

XDM



User guide

Product revision

Software Revision: 1.7.0

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Changes

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Safety

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About this chapter

Read this chapter attentively. It contains important information to prevent personal injury while installing and using your XDM projector. Furthermore, it includes several cautions to prevent damage to your XDM projector. Ensure that you understand and follow all safety guidelines, safety instructions and warnings mentioned in this chapter before installing and using the XDM projector. After this chapter, additional “warnings” and “cautions” are given depending on the procedure. Read and follow these “warnings” and “cautions” as well.

Clarification of the term “XDM” used in this document

When referring in this document to the terms “XDM”, “XDM-4K25B” or “XDM-4K25C” means that the content is applicable for following Barco product:

- XDM-4K25



Barco provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. Observing the specification mentioned in this chapter is critical for projector performance. Neglecting this can result in loss of warranty.

1.1 General considerations

General safety instructions

- Before operating this equipment please read this manual thoroughly and retain it for future reference.
- Installation and preliminary adjustments should be performed by qualified Barco personnel or by authorized Barco service dealers.
- All warnings on the projector and in the documentation manuals should be adhered to.
- All instructions for operating and use of this equipment must be followed precisely.
- All local installation codes should be adhered to.

Notice on safety

This equipment is built in accordance with the requirements of the applicable international safety standards. These safety standards impose important requirements on the use of safety critical components, materials and insulation, in order to protect the user or operator against risk of electric shock and energy hazard and having access to live parts. Safety standards also impose limits to the internal and external temperature rises, radiation levels, mechanical stability and strength, enclosure construction and protection against the risk of fire. Simulated single fault condition testing ensures the safety of the equipment to the user even when the equipment's normal operation fails.

Notice on optical radiation

This projector embeds extremely high brightness (radiance) lasers; this laser light is processed through the projector's optical path. Native laser light is not accessible by the end user in any use case. The light exiting the projection lens has been diffused within the optical path, representing a larger source and lower radiance value than native laser light. Nevertheless the projected light represents a significant risk for the human eye and skin when exposed directly within the beam. This risk is not specifically related to the characteristics of laser light but solely to the high thermal induced energy of the light source; which is equivalent with lamp based systems.

Thermal retinal eye injury is possible when exposed within the Hazard Distance (HD). The HD is defined from the projection lens surface towards the position of the projected beam where the irradiance equals the maximum permissible exposure as described in the chapter "Hazard Distance".



WARNING: No direct exposure to the beam within the hazard distance shall be permitted, RG3 (Risk Group 3) IEC EN 62471-5:2015



CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Restricted access location

This product may only be installed in a restricted access location. The definition of a "restricted access location" is a location for equipment where both of following applies:

- Access can only be gained by SERVICE PERSONNEL or by OPERATORS who have been instructed about the reasons for the restriction applied to the location and about the precautions that shall be taken.
- Access is through the use of the tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.

Why a restricted access location: This is a RG3 product. Based on international requirements, no person is allowed to enter the projected beam within the zone between the projection lens and the related Hazard Distance (HD). This shall be physically impossible by creating sufficient separation height or by placing optional barriers. Within the restricted area operator training is considered sufficient. The applicable separation heights are discussed in "[High Brightness precautions: Hazard Distance](#)", page 20.

Users definition

Throughout this manual, the terms SERVICE PERSONNEL and TRAINED PROJECTIONIST refers to persons having appropriate technical training and experience necessary to be knowledgeable of potential hazards to which they are exposed (including, but not limited to HIGH VOLTAGE ELECTRIC and ELECTRONIC CIRCUITRY and HIGH BRIGHTNESS PROJECTORS) in performing a task, and of measures

to minimize the potential risk to themselves or other persons. The term USER and OPERATOR refers to any person other than SERVICE PERSONNEL or TRAINED PROJECTIONISTS, AUTHORIZED to operate professional projection systems.

The TRAINED PROJECTIONISTS may only perform the maintenance task described in the User & Installation manual. All other maintenance tasks and service tasks must be performed by qualified SERVICE PERSONNEL.

The DLP Cinema Systems are intended "FOR PROFESSIONAL USE ONLY" by AUTHORIZED PERSONNEL familiar with potential hazards associated with high voltage, high intensity light beams generated by lasers. Only qualified SERVICE PERSONNEL and TRAINED PROJECTIONISTS, knowledgeable of such risks, are allowed to perform service functions inside the product enclosure.

1.2 Important safety instructions

To prevent the risk of electrical shock

- This projector should be operated from an AC power source. Ensure that the mains voltage and capacity matches the projector electrical ratings. If you are unable to install the AC power requirements, contact your electrician. Do not defeat the purpose of the grounding.
- Installation should be done according to the local electrical code and regulations by qualified technical personnel only.
- This product is equipped with a 5-terminal barrier strip for the connection of a power line. The projector can run on one of the following configurations, depending on what power system is available:
 - A 3W+N+PE power system (Y configuration).
 - A 3W+PE power system (Δ configuration).
 - A mono phase system with power line with a separate earth ground PE.
 If you are unable to install the AC power requirements, contact your electrician. Do not defeat the purpose of the grounding.
- This product is equipped with a 3-terminal barrier strip for the connection of a UPS power cord (2-pole, 3-wire grounding).
- The electronics of the projector (UPS INLET) must be powered from a suitable UPS unit. The building has to be provided with a circuit breaker of max 16A to protect the UPS.
- The building installation has to be provided with a circuit breaker of max 40A to protect the complete unit.
- The circuit breakers are considered as readily accessible disconnect devices that must be incorporated externally to the equipment for removal of the power to the projector mains terminals and UPS inlet terminals.
- The cross-sectional area of the conductors in the power supply cord should be not less than 4 mm² (10 AWG) while using a circuit breaker of 40A max. The power cord should have a rating depending on what power system is available:
 - Y configuration: min 500V.
 - Δ configuration: min 300V.
 - Mono phase configuration: min 300V.
- The cross-sectional area of the UPS inlet cord shall be not less than 1.5 mm² (14 AWG) and has a rating of minimum 300V.
- In case of using a circuit breaker of a current rating less than 40A, the cross-sectional area of the conductors in the power supply cord must comply with the local electrical code regulations where the projector is installed.
- The cable gland of the power supply cord has a clamping range between 11 mm and 21 mm (cable diameter of the power supply cord must be in this range :11-21 mm)
- Disconnect the power to the projector mains terminals for removal of all power from the projector.
- Do not allow anything to rest on the power cord. Do not locate this projector where persons will walk on the cord.
- Do not operate the projector with a damaged cord or if the projector has been dropped or damaged - until it has been examined and approved for operation by a qualified service technician.
- Position the cord so that it will not be tripped over, pulled, or contact hot surfaces.
- If an extension cord is necessary, a cord with a current rating at least equal to that of the projector should be used. A cord rated for less amperage than the projector may overheat.
- Never push objects of any kind into this projector through cabinet slots as they may touch dangerous voltage points or short circuit parts that could result in a risk of fire or electrical shock.

- Do not expose this projector to rain or moisture.
- Do not immerse or expose this projector in water or other liquids.
- Do not spill liquid of any kind on this projector.
- Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified service personnel before resuming operations.
- Do not disassemble this projector, always take it to a trained service person when service or repair work is required.
- Do not use an accessory attachment which is not recommended by the manufacturer.
- Lightning - For added protection for this video product during a lightning storm, or when it is left unattended and unused for long periods of time, remove all power from the projector. This will prevent damage to the projector due to lightning and AC power-line surges.

To prevent personal injury

- To prevent injury and physical damage, always read this manual and all labels on the system before powering the projector or adjusting the projector.
- Do not underestimate the weight of the projector. The projector weighs ± 140 kg (± 309 lbs). To prevent personal injury a hoisting tool should be used to lift the projector.
- To prevent injury, ensure that the lens, cooling system and all cover plates are correctly installed. See installation procedures.
- Warning: high intensity light beam. NEVER look into the lens ! High luminance could result in damage to the eye.
- **Warning: extremely high brightness projector:** This projector embeds extremely high brightness (radiance) lasers; this laser light is processed through the projectors optical path. Native laser light is not accessible by the end user in any use case. The light exiting the projection lens has been defused within the optical path, representing a larger source and lower radiance value than native laser light. Nevertheless the projected light represents a significant risk for the human eye when exposed directly within the beam. This risk is not specifically related to the characteristics of laser light but solely to the high thermal induced energy of the light source; which is equivalent to lamp based systems. Thermal retinal eye injury is possible when exposed within the Hazard Distance. The Hazard Distance (HD) is defined from the projection lens surface towards the position of the projected beam where the irradiance equals the maximum permissible exposure as described in the chapter "[High Brightness precautions: Hazard Distance](#)", page 20.
- Based on international requirements, no person is allowed to enter the projected beam within the zone between the projection lens and the related Hazard Distance (HD). This shall be made physically impossible by creating sufficient separation height or by placing optional barriers. Within the restricted area operator training is considered sufficient. The applicable separation heights are discussed in "[High Brightness precautions: Hazard Distance](#)", page 20.
- The projector shall be installed in a restricted access room equipped with a key or security lock preventing untrained persons entering the Risk Group 3 use zone.
- Switch off the projector before attempting to remove any of the projector's covers.
- Do not place this equipment on an unstable cart, stand, or table. The product may fall, causing serious damage to it and possible injury to the user.
- Lenses, shields or screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired. For example by cracks or deep scratches.
- The associated Safety responsible of the unit must evaluate the setup before the unit may be started.
- Never point or allow light to be directed on people or reflective objects within the HD zone.
- All operators shall have received adequate training and be aware of the potential hazards.
- Strictly minimize the number of people who have access to the unit. The unit may never be operated without permission of the responsible for safety.
- Do not put your hand or any body part in front of the beam.
Do not clean the port window when the projector is switched on.

To prevent fire hazard

- Do not place flammable or combustible materials near the projector!
- Barco large screen projection products are designed and manufactured to meet the most stringent safety regulations. This projector radiates heat on its external surfaces and from ventilation ducts during normal operation, which is both normal and safe. Exposing flammable or combustible materials into close proximity of this projector could result in the spontaneous ignition of that material, resulting in a fire. For this reason, it is absolutely necessary to leave an "exclusion zone" around all external surfaces of the projector

whereby no flammable or combustible materials are present. The exclusion zone must be not less than 40 cm (16") for this projector.

- Do not place any object in the projection light path at close distance to the projection lens output. The concentrated light at the projection lens output may result in damage, fire or burn injuries.
- Ensure that the projector is solidly mounted so that the projection light path cannot be changed by accident.
- Do not cover the projector or the lens with any material while the projector is in operation. . Mount the projector in a well ventilated area away from sources of ignition and out of direct sun light. Never expose the projector to rain or moisture. In the event of fire, use sand, CO₂ or dry powder fire extinguishers. Never use water on an electrical fire. Always have service performed on this projector by authorized Barco service personnel. Always insist on genuine Barco replacement parts. Never use non-Barco replacement parts as they may degrade the safety of this projector.
- Slots and openings in this equipment are provided for ventilation. To ensure reliable operation of the projector and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the projector too close to walls, or other similar surface. This projector should never be placed near or over a radiator or heat register. This projector should not be placed in a built-in installation or enclosure unless proper ventilation is provided.
- Projection rooms must be well ventilated or cooled in order to avoid build up of heat. It is necessary to vent hot exhaust air from projector and cooling system to the outside of the building.
- Let the projector cool completely before storing. Remove cord from the projector when storing.

To prevent battery explosion

- Danger of explosion if battery is incorrectly installed.
- Replace only with the same or equivalent type recommended by the manufacturer.
- For disposal of used batteries, always consult federal, state, local and provincial hazardous waste disposal rules and regulations to ensure proper disposal.

To prevent projector damage

- The air filters of the projector must be cleaned or replaced on a regular basis. Cleaning the booth area would be monthly-minimum. Neglecting this could result in disrupting the air flow inside the projector, causing overheating. Overheating may lead to the projector shutting down during operation.
- The projector must always be installed in a manner which ensures free flow of air into its air inlets.
- In order to ensure that correct airflow is maintained, and that the projector complies with Electromagnetic Compatibility (EMC) and safety requirements, it should always be operated with all of it's covers in place.
- Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. The device should not be placed in a built-in installation or enclosure unless proper ventilation is provided.
- Ensure that nothing can be spilled on, or dropped inside the projector. If this does happen, switch off and remove all power from the projector. Do not operate the projector again until it has been checked by qualified service personnel.
- Do not block the projector cooling fans or free air movement around the projector.
- Proper operation of the projector can only be guaranteed in table mounting. It is not permitted to use the projector in another position. See installation procedure for correct installation.
- **Special care for Laser Beams:** Special care should be used when DLP projectors are used in the same room as high power laser equipment. Direct or indirect hitting of collimated laser beams on to the lens from outside the projector body can severely damage the Digital Mirror Devices™ in which case there is a loss of warranty.
- Never place the projector in direct sunlight. Sunlight on the lens can severely damage the Digital Mirror Devices™ in which case there is a loss of warranty.
- Save the original shipping carton and packing material. They will come in handy if you ever have to ship your equipment. For maximum protection, repack your set as it was originally packed at the factory.
- Remove all power from the projectors mains terminals before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning. Never use strong solvents, such as thinner or benzine or abrasive cleaners, since these will damage the cabinet. Persistent stains may be removed with a cloth lightly dampened with mild detergent solution.

- To ensure the highest optical performance and resolution, the projection lenses are specially treated with an anti-reflective coating, therefore, avoid touching the lens. To remove dust on the lens, use a soft dry cloth. For lens cleaning follow the instructions precisely as stipulated in the projector manual.
- Rated maximum ambient temperature, $t_a = 40^\circ\text{C}$ (104°F).
- Rated humidity = 5% RH to 85% RH non-condensed.

On servicing

- Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage potentials and risk of electric shock.
- Refer all servicing to qualified service personnel.
- Attempts to alter the factory-set internal controls or to change other control settings not specially discussed in this manual can lead to permanent damage to the projector and cancellation of the warranty.
- Replacement parts: When replacement parts are required, be sure the service technician has used original Barco replacement parts or authorized replacement parts which have the same characteristics as the Barco original part. Unauthorized substitutions may result in degraded performance and reliability, fire, electric shock or other hazards. Unauthorized substitutions may void warranty.
- Safety check: Upon completion of any service or repairs to this projector, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

Malfunction unit

Remove all power from the projector and refer servicing to qualified service technicians under the following conditions:

- When the power cord or plug is damaged or frayed.
- If liquid has been spilled into the equipment.
- If the product has been exposed to rain or water.
- If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of the other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
- If the product has been dropped or the cabinet has been damaged.
- If the product exhibits a distinct change in performance, indicating a need for service.

Safety Data Sheets for Hazardous Chemicals

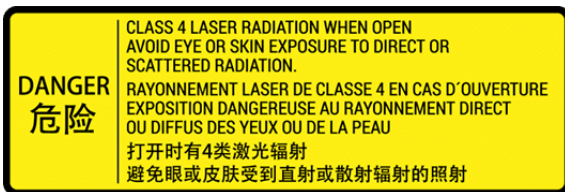
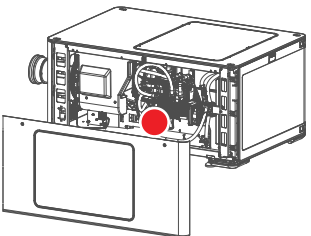
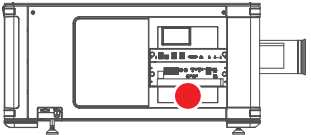

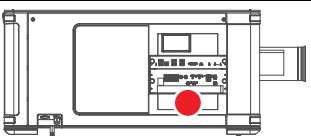

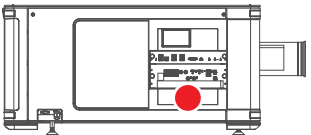
For safe handling information on chemical products, consult the Safety Data Sheet (SDS). SDSs are available upon request via safetydatasheets@barco.com.

On the reinforcement frame

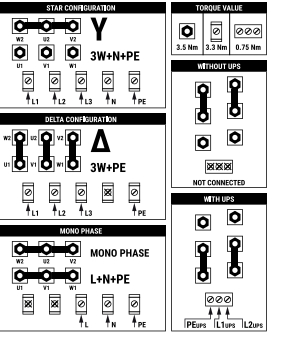
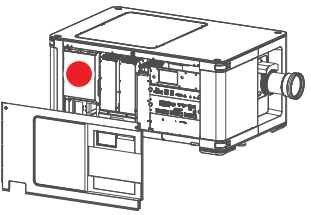

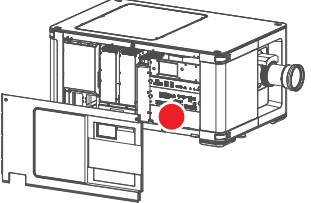
- The XDM reinforcement frame is exclusively designed for the XDM projectors and can thus not be used on other equipment.
- The reinforcement frame is single use. While certain brackets on the frame can be removed in order to remove the front, rear and top cover of the projector, it is not allowed to disassemble the reinforcement frame itself.
- It is not allowed to stack the reinforcement frames of the XDM projector on top of each other, nor is it allowed to suspend them from each other.
- When the projector is suspended from a truss, a minimum of four (4) clamps must be used to secure the projector. The clamps must be fixed to the projector frame. Use a truss which is capable of handling five (5) times the complete load of the system. Also use clamps that are capable of handling five (5) times the complete load of the system.
- It is the responsibility of the installer to suspend the reinforcement frame in a safe and secure fashion. Safety cables must be applied according to local regulations and standards. Safety cables must be dimensioned for the applicable load and no drop distance is allowed or must be limited as much as possible.
- When the safety cables have undergone a heavy shock, invisible damage may have occurred to the safety cables. In this case the safety cables must be replaced.

1.3 Product safety labels

Light beam related safety labels

Label image	Label description	Label location
	<p>CLASS 4 LASER RADIATION WHEN OPEN AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION. RAYONNEMENT LASER DE CLASSE 4 EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU RAYONNEMENT DIRECT OU DIFFUS DES YEUX OU DE LA PEAU 打开时有4类激光辐射 避免眼或皮肤受到直射或散射辐射的照射</p> <p>DANGER! CLASS 4 LASER RADIATION WHEN OPEN. AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION. DANGER! RAYONNEMENT LASER DE CLASSE 4 EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU RAYONNEMENT DIRECT OU DIFFUS DES YEUX OU DE LA PEAU. 危险! 打开时有4类激光辐射。 避免眼或皮肤受到直射或散射辐射的照射。</p>	
<p><small>WARNING! DO NOT LOOK INTO THE BEAM NO DIRECT EYE EXPOSURE TO THE BEAM IS PERMITTED. RG3 IEC EN 62471-5:2015 CLASS 1 IEC EN 60825-1:2014 HAZARD DISTANCE: CONSULT SAFETY MANUAL.</small></p> <p><small>ATTENTION! NE PAS REGARDER LE FAISCEAU EVITER TOUTE EXPOSITION DIRECTE DES YEUX AU FAISCEAU. RG3 IEC EN 62471-5:2015 CLASS 1 IEC EN 60825-1:2014 DISTANCE DE SECURITE: CONSULTER LE MANUEL DE SECURITE</small></p> <p><small>警告! 勿观看光束 眼睛勿直接接触可允许暴露的光束 RG3 IEC EN 62471-5:2015 CLASS 1 IEC EN 60825-1:2014 危害距离: 请参考安全手册</small></p> <p><small>警告! 请勿注视光源。 禁止眼睛暴露在光源照射范围。雷射危险等级 RG3 IEC EN 62471-5:2015 CLASS 1 IEC EN 60825-1:2014 安全危害距离: 请参考安全手册。</small></p> <p><small>THIS PRODUCT IS IN CONFORMITY WITH PERFORMANCE STANDARDS FOR LASER PRODUCTS UNDER 21 CFR 1040 EXCEPT WITH RESPECT TO THOSE CHARACTERISTICS AUTHORIZED BY VARIANCE NUMBER 2018-V-2875 EFFECTIVE ON OCTOBER 2, 2018.</small></p>	<p>WARNING! DO NOT LOOK INTO THE BEAM; NO DIRECT EYE EXPOSURE TO THE BEAM IS PERMITTED. RG3 IEC EN 62471-5:2015. CLASS 1 IEC EN 60825-1:2014. HAZARD DISTANCE: CONSULT SAFETY MANUAL. “Important safety instructions”, page 15</p> <p>THIS PRODUCT IS IN CONFORMITY WITH PERFORMANCE STANDARDS FOR LASER PRODUCTS UNDER 21 CFR 1040 EXCEPT WITH RESPECT TO THOSE CHARACTERISTICS AUTHORIZED BY VARIANCE NUMBER [see applied label] EFFECTIVE ON [see applied label].</p> <p>ATTENTION! NE PAS REGARDER LE FAISCEAU EVITER TOUTE EXPOSITION DIRECTE DES YEUX AU FAISCEAU. RG3 IEC EN 62471-5:2015. CLASS 1 IEC EN 60825-1:2014. DISTANCE DE SECURITE : CONSULTER LE MANUEL DE SECURITE</p> <p>警告! 勿观看光束 眼睛勿直接接触可允许暴露的光束 RG3 IEC EN 62471-5:2015 CLASS 1 IEC EN 60825-1:2014 危害距离: 请参考安全手册</p> <p>警告! 请勿注视光源。禁止眼睛暴露在光源照射范围。雷射危险等级 RG3 IEC EN 62471-5:2015 CLASS 1 IEC EN 60825-1:2014 安全危害距离: 请参考安全手册。</p>	
	<p>Hazard RG3: optical radiation warning symbol</p>	
	<p>Hazard RG3: not for household use symbol</p>	

Electric related safety labels

Label image	Label description	Label location
<p>Disconnect the power to the unit mains terminals and unplug power cord at UPS inlet before removing this cover. See ID-label for ratings.</p> <p>WARNING : HIGH LEAKAGE CURRENT EARTH CONNECTION ESSENTIAL BEFORE CONNECTING SUPPLY</p> <p>SEE INSTALLATION INSTRUCTIONS BEFORE CONNECTING TO THE SUPPLY</p> <p>Déconnecter l'alimentation des bornes du réseau et déconnecter le câble de la prise UPS avant de retirer ce couvercle. Voir l'étiquette d'identification pour les paramètres.</p> <p>ATTENTION : COURANT DE FUITE ÉLEVÉ RACCORDEMENT À LA TERRE INDISPENSABLE AVANT LE RACCORDEMENT AU RÉSEAU</p> <p>VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RÉSEAU</p> <p>在取下此外殼前，斷開投影機主電源端的電源並從UPS電源插座上拔下電源線。額定功率參閱產品標籤。</p> <p>警告：大漏電流，在接通電源之前必須先接地。</p> <p>在連接電源前請查看安裝說明書</p> <p>在取下此外殼前，斷開投影机主電源端的電源并从UPS电源插座上拔下电源线。额定功率参阅产品标签。</p> <p>警告：大漏电流，在接通电源之前必须先接地。</p> <p>在连接电源前请查看安装说明书</p> 	<p>Disconnect the power to the unit mains terminals and unplug power cord at UPS inlet before removing this cover. See ID-label for ratings.</p> <p>WARNING : HIGH LEAKAGE CURRENT EARTH CONNECTION ESSENTIAL BEFORE CONNECTING TO THE SUPPLY.</p> <p>Déconnecter l'alimentation des bornes du réseau et déconnecter le câble de la prise UPS avant de retirer ce couvercle. Voir l'étiquette d'identification pour les paramètres.</p> <p>ATTENTION : COURANT DE FUITE ÉLEVÉ RACCORDEMENT À LA TERRE INDISPENSABLE AVANT LE RACCORDEMENT AU RÉSEAU VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RÉSEAU</p> <p>在取下此外殼前，斷開投影機主電源端的電源並從UPS電源插座上拔下電源線。額定功率參閱產品標籤。警告：大漏電流，在接通電源之前必須先接地。在連接電源前請查看安裝說明書</p> <p>在取下此外殼前，斷開投影机主電源端的電源并从UPS电源插座上拔下电源线。额定功率参阅产品标签。警告：大漏电流，在接通电源之前必须先接地。在连接电源前请查看安装说明书。</p>	 <p>Printed on Mains cover</p>
 <p>CAUTION DOUBLE POLE / NEUTRAL FUSING HIGH RESIDUAL VOLTAGE -</p> <p>WARNING : RISK OF ELECTRIC SHOCK SWITCH OFF AND UNPLUG BEFORE REMOVING THIS COVER</p> <p>SEE INSTRUCTIONS BEFORE REMOVING SMPS</p> <p>注意 兩極/中性熔斷 高殘餘電壓</p> <p>警告：存在觸電風險 移除此蓋板之前， 請先關機並拔掉電源插頭</p> <p>移除SMPS之前，請先閱讀說明</p> <p>ATTENTION DOUBLE PÔLE / FUSIBLE SUR LE NEUTRE HAUTE TENSION RÉSIDUELLE -</p> <p>ATTENTION : RISQUE DE CHOCS ÉLECTRIQUES ÉTEINDRE ET DÉCONNECTER AVANT OUVERTURE DU COUVERCLE</p> <p>LIRE LES INSTRUCTIONS AVANT DE RETIRER LE SMPS</p>	 <p>Printed on SMPS cover</p>	
<p>CAUTION! DOUBLE POLE / NEUTRAL FUSING HIGH RESIDUAL VOLTAGE - WARNING : RISK OF ELECTRIC SHOCK SWITCH OFF AND UNPLUG BEFORE REMOVING THIS COVER. SEE INSTRUCTIONS BEFORE REMOVING SMPS.</p> <p>注意 兩極/中性熔斷 高殘餘電壓. 警告：存在觸電風險 移除此蓋板之前，請先關機並拔掉電源插頭 移除SMPS之前，請先閱讀說明。</p> <p>ATTENTION DOUBLE PÔLE / FUSIBLE SUR LE NEUTRE HAUTE TENSION RÉSIDUELLE - ATTENTION : RISQUE DE CHOCS ÉLECTRIQUES. ÉTEINDRE ET DÉCONNECTER AVANT OUVERTURE DU COUVERCLE. LIRE LES INSTRUCTIONS AVANT DE RETIRER LE SMPS.</p>		

1.4 High Brightness precautions: Hazard Distance



HD

Hazard Distance (HD) is the distance measured from the projection lens at which the intensity or the energy per surface unit becomes lower than the applicable exposure limit on the cornea or on the skin. The light beam is considered (to be) unsafe for exposure if the distance from a person to the light source is less than the HD.

Restriction Zone (RZ) based on the HD

The HD depends on the amount of lumens produced by the projector and the type of lens installed. See chapter “HD in function of modifying optics”, page 24.

To protect untrained end users (as cinema visitors, spectators) the installation shall comply with the following installation requirements: Operators shall control access to the beam within the hazard distance or install the product at a height that will prevent spectators' eyes from being in the hazard distance. Radiation levels in excess of the limits will not be permitted at any point less than 2.0 meter (SH) above any surface upon which persons other than operators, performers, or employees are permitted to stand or less than 1.0 meter (SW) lateral separation from any place where such persons are permitted to be. In environments where unrestrained behavior is reasonably foreseeable, the minimum separation height should be greater than or equal to 3.0 meter to prevent potential exposure, for example by an individual sitting on another individual's shoulders, within the HD.

These values are minimum values and are based on the guidance provided in IEC 62471-5:2015 section 6.6.3.5.

The installer and user must understand the risk and apply protective measures based upon the hazard distance as indicated on the label and in the user information. Installation method, separation height, barriers, detection system or other applicable control measure shall prevent hazardous eye access to the radiation within the hazard distance.

For example, projectors that have a HD greater than 1 m and emit light into an uncontrolled area where persons may be present should be positioned in accordance with “the fixed projector installation” parameters, resulting in a HD that does not extend into the audience area unless the beam is at least 2.0 meter above the floor level. In environments where unrestrained behavior is reasonably foreseeable, the minimum separation height should be greater than or equal to 3.0 meter to prevent potential exposure, for example by an individual sitting on another individual's shoulders, within the HD. Sufficiently large separation height may be achieved by mounting the image projector on the ceiling or through the use of physical barriers.

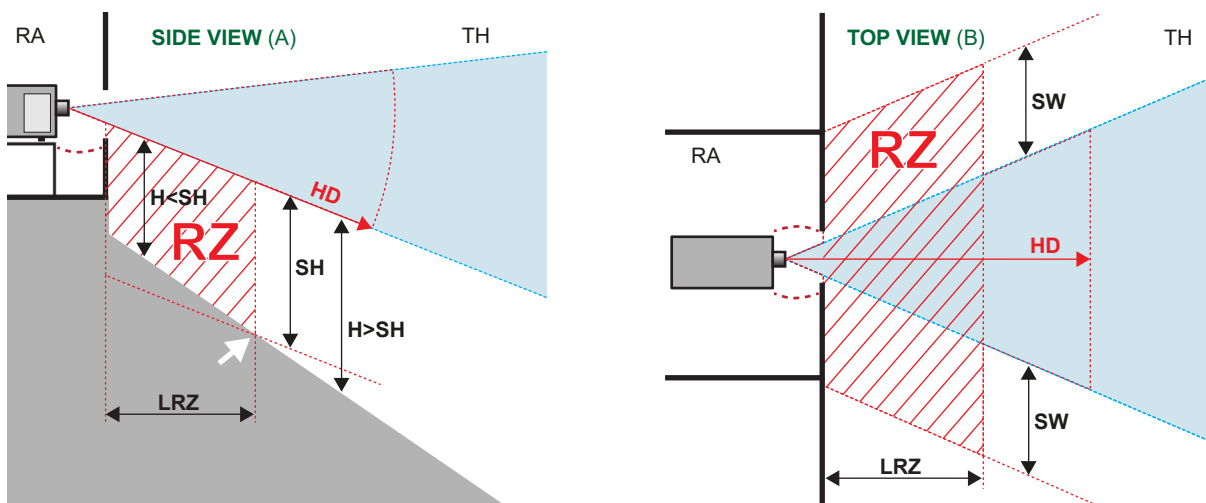


Image 1-1

- A** Side view
- B** Top view
- RA** Restricted Access location (boot area of projector).
- TH** Theater
- RZ** Restriction Zone in the theater

- HD** Hazard Distance
- LRZ** Length Restriction Zone in the theater
- H** Height between surface floor and the light beam
- SH** Separation Height
- SW** Separation Width

Based on national requirements, no person is allowed to enter the projected beam within the zone between the projection lens and the related hazard distance (HD). This shall be physically impossible by creating sufficient separation height or by placing barriers. The minimum separation height takes into account the surface upon which persons other than operator, performers or employees are permitted to stand.

On [Image 1-2](#) a typical setup is displayed. It must be verified if these minimum requirements are met. If required a restricted zone (RZ) in the theater must be established. This can be done by using physical barrier, like a red rope as illustrated in [Image 1-2](#).

The restricted area sticker can be replaced by a sticker with only the symbol.

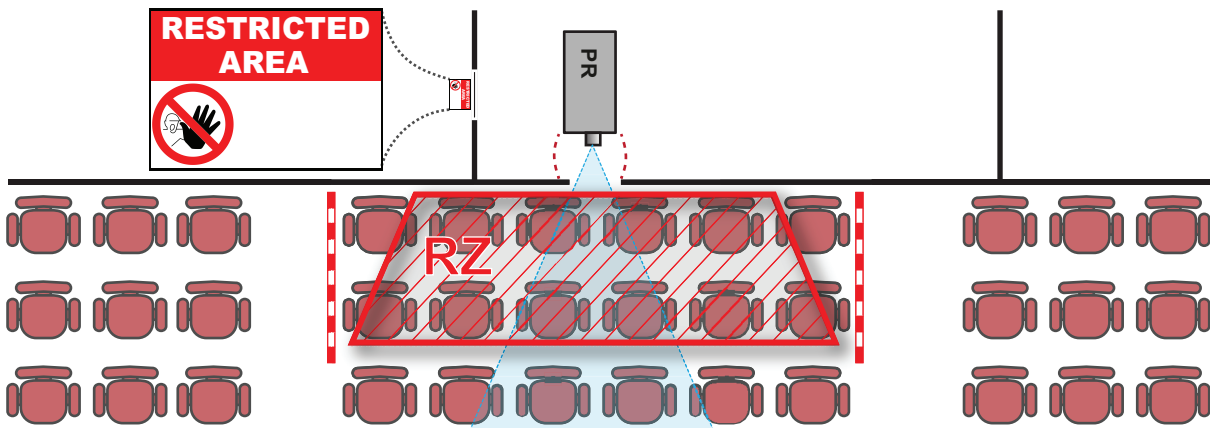


Image 1-2

USA market

For LIPs (Laser Illuminated Projectors) installed in the USA market other restriction zone conditions apply.

LIPs for installation in restrained environment (cinema theaters, business rooms, class rooms, museums ...) shall be installed at height vertically above the floor such that the bottom plane of the hazard distance zone shall be no lower than 2.5 meters above the floor. Horizontal clearance to the hazard distance zone shall be not less than 1 meter. Alternatively, in case the height of the separation barrier for the horizontal clearance is at least 1 meter high then the horizontal clearance (SW) can be reduced to:

- 0 meter if the height of the hazard zone is minimum 2.5 meter.
- 0.1 meter if the height of the hazard zone is minimum 2.4 meter.
- 0.6 meter if the height of the hazard zone is minimum 2.2 meter.

LIPs for installations in unrestrained environment (concerts, ...) shall be installed at a height vertically above the floor such that the bottom plane of the Hazard distance Zone shall be no lower than 3 meters above the floor. Horizontal clearance to the hazard distance zone shall be not less than 2.5 meters. Any human access horizontally to the Hazard Zone, if applicable, shall be restricted by barriers. If human access is possible in an unsupervised environment, the horizontal or vertical clearances shall be increased to prevent exposure to the hazard distance zone.

The LIP shall be installed by Barco or by a trained and Barco-authorized installer or shall only be transferred to laser light show variance holders. This is applicable for dealers and distributors since they may need to install the LIP (demo install) and/or they transfer (sell, rent, lease) the LIP. Dealers and distributors shall preserve sales and installation records for a period of 5 years. Variance holders may currently hold a variance for production of Class IIIB and IV laser light shows and/or for incorporating RG3 LIPs. Laser light show variance for RG3 LIPs can be requested by mailing the application to RadHealthCustomerService@fda.hhs.gov.

The installation checklist for laser illuminated RG3 projectors must be fully completed after the installation. The installation checklist can be downloaded from the Barco website. The installer shall preserve the checklist for a period of 5 years.

Install one or more readily accessible controls to immediately terminate LIP projection light. The power input at the projector side is considered as a reliable disconnect device. When required to switch off the projector, disconnect the power cord at the projector side. In case the power input at the projector side is not accessible (e.g. truss mount), the socket outlet supplying the projector shall be installed nearby the projector and be easily accessible, or a readily accessible general disconnect device shall be incorporated in the fixed wiring.

1.5 HD for fully enclosed projection systems

HD



Hazard Distance (HD) is the distance measured from the projection lens at which the intensity or the energy per surface unit becomes lower than the applicable exposure limit on the cornea or on the skin. The light beam is considered (to be) unsafe for exposure if the distance from a person to the light source is less than the HD.

Restriction Zone (RZ) based on the HD

The projector is also suitable for rear projection applications; projecting a beam onto a diffuse coated projection screen. As displayed in [Image 1–3](#) two areas should be considered: the restricted enclosed projection area (RA) and the observation area (TH).

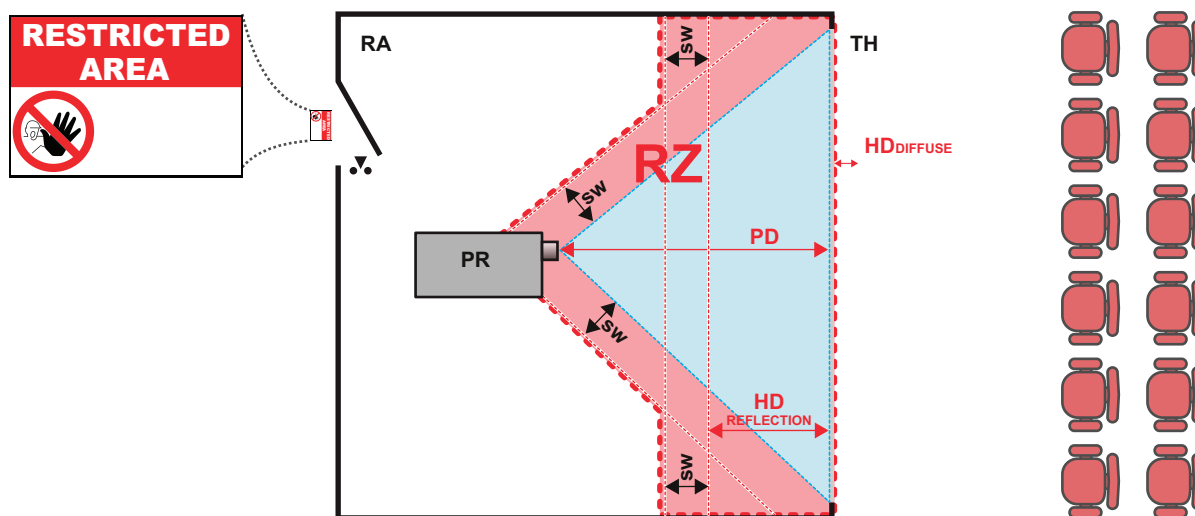


Image 1–3

RA Restricted Access location (enclosed projection area).
PR Projector.
TH Theater (observation area).

RZ Restriction Zone.
PD Projection Distance.
SW Separation Width. Must be minimum 1 meter.

For this type of setup 3 different HD shall be considered:

- HD as discussed in [“High Brightness precautions: Hazard Distance”](#), page 20, relevant for intrabeam exposure.
- $HD_{\text{reflection}}$: the distance that has to be kept restrictive related to the reflected light from the rear projection screen.
- HD_{diffuse} : the relevant distance to be considered while observing the diffuse surface of the rear projection screen.

As described in [“High Brightness precautions: Hazard Distance”](#), page 20, it is mandatory to create a restricted zone within the beam areas closer than any HD. In the enclosed projection area the combination of two restricted zones are relevant: The restricted zone of the projected beam toward the screen; taking into account 1 meter Separation Width (SW) from the beam onward. Combined with the restricted zone related to the rear reflection from the screen ($HD_{\text{reflection}}$); also taking into account a 1 meter lateral separation.

The $HD_{\text{reflection}}$ distance equals 25% of the difference between the determined HD distance and the projection distance to the rear projection screen. To determine the HD distance for the used lens and projector model see chapter [“HD in function of modifying optics”](#), page 24.

$$HD_{\text{reflection}} = 25\% (HD - PD)$$

The light emitted from the screen within the observation shall never exceed the RG2 exposure limit, determined at 10 cm. The HD_{diffuse} can be neglected if the measured light at the screen surface is below 5000 cd/m² or 15000 LUX.

1.6 HD in function of modifying optics

Hazard distance

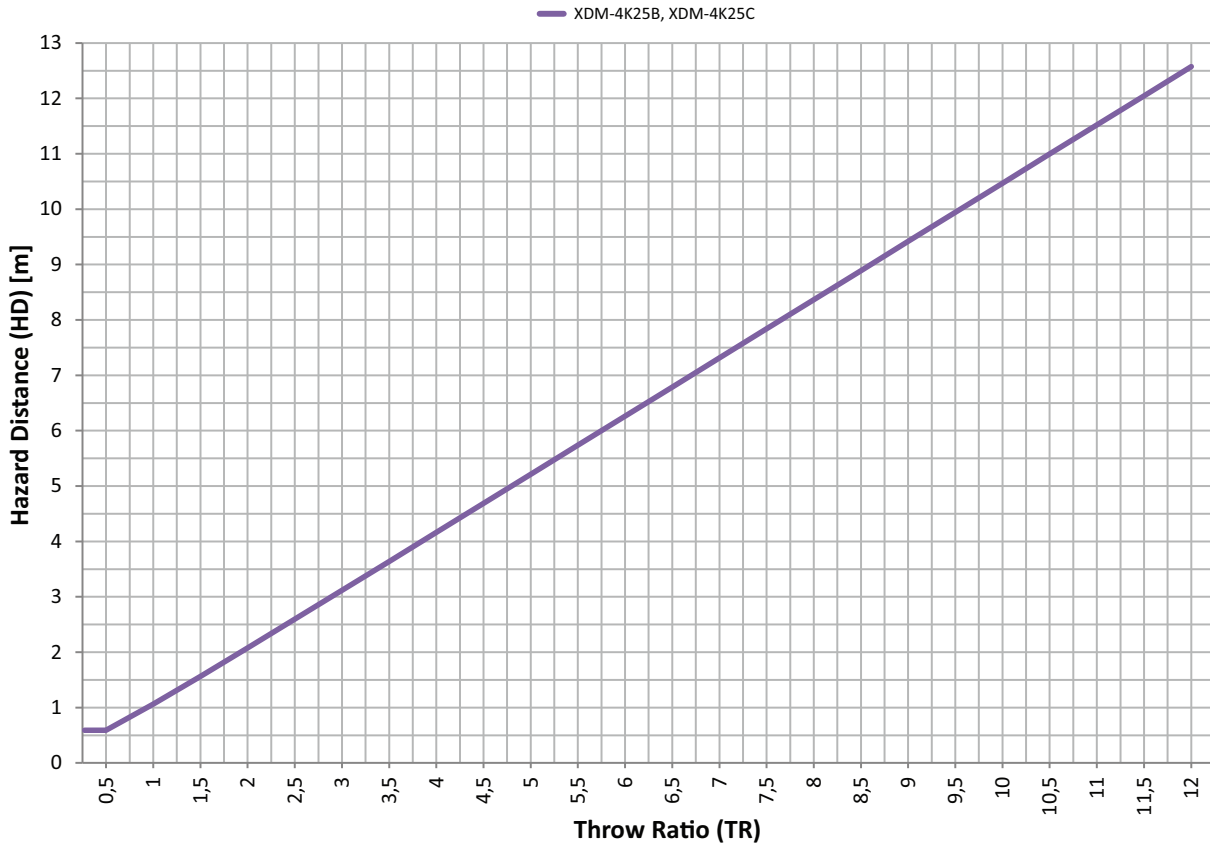
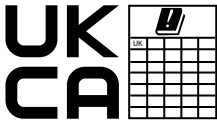


Image 1-4

HD Hazard Distance
TR Throw Ratio

1.7 Compliance

UK Compliance



This product is fit for use in the UK.

Authorised Representative: Barco UK Ltd

Address: Building 329, Doncastle Road
 Bracknell RG12 8PE, Berkshire, United Kingdom

Getting started

2

2.1	Explaining the power states	26
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Physical installation

Instructions for the physical installation of this projector are not included in this document (User Guide) . For physical installation instructions (e.g. positioning, cooling, electrical connection ...) see installation manual of the projector.

How to control the projector ?

The projector can be controlled by the local touch screen, via General Purpose inputs and outputs or by browser application.

2.1 Explaining the power states

Power states explained

The projector can have one of several power states, which you can recognize by the state of the power LED.

Projector Power State	Behavior	Power LED
Mains power off	Projector is not powered	Off
OFF mode	The power button and GPI3 are powered (for remote power-on).	Slowly blinking RED
ECO mode	Projector IP connection is active; touch display and image processing are off.	Full RED
READY mode	Projector is fully powered and active; touch display is on (if available), Web Communicator is active and light is OFF.	Full GREEN
ON mode	Projector is fully powered and active; touch display is on (if available), Web Communicator is active and light is ON.	Full GREEN
Going to ECO mode	Turning electronics and light source OFF.	Blinking green

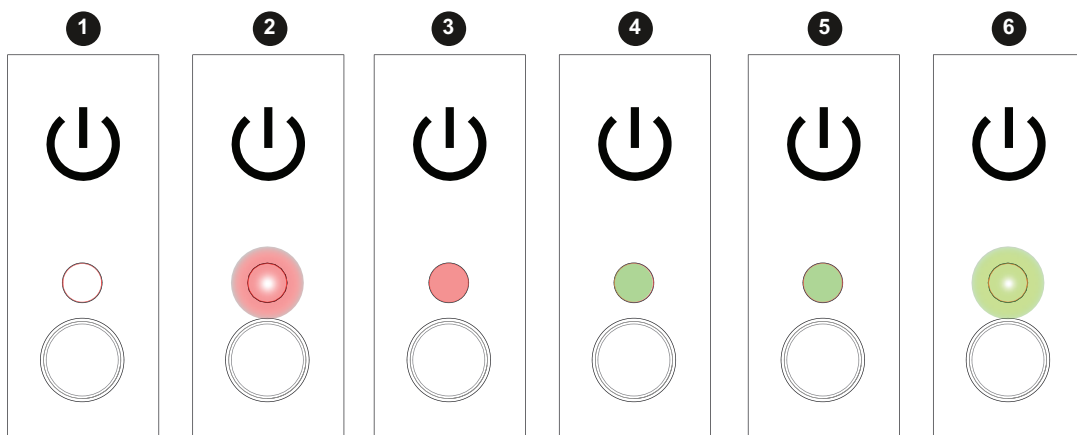


Image 2-1

- 1 Mains power off
- 2 OFF mode
- 3 ECO mode

- 4 READY mode
- 5 ON mode
- 6 Going to ECO mode

Switching between power states

You can change power state by using one of the following options:

- Pressing the Power button on the Cinema Controller (reference 1)
- Sending a wake-up signal to the GPI3 input for more than 0.5 seconds, but less than 2 (reference 2).¹
- Using the *ECO* menu on the touch display (if available).
- Using the *Power* menu in Web Communicator.

1. GPI3 works the same way as the power button. Thus take into account that sending a signal for more than 6 seconds will turn the projector OFF instead.

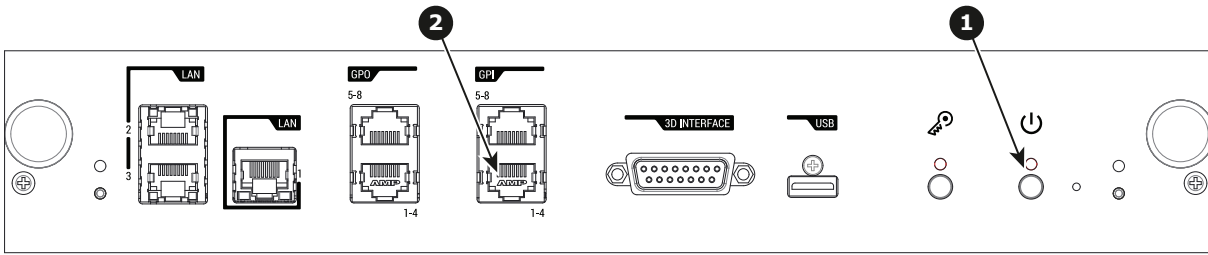


Image 2-2 Location of the Power button and GPI 1-4 input on the Cinema Controller.

Power state diagram

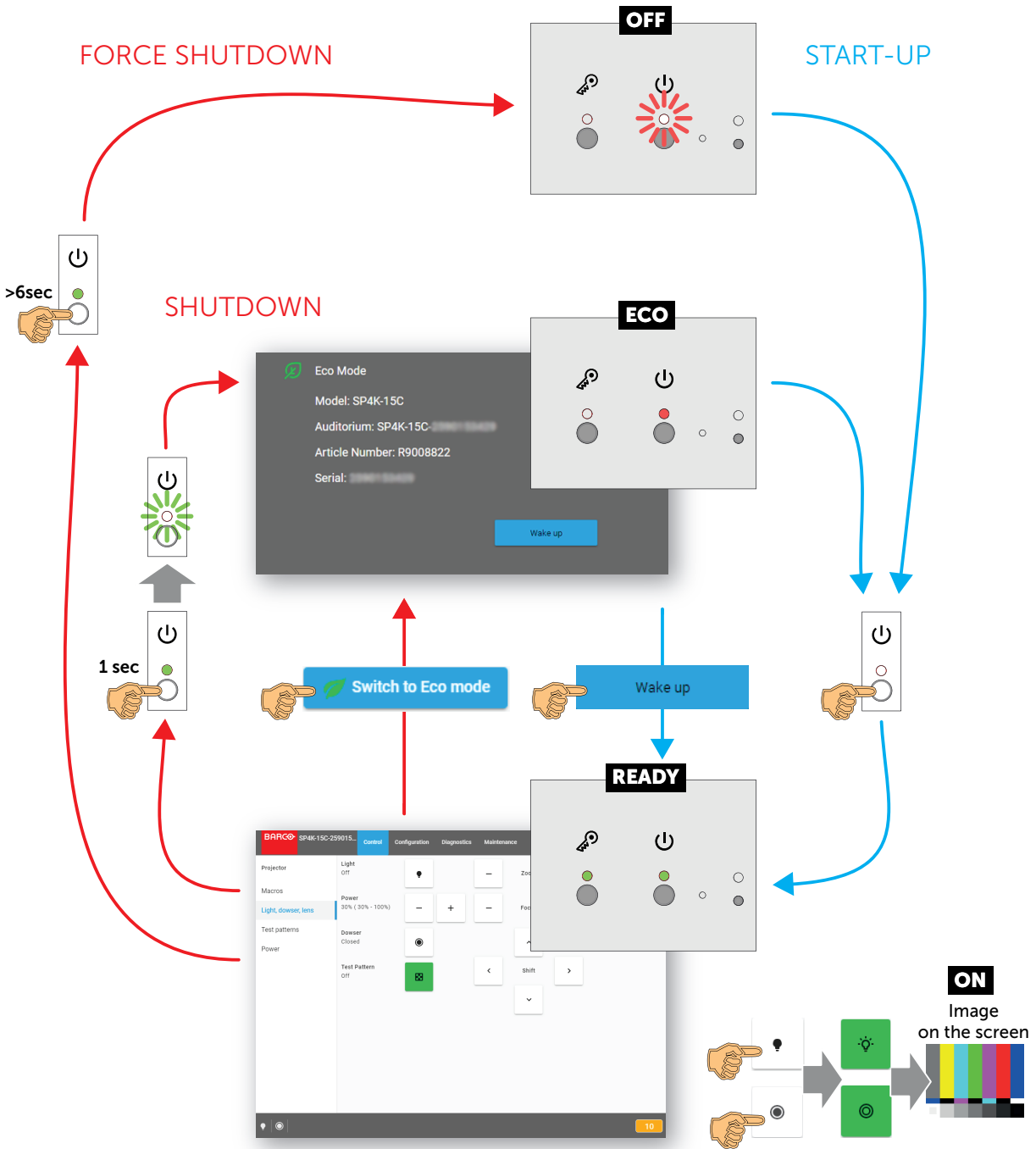


Image 2-3 Power State diagram

2.2 Switching the projector ON

Possible ways to switch on

There are multiple ways to switch on the projector, depending on a few factors:

Current Power Stage	How to power on	Notes
OFF	<ul style="list-style-type: none"> Locally, using the power button Remotely, using GPI3 	After the projector is powered, you can further access the projector using either Web Communicator or the optional touch display.
ECO mode	<ul style="list-style-type: none"> Locally, using the power button and touch display² Remotely, using Web Communicator Remotely, using GPI3 	Take into account that the Web Communicator method can only be used when the projector is in ECO mode.

How to switch on locally, using the touch display?

1. Ensure that the XDM projector is installed onto a stable platform.
2. Ensure the projector is correctly connected to the mains power.
3. Ensure that the correct lens is installed for your application.
4. Press the power button to switch the projector ON.

The projector will start up and the touch display will start its initialization procedure.

5. Wait until the *Projector control* menu is fully accessible on the touch display.



Tip: While the menu may become accessible early on, certain icons (e.g. the Light button) may be greyed out until the projector is ready to play.



Image 2-4 Example of the Projector control menu on the touch display.

6. Press the **Light** button to activate the light source. Use a press of >1 second.

The Light source will prepare itself for playing, by doing a laser self-test. This may take a while, depending on your projector variant. While the light source is turning on, the Light button will blink green. Once completed it will be full green.

7. Press the **Dowser** button to open the dowser.

How to switch on remotely, using only Web Communicator?

1. Ensure that the XDM projector is installed onto a stable platform.

2. Only possible if the Touch Display option has been chosen.

2. Ensure the projector is correctly connected to the mains power.
3. Ensure that the correct lens is installed for your application.
4. Browse to the IP address of the projector, using the http protocol.

With the projector in ECO mode, you will be redirected to the ECO mode page.

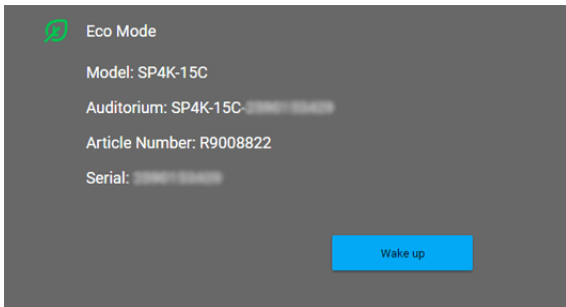


Image 2–5 Example of the Eco Mode page in Web Communicator

5. On the Eco mode page, press **Wake up**.
The projector will start up. Once it has fully started up, you will be redirected to the login page of Web Communicator.
6. Once the login page becomes available, log in to the projector.
Once logged in, you will be redirected to the *Light, dower, lens* menu.
7. In this menu, press the **Light** button to activate the light source. Use a press of >1 second.
The Light source will start warming up.
8. Press the **Dowser** button to open the dowser.

How to switch on remotely, using only GPI3?

1. Ensure that the XDM projector is installed onto a stable platform.
2. Ensure the projector is correctly connected to the mains power.
3. Ensure that the correct lens is installed for your application.
4. Ensure that the GPI port is connected to a supported automation controller (e.g. a JNIOR device).
5. Send a signal to GPI3 for more than 0.5 seconds (but less than six seconds).



Tip: GPI3 works in a similar fashion to the power button. So sending a signal for six seconds or more will force the projector OFF instead.



CAUTION: See the User Guide of the projector to operate and control the projector.

2.3 Connecting to the projector for the first time

Default settings

If you want to access Web Communicator, take into account the following default settings of the projector. By default you will be able to access Web Communicator using the following default settings.

Item	Setting
IP address	192.168.100.2
Subnet mask	255.255.255.0

Item	Setting
Default gateway	192.168.100.1
Default hostname	[projector model] - [serial number]

How to connect?

1. On the touch display of the projector, press either *About*, or *Settings* to see the IP address assigned to the projector.
2. Use a web browser to browse to the assigned IP address.
The login page of Web Communicator will be displayed.
3. Log in onto Web Communicator.

Default passwords Web Communicator

When logging in for the first time, use one of the following default passwords

User group	User name projector	Default password	User name ICMP	Default password
Administrator	admin	Admin1234	admin	Admin1234
Service technician	st	Service1234		
Show manager	show	Show1234	show	Show1234
Projectionist			proj	Proj1234



For security reasons, it is advised to change these passwords as soon as possible after your projector has been configured.

2.4 Switching the projector OFF



Putting the projector in ECO mode is the preferred method of shutting down the projector after a day of playing. Only switch the projector to OFF if technical problems have occurred. Take into account that you can **not** start the projector remotely when the projector has been switched OFF. You can only power it using the power button.

How to put the projector in ECO mode, using the touch display?

1. In the main menu of the touch display, press on the ECO button.

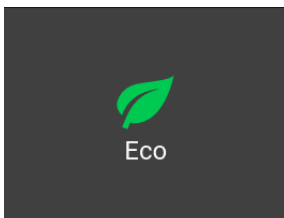


Image 2-6

2. In the Eco menu, press "Switch to ECO mode". Press for more than one second.

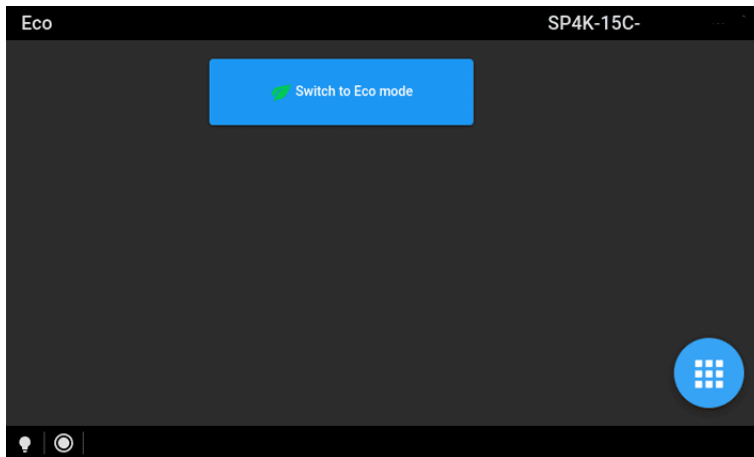


Image 2-7 Example of the ECO menu on the touch display

How to put the projector in ECO mode, using the Web Communicator?

1. In the Communicator, browse to *Control* >> *Power*.
2. In the Power menu, press **Switch to ECO mode** and confirm.

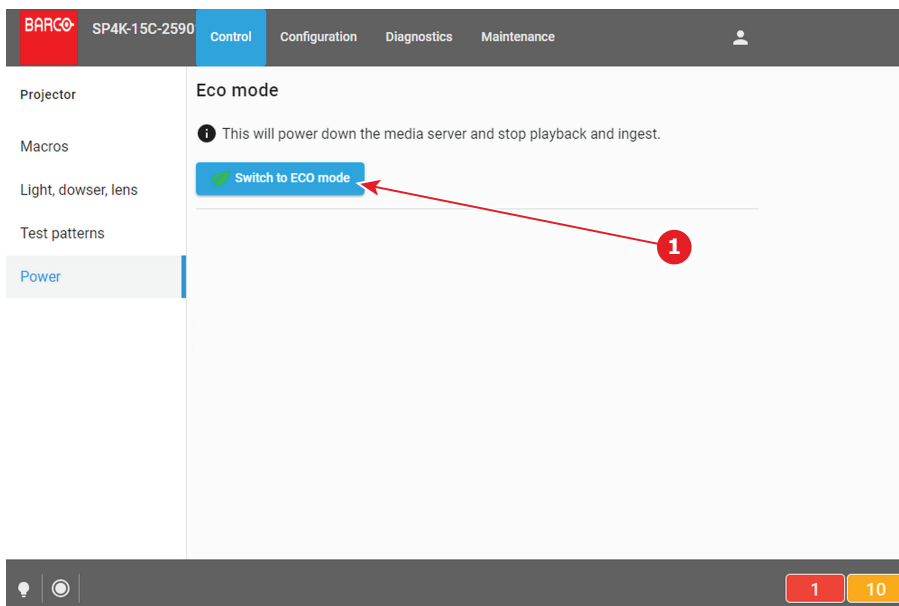


Image 2-8

How to turn the projector OFF?

1. Press the power button for more than six seconds. The projector will go to OFF mode.

or

Send a signal via GPI3 for more than six second. The projector will go to OFF mode.

2.5 Operation in 24/7 Mode

General

When the projector is destined to be operated continuously 24 hours a day, 7 days a week, the following recommendations should be followed:

- Twice a day, switch off the projector during two minutes by using the power button. The power down action will automatically and invisibly trigger a grey test pattern running within the projector.

- Apply moving video content as much as possible, with on average a level of 50% white (long-term use of extreme black or white content could potentially cause accelerated aging).

2.6 Web Communicator

Built-in web application

The Web Communicator application is a uniquely powerful and easy to use built-in web application for the Barco projector. This application provides all the necessary tools necessary to setup and control the connected projector. A comprehensive array of easy to access menu pages provide the projectors digital input, output and screen display via a combination of simple buttons and displays.

The Web Communicator user interface is readily available on the projector without any additional software installation. It is accessible via a web browser and is fully supported on iOS and Android devices.



While all web browsers are supported, the recommended browser is Chrome.

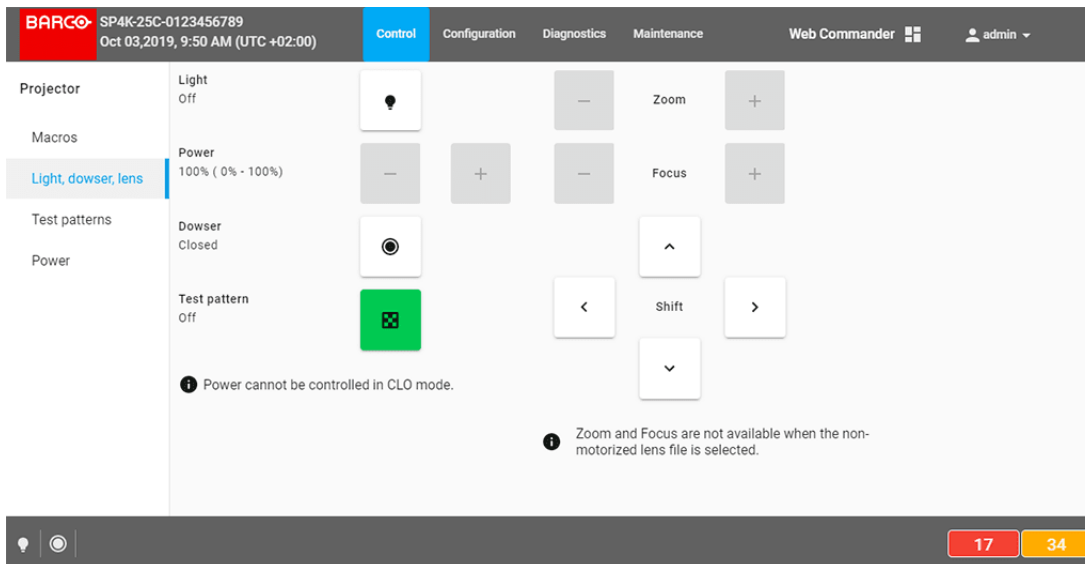


Image 2–9 Example of the Web Communicator tool

Quick and Easy configuration

Clearly indicated tab pages allow the control of Projector connection, configuration, test, color calibration and configuration with an existing automation system. All actions can be activated by a simple click. Depending on the user level, functions are enabled or disabled in the application. The enabled functions are only accessible via a password entry and that prevents misalignment once everything is correctly aligned.

2.7 Web Commander

Web Commander

All Barco Alchemy projectors come with the 'Barco Web Commander' screen management system featuring an intuitive user interface for simple operation.

The Barco Alchemy projectors have been carefully designed to greatly increase the level of operational efficiency. Projectionists can enjoy a streamlined and intuitive user interface that seamless blends projector control with a full-fledged screen management system. The 'Barco Web Commander' user interface is readily available on the projector without any additional software installation. It is accessible via a web browser and is fully supported on iOS and Android devices.

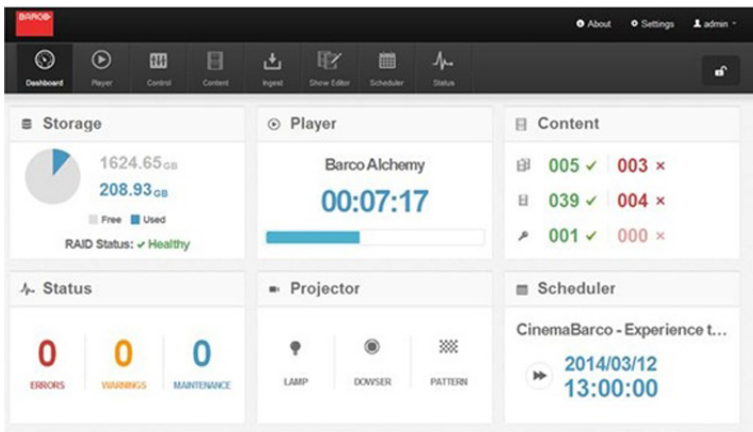


Image 2-10



The Web Commander has its own user guide, of which you can find the latest version on the Barco website.

Touch display

3

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About this chapter

This chapter describes the panels dedicated to projector control accessible via the touch display.



The touch display is an optional accessory which, when present, is located in the upper part of the card cage (above the Barco Cinema controller).



The touch display is an easy way to access basic functionality like setting the network address, switch to Eco mode or execute direct commands (e.g. zoom, open dowsers, switch on the light source...), but for setup and control it is recommended to use Web Communicator, the web application that provides all the tools needed to configure and control the connected projector. For further details, see sections dedicated to Web communicator.

3.1 General

Overview

When present, the touch display is located in the upper part of the card cage, above the Barco Cinema controller (reference 1, [Image 3-1](#)).

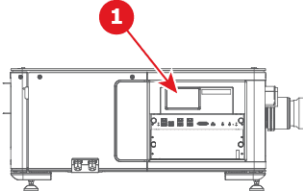


Image 3-1 Touch display in card box

The panels displayed in the touch display are organized around a *top* bar (on the top), a *status* bar (on the bottom) and a working area (center of the screen).

There is a *main* panel (reference 1, [Image 3-2](#)) which provides access to six submenus. After a few moments of inactivity, the *main* panel is automatically replaced by the *notifications overview* panel (reference 2, [Image 3-2](#)). This panel displays in the entire surface of the working area, the number of error (red), warning (yellow) and info (blue) notifications still present (not resolved) in the system. The purpose of this panel is to draw the user's attention to potential issues. An error must be resolved as soon as possible in order to perform a correct play back and to avoid damaging the projector. Touch a notification type to directly switch in notification panel and obtain the complete list, push the cross (exit) located at the bottom right to leave this panel and go back to the *main* menu.

Submenus present in the touch panel can use to directly interact with the projector (e.g. zoom, open dower, switch on the light source, switch to Eco mode ...), or to perform basic setups like providing network address or select the dark theme. For more details see the sections dedicated to each sub-menu provided later in this chapter.



Image 3-2

- | | | | |
|---|------------------------|---|----------|
| 1 | General menu | 5 | Presets |
| 2 | Notifications overview | 6 | Eco |
| 3 | Projector control | 7 | Settings |
| 4 | Notifications | 8 | About |

Top bar

Top bar is always present regardless of the displayed panel. The name of the current panel is displayed on the left of the top bar (reference 2, [Image 3-3](#)). The *auditorium* name (reference 3, [Image 3-3](#)), provided during installation via the Web Communicator application, is displayed on the right of the top bar.

In a sub-menu, click **back** (reference 1, [Image 3-3](#)) to return to *main* menu.

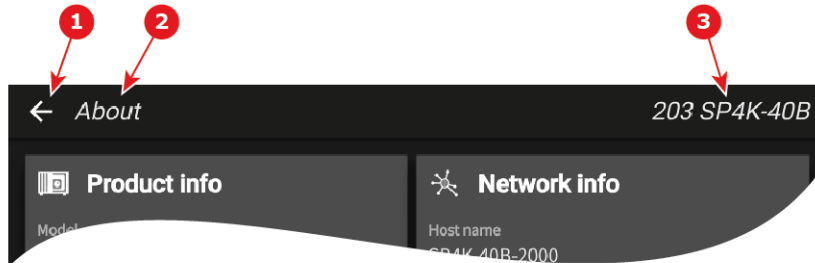


Image 3-3 Top bar

- 1 Back to Main menu
- 2 Title of the panel (e.g. About)
- 3 Auditorium name

Status bar

Status bar is always present regardless of the displayed panel. Located to the left, icons provide information on the respective statuses of the light source, the dowser and the test pattern (references 1, 2 and 3, [Image 3-4](#)). Name of the last executed macro is displayed in the middle of the status bar (reference 4, [Image 3-4](#)). Notification icons (references 5, 6 and 7, [Image 3-4](#)), at right, indicate the number of error (red), warning (yellow) and info (blue) notifications still present in the system.

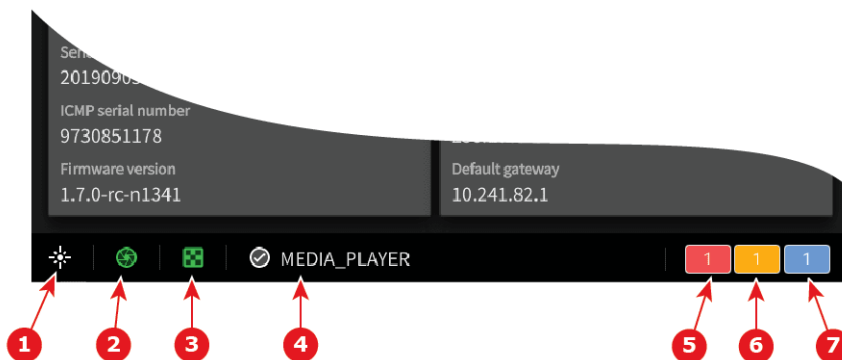


Image 3-4 Status bar

- 1 Light source
- 2 Dowser
- 3 Test pattern
- 4 Executed macro
- 5 Notification icon (error)
- 6 Notification icon (warning)
- 7 Notification icon (info)

3.2 Projector control panel

Overview

This panel is used to trigger some projector commands (dowser, light, test pattern...). When a motorized lens is selected and correctly installed this menu also allows you to adjust lens settings (lens shift, focus and zoom).

If a feature is not available (e.g. focus adjustment on manual lens), the related button is locked (reference 11, [Image 3-5](#)).

To prevent accidents, some actions require touching and holding the button for a few moments before executing (e.g. switch off the light source).

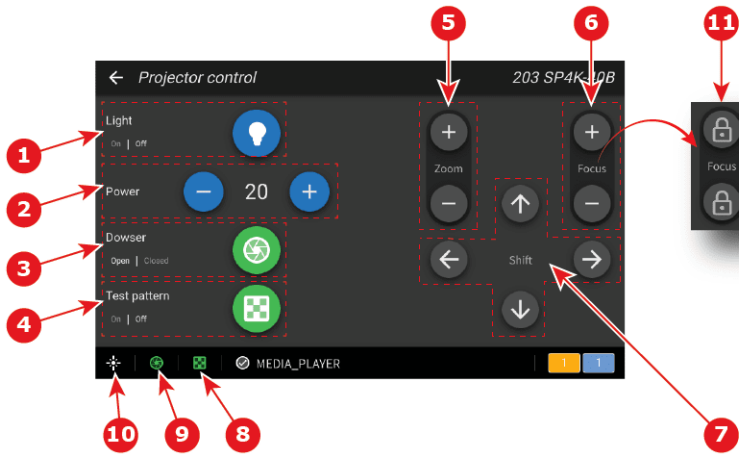


Image 3-5 “Projector control” panel

- | | |
|--|--|
| <ul style="list-style-type: none"> 1 Light Source on-off 2 Light Source power increase-decrease 3 Dowser open-close 4 Test pattern on-off 5 Lens zoom 6 Lens focus | <ul style="list-style-type: none"> 7 Lens shift 8 Test pattern status 9 Dowser status 10 Projector light source status 11 Locked button |
|--|--|

How to switch on or switch off the projector light source

On the touch display, while in *Main > Projector control*,

1. Press and hold for 2 seconds **Light** button (reference 1, [Image 3-5](#)) to switch on or switch off the projector light source.

After few moment, the light source changes state (On <-> Off) and the *projector light source status* icon (reference 10, [Image 3-5](#)) is adapted:

Projector light source	Color of the “Light” button	Color of the “Light source status” icon
On	Green	Green
Off	Blue	White

How to increase or decrease light source power

On the touch display, while in *Main > Projector control*,

1. Use the **plus** button (reference 2, [Image 3-5](#)) to increase the light source power.

or

Use the **minus** button (reference 2, [Image 3-5](#)) to decrease the light source power.

Intensity of the light source changes.



The minimum light source power is limited to 20%.

How to open or close the dowser

On the touch display, while in *Main > Projector control*,

1. Click **Dowser** button (reference 3, [Image 3-5](#)) to open or close the dowser.

The dowser changes state (Open <-> Close). The color of the button and the *Dowser status* icon (reference 9, [Image 3-5](#)) is adapted:

Dowser	Color of the “Dowser” button	Color of the “Dowser” icon
Open	Green	Green
Close	Blue	White



This dowser on the projector is not a mechanical dowser, but a software functionality.

How to activate or deactivate selected test pattern

On the touch display, while in *Main > Projector control*,

1. Click **Test pattern** button (reference 4, [Image 3–5](#)) to activate test pattern.

Test pattern is displayed on the screen and the *test pattern status* icon (reference 8, [Image 3–5](#)) is adapted:

Dowser	Color of the “Test Pattern” button	Color of the “Test Pattern” icon
Activated	Blink green	Blink green
Desactivated	Green	Green

2. Click again on the **Test pattern** button (reference 4, [Image 3–5](#)) to activate the next test pattern in the preselected list. Repeat this action in order to switch to the next test patterns in the list.
3. Hold the **Test pattern** button (reference 4, [Image 3–5](#)) for more than 2 seconds to deactivate test pattern.

How to zoom in or zoom out

On the touch display, while in *Main > Projector control*,

1. Use the **plus/minus** zoom (reference 5, [Image 3–5](#)) to adapt the image size (zoom in/out)

How to adjust the lens focus

On the touch display, while in *Main > Projector control*,

1. Use the **plus/minus** focus (reference 6, [Image 3–5](#)) to adjust the focus of the lens.

How to shift the lens

On the touch display, while in *Main > Projector control*,

1. Use the **arrows** of the Shift control (reference 7, [Image 3–5](#)) to correctly position (up/down/left/right) the projected image on the screen.

3.3 Notifications panel

Overview

Operational notifications and hardware errors encountered on the projector and the Cinema Processor (ICP-D or ICMP) are grouped here. Notifications are spitted in three categories: Error (red), Warning (yellow) and Caution/info (blue).

How display notifications

On the touch display, while in *Main > Notifications*,

1. Touch an area corresponding to a notification type (e.g. Yellow for warning notifications).
List of warning is displayed.

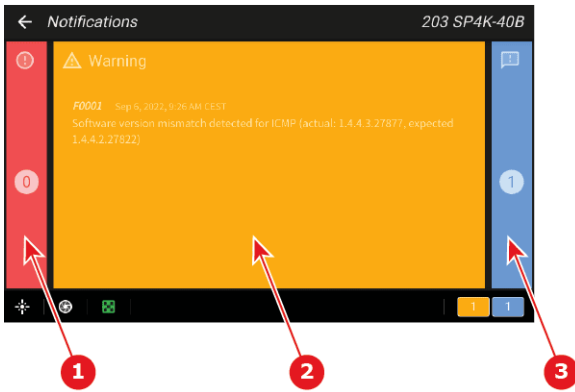


Image 3-6 “Notifications” panel

- 1 Error list
- 2 Warning list
- 3 Caution/Info list

3.4 Presets panel

Overview

This panel allows to execute a macro associated to a preset button. The association of a macro with a touch display button is done in *Web communicator* (Panel: *Configuration > Projector > Macros*).

When a button is not linked to a macro (reference 2, [Image 3-7](#)), its label is *No macro linked* and it is no longer clickable.

The name of the last executed macro is displayed in the middle of the status bar (reference 3, [Image 3-7](#)).

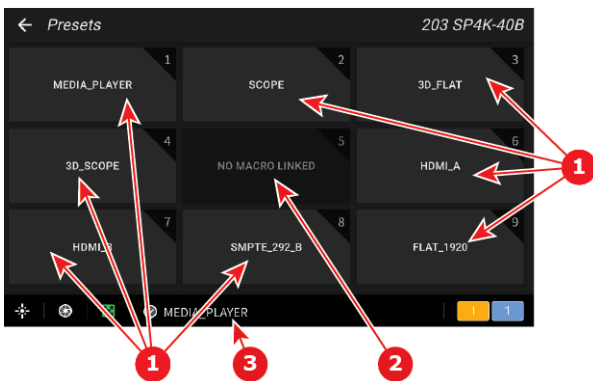


Image 3-7 “Presets” panel

- 1 Preset buttons linked to a macro
- 2 Preset button not linked to a macro
- 3 Name of the last executed macro

How to execute presets

On the touch display, while in *Main > Presets*,

1. Click desired preset button (e.g. MEDIA_PLAYER).

Macro linked to this button is executed. Once the macro is executed, its name is displayed in the status bar (reference 3, [Image 3-7](#)).

3.5 Eco (power) panel

Overview

This panel groups together two commands related to power modes:

- *Switch to Eco mode* (reference 1, [Image 3–8](#)). This will power down the media server and put in standby mode the projector electronic.
- *Reboot projector* (reference 2, [Image 3–8](#)). This will reboot the projector and the media server.

For more information concerning the power states of the projector, please refer to “[Explaining the power states](#)”, page 26.

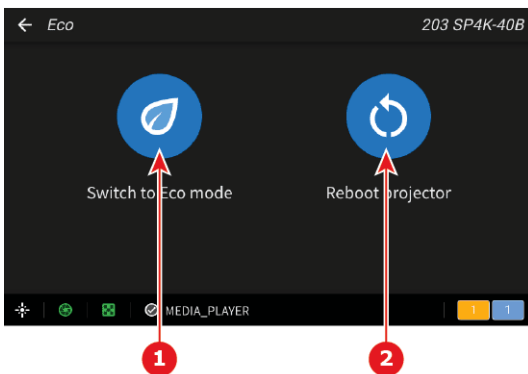


Image 3–8 “Eco” Panel

- 1 Switch to Eco mode
- 2 Reboot projector

How to switch to Eco mode

On the touch display, while in *Main > Eco*,

1. Press and hold for 3 seconds *Switch to Eco mode* (reference 1, [Image 3–8](#)) to activate.

The panel color changes to yellow and the following message appears: *Please stand by while switching to Eco mode. This might take several minutes.*

All ongoing activities are stopped (playback ...) and all electronics (including fans, pumps,...) will turn off, except for the wake up service.

2. After few moments the projector has switched to *Eco* mode.

The Touch display switch off.

How to reboot the projector

On the touch display, while in *Main > Eco*,

1. Press and hold for 3 seconds *Reboot projector* (reference 2, [Image 3–8](#)) to reboot.

The panel color changes to yellow and the following message appears: *Please stand by while rebooting the projector.*

All features (playback, ingest ...) and connections are down during the reboot.

2. After few moments the projector is operational.

The main menu is displayed on the touch display.

3.6 Settings panel

Overview

This panel is used to perform the basic network configuration of the device, or choose the theme (Light/Dark) of the display panel.

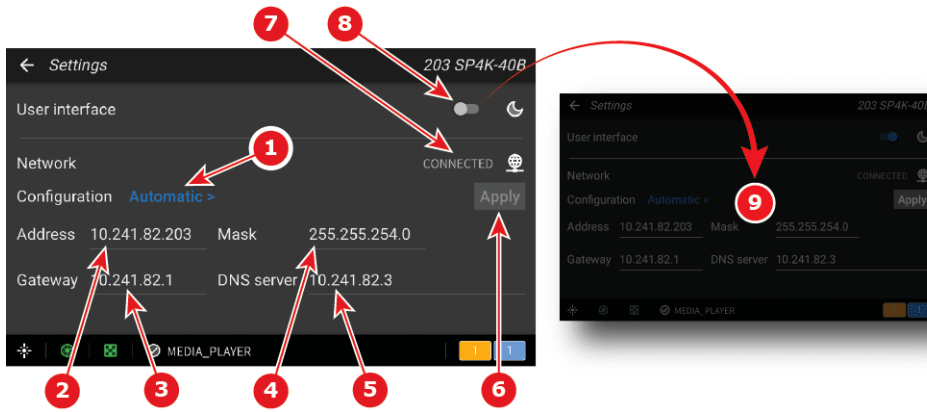


Image 3–9 “Settings” panel

- | | |
|---|--|
| <p>1 Settings mode (automatic/Manual)</p> <p>2 Ip (Internet Protocol) - default IP address : 192.168.100.2</p> <p>3 Default Gateway</p> <p>4 Subnet mask</p> <p>5 DNS server</p> | <p>6 Apply button</p> <p>7 Connection status</p> <p>8 Switch to choose the theme (Light/Dark)</p> <p>9 Panel in Dark theme</p> |
|---|--|

User interface

A switch (reference 8, [Image 3–9](#)) allows to switch the GUI from light theme to dark theme (reference 9, [Image 3–9](#)) and vice versa.

Network

The *Network connection status* (reference 7, [Image 3–9](#)) indicates if the device is connected (or disconnected) to the local network.

A switch (reference 1, [Image 3–9](#)) allows to choose the setting mode. Two configuration modes are available: *Automatic* or *Manual*.

In *manual* mode, network parameters (reference 2, 3, 4 and 5, [Image 3–9](#)) are editable and can be adjusted manually.

In *automatic* mode, DHCP (Dynamic Host Configuration Protocol) server provides settings which will be applied to the projector's network configuration.

For more information concerning the Network configuration of the projector, please refer to chapter dedicated the network configuration in the sections dedicated to Web communicator application.

How to change theme (Light/Dark)

On the touch display, while in *Main > Settings*,

1. Choose the *Dark* theme by moving the button (reference 8, [Image 3–9](#)) to the right.

or

Choose the *Light* theme by moving the button (reference 8, [Image 3–9](#)) to the left.

The theme is automatically modified (e.g. Dark theme - reference 9, [Image 3–9](#)).

How to set up automatically the network configuration

On the touch display, while in *Main > Settings*,

1. Click on the switch that allows you to choose the setting mode (reference 1, [Image 3–9](#)).

A submenu with two choices is displayed:

- *Automatic*
- *Manual*

2. Click *Automatic*.

If the device is connected to the network (reference 7, [Image 3–9](#)) and an appropriate DHCP server is found, the device receive an IP address automatically.

Other network parameters (reference 2, 3, 4 and 5, [Image 3–9](#)) can no longer be manually edited. You should not have to configure anything.

3. Click **Apply** (reference 6, [Image 3–9](#)).

The configuration provided by the DHCP server becomes active.

How to set up manually the network configuration

On the touch display, while in *Main > Settings*,

1. Click on the switch that allows you to choose the setting mode (reference 1, [Image 3–9](#)).

A submenu with two choices is displayed:

- *Automatic*
- *Manual*

2. Click *Manual*.

Network parameters (reference 2, 3, 4 and 5, [Image 3–9](#)) can now be edited.

3. Click *Address* (reference 2, [Image 3–9](#)).

A submenu with numeric pad is displayed.

4. Use the numeric pad to provide a valid IP address.

 *Tip:* A network address contains 4 numbers with a value between 0 and 255, e.g. 192.168.1.101.

5. Repeat from step 3 until all network parameters (reference 2, 3, 4 and 5, [Image 3–9](#)) are correctly filled.

6. Leave the submenu (the screen with the numeric pad) by clicking on the top bar.

A confirmation popup is displayed to verify if you really want to proceed with this action.

7. Click **Stay** to stay in the settings panel and continue the network configuration (go to next step).

The confirmation popup disappears and the *Main > Settings* panel with new the values is displayed.

or

Click **Leave** to leave the settings panel without saving.

The confirmation popup disappears and the *Main* panel is displayed. **Changes are lost!**

8. If you decide to save the new network configuration, click **Apply** (reference 6, [Image 3–9](#)).

The new configuration becomes active.

3.7 About panel

Overview

This panel provides information concerning the product and the network configuration.

This panel is read only. To modify *Network* parameters via touch display, you need use *Main > Settings* panel.



For setup and control the projector is it recommended to use Web Communicator, the web application that provides all the tools needed to configure and control the connected projector.

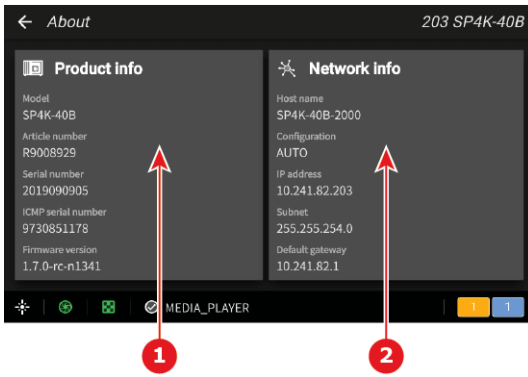


Image 3–10 “About” panel

- 1 Product information
- 2 Network information

Product information

- **Model** : Indicates the Model of the projector (e.g. DP4K-xx).
- **Article number**: Indicates article number of the projector (e.g. R90xxxxx).
- **Serial number**: Indicates the serial number of the projector.
- **ICMP serial number**: Indicates the serial number of the ICMP (Integrated Cinema Media Processor) or ICP-D (Integrated Cinema Processor) present in the projector.
- **Firmware version**: Indicates the software package version installed on the device.

Network information

- **Host name**: Contains the host name assigned to the projector to identify it in the theater network (e.g. projector1).
- **Configuration**: MANUAL or AUTO. Indicates if the IP address has been assigned manually by user or automatically by DHCP (Dynamic Host Configuration Protocol) server.
- **IP address**: Contains the IP address of the projector required for network communication (e.g. 10.98.0.245).
- **Subnet**: The subnet mask is the number that is used to identify a subnet so that IP addresses can be shared on a local area network (e.g. 255.255.254.0).
- **Default gateway**: Contains the default gateway IP address of the projector (router) required for network communication (e.g. 10.98.0.1).

Web Communicator – Graphical User Interface (GUI)

4

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4.1 Graphical User Interface

Overview

The user interface is organized around a *Menu* bar (reference 1), a *Status* bar (reference 2) and a working area (reference 3). Working area varies depending on the page in use. A *Side* bar (reference 4) always located at the left of the working area indicates in highlight the name of the current page.

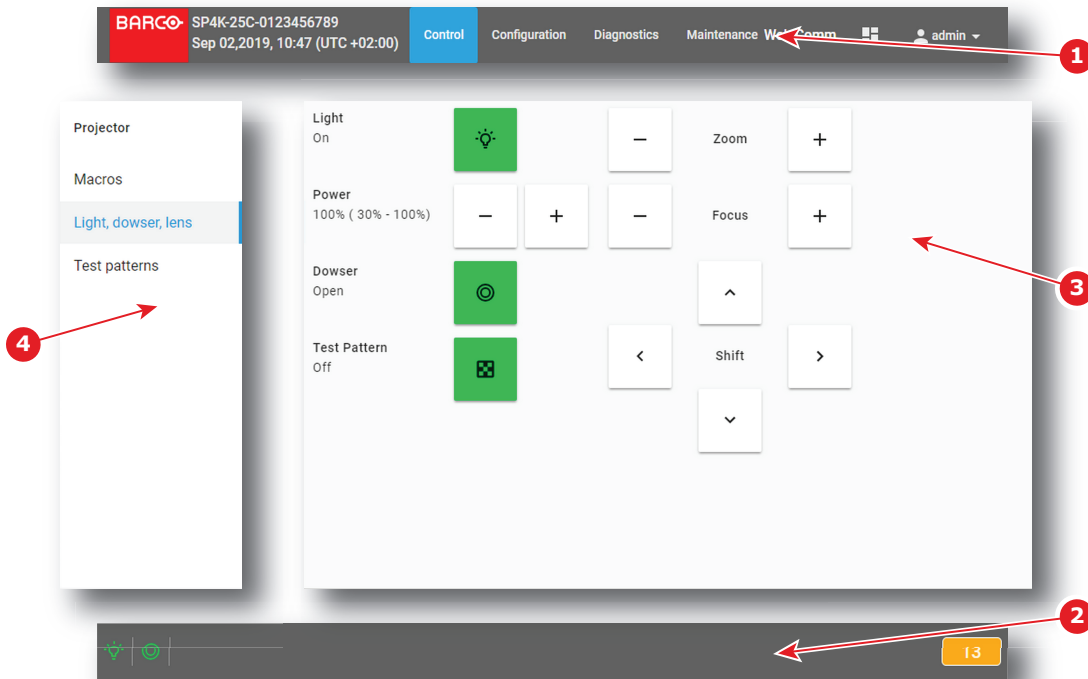


Image 4–1

- 1 Menu bar
- 2 Status bar
- 3 Working area
- 4 Side bar

Menu bar

In the Web Communicator application, the *Menu* bar is always present regardless of the displayed page.

Auditorium name, *date* and *time* (reference 1) are displayed next to Barco logo. For more details concerning *Auditorium name*, please refer to chapter “[Network configuration](#)”, page 236. For more details concerning *date and time* adjustment, please refer to chapter “[Internal clock settings](#)”, page 184.



When the Auditorium name has been entered correctly, it is always available in the menu bar near the Barco logo, even when you are not logged in.

The general menu (reference 2) allows to reach all available pages of the application. An overview of the menu tree is available in section “[Application Menu tree](#)”, page 63.

Web Commander shortcut (reference 3) allows to run WebCommander, the web application provided by Barco to control ICMP (Integrated Cinema Media Processor). Only available when the projector is equipped with an ICMP. For more details please refer to ICMP user guide.

Dashboard shortcut (reference 4) allows to display a dashboard that provide general overview of all projectors located on the local network. For more details concerning dashboard panel, please refer to “[Dashboard](#)”, page 60.

User icon (reference 5) located at right is followed by the current user name. Click on this icon to open a short menu dedicated to account settings and logout. For more details concerning this menu, please refer to “[Modifying account settings \(password\)](#)”, page 57.

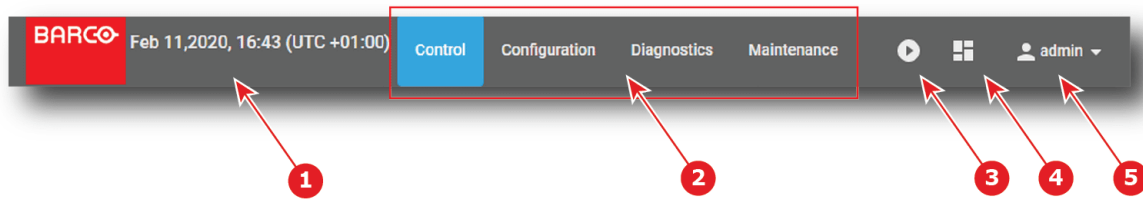


Image 4–2

- 1 Auditorium name
- 2 General menu
- 3 WebCommander shortcut (optional)
- 4 Dashboard shortcut
- 5 User icon

Status bar

In the Web Communicator application, the *Status* bar is always present regardless of the displayed page.

Status icons (reference 1) provide information on the respective status of the dowser, the light source and the test pattern. Click on these icons to directly change these status, just like commands provided in *Control > Projector > Light, dowser, lens* menu. For more details concerning status icons, please refer to chapter “[Light, dowser, lens](#)”, page 71.

Multi-projector status icon (reference 2) lets you know if the projector is operating in multi-projector mode and if it is master (icon that represents a crown) or a slave (icon that represents a chain). Click on this icon to directly access to *Configuration > System access > Multi projectors* and modify multi projector settings.

Name of the last executed macro is displayed in the status bar (reference 3). Click on this macro name to directly reach *Configuration > Projector > Macros*, the panel that allows manage the macros of the projector. If the current user have limited rights (no access to configuration panels), click on this macro name allows to only reach *Control > Projector > Macros*, the panel that allows activate a macros of the projector. Note that nothing is displayed on the status bar if no macro has been run.

Notification icons (reference 4) located at the bottom right corner indicate the number of *error* notifications (in red) and the number of *warning* notifications (in yellow). Click on these icons allows to display the notification list (*Diagnostics > Monitoring > Notifications*). For more details concerning notifications, please refer to chapter “[Notifications](#)”, page 267.



Image 4–3

- 1 Status icons
- 2 Multi-projector status
- 3 Executed macro
- 4 Notification icons (errors and warnings)

Side bar

The *Side* bar allows direct access to other pages located in the current sub section.

Name of the current page is highlighted (reference 1).

The name of the sub section where the active page is located is displayed on the top (reference 2).

You can hide the Side bar by left-clicking on the Side bar while holding the **<ESC>** key.

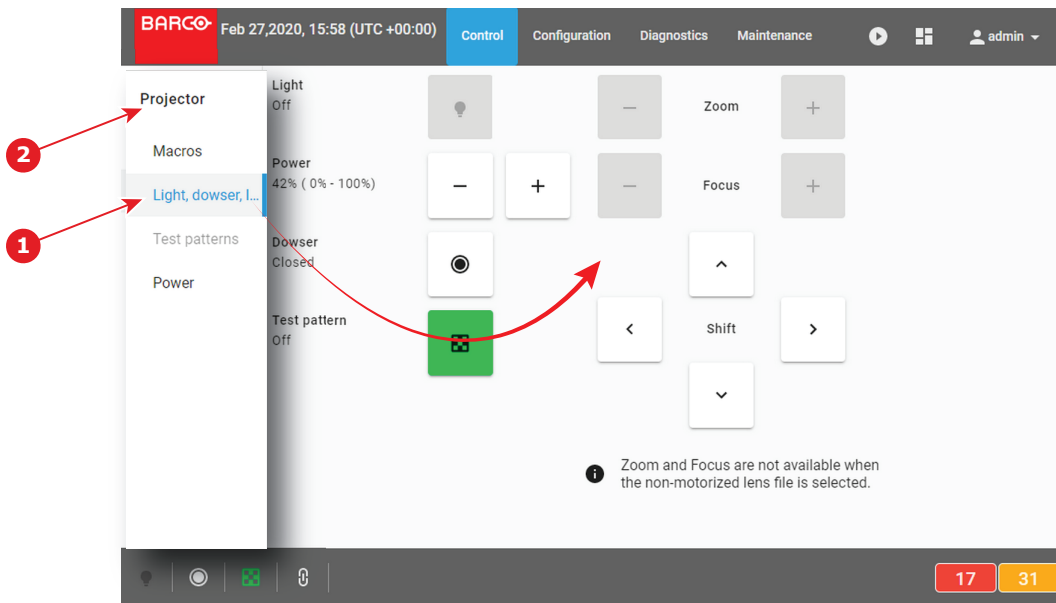


Image 4-4

- 1 Active menu
- 2 Name of the sub section where the menu is located

Special GUI behavior on a limited screen area

When Web communicator is used in small window or when it runs on a device with a restricted display (e.g. a smart phone), a space-saving mechanism is automatically activated. The general menu is no longer displayed in the *Menu* bar. It is replaced by a collapsed menu icon (*hamburger* icon) located to the right side of the *Menu* bar (reference 1).

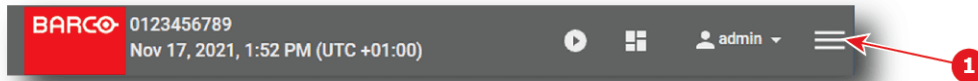


Image 4-5

Click on this icon (reference 1) to reveal an vertical version (also called Hamburger menu) of the general menu (reference 2) under the menu bar.

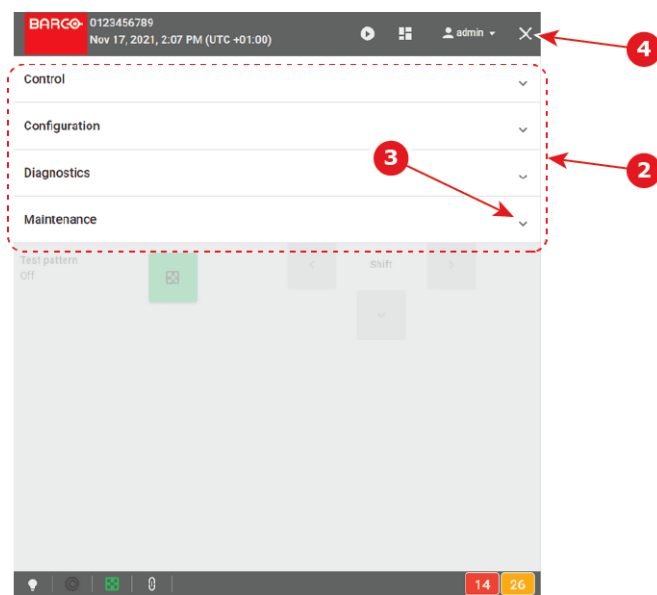


Image 4-6

Click on an element (reference 3) of the menu allows to display a sub menu. Continue to navigate in this way in the sub-levels to reach the targeted page.

Click on the *cross* (reference 4) to close the menu.

Available list actions

Many pages of the application are based on a list of elements (reference 1) with slider (reference 2). A series of tools located at the top of the list (reference 3) makes it easy to sort or retrieve these items.

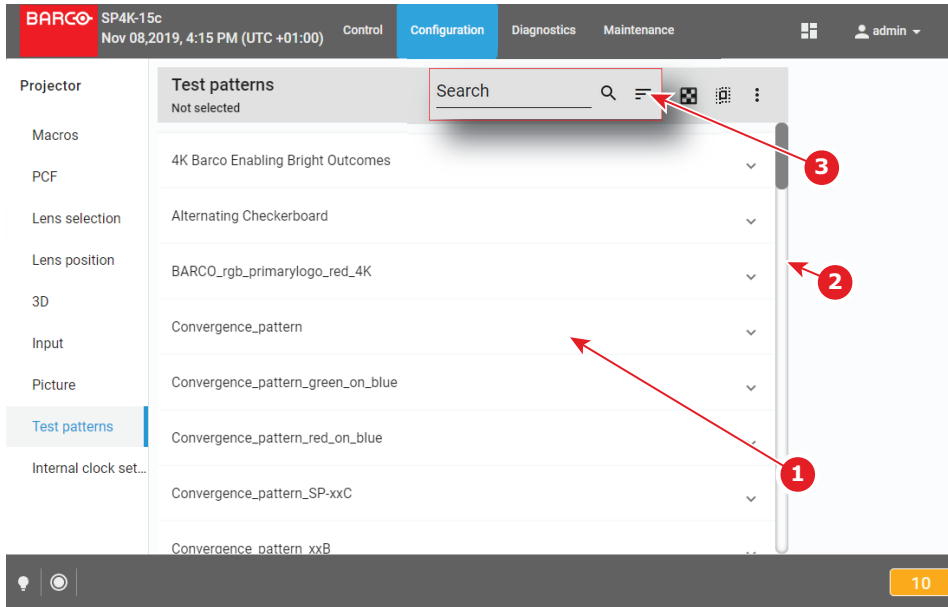


Image 4–7 e.g. list of lens in lens selection page.

Following actions could be used on list:

Action	Graphical Component	Description
Search		Allows to quickly retrieve one or several items in the list. See section “Search”, page 59 to obtain more details concerning the Search functionality.
Sort		Allows to sort the list according criteria selected (e.g. ascending or descending alphabetical order).

4.2 Starting up

Prerequisites

The device has direct access to the projector LAN via Ethernet cable or Wifi, or it has open access via Internet.

How to start up

1. Start a web Browser (Google Chrome, Mozilla Firefox ...).
2. Set the web application URL provided by the Cinema controller. The URL is composed of the HTTPS tag and the address of projector (e.g. https:// 150.158.252.210). The HTTPS (Hypertext Transfer Protocol Secure) communication protocol is used for security reasons. For more detail concerning HTTPS protocol and potential issues encountered with the SSL certificate, see “Installing SSL certificate to enable HTTPS protocol”, page 50. Refer to the projector’s installation manual for more information concerning the addressing of the cinema controller.

Login page is displayed once the connection with the server is established.

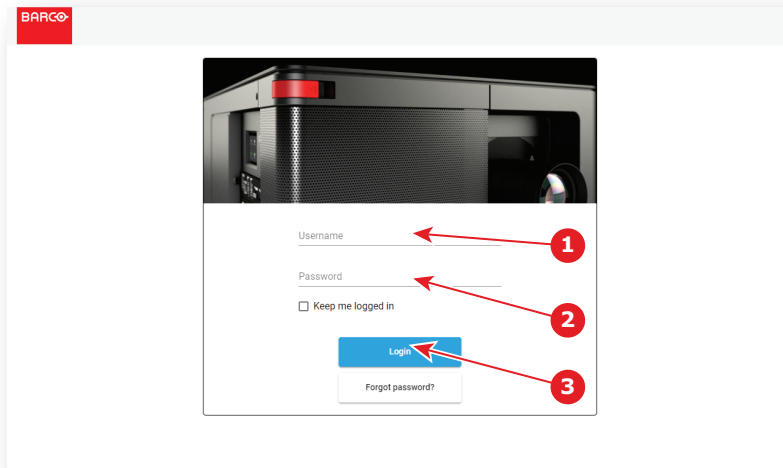



Image 4–8

3. Sign in using user name (reference 1) and password (reference 2) then push on Login button (reference 3).

 **Note:** Web Communicator is equipped with an auto logout mechanism that locks the application after a period of inactivity. Select the "Keep me logged in" checkbox to disable the auto-logout functionality.

Once logged, the landing page is displayed. By default this is the page dedicated to triggering the main projector controls (*Control > Projector > Light, dowsler, lens*). The landing page may vary depending on the user and the rights given to him. Depending on these rights, some parts of the application are accessible or blocked. For more details, please see the chapter dedicated to user rights in the next sections.

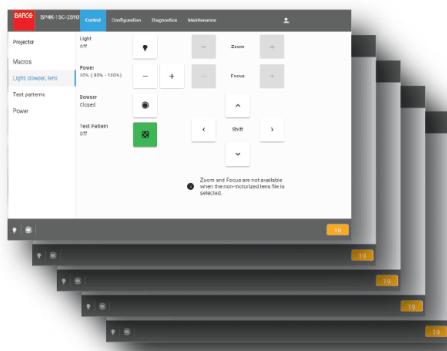


Image 4–9



The landing page can be accessed at any time by clicking on the Barco logo located on the Menu bar.

4.3 Installing SSL certificate to enable HTTPS protocol

Overview

The HTTPS protocol (HyperText Transfer Protocol Secure) is the secure version of HTTP protocol which is the primary protocol used to send data between a web browser and a website. HTTPS is encrypted in order to increase security of data transfer (no information is passed in plain text). This type of security system uses public/private keys to encrypt communications between two parties and requires the use of a valid SSL

(Secure Sockets Layer) certificate. The SSL certificate need to be downloaded from the projector web site and manually installed on the web browser. Once the SSL certificate is installed the HTTPS protocol is enabled and the future connections will be established automatically as long as the certificate is valid.

Connection error related to invalid or missing SSL certificate

One of the most common error encountered with the HTTPS protocol is “*your connection is not private*” error. The browser finds that there is a problem with the security protocol and it will automatically try to prevent you from reaching the site. This feature is built into web browsers to protect the user.

The way an error appears can vary a bit, depending on what browser you’re using.

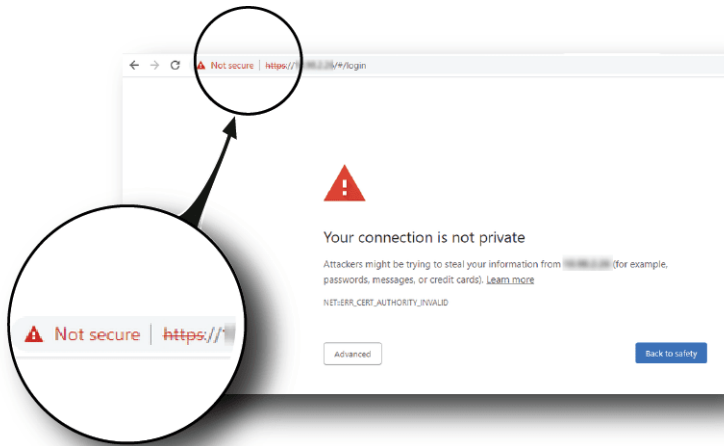


Image 4–10 e.g. Google Chrome

This issue will appear when the SSL certificate is not installed or is invalid. The HTTPS communication couldn't be established and it is necessary to consider installing a new certificate. Bypassing security and only using the HTTP protocol for your communication with the projector is not recommended.

Even if you do have an SSL certificate installed on your browser, there can be several reasons why the browser doesn't recognize the validity of this certificate. It is often a problem with the validity period. The certificate has a limited life period (2 years max) and it has expired. Or it is also possible that the settings on which the certificate is based have changed. For example, when the “Hostname” or “domain” values in the projector's network configuration are changed by the administrator, a new certificate is automatically calculated.

How to download the SSL certificate in Windows using Chrome browser

1. Open a chrome browser and enter the portal url with *https* tag since its secured network (reference 1).

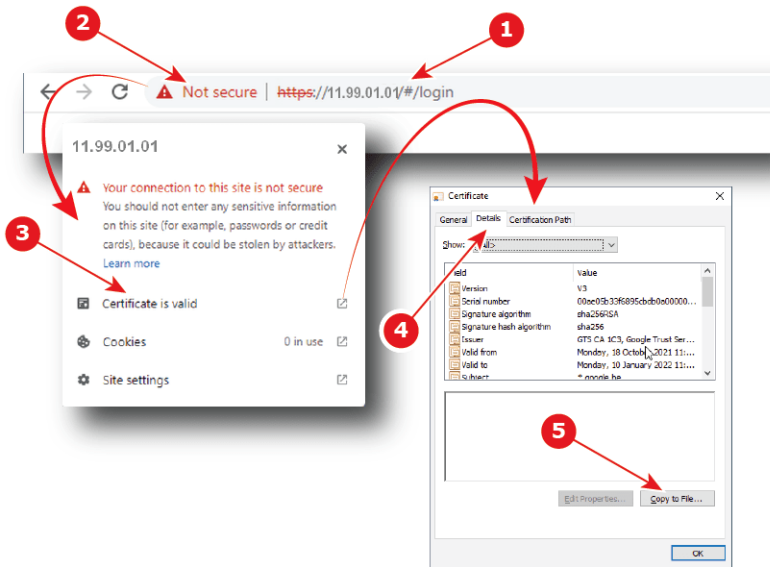


Image 4–11

2. Click on the *site information* button (reference 2) on the left of the url to display the menu.
3. Click on *View Certificate* (reference 3) to open up the *certificate* popup.
4. Click on the *Details* tab (reference 4).
5. Click to *Copy to File* (reference 5) to open up the *Certificate Export Wizard*.
6. Click to *Next* (reference 6), then select the export the “**DER encoded binary X.509 (.CER)**” file format (reference 7).

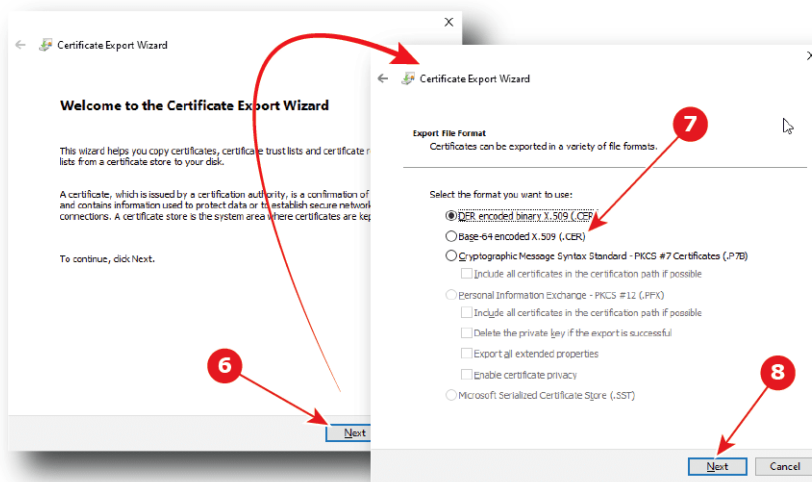


Image 4–12

7. Click to *Next* (reference 8), then specify the name and the location where you want to export the certificate (reference 9).

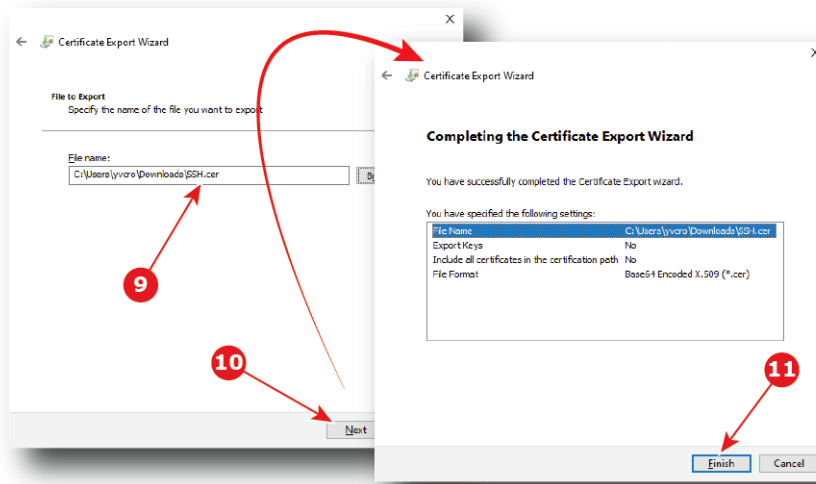


Image 4–13

8. Click to *Next* (reference 10), then click *Finish* (reference 11).

The SSL file (certificate) is now available and need to be installed on your Browser.

How to install the SSL certificate in your browser

1. Open a chrome browser and click *Customize and control* button (reference 1) in the upper right corner.

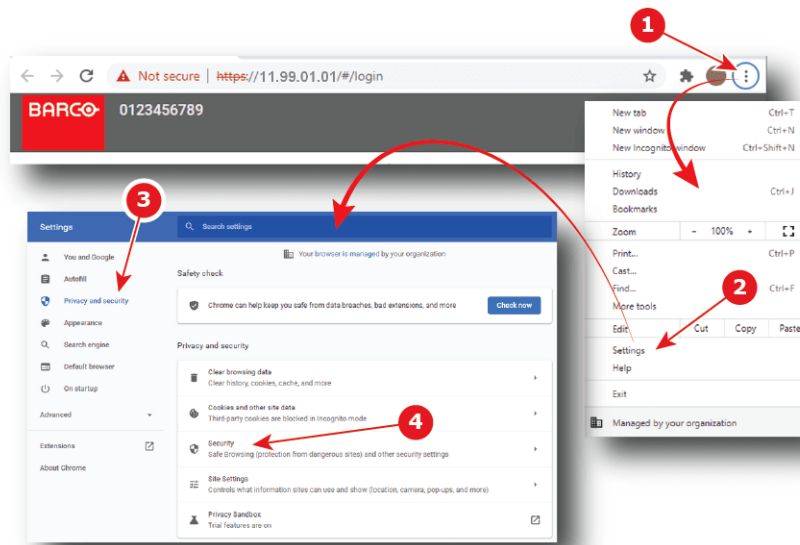


Image 4–14

2. Choose *settings* (reference 2) to open up the *settings* page.
3. Under *Privacy and security* section (Reference 3), click *Security* (reference 4) to display the menu dedicated to Safe Browsing (protection from dangerous sites) and other security settings
4. Scroll down (reference 5) and click to manage certificates (reference 6) to open up the *certificate* popup.

Web Communicator – Graphical User Interface (GUI)

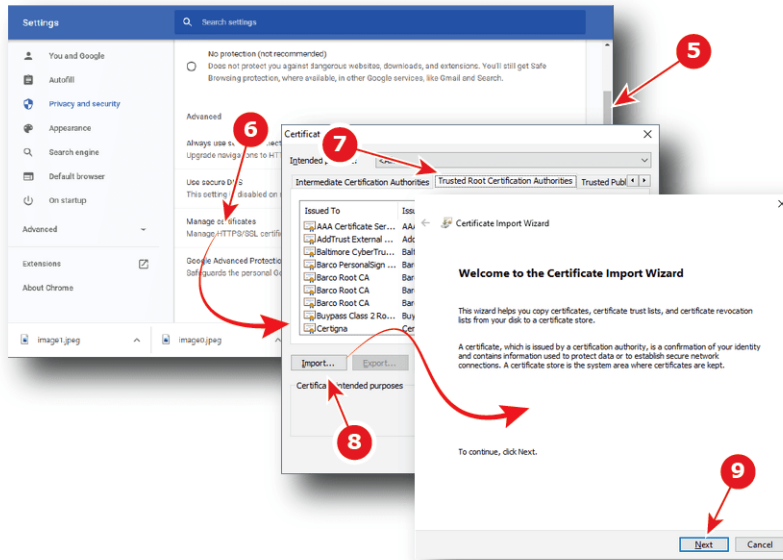


Image 4–15

5. Click on the *Trusted Root Certification Authorities* tab (reference 7).
6. Click to *Import* (reference 8) to open up the *Certificate Import Wizard*, then click *Next* (reference 9).
7. Specify the location and the name where the certificate is saved (reference 10) or use *Browse...* to retrieve the certificate (reference 11), then click *Next* (reference 12).

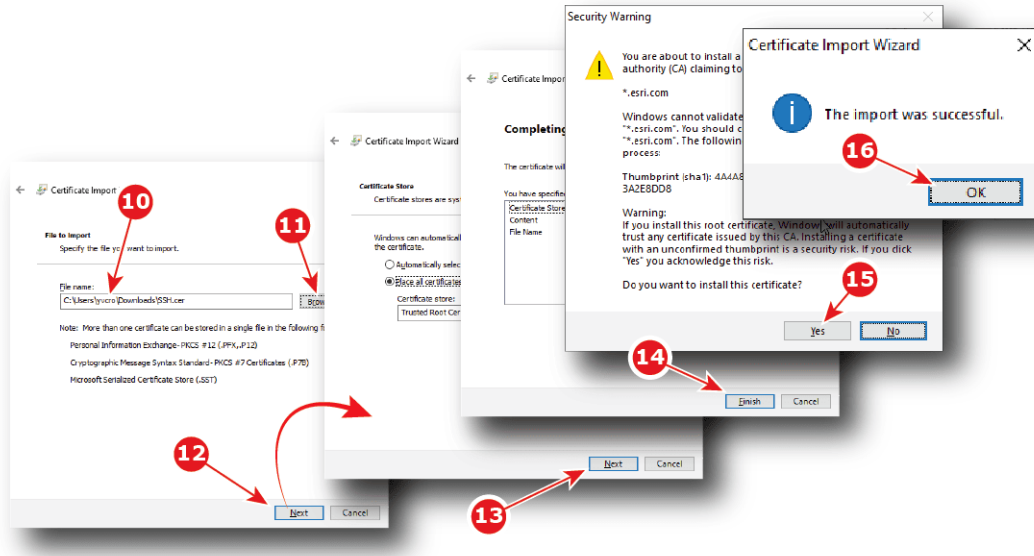


Image 4–16

8. Click *Next* (reference 13), then click *Finish* (reference 14) to close the *Certificate Import Wizard*.
9. After few seconds a *Security Warning* popup will appear. Click *Yes* (reference 15).
10. And finally click *Ok* in the *Certificate Import Wizard*.

SSL certificate is successfully imported.

4.4 Reset administrator password

About administrator password reset

In its factory configuration, the projector has a default password associated to the default admin user. If for any reason the administrator lost this password, there is no way to recover it.

The only way to resolve this situation is following the procedure to reset the administrator password. Procedure is based on principal of public and private keys pair. The administrator needs provide challenge code to the help desk that will send response code based on this code and the projector serial number.

How to reset administrator password

1. Click on “**Forgot password?**” in the *login* page.

A new page is displayed.

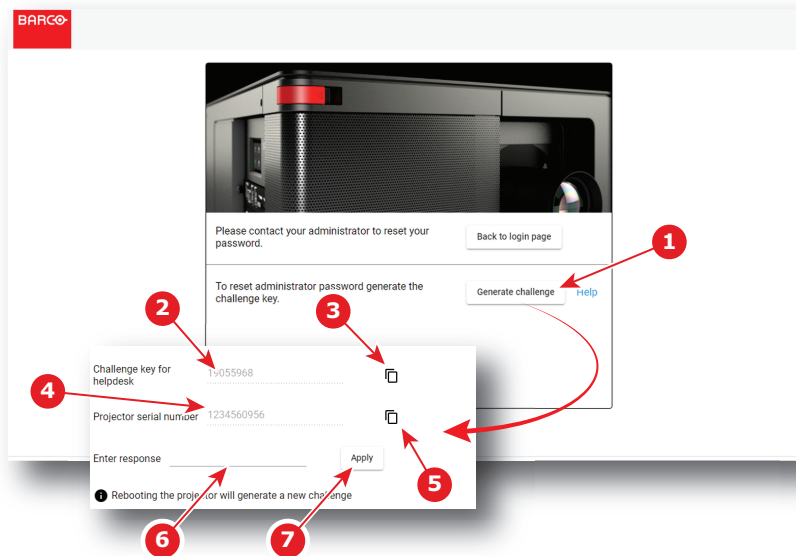



Image 4–17

2. Click on **generate challenge** button (reference 1).
A challenge key number is generated (reference 2).
3. Click to *copy* icon (reference 3) to copy the challenge key number in the clipboard.


 *Tip:* Saving this number in the clipboard will allow you to reuse it easily in the following steps.

4. Send a password reset request to the help desk. Provide the challenge key number (already in the clipboard since the previous step) and the projector serial number (reference 4) with your request. Avoid errors by using *copy* icon located near the projector number (reference 5) to copy projector serial number in the clipboard.

The help desk will generate a response code. This code will be sent to you.

5. Enter the code in *Enter response* field (reference 6), then click on **Apply** (reference 7).


If the code is correct, the default administrator user is available again. For more details concerning default user, please refer to [“User rights”, page 61](#).

 The current challenge key will become invalid if you entered the wrong response code three times or restarted the projector. If this occurred, this procedure will have to be repeated.

4.5 Signing out from application

About logout

At any time you can choose to logout in order to change user.

 The application is equipped with an auto logout mechanism that logs out the user after a period of inactivity. You can prevent this from happening by selecting the "Keep me logged in" checkbox when logging onto the Web Communicator (see [“Starting up”, page 49](#)).

How to logout

1. Click on user icon (reference 1).
Menu is displayed.

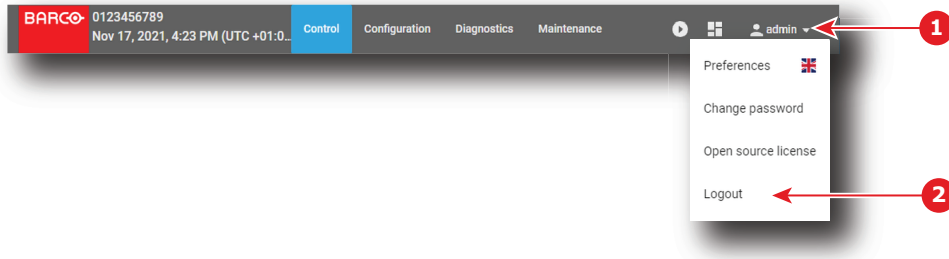


Image 4–18

2. Select *Logout* (reference 2).

User is disconnected and *login* page is displayed.

Credentials and password will be required to use the application again.

4.6 Modifying account settings (password)

About account settings

Entire management of user (add or remove a user, change settings) is done in *Configuration > System access > Manage users* panel (see “[User management](#)”, page 243). However there is another way to change the password of the current user through the *change password* menu.

How to modify the password

1. Click on the **user** icon (reference 1).

Menu is displayed.

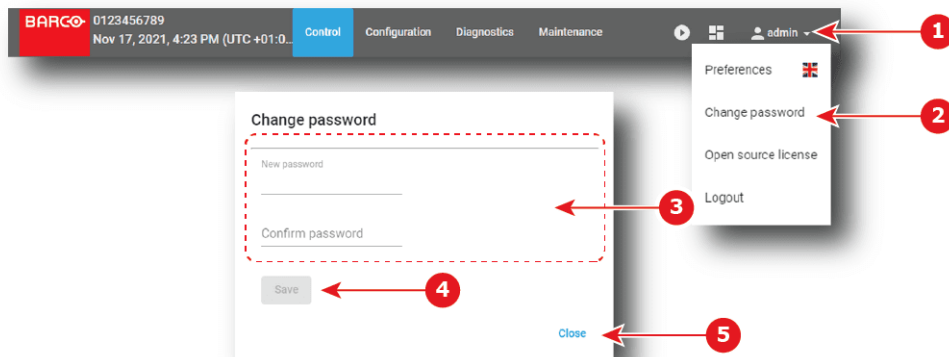


Image 4–19

2. Select *change password* (reference 2).

The *Change password* window is prompted.

3. Change the current password (reference 3): click in the *New password* field and enter the new password (use 8 or more characters), then click in *confirm password* field and re-enter the password to confirm. Both passwords must be identical.

4. Click **Save** (reference 4) to save the changes.

Password of the current user is changed.

5. Click on *close* (reference 5).

Change password page closes.

4.7 Modifying preferences (language, theme, time format)

How to select another language

1. Click on user icon (reference 1).

Menu is displayed.

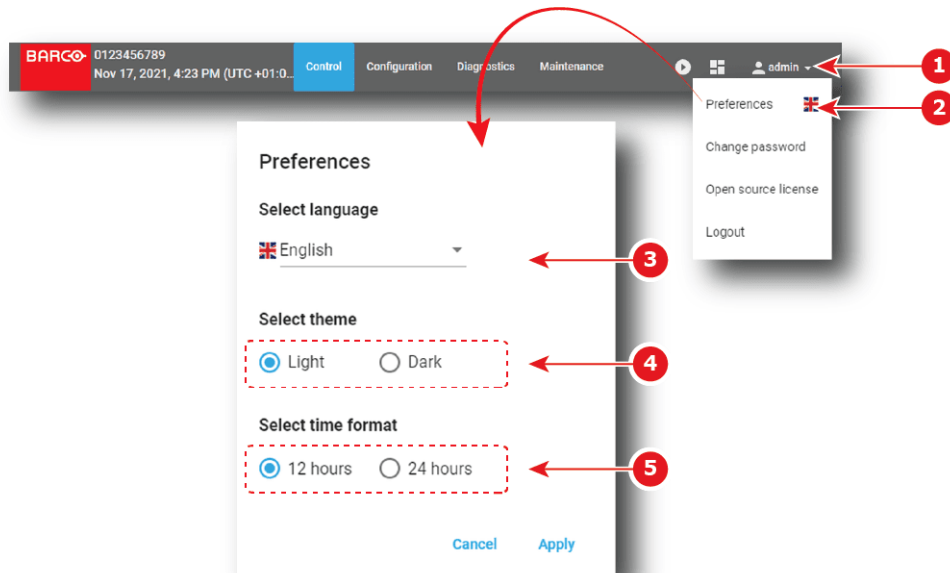


Image 4–20

2. Click *Preferences* (reference 2).
The Preferences window is prompted.
3. Select a language in the *Select language* drop down list (reference 3).
4. Click on *Apply* to change language.

GUI is immediately translated.

or

Click on *Cancel* to exit without apply change.

Preferences window closes.

How to change theme

1. Click on user icon (reference 1, [Image 4–20](#)).
Menu is displayed.
2. Click *Preferences* (reference 2, [Image 4–20](#)).
The Preferences window is prompted.
3. Select the theme in the *Select theme* check list (reference 4, [Image 4–20](#)).
4. Click on *Apply* to change language.

Preferences window closes and selected theme is immediately applied.

or

Click on *Cancel* to exit without apply change.

Preferences window closes.

How to change time format

1. Click on user icon (reference 1, [Image 4–20](#)).
Menu is displayed.
2. Click *Preferences* (reference 2, [Image 4–20](#)).
The Preferences window is prompted.
3. Select the time format in the *Select time format* check list (reference 5, [Image 4–20](#)).
4. Click on *Apply* to change time format.
Preferences window closes and selected time format is immediately applied.

or

Click on *Cancel* to exit without apply change.

Preferences window closes.

4.8 Search

How to use search

A search field is available in menus that display a list of items. Located above the list, search allows to quickly retrieve one or several items corresponding to an alphanumeric string:

1. Click in the field *Search*, then type in the name (or part of the name) you are looking for.

The list is directly refreshed: items corresponding to the search are displayed.

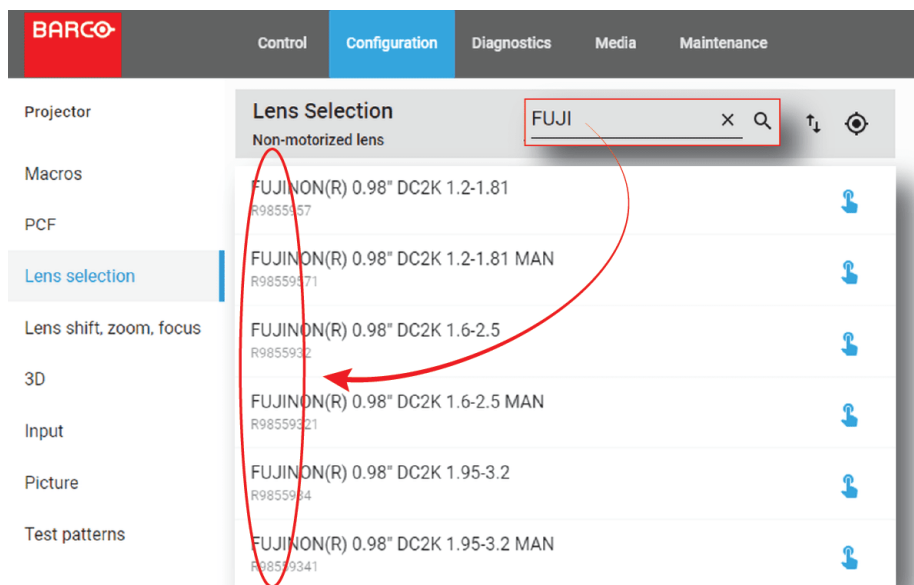


Image 4–21

The comment "No Record Found" appears if no result matching search criteria.

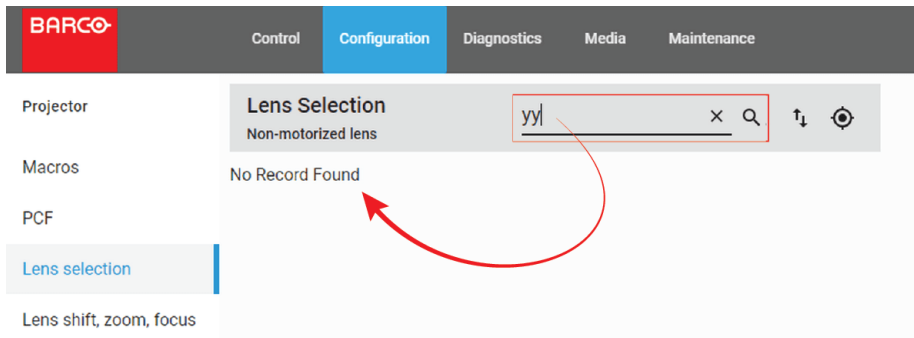


Image 4–22

2. Click on the reset icon to reset the search.



Image 4–23

The entire list is displayed again. Nothing is filtered.

4.9 Dashboard

About dashboard

At any time you can display dashboard to obtain status of Series 4 projectors connected on local network.

For each projector displayed on dashboard you have:

- the Auditorium name and IP address (reference 1).
- a slight overview of the projector status (reference 2):
 - *Light Source* status (on-off).
 - *Dowser* status (open-closed).
 - Name of last macro activated.
 - *Test pattern* status to know if test pattern is activated or not (on-off).
- a shortcut (reference 3) to launch a new Web Communicator instance dedicated to the targeted projector.

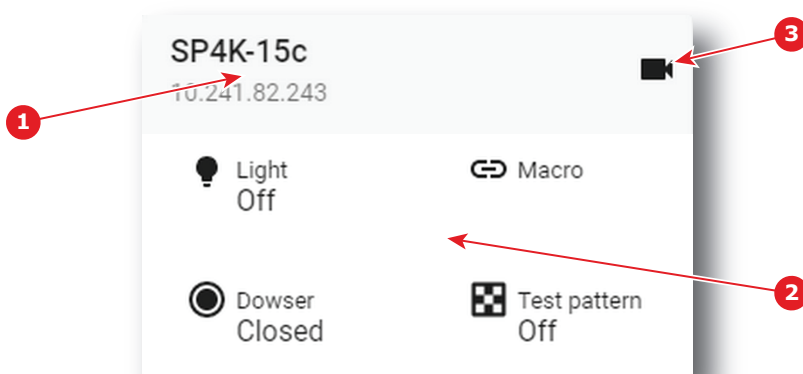


Image 4–24

How to display/close dashboard

1. In the menu bar, click on dashboard shortcut (reference 1).

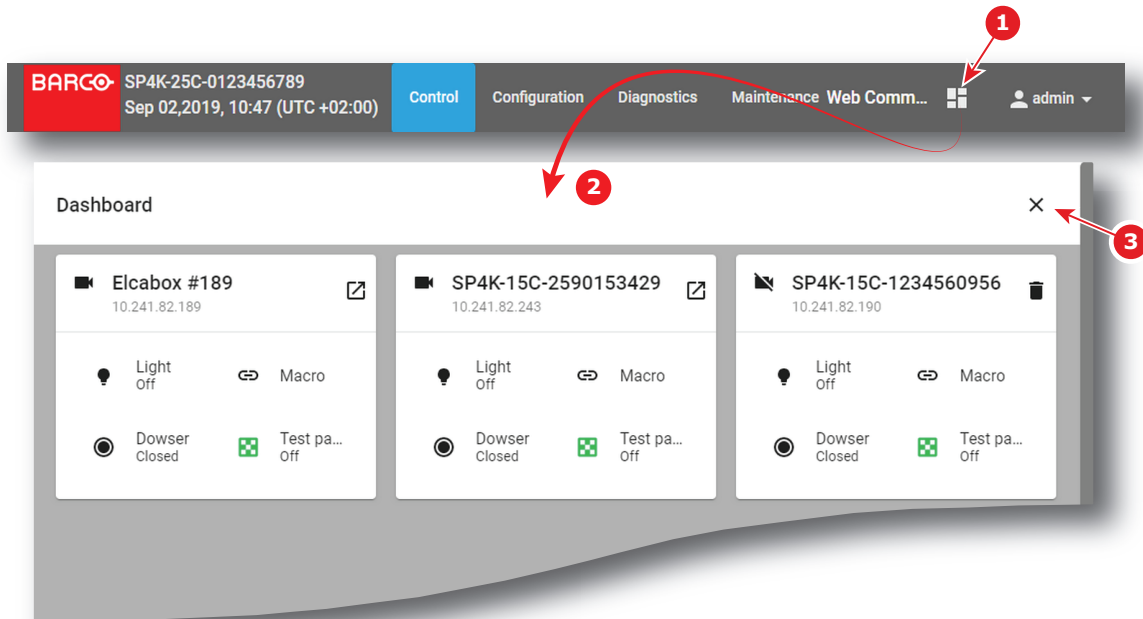


Image 4–25

Dashboard (reference 2) is displayed.

2. To quit dashboard, click the x (reference 3) button in the top right corner.

Dashboard is closed.

4.10 User rights

About users

Access to Web Communicator application is regulated by a principle of recognition of the user via a login. The user must be connected in order to perform an action (Control projector, modify settings,...). There are several levels of rights conferred on the user types.

User groups and limitations

All users belong to one of the following user groups:

Groups	Description
Administrator	<ul style="list-style-type: none"> Unlimited access to all application panels (projector control and settings, media server settings and automations). Has access to all diagnostics and maintenance panels. Can dynamically add/remove users and change the password for other users.
Service Technician	<ul style="list-style-type: none"> Service Tech level users can manage Show Managers level user Has access to the projector control and settings panels and to all media panels. Has access to diagnostics and maintenance panels except for software updates.
Show Manager	<ul style="list-style-type: none"> Can only access the projector control panels to start or stop a show

Following rule is relevant:

- Users cannot delete or promote, demote themselves.

Default users

When first accessing your projector, the following default users are pre-configured in the system.

Group	Login	Password
Administrator	admin	Admin1234
Service Tech	st	Service1234
Show Manager	show	Show1234



For security reasons, it is recommended to change the users and/or passwords as soon as possible.

User management

All user management (adding or removing a user, change settings, etc) is done in *Configuration > System access > Manage users* panel (see [“User management”](#), page 243).

Changing the password of the current user is also possible through the account settings menu. For more details, please refer to section [“Modifying account settings \(password\)”](#), page 57.

4.11 Displaying open source license list

About open source components

The software contains software components released under an Open Source License. Third party components used are listed here below.

How to display the list of open source components

- Click on user icon (reference 1).

Menu is displayed.

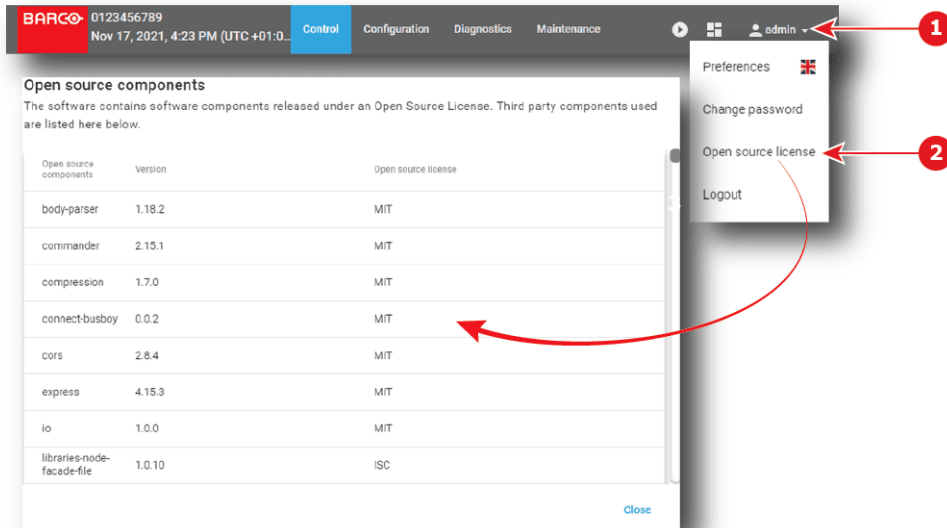


Image 4–26

2. Click *Open source license* (reference 2).

List of software components used in this application and currently under an open source license is displayed. Use the vertical scroll bar to scroll the list.

3. Click on *Close*.

Open source components page closes.

4.12 Application Menu tree

Menu tree

The following diagram illustrates the application menu tree.

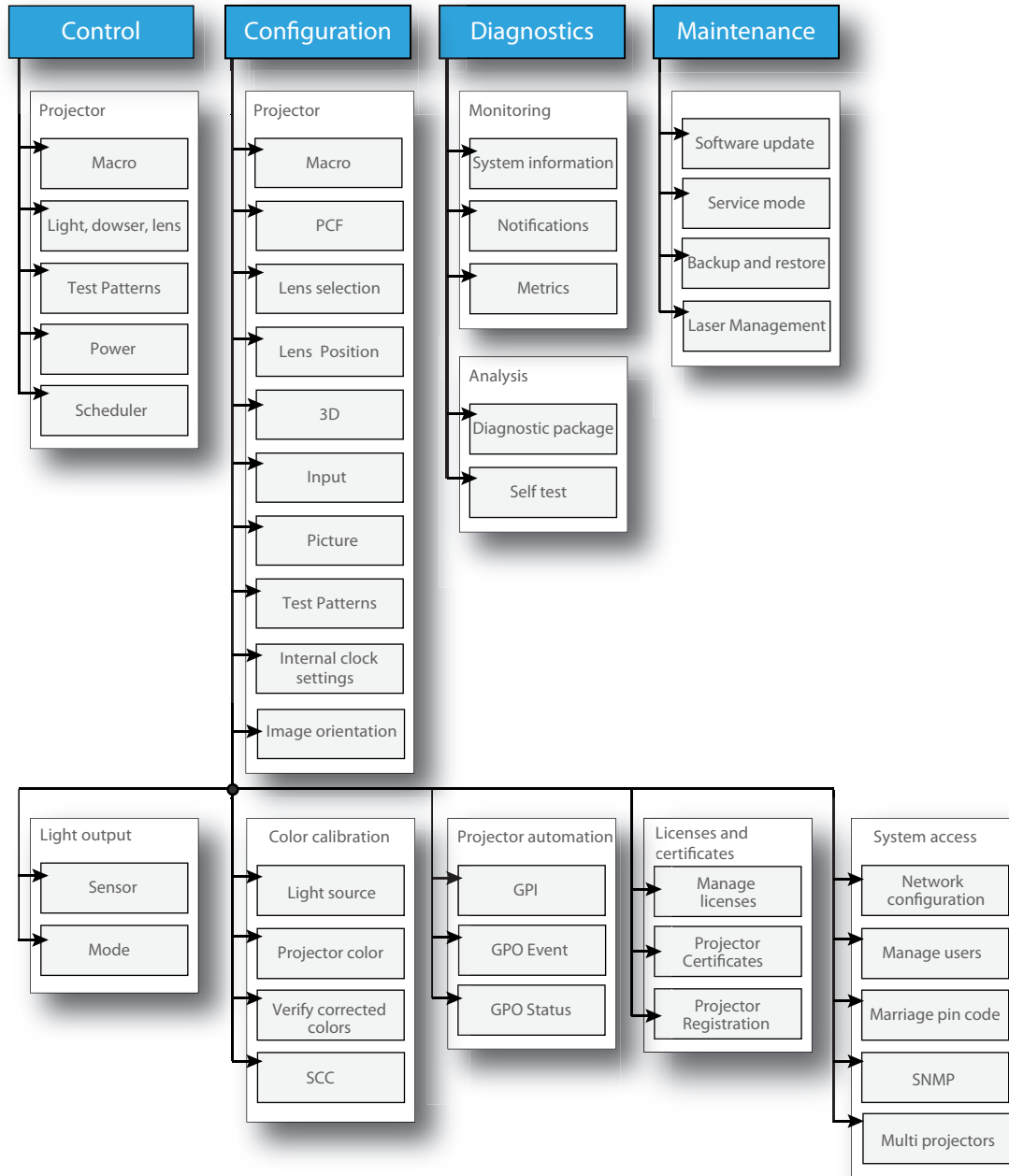


Image 4-27

Projector configuration process overview

5

5.1	Prerequisites	66
5.2	Process overview	66

About this chapter

After you have physically installed the projector, you can start with the configuration process of your XDM projector. This chapter gives an overview of all the different stages in the configuration process which you have to follow to get your XDM projector up and running. Each stage is briefly described and refers to more detailed step by step procedures in this manual.

Use this process overview as a checklist to ensure that all stages have been followed in the configuration process of the XDM projector.

5.1 Prerequisites

Overview

Prerequisites may vary depending on the projector model to install. The list of prerequisites provided here is indicative. For more information on each prerequisite, please consult the installation manual of the projector.

List of prerequisites

The following prerequisites must be met before you start configuring the projector:




- The projector must be physically installed as written in the installation manual of this projector.
- Make sure the projector is connected to the power net via the mains or via a UPS.
- The appropriate lens must be installed in the projector lens holder, with or without lens adapter (depending on the projector type) and with the lens safety cable correctly attached to the frame.

5.2 Process overview



This high level overview briefly describes all process stages that need to be done in a chronological order to configure the projector in a correct way using the Web Communicator. This overview does not include the physical installation process. For that refer to the installation manual of the projector.

Projector configuration process

1. **Check if all prerequisites are fulfilled.** For more info see chapter [“Prerequisites”, page 66](#).
2. **Power on the projector.**
3. **Auditorium name and network configuration.** Fill in network configuration in order to interact properly with the projector via local network, and give a relevant auditorium name to easily identify it. Network configuration could be adjusted manually, or automatically via DHCP server. For more information concerning these settings see chapter [“Network configuration”, page 236](#).
4. **Load a clone package** corresponding to the projector type and related to the chosen configuration . See chapter [“Maintenance”, page 279](#).
5. **Activate and calibrate the lens** installed in the lens holder. Article number of the used lens must be identified in the lens list and activated, then an automatic calibration must be performed to detect reference points and middle position. See [“Activating a lens”, page 115](#) and [“Calibrating a lens”, page 116](#).
 -  **Note:** Pay special attention to selecting the correct lens. Certain lenses are focused by shifting the lens holder of the projector while other lenses are focused using the internal focus motor of the lens. By selecting the correct lens the projector will know the correct method of adjusting the focus. An incorrect choice may lead to an unfocused image or wrongful alignment of the lens.
6. **Switch on the light source.** See [“Light Source on-off”, page 72](#).
7. **Open the Dowser.** See [“Dowser open-close”, page 73](#).
8. **Display a test pattern on the screen.** Select a test pattern that allows you to perform the desired projection format settings.(e.g. *Framing_uncorrected* testpattern).For more info concerning how to select test pattern, please see [“Activating a test pattern using the control menu”, page 77](#).
9. **Testing the limits of the lens.** By using **Zoom**, **Shift** and **Focus** buttons, check if the desired projection formats (e.g. 2D, 3D, cinema flat and scope, etc) can fit into the screen with the current lenses you have. For more info see procedures [“Lens zoom”, page 74](#), [“Lens shift”, page 74](#) and [“Lens focus”, page 74](#).
 -  **Tip:** High accuracy is not necessary during this test. The goal is to quickly test lens limits.
 -  **Note:** Not being able to do one of the next steps means that you have to realize a back focus alignment directly on the lens, or the lens selected model is not suitable to this configuration.
10. **Creating the lens position file(s).** Now that the limits of the lens have been tested, we can save the lens position for the current projection format. Save the active configuration in a new lens file. Repeat this

process for every projection format, lens and projector position you want to use this projector for. See procedure [“Creating a lens position file”, page 119](#).



Tip: It is recommended to create a slightly larger picture (2 or 3 pixels) to facilitate masking step that will come later.

- 11. Creating the screen files.** These files contain information about screen presentation configuration like resizing, letterboxing, masking and lens factor.
Follow this procedure to create file related to every projection format. For more information, see [“Creating a screen file”, page 159](#).
- 12. Creating the input files (optional).** These files contain information about input configuration. This step is optional. By default input files are loaded with clone package. For more information concerning these settings see [“Creating an input file”, page 145](#).
- 13. Perform a white point calibration.** See [“White point calibration”, page 202](#).
- 14. Perform Color calibration** for all formats (see [“Creating a new MCGD file”, page 206](#)) then verify (see [“Verifying the colors after correction”, page 209](#)).
- 15. Perform Light sensor calibration** for all projection formats. See [“Creating a new light sensor calibration file”, page 191](#).
- 16. Creating the macros.** Macro needs to be (automatically) executed before each show in order to set projector with correct parameter values related to the show. For more information see procedure [“Creating a new macro”, page 89](#).
- 17. Linking the macros to preset buttons.** Macro could be executed by clicking on preset button accessible on touch display located on *Input & Communication* side of the projector. See [“Linking a macro to preset button”, page 99](#).
- 18. Creating a profile** fit for each user acting with the projector. See [“Creating a user”, page 245](#).
- 19. Creating the marriage PIN codes.** It is recommended to create a PIN code for each user supposed to perform a marriage operation between Mediablock and projector. For more info see chapter [“Marriage pin code”, page 248](#).

Control - Projector

6

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About this menu

Control > Projector menu groups together all actions used to directly interact with the projector. It will be used to execute projector commands (e.g. zoom, open dower, switch on the light source, ...), select and display patterns, or activate pre-programmed macros.



This menu is oriented to perform actions (e.g. execute presets or commands). Settings, modification of presets or loading/removing macros are not realized here but in configuration menus.



Depending if the connected device is equipped with a media server or not, the menu items and the content of some items will be different.

6.1 Macros control

6.1.1 About macro control

Location & access

Menu: Control > Projector > Macros

Level: Administrator, Service technician, Show manager

Overview

All macros available in the projector are listed here. Use this page to activate a macro.

Use sort tool, at top of the list, to sort macros by ascending or descending alphabetical order, ascending or descending preset number or creation date.

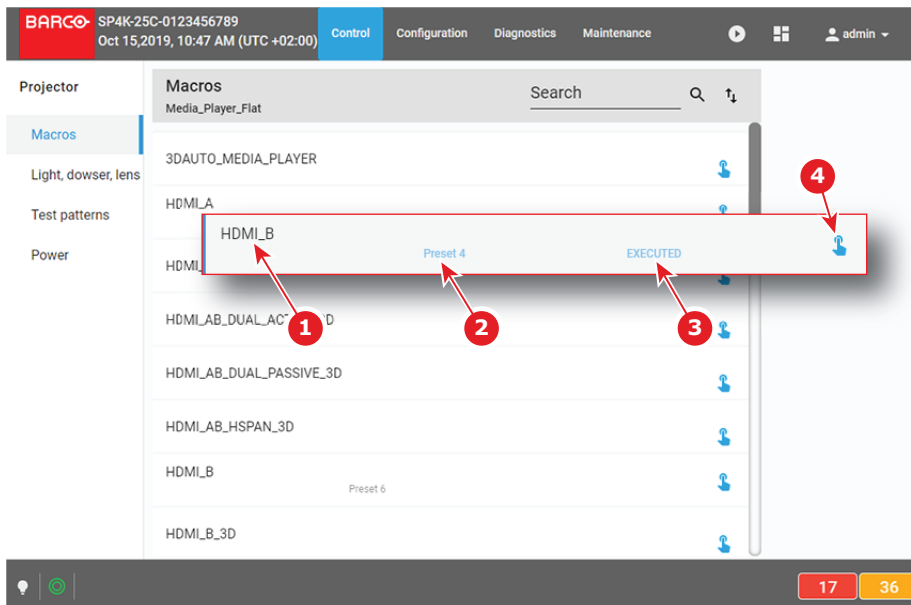


Image 6-1

Each macro displayed here has a *title* (reference 1). If a macro is associated with a preset button (projector keypad), the *preset number* (reference 2) is specified on the macro. For more details concerning link to preset buttons, please refer to chapter “[Linking a macro to preset button](#)”, page 99.

Click **Execute** (reference 4) allows to activate the macro. During its execution, the *status* of the macro (reference 3) turns to *BUSY*. When the macro is completed, the *status* of the macro (reference 3) turns to *EXECUTED*.

6.1.2 Activating a macro using the control menu

What is possible

A macro can be activated via one of the preset buttons (touch display located on *Input & Communication* side of the projector) or directly via a click on **Execute** button (see following procedure).

How to activate

1. While in *Control > Projector > Macro*, locate the macro you want to activate then click **Execute** (reference 1).



Image 6-2

Status of the macro (reference 2) turns to *BUSY* and content of the macro is executed (e.g. close dowser, activate PCF file ...).

2. After few moments execution is done.

Status of the macro (reference 3) turns to *EXECUTED*.

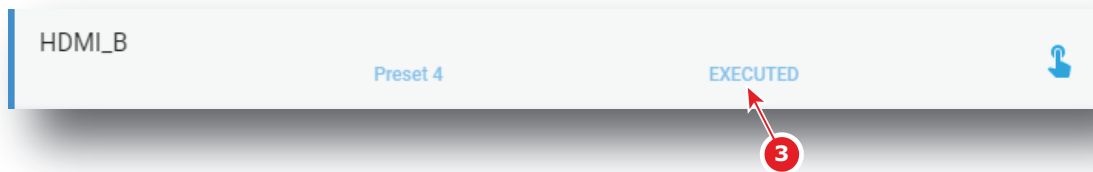


Image 6-3

When an error occurs

If for some reason the macro does not run correctly, the status turns to *COMMANDFAILURE*. Click the info balloon (reference 4) to display Macro failure steps.

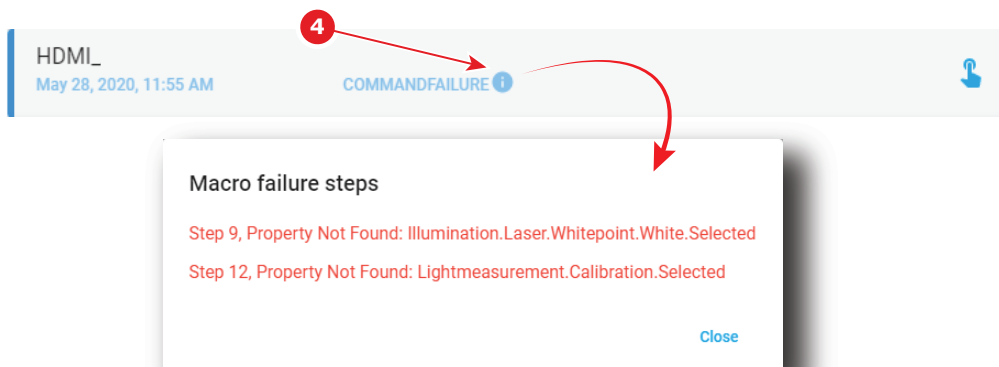


Image 6-4

6.2 Light, dowser, lens

6.2.1 About Light, dowser, lens menu

Location & access

Menu: Control > Projector > Light, dowser, lens

Level: Administrator, Service technician, Show manager

Overview

This menu is used to trigger some projector commands (dowser, light, test pattern...).

When a motorized lens is selected and correctly installed this menu also allows you to adjust lens settings (lens shift, focus and zoom). Otherwise Zoom, Shift and Focus buttons will be greyed out.

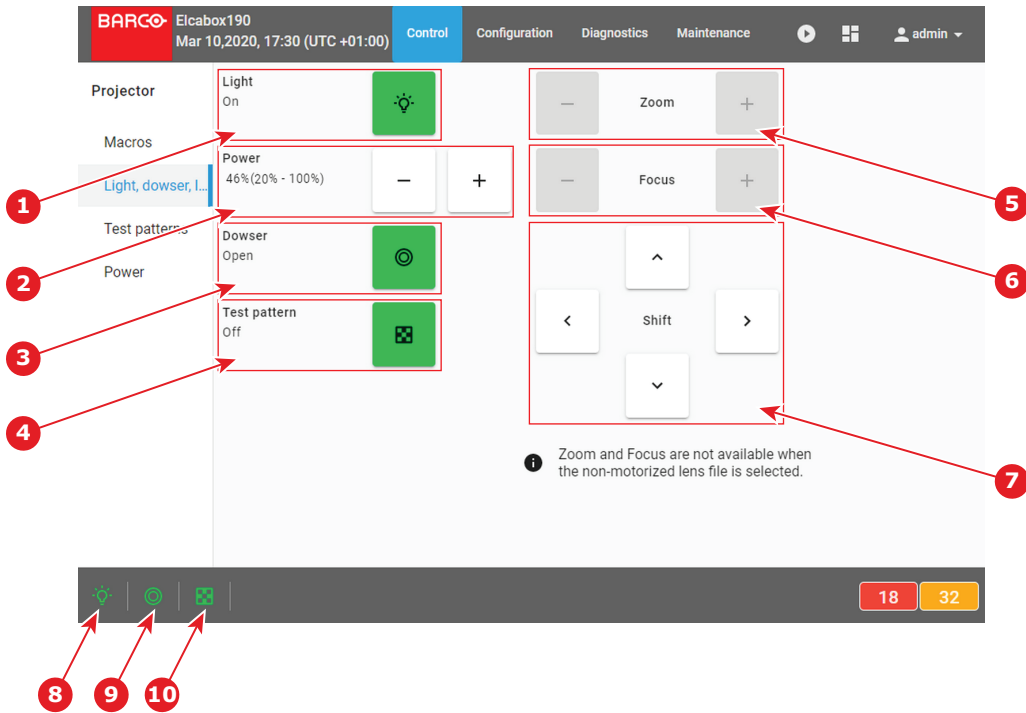


Image 6–5 Control > Projector > Light, Dowser, Lens

- | | |
|--|--|
| <ul style="list-style-type: none"> 1 Light Source on-off 2 Light Source power increase-decrease 3 Dowser open-close 4 Test pattern on-off 5 Lens zoom | <ul style="list-style-type: none"> 6 Lens focus 7 Lens shift 8 Projector light source status 9 Dowser status 10 Test pattern status |
|--|--|

6.2.2 Light Source on-off



Location & access

Menu: Control > Projector > Light, dowser, lens

Level: Administrator, Service technician, Show manager

How to switch on or switch off the projector light source

1. Click on the projector light source button to switch on or switch off the projector light source.

Button State	Projector light	Button color	Status icon
On	On	Green 	Light is On 
Off	Off	White 	Light is Off 

6.2.3 Light Source power increase-decrease

Location & access

Menu: Control > Projector > Light, dowser, lens

Level: Administrator, Service technician, Show manager

How to increase or decrease light source power

1. Power buttons allow to change intensity of the light source.

Use the **plus** button to increase the light source power.

or

Use the **minus** button to decrease the light source power.
Intensity of the light source changes.

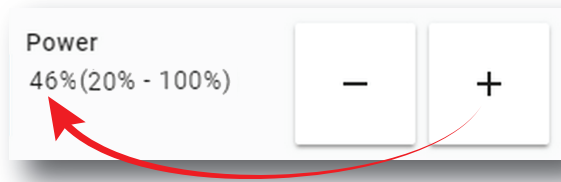


Image 6-6



The minimum light source power is limited to 20%.

6.2.4 Dowser open-close

Location & access

Menu: Control > Projector > Light, dowser, lens





Level: Administrator, Service technician, Show manager



This dowser on the projector is not a mechanical dowser, but a software functionality.

How to open or close the dowser

1. Click on the **Dowser** button to open or close the projector dowser.

Button State	Dowser	Button color	Status icon
On	Open	Green 	Dowser is open 
Off	Close	White 	Dowser is closed 

6.2.5 Test pattern on-off





Location & access

Menu: Control > Projector > Light, dowser, lens

Level: Administrator, Service technician, Show manager

How to activate or deactivate selected test pattern

1. Click on the **test pattern** button to activate test pattern.

Button State	Test pattern	Button color	Status icon
On	Activated (displayed on screen)	Blinks Green 	Icon blinks 
Off	Deactivated	Green 	Icon is lit continuously 

2. Click again on the **test pattern** button to activate the next test pattern in the preselected list. Repeat this action in order to switch to the next test patterns in the list.
3. Hold the **test pattern** button for more than 3 seconds to deactivate test pattern.

6.2.6 Lens zoom

Location & access

Menu: Control > Projector > Light, dowser, lens

Level: Administrator, Service technician, Show manager

How to zoom in or zoom out

1. Use the **plus** button to zoom in.

or

Use the **minus** button to zoom out.

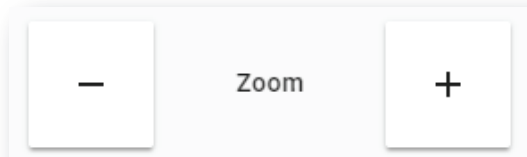


Image 6-7

or

Use keyboard arrows as described in [“Control key shortcut”, page 75](#).

6.2.7 Lens focus

Location & access

Menu: Control > Projector > Light, dowser, lens

Level: Administrator, Service technician, Show manager

How to adjust the lens focus

1. Use the **plus** button or **minus** button to adjust the focus of the lens.

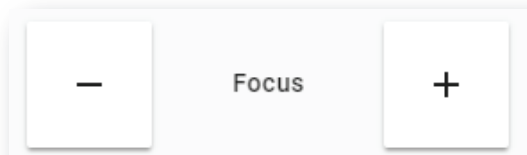


Image 6-8

or

Use keyboard arrows as described in [“Control key shortcut”, page 75](#).

6.2.8 Lens shift

Location & access

Menu: Control > Projector > Light, dowser, lens

Level: Administrator, Service technician, Show manager

How to shift the lens

1. Use the **Shift** buttons to correctly position (up/down/left/right) the projected image on the screen.



Image 6-9

or

Use keyboard arrows as described in [“Control key shortcut”, page 75](#).

6.2.9 Control key shortcut

Overview

To facilitate lens settings, there are keyboard shortcuts that allow you to zoom, focus or position the lens while keeping your attention on the screen.

Key	Description
[TAB]	Tabulation key allows to toggle between Zoom, Focus and Shift settings.
[ESC]	ESC key allows to release control.
[ARROW Up] [ARROW Down] [ARROW Left] [ARROW Right]	For Zoom and Focus settings, [ARROW Up] and [ARROW Right] corresponding to “plus” button and [ARROW Down] and [ARROW Left] corresponding to “minus” button. For Shift settings, arrows directly positioning the image on the screen.

How to control Lens with keyboard shortcut

1. While in *Control > Projector > Light, dowsler, lens*, click on the desired control settings (reference 4, 5 or 6).

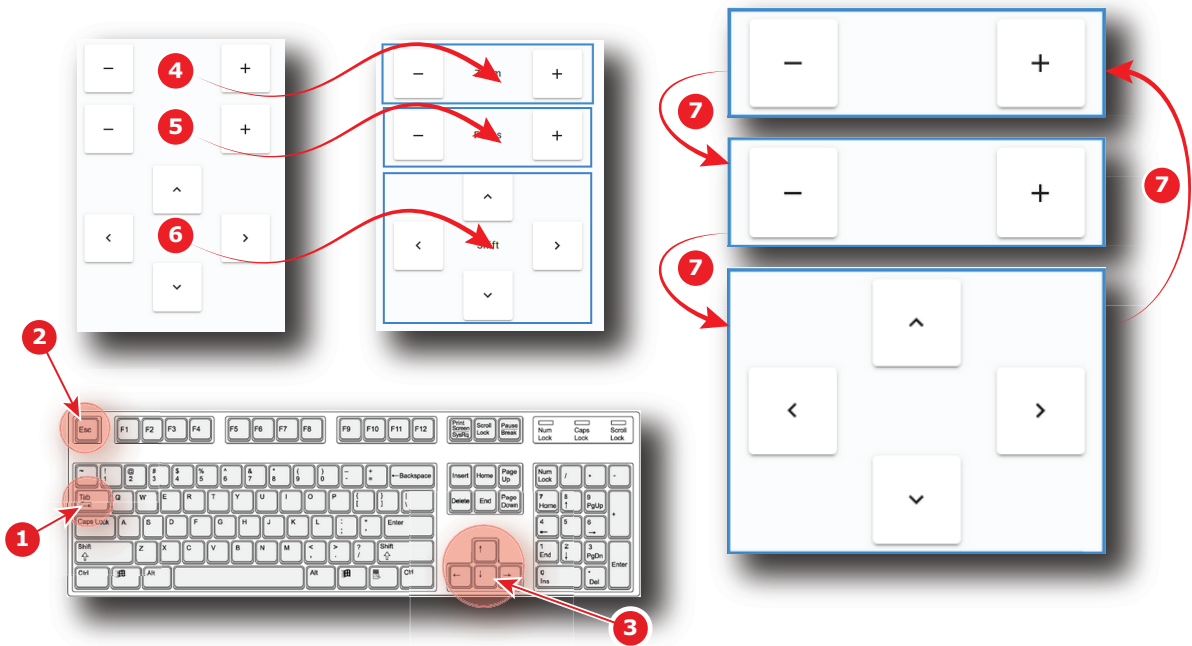


Image 6–10

One of the three available settings (Zoom, Focus or Shift) is selected. Selected control is highlighted with a blue rectangle.

2. Use *[TAB]* key (reference 1) to toggle between Zoom, Focus and Shift settings.
Each time *[TAB]* is pressed, the selected control change (reference 5). The blue rectangle that highlight the area moves to the next one.
3. When the desired settings buttons are selected (Highlighted), use Arrows keys (reference 3) to adjust.
4. Click outside the selected control or hit *[ESC]* key (reference 2) to release control.

6.3 Test patterns control

6.3.1 About test patterns control

Location & access

Menu: Control > Projector > Test patterns

Level: Administrator, Service technician, Show manager

Overview

All test patterns available in the system are listed here. Use this page to activate or deactivate a test pattern.

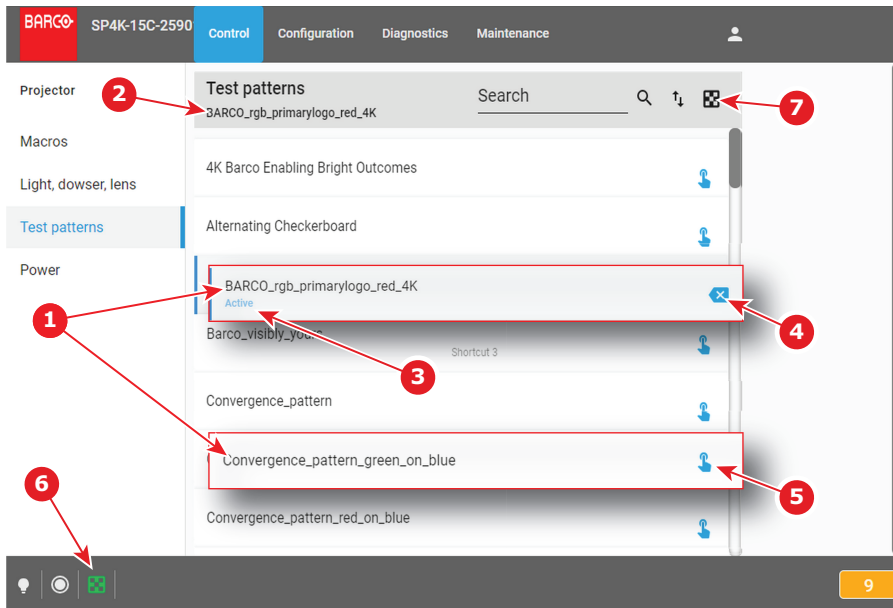


Image 6–11

Each test pattern displayed in this menu has a *Name* (reference 1).

When a test pattern is activated the following are available:

- the *status* of the test pattern (reference 3) turns to *Active*.
- name of the test pattern is noticed on top of the list (reference 2).
- **Deactivate** (reference 4) located to the right is available.
- Icon of test pattern (reference 6) is displayed (Blink Green) in status bar.

When no test pattern is activated the following are available:

- status of all test pattern are blank.
- *Not selected* is written on the top of the list (reference 2)
- **Activate** (reference 5) located to the right is available for all test pattern.

Click **Off TestPattern** (reference 7) located on the top right of the list allows to deactivate current test pattern without retrieve it in the list.



Test pattern is automatically displayed on the screen when it is activated.

6.3.2 Activating a test pattern using the control menu

Location & access

Menu: Control > Projector > Test patterns

Level: Administrator, Service technician, Show manager

How to activate a test pattern

1. While in *Control > Projector > Test Patterns*, scroll (reference 1) to the desired test pattern (or retrieve it with search function in the upper bar).

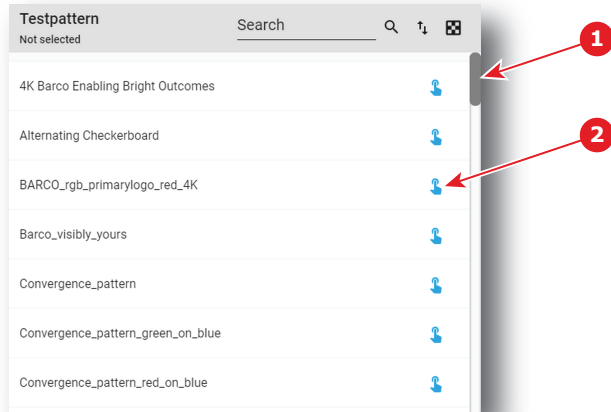


Image 6–12

2. Click **Activate** (reference 2).

The test pattern is now selected and automatically activated:

- Name of the test pattern is now displayed at the top of the list (reference 3).
- Status of the test pattern (reference 4) turns to *Active*.
- **Deactivate** (reference 5) is now available.
- Icon of test pattern (reference 6) is displayed (Blink Green) in status bar.

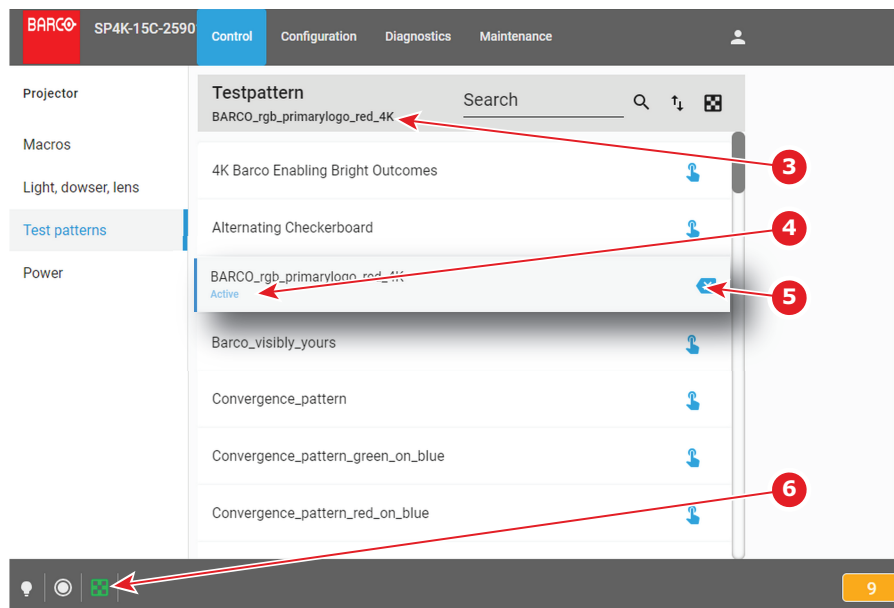


Image 6–13

6.3.3 Deactivating a test pattern using the control menu

Location & access

Menu: Control > Projector > Test patterns

Level: Administrator, Service technician, Show manager



Click on *the Off TestPattern* icon located on the top right of the list to deactivate the current test pattern without retrieve it in the list.

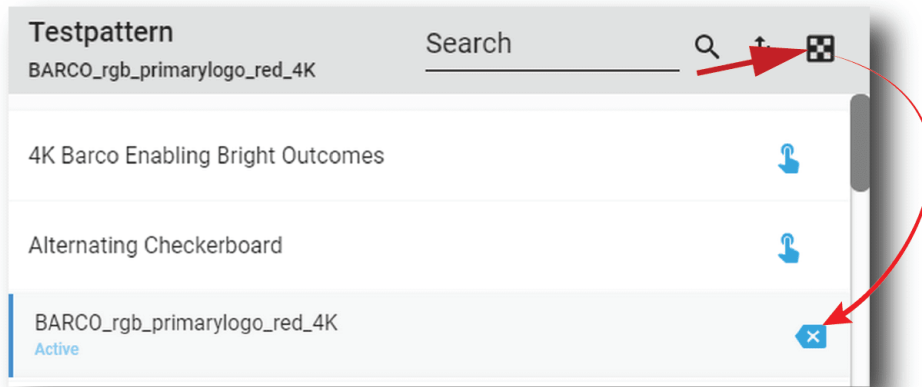


Image 6–14

How to deactivate a test pattern

1. While in *Control > Projector > Test patterns*, locate the currently activated test pattern.

The status of the active test pattern is *Activate* (reference 2) and its name is noticed on top of the list (reference 1).

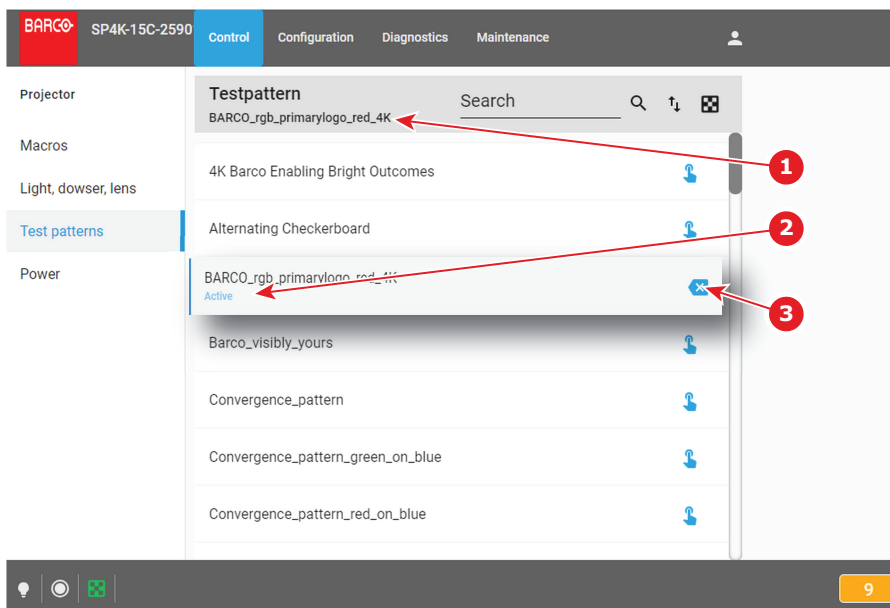


Image 6–15

2. Click on the **Deactivate** button (reference 3) located at the right.

Test pattern is deactivated:

- Name of the test pattern is removed from the top of the list and is replaced by *Not selected* (reference 4).
- Status of the test pattern turns to blank (reference 5).
- In the status bar, status icon dedicated to test pattern is switched off (reference 6).

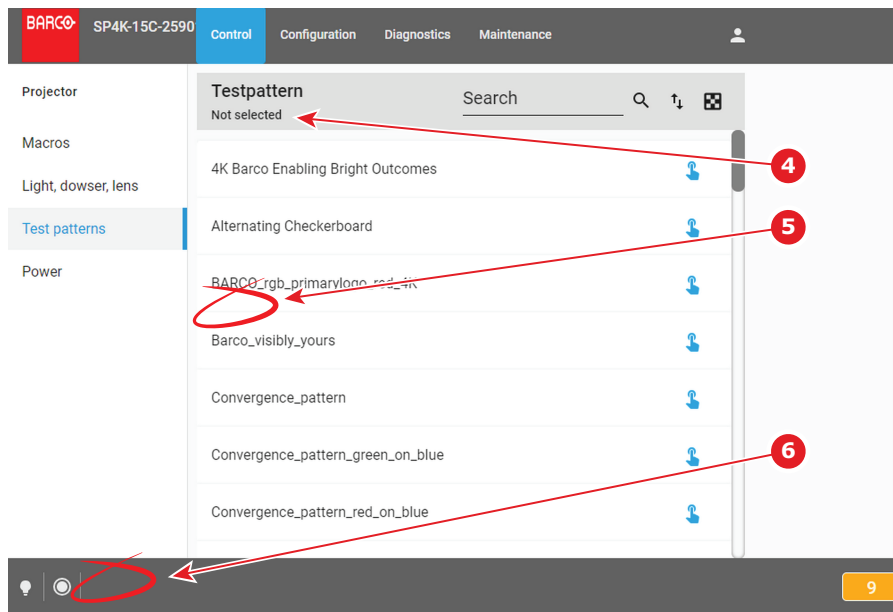


Image 6-16

6.4 Power

6.4.1 About Power menu

Location & access

Menu: Control > Projector > Power

Level: Administrator, Service technician, Show manager

Overview

This page groups together three commands related to power modes:

- **Switch to ECO mode** (reference 1). This will power down the media server and put in standby mode the projector electronic.
- **Reboot ICMP** (reference 2), only available if ICMP is present. This will reboot the media server only.
- **Full system reboot** (reference 3). This will reboot the projector and the media server.

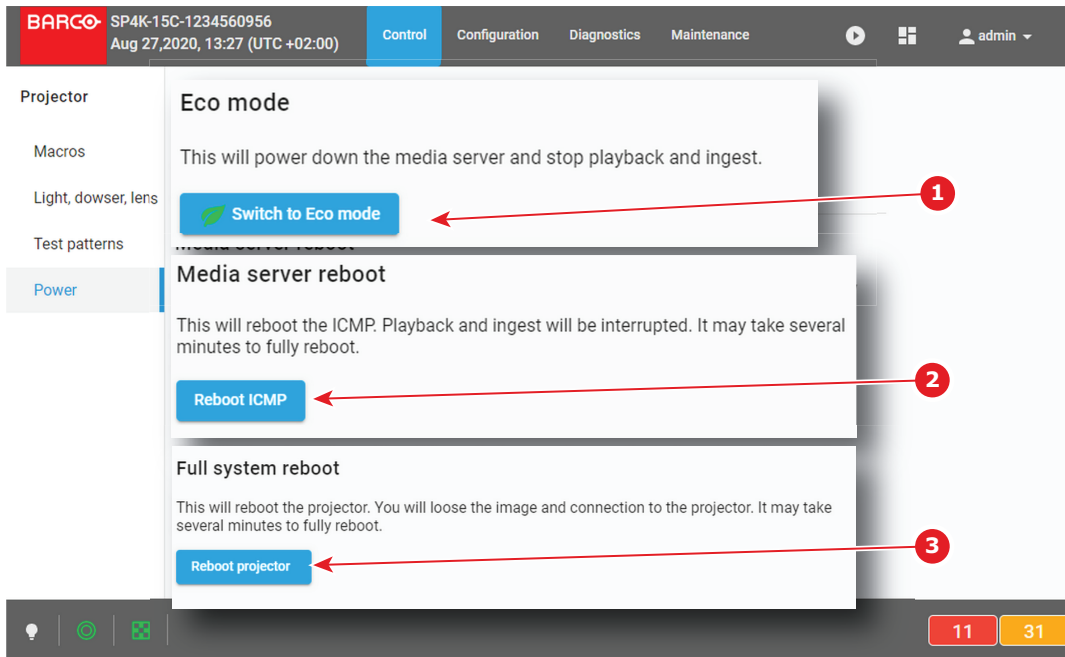


Image 6–17

About Power modes

For more information concerning the power states of the projector, please refer to [“Explaining the power states”](#), page 26.

6.4.2 Switching to ECO mode

Location & access

Menu: Control > Projector > Power

Level: Administrator, Service technician, Show manager

How to switch

1. While in *Control > Projector > Power*, click on the **Switch to ECO mode** button (reference 1)

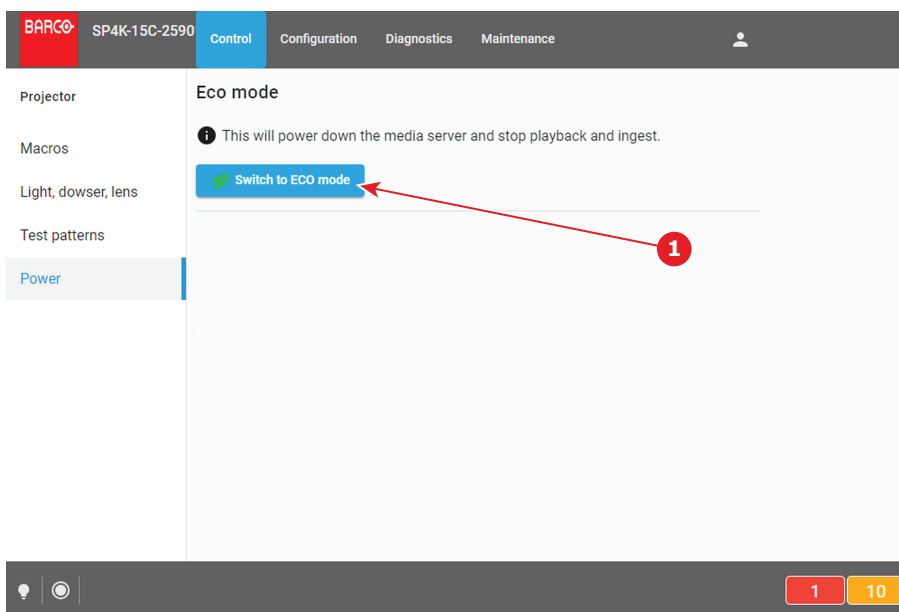


Image 6–18

Confirmation window is displayed to inform the user of consequences to switch to ECO mode. By example, this message inform if other users are currently connected or if playback is in progress.

2. Click on the **OK** to confirm and continue.

The projector switches to ECO mode. All ongoing activities are stopped (playback ...) and all electronics (including fans, pumps,...) will turn off, except for the wake up service. If you reload the page, you will find the wake-up page.

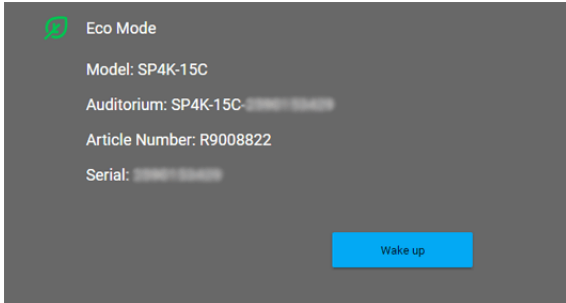


Image 6–19 Example of the Eco Mode page in Web Communicator

3. Press **Wake up** to turn the projector back to *Ready* state.

6.4.3 Full system reboot

Location & access

Menu: Control > Projector > Power

Level: Administrator, Service technician, Show manager

How to reboot the projector

1. While in *Control > Projector > Power*, click **Reboot projector** (reference 1).

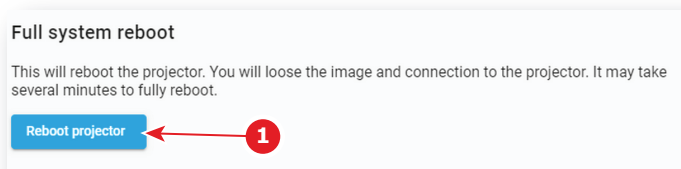


Image 6–20

2. Confirmation window is displayed.
3. Click **OK** to confirm.

The projector will reboot. This operation will take several minutes. All features (image, ingest ...) and connections are down during the reboot.

6.5 Scheduler

6.5.1 About Scheduler

Location & access

Menu: Control > Projector > Scheduler

Level: Administrator, Service technician, Show manager

Overview

This menu is used to schedule the automatic switch on (Wake-up) and shutdown (switch to ECO mode) of the projector.

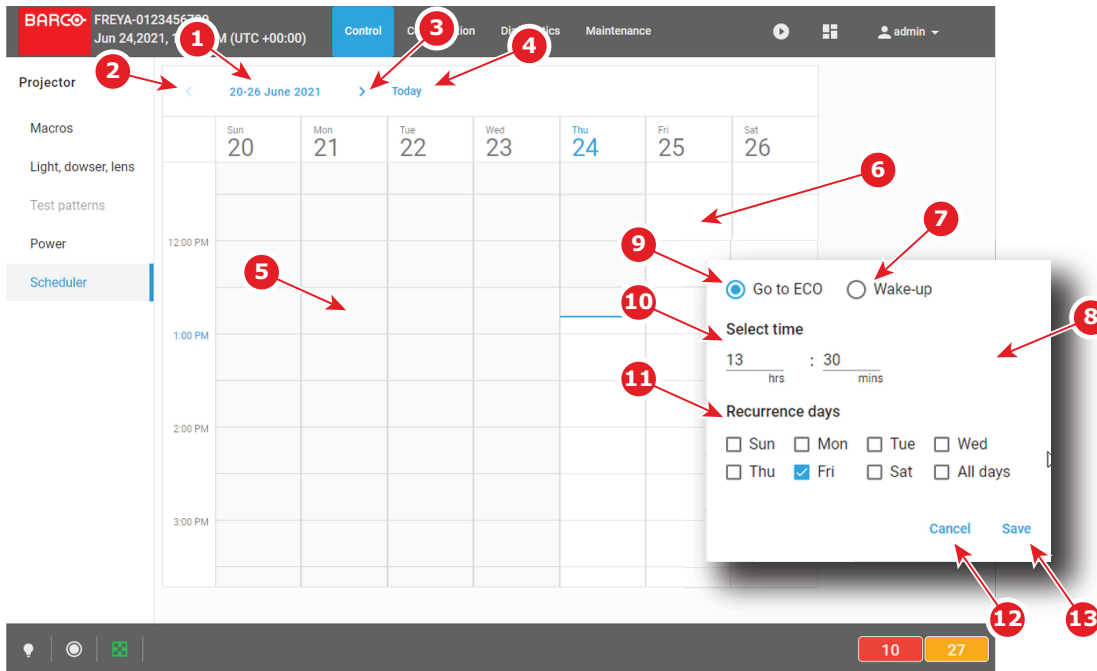


Image 6–21

The scheduler allows an overview on one entire week. The date of the week is displayed on the top (reference 1).

One column represents a day of the week. Slots in the day are represented by rectangles (one slot each half hour).

The vertical axis is graduated in hours. Use the scroll bar located on the right side to display the rest of the day if needed.

A blue line indicates the current time. The area located temporally before this line (reference 5) is grayed. No further action is possible on time slots located in the grayed area (in the past). Only slots located after this line, in clear area (reference 6) are accessible.

Following actions are available in this menu:

- **Left Arrow** (reference 2) moves the week view for one week to the left (the previous week).
- **Right Arrow** (reference 3) moves the week view for one week to the right (the next week).
- **Today** (reference 4) allows to display a view of the scheduler centralized on the current day.
- Click on a slot located after the current time displays a popup (reference 8) that allow to set an automatic switch on (reference 7) or an automatic shutdown (reference 9) of the projector. The time of triggering of an action can be modified (reference 10) and automatically repeated in the week by checking one or several days of the week in the “*recurrent days*” section (reference 11).
- Remove a shutdown (*Go to ECO*) or a switch on (*Wake-up*) already present by clicking on it.

Once automatic switch on (reference 14) and shutdown (reference 15) of the projector are fixed, the areas located between a *Go to ECO* and the next *Wake-up* are turn in green hatched area (reference 16). The projector will be in ECO mode in this period without possibility to play.

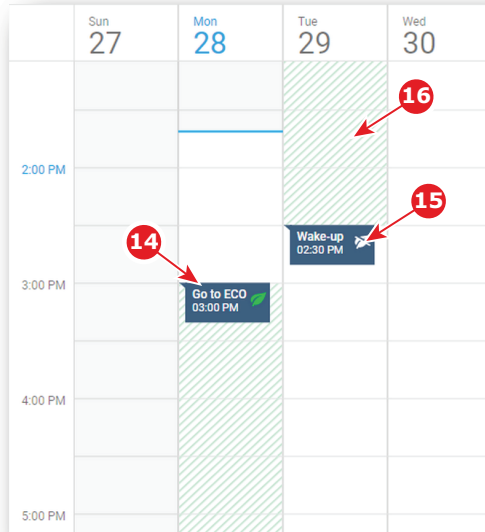



Image 6–22

6.5.2 Scheduling of automatic switches on or shutdowns of the projector..

How to add an automatic switch on or an automatic shutdown of the projector in the scheduler

1. While in *Control > Projector > Scheduler*, locate and click the empty slot where you want add an action in the scheduler.

 **Note:** Only the slots located after the current time (clear area) are reachable. Other slots are greyed.

A dialog with parameters related to projector switch on or shutdown action is prompted.

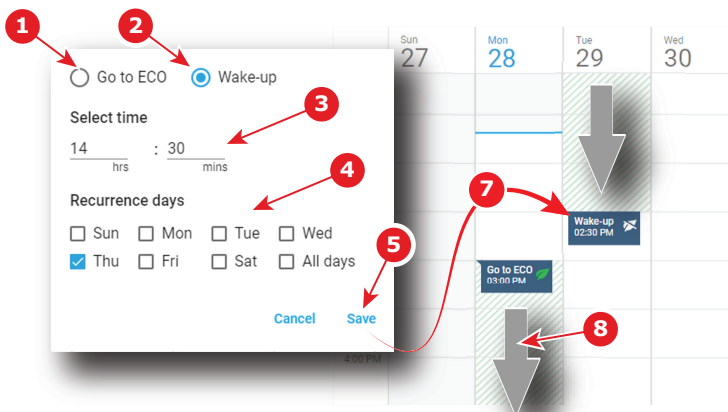


Image 6–23

2. Select the action type:
 - switch on the projector (Wake-up) (reference 2). The projector will automatically start powering up to Ready-mode at the selected time.
 - shutdown the projector (Go to ECO) (reference 1). The projector will automatically switch in ECO mode at the selected time.
3. If necessary you can modify or refine the trigger time of the action.

4. Check one or several days of the week in the “*recurrent days*” section (reference 4) to repeat this action in the week (recurrence).
5. Click Save (reference 5).

The action is added in the scheduler (reference 7) and the areas located between the *Go to ECO* and the *Wake-up* is in green hatched (reference 8).

How to remove an automatic switch on or an automatic shutdown of the projector from the scheduler.

1. While in *Control > Projector > Scheduler*, locate the automatic action you want to remove then click on it (reference 1).

A contextual menu appears (reference 2).

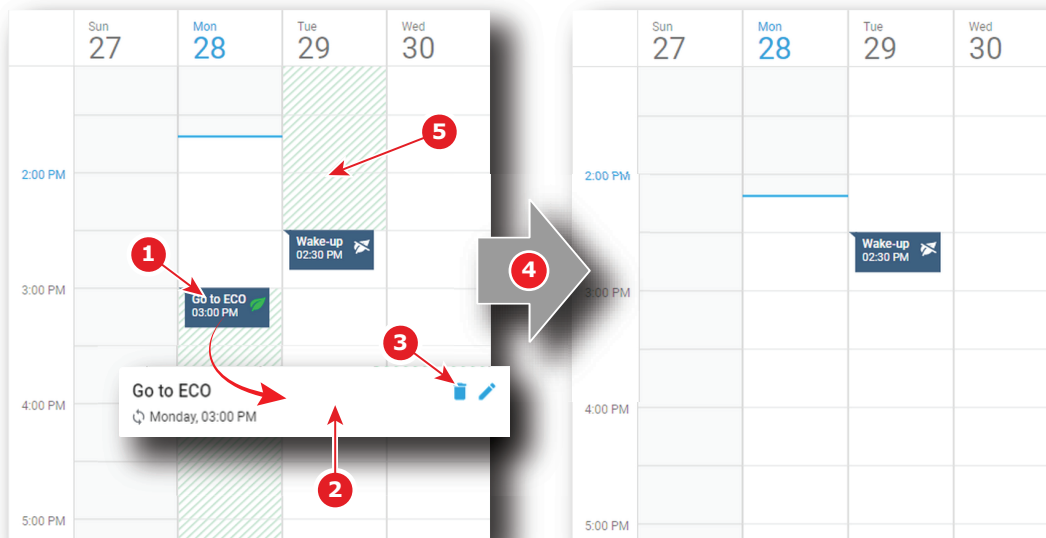


Image 6–24

2. Click **Delete** (trash icon) in the menu (reference 3).

A confirmation message appears.

3. Click **OK**.

The action is removed from the scheduler (reference 4). The area in green hatched (reference 5) is recalculated or removed depending on the position or the type of action removed.

Configuration - Projector

7

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About this menu

The Configuration > Projector menu is used to configure the projector.

7.1 Macros configuration

7.1.1 About macro configuration

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

Overview

This panel allows to manage macros of the projector.

Use sort tool, at top of the list, to sorted macros by ascending or descending alphabetical order, ascending or descending preset number or creation date.

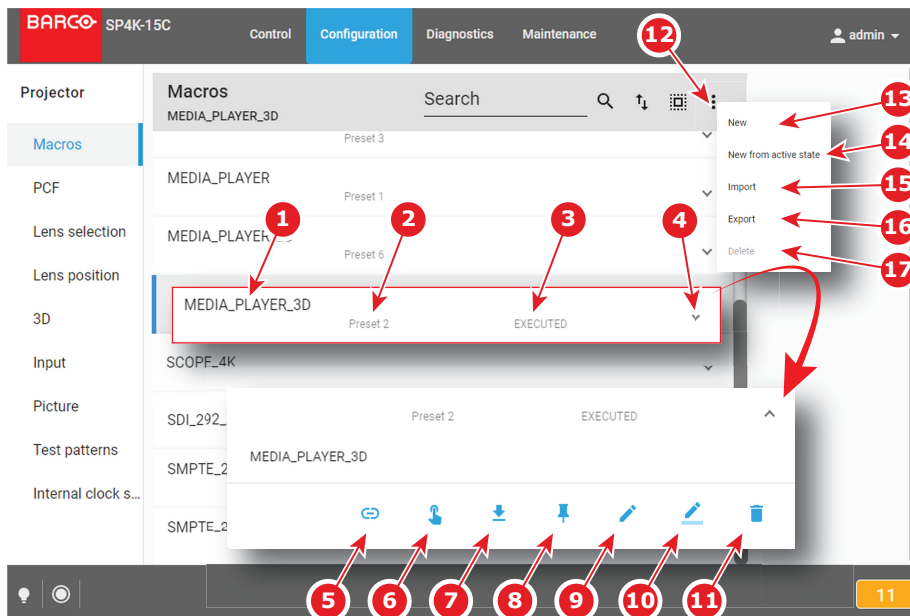


Image 7-1

Each macro displayed here has a *title* (reference 1). If a macro is associated with a preset button (projector keypad), the *preset number* (reference 2) is specified on the macro. For more details concerning link to preset buttons, please refer to chapter "Linking a macro to preset button", page 99.

Click on a macro (reference 4) in this list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Save as cue** (reference 5) allows to create a cue on the ICMP.
- **Execute** (reference 6) allows to activate the macro. During its execution, the *status* of the macro (reference 3) turns to *BUSY*. When the macro is completed, the *status* of the macro (reference 3) turns to *EXECUTED*.
- **Export** (reference 7) creates a downloadable backup package.
- **Link/Unlink to preset** (reference 8) allows to link or unlink the macro with preset button of the projector keypad.
- **Edit** (reference 9) allows to modify the macro.
- **Rename** (reference 10) allows to modify the name of the macro.
- **Delete** (reference 11) allows to remove the macro from the list.

Clicking on menu (reference 12) displays the macro general menu.

Following actions are available in this menu:

- **New** (reference 13) allows to create a new empty macro.

- **New from active state** (reference 14) allows to create a new macro pre-filled with commands corresponding to current projector state.
- **Import** (reference 15) allows to import macro.
- **Export** (reference 16) creates a downloadable backup package that contains all macro files selected in the list.
- **Delete** (reference 17) allows to remove selected macro files from the list..

7.1.2 Creating a new macro

How to create a new macro

1. While in Configuration > Projector > Macros, click on the **menu icon** (reference 1) located on the top right of the list, then select **New** (reference 2) in the menu.

The macro editor opens with a new, empty *untitled* macro (reference 3).

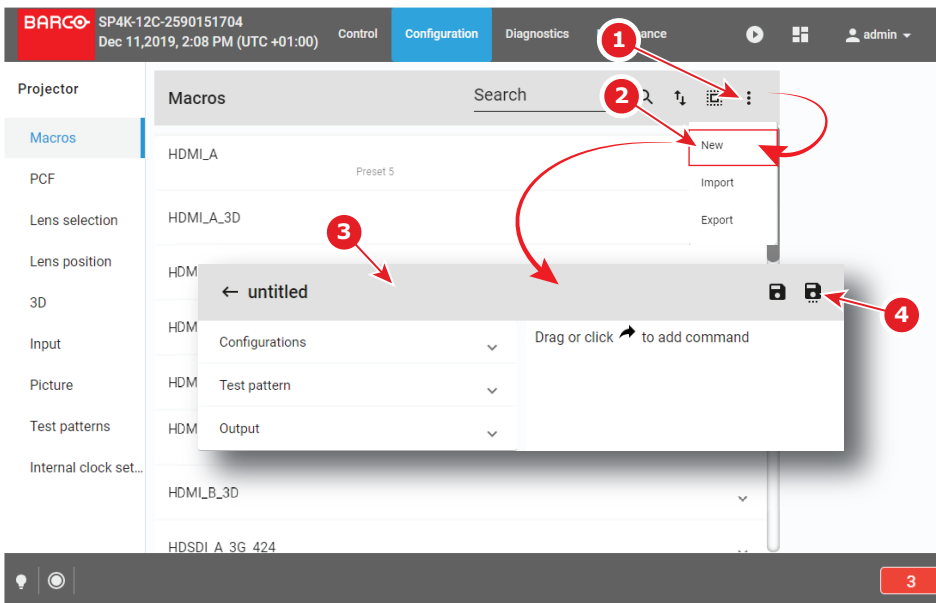


Image 7–2

2. Add commands in the macro. For more information about the *Macro editor*, see “[Macro editor](#)”, page 90.
3. Click the **Save** or **Save As** (reference 4) icon to prompt the *Save As* dialog. Enter a name then click **Save** to save modifications.

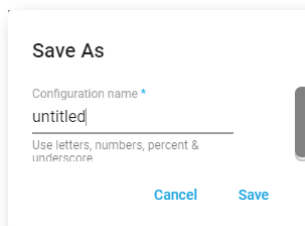


Image 7–3



Note: List of Macros already available in the projector is displayed in this window. Directly click on this list allows you to reuse all or part of an already existing macro name.

4. Enter a name and confirm with **Save**.
5. Click the **Return** icon to return to the macros menu.

The newly created macro is added to the list of macro files.

7.1.3 Creating a new macro from active state

How to create a new macro from current projector state

1. Check if projector settings are in accordance to the desired configuration.
2. While in Configuration > Projector > Macros, click on the **menu icon** located on the top right of the list to select **New macro from active state**.

The macro editor opens with a pre-filled macro (commands already present correspond to the current state of the projector).

3. Finish the macro creation and save it as described in procedure “Creating a new macro”, page 89.

7.1.4 Macro editor

About this chapter

This chapter contains all the necessary information to use macro editor, the Web Communicator page used to create or modify macros.

7.1.4.1 General

About Macro editor

Use the *Macro editor* to create or modify macros. This page is not directly accessible via a general menu. Click **Edit** to modify a macro in a contextual menu (reference 1) or click **New** in the macro general menu to create a new macro (reference 2). For more information, please consult the sections dedicated to these operations in chapter “Macros configuration”, page 88.

The *Macro editor* consists of a commands set distributed in several tabs (reference 3) and an ordered list of commands (reference 4). List of commands is empty when it's a creation of a new macro.

The following actions are available:

- add commands from the command set to the list.
- delete some commands out of the list.
- change the order of the commands in the list.
- edit commands attributes.

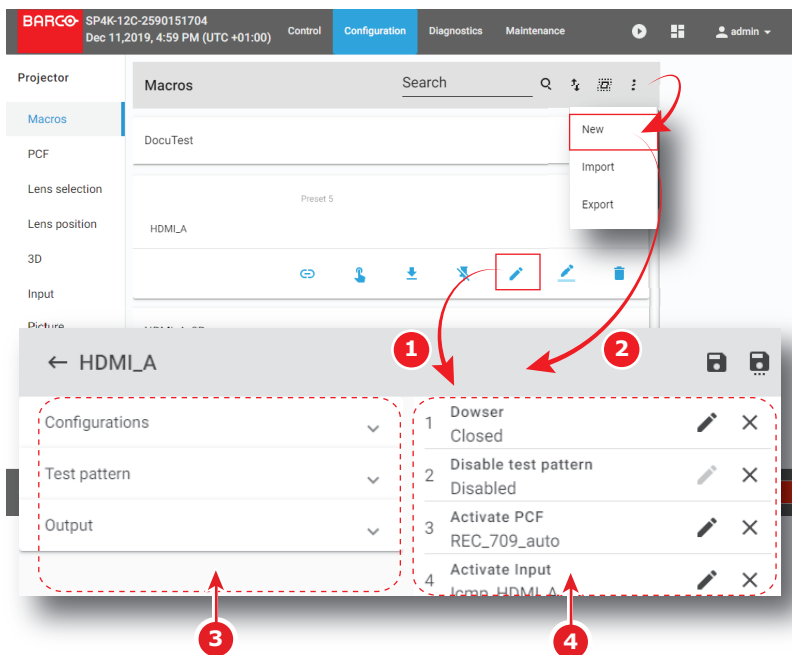


Image 7-4

About Macros

A macro is a saved sequence of *commands* that can be stored and then easily recalled.

A macro can contain at least:

- an input file
- a screen file
- a PCF file
- a 3D file
- a 2D MCGD file
- a light sensor calibration file
- a lens position file

A macro can be executed in one of the following:

- Click **Execute** directly on the concerned macro in *Control > Projector > Macros*.
- If macro is associated with preset, click on preset button (touch display located on *Input & Communication* side of the projector).
- If the rights of the user are not limited to *Show manager* level, click **Execute** in the contextual menu of the concerned macro in *Configuration > Projector > Macros*.

About Commands

Commands are basic actions used to trigger mechanisms or features of the projector. Some commands can be relatively basic, such as opening the dowsers, associating an action with a general purpose output, or displaying a pattern. Others, more complex, use settings files to apply specific presets (modify the colorimetry, switch in 3D mode ...).

Commands are grouped by theme in several tabs. The following commands tabs are available:

- Configurations
- Test pattern
- Output

Some commands require additional parameters such as channel number, pulse duration for GPIO or the name of the parameter file to be used by the command. These additional actions are performed by clicking **Edit** located to the right of each command in the command list

7.1.4.2 Adding a command to a macro

What is possible

Commands list can be completed by new ones, directly selected in the commands set located to the right of the panel. The command can be added at the end of the list (click **Move**) or drag and dropped directly to the right location in the list.

How to add

1. While in *Macro editor*, expand the drop down list (reference 1) related to the command category you need to explore.

All available commands (reference 2) are displayed (e.g. Test pattern).

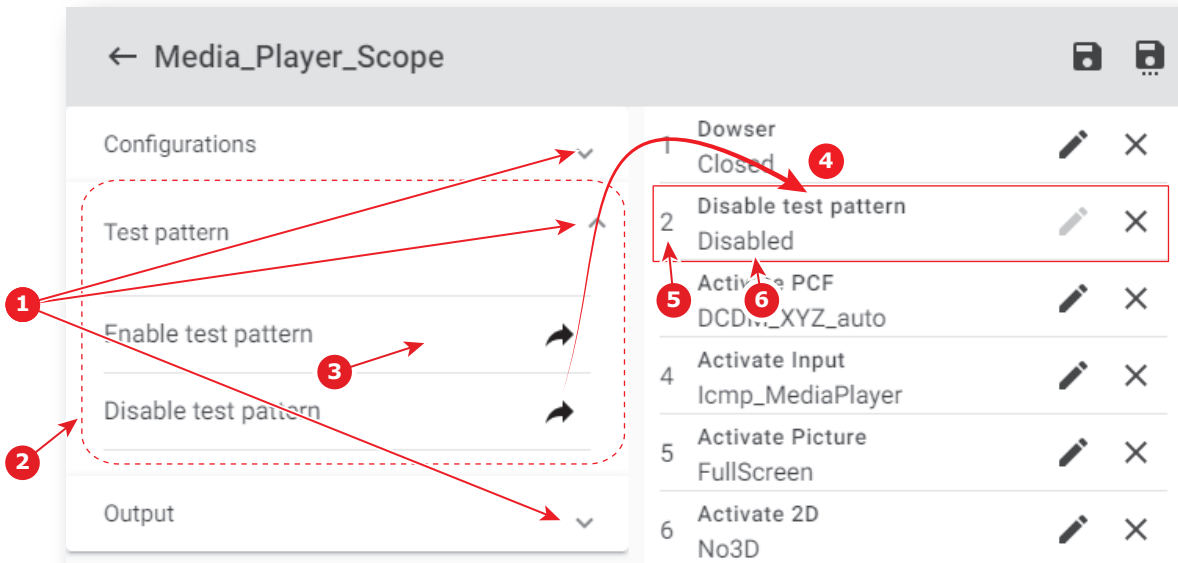


Image 7-5

2. Click **Move** (reference 3) located to the right of the command.

The command is automatically added at the end of the list (reference 4) with the correct sequence number (reference 5).

Parameter status (reference 6) is *Unassigned* as attributes of the command are not settled.

or

drag and drop the command (reference 7) to the right location in the list (reference 8).

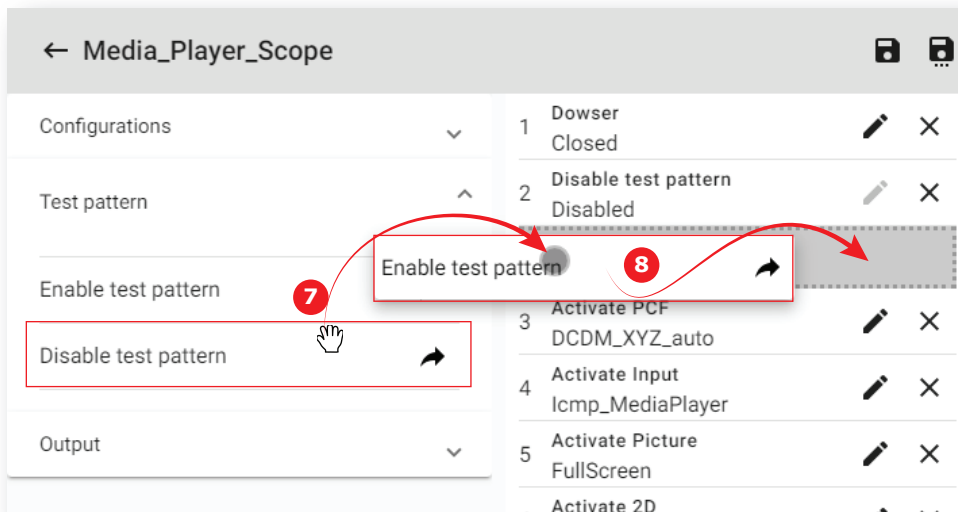


Image 7-6

The command is automatically added to the list at the right position with the correct sequence number. It will not be necessary to move it again in the future.

As for the previous example, parameter status (reference 6) is *Unassigned* as attributes of the command are not settled.

7.1.4.3 Deleting a command from a macro file

What is possible

Commands in the list may be removed by a simple click.

How to delete a command

1. While in *Macro editor*, locate the element you want to remove (reference 1) from the list of commands (reference 2).

The background color of command pointed by the mouse cursor turns to dark when you go through the list.

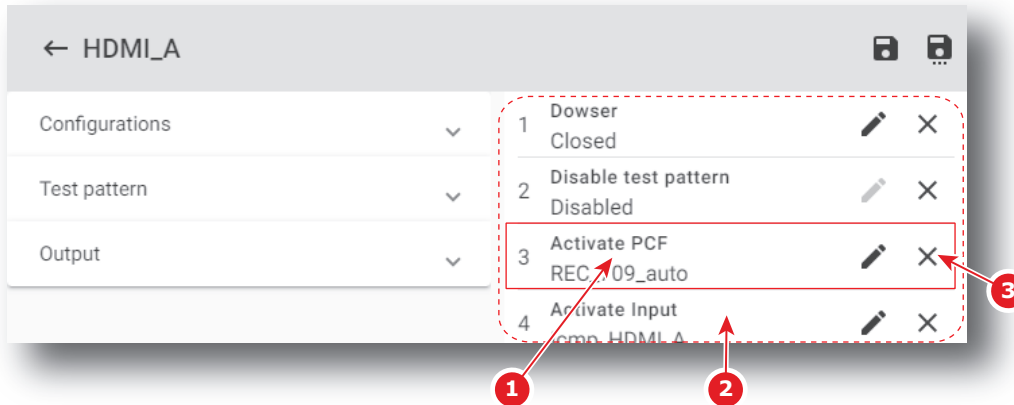


Image 7-7

2. Click **Delete** (reference 3).

The command is removed from the list.

7.1.4.4 Editing values of macro commands

What is possible

When available, parameters of a command may be defined or modified by a simple click. When no parameter is available for a command, the **edit** button stays greyed.

How to edit parameters

1. While in *Macro editor*, locate the item you want to edit (reference 1) in the list of commands (reference 2).

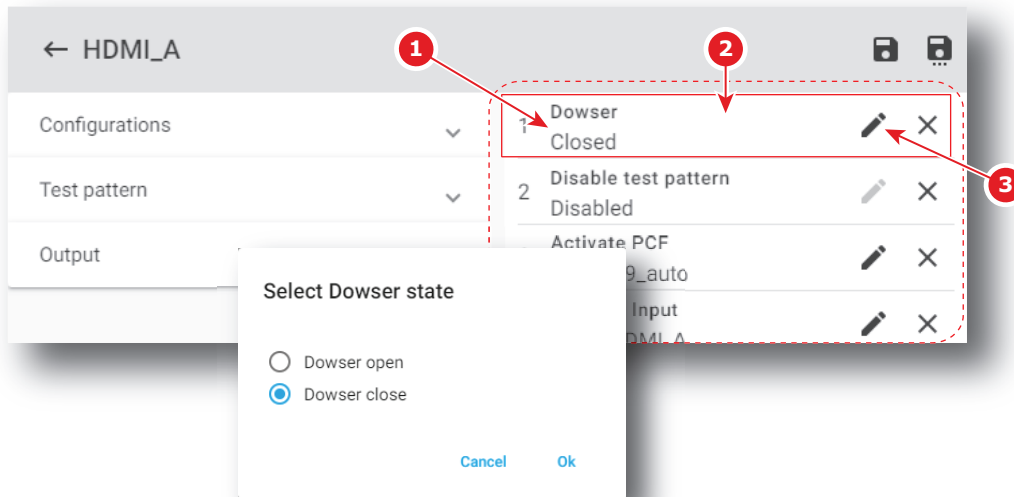


Image 7-8

2. Click the **Edit** icon (reference 3).

A dialog with parameters related to the command is prompted.

e.g. Concerning the Dowser state command, the only two choices (**Dowser open** or **Dowser close**) are displayed.

3. Select the desired parameter and confirm with **OK**.

The edited parameters are updated.

7.1.4.5 Changing the order of Macro commands

What is possible

Order of the commands in the list may be modified by a simple displacement of elements using the mouse.

How to change

1. While in *Macro editor*, locate the element to be moved in the list of commands (reference 1).

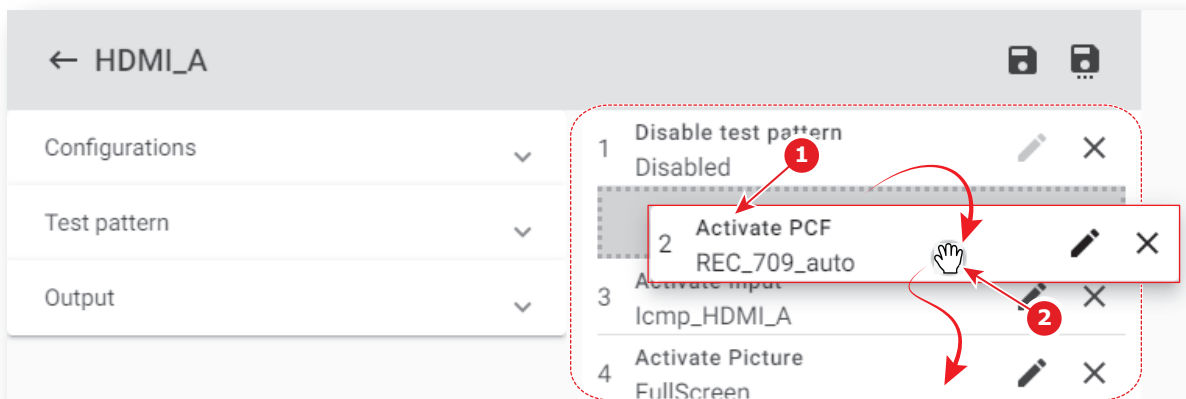


Image 7-9

2. Drag the command (reference 2) from its original position and drop it to the desired position.

Commands list is automatically reordered.

7.1.5 Editing a macro

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

How to edit a macro

1. While in *Configuration > Projector > Macros*, click on the macro that you need to change.



Image 7-10

The macro is displayed in its expanded form with menu.

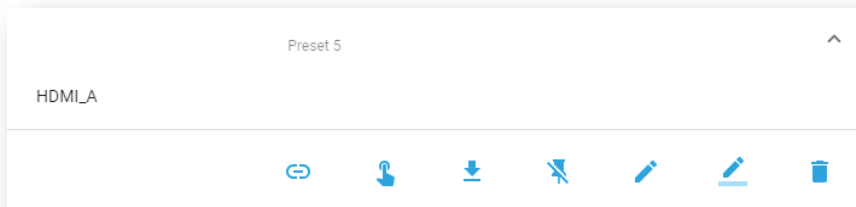


Image 7-11

2. Click **Edit** in the menu. 

The macro is displayed in *Macro editor* (reference 1).

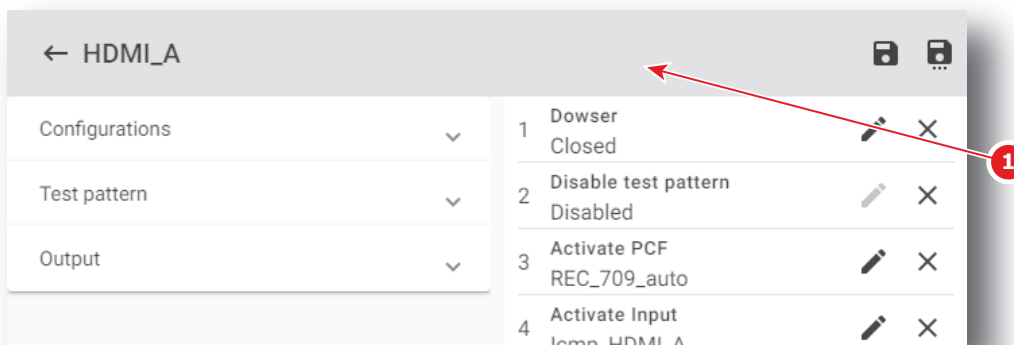


Image 7-12

3. Add, remove or modify commands of the macro. For more information about the *macro editor*, see ["Macro editor"](#), page 90.

The macro is marked by an asterisk (reference 3) if it has been modified.

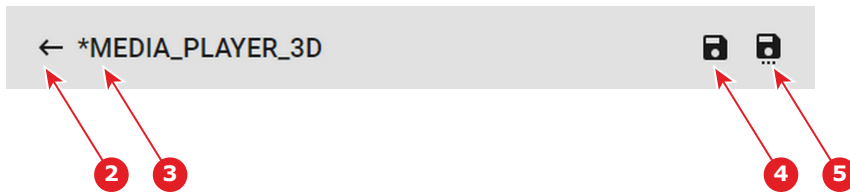


Image 7-13

4. Click **Save** (reference 4) to save the changes made to the macro.
Old version of macro is now replaced by the new one and asterisk is removed from the name of the macro.

or

Click **Save As** (reference 5) to display the *Save As* window. Enter a name then click **Save** to save modifications.



Note: List of Macros already available in the projector is displayed in this window. Directly click on this list allows you to reuse all or part of an already existing macro name.

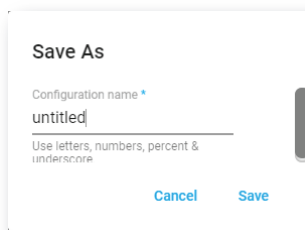


Image 7-14

Previous macro is closed without saving and a new macro is created with the new characteristics.

or

Click **Exit** (reference 2) to leave without saving.

A Confirmation (Dialog Box) verifies if you really want to proceed with this action. Click **OK** if you want to leave without saving.

7.1.6 Renaming a macro

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

How to rename a macro

1. While in *Configuration > Projector > Macros*, click on the macro that you need to rename.



Image 7-15

The macro is displayed in its expanded form with menu.

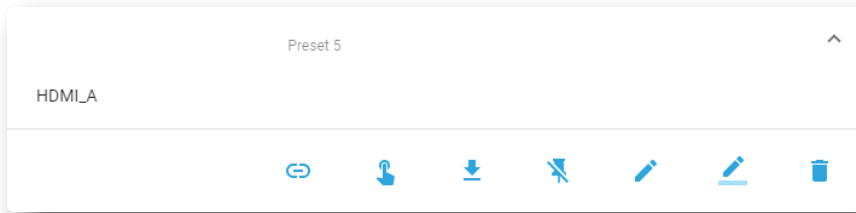


Image 7–16

- Click the **Rename** icon in the menu.



Rename window is displayed.

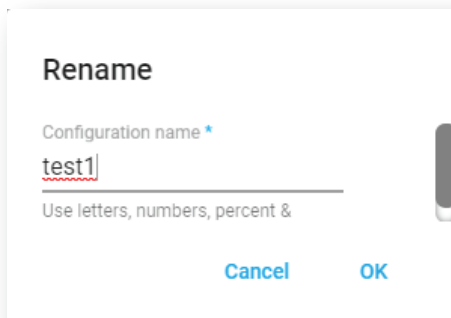


Image 7–17

- Enter a new *macro name* and click **OK**.

7.1.7 Activating a macro using the configuration menu

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

What is possible

A macro can be activated via one of the preset buttons (touch display located on *Input & Communication* side of the projector) or directly via a click on **Execute** button in the macro contextual menu (see following procedure).



For users who have only limited rights and who do not have access to the setting menu, it is possible to run a macro via the *control* menu. For more information about the macro execution in *control* menu, see [“Activating a macro using the control menu”, page 70](#).

How to execute a macro

- While in *Configuration > Projector > Macros*, click on the macro you want to activate.



Image 7–18

The macro is displayed in its expanded form with menu.

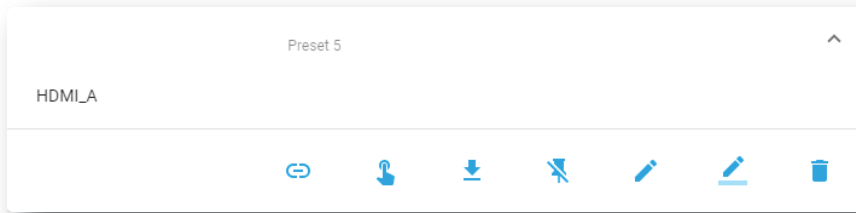


Image 7-19


2. Click **Execute** in the menu.  Status (reference 1) of the macro turns to BUSY and content of the macro is executed.



Image 7-20

3. After few moments execution is done. Status (reference 2) of the macro turns to EXECUTED.



Image 7-21

When an error occurs

If for some reason the macro does not run correctly, the status turns to COMMANDFAILURE. Click the info balloon (reference 3) to display Macro failure steps.

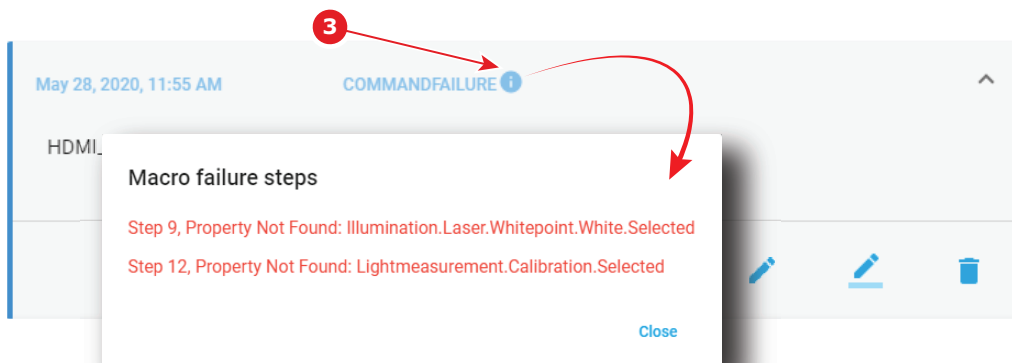


Image 7-22

7.1.8 Saving a macro as cue on media server

What is possible

A macro can be saved as a cue on the media server. The cue will be automatically created on the ICMP under a group called *Projector*.

Save a macro as cue on media server

1. While in *Configuration > Projector > Macros*, click on the macro that you want to save as cue on media server.



Image 7-23

The macro is displayed in its expanded form with menu.

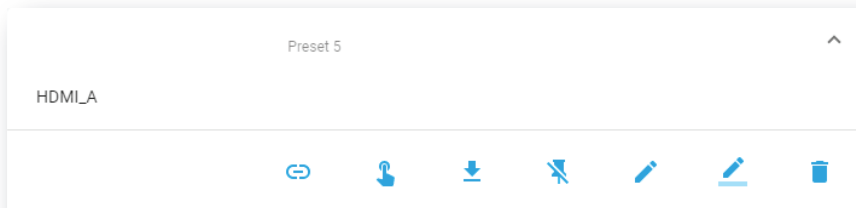


Image 7-24

2. Click **Save as cue** in the menu. 

A cue is created on the ICMP as a user cue under the group *Projector* with the same name as the macro name.

If a cue was already create with this macro name confirmation message appears.

7.1.9 Linking a macro to preset button

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

How to link a macro to preset

1. While in *Configuration > Projector > Macros*, click on the macro you need to link to a preset button.



Image 7-25

The macro is displayed in its expanded form with menu.

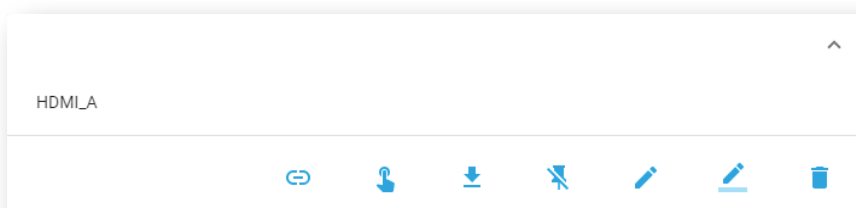


Image 7-26

2. Click **Link to preset** in the menu. 

Link to preset window is displayed and invite you to select a preset.

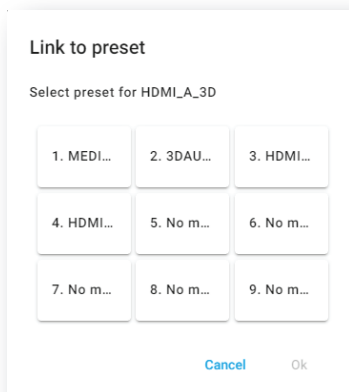


Image 7-27

3. Choose the desired preset button not already linked to a macro (e.g. 5) and confirm with **OK**. The macro is now associated with the chosen preset button.



Image 7-28

7.1.10 Removing a macro from preset buttons

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

How to unlink a macro from preset

1. While in *Configuration > Projector > Macros*, click on the macro you want to unlink from preset buttons.

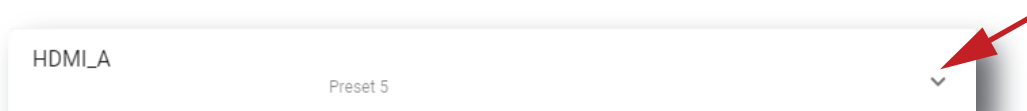


Image 7-29

The macro is displayed in its expanded form with menu.

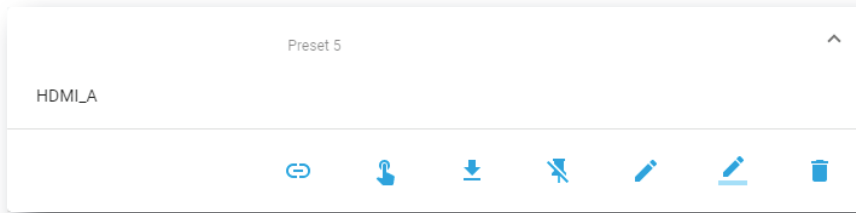


Image 7–30

2. Click **Unlink to preset** in the menu.



Macro is no longer associated with preset button (e.g. preset 2) and preset number is removed from the macro.



Image 7–31

7.1.11 Importing a macro

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

How to import an Input file

1. While in *Configuration > Projector > Macros*, click on the macros general menu (reference 1) located on the top right of the list.

The menu is displayed.

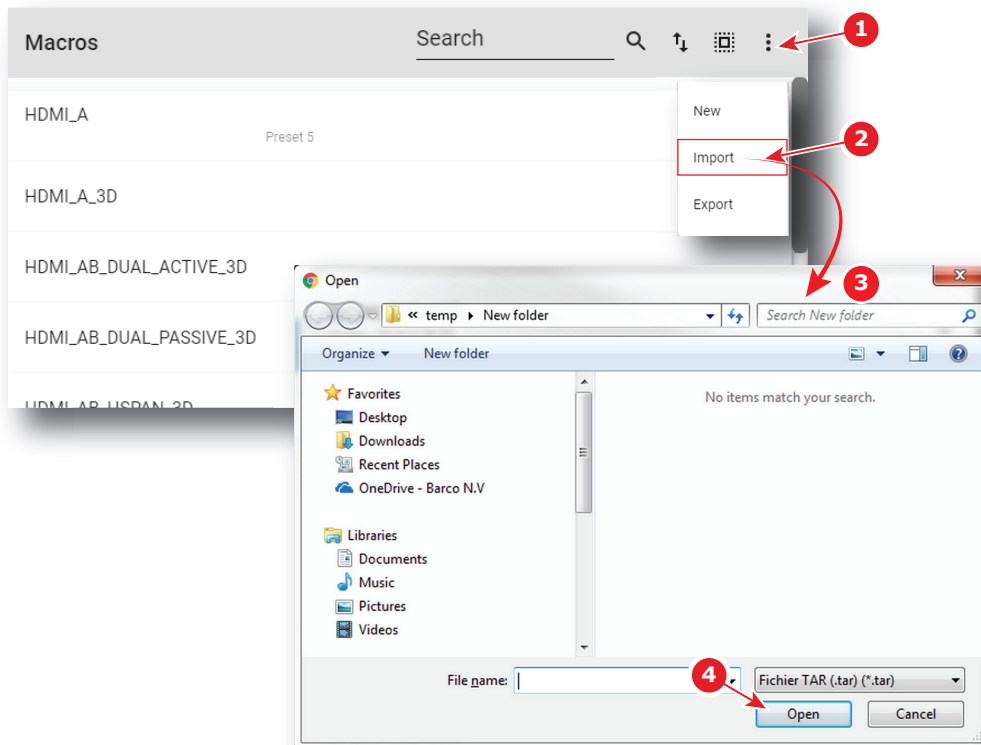


Image 7-32

2. Select **Import** (reference 2) in the menu.
Open window (reference 3) is displayed
3. Locate and select the macro.
4. Click **Open** (reference 4).
The macro is imported and added to the list.

7.1.12 Exporting a macro

Location & access

Menu: Configuration > Projector > Macro

Level: Administrator, Service technician

How to export a macro file

1. While in *Configuration > Projector > Macros*, click on the macro that you want to export.



Image 7-33

The macro is displayed in its expanded form with menu.

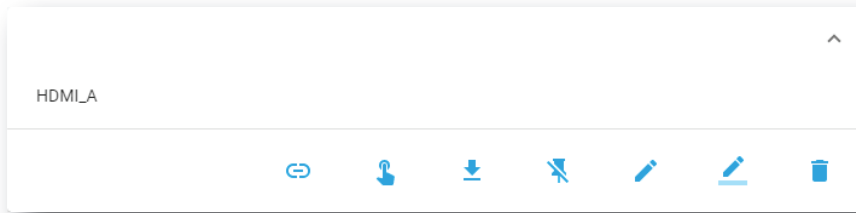



Image 7-34

2. Click **Export** in the menu. 

Download package window is displayed during backup package creation.

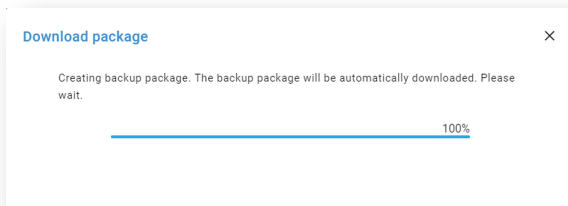


Image 7-35

3. When the backup package is created, it will automatically download to the default *Downloads* directory of your computer (e.g. *MACRO-backup-SP4K-15C-2590153431-2019-04-17T081744Z.tar*).

7.1.13 Exporting several macro files in a backup package

What is possible

Several macro files could be exported at once in a backup package.

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

How to create and export backup package of macro files

1. While in *Configuration > Projector > Macros*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the macro files in order to select/deselect the files you want to export.

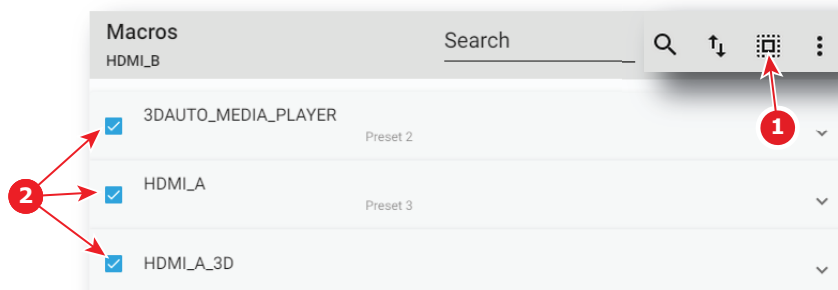


Image 7-36

2. Click on the macro file general menu (reference 3) located on the top right of the list. A menu is displayed.

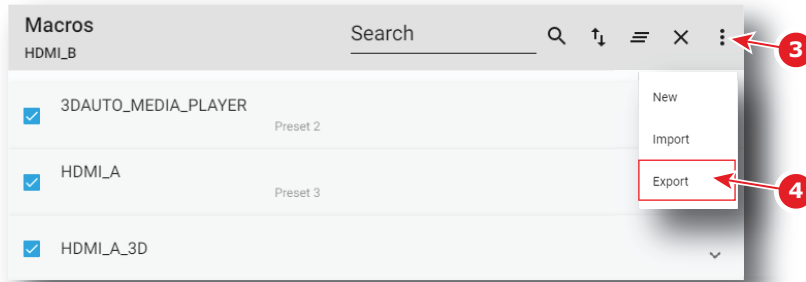


Image 7-37

3. Select **Export** (reference 4) in the menu.
Download package window is displayed during backup package creation.

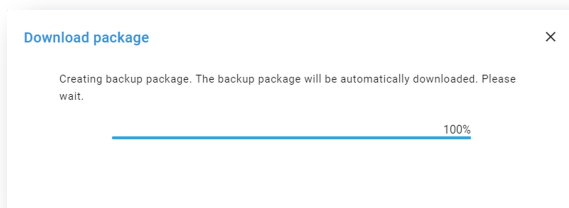


Image 7-38

4. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *MACRO-backup-SP4K-15C-2590153431-2019-04-17T081744Z.tar*).

7.1.14 Deleting a macro

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

How to delete a macro

1. While in *Configuration > Projector > Macros*, click on the macro you want to delete.



Image 7-39

The macro is displayed in its expanded form with menu.

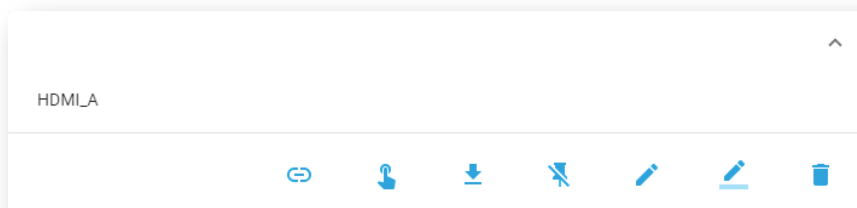


Image 7-40

- Click the **Delete** icon in the menu and confirm with **OK**.



The macro is removed from the list.

7.1.15 Deleting several macro files

What is possible

Several macro files could be deleted in a single action.

Location & access

Menu: Configuration > Projector > Macros

Level: Administrator, Service technician

How to delete several macro files

- While in *Configuration > Projector > Macros*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the macro files in order to select/deselect the files you want to delete.

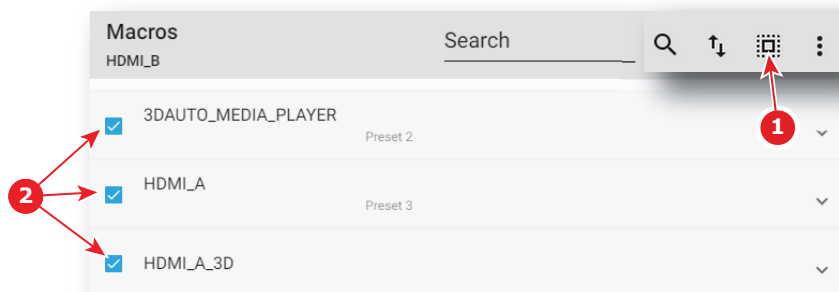


Image 7-41

- Click on the macro general menu located on the top right of the list, then select **Delete** and confirm with **OK**.

The macro files selected are definitively removed from the list.

7.2 PCF

7.2.1 About PCF

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

Overview

This panel allows to manage Projector Configuration Files (PCF). These files contain all data needed to display a certain movie as it is defined by the movie distributor. A batch of default files are installed on the projector during the initial setting with the clone package. Specific PCFs could be delivered with movies or imported manually.

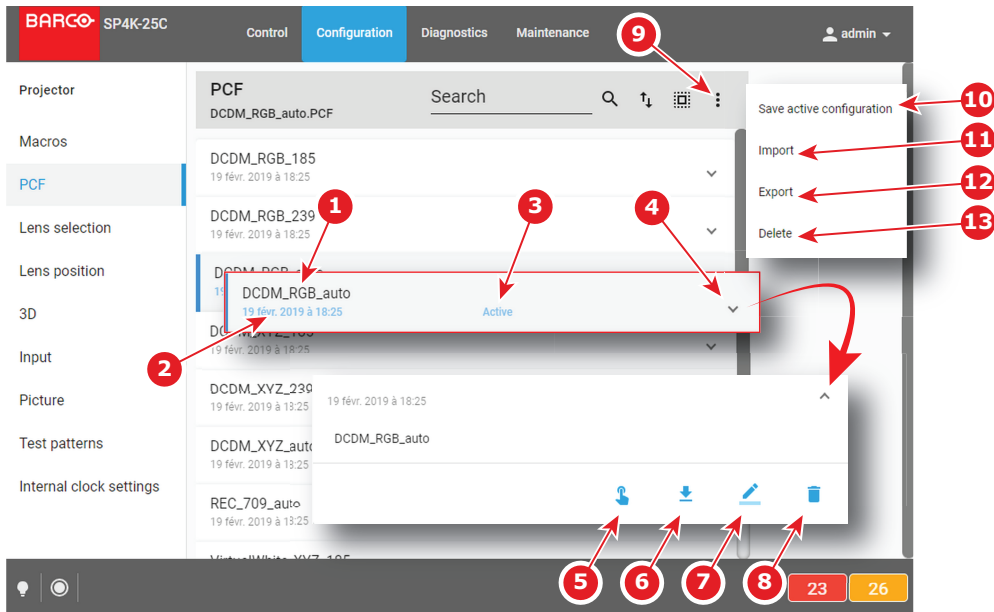


Image 7–42

Each PCF displayed here has a *name* (reference 1). Creation date (reference 2) of the PCF file is displayed just under its name. When a PCF is activated the status (reference 3) turns to *Active* and its name is noticed on top of the list.

Clicking on a PCF (reference 4) in this list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Activate** (reference 5) allows to activate the PCF.
- **Export** (reference 6) copies the .PCF file in the *Downloads* directory of your computer.
- **Rename** (reference 7) allows to modify the name of the PCF.
- **Delete** (reference 8) allows to remove the PCF from the list.

Clicking on menu (reference 9) displays the PCF general menu.

Following actions are available in this menu:

- **Save active configuration** (reference 10) allows to create a new PCF based on current configuration.
- **Import** (reference 11) allows to import a PCF alone (one single file), or a package of PCF (.tar) with several files inside.
- **Export** (reference 12) creates a downloadable backup package that contains all PCF selected in the list. then copies this package in the *Downloads* directory of your computer.
- **Delete** (reference 13) allows to remove several PCF selected in the list.

7.2.2 Creating a PCF with active configuration

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

How to create a PCF with active configuration

1. While in *Configuration > Projector > PCF*, click on the PCF general menu (reference 1) located on the top right of the list.
PCF menu is displayed.

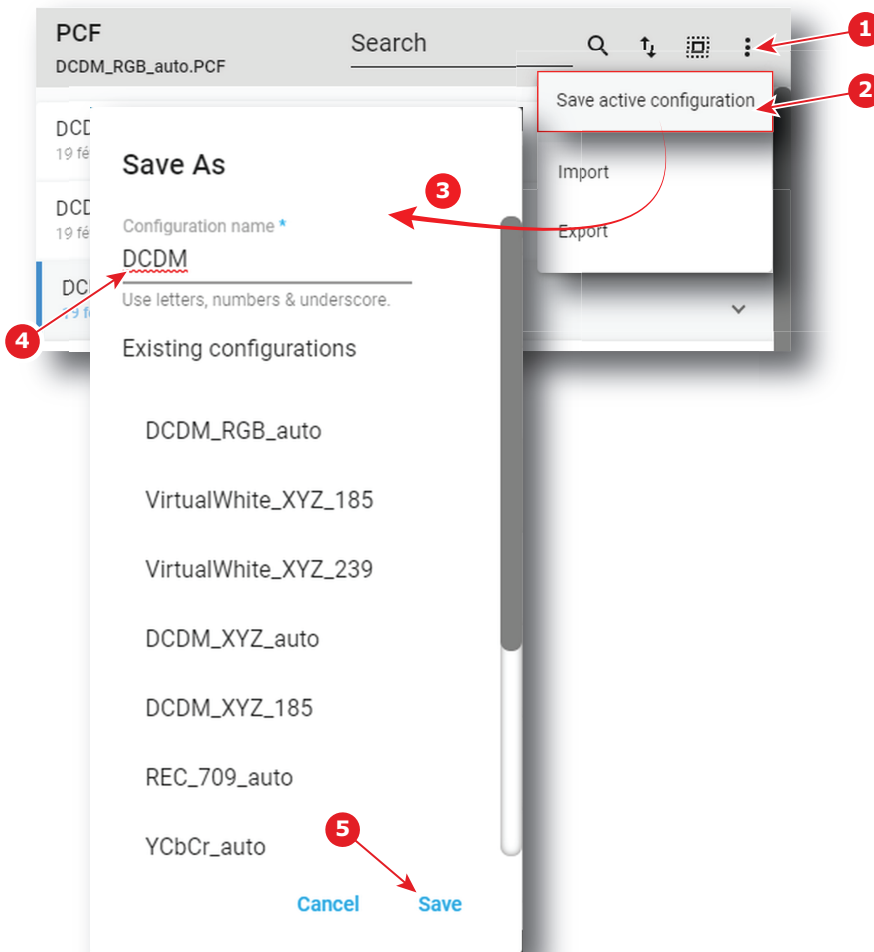


Image 7-43

2. Select **Save active configuration** (reference 2) in the menu.
Save As window (reference 3) is displayed
3. Enter a PCF file name (reference 4)
or
Select a name already existing in the list.
4. Click **Save** (reference 5).
PCF is created with current active configuration and added to the PCFs list.

7.2.3 Activating a PCF

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

What is possible

Usually a PCF file is activated via a macro but it is possible to directly activate a PCF by clicking on **Activate** in the contextual menu.

How to activate

1. While in *Configuration > Projector > PCF*, find and click on the PCF you want to activate.

The PCF is displayed in its expanded form with menu.

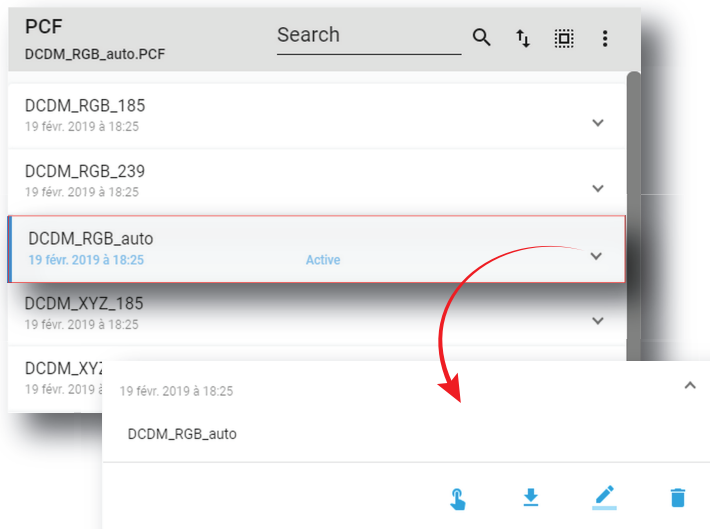


Image 7-44

2. Click **Activate** in the menu.



The new configuration is applied. Status of the PCF turns to *Active* and its name is noticed on top of the list.

7.2.4 Renaming a PCF

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

How to rename a PCF

1. While in *Configuration > Projector > PCF*, find and click on the PCF you want to rename.

The PCF is displayed in its expanded form with menu.

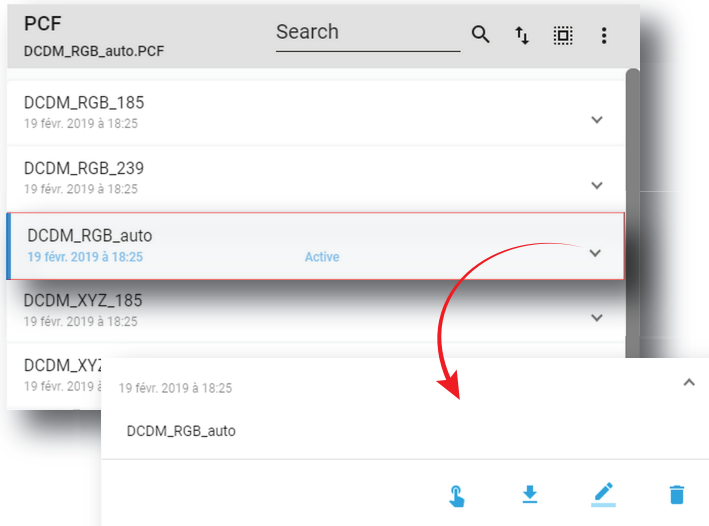



Image 7–45

- Click **Rename** in the menu. 
Rename window is displayed.

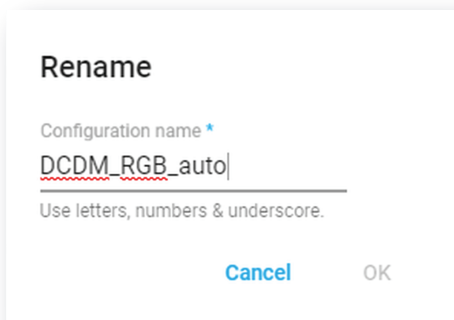


Image 7–46

- Enter a new *Configuration name* and click **OK**.

7.2.5 Importing a PCF

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

How to import a PCF

- While in *Configuration > Projector > PCF*, click on the PCF general menu (reference 1) located on the top right of the list.
PCF menu is displayed.

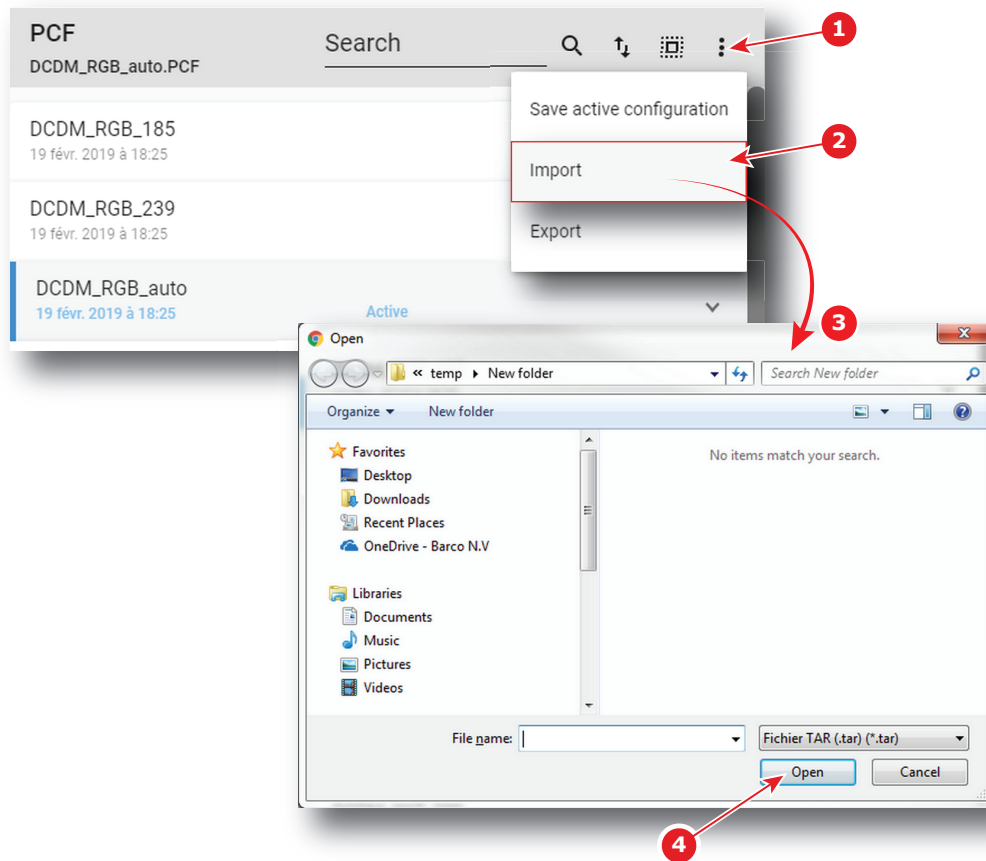


Image 7-47

2. Select **Import** (reference 2) in the menu.
Open window (reference 3) is displayed
3. Locate and select a single PCF file (.PCF) or a package of PCF files (.tar).
4. Click **Open** (reference 4).
Selected files are imported and added to the PCFs list.



If a file has the same name as a file already present, a confirmation will be required before overwriting.

7.2.6 Exporting a PCF

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

How to export a PCF

1. While in *Configuration > Projector > PCF*, find and click on the PCF you want to export.
The PCF is displayed in its expanded form with menu.

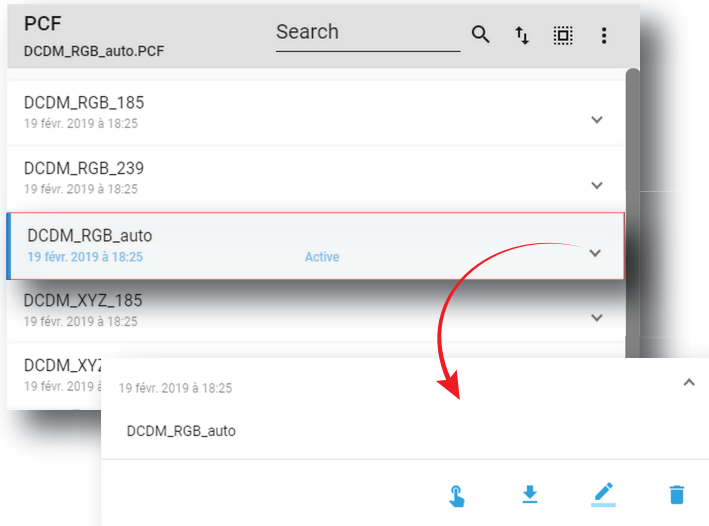


Image 7-48

2. Click **Export** in the menu. 

PCF file is created and automatically copied in the *Downloads* directory of your computer (e.g. *DCDM_RGB_auto.PCF*).

7.2.7 Exporting several PCF in a backup package

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

What is possible

Several PCF files could be exported at once in a backup package.

How to create and export backup package of PCF

1. While in *Configuration > Projector > PCF*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the PCF files in order to select/deselect the PCF files you want to export.

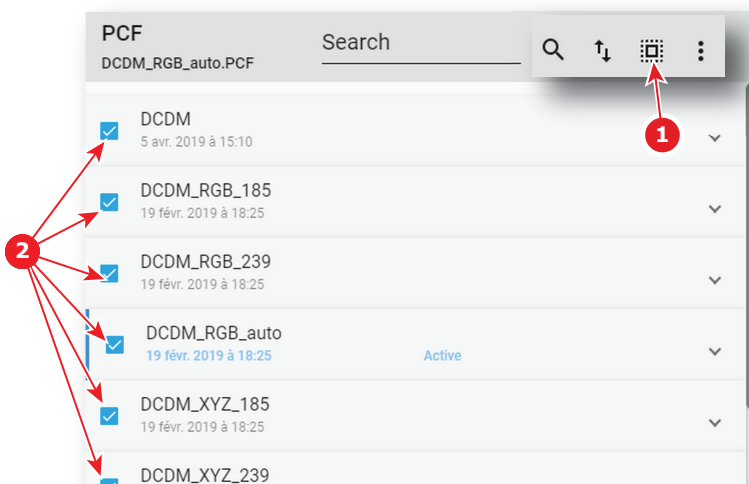


Image 7-49

2. Click on the PCF general menu (reference 3) located on the top right of the list.
PCF menu is displayed.

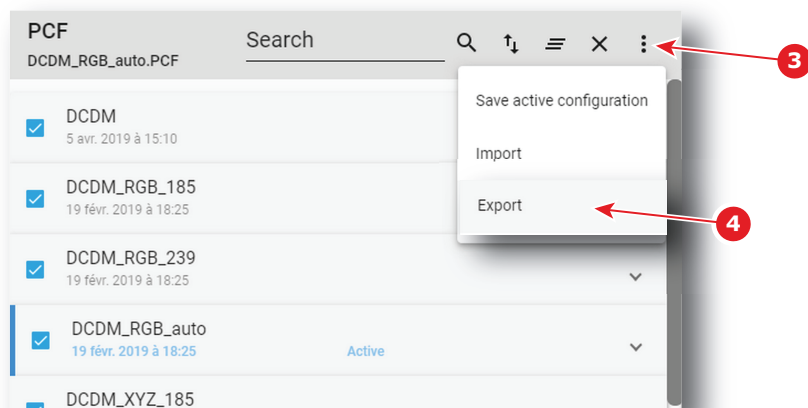


Image 7-50

3. Select **Export** (reference 4) in the menu.
Download package window is displayed during backup package creation.

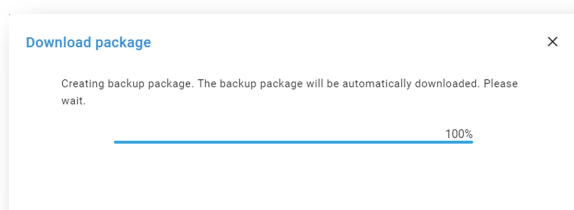


Image 7-51

4. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *pcf-backup-SP4K-15C-2590153431-2019-04-09T134843Z.tar*).

7.2.8 Deleting a PCF

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

How to delete a PCF

1. While in *Configuration > Projector > PCF*, find and click on the PCF you want to delete.
The PCF is displayed in its expanded form with menu.

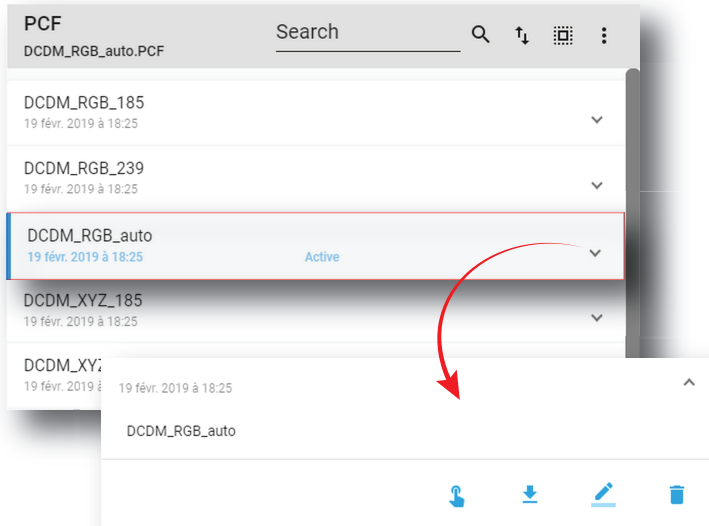



Image 7–52

2. Click **Delete** in the menu. 

A confirmation message appears.

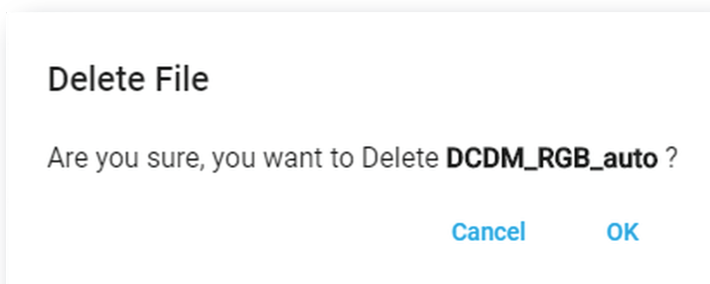


Image 7–53

3. Click **OK**.

File is removed from the list.

7.2.9 Deleting several PCF

Location & access

Menu: Configuration > Projector > PCF

Level: Administrator, Service technician

How to delete several PCF

1. While in *Configuration > Projector > PCF*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the PCF files in order to select/deselect the PCF files you want to delete.

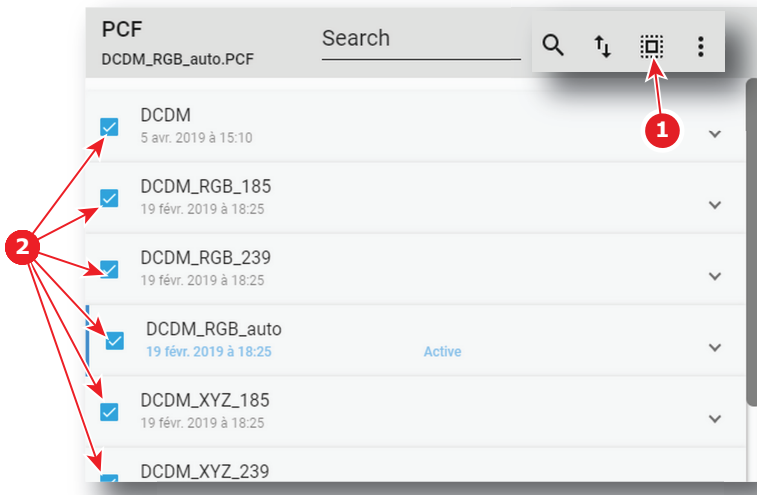


Image 7-54

2. Click on the PCF general menu located on the top right of the list, then select **Delete** and confirm with **OK**. The PCF files selected are definitively removed from the list.

7.3 Lens selection

7.3.1 About Lens selection

Location & access

Menu: Configuration > Projector > Lens selection

Level: Administrator, Service technician

Overview

This panel allows to select a lens type (in the list of lens types available for the projector) and execute lens calibration.

Each item in the list represents a lens type.

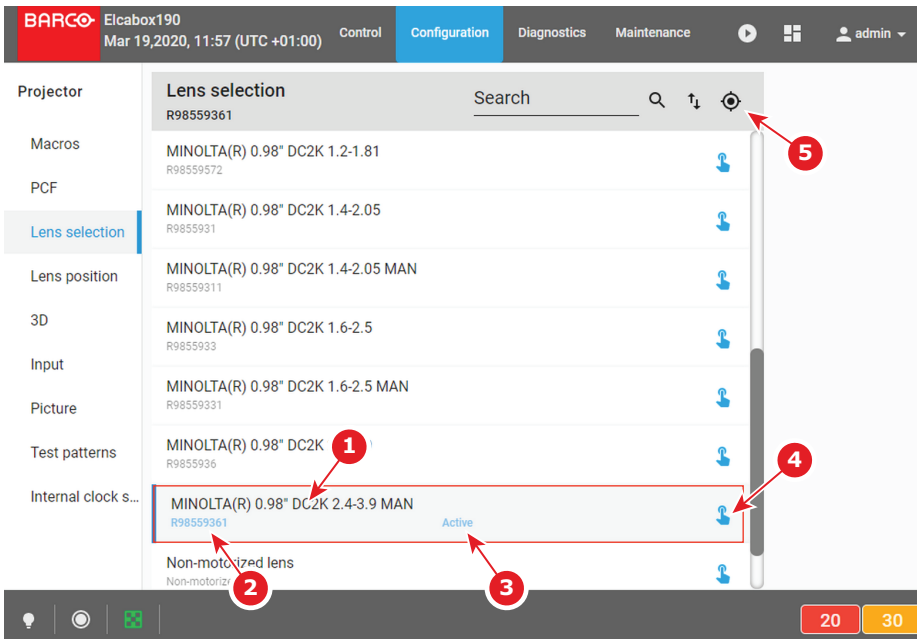


Image 7–55

Each item has a complete lens description (reference 1). Reference number (reference 2) of the lens is displayed just under this description. When a lens type is activated the status (reference 3) turns to *Active* and the reference number of the lens is noticed on top of the list.

Click **Active** (reference 4) allows to activate the lens type.

Click **calibrate** (reference 5) located on top of the list allows to display *calibrate* panel in order to realize a lens calibration or consult the calibration history (overview on the last performed calibration).

7.3.2 Activating a lens

Importance of activating the correct lens

Pay attention to selecting the correct lens mounted in the projector. Certain available lenses are focused by shifting the lens holder of the projector while other lenses are focused using the internal focus motor of the lens.

By activating the correct lens, the system will activate the correct focus adjustment process. Choosing an incorrect lens may lead to an unfocused picture or a misalignment of the lens holder.

Location & access

Menu: Configuration > Projector > Lens selection

Level: Administrator, Service technician

How to activate

1. While in *Configuration > Projector > Lens selection*, click on the activate icon located in the right corner of the desired lens type.

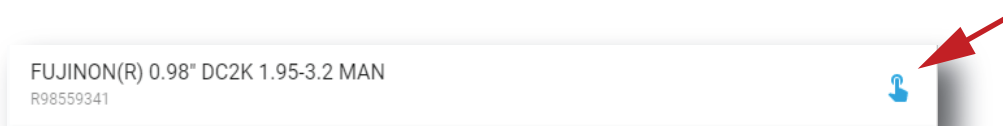


Image 7–56

The lens type is now activated :

- Reference number of the lens is noticed on top of the list (reference 1).
- Status (reference 2) turns to Active.

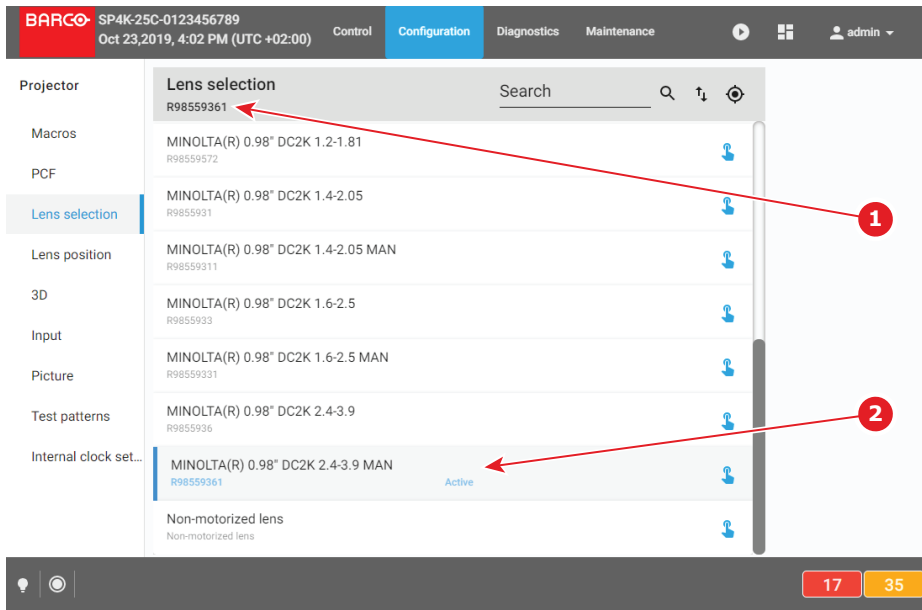


Image 7–57

2. The system will ask you to calibrate the lens and forward you to the calibration menu. For more info, see [“Calibrating a lens”, page 116](#).

7.3.3 Calibrating a lens

Location & access

Menu: Configuration > Projector > Lens selection

Level: Administrator, Service technician

About lens calibration

The lens calibration consists of moving the lens to a reference point and either returning it to the original position or to the mid position.

Each time a lens is inserted in a projector it is necessary to perform a lens calibration.

In case the projector has lost its original reference point for the lens, the projector will automatically perform a lens calibration at boot time.

Lens calibration history

The table on the top of the calibration panel gathers lens calibration information like time and date of the last performed calibration and the status of that calibration.

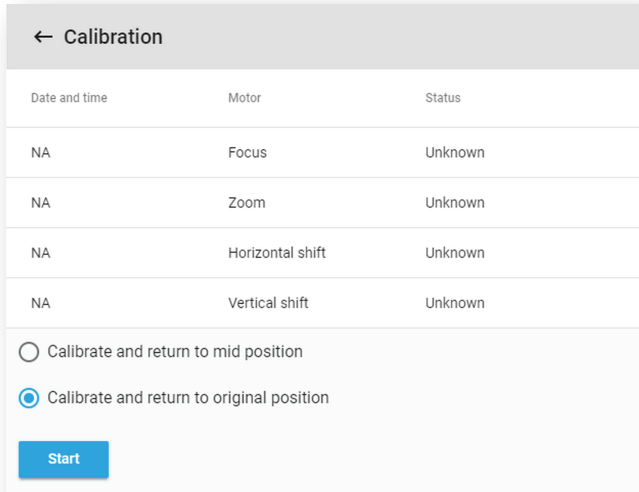


Image 7-58

How to calibrate a lens

1. While in *Configuration > Projector > Lens*, activate the desired lens.
2. Click on the **calibrate** icon located on top of the lens selection list.

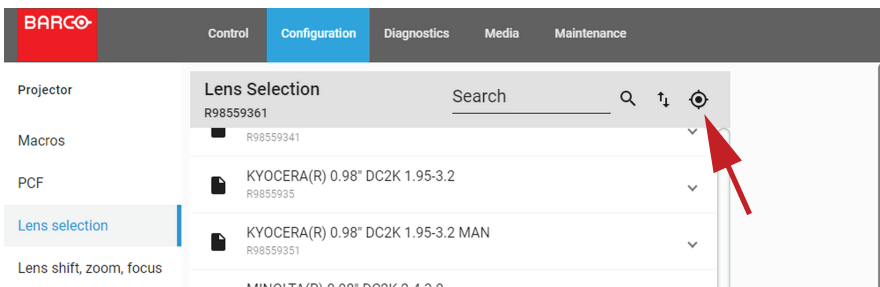


Image 7-59

The Calibration panel is displayed.

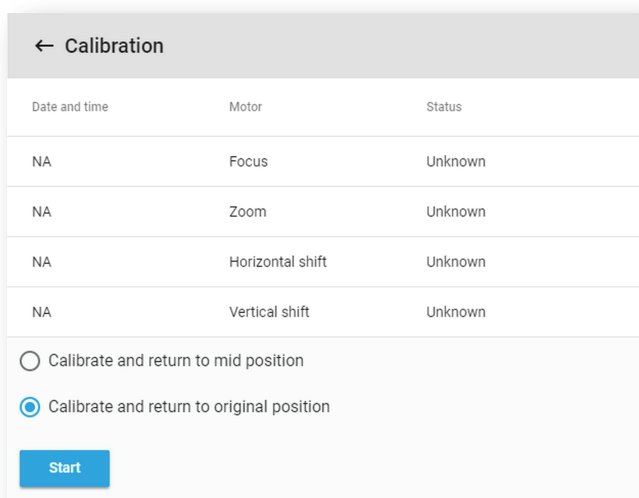


Image 7-60

3. Select one of the following calibration options:
 - *Calibrate and return to mid position* allows the lens to return to the middle position once the lens has reached the reference point.

- *Calibrate and return to original position* allows the lens to return to the position before the calibration once the lens has reached the reference point.

4. Click **Start**.

The calibration will start. A message will display the status of the calibration.

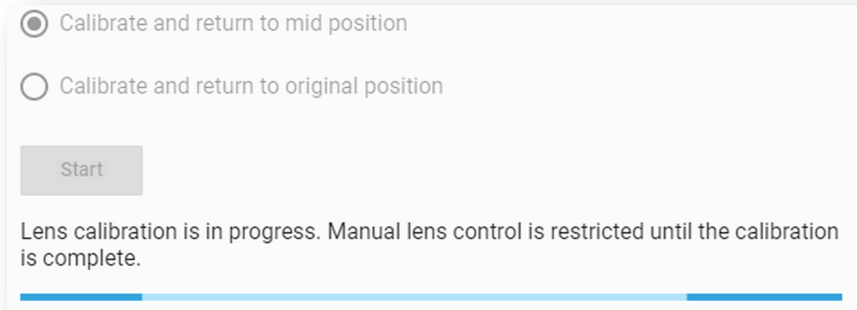


Image 7-61

5. After a while, the calibration will end and the page will automatically refresh.

The result of the calibration will be displayed in the calibration table (both failure and success).

7.4 Lens position

7.4.1 About Lens position

Location & access

Menu: Configuration > Projector > Lens position

Level: Administrator, Service technician

Overview

This panel allows to manage *lens position* files. These files contain zoom, shift and focus information. This files must be created during projector installation and apply before each ployout via a macro.

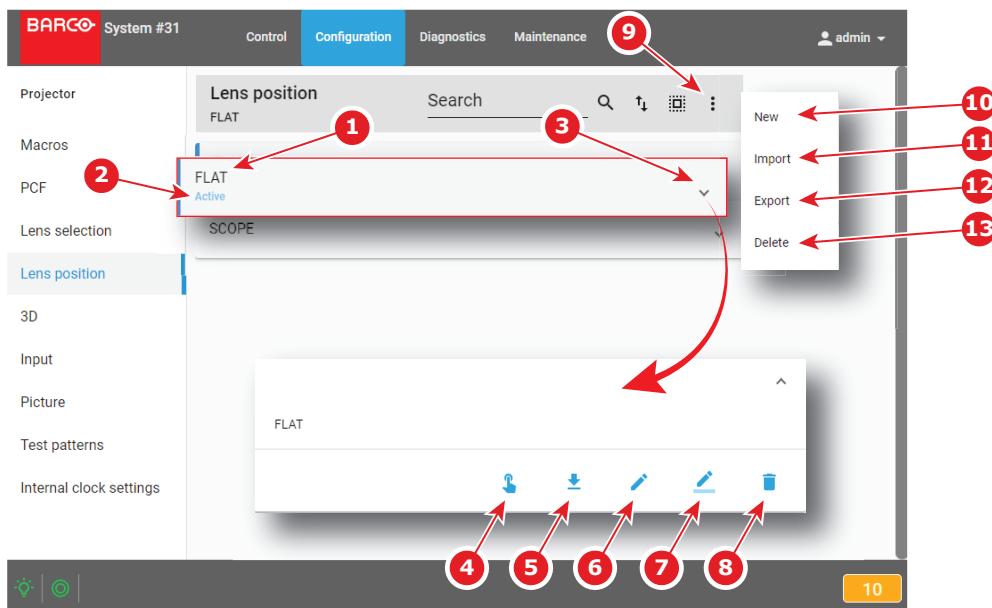


Image 7-62

Each *lens position* file displayed here has a *name* (reference 1). When a *lens position* file is activated the status (reference 2) turns to *Active* and its name is noticed on top of the list.

Clicking on a file (reference 3) in this list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Activate** (reference 4) allows to activate the *lens position* file.
- **Export** (reference 5) creates a downloadable backup package.
- **Edit** (reference 6) allows to modify the *lens position* file.
- **Rename** (reference 7) allows to rename the *lens position* file.
- **Delete** (reference 8) allows to remove the file from the list.

Clicking on menu (reference 7) displays the *lens position* general menu.

Following actions are available in this menu:

- **New** (reference 10) allows to create a new *lens position* file based on current configuration.
- **Import** (reference 11) allows to import *lens position* file.
- **Export** (reference 12) creates a downloadable backup package that contains all *lens position* files selected in the list.
- **Delete** (reference 13) allows to remove several *lens position* files selected in the list.



Click on the name of the active file located on the top of the list to open it directly in edit mode.

7.4.2 Creating a lens position file

Location & access

Menu: Configuration > Projector > Lens position

Level: Administrator, Service technician

How to create lens position file from an active configuration

1. While in *Configuration > Projector > Lens position*, click on the Lens position general menu (reference 1) located on the top right of the list.

Lens position menu is displayed.

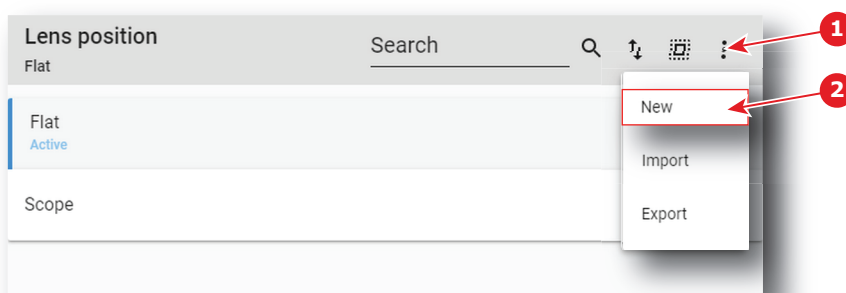


Image 7-63

2. Select **New** (reference 2) in the menu.

Lens control panel is displayed.

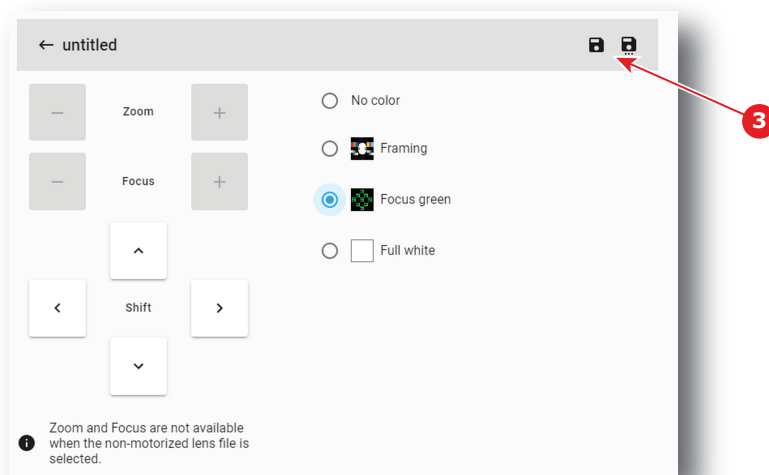



Image 7-64

3. Select a test Pattern (e.g. Focus green) and adjust lens settings (lens shift, focus and zoom) if needed. For more detail concerning lens settings in *lens control* panel, please see [“Light, dowser, lens”, page 71.](#)

 **Note:** Zoom and Focus are not available when the non-motorized lens file is selected.

4. Click **Save** (reference 3) to prompt the Save As window

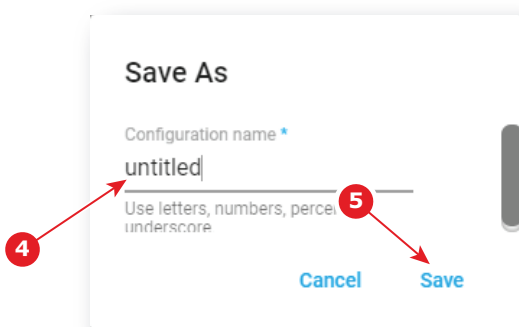


Image 7-65

5. Enter a lens position file name (reference 4)

or

if a list of names appears in the window, you can also select an existing name to overwrite.

6. Click **Save** (reference 5).

A lens position is created with current active configuration and added to the lens position list.

7.4.3 Editing a Lens position file

Location & access

Menu: Configuration > Projector > Lens position

Level: Administrator, Service technician

How to edit

1. While in Configuration > Projector > Lens position, find and click on the lens position file you want to activate.

The lens position file is displayed in its expanded form with menu.

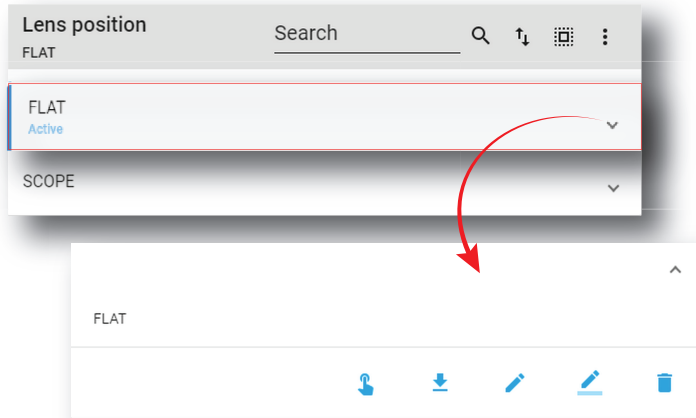



Image 7-66

2. Click **Edit** in the menu. 

Lens control panel is displayed.

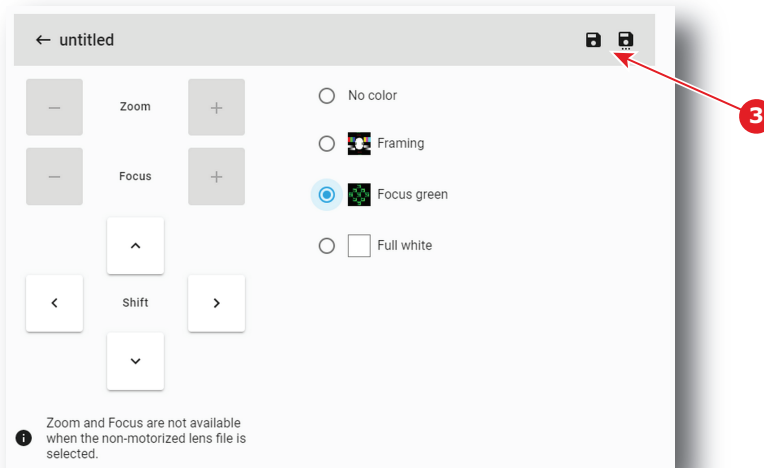



Image 7-67

3. Select a test Pattern (e.g. Focus green) and adjust lens settings (lens shift, focus and zoom) if needed. For more detail concerning lens settings in *lens control* panel, please see [“Light, dowser, lens”, page 71](#).

 *Note:* Zoom and Focus are not available when the non-motorized lens file is selected.

4. Click **Save** (reference 3).

7.4.4 Activating a lens position file

What is possible

Usually a lens position file is activated via a macro but it is possible to directly activate it by clicking on **Activate** in the contextual menu.

How to activate

1. While in Configuration > Projector > Lens position, find and click on the lens position file you want to activate.

The lens position file is displayed in its expanded form with menu.

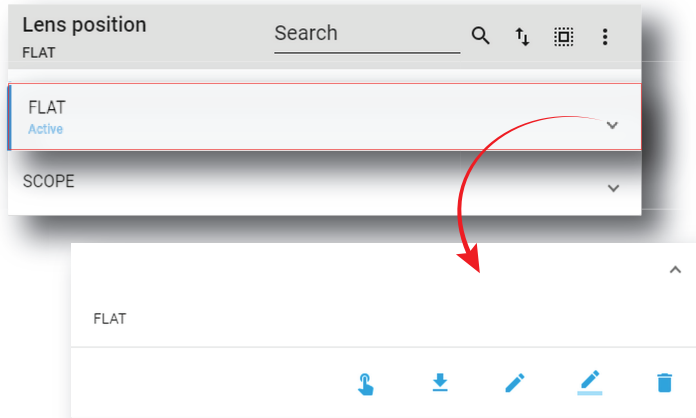



Image 7-68

2. Click **Activate** in the menu. 

The new configuration is applied. Status of the lens position file turns to *Active* and its name is noticed on top of the list.

 Click on the name of the active file located on the top of the list to open it directly in edit mode.

7.4.5 Renaming a lens position file

How to rename

1. While in *Configuration > Projector > 3D*, find and click on the 3D file you want to rename.

The 3D file is displayed in its expanded form with menu.

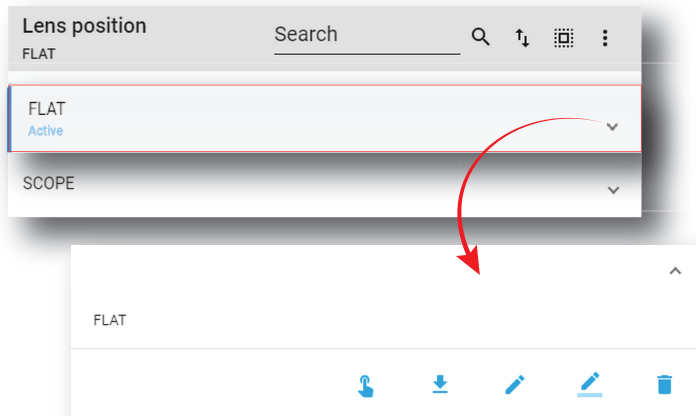


Image 7-69

2. Click the **Rename** icon. 

The *Rename* window is prompted.

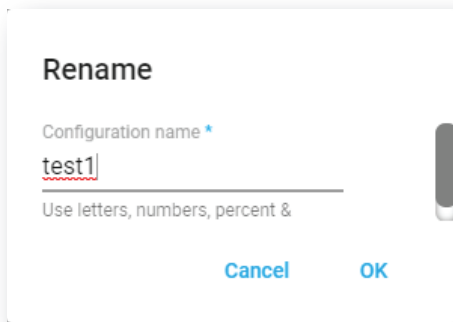


Image 7-70

3. Enter a new name and confirm with **OK**.

7.4.6 Importing a Lens position file

Location & access

Menu: Configuration > Projector > Lens position

Level: Administrator, Service technician

How to import a Lens position file

1. While in *Configuration > Projector > Lens position*, click on the Lens position general menu (reference 1) located on the top right of the list.

Lens position menu is displayed.

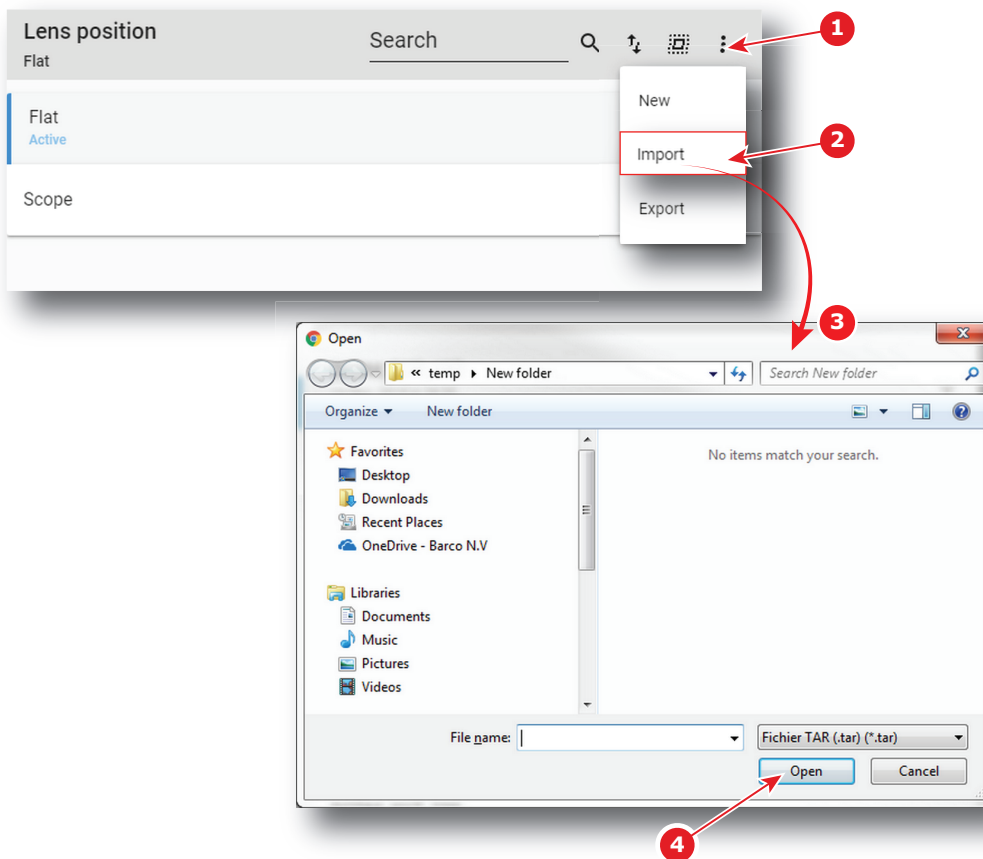


Image 7-71

2. Select **Import** (reference 2) in the menu.

Open window (reference 3) is displayed

3. Locate and select the lens position file.
4. Click **Open** (reference 4).

Lens position is imported and added to the lens positions list.

7.4.7 Exporting a Lens position file

Location & access

Menu: Configuration > Projector > Lens position

Level: Administrator, Service technician

How to export lens position file

1. While in *Configuration > Projector > Lens position*, find and click on the lens position file you want to export.

The lens position file is displayed in its expanded form with menu.

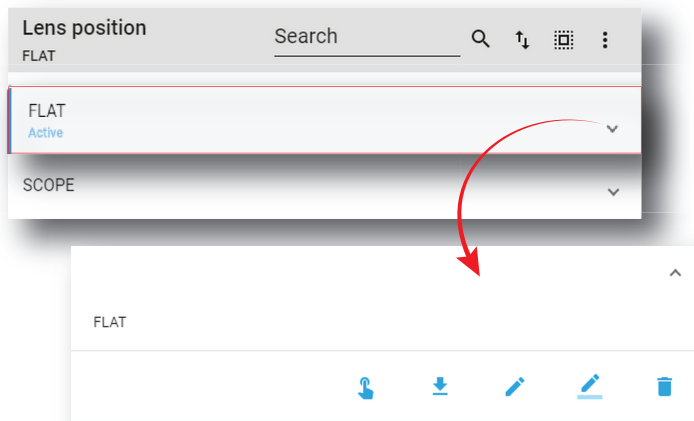


Image 7-72

2. Click **Export** in the menu. 

Download package window is displayed during backup package creation.

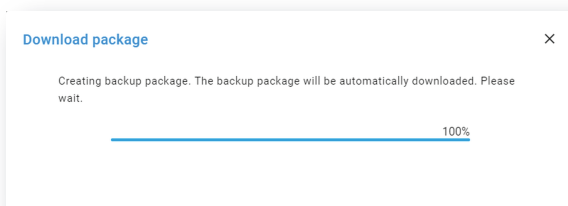


Image 7-73

3. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *OPTICS-backup-SP4K-15C-2590153431-2019-04-09T142045Z.tar*).

7.4.8 Exporting several lens position files in a backup package

Location & access

Menu: Configuration > Projector > Lens position

Level: Administrator, Service technician

What is possible

Several lens position files could be exported at once in a backup package.

How to create and export backup package of lens position file

1. While in *Configuration > Projector > Lens position*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the lens position files in order to select/deselect the files you want to export.

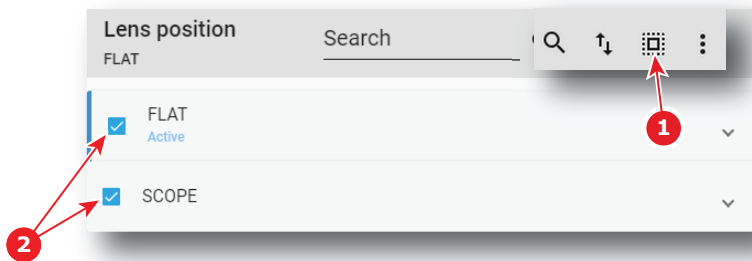


Image 7-74

2. Click on the lens position general menu (reference 3) located on the top right of the list. Lens position menu is displayed.

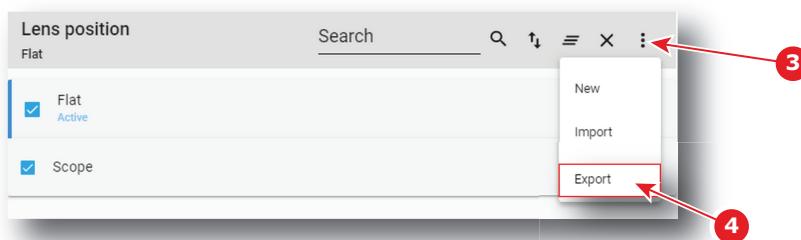


Image 7-75

3. Select **Export** (reference 4) in the menu. *Download package* window is displayed during backup package creation.

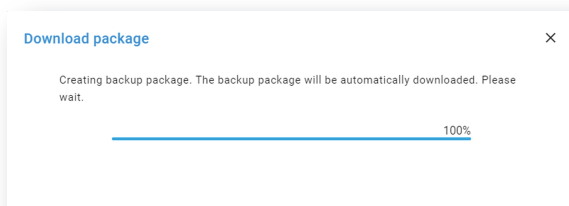


Image 7-76

4. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *OPTICS-backup-SP4K-15C-2590153431-2019-04-09T142045Z.tar*).

7.4.9 Deleting a Lens position file

Location & access

Menu: Configuration > Projector > Lens position

Level: Administrator, Service technician

How to delete a Lens position

1. While in *Configuration > Projector > Lens position*, find and click on the lens position file you want to delete.

The lens position file is displayed in its expanded form with menu.

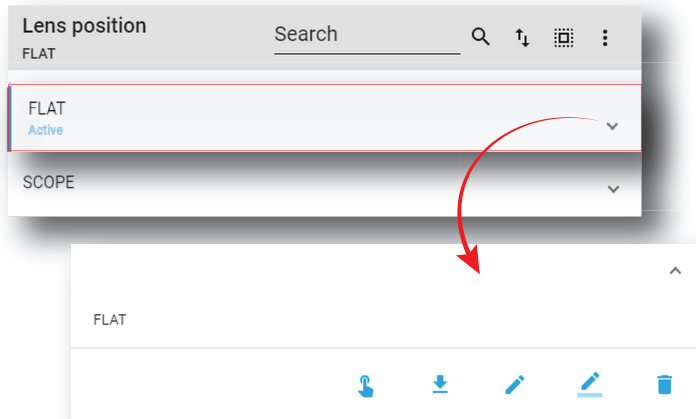


Image 7-77

2. Click the **Delete** icon and confirm with **OK**.



The Lens position file is removed from the list.

7.4.10 Deleting several Lens position file

Location & access

Menu: Configuration > Projector > Lens position

Level: Administrator, Service technician

How to delete several Lens position files

1. While in *Configuration > Projector > Lens position*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the lens position files in order to select/deselect the files you want to delete.

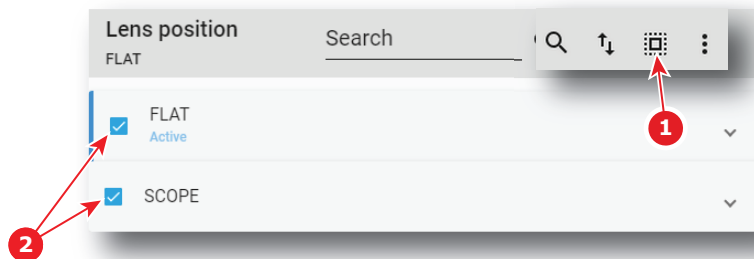


Image 7-78

2. Click on the lens position general menu located on the top right of the list, then select **Delete** and confirm with **OK**.

The lens position files selected are definitively removed from the list.

7.5 3D

7.5.1 About 3D file

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

Overview

This panel allows to manage 3D Configuration Files. These files contain all data needed to display 3D movies according 3D system. A batch of default files are installed on the projector during the initial setting with the clone package. Specific 3D files could be imported manually. 3D files must be adapted according to the 3D system used. Please refer to the 3D system manual to obtain correct settings.

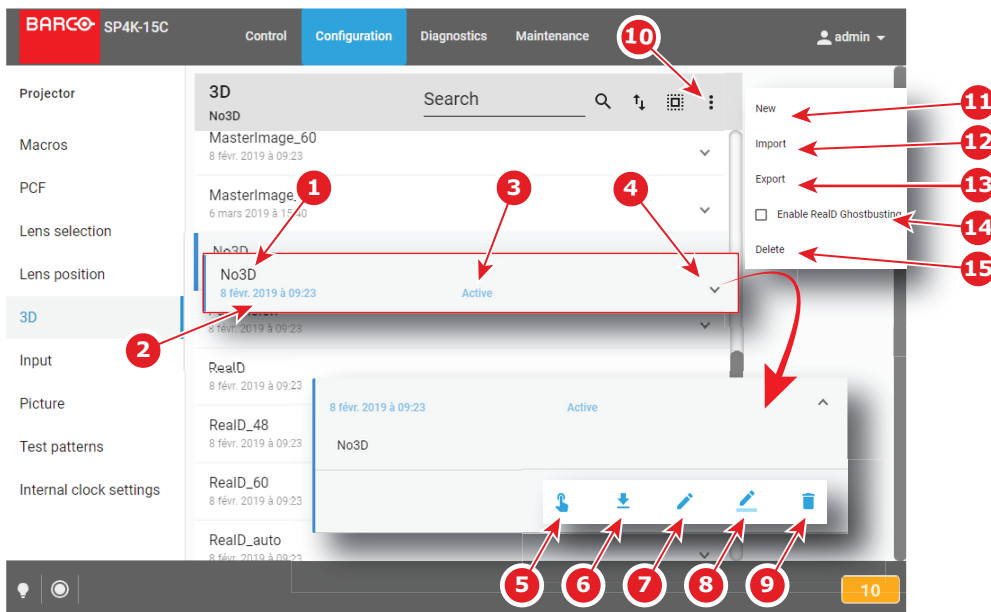


Image 7-79

Each 3D file displayed here has a *name* (reference 1). Creation date (reference 2) of the 3D file is displayed just under its name. When a 3D file is activated the status (reference 3) turns to *Active* and its name is noticed on top of the list.

Clicking on a 3D file (reference 4) in this list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Activate** (reference 5) allows to activate the 3D file.
- **Export** (reference 6) creates a downloadable backup package.
- **Edit** (reference 7) allows to modify the 3D file.
- **Rename** (reference 8) allows to rename the 3D file.
- **Delete** (reference 9) allows to remove the 3D file from the list.

Clicking on menu (reference 10) displays the 3D file general menu.

Following actions are available in this menu:

- **New** (reference 11) allows to create 3D configuration files.
- **Import** (reference 12) allows to import 3D files.
- **Export** (reference 13) creates a downloadable backup package that contains all 3D files selected in the list.
- When the ICMP has a valid RealD license installed, switched on (or switched off) the check box **Enable RealD Ghostbusting** (reference 14) allows to activate (or deactivate) the *RealD Ghostbusting* algorithm. This algorithm allow to reduce the 3D crosstalk during play-out (also known as ghosting).

- **Delete** (reference 15) allows to remove several 3D files selected in the list.



Click on the name of the active file located on the top of the list to open it directly in edit mode.

Management of 3D Files

Until now a 3D configuration file contained data needed to display a 3D movie with a specific frame rate. And it was necessary to repeat the creation process for each frame rate multiplication (24, 48, 60).

From version 1.2 or higher, it is still possible to work this way but this is no longer the normal process. The creation and management of 3D configuration files has been slightly modified.

Now, during creation process, it is no longer one file that is added to the 3D file list but four: a first file with the common parameters (_auto) and three additional files with the parameters dedicated to the different frame rates (24, 48, 60).

These files could be edited separately but system takes care to maintain consistency between files. By example, if user change L/R Input Reference of one file (e.g. RealD_48), that settings will be saved. But, while editing the RealD_auto file, a setting mismatch warning will be displayed on GUI (reference 1).

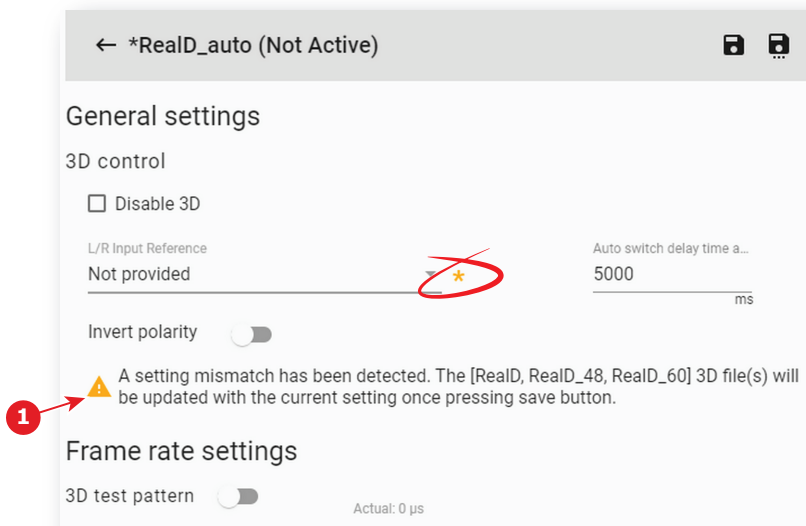


Image 7-80

When the user will save this file (RealD_auto), the settings mismatch will be solved by applying the same settings on all related files (RealD_auto, RealD, RealD_48, RealD_60).

7.5.2 Creating a 3D file

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

How to create 3D file

1. While in *Configuration > Projector > 3D*, click on the 3D file general menu (reference 1) located on the top right of the list.

The menu is displayed.

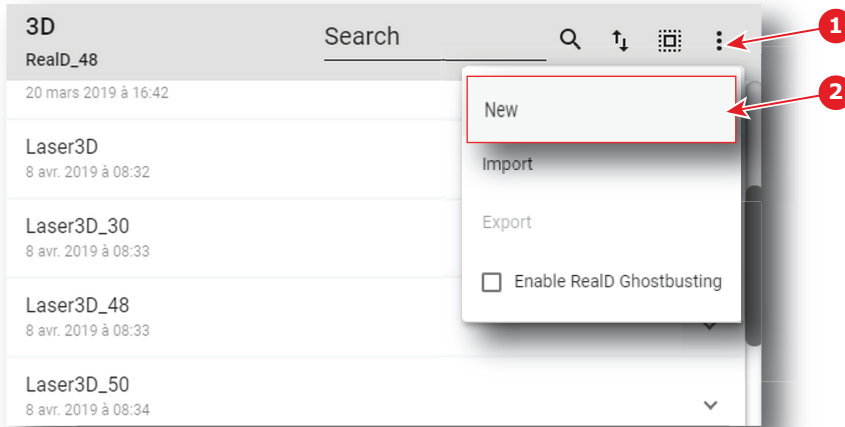


Image 7–81

2. Select **New** (reference 2) in the menu.
3D file editor is displayed with a new (untitled) 3D file.

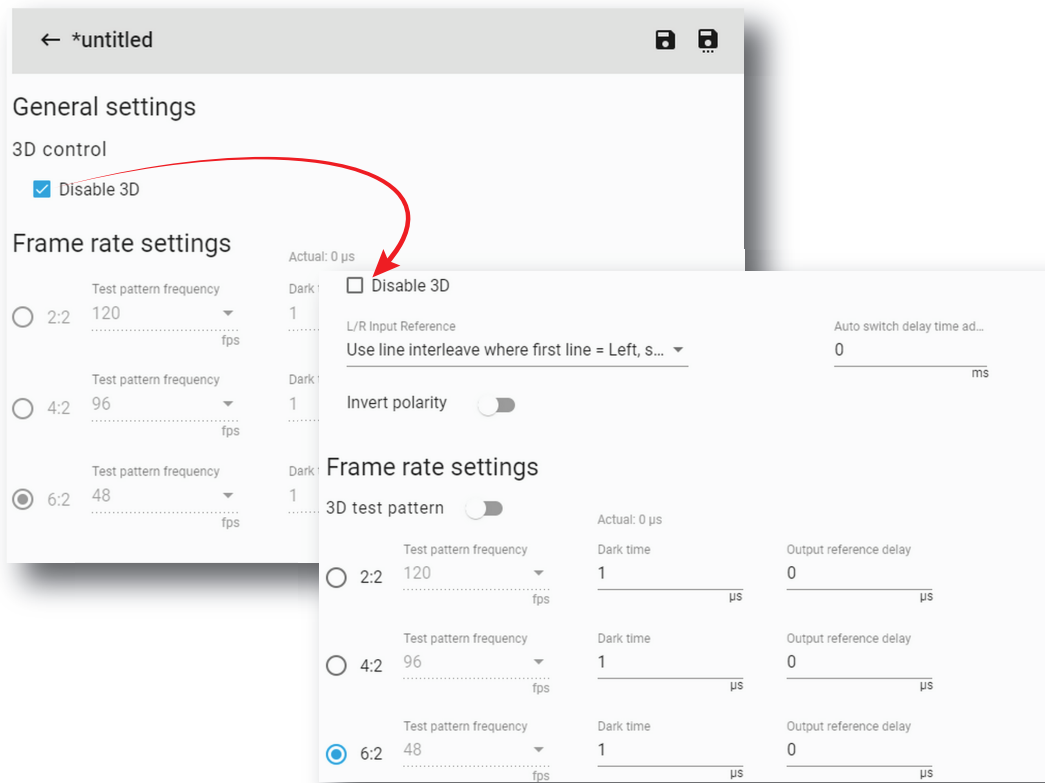


Image 7–82

3. Fill the 3D file parameters. From version 1.2 or higher, uncheck option *Disable 3D* allows to simultaneously create several 3D files with same name but dedicated to different frame rates (Auto, 2:2, 4:2, 6:2).

For more information about the 3D file editor, see “3D file editor”, page 130.

4. Click **Save As** (reference 3) to display the *Save As* window.

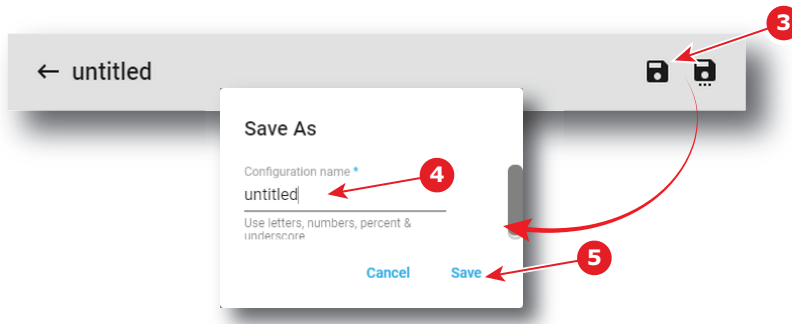




Image 7–83

5. Enter a name (reference 4).

 **Note:** List of files already available in the projector is displayed in this window. Directly click on this list allows you to reuse all or part of an already existing file name.

6. Click **save** (reference 5).

 **Note:** If the name enter in the previous step already exists, a warning is displayed. Click **Overwrite** to confirm and replace the existing the file.

From version 1.2 or higher, number of files created and added to the 3D files list is different if *Disable 3D* option is checked or not:

- if *Disable 3D* option is checked, one new file with name defined in step 5 is added to the 3D files list.
- if *Disable 3D* option is unchecked, 4 files are added to the 3D files list with names based on the name defined in step 5 and a suffix relative to different frame rates available (e.g. RealID, RealID_48, RealID_60 and RealID_auto).

For more information about the *3D file* management, see [“About 3D file”, page 127](#).

7.5.3 3D file editor

About this chapter

This chapter contains all the necessary information to use 3D file editor, the Web Communicator page used to create or modify 3D files.

7.5.3.1 3D Test pattern

What can be done?

With the 3D test pattern, it is possible to test the complete setup in combination with an external polarizer system, or active polarity glasses. The output frequency of the test pattern can be entered so that the simulation of the input signal is completely covered for the used polarizer system or polarity glasses.



Image 7–84 3D test pattern

- 1 Left eye (Green field with white L)
- 2 Right eye (Magenta field)

The left or the right eye pattern will be displayed alternatively. When e.g. the left pattern (indicated with L) is displayed, only the left eye may see this image. When it is not so, the setup is wrong and should be corrected.

Entering the output frequency

1. While in *3D file editor*, check if *Disable 3D* option (reference 1) is unchecked in order to accessed the settings.

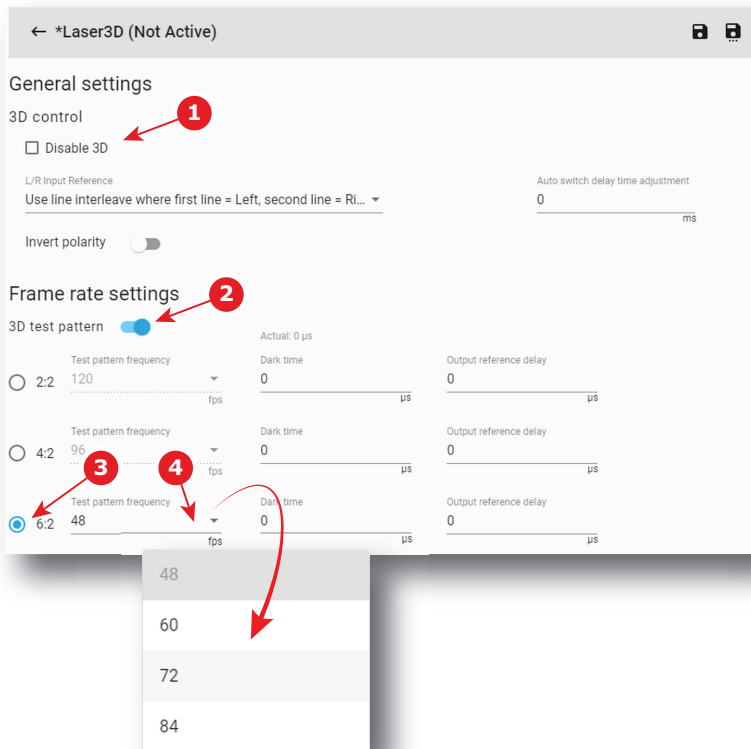


Image 7–85

2. Activate 3D test pattern (reference 2).
3. Select the playback frame rate (reference 3) for which the settings will be apply.
4. Select a new test pattern output frequency in drop down list (reference 4).
5. If necessary, repeat steps 3 and 4 at other playback frame rates.

7.5.3.2 3D control

L/R Input Reference

The Input Reference indicates which frame is Right and which frame is Left.

The following choices are possible:

Setting	Description
None Provided	no 3D L/R input reference provided
Use input reference - frame sequence mode (polarity = true)	Use Active data port assignment (for dual port sources) to determine 3D L/R input reference.
Use line interleave where first line = left, second line = right	Uses the default assignment for 3D L/R reference.

How to adjust 3D control parameters

1. While in *3D file editor*, switch off **Disable 3D** (reference 1) to activate 3D control.

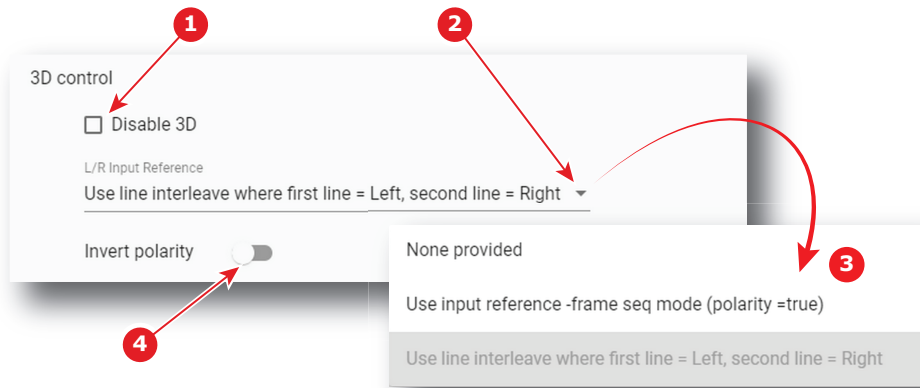


Image 7–86

2. Select the L/R Input Reference. Click on drop down list (reference 2) to display the menu (reference 3), then select the desired value.
3. Select switch on

7.5.3.3 Dark time adjustment

Dark Time Adjustment

Between switching the frames the image needs to be black the same time the external devices need to switch (external devices can be 3D Glasses, or polarizing filter).

For 3D applications, systems typically need a period of time where the image projected on the screen is black. This black or “dark time” is used to switch the mechanism that controls what a viewers left eye and right eye sees. This software command is used to adjust the projector dark time to meet the requirements of whatever switching mechanism is being used.

3D dark time adjustment will be disabled (set to 0) whenever 3D is disabled. With 3D enabled and 3D dark time adjustment disabled, the projector will be set to its default dark time of approximately 388 μ s. There is no dark time when 3D is disabled.

The system will have a minimum and maximum dark time that can be achieved. If the specified value is smaller than the system can provide, the dark time will be set to the systems minimum value, which will be reported as the actual dark time value. If the specified value is larger than the system can provide, the dark time will be set to the systems maximum value, which will be reported as the actual dark time value.

For 3D applications, systems typically need a period of time where the image projected on the screen is black. This black or “dark time” is used to switch the mechanism that controls what a viewers left eye and right eye sees. For most 3D applications, the system will provide an output reference signal that indicates whether left or right eye data is being displayed, as well as the start of dark time. This signal is the 3D L/R Output Reference.

How to adjust

1. While in *3D file editor*, check if *Disable 3D* option (reference 1) is unchecked in order to acceded the settings.

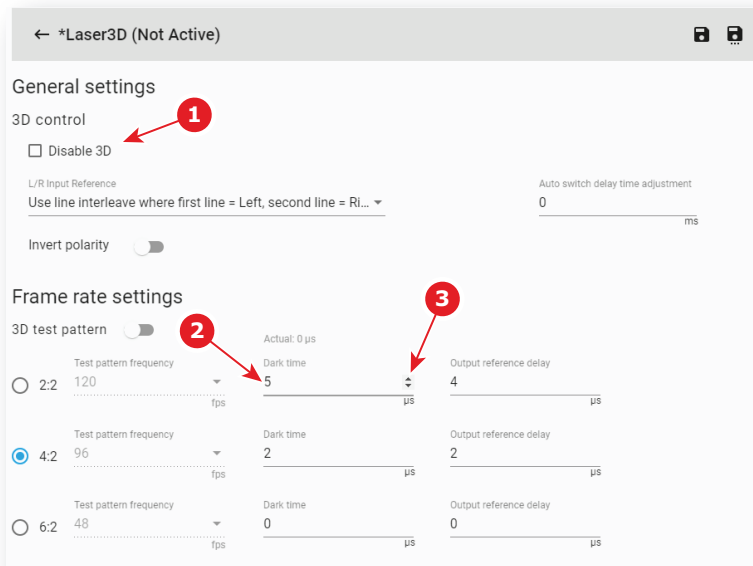


Image 7–87

- Identify the playback frame rate (2:2, 4:2, 6:2) for which the settings will be apply, then enter a dark time adjustment value in μs with the keyboard (e.g. reference 2).

or

Use the plus button or minus button (reference 3) to adjust the value (+/- 1 μs).

- If necessary, repeat previous step at other playback frame rates.

7.5.3.4 Output Reference Delay

Output Reference Delay

The output reference delay shifts the output reference signal. That results in the best 3D viewing with the least possible crosstalk between eyes.

Delay value from Delay – Time is added to the nominal timing between the displayed dark time and the 3D L/R Output Reference.

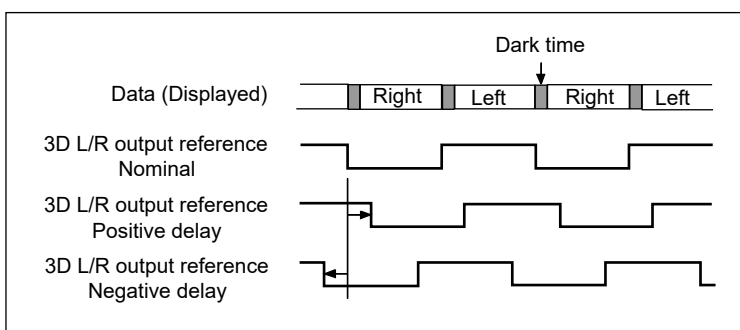


Image 7–88 Delay example for 3D L/R Output Reference



If you require corrective lenses to see a cinema screen clearly, be sure you have them available.

How to adjust the reference delay

- Start the synchronization delay test clip related to playback frame rate for which the settings will be apply, or select appropriate 3D test pattern in *Control > Projector > Test Patterns* first.
- While in 3D file editor, check if *Disable 3D* option (reference 1) is unchecked in order to acceded the settings.

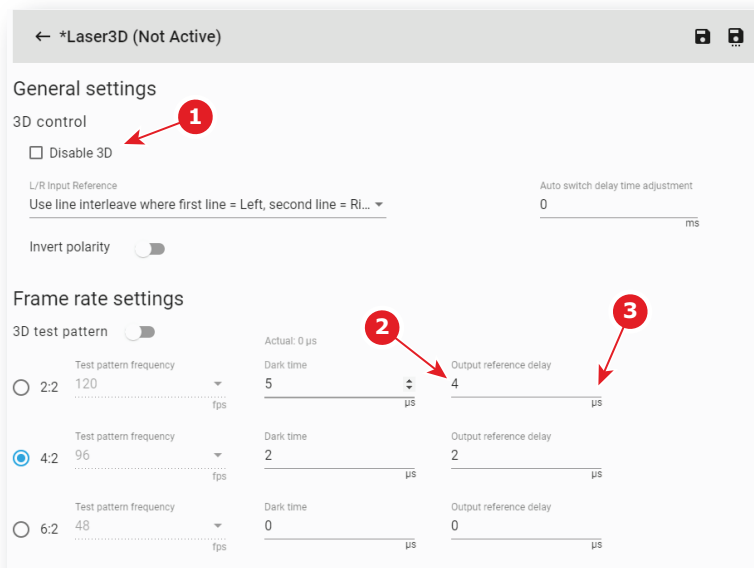



Image 7–89

- Put on the glasses and view the screen, covering or closing first one eye and then the other.

 *Note:* Do not adjust the reference delay value with both eyes open.

- Start e.g. the adjustment with the left eye,
Enter a delay value in µs with the keyboard (reference 2).

or

use the plus button or minus button (reference 3) to adjust the delay (+/- 1 µs) until the white stripes disappear in the black column.

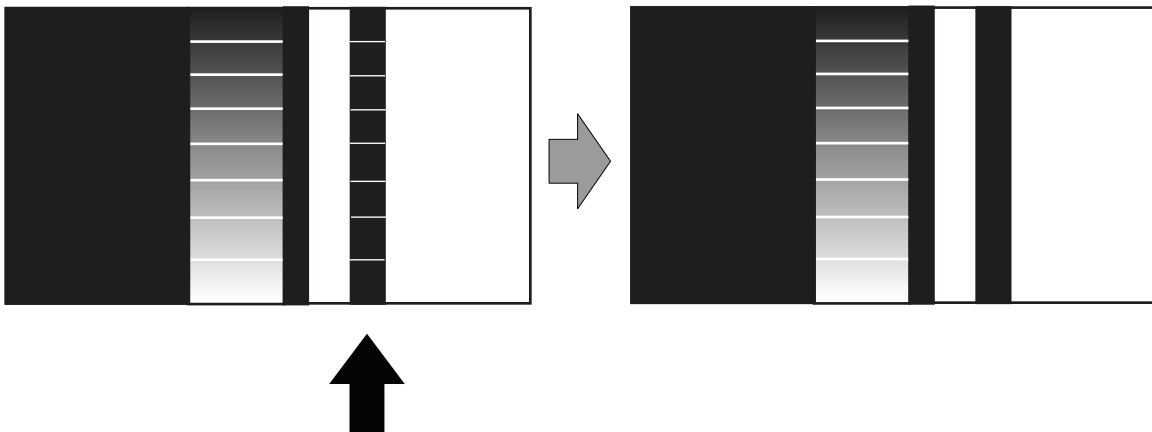


Image 7–90 Left eye delay test content

- Continue with the right eye and adjust the delay again.

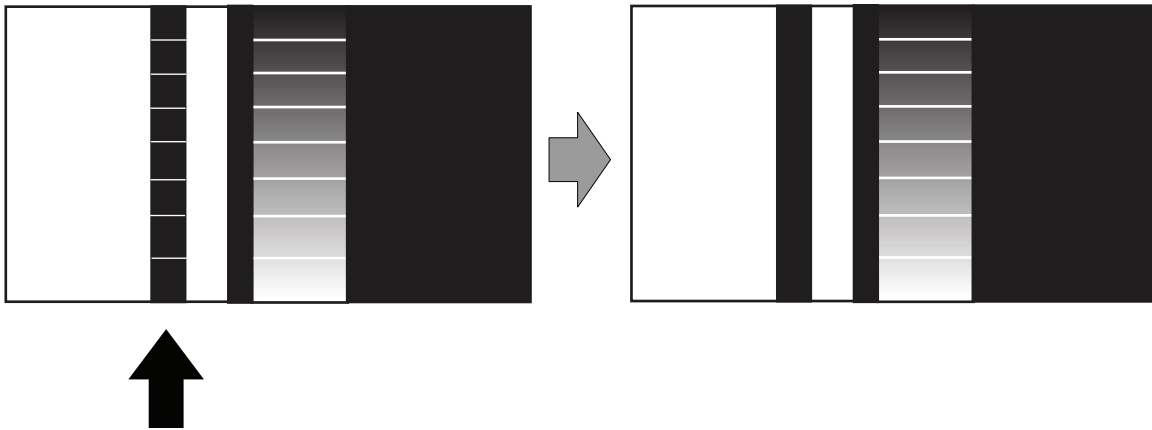


Image 7-91 Right eye delay test content

6. When the left and right eye image appear superimposed the Reference delay is not correctly optimized. Repeat the procedure.
7. If necessary, repeat all the procedure at other playback frame rates.

7.5.3.5 Auto switch delay time adjustment

Auto switch delay time

When playing a 3D contents, the ICMP and ICP-D can automatically detect the frame rate of the played content and configure the frame rate multiplier accordingly.

That feature simplifies the show creation by allowing the exhibitor to use a single macro whatever the frame rate of the content (additional macro to handle the content's aspect ratio differences are still needed).

This Auto adjustment can be activated by using the *name_auto.3D* in the Macro.

When this file is activated, the ICMP or ICP-D will check the frame rate played and will activate 3d settings such as *Dark time adjustment* and *Output reference delay* contained in the other files such as *name_24.3D*.

The selection of the file used will be based on the following table:

Frame Rate played (fps/eye)	3D file used by the Auto configuration (<i>name_auto.3D</i>)	Frame Rate multiplier setting called
From 24 to 47	<i>name_24.3D</i> or <i>name.3D</i>	6:2
From 48 to 59	<i>name_48.3D</i>	4:2
From 60 to higher	<i>name_60.3D</i>	2:2

For 3D application, the system need typically a period of time to be synchronized with the playout. An additional parameter then available in web communicator in order to adjust that period of time; the *Auto switch delay time* adjustment. That setting will then delay the playout, by the amount of *ms* configured, if a change in the frame rate is detected between the previous and the next clip to be played.

How to adjust auto switch delay time

1. While in 3D file editor, check if *Disable 3D* option (reference 1) is unchecked in order to acceded the settings.

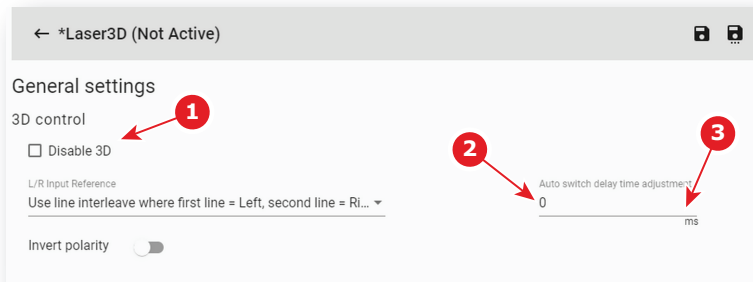


Image 7-92

2. Enter delay value in ms with the keyboard (reference 2).

or

Use the plus button or minus button (reference 3) to adjust the value (+/- 1 ms).

7.5.4 Editing a 3D file

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

How to edit

1. While in *Configuration > Projector > 3D*, find and click on the 3D file you want to edit.
The 3D file is displayed in its expanded form with menu.

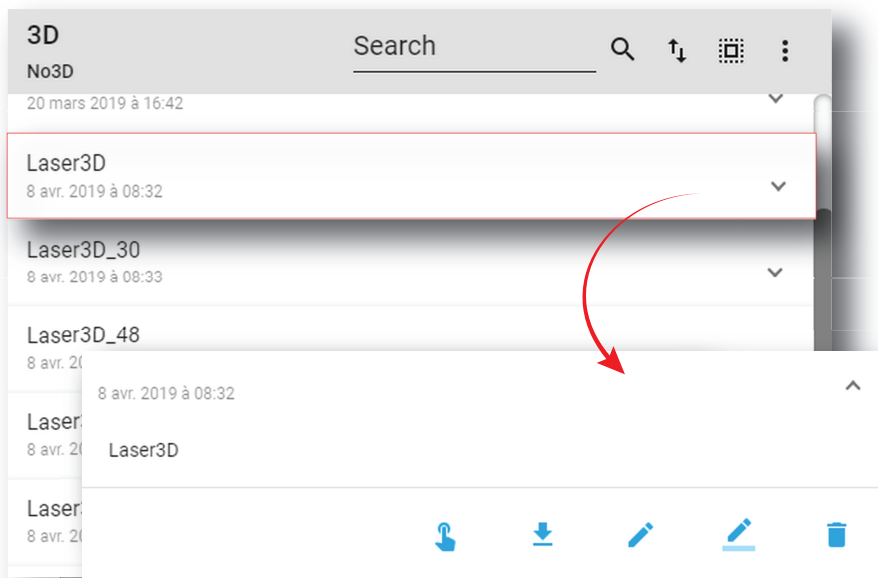


Image 7-93

2. Click the **Edit** icon in the menu. 

The 3D file is displayed in *3D file editor*.

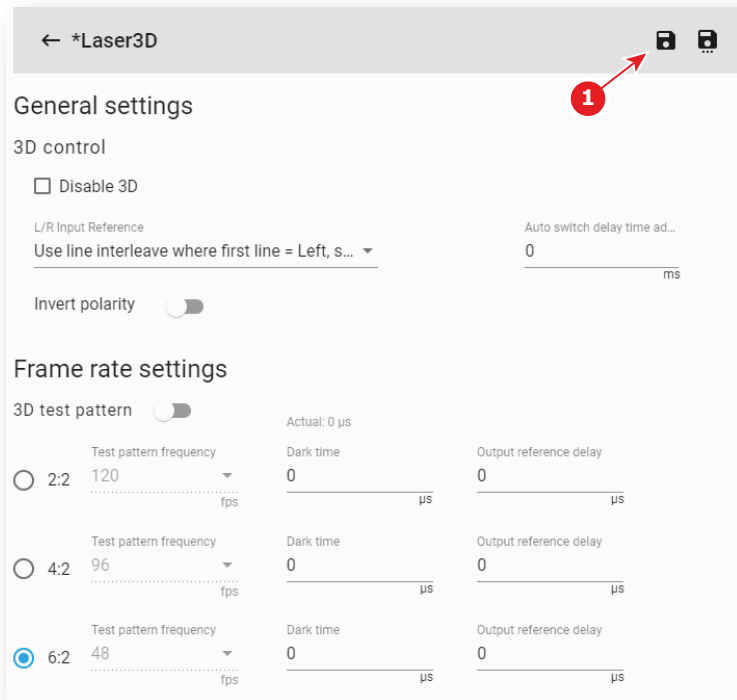


Image 7-94

3. Modify the 3D file parameters. For more information about the *3D file editor*, see “3D file editor”, page 130.
4. Click the **Save** icon (reference 1).

7.5.5 Activating a 3D file

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

What is possible

Usually a 3D file is activated via a macro but it is possible to directly activate a 3D file by clicking on **Activate** in the contextual menu.

How to activate

1. While in *Configuration > Projector > 3D*, find and click on the 3D file you want to activate.
The 3D file is displayed in its expanded form with menu.

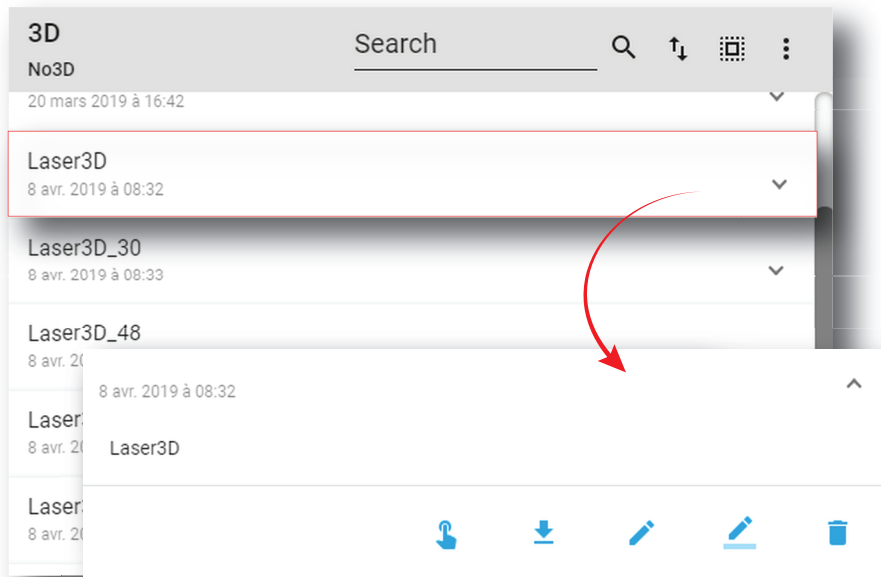


Image 7-95

2. Click **Activate** in the menu.



The new configuration is applied and visible on top of the list. The status of the 3D file also turns to *Active*.

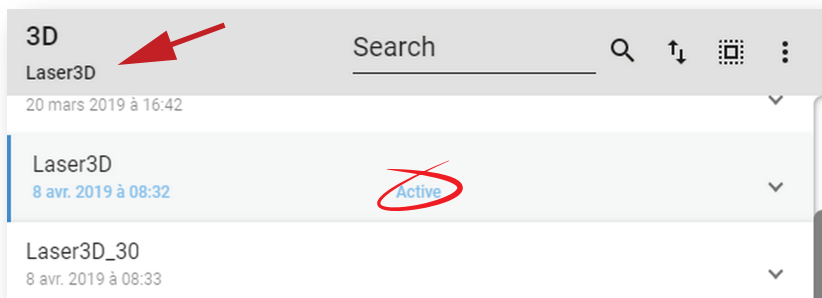


Image 7-96



Click on the name of the active file located on the top of the list to open it directly in edit mode.

7.5.6 Renaming a 3D file

How to rename

1. While in *Configuration > Projector > 3D*, find and click on the 3D file you want to rename.

The 3D file is displayed in its expanded form with menu.

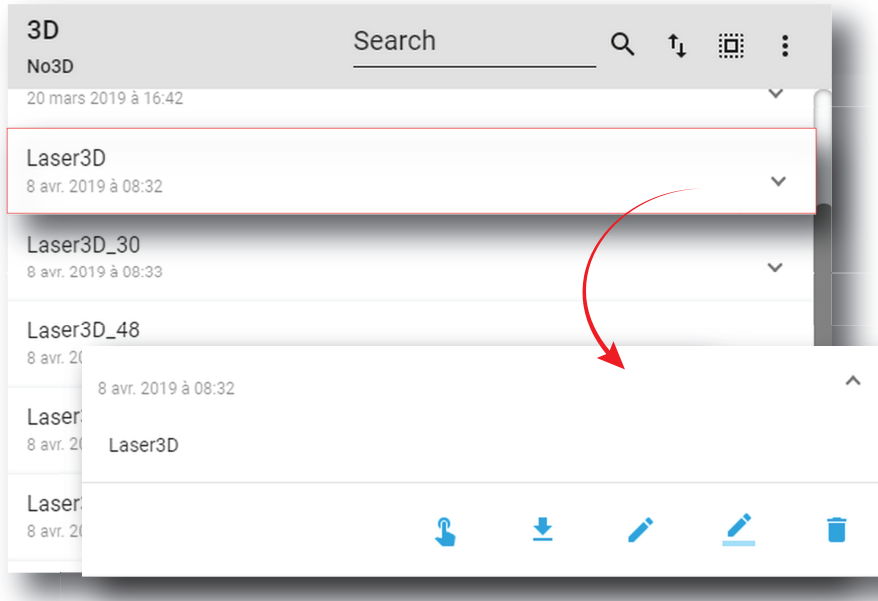



Image 7–97

- Click the **Rename** icon.  The *Rename* window is prompted.

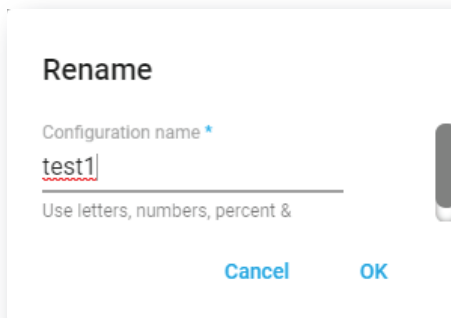


Image 7–98

- Enter a new name and confirm with **OK**.

7.5.7 Importing a 3D file

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

How to import a 3D file

- While in *Configuration > Projector > 3D*,+ click on the 3D file general menu (reference 1) located on the top right of the list.

The menu is displayed.

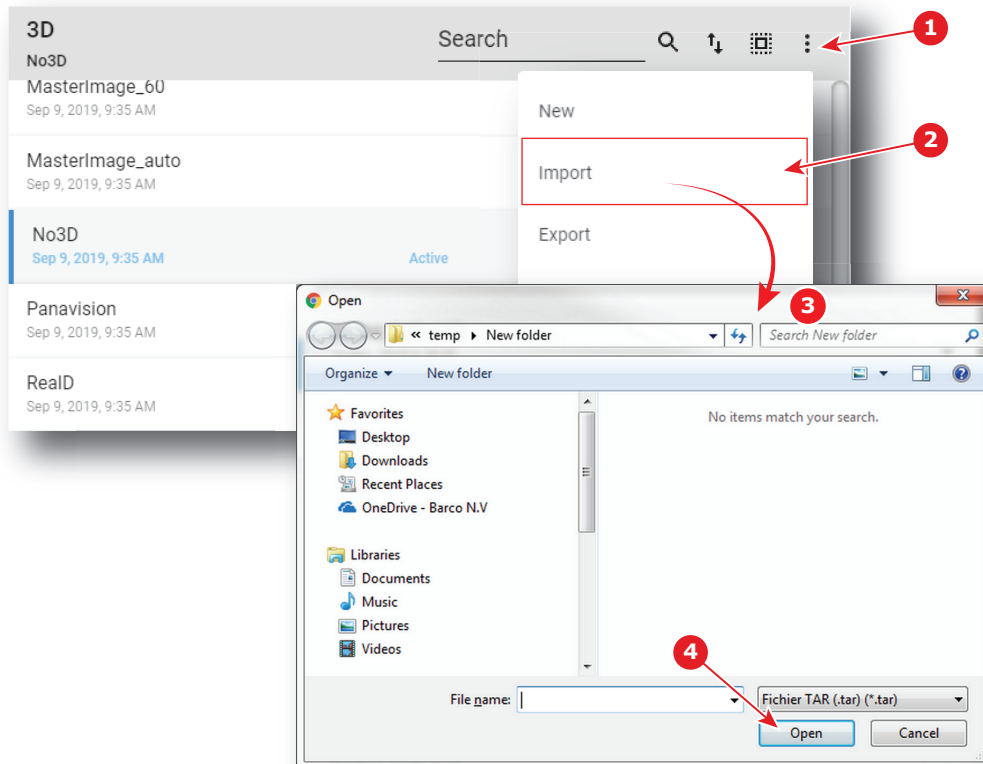


Image 7-99

2. Select **Import** (reference 2) in the menu.
Open window (reference 3) is displayed
3. Locate and select the 3D file.
4. Click **Open** (reference 4).
3D file is imported and added to the 3D files list.

7.5.8 Exporting a 3D file

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

How to export a 3D file

1. While in *Configuration > Projector > 3D*, find and click on the 3D file you want to export.
The 3D file is displayed in its expanded form with menu.

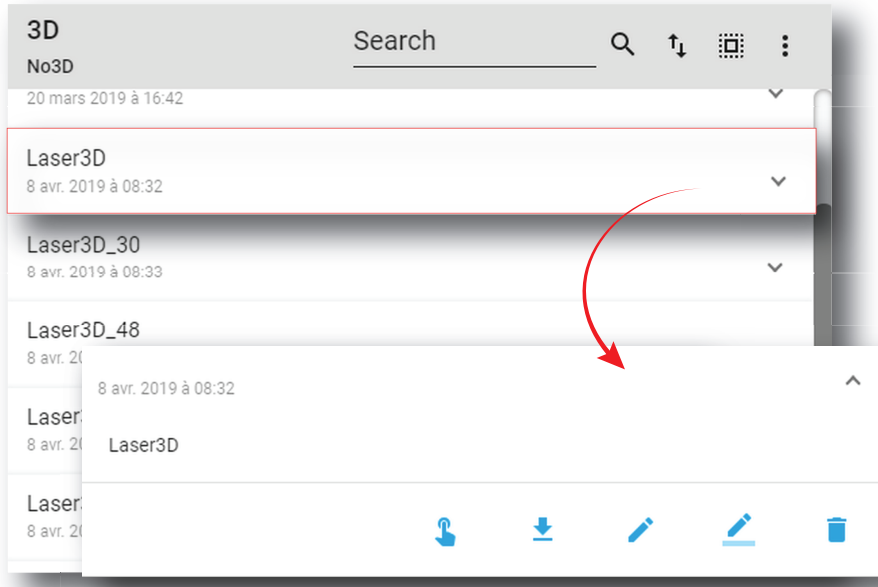


Image 7–100

2. Click the **Export** icon in the menu.



The *Download package* window is displayed during backup package creation.

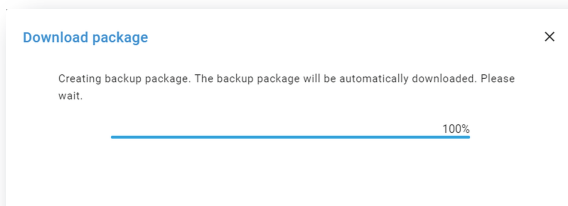


Image 7–101

3. When the backup package is created it is automatically copied in the *Downloads* directory of your computer (e.g. *3D-backup-SP4K-15C-2590153431-2019-04-11T142930Z.tar*).

7.5.9 Exporting several 3D files in a backup package

What is possible

Several 3D files could be exported at once in a backup package.

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

How to create and export backup package of 3D files

1. While in *Configuration > Projector > 3D*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the 3D files in order to select/deselect the files you want to export.

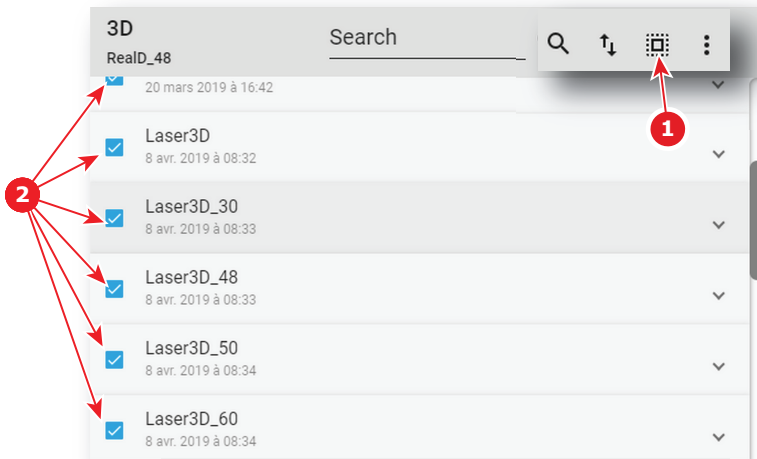


Image 7-102

2. Click on the menu icon (reference 3) and select **Export**.

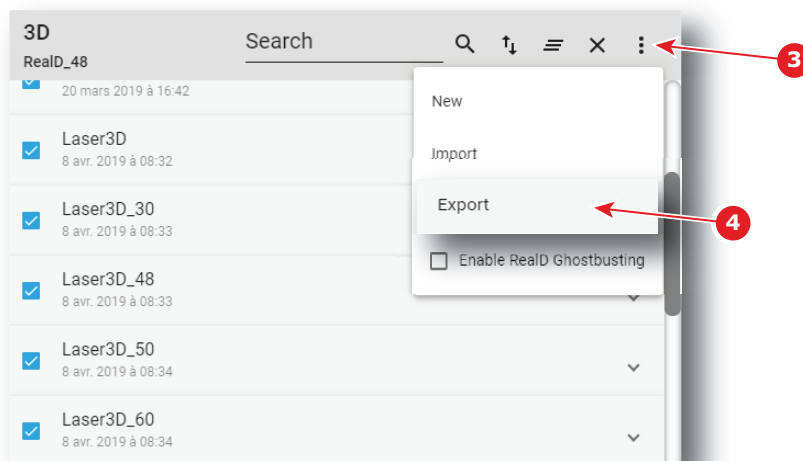


Image 7-103

The *Download package* window is displayed during backup package creation.

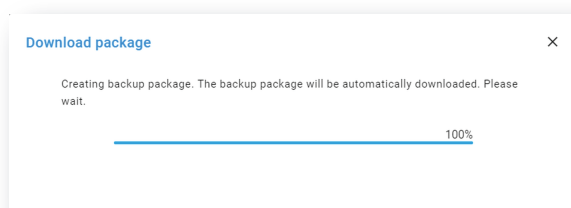


Image 7-104

3. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *3D-backup-SP4K-15C-2590153431-2019-04-11T142930Z.tar*).

7.5.10 Delete a 3D file

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

How to delete

1. While in *Configuration > Projector > 3D*, find and click on the 3D file you want to delete.
The 3D file is displayed in its expanded form with menu.

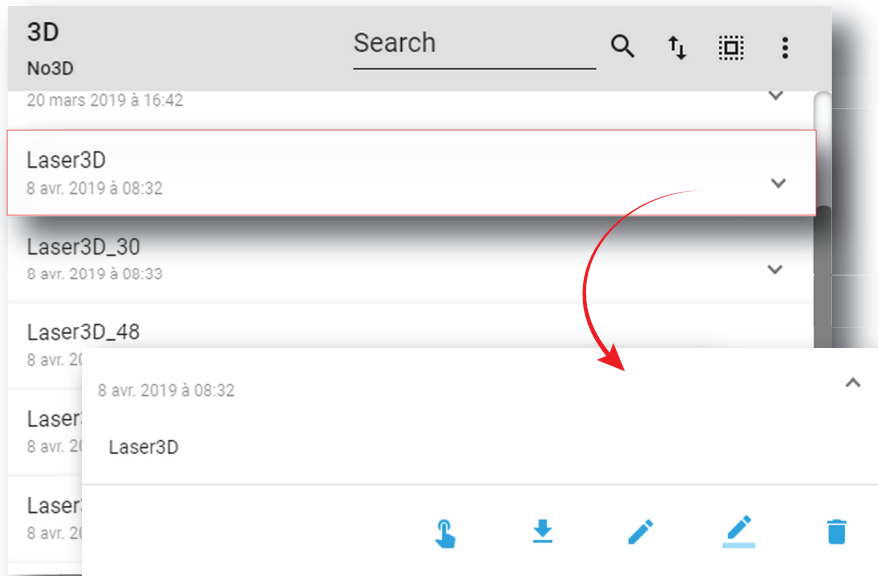


Image 7-105

2. Click the **Delete** icon and confirm with OK 

The 3D file is removed from the list.

7.5.11 Deleting several 3D files

Location & access

Menu: Configuration > Projector > 3D

Level: Administrator, Service technician

How to delete several 3D files

1. While in *Configuration > Projector > 3D*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the 3D files in order to select/deselect the files you want to delete.

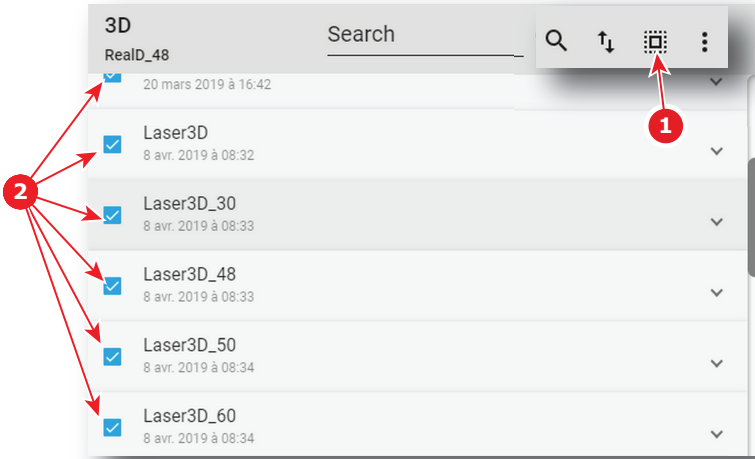


Image 7-106

2. Click on the 3D file general menu located on the top right of the list, then select **Delete** and confirm with **OK**.

The 3D files selected are definitively removed from the list.

7.6 Input

7.6.1 About Input file

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

Overview

This panel allows to manage Input configuration files. These files contain all data needed to activate input according to connected device that provide the video signal (e. g. ICMP media player, Blu-ray HDMI player ...). A batch of default files are installed on the projector during the initial setting with the clone package. Specific input files could be imported manually. Input files must be adapted according to the connected device.

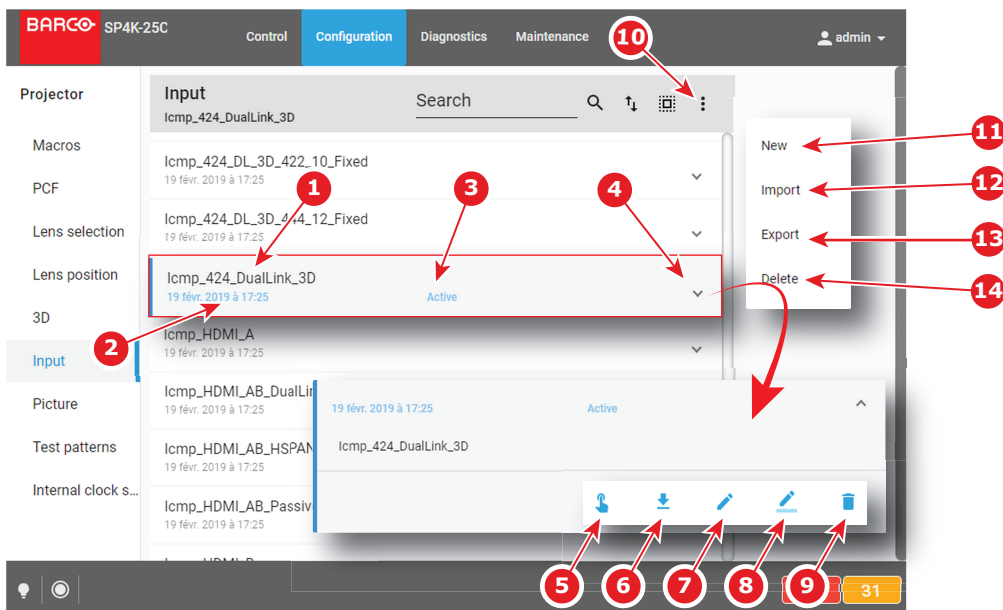


Image 7-107

Each input file displayed here has a *name* (reference 1). Creation date (reference 2) of the file is displayed just under its name. When a input file is activated the status (reference 3) turns to *Active* and its name is noticed on top of the list.

Clicking on a input file (reference 4) in this list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Activate** (reference 5) allows to activate the input file.
- **Export** (reference 6) creates a downloadable backup package.
- **Edit** (reference 7) allows to modify the input file.
- **Rename** (reference 8) allows to rename the input file.
- **Delete** (reference 9) allows to remove the input file from the list.

Clicking on menu (reference 10) displays the input file general menu.

Following actions are available in this menu:

- **New** (reference 11) allows to create a new input file.
- **Import** (reference 12) allows to import an input file.
- **Export** (reference 13) creates a downloadable backup package that contains all input files selected in the list.
- **Delete** (reference 14) allows to remove several input files selected in the list.



Click on the name of the active file located on the top of the list to open it directly in edit mode.

7.6.2 Creating an input file

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

How to create Input file

1. While in *Configuration > Projector > Input*, click on the input file general menu (reference 1) located on the top right of the list.

The menu is displayed.

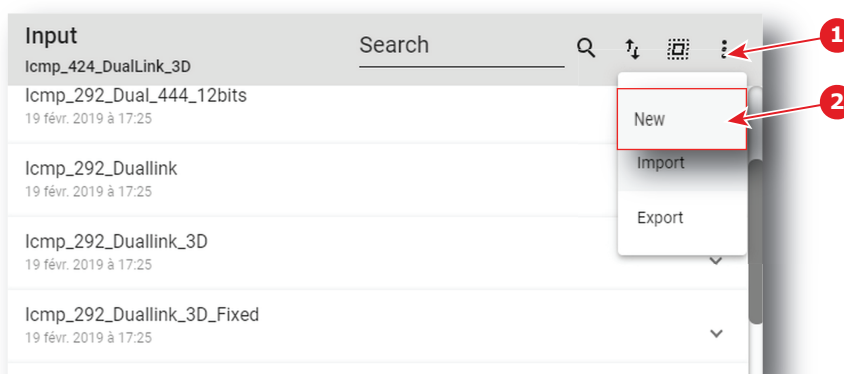


Image 7-108

2. Select **New** (reference 2) in the menu.

Input file editor (reference 3) is displayed with a new (untitled) input file.

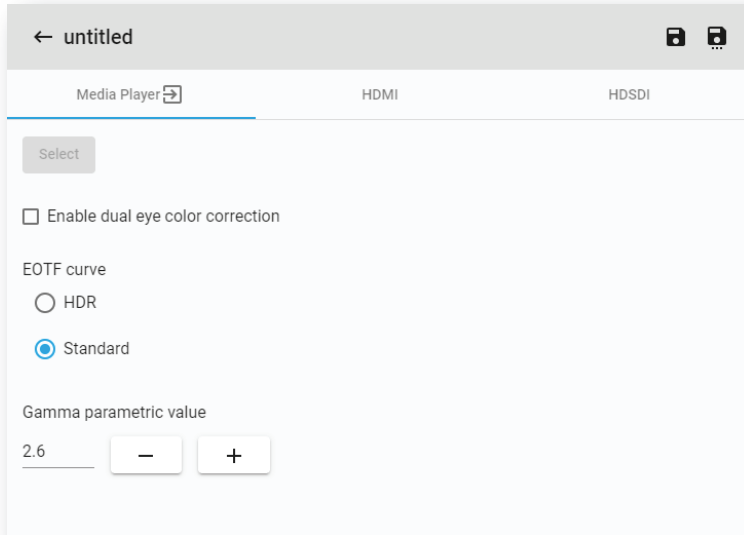


Image 7-109

3. Fill the input file parameters. For more information about the *input file editor*, see [“Input file editor”](#), page 146.
4. Click **Save As** (reference 3) to display the *Save As* window.

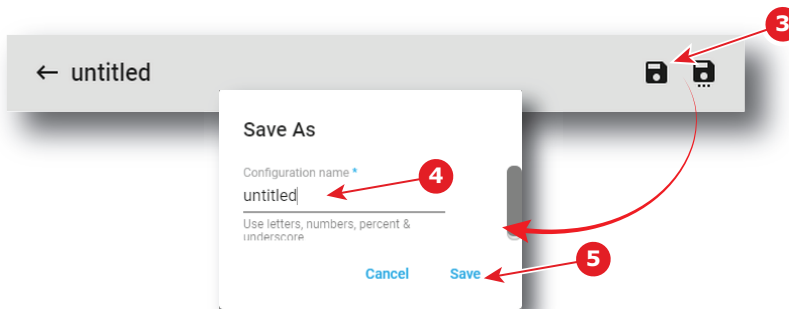




Image 7-110

5. Enter a name (reference 4).
 -  **Note:** List of files already available in the projector is displayed in this window. Directly click on this list allows you to reuse all or part of an already existing file name.
6. Click **save** (reference 5).
 -  **Note:** If the name enter in the previous step already exists, a warning is displayed. Click **Overwrite** to confirm and replace the existing the file.

New 3D file is added to the 3D files list.

7.6.3 Input file editor

About this chapter

This chapter contains all the necessary information to use input file editor, the Web Communicator page used to create or modify input files.

7.6.3.1 HDSI (3G-SDI) for ICMP

How to adjust HDSI (3G-SDI) parameters for ICMP

1. While in *input file editor*, click **HDSI** (reference 1).

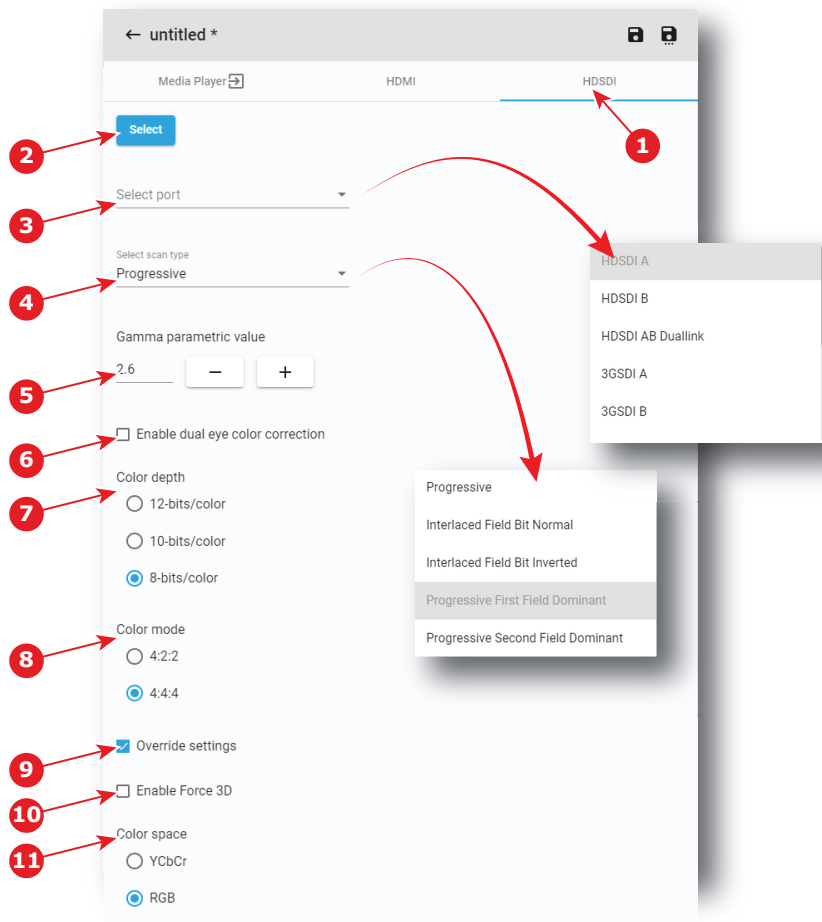


Image 7–111

2. If not already done, click **Select** (reference 2) to specify that HD-SDI is right now the source format for this file.
3. Select the *port* in the drop down list (reference 3).

The following ports are available:

- HDSDI A
- HDSDI B
- HDSDI AB Duallink
- 3GSDI A
- 3GSDI B
- 3GSDI AB Hspan
- 3GSDI A LevelB
- 3GSDI B LevelB
- 3GSDI A LevelB Dualstream
- 3GSDI B LevelB Dualstream

To obtain more details concerning the HD-SDI ports see [“Specifications”, page 305](#).

4. Select the *scan type* in the drop down list (reference 4).
The available list of scan type depends on the port selected in the previous step. To obtain more details concerning the HD-SDI ports see [“Specifications”, page 305](#).
5. Use the **plus** button or **minus** button to adjust *Gamma parametric value* depending on the source.
6. Select the desired color correction.

The following corrections are possible:

- **Enable dual eye color correction** (reference 6) must be not checked to choose “single eye” color correction.

- **Enable dual eye color correction** (reference 6) must be checked to chose “dual eye” color correction (separate eyes).

7. Define *color depth* (reference 7) and *color mode* (reference 8). These values must be adapted depending the specifications of the selected signal.

To obtain more details concerning the HD-SDI ports see “[Specifications](#)”, page 305.

8. Depending on your selection, detailed settings can be set.

When **Override settings** (reference 9) are not overruled (not checked), *Color Space* and *3D* are automatically set with the info given in the Info Frames inside the HD-SDI signal.

When **Override settings** (reference 9) are checked,

- *Color Space* (reference 11) can be set between RGB or YCbCr.
- Force 3D can be enabled or disabled (reference 10).

7.6.3.2 HDMI

How to adjust HDMI parameters

1. While in *input file editor*, click **HDMI** (reference 1).

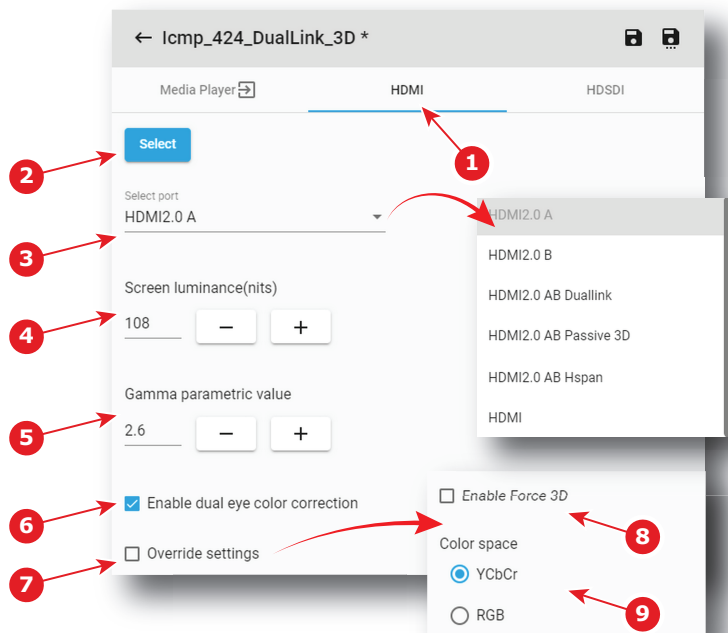


Image 7–112

2. If not already done, click **Select** (reference 2) to specify that HDMI is right now the source format select for this file.
3. Select the *port* in the drop down list (reference 3).

The following ports are available:

- HDMI2.0 A
- HDMI2.0 B
- HDMI2.0 AB Duallink
- HDMI2.0 AB Passive 3D
- HDMI2.0 AB Hspan
- HDMI

To obtain more details concerning the HDMI ports see “[Specifications](#)”, page 305.

4. Use the **plus** button or **minus** button to adjust *Screen luminance(nits)* (reference 4) depending on the source.

5. Use the **plus** button or **minus** button to adjust *Gamma parametric value* (reference 5) depending on the source.

6. Select the desired color correction.

The following corrections are possible:

- **Enable dual eye color correction** (reference 6) must be not checked to chose “single eye” color correction.
- **Enable dual eye color correction** (reference 6) must be checked to chose “dual eye” color correction (separate eyes).

7. Depending on your selection, detailed settings can be set.

When **Override settings** (reference 7) are not overruled (not checked), *Color Space* and *3D* are automatically set with the info given in the Info Frames inside the HDMI signal.

When **Override settings** (reference 7) are checked,

- *Color Space* (reference 9) can be set between RGB or YCbCr.
- Force 3D can be enabled or disabled (reference 8).

7.6.3.3 Media player

How to adjust media player parameters

1. While in *input file editor*, click **Media Player** (reference 1).

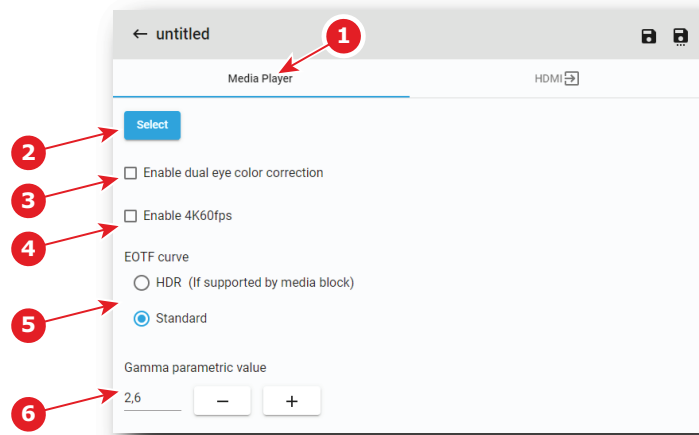


Image 7–113

2. If not already done, click **Select** (reference 2) to specify the *Media Player* is the desired source format chosen for this file.

3. Select the desired color correction.

The following corrections are possible:

- **Enable dual eye color correction** (reference 3) should be not checked to chose “single eye” color correction.
- **Enable dual eye color correction** (reference 3) should be checked to chose “dual eye” color correction (separate eyes).

4. If the Media player is an ICP-D associated with a Dolby IMB, it is possible to activate the 4K60fps mode:

- **Enable 4K60fps** (reference 4) should not be checked to choose not to enable 4K60fps mode.
- **Enable 4K60fps** (reference 4) should be checked to chose to enable the 4K60fps mode.



Note: This option is only available on 4K projectors, not on 2K projectors.

5. Select EOTF (Electro-Optical Transfer Function) curve (reference 5).

The following choices are possible:

- **HDR** should be checked to chose “High Dynamic Range” content.
- **Standard** should be checked to chose standard content.

6. Use the **plus** button or **minus** button to adjust *Gamma parametric value* (reference 6) depending on the source.

7.6.4 Editing an input file

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

How to edit

1. While in *Configuration > Projector > Input*, find and click on the input file you want to edit.

The input file is displayed in its expanded form with menu.

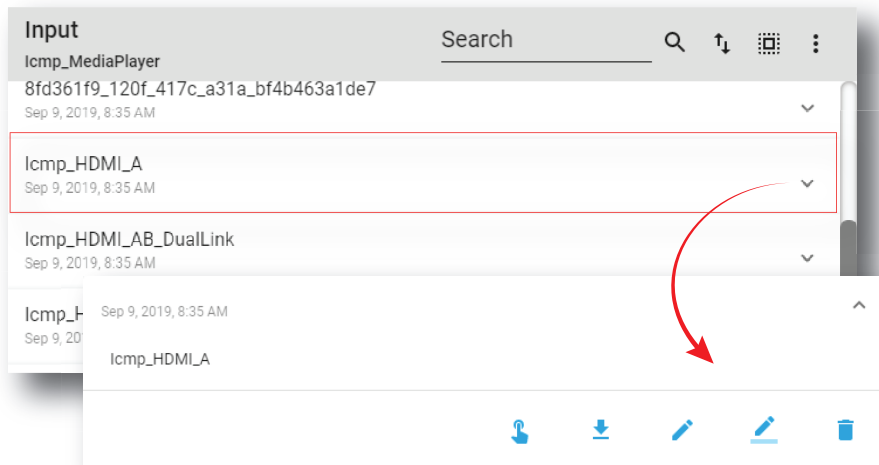


Image 7–114

2. Click **Edit** in the menu. 

The input file is displayed in *input file editor*.

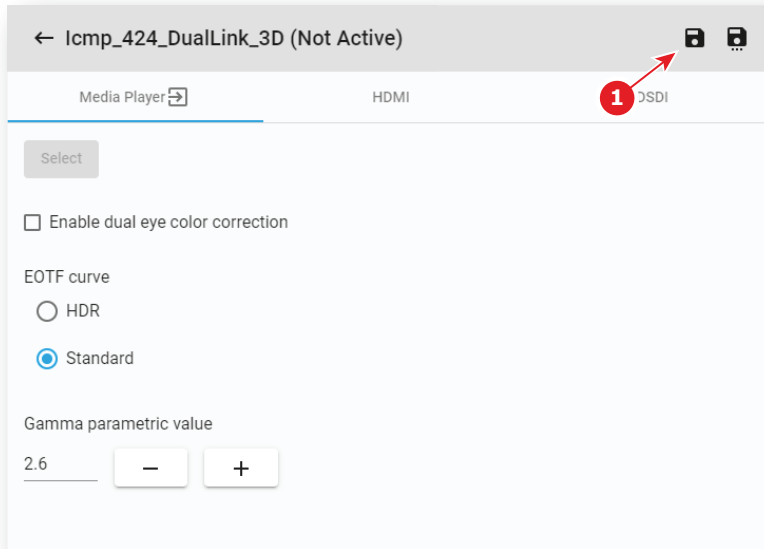


Image 7–115

3. Modify the input file parameters. For more information about the *input file editor*, see [“Input file editor”, page 146](#).
4. Click **Save** (reference 1).

7.6.5 Activating an input file

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

What is possible

Usually a Input file is activated via a macro but it is possible to directly activate a 3D file by clicking on **Activate** in the contextual menu.

How to activate

1. While in *Configuration > Projector > Input*, find and click on the input file you want to activate.
The input file is displayed in its expanded form with menu.

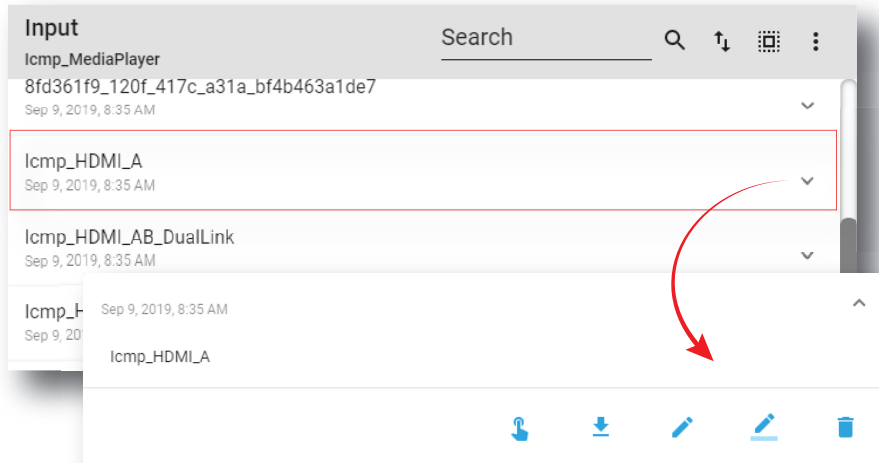


Image 7-116

2. Click **Activate** in the menu. 

The new configuration is applied. Status of the input file turns to *Active* and its name is noticed on top of the list.

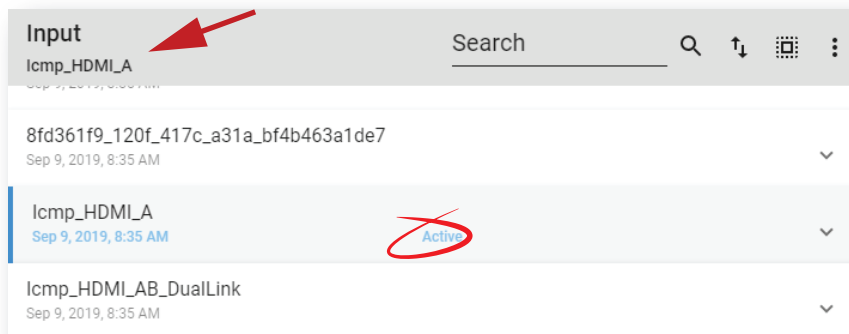


Image 7-117



Click on the name of the active file located on the top of the list to open it directly in edit mode.

7.6.6 Renaming input file

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

How to rename

1. While in *Configuration > Projector > Input*, find and click on the input file you want to rename.
The input file is displayed in its expanded form with menu.

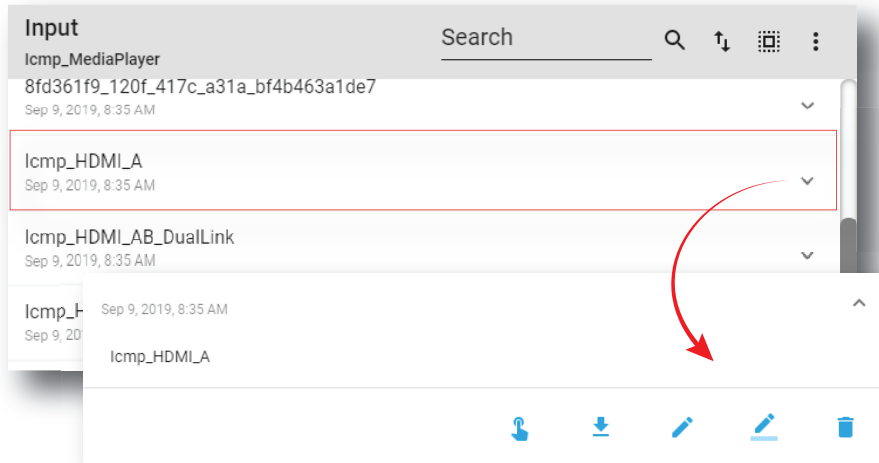



Image 7–118

- Click **Rename** in the menu. 
Rename window is displayed.

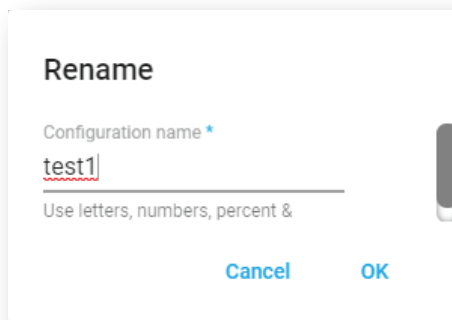


Image 7–119

- Enter a new name and click **OK**.

7.6.7 Importing an input file

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

How to import a Input file

- While in *Configuration > Projector > Input*, click on the input file general menu (reference 1) located on the top right of the list.

The menu is displayed.

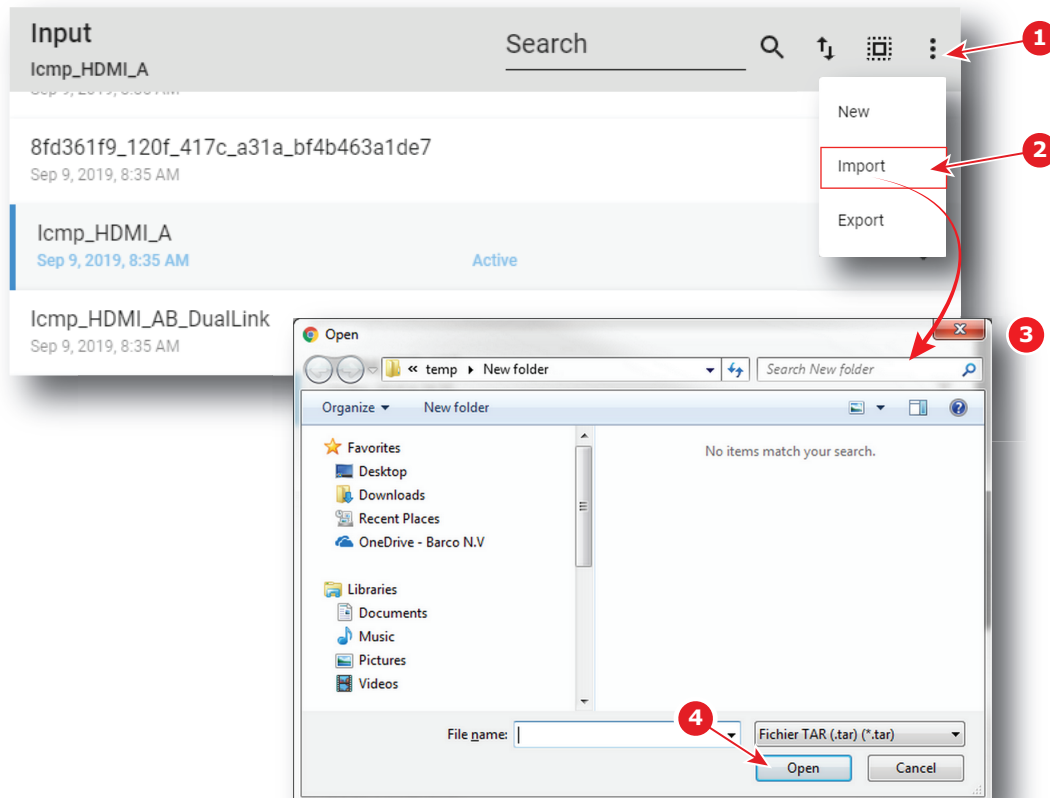


Image 7–120

2. Select **Import** (reference 2) in the menu.
Open window (reference 3) is displayed
3. Locate and select the Input file.
4. Click **Open** (reference 4).
 The input file is imported and added to the files list.

7.6.8 Exporting an input file

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

How to export an Input file

1. While in *Configuration > Projector > Input*, find and click on the Input file you want to export.
 The input file is displayed in its expanded form with menu.

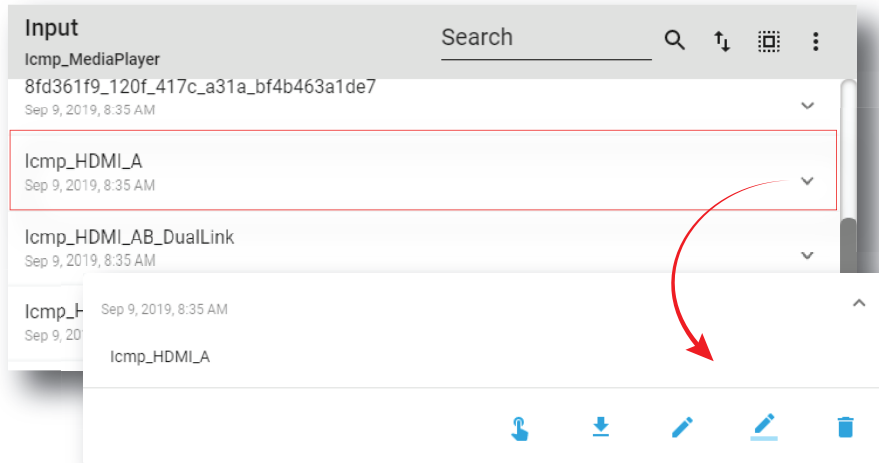


Image 7–121

2. Click **Export** in the menu. 

Download package window is displayed during backup package creation.

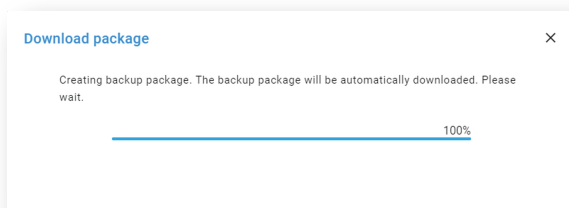


Image 7–122

3. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *INPUT-backup-SP4K-15C-2590153431-2019-04-13T104028Z.tar*).

7.6.9 Exporting several input files in a backup package

What is possible

Several input files could be exported at once in a backup package.

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

How to create and export backup package of input files

1. While in *Configuration > Projector > Input*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the input files in order to select/deselect the files you want to export.

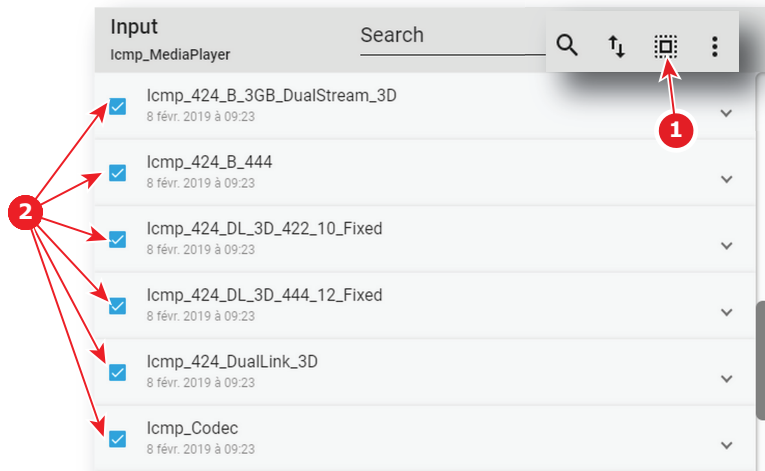


Image 7-123

2. Click on the input file general menu (reference 3) located on the top right of the list. A menu is displayed.

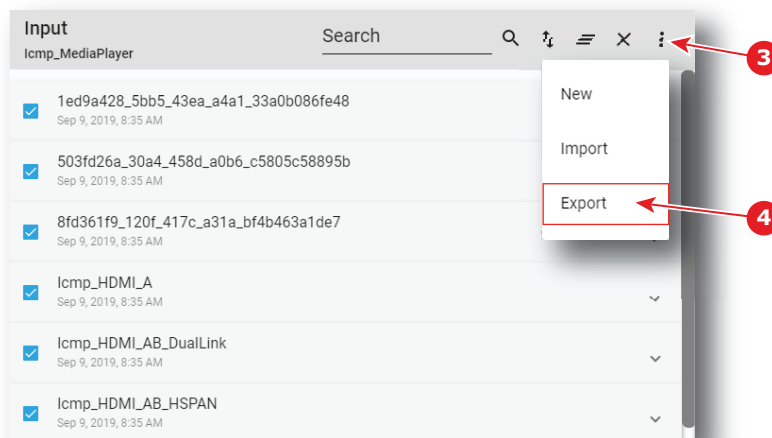


Image 7-124

3. Select **Export** (reference 4) in the menu. *Download package* window is displayed during backup package creation.

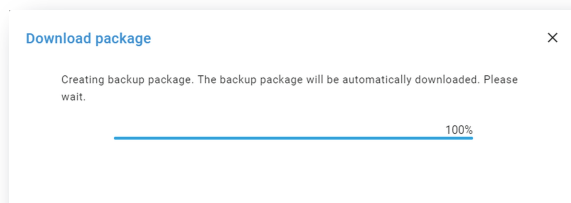


Image 7-125

4. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *INPUT-backup-SP4K-15C-2590153431-2019-04-13T104028Z.tar*).

7.6.10 Delete an input file

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

How to delete

1. While in *Configuration > Projector > Input*, find and click on the input file you want to delete.

The Input file is displayed in its expanded form with menu.

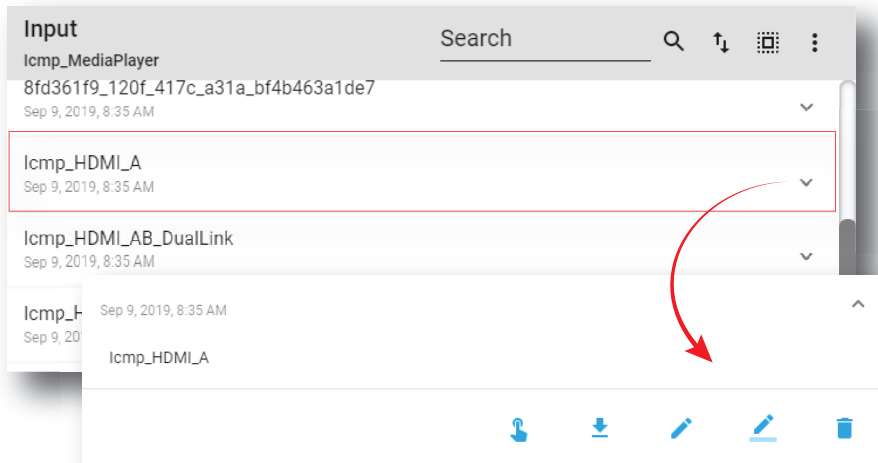


Image 7-126

2. Click the **Delete** icon and confirm with **OK**.



The input file is removed from the list.

7.6.11 Deleting several input files

Location & access

Menu: Configuration > Projector > Input

Level: Administrator, Service technician

How to delete several input files

1. While in *Configuration > Projector > Input*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the input files in order to select/deselect the files you want to delete.

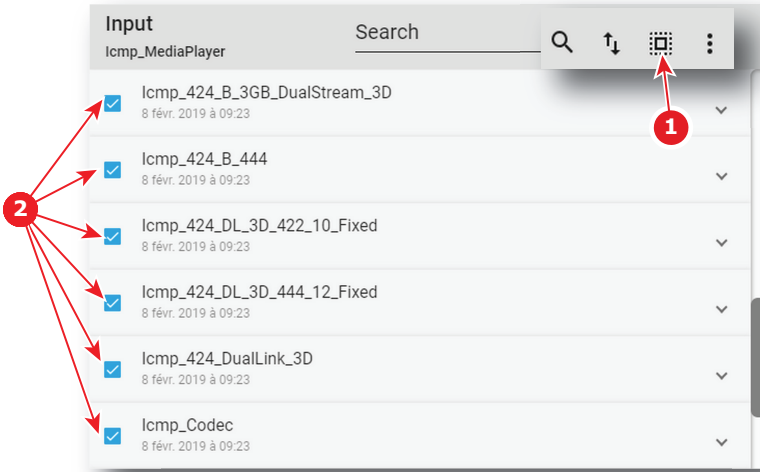


Image 7-127

2. Click on the input file general menu located on the top right of the list, then select **Delete** and confirm with **OK**.

The input files selected are definitively removed from the list.

7.7 Picture

7.7.1 About screen file

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

Overview

This panel allows to manage screen configuration files. These files contain all data needed to adjust picture on screen. A batch of default files are installed on the projector during the initial setting with the clone package (e. g. FullScreen). Specific screen files could be imported manually.

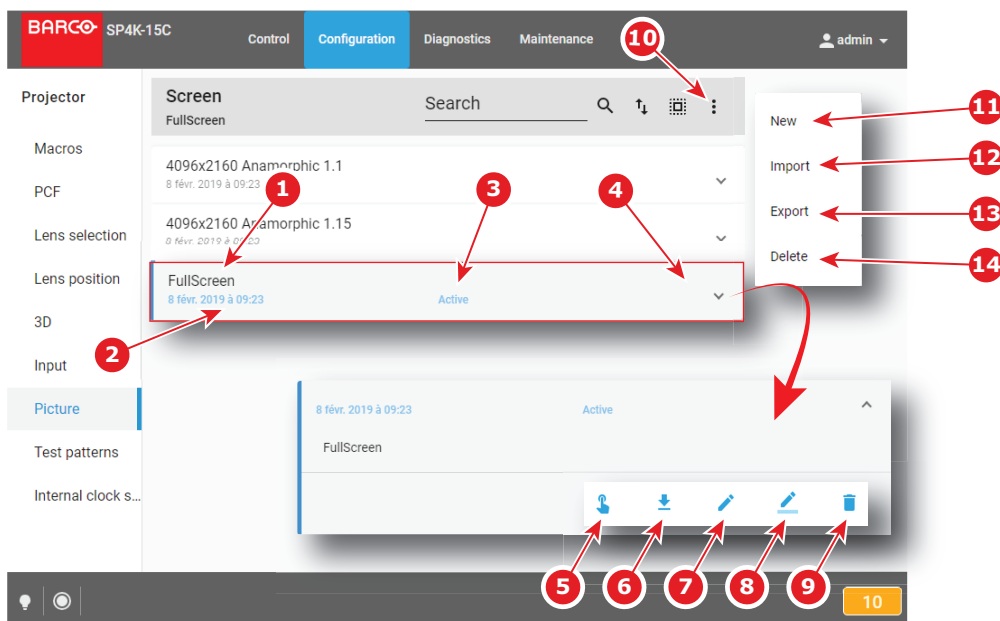


Image 7-128

Each screen file displayed here has a *name* (reference 1). Creation date (reference 2) of the file is displayed just under its name. When a screen file is activated the status (reference 3) turns to *Active* and its name is noticed on top of the list.

Clicking on a screen file (reference 4) in this list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Activate** (reference 5) allows to activate the screen file.
- **Export** (reference 6) creates a downloadable backup package.
- **Edit** (reference 7) allows to modify the screen file.
- **Rename** (reference 8) allows to rename the screen file.
- **Delete** (reference 9) allows to remove the screen file from the list.

Clicking on menu (reference 10) displays the screen file general menu.

Following actions are available in this menu:

- **New** (reference 11) allows to create a new screen file.
- **Import** (reference 12) allows to import a screen file.
- **Export** (reference 13) creates a downloadable backup package that contains all screen files selected in the list.
- **Delete** (reference 14) allows to remove several screen files selected in the list.



Click on the name of the active file located on the top of the list to open it directly in edit mode.

7.7.2 Creating a screen file

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

How to create Input file

1. While in *Configuration > Projector > Picture*, click on the screen file general menu (reference 1) located on the top right of the list.

The menu is displayed.

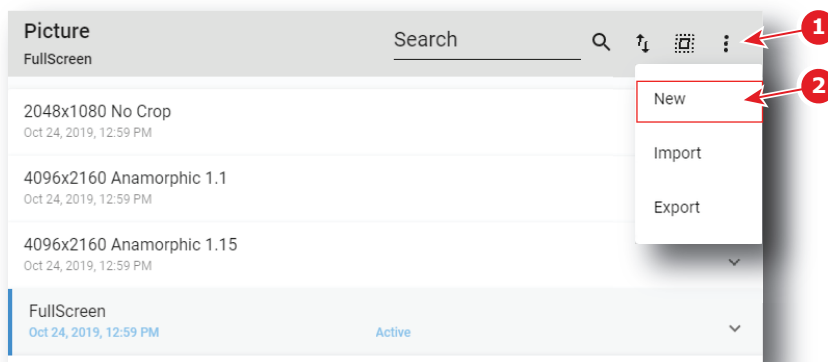


Image 7–129

2. Select **New** (reference 2) in the menu.
Screen file editor (reference 3) is displayed with a new (untitled) input file.

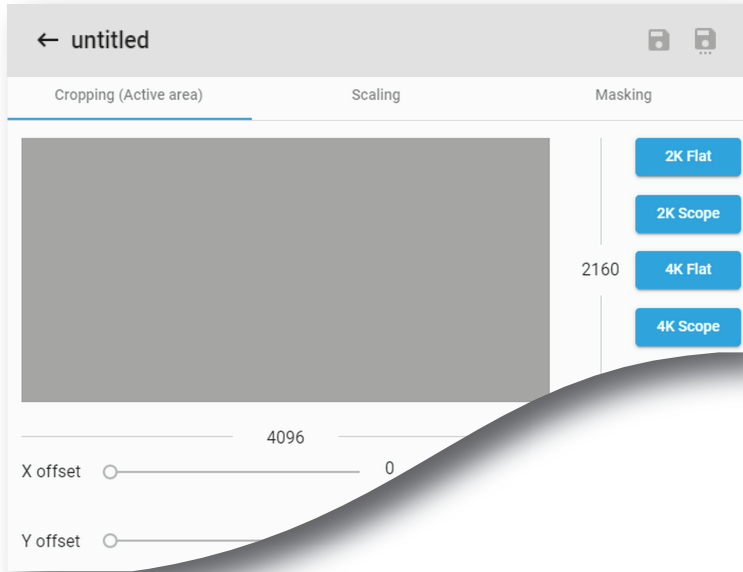


Image 7–130

3. Fill the input file parameters. For more information about the *input file editor*, see [“Screen file editor”](#), page 160.
4. Click **Save As** (reference 3) to display the *Save As* window.

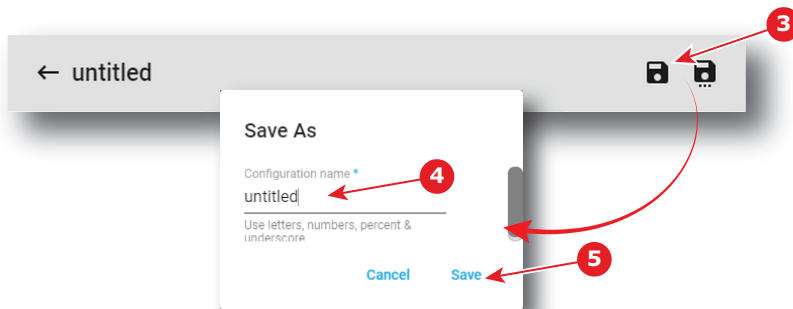




Image 7–131

5. Enter a name (reference 4).
 -  **Note:** List of files already available in the projector is displayed in this window. Directly click on this list allows you to reuse all or part of an already existing file name.
6. Click **save** (reference 5).
 -  **Note:** If the name enter in the previous step already exists, a warning is displayed. Click **Overwrite** to confirm and replace the existing file.

New screen file is added to the screen files list.

7.7.3 Screen file editor

About this chapter

This chapter contains all the necessary information to use screen file editor, the Web Communicator page used to create or modify screen files.

7.7.3.1 Cropping (active area)

What is cropping

Realize "cropping" means define an active area.

The active area within a source frame equals the relevant movie information within the movie stream. E.g. : 1280 x 1024 movie can be mastered in a 1920 x 1080 stream. Only the 1280 x 1024 frame contains the relevant movie information. In this case, the active area is 1280 x 1024.

The most frequently used active areas are predefined behind shortcuts (e.g. 2K Scope).



The list of predefined shortcuts may be different depending on the type of projector (e.g. 4K shortcut is not present on 2K series projectors).

How to crop

1. While in *screen file editor*, click **Cropping** (reference 1).

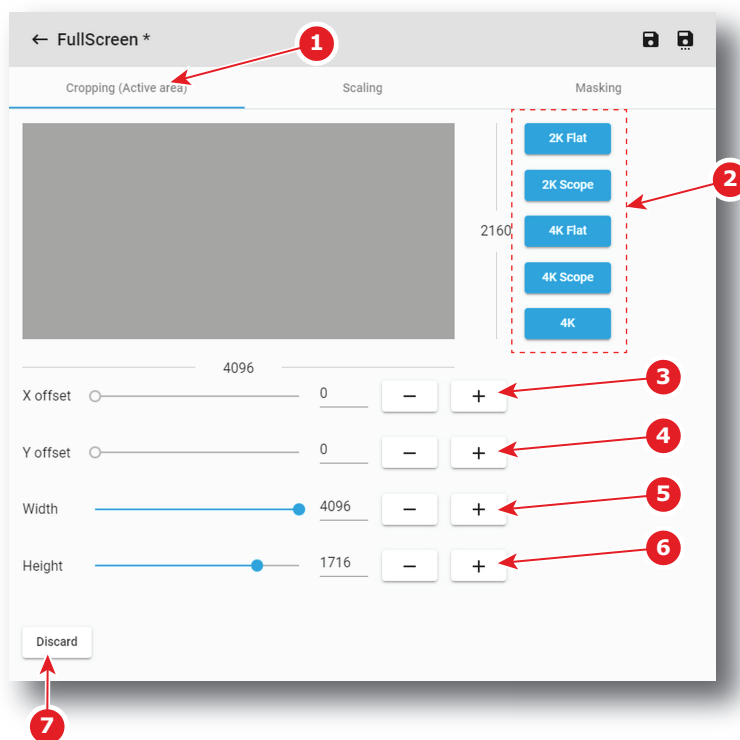


Image 7-132

2. If you need a predefined active area, click on a shortcut at the right hand of the window (reference 2). *Width* (reference 5) and *Height* (reference 6) are settled with predefined values.
For a dedicated active area, continue with the next steps.
3. Click on the slider of *Width* (reference 5) and *Height* (reference 6) and drag to set up the active area.
or
click on **plus** button or **minus** button of *Width* (reference 5) and *Height* (reference 6) to set up the active area.
or
click in the input field of *Width* (reference 5) and *Height* (reference 6) , select the current value and enter a new value with the keyboard to set up the active area.
4. Click on the slider of *X-offset* (reference 3) and *Y-offset* (reference 4) and drag to set the offset.
or

click on **plus** button or **minus** button of *X-offset* (reference 3) and *Y-offset* (reference 4) to set up the offset.

or

click in the input field of *X-offset* (reference 3) and *Y-offset* (reference 4), select the current value and enter a new value with the keyboard to set the offset.

The offset is referring to the center of the active area and to the center of the source frame.

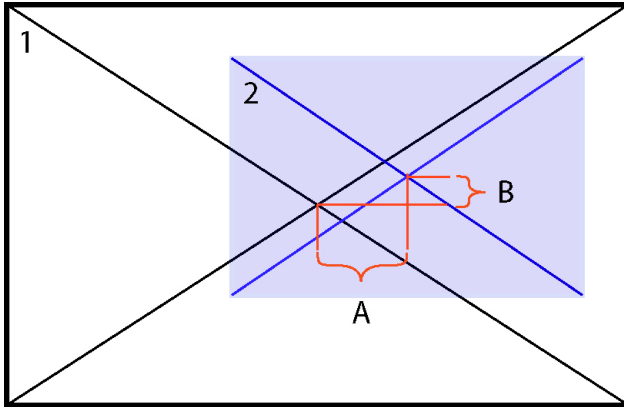


Image 7-133 Center offset indication

- 1 source frame
- 2 Active area on source frame
- A Horizontal offset
- B Vertical offset

5. Click **Discard** (reference 7) allows to remove all the modifications done in the previous steps.

7.7.3.2 Scaling

What is scaling

With the scaling tool it is possible to adapt the projected image on the screen size (defining the area available for image display). So, look always to the screen when scaling the image. The projector will always attempt to keep the image centered within this defined area, and the correct aspect ratio of the image will always be preserved.



As the projector project an image under an angle, the original image will be shown as trapezium. The image will be squared with the masking function by masking the shaded areas.

How to scale

1. While in *screen file editor*, click **Scaling** (reference 1).

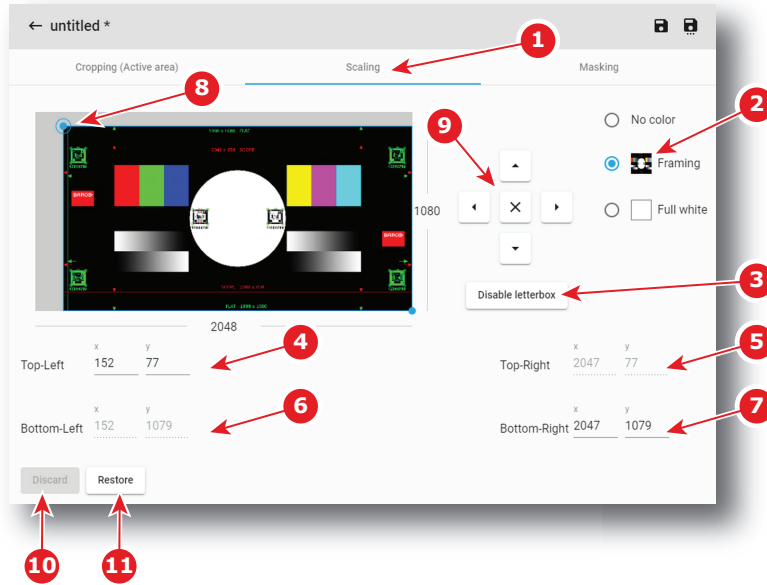



Image 7-134

2. Select a **Test pattern** (reference 2) to display a test pattern on screen.
3. Enable or disable **letterbox** (reference 3) to determine how the image will be displayed. Enabled **letterbox** allows to preserve the film's original aspect ratio. For more details see section dedicated to letterbox after this procedure.
4. Set the position the *Top-Left* corner and *Bottom-Right* corner by using numeric values. Position the four corners of the picture on the four corners of the screen.
 1. Click in the input fields for X and Y of *Top-Left* corner (reference 4) and fill out the desired position value (or use up down control of spin box near the input field).
 2. Redo the same operation with the *Bottom-Right* corner (reference 7). *Top-Right* corner (reference 5) and *Bottom-Left* corner (reference 6) cannot be modified: these fields are automatically updated depending on the actions on the other two fields.

or

Set the position the 4 corners manually by using arrows (reference 9):

1. Click on *Top-Left* corner (reference 8) to select it, then use up/down/left/right arrows (reference 9) to reach the desired position.
2. Redo the same operation with the *Bottom-Right* corner.

 *Tip:* Combination of these arrows with [SHIFT] or [ALT] keys on keyboard allows to optimizing positioning. See following section dedicated to *positioning accelerator*.


5. Click **Discard** (reference 10) allows to remove all the modifications done in the previous step.
6. Click **Restore** (reference 11) allows to reset the scaling (zero position).

Positioning accelerator

Manually positioning corners could be fastidious, especially if the new position is far to the previous one. To avoid this, some keyboard combination are available to accelerate positioning.

To speed up the positioning by factor of x10 , use up/down/left/right arrows on the screen in combination with the **[SHIFT]** key on the keyboard. With this combination the displacements will be 10 pixels for each click.

To speed up the positioning by factor of x100 , use up/down/left/right arrows on the screen in combination with the **[ALT]** key on the keyboard. With this combination the displacements will be 100 pixels for each click.

 Another way to optimize movement during positioning is push on one up/down/left/right arrows on the screen but not release (stay pressed). This action allows to obtain a displacement with speed that increased until release.

Letterbox

The letterbox function determines how the image will be displayed.

If Letterbox enabled is checked, the system will show all of the original image data on the screen. This may require that the system letterbox the image, either on the top and bottom, or left and right side.

If Letterbox enabled is not checked, the system will fill all the screen with image data. This may require that the system discard image data, either from the top and bottom, or the left and right side.

The following two examples show what will be displayed based on the state of the letterbox function.

Example with letterbox enabled

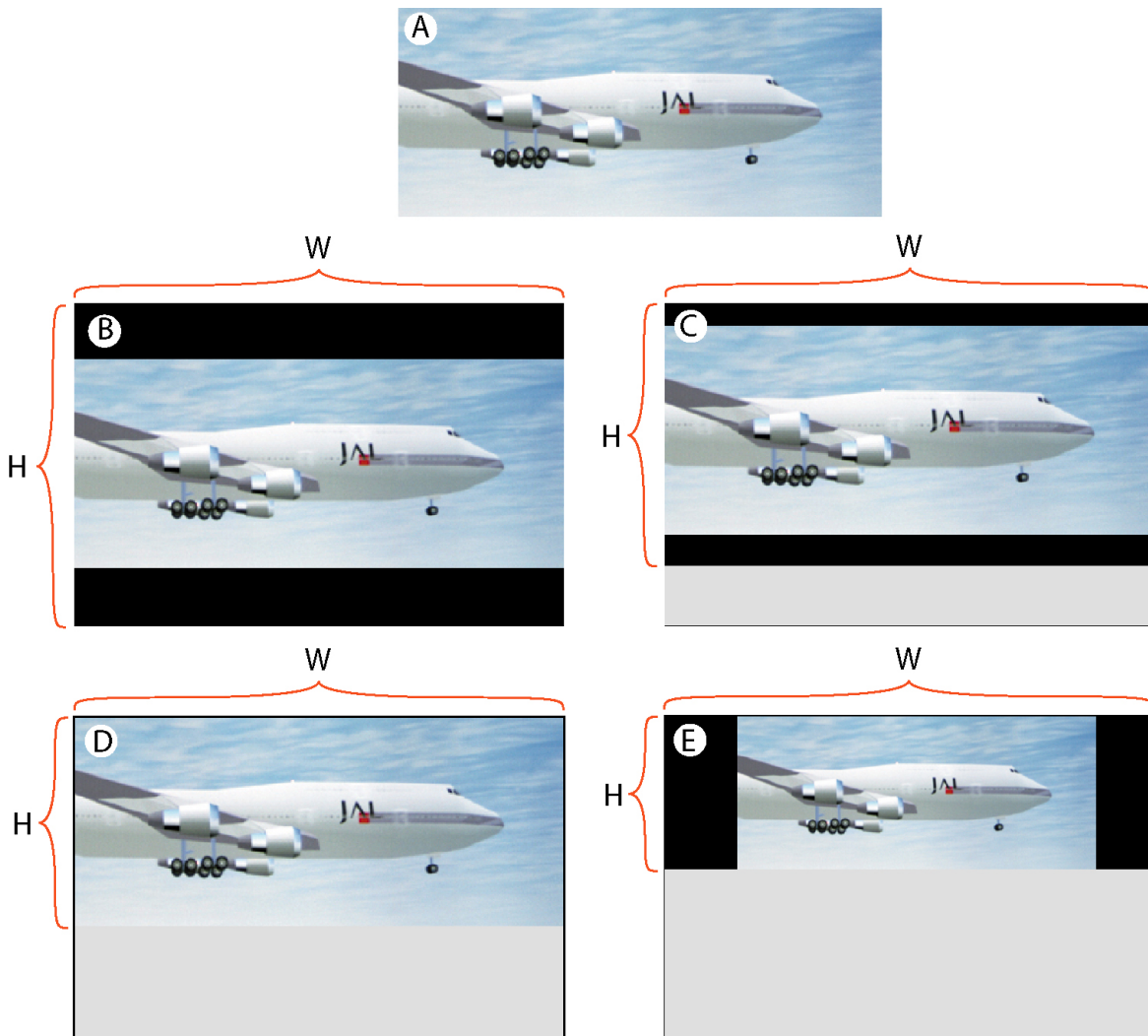


Image 7-135 Example letterboxing enabled

W and H are width and height of the resized area.

- A : input source
- B :
 - Resized area equals the maximum DMD size
 - The input image has a different aspect ratio from the resized area.
 - Full image is letterboxed (top and bottom) and centered within the resized area.
- C :
 - The screen height is narrowed, bottom is moved upwards.
 - The input image has a different aspect ratio from the resized area.
 - Full image is letterboxed (top and bottom) and centered within the resized area.
- D :
 - Bottom of resized area is moved upward to where image fills this area.

- The input image has now the same aspect ratio from the resized area.
- Full input image centered within the resized area and letterboxing is not required.
- E :
 - Bottom of resized area has moved upward to where image at previous size cannot be fully displayed.
 - Resized area reduced in both directions (maintaining aspect ratio) so full scaled image can be displayed.
 - Image is letterboxed (right side and left side).

Example with letterbox disabled

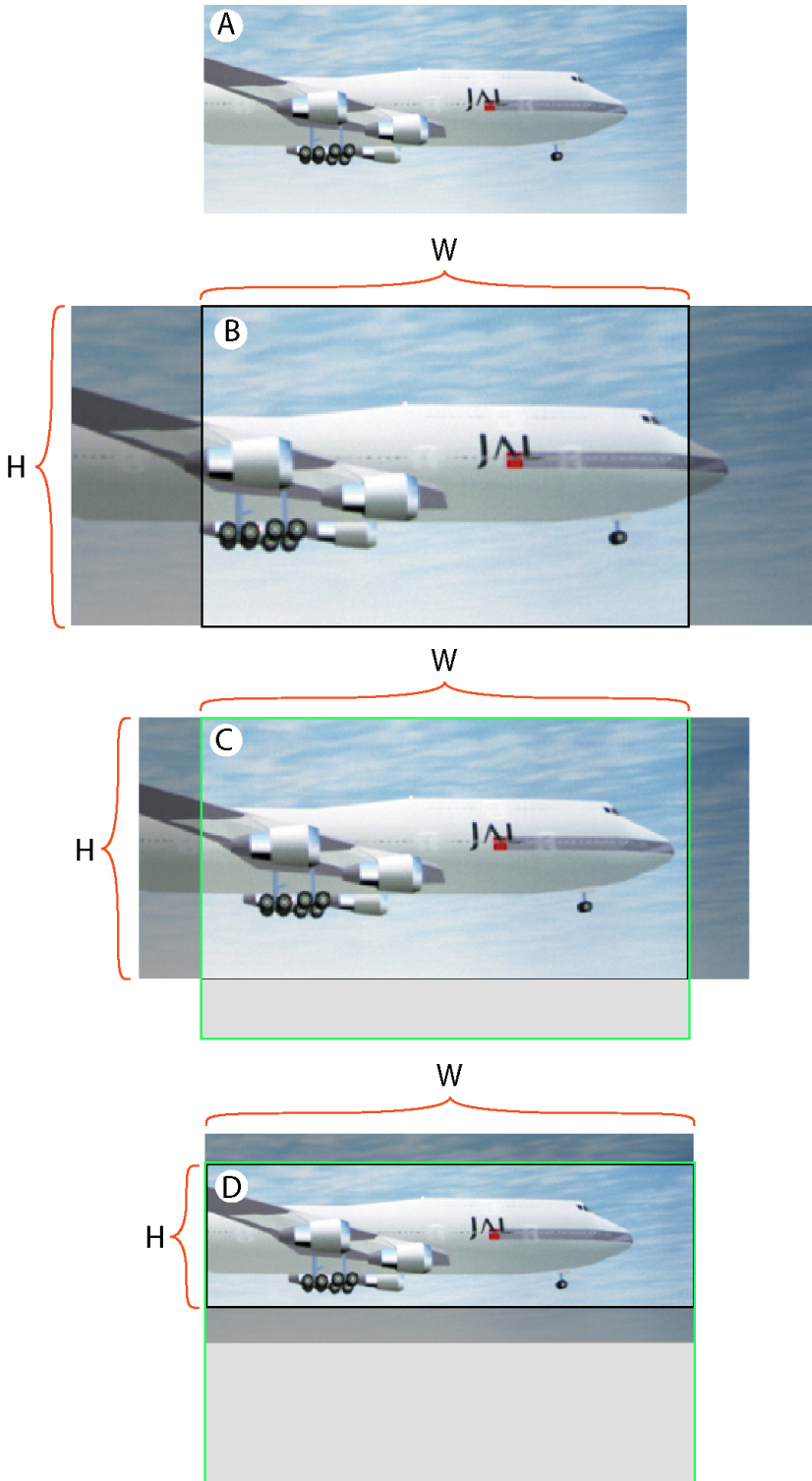


Image 7-136 Example letterboxing disabled

W and H are width and height of the resized area.

- A : input source
- B :
 - Resized area equals the maximum DMD size
 - The input image has a different aspect ratio from the resized area.
 - Image is scaled up to fill resized area, requiring that some input data be discarded because it falls outside the resized area (dark transparent areas left and right).
- C :
 - Bottom of resized area has moved upward.
 - The input image has a different aspect ratio from the resized area.
 - Image is scaled up to fill resized area, requiring that some input data be discarded because it falls outside the resized area (dark transparent areas left and right).
- D :
 - Bottom of resized area has moved upward so that the height is smaller than the image height.
 - The input image has a different aspect ratio from the resized area.
 - Input image is not scaled, however, data at the top of the image must be discarded because it falls outside of the resized area, and data at the bottom of the image must be discarded because it falls outside the resized area.

7.7.3.3 Masking

What is masking

After resizing the image, it may be still need to mask away pixels on the screen due to keystone and/or bow distortion of the projected image. So look always at the screen while masking pixels.

How to mask

1. While in *screen file editor*, click **Masking** (reference 1).

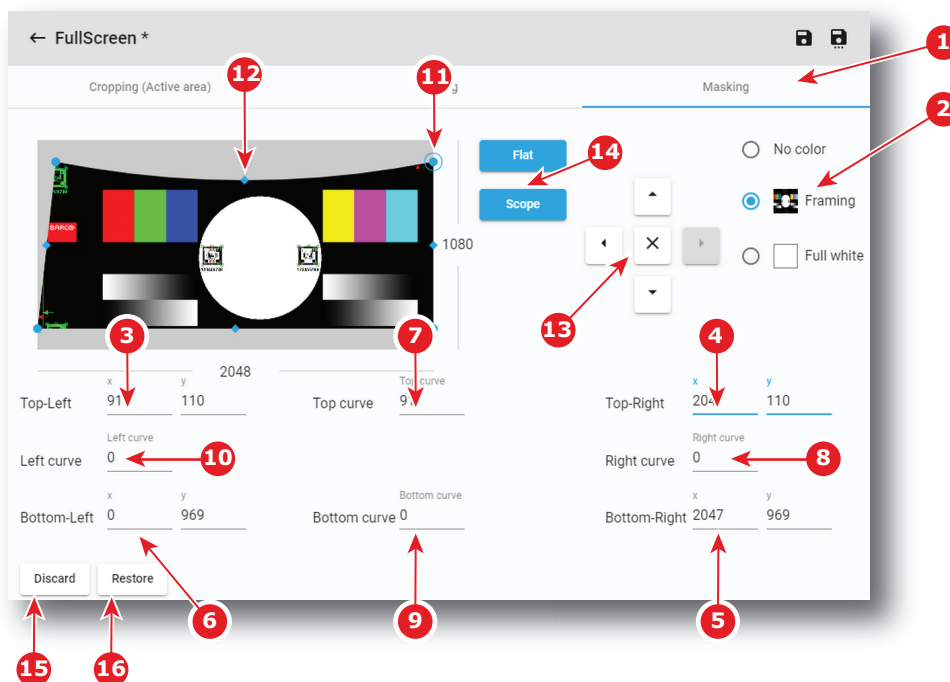


Image 7-137

2. Select a **Test pattern** (reference 2) to display a test pattern on screen.
3. If you need a predefined shape of masking, click on a shortcut (reference 14) at the right of the screen representation.

4. Set the position the 4 corners by using numeric values. Fit the corners of the picture on the four corners of the screen by blanking the pixels displayed outside of the screen.
 1. Click in the input fields for X and Y of *Top-Left* corner (reference 3) and fill out the desired position value (or use up down control of spin box near the input field).
 2. Redo the same operation with the other corners: *Top-Right* corner (reference 4), *Bottom-Right* corner (reference 5), *Bottom-Left* corner (reference 6).

or

Set the position the 4 corners manually by using arrows (reference 13):

1. Click on a corner (e.g. reference 11) to select it, then use up/down/left/right arrows (reference 13) to reach the desired position.
2. Redo the same operation with the other corners.



Tip: Combination of these arrows with [SHIFT] or [ALT] keys on keyboard allows to optimizing positioning. See section dedicated to *positioning accelerator* in "[Scaling](#)", page 162.

5. Set the 4 sides alignment by using numeric values. Fit the four sides of the picture to the four sides of the screen by blanking the pixels displayed outside of the screen. This setting is mainly used on curve screens.
 1. Click on the input field of the *Top curve* (reference 7) and enter the curve factor (or use up down control of spin box near the input field).
 2. Redo the same operation with the other curves: *Right curve* (reference 8), *Bottom curve* (reference 9), *Left curve* (reference 10).

or

Set the 4 sides alignment manually by using arrows (reference 13):

1. Click on a side/curve (e.g. reference 12) to select it, then use up/down/left/right arrows (reference 13) to reach the desired position.
2. Redo the same operation with the other side/curves.



Tip: Combination of these arrows with [SHIFT] or [ALT] keys on keyboard allows to optimizing positioning. See section dedicated to *positioning accelerator* in "[Scaling](#)", page 162.

6. Click **Discard** (reference 15) allows to remove all the modifications done in the previous steps.
7. Click **Restore** (reference 16) allows to reset the masking (zero position).

7.7.4 Editing a Screen file

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

How to edit

1. While in *Configuration > Projector > Picture*, find and click on the screen file you want to edit.
The screen file is displayed in its expanded form with menu.

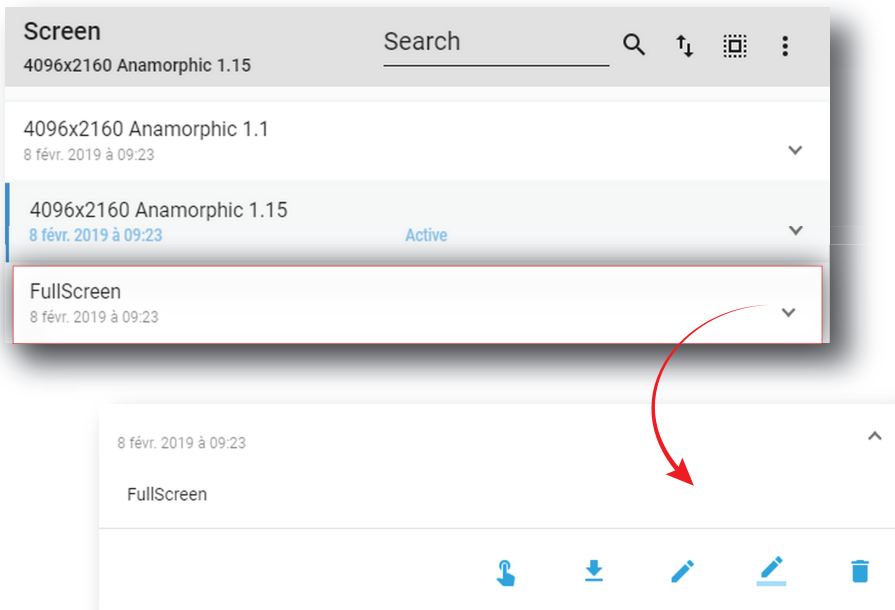


Image 7-138

2. Click **Edit** in the menu.



The screen file is displayed in *screen file editor*.

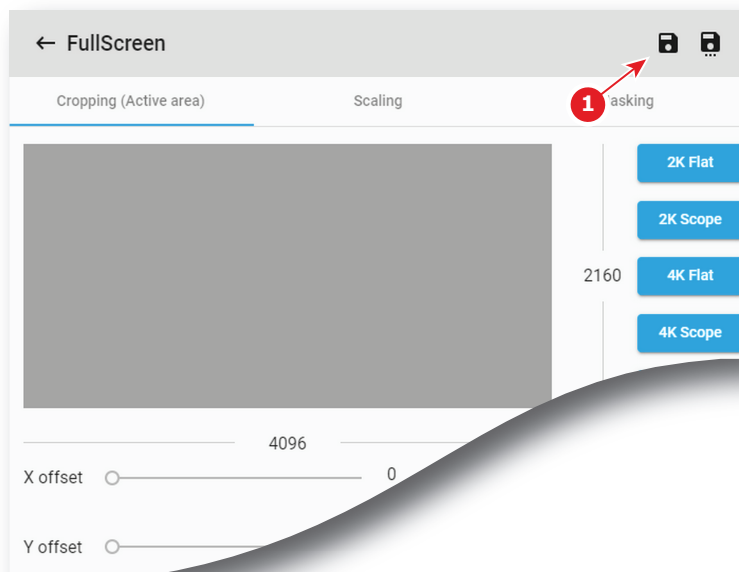


Image 7-139

3. Modify the screen file parameters. For more information about the *screen file editor*, see [“Screen file editor”, page 160.](#)
4. Click **Save** (reference 1).

7.7.5 Activating a screen file

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

What is possible

Usually a screen file is activated via a macro but it is possible to directly activate a screen file by clicking on **Activate** in the contextual menu.

How to activate

1. While in *Configuration > Projector > Picture*, find and click on the screen file you want to activate.

The screen file is displayed in its expanded form with menu.

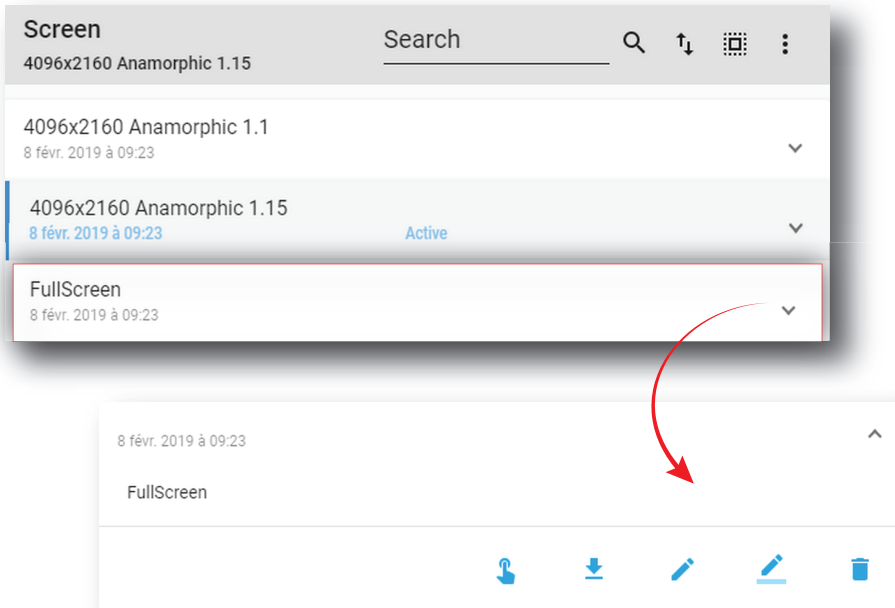


Image 7-140

2. Click **Activate** in the menu. 

The new configuration is applied. Status of the screen file turns to *Active* and its name is noticed on top of the list.

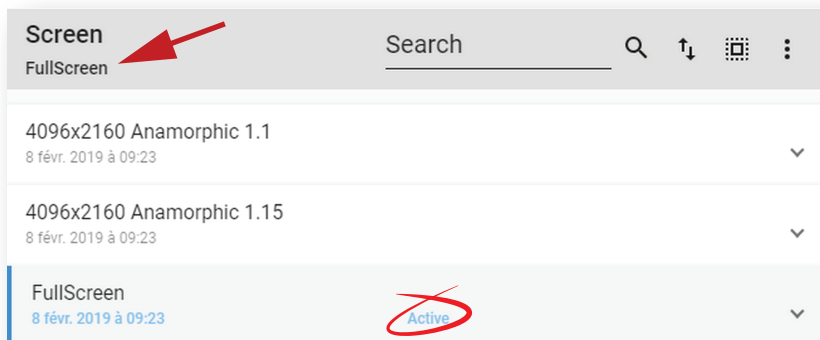


Image 7-141



Click on the name of the active file located on the top of the list to open it directly in edit mode.

7.7.6 Renaming a screen file

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

How to rename

1. While in *Configuration > Projector > Picture*, find and click on the screen file you want to rename.
The screen file is displayed in its expanded form with menu.

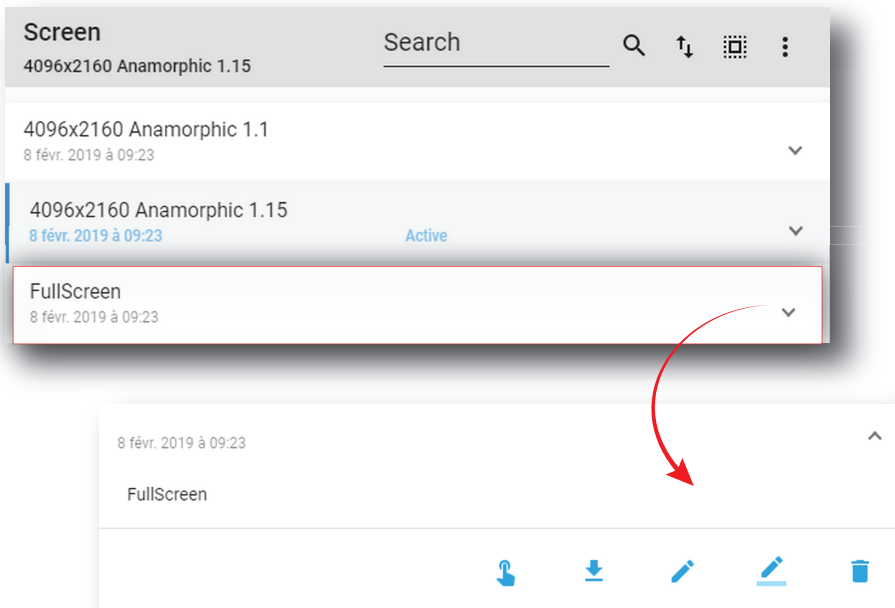



Image 7-142

2. Click **Rename** in the menu. 
Rename window is displayed.

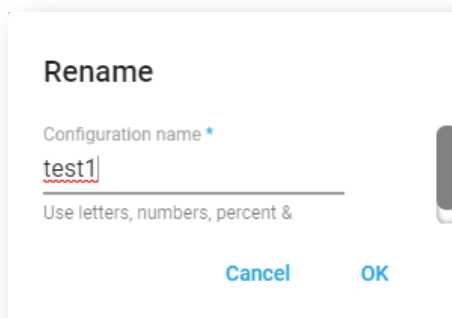


Image 7-143

3. Enter a new name and click **OK**.

7.7.7 Importing a screen file

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

How to import a screen file

1. While in *Configuration > Projector > Picture*, click on the screen file general menu (reference 1) located on the top right of the list.

The menu is displayed.

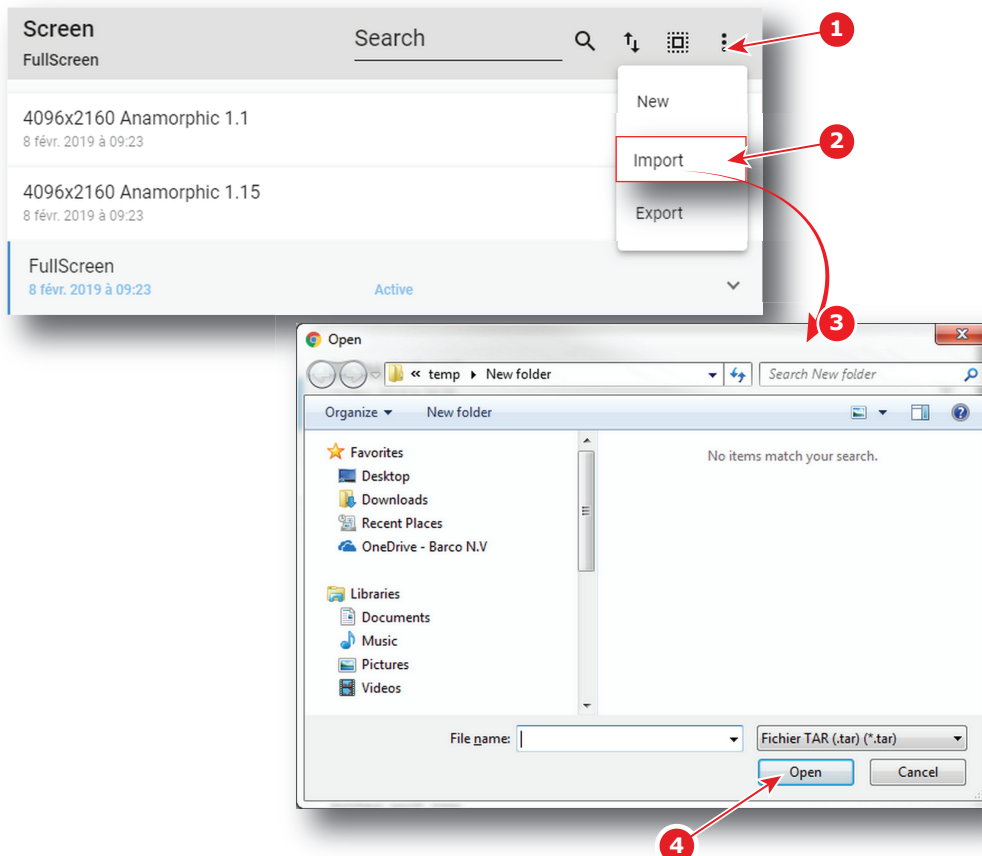


Image 7-144

2. Select **Import** (reference 2) in the menu.
Open window (reference 3) is displayed
3. Locate and select the screen file.
4. Click **Open** (reference 4).
The screen file is imported and added to the files list.

7.7.8 Exporting a screen file

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

How to export a screen file

1. While in *Configuration > Projector > Picture*, find and click on the screen file you want to export.

The screen file is displayed in its expanded form with menu.

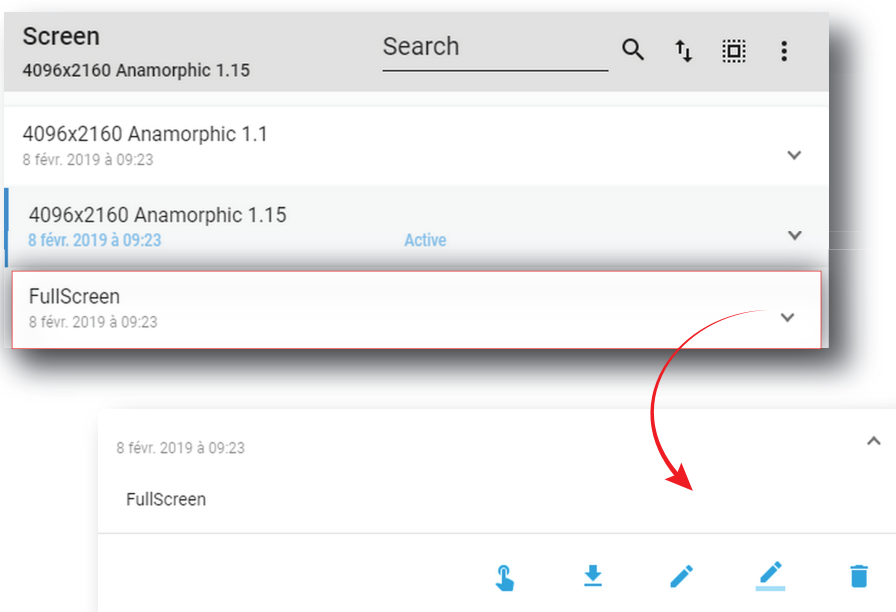


Image 7-145

2. Click **Export** in the menu. 

Download package window is displayed during backup package creation.

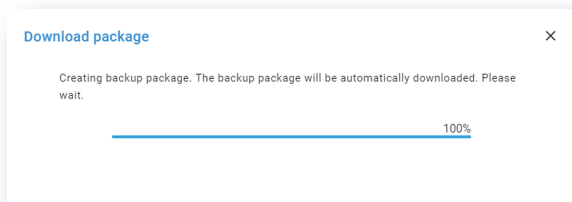


Image 7-146

3. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *SCREEN-backup-SP4K-15C-2590153431-2019-04-14T133742Z.tar*).

7.7.9 Exporting several screen files in a backup package

What is possible

Several screen files could be exported at once in a backup package.

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

How to create and export backup package of screen files

1. While in *Configuration > Projector > Picture*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the screen files in order to select/deselect the files you want to export.

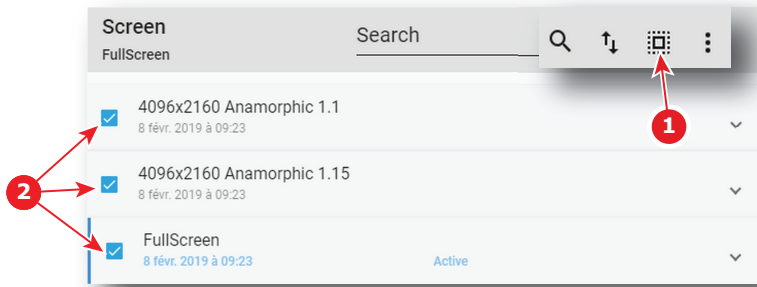


Image 7-147

2. Click on the screen file general menu (reference 3) located on the top right of the list.
A menu is displayed.

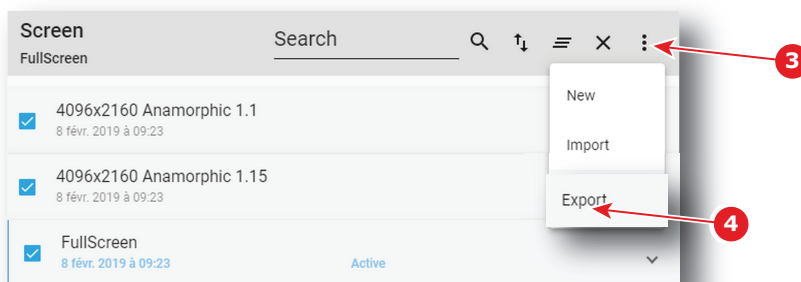


Image 7-148

3. Select **Export** (reference 4) in the menu.
Download package window is displayed during backup package creation.

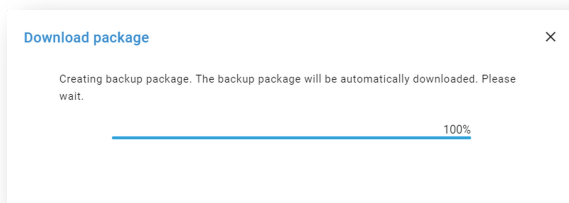


Image 7-149

4. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *SCREEN-backup-SP4K-15C-2590153431-2019-04-14T133742Z.tar*).

7.7.10 Delete a screen file

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

How to delete

1. While in *Configuration > Projector > Picture*, find and click on the screen file you want to delete.
The screen file is displayed in its expanded form with menu.

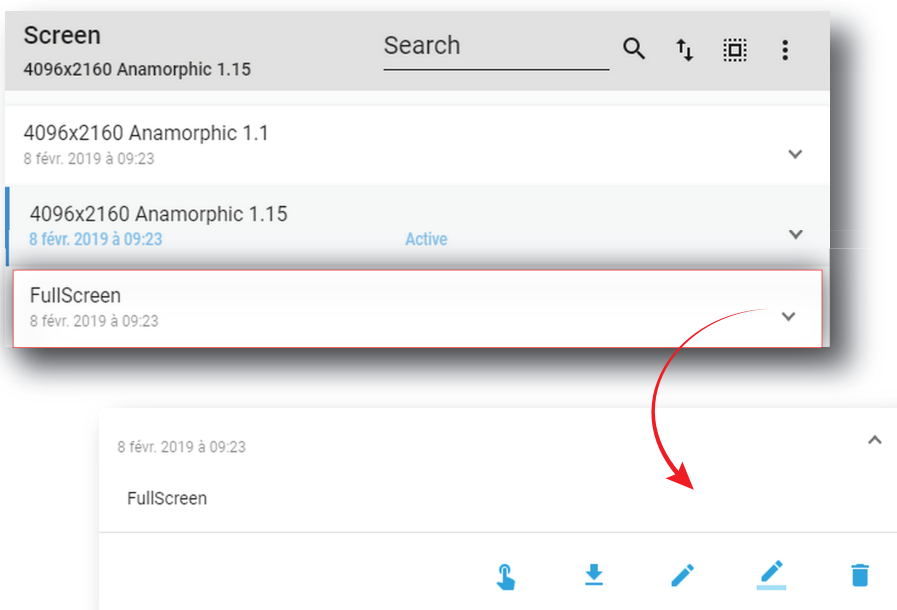


Image 7-150

2. Click the **Delete** icon and confirm with **OK**.



The screen file is removed from the list.

7.7.11 Deleting several screen files

Location & access

Menu: Configuration > Projector > Picture

Level: Administrator, Service technician

How to delete several screen files

1. While in *Configuration > Projector > Picture*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the screen files in order to select/deselect the files you want to delete.

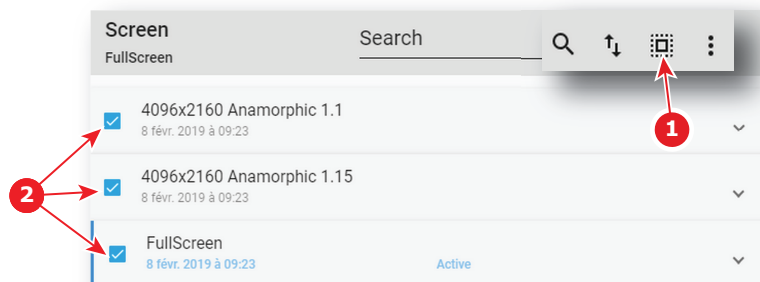


Image 7-151

2. Click on the screen file general menu located on the top right of the list, then select **Delete** and confirm with **OK**.

The screen files selected are definitively removed from the list.

7.8 Test patterns

7.8.1 About test patterns

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

Overview

This panel allows to manage test patterns of the projector.

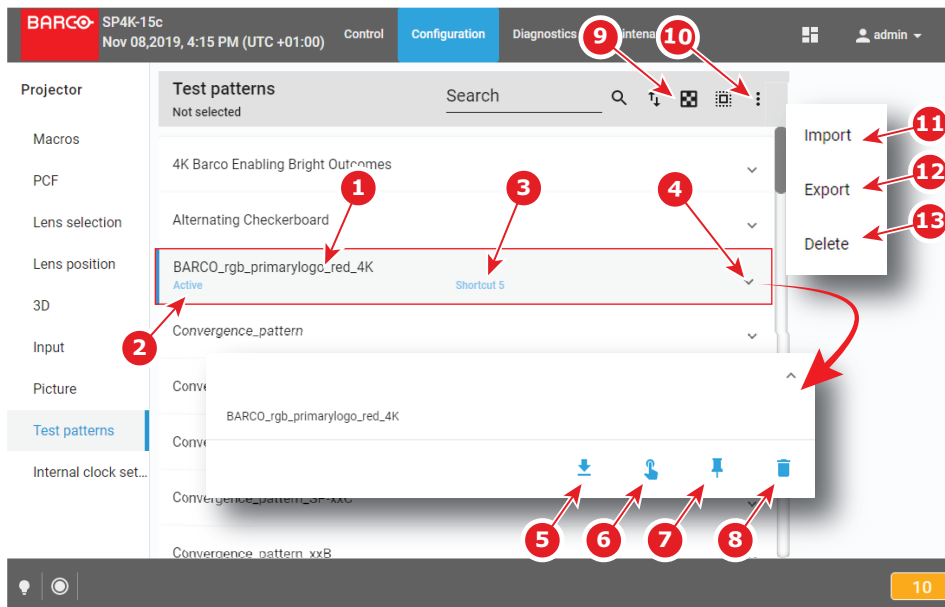


Image 7–152

Each test pattern displayed in this menu has a *Name* (reference 1). When a test pattern is selected the status of the test pattern (reference 2) turns to *Selected* and its name is noticed on top of the list. On the status bar, a icon blinks in green when a test pattern is activated.

Predefined patterns can be quickly selected via the shortcuts (e. g. *Control panel* in *Web Commander* software). If a test pattern is associated to shortcut, the shortcut name (reference 3) is specified on the test pattern.

Clicking on a test pattern (reference 4) in this list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Export** (reference 5) copies the .PNG file in the *Downloads* directory of your computer.
- **Activate/Deactivate** (reference 6) allows to display (/remove) the test pattern on (/from) the screen.
- **Create/Delete** shortcut (reference 7) allows to associate (/unlink) test pattern to (/from) a shortcut.
- **Trash bin** icon (reference 8) allows to remove test pattern from the list.

Clicking on **Off TestPattern** (reference 9) located on the top right of the list allows to deselect current test pattern without retrieve it in the list.

Clicking on menu (reference 10) displays the test patterns general menu.

Following actions are available in this menu:

- **Import** (reference 11) allows to import a test pattern (.PNG) alone (one single file), or a package of test patterns (.tar) with several files inside.
- **Export** (reference 12) creates a downloadable backup package that contains all test patterns selected, then copies this package in the *Downloads* directory of your computer.
- **Delete** (reference 13) allows to remove several test patterns selected in the list.

7.8.2 Activating a test pattern using configuration menu

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to activate

1. While in Configuration > Projector > Test patterns, find and click on the test pattern you want to activate. The test patterns is displayed in its expanded form with menu.

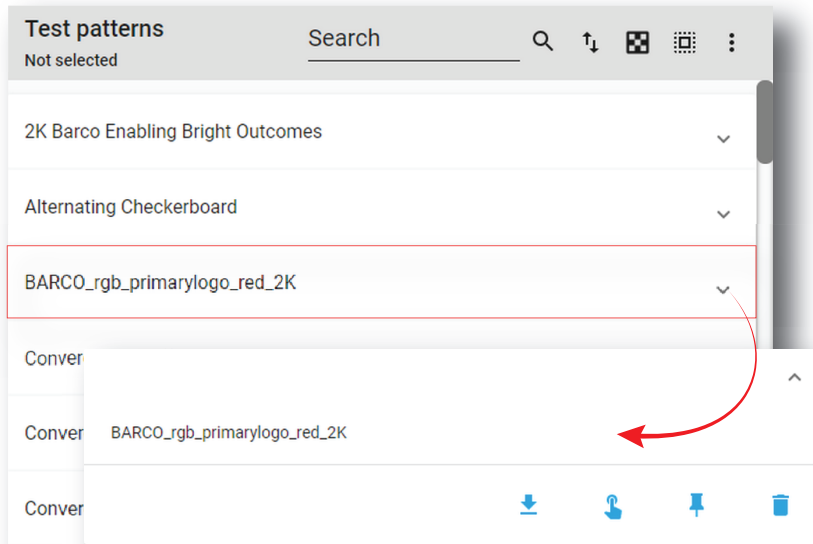


Image 7-153

2. Click **Activate** in the menu.



The Test patterns is activated. Status of the test patterns turns to *Active* and its name is noticed on top of the list.

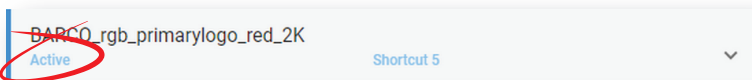


Image 7-154

On the status bar, a icon blinks in green when a test pattern is activated.

7.8.3 Deactivating a test pattern using configuration menu

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to deactivate

1. While in Configuration > Projector > Test patterns, find and click on the test pattern you want to deactivate. The test patterns is displayed in its expanded form with menu.

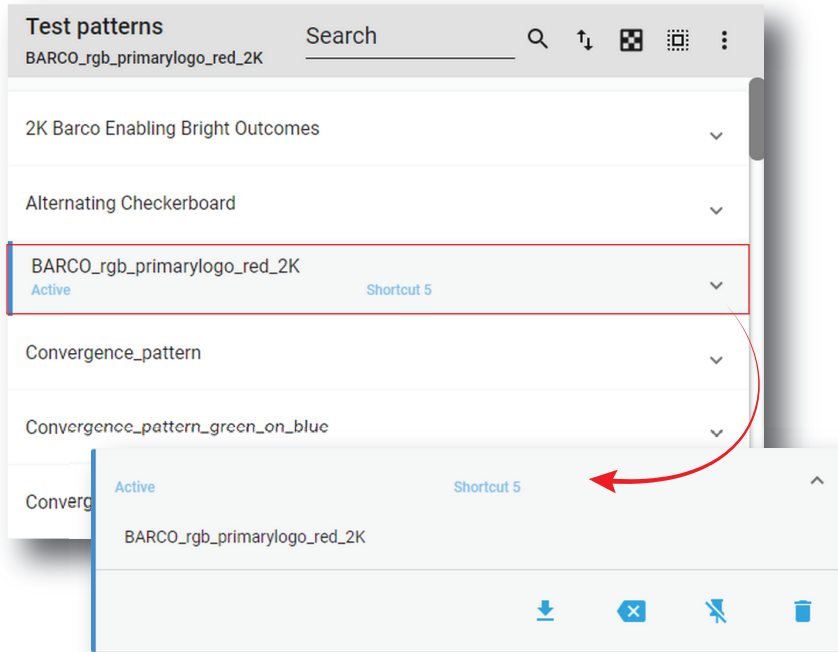


Image 7-155

2. Click **Deactivate** in the menu. 

The Test patterns is deactivated. *Active* status is removed from the test pattern and “Not selected” is noticed on top of the list.

On the status bar, the icon related to test pattern is removed.

7.8.4 Assign a test pattern to a shortcut

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to assign a test pattern to a shortcut number

1. While in *Configuration > Projector > Test pattern*, find and click on the test pattern you want to link with a shortcut.

The test pattern is displayed in its expanded form with menu.

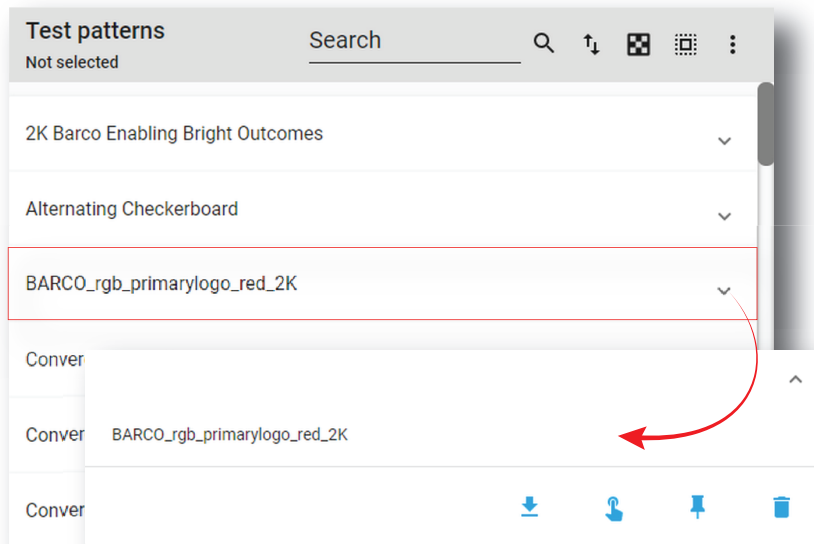



Image 7–156

2. Click **Create shortcut** in the menu. 
Assign to test pattern shortcut window is displayed and invite you to select a shortcut.

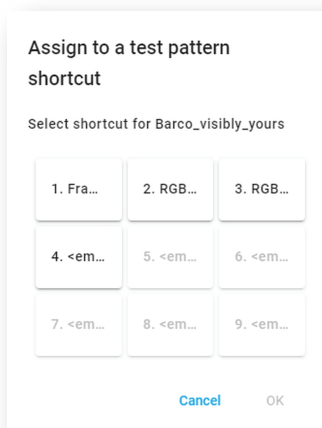


Image 7–157

3. Choose a shortcut button not already assigned to a test pattern (e.g. 2) then click **OK**.
 Test pattern is now linked with a shortcut and the shortcut number is displayed on the test pattern.

7.8.5 Removing a test pattern from a shortcut

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to unlink a test pattern from a shortcut number

1. While in *Configuration > Projector > Test patterns*, find and click on the test pattern you want to unlink.
 The test patterns is displayed in its expanded form with menu.

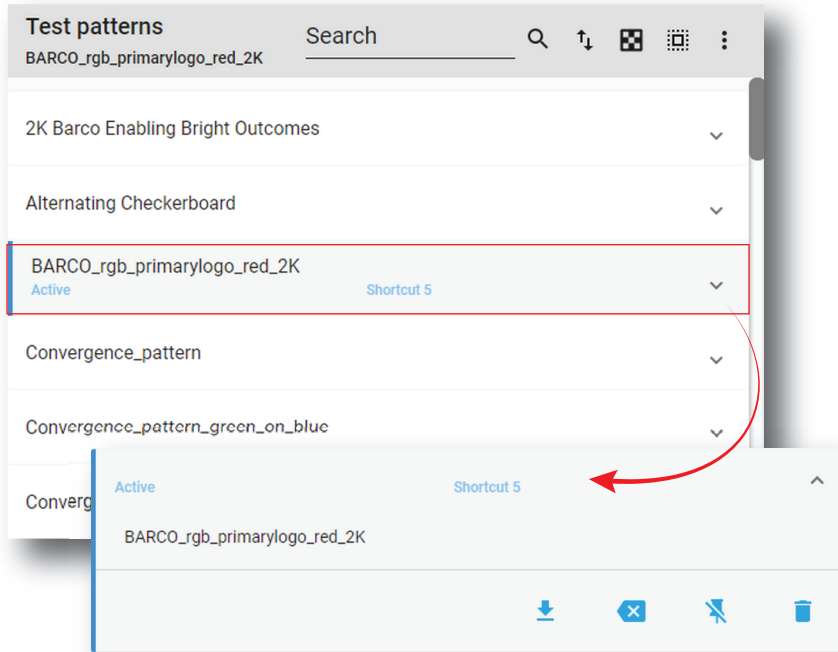


Image 7-158

2. Click **Delete shortcut** in the menu. 

Test pattern is no longer associated with shortcut (e. g. *Shortcut 2*) and shortcut name is removed from the test pattern.

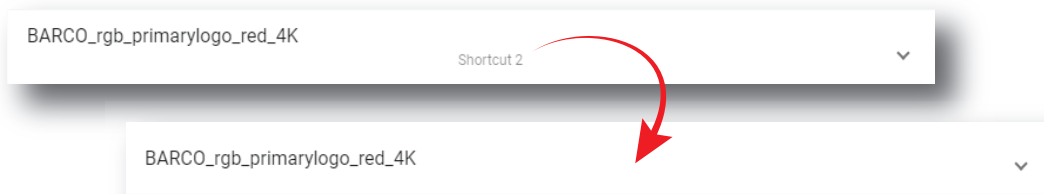


Image 7-159

7.8.6 Importing a test pattern

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to import a test pattern

1. While in *Configuration > Projector > Test patterns*, click on the test pattern general menu (reference 1) located on the top right of the list.

Test patterns menu is displayed.

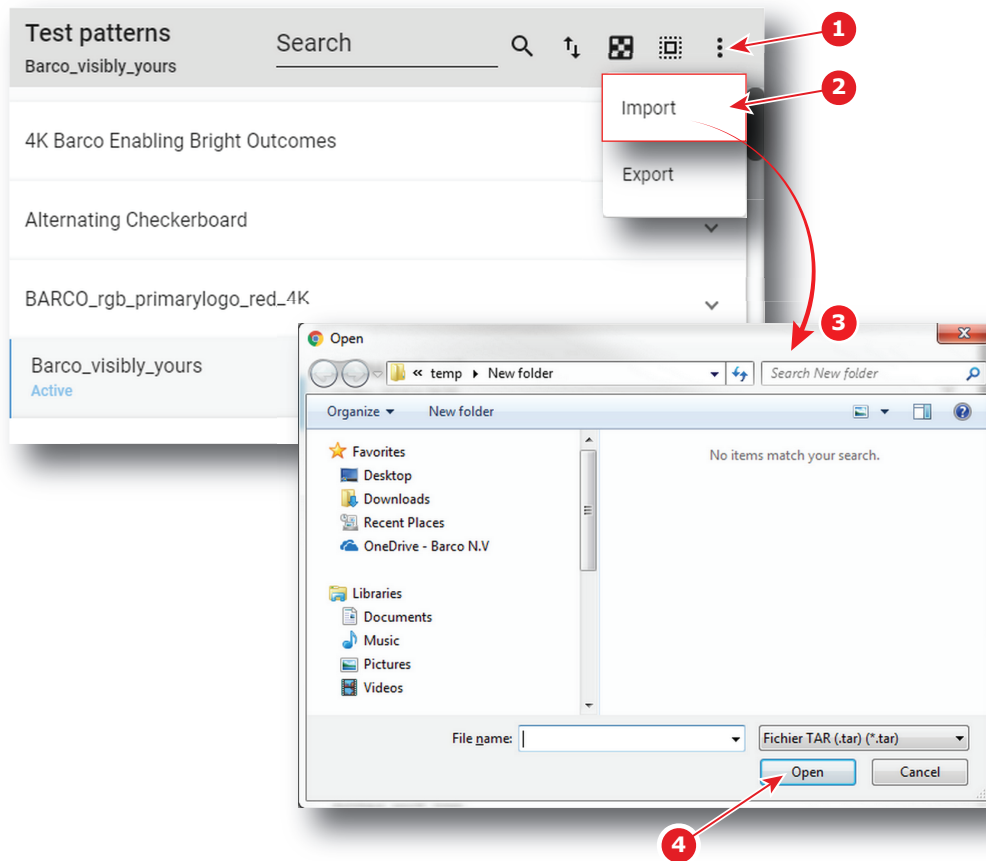


Image 7–160

2. Select **Import** (reference 2) in the menu.
Open window (reference 3) is displayed
3. Locate and select a test pattern (.PNG) alone (one single file), or a package of test patterns (.tar) with several files inside.
4. Click **Open** (reference 4).
 Selected files are imported and added to the list.



If a file has the same name as a file already present, a confirmation will be required before overwriting.

7.8.7 Exporting a test pattern

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to export a test pattern

1. While in *Configuration > Projector > Test pattern*, find and click on the test pattern you want to export.
 The test pattern is displayed in its expanded form with menu.

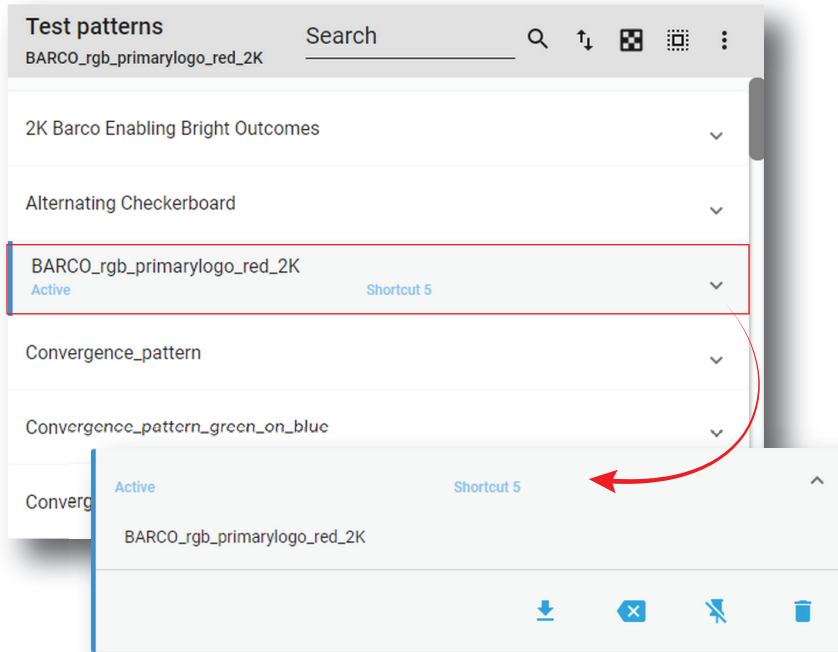


Image 7-161

2. Click **Export** in the menu.



Test pattern file (.PNG) is created and automatically copied in the *Downloads* directory of your computer (e.g. *BARCO_rgb_primarylogo_red_2K.PNG*).

7.8.8 Exporting several test patterns in a backup package

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to create and export backup package of test patterns

1. While in *Configuration > Projector > Test patterns*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the test patterns in order to select/deselect the test pattern files you want to export.

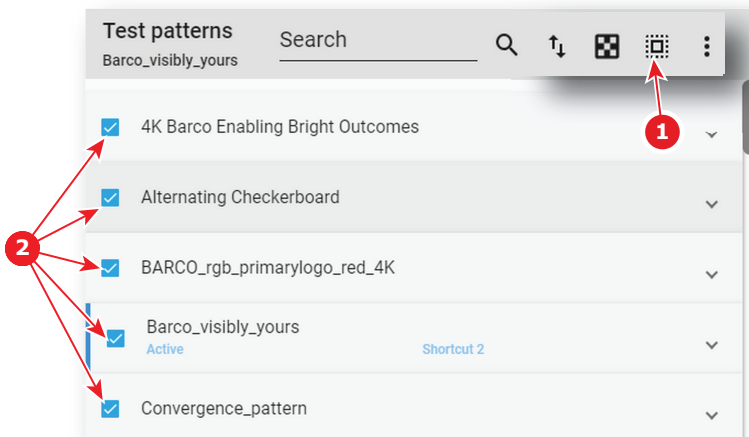


Image 7-162

2. Click on the Test patterns general menu (reference 3) located on the top right of the list. Test pattern general menu is displayed.

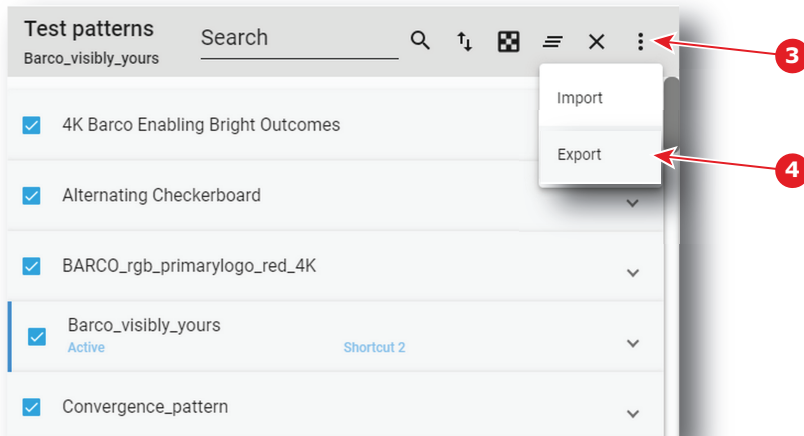


Image 7-163

3. Select **Export** (reference 4) in the menu. *Download package* window is displayed during backup package creation.

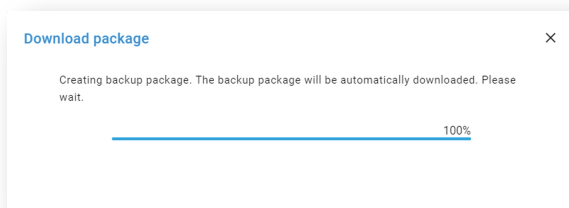


Image 7-164

4. When backup package is created, it is automatically copied in the *Downloads* directory of your computer (e.g. *TESTPATTERN-backup-SP4K-15C-2590153431-2019-04-09T134843Z.tar*).

7.8.9 Delete a test pattern

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to delete

1. While in *Configuration > Projector > Test pattern*, find and click on the test pattern you want to delete. The test pattern is displayed in its expanded form with menu.

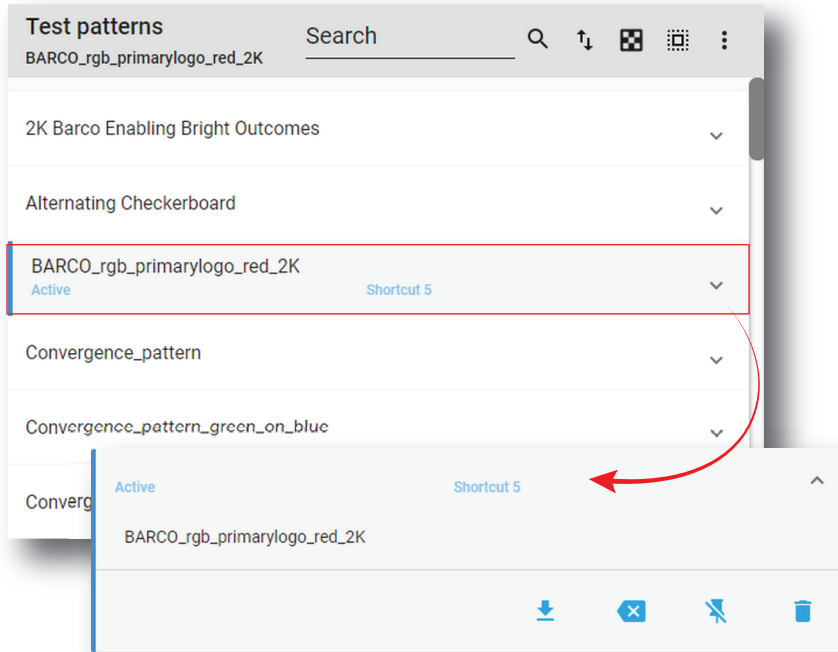


Image 7-165

2. Click the **Delete** icon and confirm with **OK**.



The file is removed from the list.

7.8.10 Deleting several test pattern files

Location & access

Menu: Configuration > Projector > Test Patterns

Level: Administrator, Service technician

How to delete several test pattern files

1. While in *Configuration > Projector > Test patterns*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the test patterns in order to select/deselect the test pattern files you want to delete.

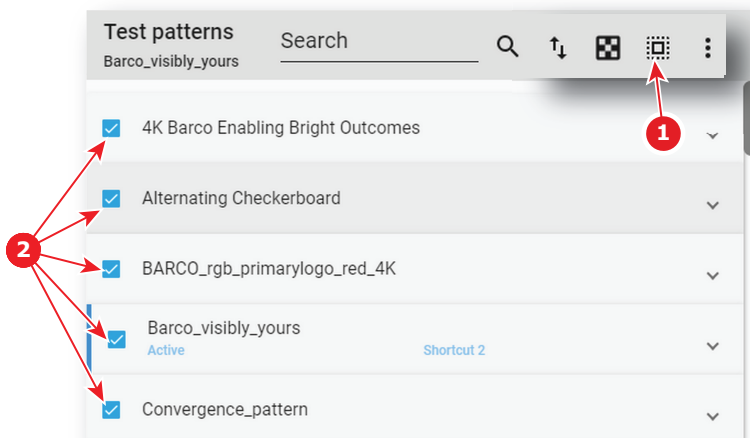


Image 7-166

- Click on the test pattern general menu located on the top right of the list, then select **Delete** and confirm with **OK**.

The test patterns selected are definitively removed from the list.

7.9 Internal clock settings

7.9.1 About Internal clock settings

Location & access

Menu: Configuration > Projector > Internal clock settings

Level: Administrator, Service technician

Overview



Only available when the projector is equipped with an ICMP.

This panel allows you to adjust the internal clock.

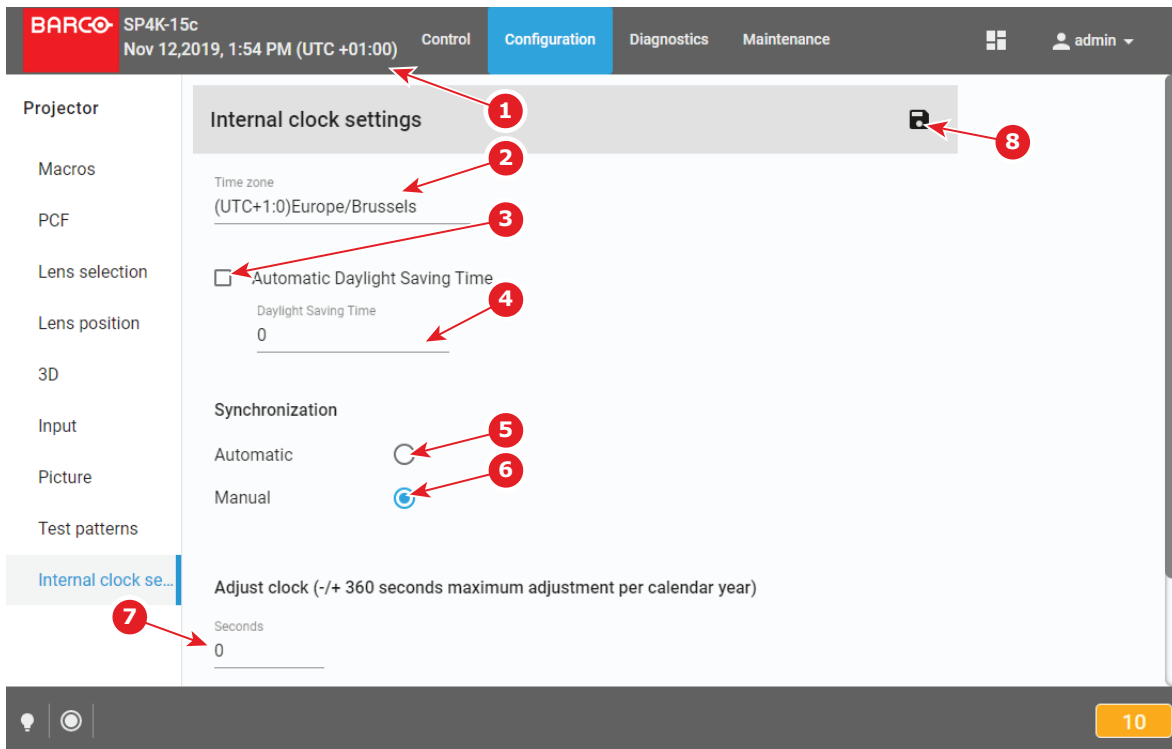


Image 7-167

The clock indication (reference 1) next to local time indicates the local time as set by selecting the local time zone (reference 2).

Automatic Daylight saving time mechanism can be enabled or disabled (reference 3). If disabled, the daylight saving time must be adjusted manually (reference 4).

To limit a clock deviation, the local time must be synchronized with the real UTC time. Depending on the synchronization source (automatic or manual synchronization), the deviation is limited within certain limits:

Manual clock adjustment

If there is a small difference between the actual UTC time and the UTC time displayed on the projector and you cannot connect to a Network Time Protocol server (NTP server), you can use manual synchronization

(reference 6) instead. Using this method, you can enter an offset value between -360 and +360 seconds (reference 7).

A maximum offset of 360 seconds (6 minutes) per calendar year can be used using this method.

Automatic clock adjustment (NTP server)

If you have access to a Network Time Protocol Server (NTP), it is recommended to synchronize the projector to it. Using this method, the internal clock of the projector will be continuously synchronized with the NTP server. Any deviation between the NTP server and the projector will be in the order of milliseconds.



NTP
Network Time Protocol

7.9.2 Setting the internal clock of the projector

Location & access

Menu: Configuration > Projector > Internal clock settings

Level: Administrator, Service technician

How to set the internal clock of the projector?

1. While in *Configuration > Projector > Internal clock settings*, set your local Time zone (reference 1). Click on the drop down box and select the applicable time zone for your location (reference 2).

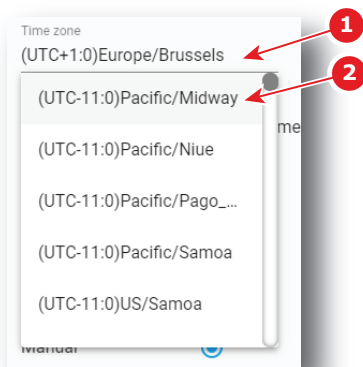


Image 7-168

2. Optionally, you can deactivate the *Automatic Daylight Saving Time (DST)* by deselecting the checkbox next to it (reference 3). If deselected, you can select the corresponding value for your time zone by using the associated drop box (reference 4).

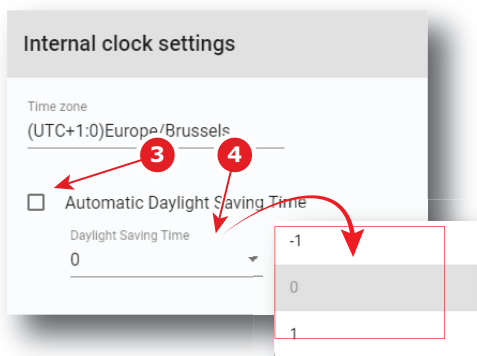



Image 7-169

 **Note:** Automatic Daylight Saving Time (DST) is by active by default. While you can disable this feature to adjust it manually, this is not recommended. Only disable this feature if you live in a time zone without an active DST, or if local legislation forces you to do so.

3. If you cannot access an NTP server, select **Manual** Synchronization (reference 5). If so, enter any observed adjustment necessary between the projector clock and the actual UTC time (reference 6) in seconds.

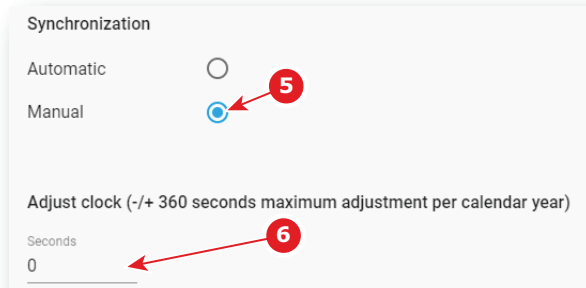



Image 7-170

 **Note:** Take into account that you can adjust a maximum of 360 seconds (either positive or negative) per calendar year.

4. If you can access an NTP server, select Automatic Synchronization (reference 7).
5. If Automatic is chosen, select the applicable NTP Server from the list of servers (reference 8).

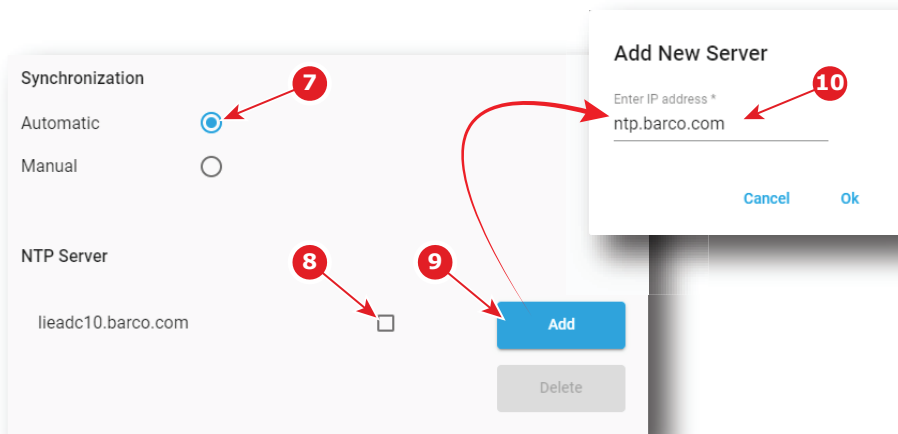



Image 7-171

 **Note:** If no NTP server has been entered before, you can Add a New Server (reference 9). Using this method, you can enter a valid IP address or server name (reference 10). The IP address or server name can be an internal or an external location, but it must be accessible via the network the projector is connected to. Confirm with **OK** to see the newly added server added in the list of NTP servers.

6. Click the **Save** icon to set the new time as current time.

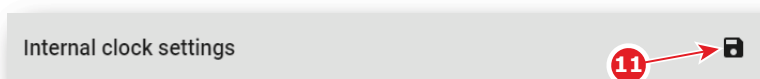


Image 7-172

7.10 Image Orientation

7.10.1 Changing image orientation

Location & access

Menu: Configuration > Projector > Internal clock settings

Level: Administrator, Service technician

What is possible?

The way of physical installation of the projector has an impact on displayed image. For example, rear or ceiling installation are possible. This menu allows to apply horizontal and/or vertical symmetry to the image.

Menu overview

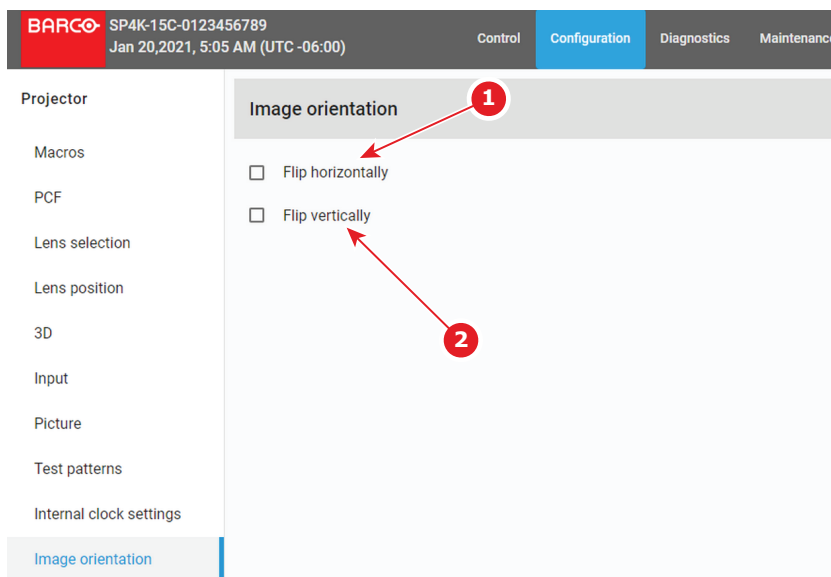


Image 7–173

Following actions are available in this menu:

- **Flip horizontally** (reference 1) allows to apply or release horizontal symmetry to the image.
- **Flip vertically** (reference 2) allows to apply or release vertical symmetry to the image.

These transformations (horizontal and vertical) can be apply simultaneously and/or independently.

How to change image orientation

1. While in *Configuration > Projector > Image orientation*, change image orientation.

Select (or unselect) the checkbox *Flip horizontally* to apply (or release) horizontal symmetry to the image.

And/Or,

Select (or unselect) the checkbox *Flip vertically* to apply (or release) vertical symmetry to the image.

Configuration - Light output

8

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About this menu

Light output menu allows you to manage the desired light output and manage Light Sensor Calibration (LSC) files.

8.1 Light sensor calibration (LSC)



LSC file

Light sensor calibration file

8.1.1 About light sensor calibration

Location & access

Menu: Configuration > Light output > Sensor

Level: Administrator, Service technician

What should be done?

The built in light sensor of the projector should be calibrated before the measured light output is the correct value. The calibration depends on the screen type and the projected image format (flat or scope). Before the measured light out is correct, at least 2 calibration files should be created: one for flat and another one for scope.

Overview

This panel allows to manage calibration files in order to realize the light sensor calibration.

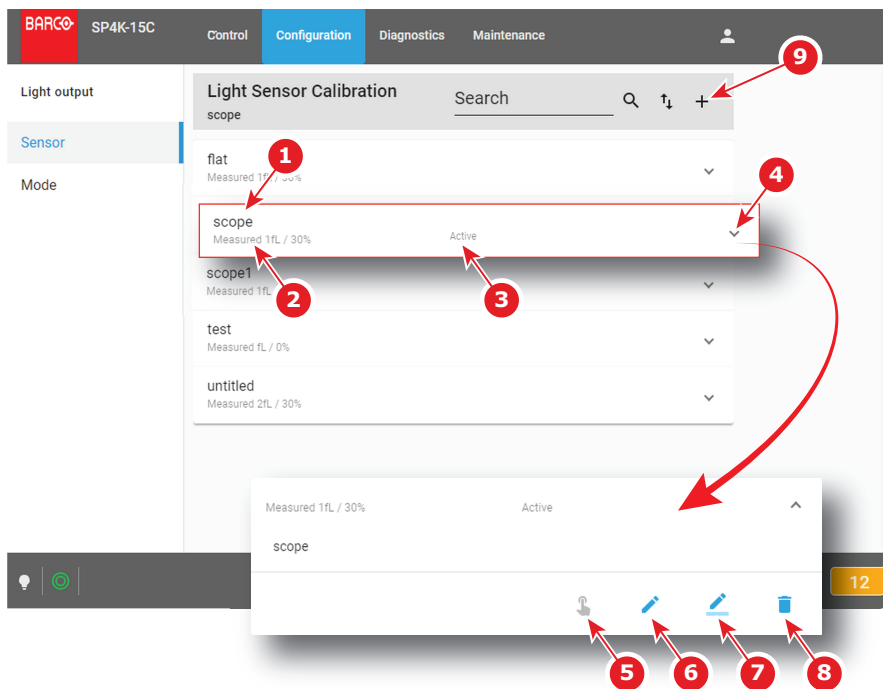


Image 8-1

Each sensor calibration file displayed in the list has a name (reference 1). Power value (reference 2) already defined for this file is shown just under this name. When a calibration file is activated the status (reference 3) turns to *Active* and its name is noticed on top of the list.

Click on sensor calibration file (reference 4) in the list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Activate** (reference 5) allows to calibrate the light output with the values defined in the sensor calibration file.
- **Edit** (reference 6) allows to modify the sensor calibration file power values.
- **Rename** (reference 7) allows to change the name of the sensor calibration file.
- **Delete** (reference 8) allows to remove the sensor calibration file.

Click **Plus** (reference 9) allows to create a new sensor calibration file.

8.1.2 Creating a new light sensor calibration file



Power settings are temporarily overruled with values in edit/creation mode. Exiting this page will restore the initial settings.

Required tools

Spectroradiometer

Prerequisites

1. Place a spectroradiometer in the auditorium. Position it in such a way it meets the following requirements.
 - Perpendicular to the screen.
 - In the auditorium sweet spot.
 - In such a way it can measure the reflected light from the center of the screen.
2. Set up the ambient light conditions as it should be during the play-out of the movie (e.g. only the stairs and emergency exit lighting are switched on).
3. Project a full white test pattern with the desired aspect ratio (flat or scope).

How to create a light sensor calibration file

1. Click on the **New** icon, located on top of the list.

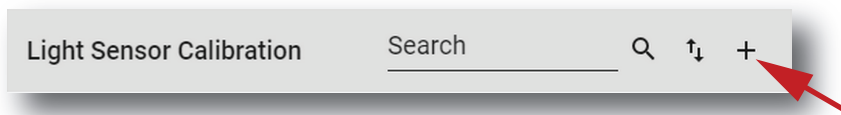


Image 8–2

A window is displayed with a new (untitled) calibration file.

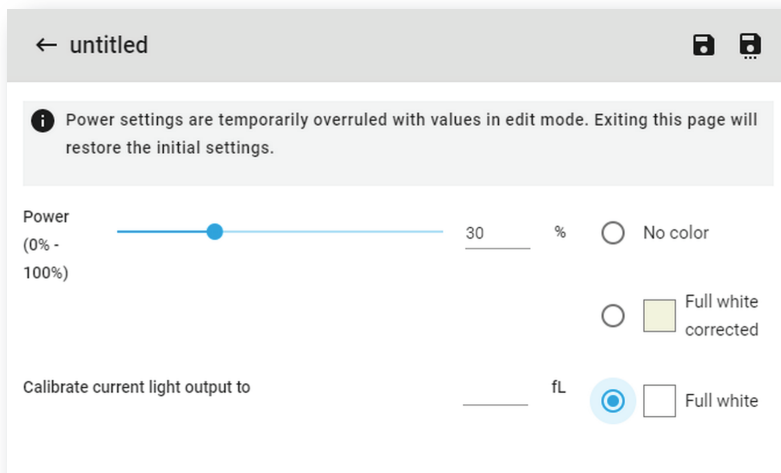



Image 8–3

2. If it is not already done Select a **Test pattern** in the list to display a test pattern on screen.
3. Measure the current light output with the spectroradiometer. The default target value is 14 foot Lambert (fL).
4. Adjust the **Power** slider until the spectroradiometer measures the target value. Several iterations will be necessary.

 **Note:** When using CLO it can be possible that due to the aging process the desired 14 fL cannot be reached.

5. Enter the measured value (14 fL) into the field **Calibrate current light output to**.
6. Click **Save** or **Save As** (reference 3) to display the Save As window. Enter a recognizable name (reference 4) and confirm with **Save** (reference 5).

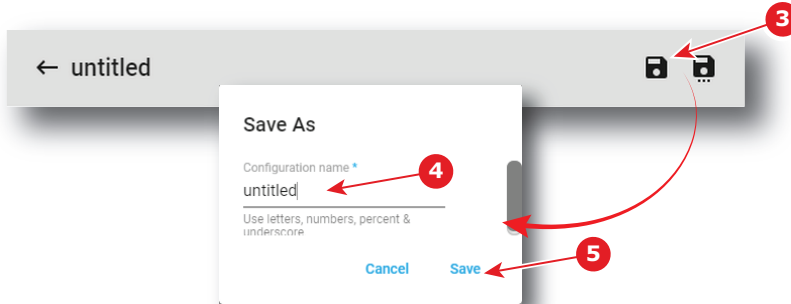


Image 8-4

7. The new file is ready to be used as light sensor calibration file (LSC file). See [“Activating a light sensor calibration file”](#), page 192 to activate this file.
8. Repeat this procedure for every desired aspect ratio and format (e.g. flat and scope). Save each iteration under a different file.

8.1.3 Activating a light sensor calibration file

How to activate a light sensor calibration file

1. While in the *Light Output Sensor* menu, select the light sensor calibration file that matches the screen type and the desired projected image format.

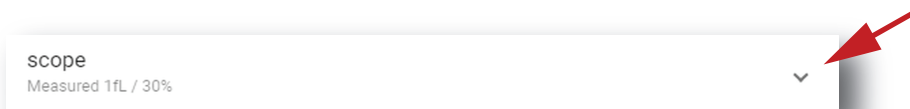


Image 8-5

The calibration file is displayed in its expanded form with menu.

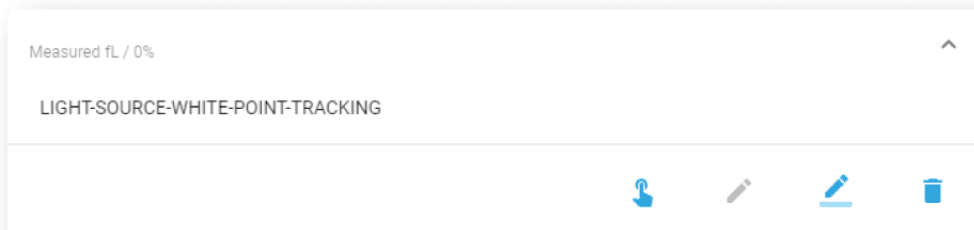


Image 8-6

2. Click the **Activate** icon. 

The calibration file is now activated :

- Built-in light sensor of the projector is settled with parameters defined in the calibration file.
- Name of the calibration file is now active (reference 2) and is displayed at the top of the LSC file list (reference 1).

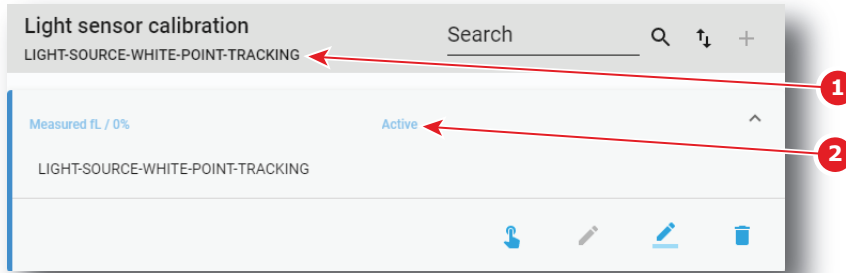


Image 8-7 LSC file is activated

8.1.4 Deleting a light sensor calibration file

How to delete a light sensor calibration file

1. In the Light sensor Calibration menu, select the undesired light sensor calibration file.



Image 8-8

The calibration file is displayed in its expanded form with menu.

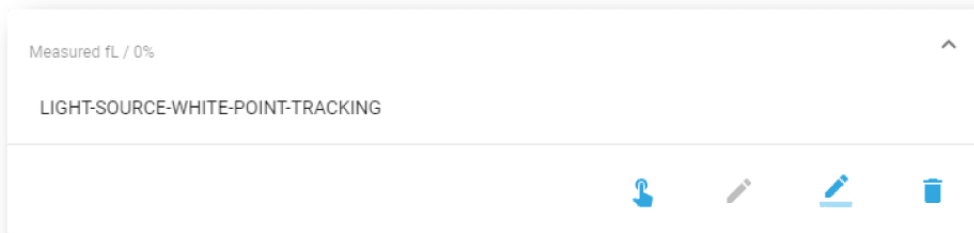




Image 8-9

2. Click the **Delete** icon in the menu and confirm with **OK**. 

The calibration file is removed from the list

8.1.5 Editing a light sensor calibration file

 If you want to edit an LSC file, make sure you comply to the same prerequisites as when creating this LSC file. For more info, refer to [“Creating a new light sensor calibration file”](#), page 191. If you only want to rename the LSC file, see the following procedure instead: [“Renaming a light sensor calibration file”](#), page 194.

How to edit a light sensor calibration file

1. In the Light Sensor Calibration menu, select the desired LSC file.

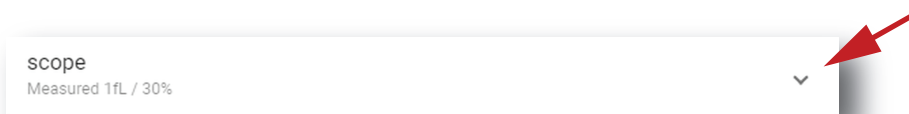


Image 8-10

The calibration file is displayed in its expanded form with menu.

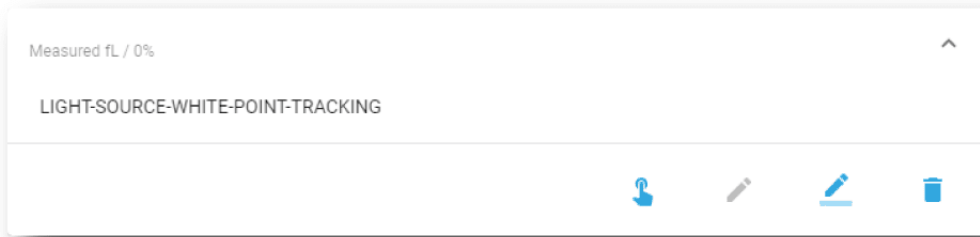


Image 8–11

2. Click the **Edit** icon. 

Edit window is displayed.

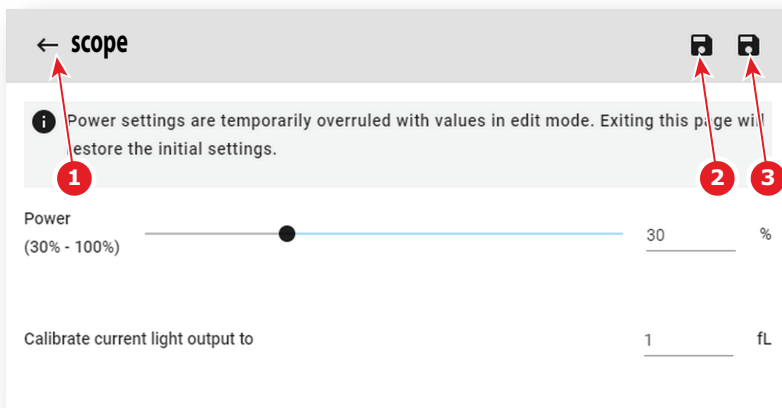



Image 8–12

3. edit the desired values.
 *Note:* Please refer to section “[Creating a new light sensor calibration file](#)”, page 191 to correctly modify a light sensor calibration file parameters.
4. Click **Save** (reference 2) to save all modifications under the same name.
or
Click **Save as** (reference 3) to save the current modifications under a different name.

8.1.6 Renaming a light sensor calibration file

How to change the name of a light sensor calibration file

1. In the Light sensor calibration menu, click on the desired LSC file.

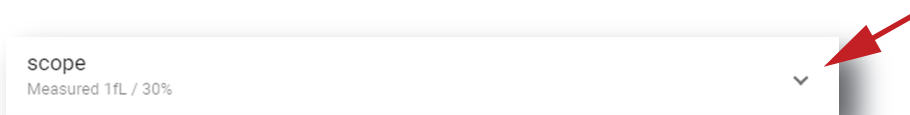


Image 8–13

The calibration file is displayed in its expanded form with menu.

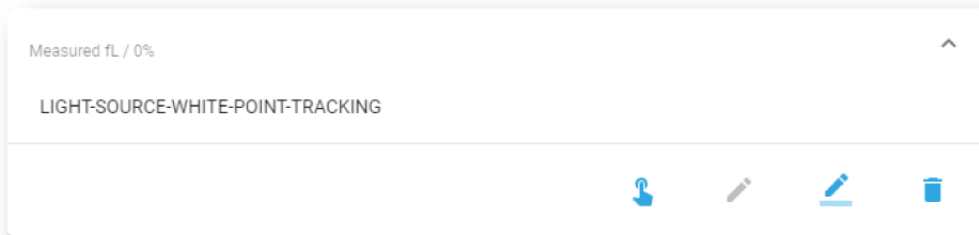


Image 8–14

2. Click **Rename** in the menu.



The *Rename* dialog is prompted.

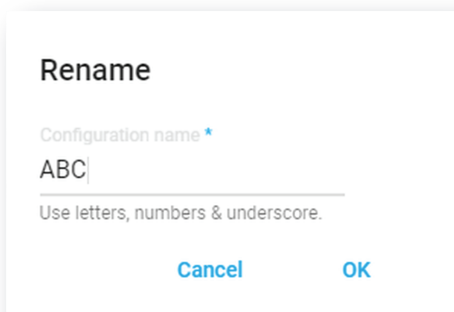


Image 8–15

3. Enter a new *file name* and click **OK**.

8.2 Light output mode

Location & access

Menu: Configuration > Light output > Mode

Level: Administrator, Service technician

Overview

This menu allows to choose the light output mode.

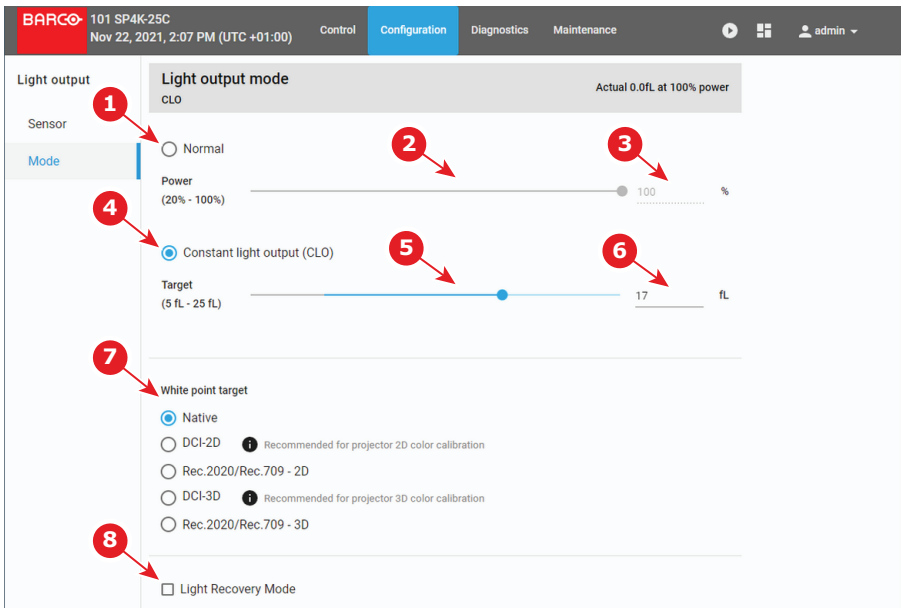


Image 8–16

Selecting **Normal mode** (reference 1) means that the light source will operate at the designated power level (no power adaptation to meet constant light output). You can change the power level by dragging the slider (reference 2) or manually entering the power value (in %) (reference 3).

Selecting **CLO mode** (reference 4) forces a constant light output of the projector over a certain period. This will eliminate uncontrolled light output drop caused by natural aging of the light source. The light output is checked every 5 minutes, if the target is not met, the laser power is adjusted. You can change the target light output by dragging the slider (reference 5) or manually entering the power value (in foot-Lambert) (reference 6).

Next to the light output mode, you can also select the desired **White Point Target** (reference 7). While technically the native white point should be correct, it may vary slightly from the DCI specifications or to the REC 2020 space color specifications. If this happens, the option is available to adjust the white point to the chosen standard.

You can choose between the following calibration files:

- Native white point calibration.
- DCI-2D (Recommended for 2D color calibration)
- Rec.2020 and Rec.709 - 2D
- DCI-3D (Recommended for 3D color calibration)
- Rec.2020 and Rec.709 - 3D

Also available, on the bottom of this menu, there is the option to enable **Light Recovery Mode** (reference 8). When the projector is connected to a UPS and this option is selected, the light will recover to its original state after a power failure lasting longer than 5 seconds.

How to set up the light output

1. In the Light output Mode menu, select *Normal* (reference 1).

Normal mode parameters are now available (references 2 & 3), and *CLO* mode parameters are greyed out (not accessible).



Image 8–17

or

select the radio button *Constant light output (CLO)* (reference 4).

CLO parameters are now available (references 5 & 6), and *Normal* mode parameters are greyed out (not accessible).

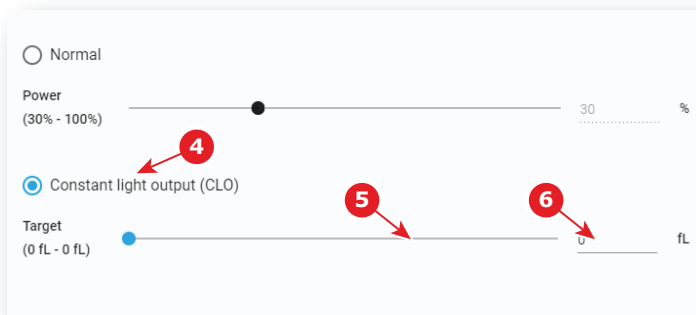


Image 8–18

2. Then, set the light output, settings depending the selected mode:
 - *Normal* mode: a light source dimming value can be set with the slider (reference 2) or directly in the input box (reference 3).
 - *CLO* mode: a desired constant light output value (in fL) can be set with the slider (reference 5) or directly in the input box (reference 6).
3. Choose the target white point of the projector (reference 7) either to the desired projection spec, or keep the Native white point.

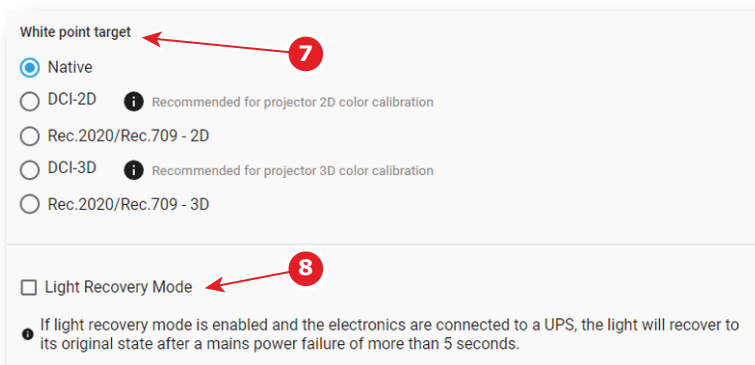


Image 8–19

4. If your projector is set up with a UPS, you can also activate Light Recovery Mode (reference 8).

Configuration - Color calibration

9

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About this menu

Color calibration has to be done for each projector laser mode and aspect ratio and starts with the white point calibration.

During this white point calibration, the color coordinates are measured and uploaded. At the same time the option exists to save these coordinates can be saved in an MCGD file.

When saving the coordinates in an MCGD file, the color gamut calibration can be skipped. When the coordinates are not saved, then you have to proceed with color gamut calibration.

These procedures for 2D and 3D are equal for all projectors.

9.1 Calibration process overview

Process overview

1. Create **Lens position files for FLAT and SCOPE**. For more on creating lens files, see [“Creating a lens position file”](#), page 119.
2. If applicable for your projector: **create the necessary amount of 3D files**. For more info on creating 3D files, see [“3D”](#), page 127.
3. Calibrate the light source, using **white point calibration**. For more info, see also [“Light source – White Point calibration”](#), page 200.
4. For the light sensor calibration, select the desired aspect ratio by activating the correct lens file.
 - **SCOPE** format
 - **FLAT** format
5. **Perform Light sensor calibration and create LSC files for Flat, Scope and 3D** (if applicable for your projector). For more info, see [“Light sensor calibration \(LSC\)”](#), page 190.
6. Prepare for color calibration in 2D. Set up the correct LSC file and the desired white point target. For more info on setting white point target, see [“Light output mode”](#), page 195.
7. **Color gamut calibration** (electronic P7 correction). Measured values are saved in the **Measured Color Gamut Data (MCGD) file**. This calibration needs to be repeated for each used format (FLAT/SCOPE) and for each used projection mode (2D/3D).

For more info about MCGD files and color gamut calibration, see [“Projector color”](#), page 205.

8. **Verify the corrected colors by comparing to select target colors**. The target colors are stored in **Target Color Gamut Data (TCGD) files**. Several TCGD files are already available in the file system of the projector.

For more info about TCGD files and verifying colors, see [“Verifying the colors after correction”](#), page 209.

9. **Arrange calibration files in a macro**. To apply correct color calibration it is important that the MCGD file (s) and matching TCGD file(s) are activated after that the INPUT file and PCF file are activated. For that it is recommended to create a macro where the files are loaded one by one in the right order:

1. First activate the **INPUT** file.
2. then activate the **PCF** file (PCF already contains plane 1 information),
3. then activate the **MCGD** and **TCGD** files.

For more details on creating macros, see [“Macros control”](#), page 70.

9.2 Light source – White Point calibration

9.2.1 About the light source white point calibration menu

Location & access

Menu: Configuration > Color calibration > Light source

Level: Administrator, Service technician

About white point calibration

The projector uncorrected white point (W_n) has to be shifted towards the DCI white point (W_t). The coordinates of the DCI white point ($x_w=0.314$; $y_w=0.351$) are embedded in the projector software and cannot be changed. The coordinates of the projector uncorrected white point has to be measured and entered.

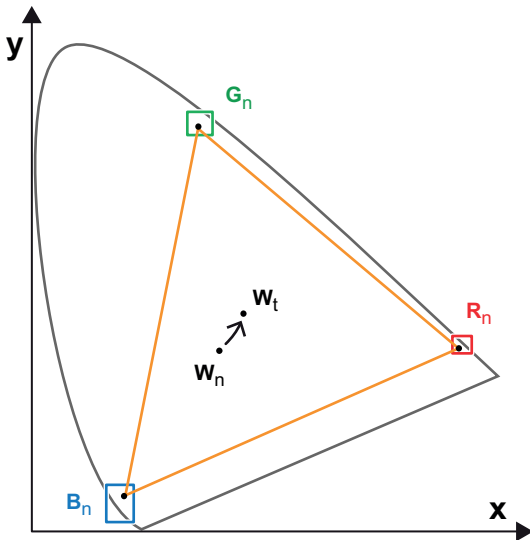


Image 9–1 Shifting projector 'white point' towards desired white point (laser power calibration)

The projector uncorrected white point can be defined by measuring the xy coordinates of the uncorrected primary colors (red, green, blue) and uncorrected full white separately.

The initial set of xy values stored in the projector for the uncorrected white point are the same as for DCI white point. After white point calibration, the initial values are overwritten with the measured values.

Based on the measured values the projector can balance the Red, Green, and Blue light to move the projector uncorrected white point towards the desired white point. This adjustment is called 'Laser RGB correction' or "Light Source calibration".

The projector uncorrected white point is different for 2D projection and 3D projection. Therefore, the projector uncorrected white point has to be measured and entered for each projection mode separately. Per projection mode one set of measured values are stored. Depending on the projection mode, the corresponding set is used for white point correction.

In case of 3D projection, the xy coordinates of uncorrected white has to be measured for each 3D file separately.

Overview

This menu allows you to perform a white point calibration.



A white point calibration is performed at the factory the during the final stages of projector manufacturing. It is usually not need to redo the white point calibration during settings of the projector in the field unless if factory restore is requested.

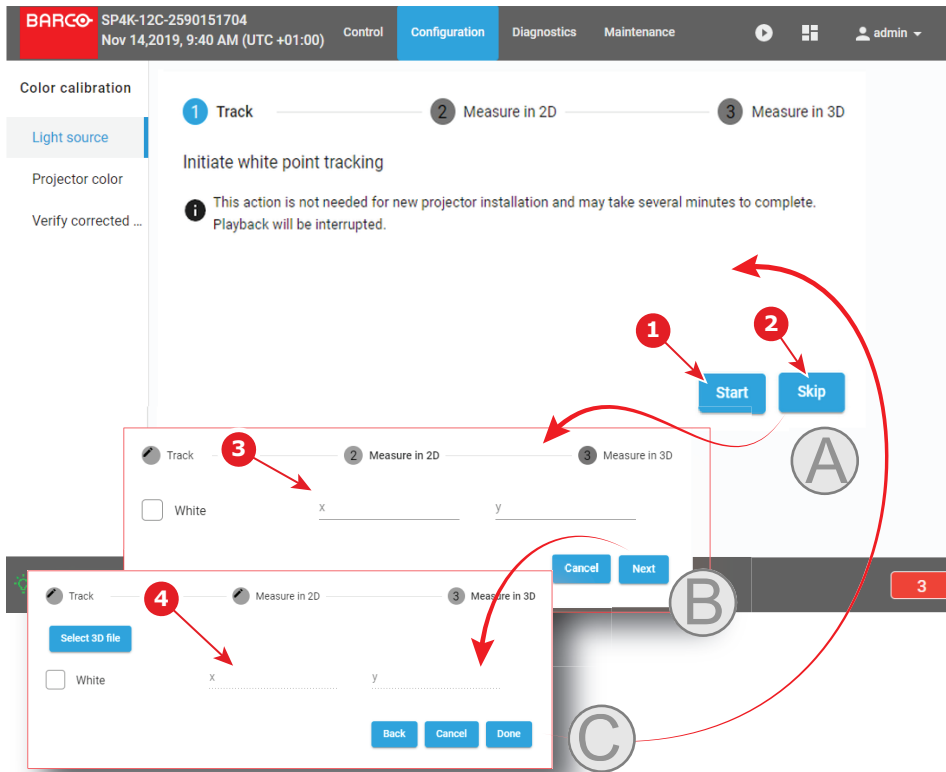


Image 9–2 White point calibration menu

Clicking on **Start** (reference 1) will start a new white point tracking procedure. By clicking **Skip** (reference 2) you will be able to enter successively the point coordinates for 2D (reference 3) and for 3D (reference 4).

Lower part of this menu is dedicated to display of the results.

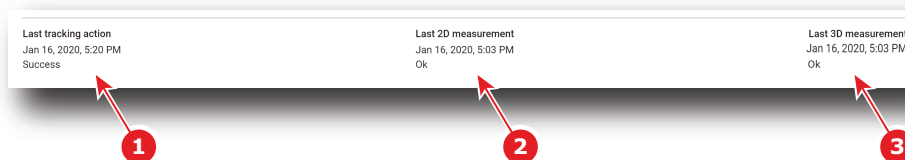


Image 9–3

If a previous white point tracking procedure has been done, results and status for each step are displayed here:

- Left column (reference 1) indicates the date and status of the last white point tracking.
- Middle column (reference 2) indicates if the 2D measurement was done and at which date.
- If 3D projection is required, the right column (reference 3) indicates if the 3D measurement was done and at which date.

9.2.2 White point calibration

Location & access

Menu: Configuration > Color calibration > Light source

Level: Administrator, Service technician

Required tools

Spectroradiometer

Preparations

1. Place a spectroradiometer in the auditorium. Position it in such a way it meets the following requirements.
 - Perpendicular to the screen.
 - In the auditorium sweet spot.
 - In such a way it can measure the reflected light from the center of the screen.
2. Set up the ambient light conditions as it should be during the play-out of the movie (e.g. only the stairs and emergency exit lighting are switched on).
3. Project a full white test pattern with the desired aspect ratio (flat or scope).



A white point calibration is performed at the factory during the final stages of projector manufacturing. It is usually not needed to redo the white point calibration during settings of the projector in the field unless a factory restore is requested.

How to calibrate

1. In the Light Source menu, perform White Point tracking. To do so, click **Start** (reference 1) to do so.



Note: This action may take several minutes to complete. Playback will be interrupted.

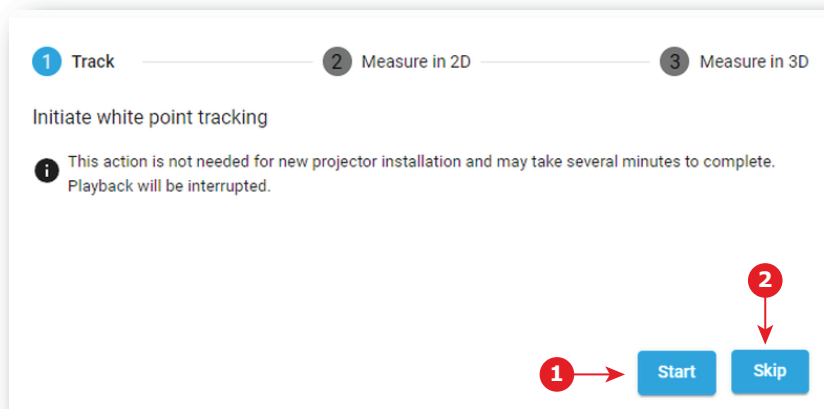


Image 9-4 White Point Calibration – White Point Tracking

The laser white point calibration will be reset. The default settings are programmed.

2. Click **Skip** (reference 2) to access the 2D measurement.



Image 9-5 White Point calibration - 2D measurement

3. Measure the white coordinates (x, y) with spectrometer and enter in the x and y fields respectively (reference 3).
4. If 3D projection is required, click **Next** (reference 4) to access the 3D measurement. If not, press **cancel** to exit.

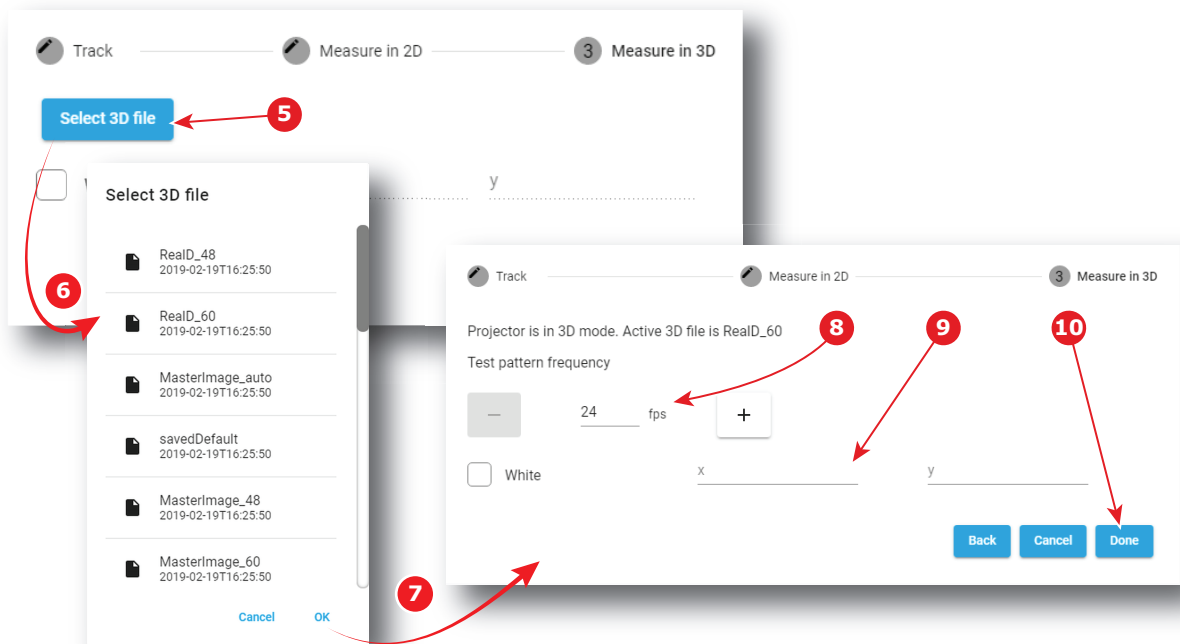


Image 9–6 White Point Calibration – 3D Measurement

5. Click **Select 3D file** (reference 5).
6. Select the desired 3D file from the prompted list (reference 6) and confirm with OK (reference 7).
The selected 3D file is implemented in the menu, alongside a *test pattern frequency* slider (reference 8) .
7. Enter the desired frequency in frames per second (fps), or use the + and - keys to change the frequency..
8. Measure the white coordinates (x, y) with spectrometer and enter in the wizard (reference 9).
9. Click **Done** (reference 10) to complete the wizard.
A window allowing to choose one of the recently updated calibration files is displayed.
10. Select a new calibration file (e.g. 2D or 3D) according to the type of MCGD you want to adjust in the next steps, then click **OK** to activate it.

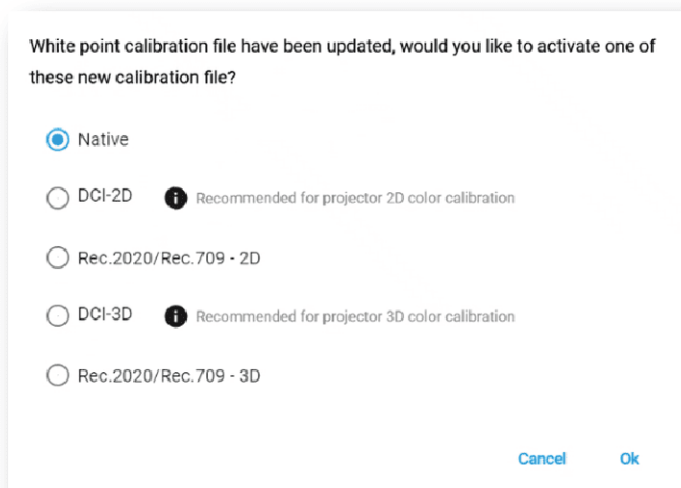


Image 9–7

or

Click **Cancel** to close the window without modifying the calibration file currently selected.

9.3 Projector color

9.3.1 About Color calibration

Location & access

Menu: Configuration > Color Calibration > Projector Color

Level: Administrator, Service technician

About MCGD files

MCGD files contain the measured color gamut data (color reference values) for a specific projector installation. This type of file can be created in the Projector Color menu.

Overview

The following menu displays the list of MCGD files and allows you to create and manage new MCGD files.

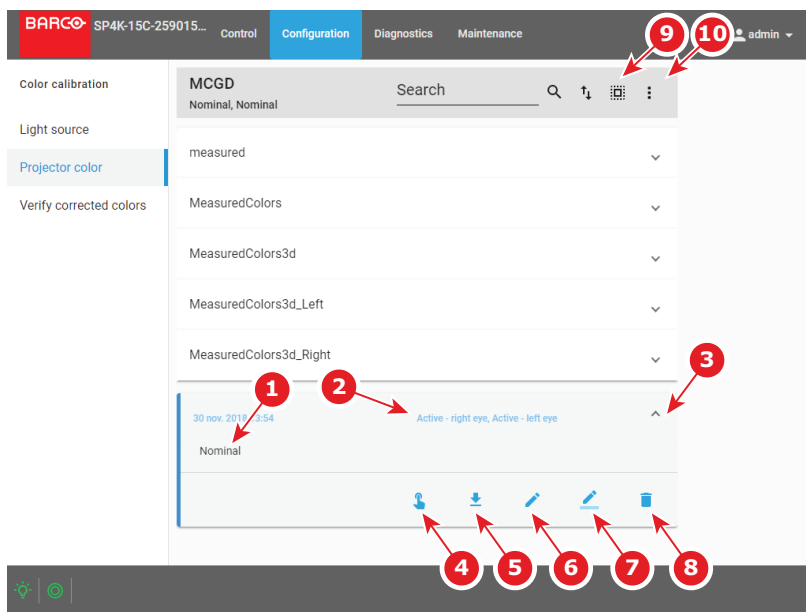


Image 9–8 Projector Color menu

Each MCGD file displayed here has a name (reference 1) and a status (reference 2).

An **expand** button (reference 3) is located to the right of each MCGD file if it has been activated. This button shows the MCGD file in its expanded form and displays a list of actions.

- **Activate** (reference 4): Activates the current MCGD file.
- **Export** (reference 5): Allows you to download the selected MCGD file.
- **Edit** (reference 6): Allows you to edit the selected MCGD file.
- **Rename** (reference 7): Allows you to rename the selected MCGD file.
- **Delete** (reference 8): Deletes the selected MCGD file, after confirmation.

In the menu bar, there is an option to **select all MCGD files** (reference 9) and a **menu** (reference 10), with the following possible actions.

- **New**: Creates a new MCGD file.
- **Import**: Imports a previously downloaded MCGD file.
- **Export**: Exports the currently selected MCGD file(s).
- **Delete**: Allows to remove several MCGD files selected in the list.

9.3.2 Creating a new MCGD file

Required tools

Photospectrometer

How to measure

1. In the MCGD menu, create a new **MCGD file**. To do so, select the **Menu** button and click **New**. A new untitled MCGD is displayed, with the following active projector settings displayed:
 - Projector mode (2D/3D)
 - The desired white point target.
 - The current Light output mode

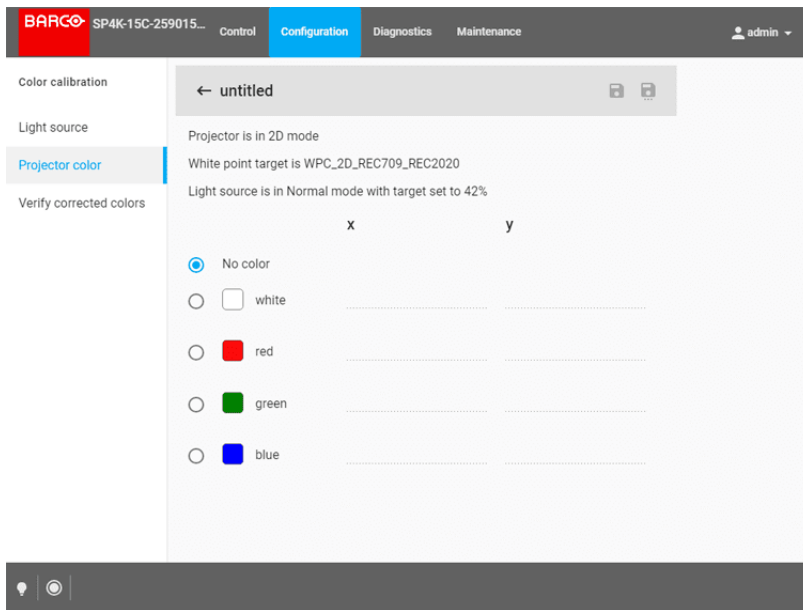


Image 9–9 Creating a new MCGD file

2. Select the desired color (e.g. white).
3. Measure the color coordinates for that specific color and enter the x and y coordinates in the appropriate fields.
4. Repeat this procedure for all other colors.
5. Click **Save** or **Save as** to save the MCGD file.


9.3.3 Editing an active MCGD file

Required tools

Photospectrometer

How to edit

1. In the MCGD menu, select one of the active MCGD files and click Edit.

 *Note:* You can only edit an active MCGD file.

The edit window is displayed.

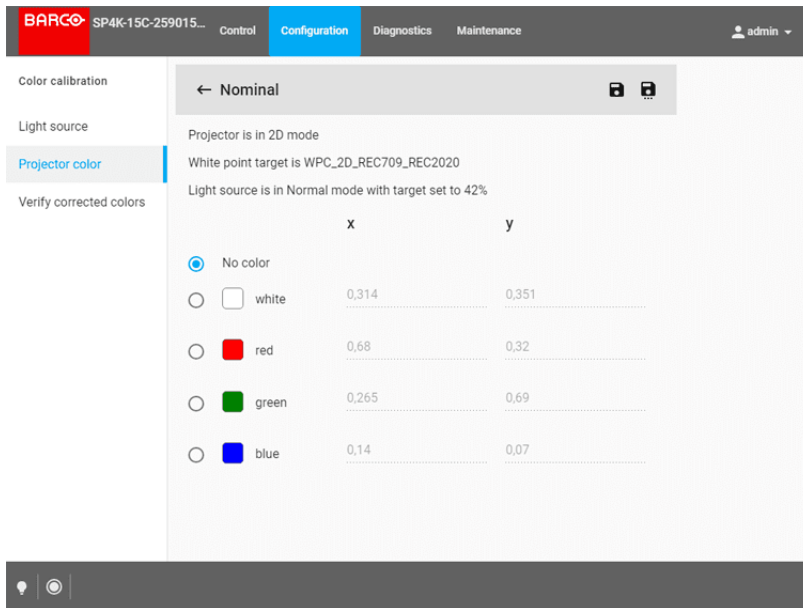


Image 9–10 Example of editing an MCGD file

2. Select the desired color (e.g. white).
3. Measure the color coordinates for that specific color and enter the x and y coordinates in the appropriate fields.
4. Repeat this procedure for all other colors.
5. Click **Save** to save the current MCGD file.

or

click **Save as** to save the MCGD file under a new name.

9.3.4 Exporting and importing MCGD files

How to export a single MCGD file

1. In the MCGD menu, select the desired MCGD file and click the **download** icon.
2. Save the MCGD file as a .tar file on your device.

How to export multiple or all MCGD files

1. In the MCGD menu, click the **Select all MCGD files** icon.
All MCGD files are selected, and selection boxes will become visible.

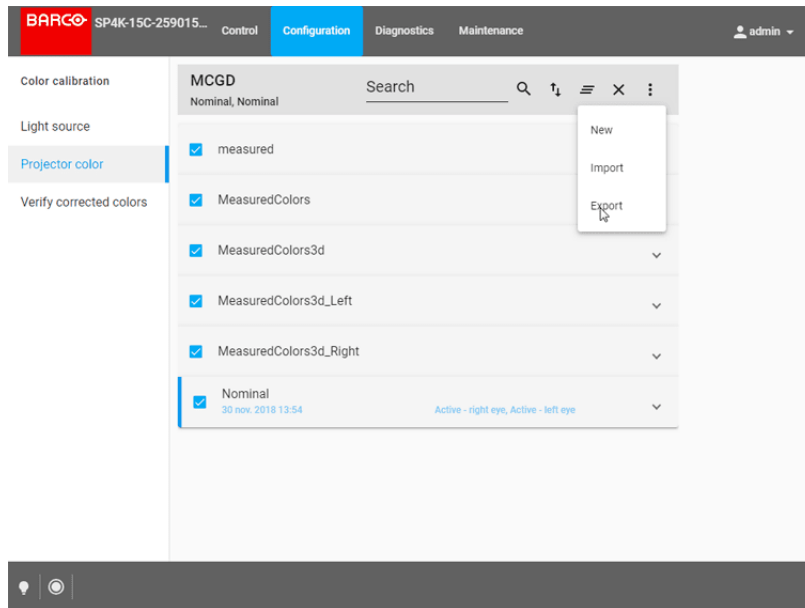


Image 9–11 Example of all MCGD files being selected.

2. If there are any undesired TCGD files selected, deselect the undesired file.
3. In the menu, click **export**.
4. Save the MCGD files as a combined .tar file.

Importing MCGD files

1. In the MCGD menu, click **Import**.
2. Browse to the desired file in .tar format and confirm.

If the MCGD files are supported by this projector, they will be included in the MCGD files list.



If a file has the same name as a file already present, a confirmation will be required before overwriting.

9.3.5 Deleting several MCGD files

What is possible

Several MCGD files could be deleted in a single action.

Location & access

Menu: Configuration > Color Calibration > Projector Color

Level: Administrator, Service technician

How to delete several MCGD files

1. While in *Configuration > Color Calibration > Projector Color*, click **Select All** (reference 1) and use the check boxes (reference 2) located at right of the MCGD files in order to select/deselect the files you want to delete.

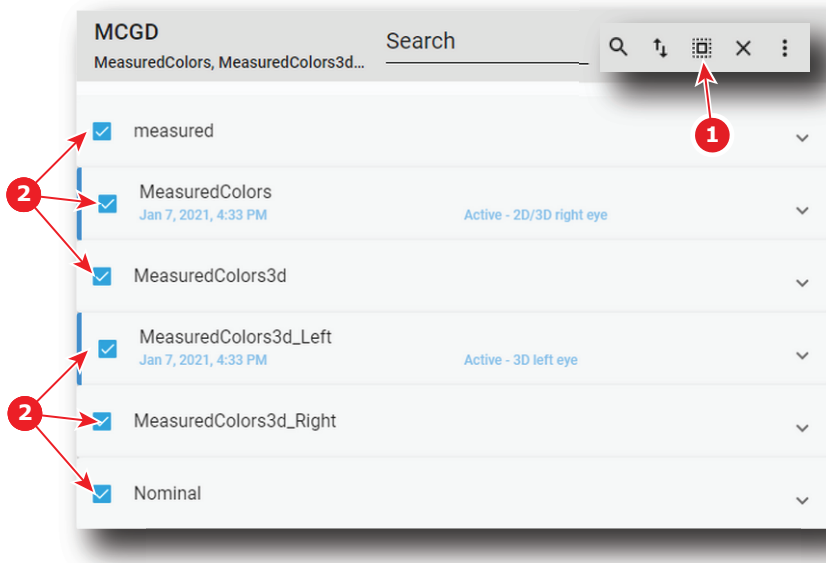


Image 9–12

2. Click on the macro general menu located on the top right of the list, then select **Delete** and confirm with **OK**.

The macro files selected are definitively removed from the list.

9.4 Verifying the colors after correction

Location & access

Menu: Configuration > Color Calibration > Verify Corrected Colors

Level: Administrator, Service technician

Overview

This panel allows you to compare the corrected colors after calibrations to certain color standards (e.g. Rec. 2020, SMPTE C, etc)..

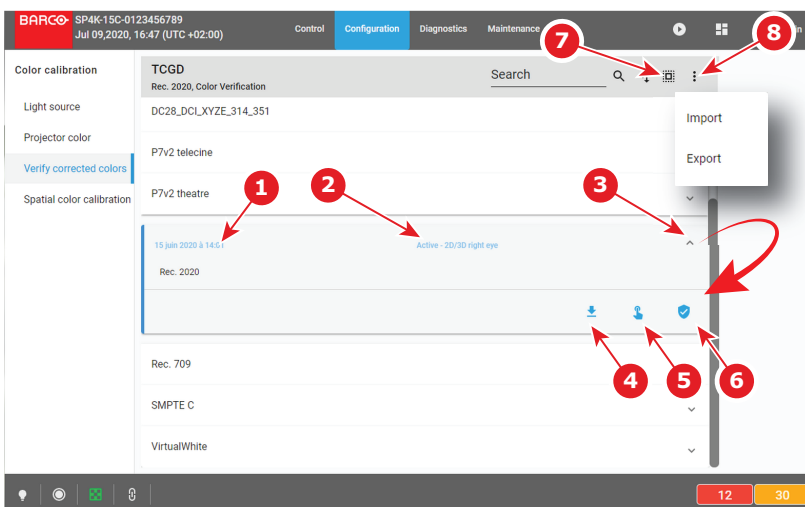


Image 9–13 Verify corrected colors menu

Each TCGD file displayed here has a name (reference 1) and a status (reference 2).

An **expand** button (reference 3) is located to the right of each TCGD file. This button shows the TCGD file in its expanded form and displays a list of actions:

- **Export** (reference 4): copies the TCGD file in the *Downloads* directory of your computer (e.g. DC28_DCI_Laser.TCGD).
- **Activate** (reference 5): Activates the current TCGD file.

If the TCGD file has been activated, a supplemental action is available:

- **Verify** (reference 6): allows to compare the corrected colors after calibrations to color standards present in the TCGD file.

In the menu bar, there is an option to **select all TCGD files** (reference 7) and a **menu** (reference 8), with the following possible actions.

- **Import**: allows to import a TCGD file alone (one single file), or a package of TCGD (.tar) with several files inside.
- **Export**: creates a downloadable backup package (.tar) that contains all TCGD selected in the list, then copies this package in the *Downloads* directory of your computer.

How to verify

1. In the TCGD menu, click on the activate icon of the desired TCGD file (reference 5) you want to compare



The Activate TCGD dialog is prompted.

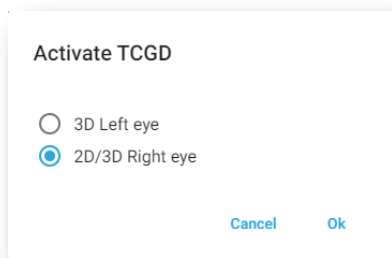


Image 9–14

2. Confirm for which format (2D/3D) you want to activate the TCGD. In case of 3D, also choose which eye (left/right).



Tip: If both eyes are required in 3D, activate the same file a second time and select the other eye.

3. Once activated, click on the expand button of the desired TCGD file (reference 3) and on the verify button (reference 6).

The detail window of the TCGD file is displayed.

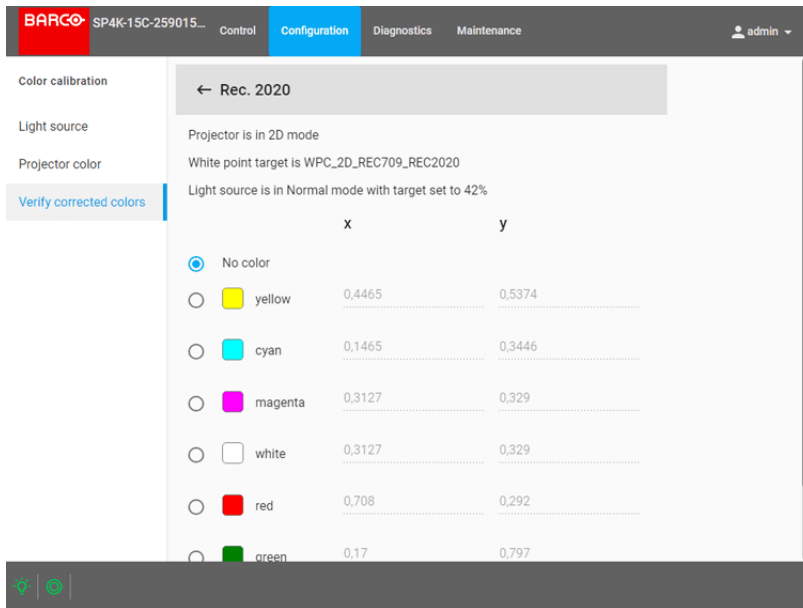


Image 9–15 Example of a detail window of a TCGD file

- Select the desired color to compare.
The selected color is displayed on the screen **with color correction**.
- Measure the coordinates with a colorimeter on the screen and check with the values next to the selected color.
- Repeat this procedure for every other color in this TCGD file.

How to export a single TCGD file

- In the TCGD menu, click on the desired TCGD file.
The TCGD file is displayed in its expanded form with menu.

- Click the **Export** icon. 

A TCGD file (.TCGD) is created and automatically copied in the *Downloads* directory of your computer (e. g. DC28_DCI_Laser.TCGD).

How to export multiple or all TCGD files

- In the TCGD menu, click the **Select all TCGD files** icon.
All TCGD files are selected, and selection boxes will become visible.
- If there are any undesired TCGD files selected, deselect the undesired file.
- In the menu, click **Export**.

All TCGD selected are combined in downloadable backup package (.tar), then this package is automatically copied in the *Downloads* directory of your computer.

Importing TCGD files

- In the TCGD menu, click **Import**.
Open window is displayed.
- Locate and select a TCGD file (file with .TCGD extension).
or
Locate and select a backup package (.tar) with several TCGD files inside.
- Click **Open** (reference 4).
If selected files are supported by this projector, they will be included in the TCGD files list.

9.5 Spatial color calibration

9.5.1 About spatial color calibration

Location & access

Menu: Configuration > Color Calibration > Spatial color calibration

Level: Administrator, Service technician

About SCC files

SCC files contain color reference values for specific projector installation. These values are used to calculate correct compensation for white point variations over the width of the screen.

Overview

The following menu displays the list of SCC files and allows you to create, import, export and execute these files.

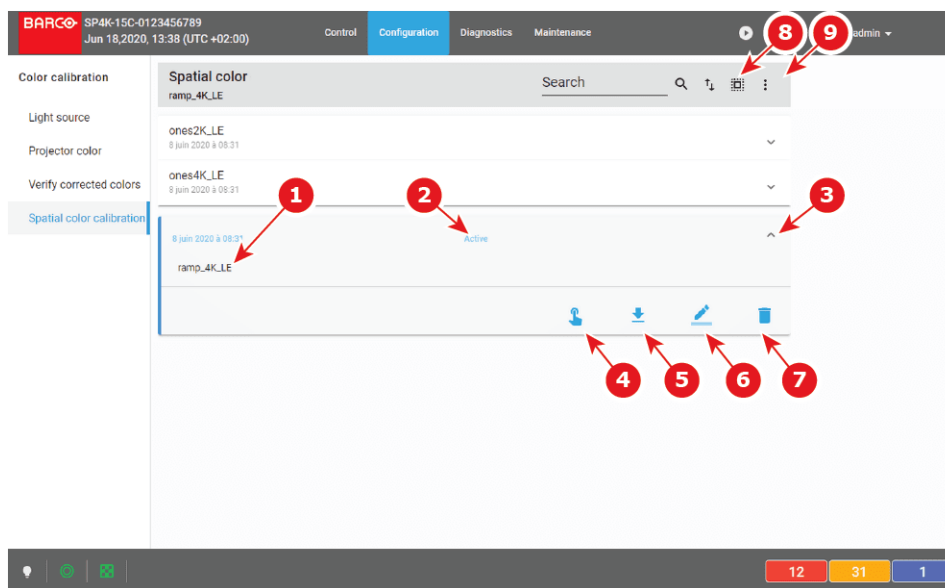


Image 9-16

Each SCC file displayed here has a name (reference 1) and a status (reference 2).

An **expand** button (reference 3) is located to the right of each SCC file. This button shows the SCC file in its expanded form and displays a list of actions.

- **Activate** (reference 4): Activates the current SCC file.
- **Export** (reference 5): copies the SCC file in the *Downloads* directory of your computer (e.g. ones2K_LE.LUT-SCC).
- **Rename** (reference 6): Allows you to rename the selected SCC file.
- **Delete** (reference 7): Deletes the selected SCC file, after confirmation.

In the menu bar, there is an option to **select all SCC files** (reference 8) and a **menu** (reference 9), with the following possible actions.

- **New** allows to create a SCC file directly on the projector by following a 3 steps procedure (Colorimetry measurements are required during this procedure).
- **Import**: allows to import a SCC alone (one single file), or a package of SCC (.tar) with several files inside.
- **Export**: creates a downloadable backup package (.tar) that contains all SCC selected in the list, then copies this package in the *Downloads* directory of your computer.
- **Delete**: allows to remove several SCC files selected in the list.

9.5.2 Activating a SCC file

How to activate a spatial color calibration file

1. In the spatial color Calibration menu, click on the desired SCC file.



Image 9–17

The spatial color calibration file is displayed in its expanded form with menu.

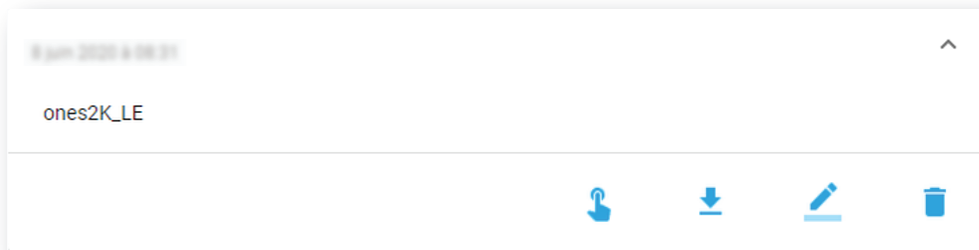


Image 9–18

2. Click the **Activate** icon. 

The calibration file is now activated :

- All previous uploaded SCC information is overwritten with parameters defined in the calibration file.
- Name of the spatial color calibration file is now active (reference 2) and is displayed at the top of the SCC file list (reference 1).

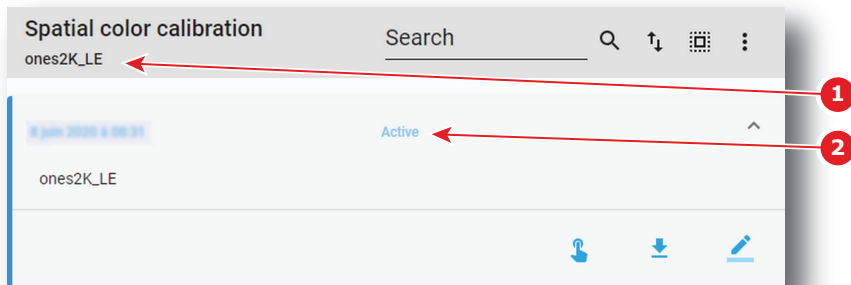


Image 9–19

9.5.3 Renaming a SCC file

How to change the name of a spatial color calibration file

1. In the spatial color Calibration menu, click on the desired SCC file.



Image 9–20

The spatial color calibration file is displayed in its expanded form with menu.

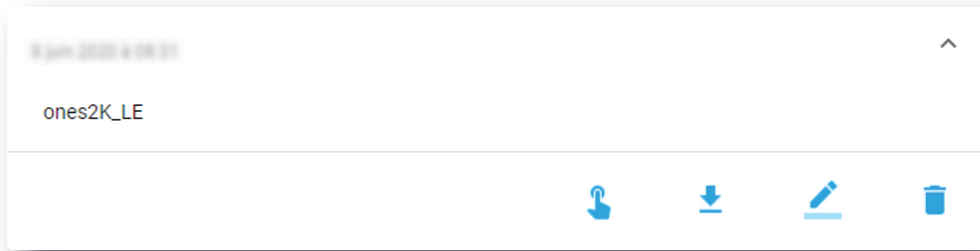



Image 9-21

2. Click **Rename** in the menu. 
The *Rename* dialog is prompted.

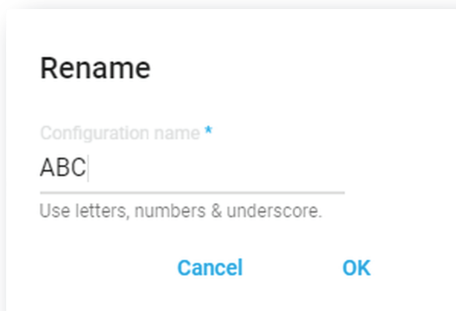


Image 9-22

3. Enter a new *file name* and click **OK**.

9.5.4 Deleting a SCC file

How to delete a spatial color calibration file

1. In the spatial color Calibration menu, click on the desired SCC file.

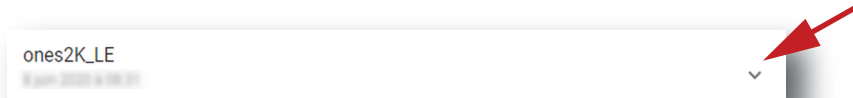


Image 9-23

The spatial color calibration file is displayed in its expanded form with menu.

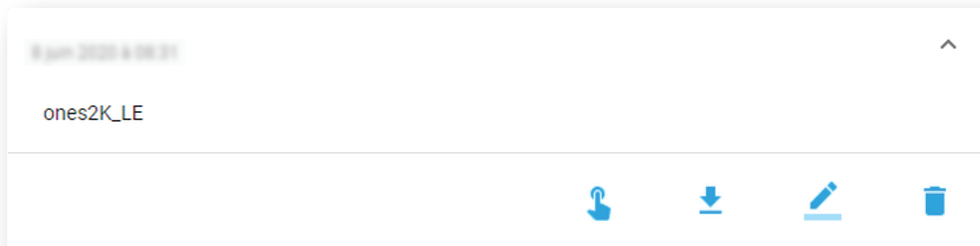



Image 9-24

2. Click the **Delete** icon in the menu and confirm with **OK**. 

The spatial color calibration file is removed from the list

9.5.5 Creating a new SCC file

Required tools

Photospectrometer

How to measure

1. In the Spatial color menu, create a new **SCC file**. To do so, select the **Menu** button and click **New**. A new untitled SCC file is created with the first step of the procedure displayed on it:

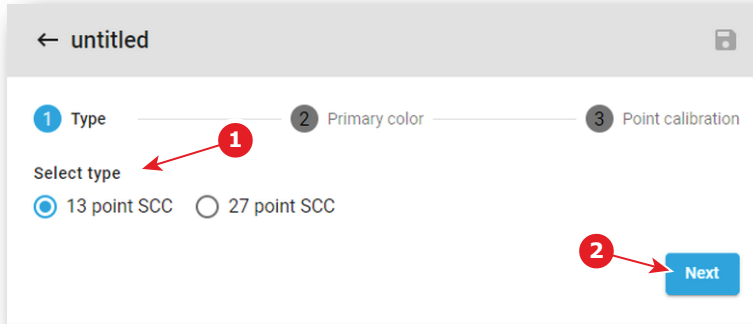


Image 9–25

2. Select the SCC file type (reference 1). The number of points will define the number of measures needed in the next steps. The *13 points* SCC files are usually used (default value), but the *27 points* SCC files are sometimes used for post production studios setup (more accurate).
3. Click Next (reference 2) to access the step 2.

Page dedicated to the primary color measuring is displayed. This page will be used to specify reference values (x, y coordinates) for each primary color. This will help in the next step to calculate the relative contribution of the primary colors to the color points measured on the different points on the screen.




Image 9–26

4. In drop down box (reference 3) select a MCGD file already created during projector color calibration in order to reuse color coordinates.

or

use the default value (*Manual*) and introduce manually the color coordinates:

1. Select the desired color (e.g. red) by clicking on radio button (reference 4). Test pattern with native color is displayed.
2. Measure the color coordinates with the photospectrometer for that specific color and enter the x and y coordinates in the appropriate fields (reference 5).
3. Repeat this procedure for all other colors.

 *Tip:* Error messages will be displayed in the bottom of the page if an error is detected (0 value is not authorized, two colors cannot share same coordinates, ...)

5. Click Next (reference 6) to access the step 3.

Page dedicated to point calibration measurement is displayed. This page will be used to specify references values (x, y coordinates) for each area. In the upper left corner (reference 7), the active PCF and Screen files are displayed.

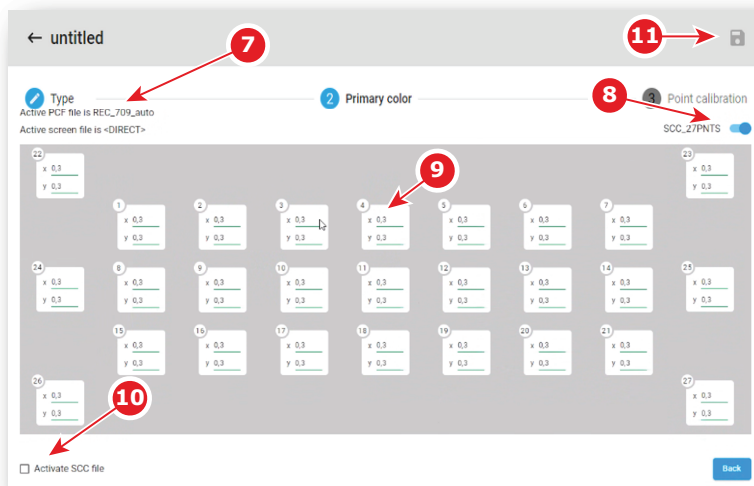


Image 9–27 27 points of calibration

6. Click toggle button (reference 8) to activate test pattern.

The appropriate SCC test pattern is displayed.

7. Measure the x and y coordinates with the photospectrometer for each white square area displayed on screen in order to complete values in all input fields (reference 9).

Limitations and errors:

- 0 value is not authorized. Save button stays grayed until 0 value is detected. This mechanism allows to detect if a field was not filled.
- Values must be specified between 0.2 and 0.4. Values in the range are underlined in green. Values not in this range are underlined in orange.
- The maximum gap between the smallest value and the largest value must be 0.03. If authorized value is exceeded, all concerned values are highlighted in orange.

8. Optional: Check the check box *Activate SCC file* (reference 10) to immediately apply created file when you leave the procedure.
9. Click on Save icon (reference 11) to save file. This icon is available only if all values was entered and no error was reported.

9.5.6 Exporting and importing SCC files

How to export a single SCC file

1. While in *Configuration > Color Calibration > Spatial color calibration (SCC)*, click on the desired SCC file in the list.

The SCC file is displayed in its expanded form with a menu consisting of several icons.

2. Click the **Export** icon. 

A SCC file (.LUT-SCC) is created and automatically copied in the *Downloads* directory of your computer (e.g. ones2K_LE.LUT-SCC).

How to export multiple or all SCC files

1. While in *Configuration > Color Calibration > Spatial color calibration* (SCC), click the **Select all files** icon in the banner at the top of the SCC files list (reference 1).

All SCC files are selected, and checkboxes will become visible (reference 2).

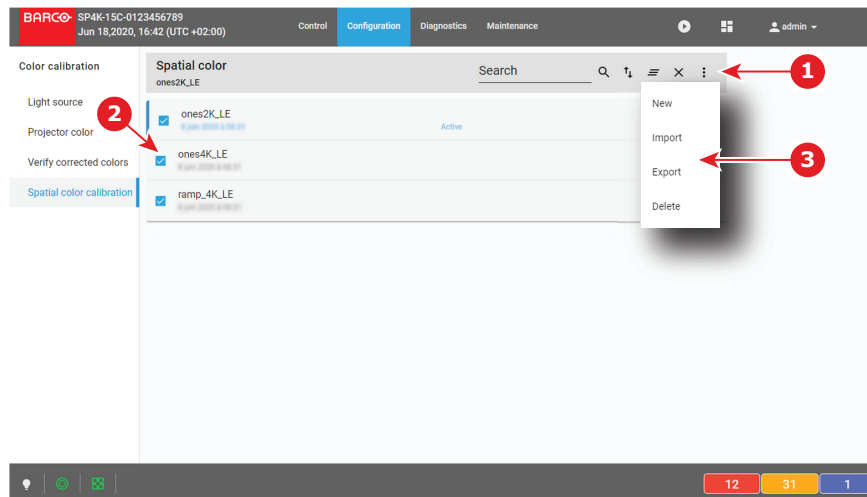


Image 9–28

2. If unwanted SCC files are selected, deselect them by clicking the checkboxes (Reference 2).
3. In the menu located at right of the banner (top of the SCC file list), click **Export**.

All SCC selected are combined in downloadable backup package (.tar), then this package is automatically copied in the *Downloads* directory of your computer.

Importing SCC files

1. While in *Configuration > Color Calibration > Spatial color calibration* (SCC), in the menu located at right of the banner (top of the SCC file list), click **Import**.

Open window is displayed.

2. Locate and select a SCC file (file with .LUT-SCC extension).

or

Locate and select a backup package (.tar) with several SCC files inside.

3. Click **Open** (reference 4).

If selected files are supported by this projector, they will be included in the SCC files list.



If a file has the same name as a file already present, a confirmation will be required before overwriting.

9.5.7 Deleting several SCC files

How to delete several SCC files

1. While in *Configuration > Color Calibration > Spatial color calibration* (SCC), click the **Select all files** icon in the banner at the top of the SCC files list (reference 1).

All SCC files are selected, and checkboxes will become visible (reference 2).

Configuration - Color calibration

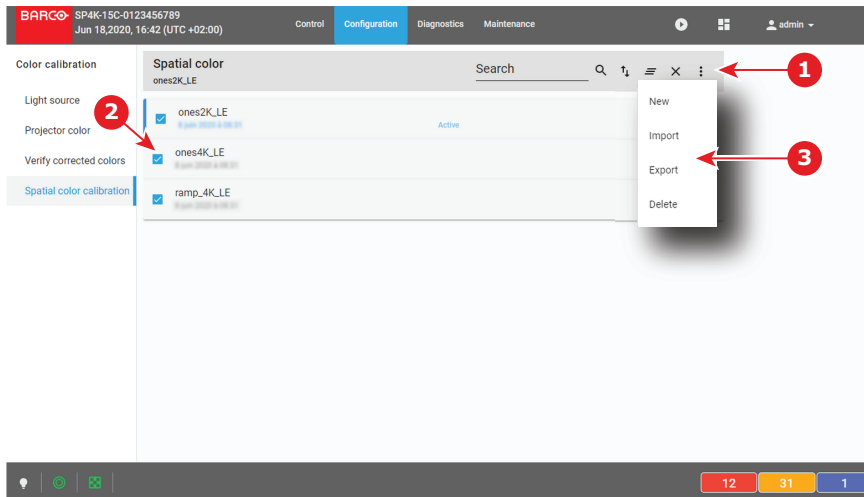


Image 9-29

2. If unwanted SCC files are selected, deselect them by clicking the checkboxes (Reference 2).
3. In the menu located at right of the banner (top of the SCC file list), click **Delete** and confirm with OK. The SCC files selected are definitively removed from the list.

Configuration - Projector automation

10

10.1	Allocating a macro to a general purpose input (GPI)	220
10.2	Associating a general purpose output to a system event	222
10.3	Changing GPO status manually	224

About this menu

GPIO menu allows you to configure automation system that is present inside the projector.

10.1 Allocating a macro to a general purpose input (GPI)

Location & access

Menu: Configuration > Projector automation > GPI

Level: Administrator, Service technician

What is rising and falling edge?

The status of a General Purpose Input (GPI) can be either high or low. This means the following:

- **Low:** The voltage between GPI P and GPI N is lower than or equal to 0.5V.
- **High:** The voltage between GPI P and GPI N is higher than or equal to 5.0V.

This translates in the GPI menu into Rising edge and Falling edge. This means the following:

- **Rising edge:** The GPI goes from a low status to a high status (e.g. from 0.5 to 5 V).
- **Falling edge:** The GPI goes from a high status to a low status (e.g. from 5 to 0.5 V).

What is possible?

The *GPI menu* allows you to allocate a macro file to a rising edge and/or falling edge on one of the general purpose inputs (GPI) of the projector.

There are 8 GPIs available on the projector but only five of these inputs are configurable. The other three are pre-defined and cannot be modified:

- GPI 1 is reserved for 3D L/R input references. This reference indicates which frame is Right and which frame is Left depending and the used polarity. For more info, see 3D settings.
- GPI 2 is reserved for 3D L/R display references. The reference indicated which frame of eye data will be displayed during a specific display frame.
- GPI 3 is reserved for power control.

Menu overview

Each GPI displayed has a name (reference 1) and a state (reference 2).

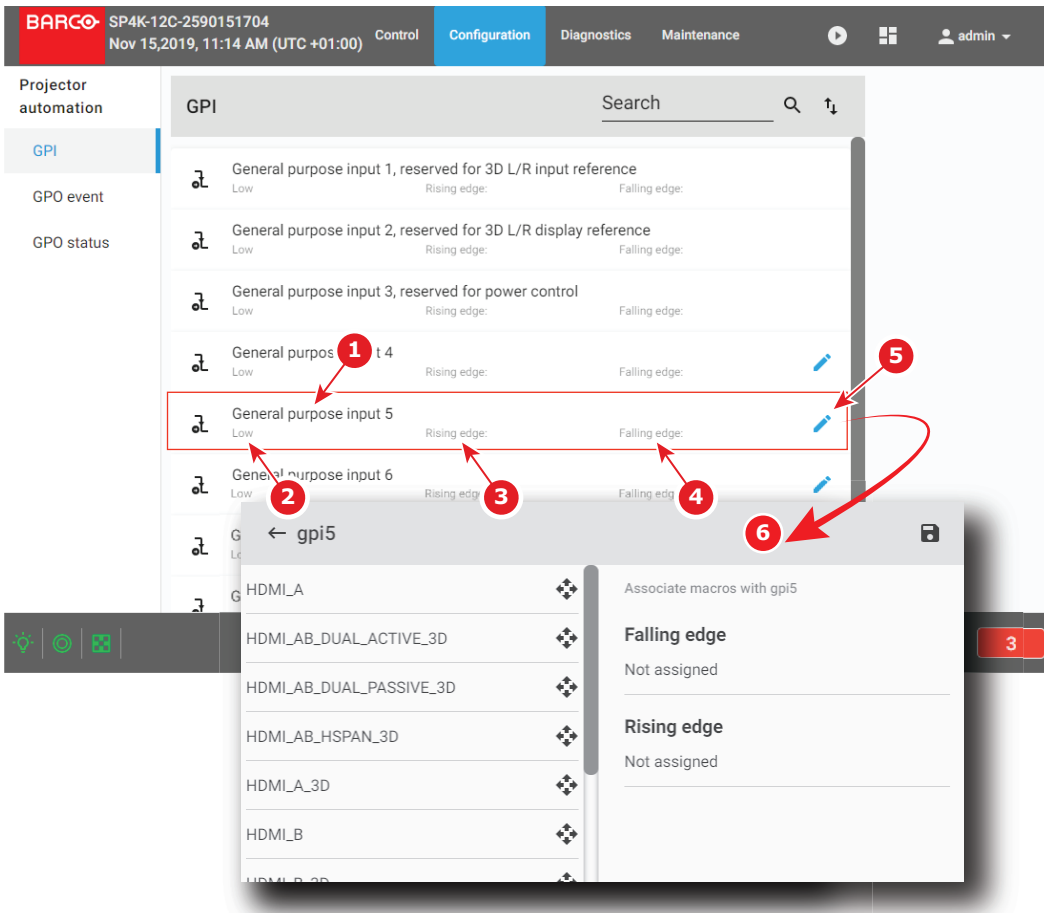



Image 10–1

A macro can be associated to **Rising edge** (reference 3) and/or **Falling edge** (reference 4).

An **Edit** button (reference 5) located to the right of each GPI makes possible to display the GPI in *GPI editor* (reference 6) to modify these associations.

How to associate a macro

1. In the GPI menu, click on the **Edit** icon. 
The *GPI editor* is displayed.

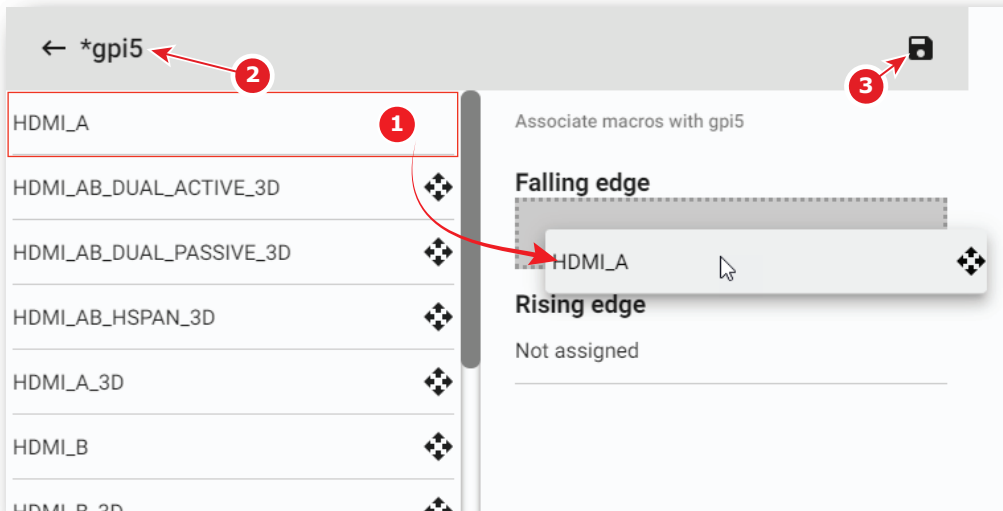


Image 10-2

2. Drag and drop a macro (reference 1) from the list of macros on *Falling edge* or on *Rising edge* to associate this macro to an edge of the GPI.

or

Click the Delete icon to dissociate a macro from the *Falling edge* or from the *Rising edge* of the GPI.

3. Once changed, the GPI name is marked by an asterisk (reference 2) if it has been modified.
4. Click the **Save** icon (reference 3) to save the changes made to the GPI.

10.2 Associating a general purpose output to a system event

Location & access

Menu: Configuration > Projector automation > GPO Event

Level: Administrator, Service technician

What is possible

The *GPO Event editor* allows you to allocate a system event to a GPO. Also, you can choose the type of action the GPO will take when the associated event triggers.

For example, you can link the projector events **Light On** and **Light Off** to a High and Low action of a GPO. This so that this GPO can trigger the theater curtains to open/close and the theater lights to dim / brighten depending on the status of the Projector Light source.

You can allocate events to five GPO's (GPO 4 to GPO 8). GPO's 1-3 are reserved by the system.

Menu overview

This menu allows to allocate system events to GPOs (general purpose outputs) available in the Cinema Controller. You can set the GPO in a certain state depending the event to trigger processes in the theatre or control room.

Each event displayed here has a name (reference 1), the name of its allocated GPO + the type of action (reference 2) the GPO will take when the associated event triggers. If no GPO is associated with the event, *Not configured* is displayed instead.

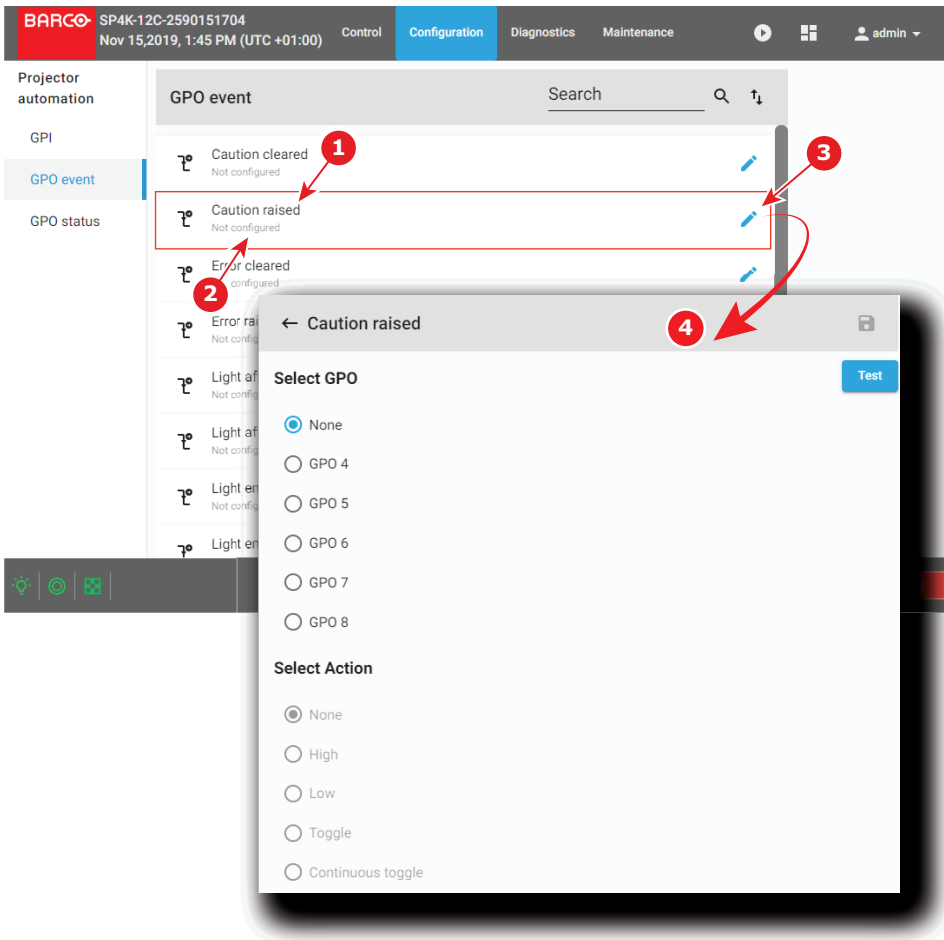


Image 10–3 GPO action menu overview

An **Edit** icon (reference 3) is located on the right-hand side of each event. This allows you to access the *GPO Event editor* (reference 4) in order to allocate said event to a GPO.

How to allocate a GPO to a system event.

1. While in the *GPO Event* menu, click on the **Edit** icon (reference 3, [Image 10–3](#)).
The *GPO Event editor* is displayed for the selected event.

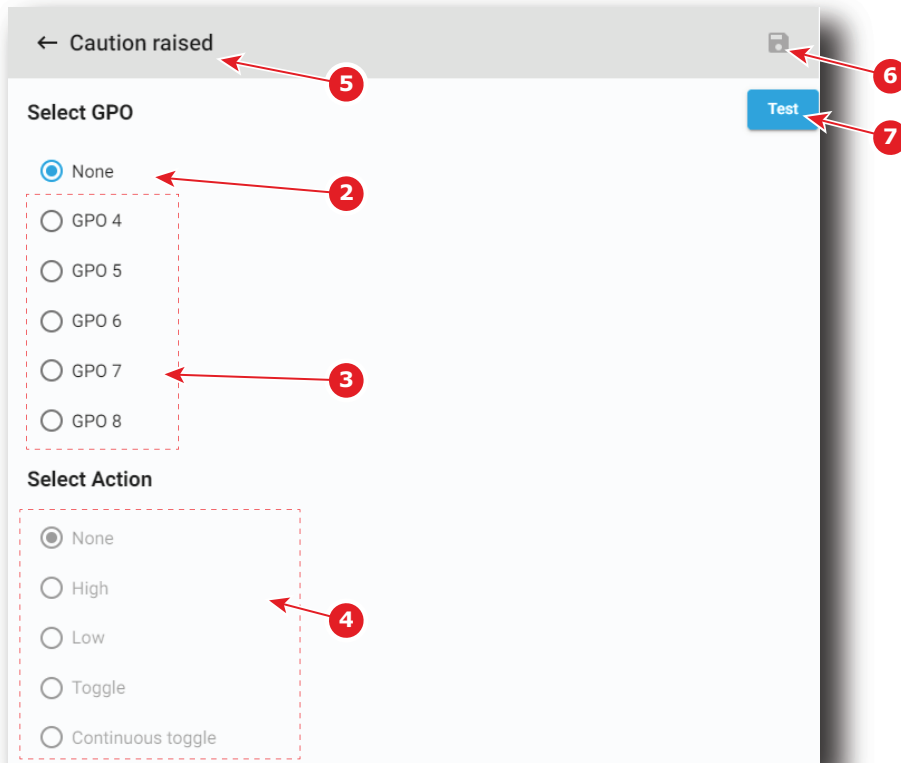


Image 10-4 Example of the GPO Event editor for the event "Caution raised"

2. Select *the desired GPO* to allocate this event.:

or

Click **None** (reference 2, [Image 10-4](#)) if you do not want to allocate this event to any GPO.

GPO actions (reference 4) are disabled until a GPO is selected.

3. Select the desired GPO action you want to trigger on the GPO.

Click the radio button (reference 4) corresponding to action that you want to trigger on the GPO.

4. If the event was modified during the previous steps, an asterisk is displayed before the event name (reference 5) and **Save** is now available (reference 6).

5. Click **Save** (reference 6) to save the changes made to the event.

6. Click **Test** (reference 7) allows testing the GPO like if the event was raised.

10.3 Changing GPO status manually

Location & access

Menu: Configuration > Projector automation> GPO Status

Level: Administrator, Service technician

Menu overview

This menu allows you to manage status of the GPOs (general purpose outputs) present inside the projector. This can be done to test associated automation systems (e.g. curtains, theater lights, etc).

The first three (GPO1, GPO2 and GPO3) are reserved by the system. You cannot manually modify their status.

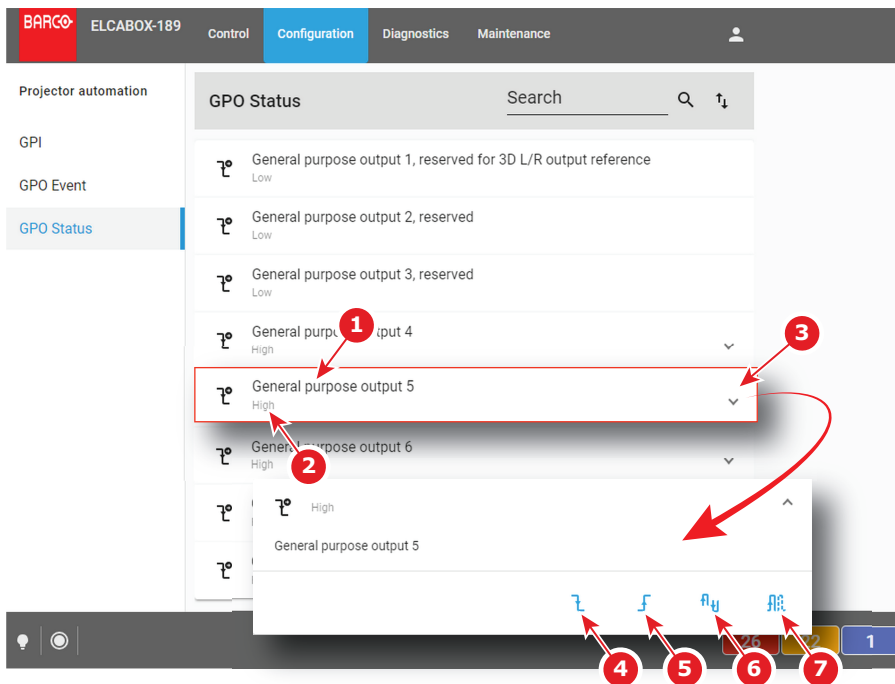


Image 10-5

Each GPO displayed here has a name (reference 1) and a state (reference 2).

An **expand** button (reference 3) is located to the right of each GPO. This button allows to show the GPO in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Low** button (reference 4) forces the GPO to low state.
- **High** button (reference 5) forces the GPO to high state.
- **Toggle** button (reference 6) switches the GPO to the opposite state then returns to previous state (a single pulse).
- **Continuous toggle** button (reference 7) forces the GPO to send continuous pulses.

How to change the status

1. Click on the **Expand** button (reference 3) located at the right of the GPO.

The GPO is displayed in its expanded form with menu.

2. Click on one of the menu buttons to change the status of the GPO (references 4-7).

The Status of the GPO is changed and its new state is displayed next to the GPO in the list (reference 2).

Configuration - License and certificates

11

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About licenses and certificates

Licenses must be installed to play specific content types on media player or to use optional features. Device Identity Certificate, stored on the projector, is mandatory to activate some features which require an identification with another unit (e.g. link CLO). This chapter describes how to manage your licenses and certificates on the projector.

11.1 Managing licenses

Location & access

Menu: Configuration > Licenses and certificates > Manage licenses

Level: Administrator

Overview

All available licenses are listed in this menu. You can also use this menu to add or remove licenses.

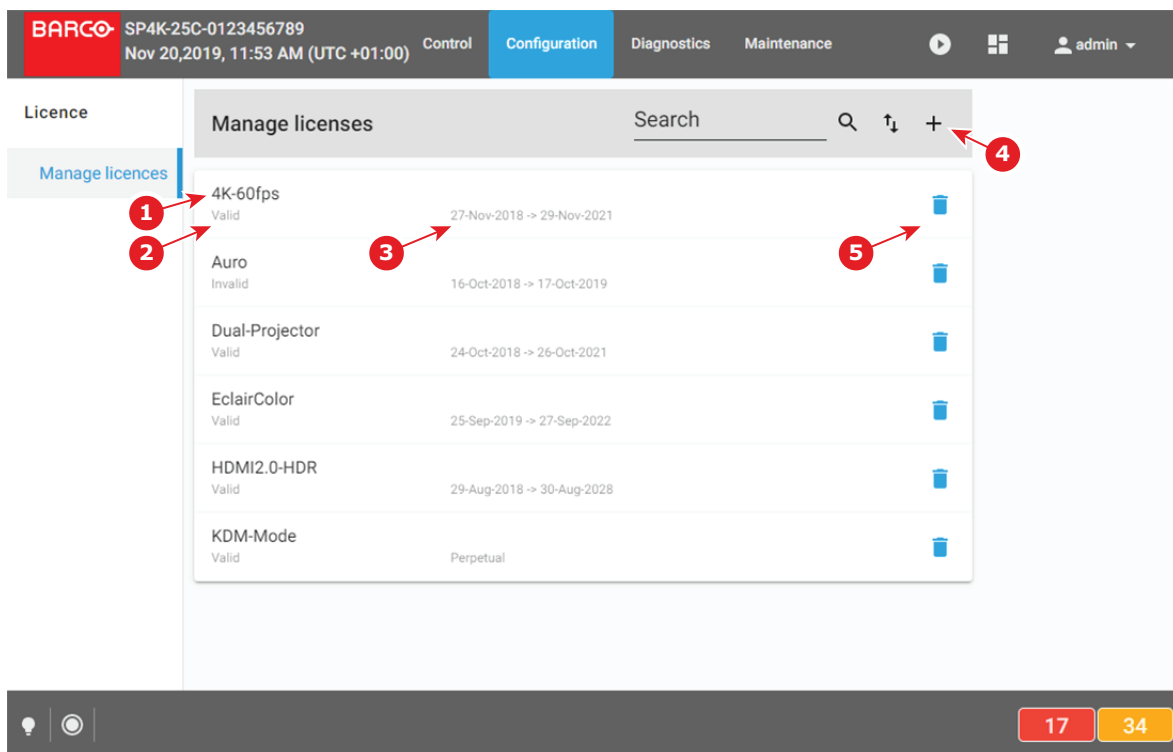


Image 11-1 Example of the Manage Licenses menu

A license file contains a name (reference 1) indicating the domain and/or a validity period (reference 3). Once the file is uploaded and checked the status of the license is indicated (reference 2).

Using the plus icon (reference 4), you can add new licenses. You can remove a license using the trash bin icon (reference 5).

How to add a new license?

1. While in *Configuration > Licenses and certificates > Manage licenses*, click on the plus-icon (reference 1) to add a new license.

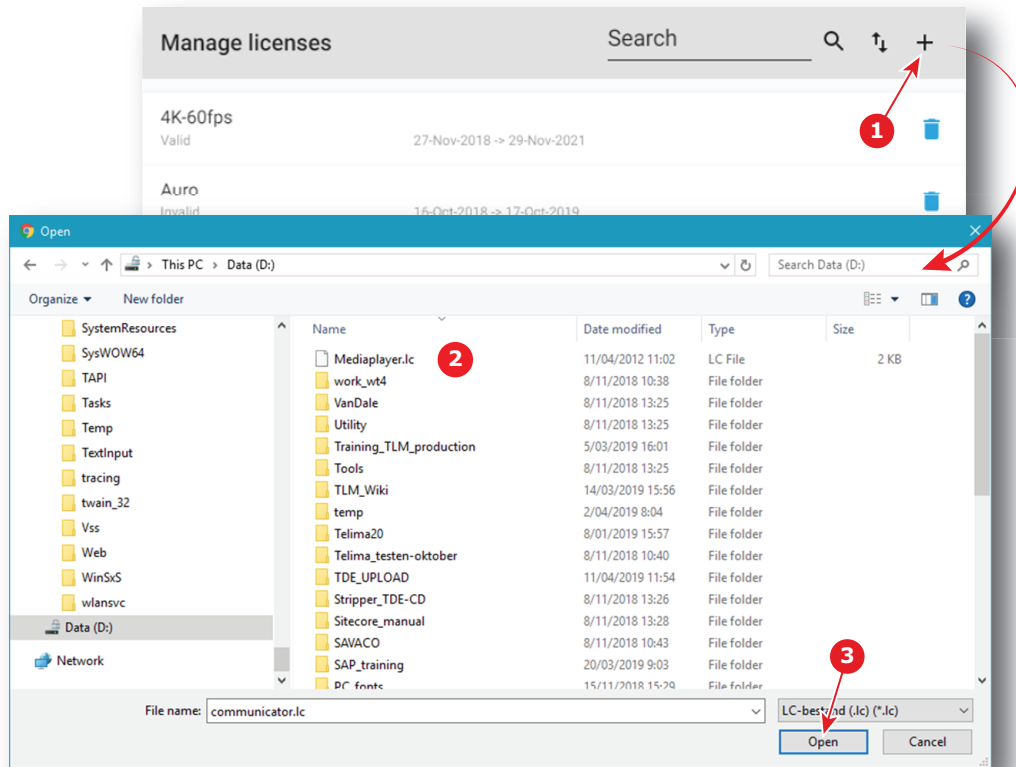


Image 11–2

A browser window opens.

2. Browse to the license file. The license file has the extension lc (reference 2).
3. Click **Open** (reference 3).

The license file is checked and uploaded to the projector. The new license will be added to the list of licenses and the status will be indicated.

How to delete a license?

1. While in *Configuration > Licenses and certificates > Manage licenses*, click on the trash bin of the undesired license (reference 1).

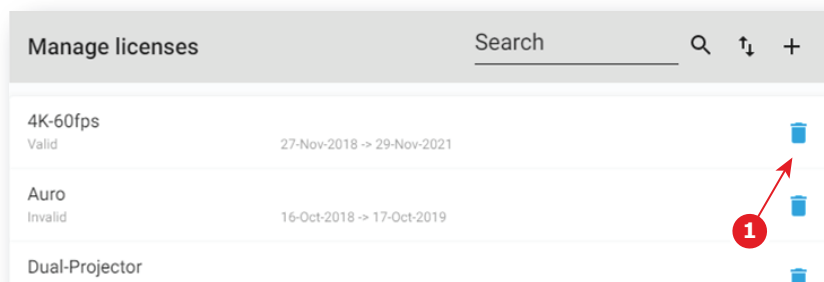


Image 11–3

The license is removed from the list.

11.2 Managing certificates

Location & access

Menu: Configuration > Licenses and certificates > Manage certificates

Level: Administrator

About certificates

There are several certificates available in this menu:

- **Projector identity certificate:** this certificate is used to digitally identify the projector. The projector certificate is used by example for the KDM generation. This certificate need to be signed by the Barco helpdesk.
- **HTTPS certificate:** This certificate (also called SSL certificate) is used to establish a secure connection to the WebCommunicator. This certificate need to be downloaded from the projector web site and manually installed on the user Web browser. For further details see [“Installing SSL certificate to enable HTTPS protocol”](#), page 50. Once the certificate is installed the HTTPS protocol is enabled and the future connections will be established automatically as long as the certificate is valid. This certificate has a limited life period (2 years max), this is the reason why a *renew* button is available to regenerate new certificate during periodic (programmed) maintenance operation. This certificate is based on parameters like the network configuration (e.g. Domain name) and need to be regenerate when these parameters change. This certificate need to be signed each time it is regenerate by a certificate authority (CA) to be valid.

Overview

In most of the cases, when certificate uploaded during the projector building is still valid, certificate menu look like this:

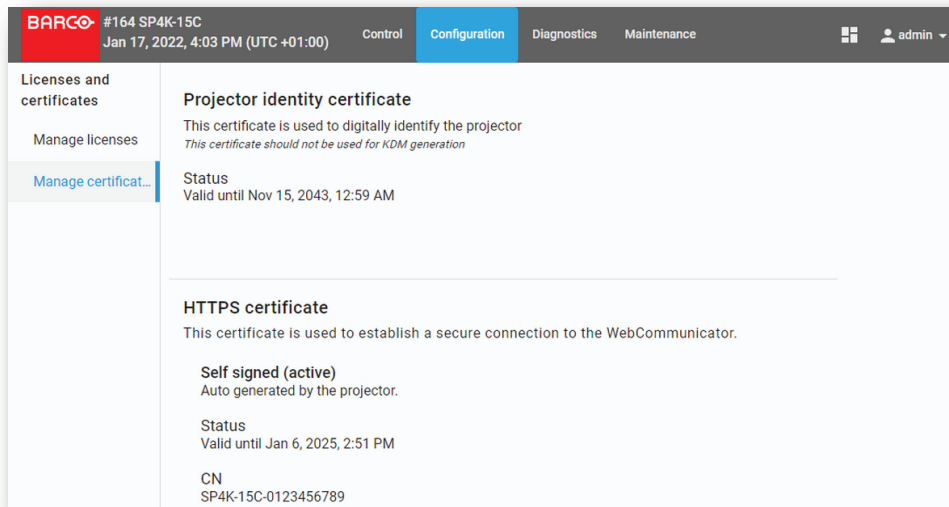


Image 11–4 Example of the Manage certificates menu with valid certificate

If device certificate is not valid or missing, certificate menu look like this:

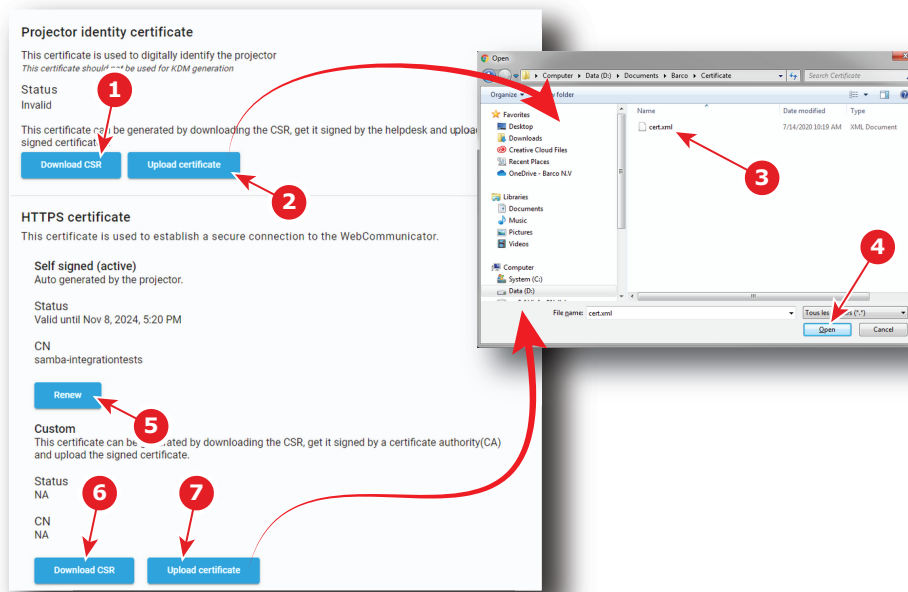


Image 11–5 Example of the Manage certificates menu with invalid certificate

In this case, follow the download procedure corresponding to the type of certificate you need.

How to upload Projector identity certificate

1. While in *Configuration > Licenses and certificates > Manage certificates*, click on **Download CSR** (reference 1) to collect the certificate signing request (CSR).
CSR file is created and automatically copied in the *Downloads* directory of your computer (e.g. *CertificateSigningRequest_01234.gypVJX.xml*).
2. Send the CSR file to your Barco helpdesk to obtain the signed certificate corresponding to the projector.
3. When you received the certificate, click on **Upload certificate** (reference 2) to add it to the projector.
A browser window opens.
4. Browse to the certificate file (reference 3). The certificate file has the extension xml (e.g. *cert_01234.xml*).
5. Click **Open** (reference 4).
The certificate file is checked and uploaded to the projector.

How to renew and upload HTTPS (SSL) certificate

1. While in *Configuration > Licenses and certificates > Manage certificates*, click first on **Renew** (reference 5), then click on **Download CSR** (reference 6) to collect the certificate signing request (CSR).
The CSR file is created and automatically copied in the *Downloads* directory of your computer (e.g. *CertificateSigningRequest_01234.xml*).
2. Send this file to a Certificate authority (CA) to obtain the signed certificate corresponding to the information present in the CSR.
3. When you received the signed certificate, click on **Upload certificate** (reference 7) to add it to the projector.
A browser window opens.
4. Browse to the certificate file (reference 3). The certificate file has the extension xml (e.g. *cert_01234.xml*).
5. Click **Open** (reference 4).
The certificate file is checked and uploaded to the projector.



Once the HTTPS certificate (SSL certificate) is correctly installed/valid, it can be downloaded from the projector web site and manually installed on the web browser of the user to establish a secure connection to the WebCommunicator. For further details see “[Installing SSL certificate to enable HTTPS protocol](#)”, page 50.

11.3 Projector registration

Location & access

Menu: Configuration > Licenses and certificates > Projector registration

Level: Administrator

Overview

If the projector is not activated, projector registration menu look like this:

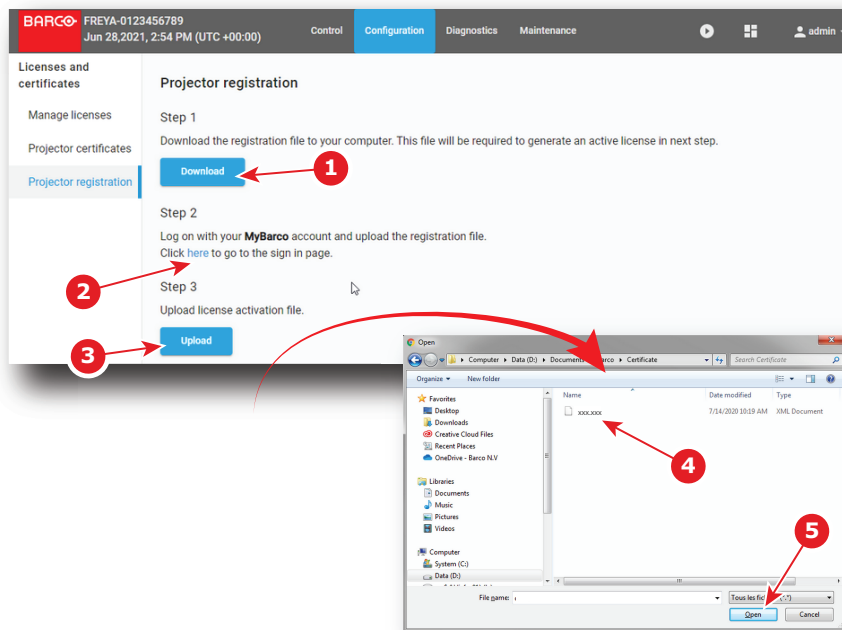


Image 11-6

Apply the next procedure to activate the projector.

How to register a projector

1. While in *Configuration > Licenses and certificates > Projector registration*, click on **Download** (reference 1) to collect the registration file to your computer.
Registration file is created and automatically copied in the *Downloads* directory of your computer (e.g. *registration_0123456789.lic*).
2. Click **here** (reference 2) to reach the sign in page. Use your credentials to log you on MyBarco (<https://www.activate.barco.com/upload>)
3. Follow the procedure describes on MyBarco to activate your product (upload the Registration file collected in the first step, ...) and receive the license activation file corresponding to your projector.

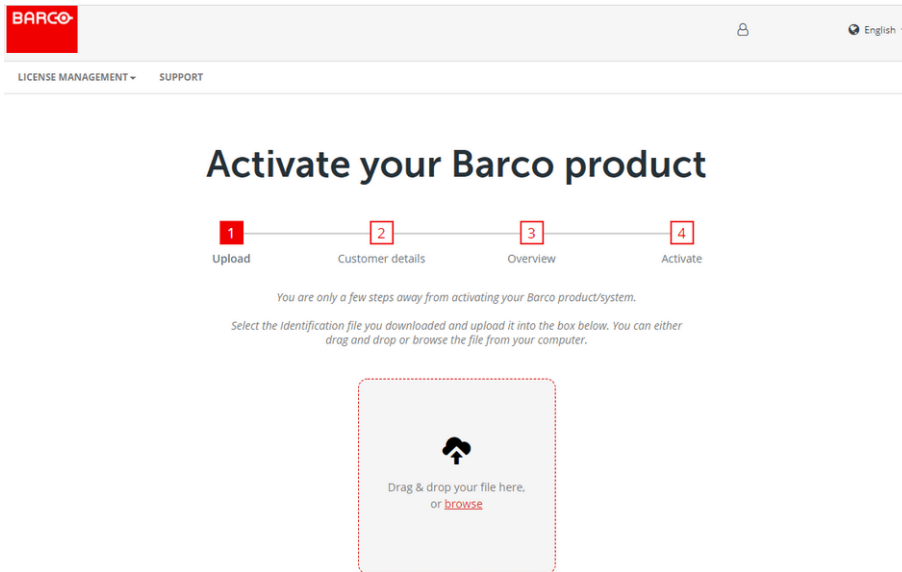


Image 11-7

4. When you received the license activation file, click on **Upload** (reference 3) to add it to the projector. A browser window opens.
 5. Browse to the license activation file (reference 4). The license file has the extension `.lic`.
 6. Click **Open** (reference 5).
- The license activation file is checked and uploaded to the projector.

Configuration - System access

12

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About this menu

System access menu allows you to set all the parameters related to system configuration (name, network settings) and user management.

12.1 Network configuration

12.1.1 About network configuration

Location & access

Menu: Configuration > System access> Network configuration

Level: Administrator, Service technician

Overview

This panel is used to define the network configuration of the projector and, when present, the network configuration of the mediablock. Click on the network interface you want to set in the list (reference 1).

When the projector network interface (reference 2) is displayed, modify the auditorium name (reference 3) and configure the network.

A switch (reference 4) allows to choose the setting mode. Two configuration modes are available: Automatic or Manual.

In manual mode, parameters (reference 7) are editable and must be adjusted manually.

In automatic mode, DHCP (Dynamic Host Configuration Protocol) server provides settings which will be applied to the projector's network configuration. Network parameters (reference 7) are not editable (greyed out).

Host name (reference 5) and Domain (reference 6) are editable in both cases.



The host name is the name given to the projector in the local network and will be used to identify it over DNS if that is configured. Domain is the name given to the local network. It will be required to reach the local network from an external point (like the Internet).

If you were trying to connect to the projector from external point, you need address it by using its IP address or with its full name (e.g. hostname.domain.com). It is preferable to use the second method to address a projector because the IP address can sometimes change (e.g. when the assignment of the IP address is automatically managed by a DHCP server).

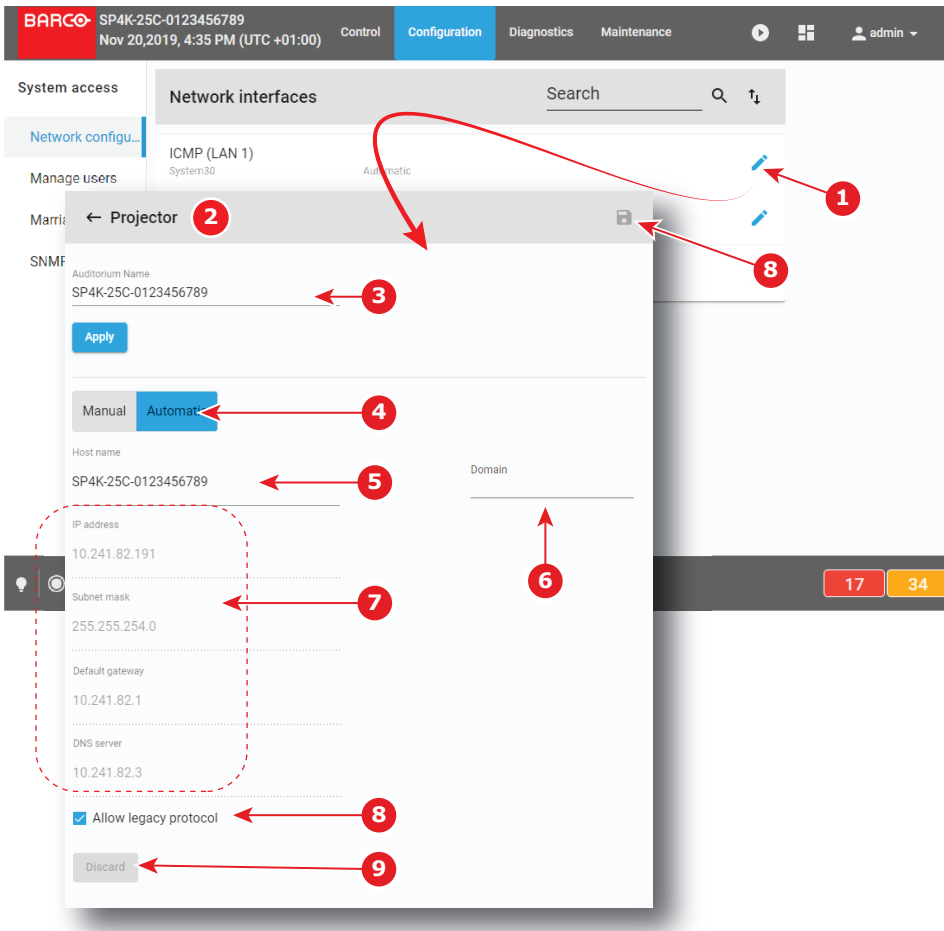


Image 12-1

Allow legacy protocol check box (reference 6) must be activated when a third party equipment need to send API over Ethernet commands to the projector using the legacy protocol as used on Series 2 projectors. A third party equipment could be a TMS, an automation device, an IMB/IMS installed in the projector or any other equipment which need to operate the projector. The commands available are controlling the basic features of the projector such as Light ON/OFF, Dowser Open/Close, Execute Macro...




Discard button (reference 7) allows to restore last configuration (removing unsaved user modifications).

Save button (reference 8) allows to save modifications.

Ethernet Connections

Ethernet is a networking technology commonly used to communicate with local area network (LAN) and wide area network (WAN). This protocol requires an IP address, Subnet-mask, default gateway and DNS server address.

These parameters can be automatically applied from DHCP server or need to be adjusted manually.

- 
IP
 Internet Protocol. The network layer of TCP/IP. Required for communication with the internet.
- 
 A new projector is delivered with a default IP address : 192.168.100.2
- 
Subnet mask
 A number that is used to identify a subnetwork so that IP addresses can be shared on a local area network.



Default Gateway

A router that serves as an entry point into and exit point out of a network. For example, a local network (LAN) may need a gateway to connect it to a wide area network (WAN) or to the Internet.



DNS server

Computers, Projectors, Touch panels connected to a network are referenced by their IP address. The only problem is that remembering IP addresses is not easy. If you need to use hundreds of addresses then it will become impossible to remember them. This is why domain names are created. Internet names (domain and host names) are just aliases to these IP addresses. When you use an Internet address it is automatically translated to an IP address. In fact a program or device that translates those Internet names to IP addresses is called a DNS Server.



Host name

This is the name that will be returned, along with the IP address in response to the UDP broadcast query for projectors/touch panels.



DHCP

Dynamic host configuration protocol. DHCP is a communications protocol that lets network administrators manage centrally and automate the assignment of IP addresses in an organization's network. Using the Internet Protocol, each machine that can connect to the Internet needs a unique IP address. When an organization sets up its computer users with a connection to the Internet, an IP address must be assigned to each machine. Without DHCP, the IP address must be entered manually at each computer and, if computers move to another location in another part of the network, a new IP address must be entered. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.



UDP

User Datagram Protocol

12.1.2 Assigning an auditorium name to the projector

Location & access

Menu: Configuration > System access> Network configuration

Level: Administrator, Service technician

How to set up auditorium name

1. While in *Configuration > System access > Network configuration*, click on the edit icon of **Projector**

(reference 1).



Projector network interface (reference 2) is displayed

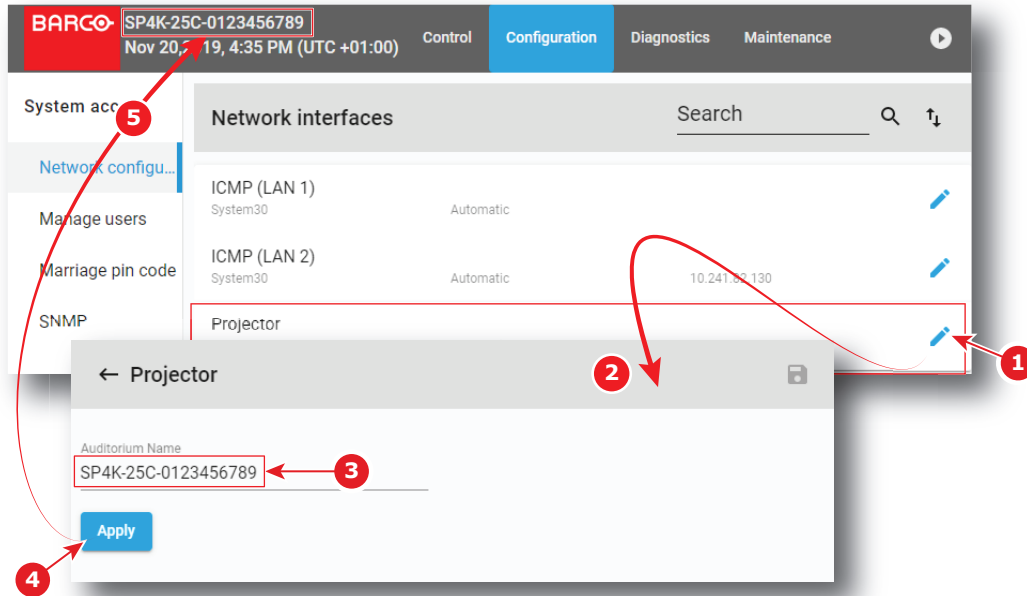


Image 12-2

2. Click in the input field of the *Auditorium name* (reference 3) to enter the desired name, then click **Apply** (reference 4).

New Auditorium name is active now and displayed in menu bar (reference 5).



When the Auditorium name has been entered correctly, it is always available in the menu bar near the Barco logo, even when you are not logged in.

12.1.3 Assigning a host name and a domain to the projector

Location & access

Menu: Configuration > System access> Network configuration

Level: Administrator, Service technician



Change the host name or domain of the projector result in the automatic creation of a new SSL certificate. This new certificate need to be installed by the users in their own browsers to enable the HTTPS protocol and establish secure connections. For more details see "[Installing SSL certificate to enable HTTPS protocol](#)", page 50.

How to set up host name or domain

1. While in *Configuration > System access > Network configuration*, click on the *edit* icon of the projector interface.

The projector network interface is displayed.

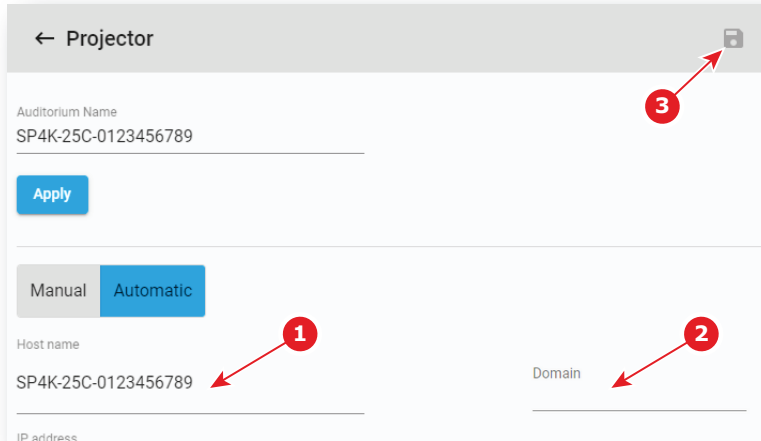



Image 12-3

2. Select the *Host name* (reference 1) and enter the desired name.

 **Note:** Host name may contain only the ASCII letters 'a' through 'z' (in a case-insensitive manner), the digits '0' through '9', and the minus sign ('-').

To indicate that projector parameters are being edited an *asterisk* is displayed and the **Save** icon (reference 3) is now enabled.

or

Select the *Domain* (reference 2) and enter the desired domain name.

To indicate that projector parameters are being edited an *asterisk* is displayed and the **Save** icon (reference 3) is now enabled.

3. Click **Save** (reference 3).

A confirmation window appears.

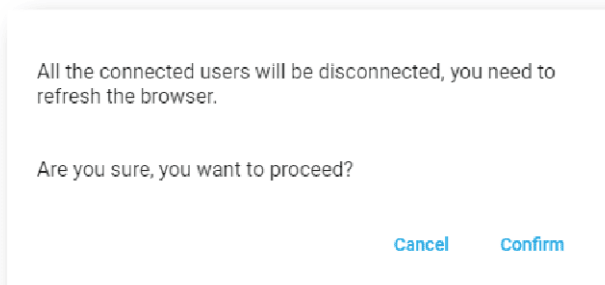


Image 12-4

4. Click **Confirm**.

Network service restarts (all connected users are disconnected from the projector) then, after few moments, login page is displayed.

or

Click **Cancel**.

The confirmation window closes and modification is canceled.

12.1.4 Assigning a network address

Location & access

Menu: Configuration > System access> Network configuration

Level: Administrator, Service technician



The projector has been configured as receiving an IP address automatically. This means that by default you should not have to configure anything. However, if the projector can not find an appropriate DHCP server on the network, or if the projector is not connected to any network in general, the projector will trigger an error instead.



If you are unsure on what IP address, subnet mask or default gateway address the projector should receive, please contact your local network administrator.

How to set up automatically

1. While in *Configuration > System access > Network configuration*, click on the *edit* icon of the projector

interface. 

The projector network interface is displayed.

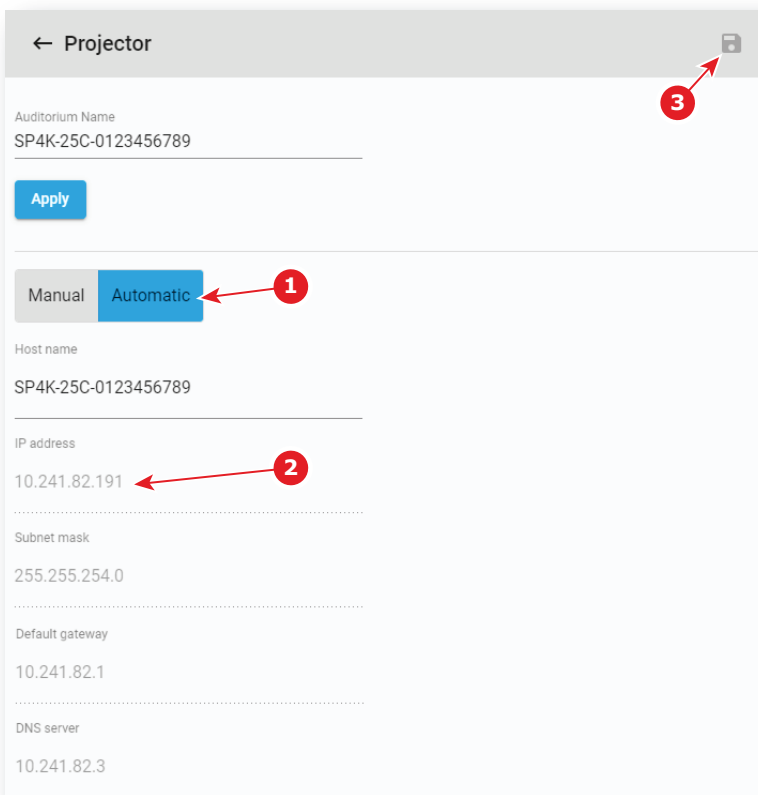


Image 12-5

2. If not already active, click **Automatic** (reference 1).
Configuration provided by DHCP server becomes active:
 - new settings (IP Address, Subnet mask, ...) replace the previous network configuration parameters.
 - network configuration parameters are greyed out.
3. Click the save icon.

How to set up manually

1. While in *Configuration > System access > Network configuration*, click on the *edit* icon of the projector

interface. 

The projector network interface is displayed.

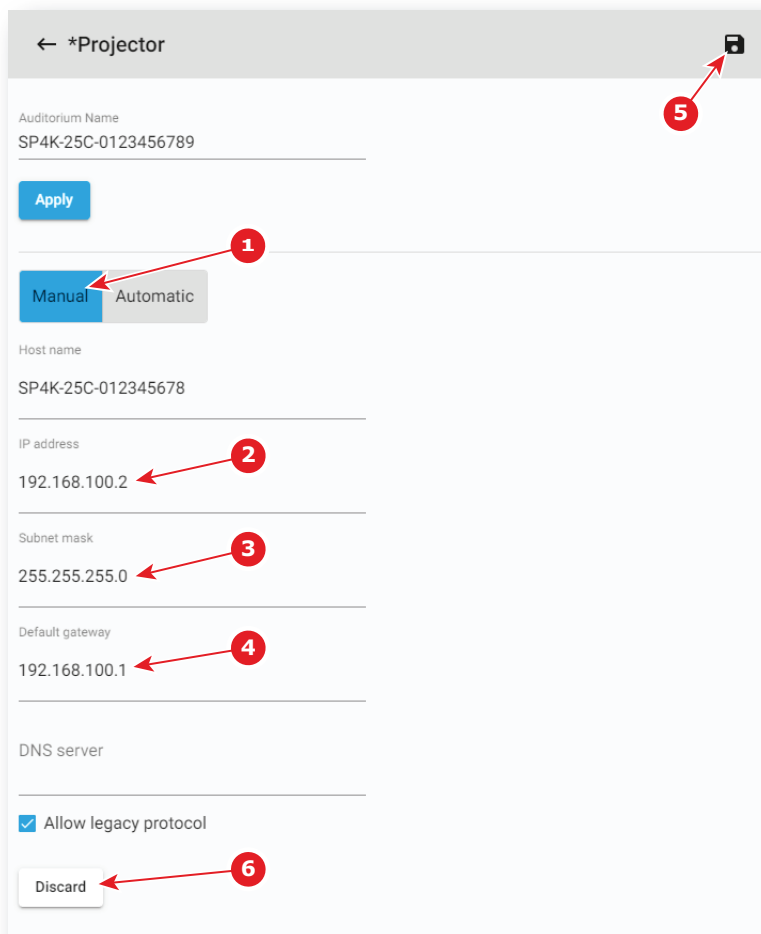


Image 12-6

2. Click **Manual** (reference 1).

The network configuration parameters can now be edited.

3. Fill in the *IP address* (reference 2).



Tip: A network address contains 4 numbers with a value between 0 and 255, e.g. 192.168.1.101.

4. Fill in the *Subnet mask* (reference 3), e.g. 255.255.255.0.
5. Fill in the *Default Gateway* (reference 4), e.g. 192.168.1.1.
6. Click **Save** (reference 5) to activate.

New settings are now active.

or

click **Discard** button (reference 8) to cancel all changes.



The address 0.0.0.0 can not be used in any of the fields.



To avoid an internal IP address conflict with the ICMP, the projector's IP address must be different from 192.168.254.x .

12.2 User management

12.2.1 About the user management menu

Location & access

Menu: Configuration > System access > Manage users

Level: Administrator

Overview

All users in the system are listed here. This panel can be used to add and delete users, as well as modifying their user rights.

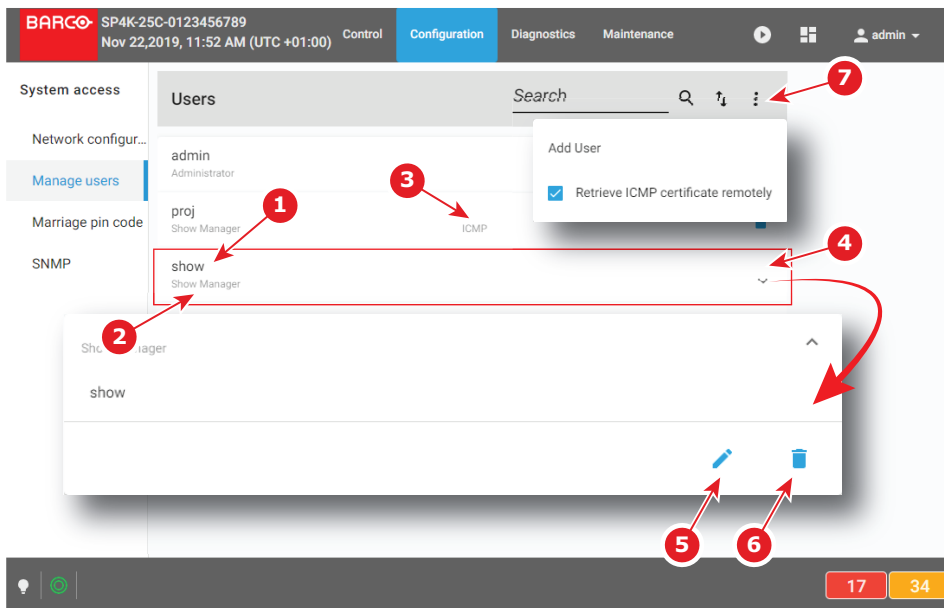


Image 12-7

Each user displayed in the user list has a name (reference 1). The group to which the user belongs is shown underneath the name (reference 2). If users are dedicated to the projector or a subsystem (e.g. ICMP) exclusively, this is indicated in the middle (reference 3).

Clicking on a user (reference 4) in the list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Edit** (reference 5) allows to modify the user.
- **Delete** (reference 6) allows to remove the user from the list.

The menu (reference 7) allows to create a new user.

12.2.2 Menu access control editor

Overview

In Web Communicator, menus access are limited by operator level, see *User groups and limitations* table in “User rights”, page 61. But, for customized control level, additional limits can be added when creating or modifying users.

List of additional limits available depending to operator level

Top menu	Submenu	Administrator	Service Tech	Show Manager
Control	Projector	O	O	O
Configuration	Projector	O	O	N/A
	Color calibration	O	O	N/A
	Media server automation	O	O	N/A
	Media server	O	O	N/A
	Light output	O	O	N/A
	Projector automation	O	O	N/A
	License	O	N/A	N/A
	System access	O	O	N/A
	Diagnosics	Monitoring	O	O
	Analysis	O	O	N/A
Maintenance	Software update	O	N/A	N/A
	Backup and restore	O	O	N/A
	Laser Bank	O	O	N/A
	Service mode	O	O	N/A
	RAID Storage	O	O	N/A

How to add additional limits to user

1. While in *Configuration > System access > Manage users*, during user creation or user modification and once user group is defined (reference 1), click on an element of the main menu, from example *Maintenance* (reference 2).

Image 12-8

A list of submenu is displayed.

2. Check / uncheck boxes (reference 3) to add / remove access to submenus.
3. Repeat same operation on other items of the main menu, then when all parameters are correctly filled in, click **Save** icon to save modifications.

12.2.3 Creating a user

Location & access

Menu: Configuration > System access > Manage users

Level: Administrator

How to add a user

1. While in *Configuration > System access > Manage users*, click on the menu (reference 1) > **Add User** (reference 2).

An *Add new user* menu is displayed (reference 3).

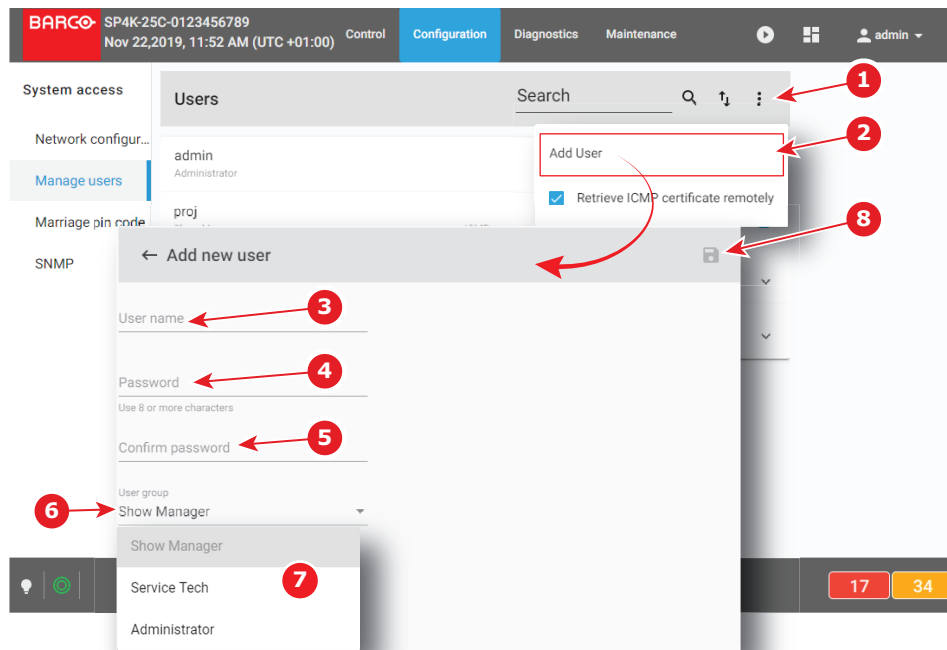



Image 12–9

2. Fill in an appropriate *User name* (reference 3).
3. Fill in a strong new password (reference 4) and repeat the password in the Confirm password field (reference 5) to ensure there were no errors made the first time around.

 *Tip:* Use 8 or more characters.

4. Click on the *User group* field (reference 6) to display the list of available user groups (reference 7), and select the desired user group.
5. If necessary add additional user limits (menu access restriction). See “[Menu access control editor](#)”, page 243.
6. When all parameters are correctly filled in, click the **Save** icon (reference 8) to save this new user.

12.2.4 Modifying settings of a user

Location & access

Menu: Configuration > System access > Manage users

Level: Administrator

How to edit user settings

1. While in *Configuration > System access > Manage users*, find and click on the desired user. The user is displayed in its expanded form with menu.

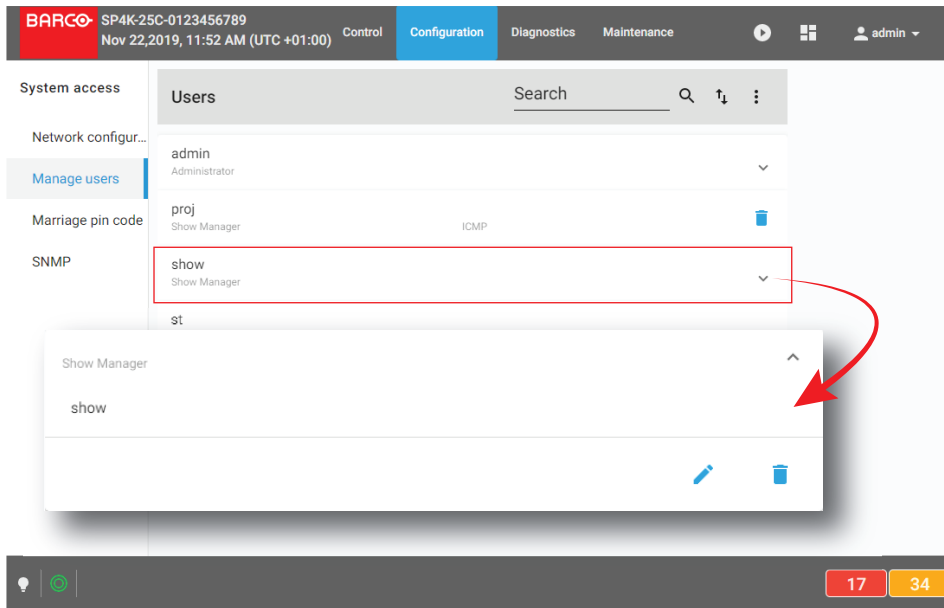


Image 12-10

2. Click the **Edit** icon. 

The *Edit User* page is displayed.

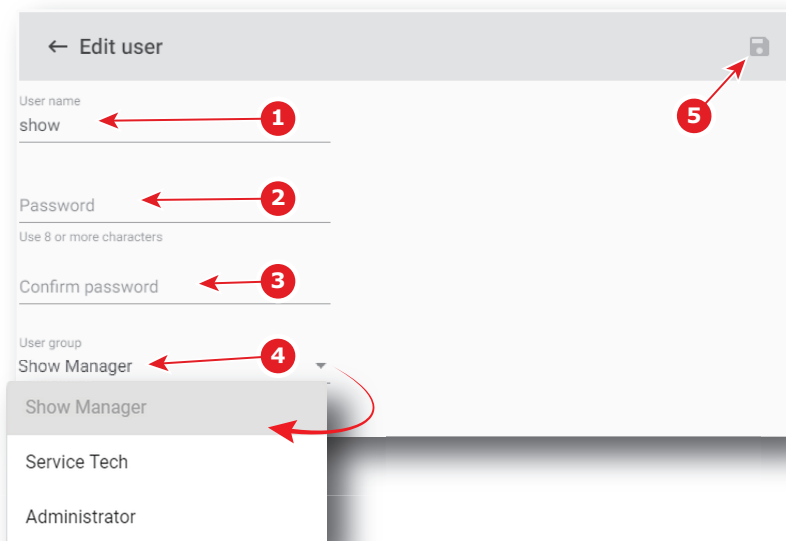


Image 12-11

3. Enter or change the user name (reference 1).

or

click in *user group* field (reference 5) to display the list of user groups available (reference 6), then select a user group to promote or demote the user.

4. Fill in a strong new password (reference 2) and repeat the password in the Confirm password field (reference 3) to ensure there were no errors made the first time around.
5. Click on the *User group* field (reference 4) to display the list of available user groups, and select the desired user group.

6. If necessary add additional user limits (menu access restriction). See [“Menu access control editor”](#), page 243.

7. When all parameters are correctly filled in, click the **Save** icon (reference 5) to save this user.

12.2.5 Deleting a user

Location & access

Menu: Configuration > System access > Manage users

Level: Administrator

How to delete a user

1. While in *Configuration > System access > Manage users*, find and click on the user you want to remove. The user is displayed in its expanded form with menu.

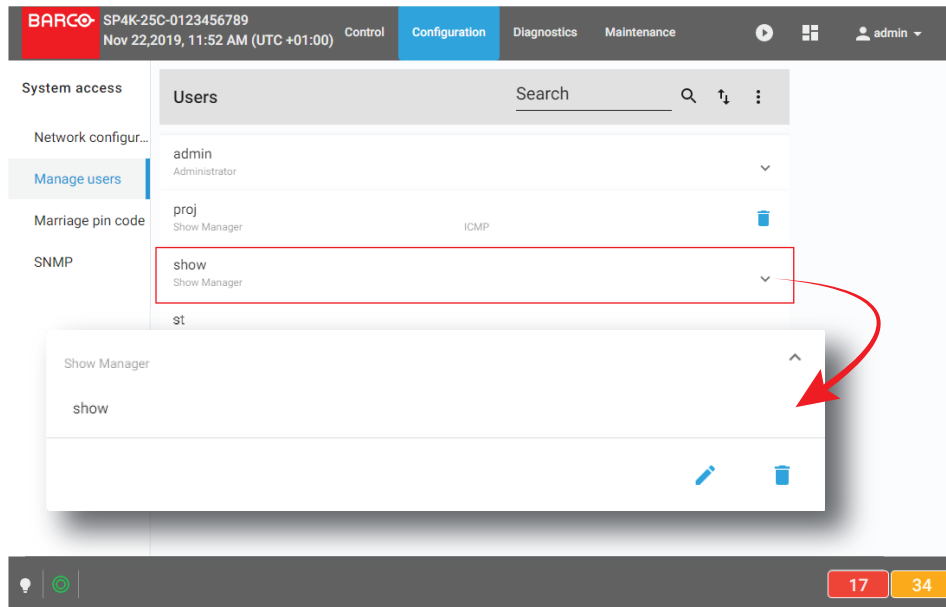


Image 12-12

2. Click the **Delete** icon in the menu and confirm with **OK**.



12.3 Marriage pin code

12.3.1 About marriage PIN code

Location & access

Menu: Configuration > System access > Marriage pin code

Level: Administrator, Service technician

Overview

All marriage PIN codes available in the system are listed here. User need use this menu to create, remove, modify PIN code.

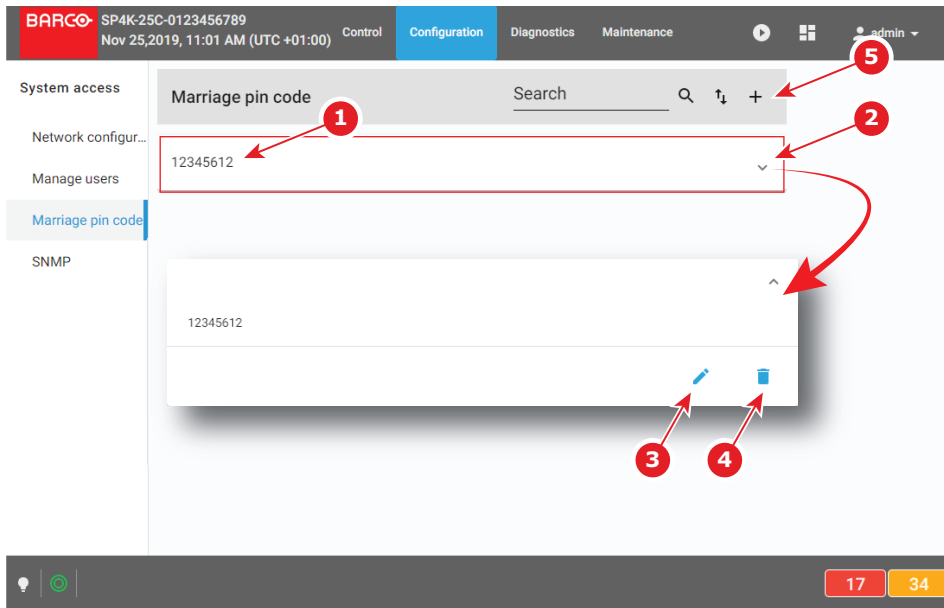


Image 12–13

A marriage PIN code is identified by a number of up to 8 digits (reference 1).

Clicking on a marriage PIN code (reference 2) in the list allows to show it in its expanded form and displays a contextual menu.

Following actions are available in this menu:

- **Edit** (reference 3) allows to modify the PIN code.
- **Delete** (reference 4) allows to remove the PIN code from the list.

New (reference 5) allows to create a new marriage PIN code.

About Marriage

For security reasons, projector and mediablock (ICMP-X or ICP-D) are linked together via an anti-tampering system. Physically replacing mediablock will introduce marriage tamper between the projector and mediablock. This is the reason why the technician who inserted a new mediablock must finalize the installation procedure by entering a marriage PIN code (see installation manual for more details concerning the entry of PIN code via touch display located on *Input & Communication* side of the projector).

Entering a pin code is a registered operation. So for traceability reasons, it is recommended to create a PIN code for each user supposed to perform a marriage operation.

PIN code must contain up to 8 digits. These digits can be any combination of the digits 1 to 9. *12345612* is provided as default PIN code.

12.3.2 Creating a new marriage PIN code

Location & access

Menu: Configuration > System access > Marriage pin code

Level: Administrator, Service technician

How to create a new PIN code

1. While in *Configuration > System access > Marriage pin code*, click on **New** (reference 1) located on the top right of the list.

A new untitled PIN code (reference 3) is displayed in PIN code editor (reference 2).

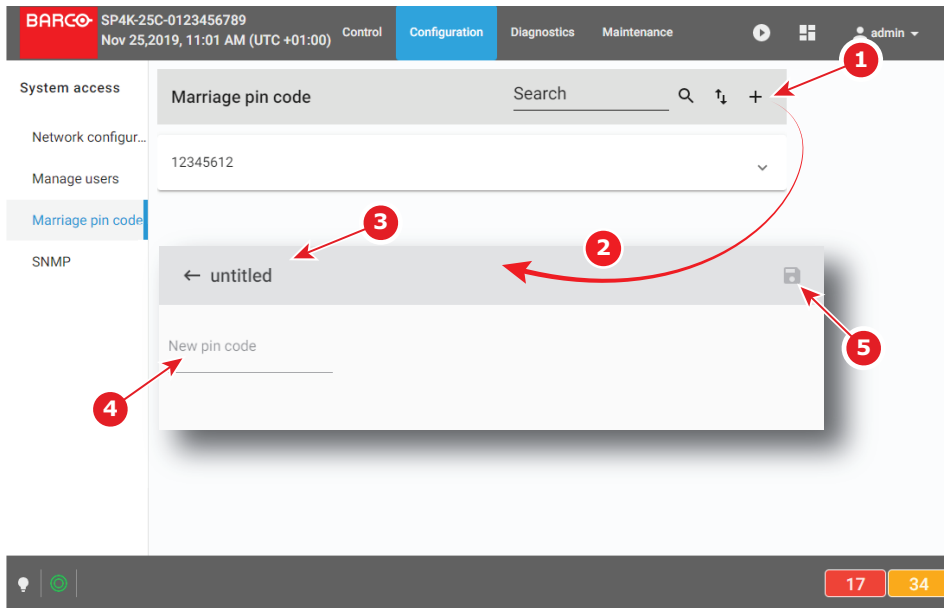


Image 12-14

2. Click in the *New PIN code* field (reference 4), then enter the new PIN code.
Save (reference 5) is now accessible.
3. Click **Save** (reference 5) to validate the new code.
New PIN code is now valid (it will be accessible to the list of PIN codes).

12.3.3 Deleting a marriage PIN code

Location & access

Menu: Configuration > System access> Marriage pin code

Level: Administrator, Service technician

How to delete

1. While in *Configuration > System access > Marriage pin code*, find and click on the PIN code you want to delete.
The PIN code is displayed in its expanded form with menu.

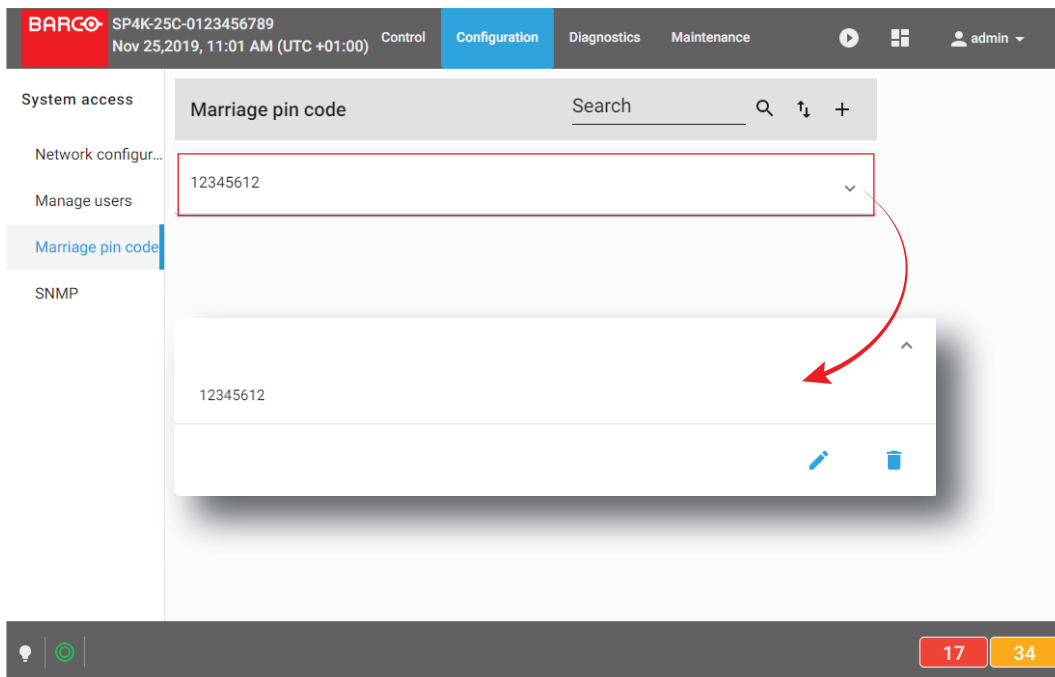


Image 12-15

2. Click the **Delete** icon and confirm. 

PIN code is removed from the list.

12.3.4 Modifying a marriage PIN code

Location & access

Menu: Configuration > System access> Marriage pin code

Level: Administrator, Service technician

How to modify

1. While in *Configuration > System access > Marriage pin code*, find and click on the PIN code you want to modify.

The PIN code is displayed in its expanded form with menu.

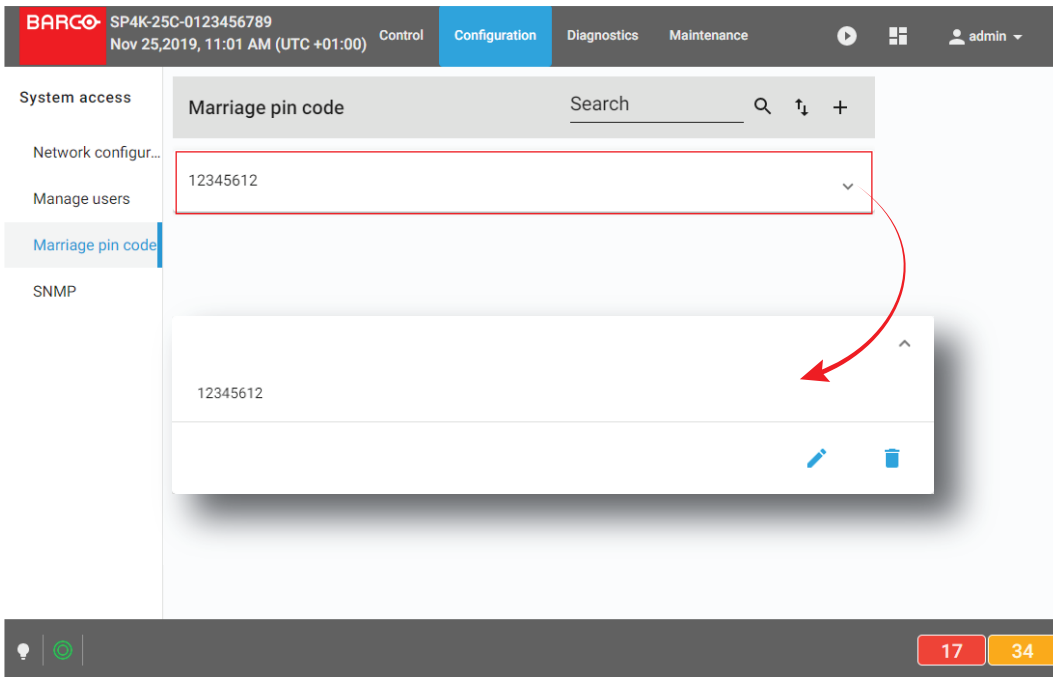


Image 12-16

2. Click the **Edit** icon. 
PIN code editor page is displayed.

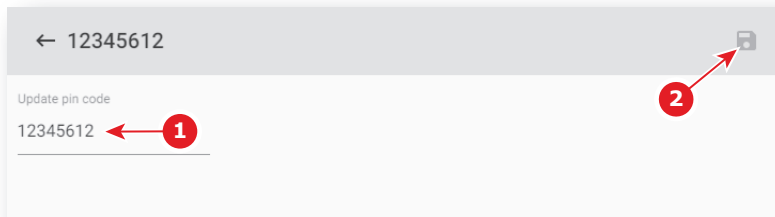


Image 12-17

3. Enter a new PIN code (reference 1). Use a numeric value of 1–8 digits.
4. Click the **Save** icon (reference 2) to validate the new code.
 The new PIN code is now valid (it will be accessible to the list of Pin codes).

12.4 SNMP

12.4.1 About SNMP configuration

Location & access

Menu: Configuration > System access > SNMP

Level: Administrator, Service technician

Overview

This panel allows to configure the Simple Network Management Protocol (SNMP), the Internet standard protocol for collecting and organizing information about managed devices on IP networks.

Set time between two traps to be sent to the management servers. This time is set in minutes and can be different for *Non critical trap* (reference 1) and *Critical traps* (reference 2).

Each trap receivers is designed by its IP address (reference 3) in the *Trap Destinations* list.

Clicking on a trap receiver (reference 5) allows to show it in its expanded form (reference 6) and displays a contextual menu.

Following actions are available in this menu:

- **Edit** (reference 7) allows to modify the IP address of the receiver.
- **Delete** (reference 8) allows to remove the receiver from the list.

Add (reference 4) allows to add a new receiver.

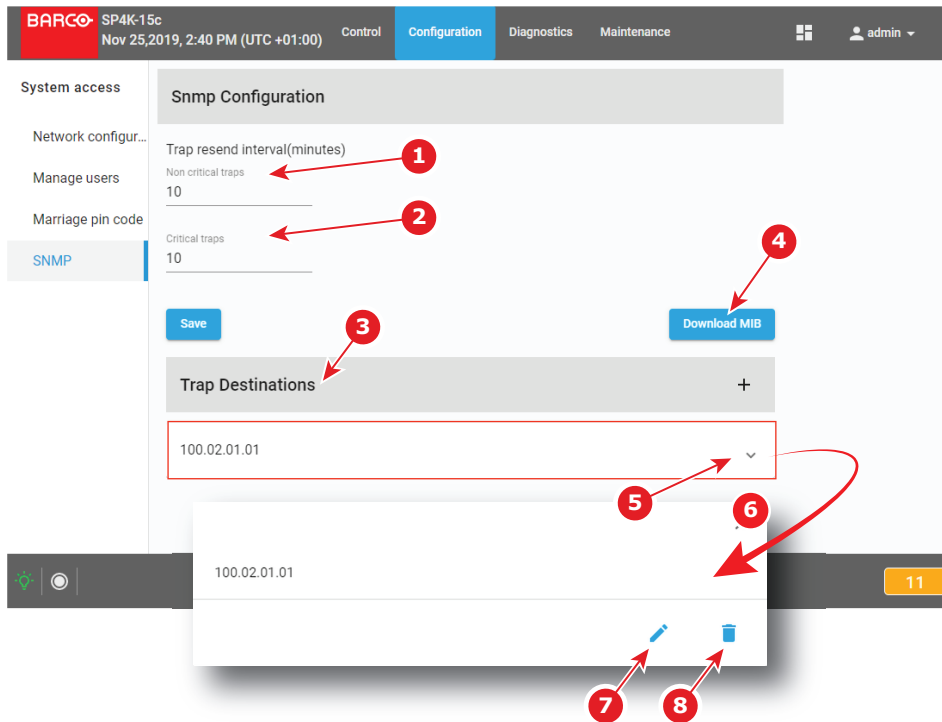


Image 12–18

12.4.2 Modifying the trap resend interval

Location & access

Menu: Configuration > System access > SNMP

Level: Administrator, Service technician

How to modify the trap resend interval

1. While in *Configuration > System access > SNMP*, click in *Non critical traps* field (reference 1), then enter the time that the projector needs wait between two sends of non critical traps to the management server.
2. Click in *Critical traps* field (reference 2), then enter the time that the projector needs wait between two sends of critical traps to the management server.

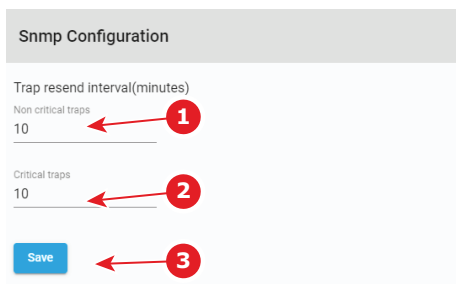


Image 12–19

3. Click **Save** (reference 3) to apply changes.

12.4.3 Adding a new SNMP receiver

Location & access

Menu: Configuration > System access > SNMP

Level: Administrator, Service technician

How to add new receiver

1. While in *Configuration > System access > SNMP*, click **Add** (reference 1).
A window prompting you to enter an IP address is displayed (reference 2).

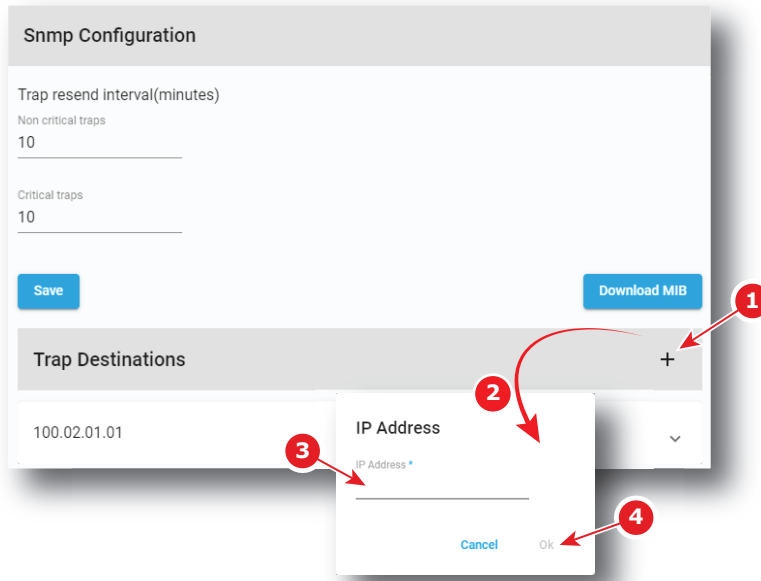


Image 12-20

2. Enter the IP address of the receiver (reference 3), then click **OK** (reference 4).
New receiver is now displayed in the *Trap Destinations* list.

12.4.4 Deleting a SNMP receiver

Location & access

Menu: Configuration > System access > SNMP

Level: Administrator, Service technician

How to delete a receiver

1. While in *Configuration > System access > SNMP*, click on the undesired receiver (reference 1) in the *Trap Destinations* list.
The receiver is displayed in its expanded form with menu (reference 2).

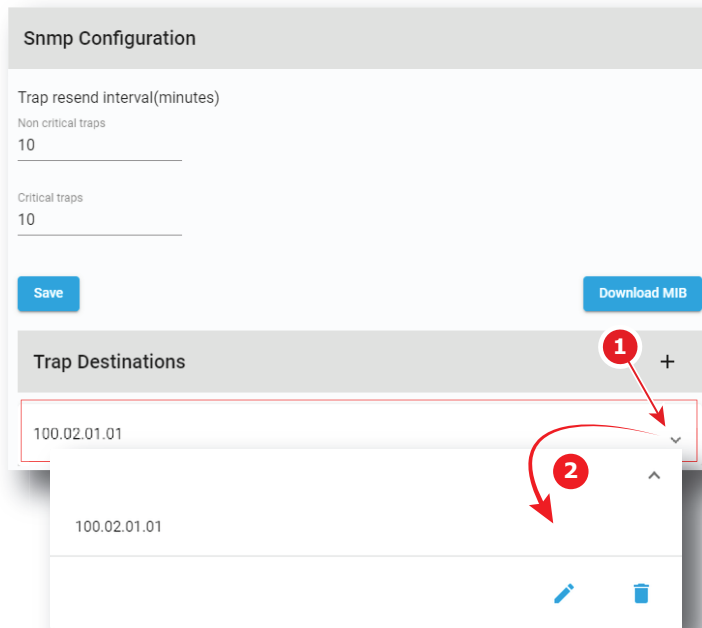



Image 12-21

2. Click the **Delete** icon in the menu and confirm. 

The receiver is removed from the *Trap Destinations* list.

12.4.5 Modifying the IP of a SNMP receiver

Location & access

Menu: Configuration > System access > SNMP

Level: Administrator, Service technician

How to modify the IP of a SNMP receiver

1. While in *Configuration > System access > SNMP*, click on the desired receiver (reference 1) in the *Trap Destinations* list.

The receiver is displayed in its expanded form (reference 2).

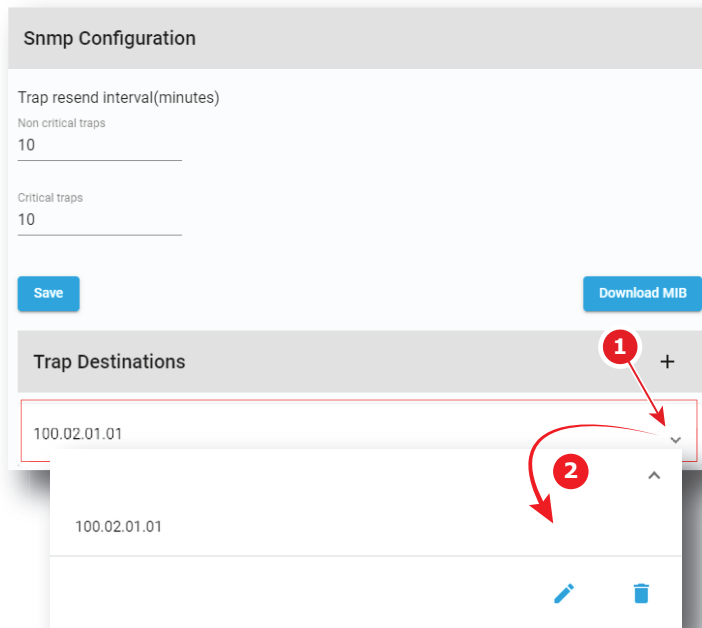


Image 12-22

- Click the **Edit** icon. 

A window with the current IP address of the receiver is displayed.

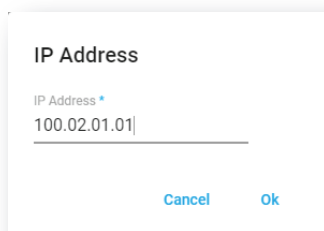


Image 12-23

- Enter the new IP address of the receiver and confirm with **OK**.

The receiver with its new IP address is displayed in the *Trap Destinations* list.

12.5 Multi projectors

12.5.1 About Multi projectors

Location & access

Menu: Configuration > System access > Multi projectors

Level: Administrator, Service technician

Overview

This panel allows to manage slave and master projectors in multi projectors configuration. A multi projector setup is used in e.g. a 3D setup where the first projector projects the left image and the second projector the right image.

One projector must be designed as master and the others as slaves. The *Multi projectors* list is created on the master (all slave projectors must be known by the master).

There are several tabs in the Multi projectors panel that corresponding to several kinds of multi projector configurations:

- **Linked ICMP**, used by example in 3D setup where the first projector projects the left image and the second projector the right image.
- **Linked CLO**, used when it necessary that several projectors are using the same light output.

The use of several multi projector configurations in same time is possible.

Linked ICMP

This tab is available when ICMP is present in the projector.

A chain of 50 Ohm coaxial cables (equipped with BNC connectors) is used to connect the sync signal between each projector. The number of slaves is theoretically not limited.

In the *Multi projectors* list, each slave projector is designed by its IP address (reference 1) or by its Host name. Both master and slave projectors need to be on the same projector control network.

Player Frames parameter (reference 2) indicates if the slave plays the right or the left image, or the both in same time.

BNC mode parameter indicates the protocol used by the slave for the BNC cable sync (this link allows a correct synchronisation between the master and the slave). The following protocols can be used:

- Sync: default sync signal (used value if the slave is not the last one in the chain of multi projectors).
- Ltc: Linear time code (usually used for the last slave in a multi projectors configuration).

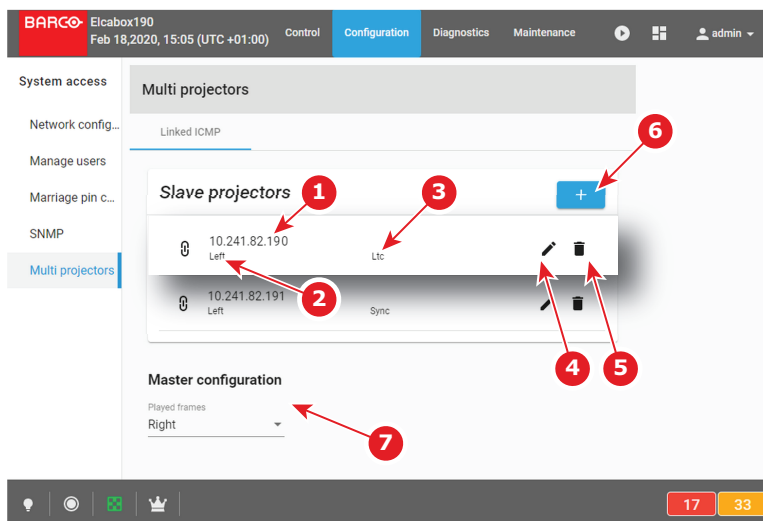


Image 12–24

Using the **Edit** icon (reference 4), you can display the *Edit* window of the concerned slave projector and modify its settings (Ip address, played frames, BNC mode).

Using the **plus** button (reference 6), you can add new slave projector. You can remove a slave projector using the **trash bin** icon (reference 5).

The only available parameter for the Master projector configuration is the *Player Frames* parameter (reference 7) that allows to choose if the master plays the right or the left image, or the both in same time.

Linked CLO

This multi projector mode use the local network. It is based on IP addresses of projectors. No additional link is needed between the projectors.

When 2 projectors are projecting on the same screen, e.g. for projecting 3D images, then it necessary that both projectors are using the same light output, otherwise a difference in brightness will be visible between both images.

To obtain this goal, one projector will be set as master and this master will manipulate the target CLO value of the slave so that the lamp output will be aligned between both projectors. When the lamp output of the master changes, then the lamp output of the slave will follow.

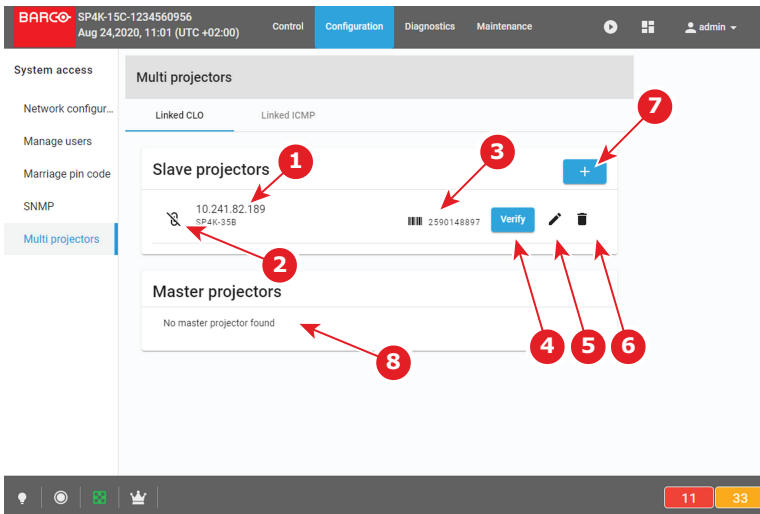


Image 12–25

In the *Slave projectors* list, each slave projector is designed by its IP address (reference 1). Both master and slave projectors need to be on the same projector control network.

Icon (reference 2) symbolizing the connection with the slave remains crossed out until the link between the master and the slave has been confirmed by using **verify** the button (reference 4).

To identify easily the slave projector, a bar code and the serial number of the targeted machine is displayed (reference 3).

Using Directly the **plus** button (reference 7) to add new slave projector (*Add projector as slave* window is dispiled). You can remove a slave projector using the **trash bin** icon (reference 6).

Using the **Edit** icon (reference 5), you can also display the *Add projector as slave* window to directly replace current projector by another one in the list.

In the *Master projectors* list (reference 8), a list of master projectors already defined in the network is displayed.

12.5.2 Linked ICMP (Adding, modifying and deleting a slave projector)

Location & access

Menu: Configuration > System access > Multi projectors

Level: Administrator, Service technician

How to add slave

1. While in tab *linked ICMP* in *Configuration > System access > Multi projectors*, click on **Add** (reference 1). A window prompting you to enter IP address of the slave projector is displayed (reference 2).

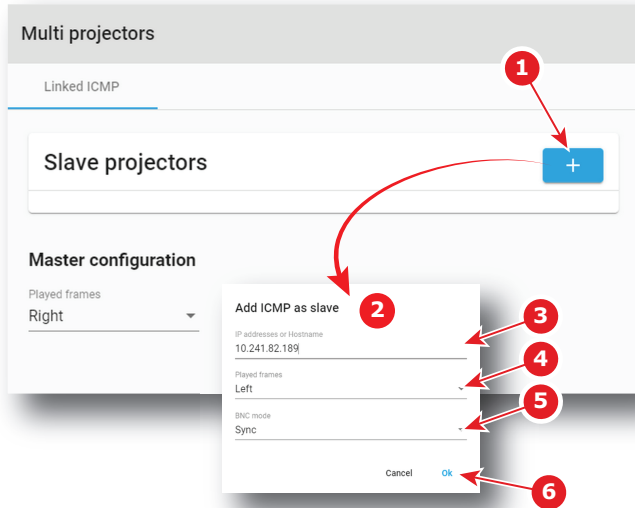


Image 12–26

2. Enter the IP address (or Host name) of slave projector (reference 3),
or
Select an IP address in the list automatically proposed (List of available projectors in the local network).
3. Select in the *played frames* drop down (reference 4) which image the slave will play: the right or the left image, or the both in same time.
4. Select a protocol of synchronisation for the BNC cable (the link that allows synchronisation between the master and the slave) by clicking on the drop down list (reference 5).
5. Click **Ok** (reference 6) .

New slave projector is now displayed in the *Slave Projectors* list.

How to modify settings of a slave projector

1. While in tab *linked ICMP* in *Configuration > System access > Multi projectors*, click on **Edit** icon (reference 1) of the projector slave you want to remove.

Edit window of the slave projector is displayed (reference 2).

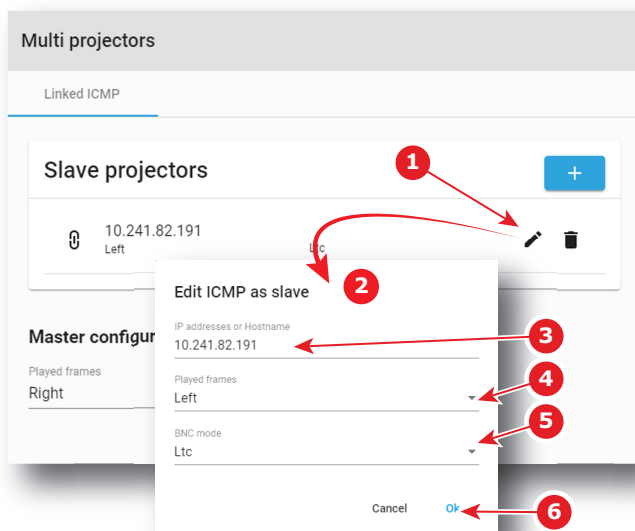



Image 12–27

2. Edit the desired values (reference 3 to 5),

 **Note:** Please refer to section “[Linked ICMP \(Adding, modifying and deleting a slave projector\)](#)”, page 258 to correctly modify slave projector parameters.

3. Confirm modifications with **OK** (reference 6).

Slave projector is displayed in the *Slave Projectors* list with its new settings.

How to delete slave projector

1. While in tab *linked ICMP* in *Configuration > System access > Multi projectors*, click on **Delete** icon (reference 1) of the projector slave you want to remove.

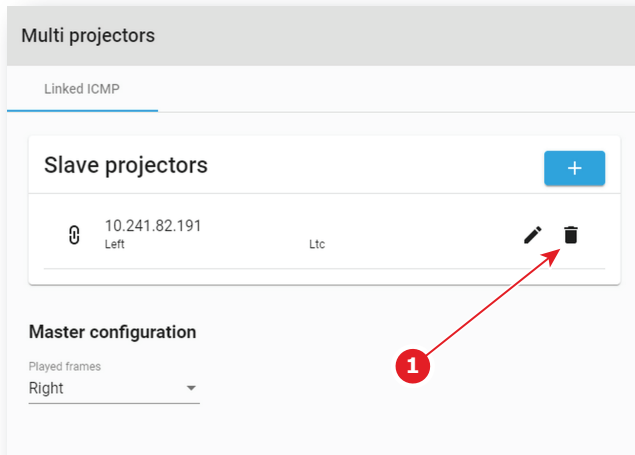


Image 12–28

Projector is removed from the *Slave Projectors* list without confirmation.

12.5.3 Linked CLO (Adding, modifying, verifying and deleting a slave projector)

Location & access

Menu: Configuration > System access > Multi projectors

Level: Administrator, Service technician



To obtain an efficient linked CLO behaviour, the CLO sensor of each units of the group (master and slaves) need to be correctly calibrated. Please refer to Configuration > Light output > Sensor section.

How to add slave

1. While in tab *linked CLO* in *Configuration > System access > Multi projectors*, click on **Add** (reference 1).
A window *Add projector as slave* is displayed.

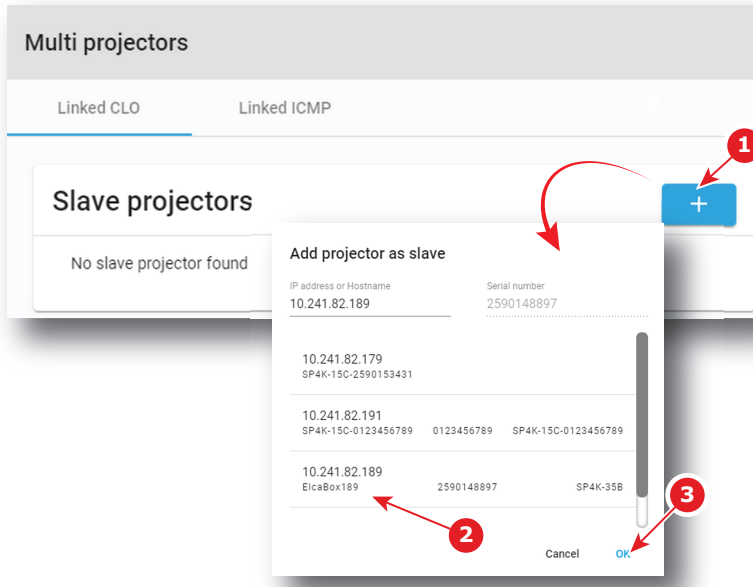


Image 12–29

2. Select an IP address (reference 2) in the list automatically proposed (List of available projectors in the local network).
3. Click **Ok** (reference 3) .

New slave projector is now displayed in the *Slave Projectors* list.

How to verify secure connection with the slave projector

1. While in tab *linked CLO* in *Configuration > System access > Multi projectors*, click on **Verify** icon (reference 1) of the projector slave you want to verify.

The window *Secure connection* is displayed.

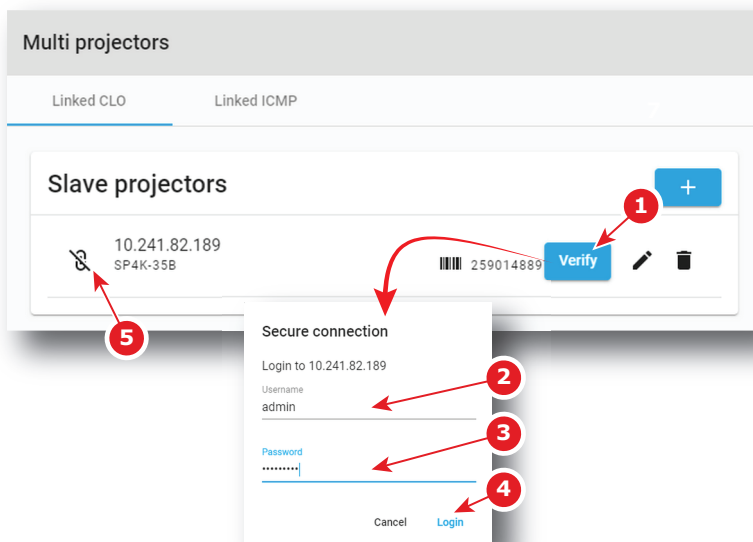


Image 12–30

2. Sign in using user name (reference 2) and password (reference 3) then click login (reference 3).
Secure connection is checked.
3. If connection is successfully verified a confirmation message is displayed. Click **Ok**.

The connection with the slave is secularized now: Icon (reference 5) symbolizing the connection with the slave is uncrossed.

or

if connection failed an error message is displayed. Click **Ok** then verify credentials and check projectors certificates and their validity dates.

How to modify settings of a slave projector

1. While in tab *linked CLO* in *Configuration > System access > Multi projectors*, click on **Edit** icon (reference 1) of the projector slave you want to exchange.

The window *Add projector as slave* is displayed.

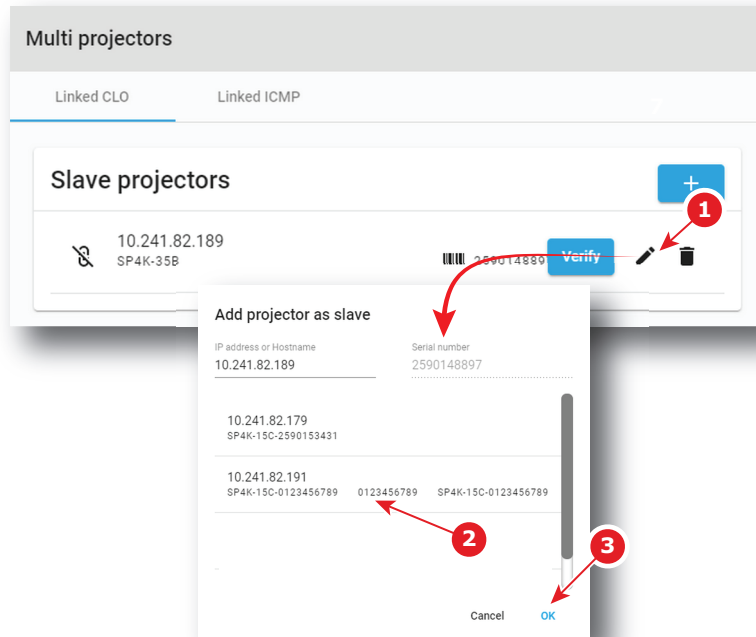


Image 12-31

Note that the address of the projector currently edited is not displayed in the list of available projectors.

2. Select an IP address (reference 2) in the list automatically proposed (List of available projectors in the local network without the current selected).
3. Click **Ok** (reference 3) .

The previous projector is removed and the new slave projector is now displayed in the *Slave Projectors* list.

How to delete slave projector

1. While in tab *linked CLO* in *Configuration > System access > Multi projectors*, click on **Delete** icon (reference 1) of the projector slave you want to remove.

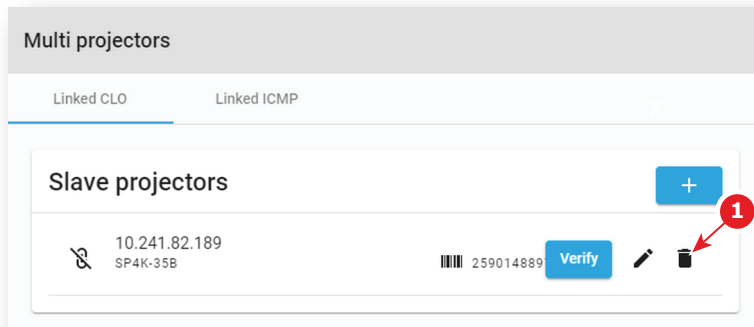


Image 12-32

2. Confirm with OK

Projector is removed from the *Slave Projectors* list.

Diagnostics - Monitoring

13

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About Monitoring

The Monitoring menu is used to retrieve system information and notifications.

13.1 System information

Location & access

Menu: Diagnostics > Monitoring > System information

Level: Administrator, Service technician, Show manager

Overview

This panel provides information concerning the product (projector + Cinema processor), settings and network configuration.



This panel is read only. To modify Network parameters displayed here, please use “[Network configuration](#)”, page 236.

The screenshot shows the diagnostic interface for a BARCO SP4K-25C projector. The top navigation bar includes 'Control', 'Configuration', 'Diagnostics' (selected), and 'Maintenance'. The 'System information' section is active, displaying the following data:

Product information	
Model SP4K-25C	Firmware version 1.5.0-rc-1891
Article number R9008862	Projector serial number 2590178148
Lens FUJINON(R) 0.98" DC2K 1...	ICMP serial number 9730738680

Network information	
Hostname 101	Default gateway 10.241.82.1
IP address 10.241.82.101	Configuration AUTO
Subnet 255.255.254.0	

Settings	
Macro	Not selected
White point target	LSC
Native	14fL
Light output mode	Power
Normal	20%
Input	PCF
Icmp_MediaPlayer	DCDM_XYZ_auto
Picture	3D
FullScreen	No3D
TCGD 3D left eye	TCGD 2D/3D right eye
DC28_DCL_XYZE_314_351	DCDM_XYZ_auto.PCF
MCGD 3D left eye	MCGD 2D/3D right eye
MeasuredColors3D_Left	MeasuredColors
LUT-SCC	Test patterns
Manual override	Not selected

Image 13-1

Product information

- **Model** : Indicates the Model of the projector (e.g. DP4K-xx).
- **Article number**: Indicates article number of the projector (e.g. R90xxxxx).
- **Projector serial number**: Indicates the serial number of the projector.
- **ICMP/ICP serial number**: Indicates the serial number of the ICMP (Integrated Cinema Media Processor) or ICP (Integrated Cinema Processor) present in the projector.
- **Firmware version**: Indicates the software package version installed on the device.
- **Lens**: Indicates the lens installed on the device.

Network information

- **Host name**: Contains the host name assigned to the projector to identify it in the theater network (e.g. projector1).
- **IP address**: Contains the IP address of the projector required for network communication (e.g. 10.98.0.245).
- **Subnet**: The subnet mask is the number that is used to identify a subnet so that IP addresses can be shared on a local area network (e.g. 255.255.254.0).
- **Default gateway**: Contains the default gateway IP address of the projector (router) required for network communication (e.g. 10.98.0.1).
- **Configuration**: MANUAL or AUTO. Indicates if the IP address has been assigned manually by user or automatically by DHCP (Dynamic Host Configuration Protocol) server.

Settings

This section provides an overview of the settings currently applied on the projector.

13.2 Notifications

Location & access

Menu: Diagnostics > Monitoring > Notifications

Level: Administrator, Service technician, Show manager

Overview

The complete list of errors, warning and maintenance messages is displayed in this menu. Operational notifications and hardware errors encountered on the projector and the Cinema Processor (ICP or ICMP) are grouped in the same list.



Hardware errors reported here are generally resolved by a technical intervention. Operational errors are easier to solve and generally requires just an operator intervention. This last category of error is more common and is often due to problems with invalid content.

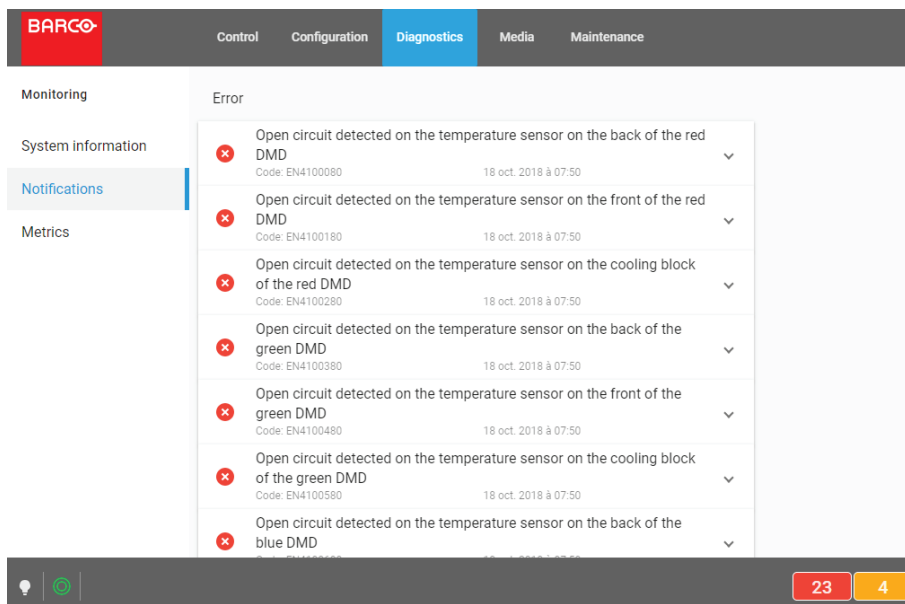


Image 13–2 Diagnostics > Monitoring > Notifications

Messages filtering

Some tabs on the top of the list allow you to filter messages:

- **Active:** click on this tab allows to display all message still actives (not solved). Error messages are displayed first in this list, followed by warnings and finally you will find eventual info messages not already automatically solved.
- **Since boot:** click on this tab allow to display all messages activated since last projector start. Messages are filtered by creation dates (most recent message in on the top of the list).
- **History:** this tab allows to load and display list of all maintenance messages raised on the projector. Messages are filtered by creation dates (most recent message in on the top of the list). To save system resources, this list is not automatically displayed. It is necessary to activate the message display by pressing **Load** button.

Notification description

Notifications are given with an identifier (code error number), a date and a description. An icon indicates the error level.

There are three error levels:

- **Error:**
Icon composed with a white cross on a red circle indicates an “Error”. This error must be resolved as soon as possible to prevent damage to the projector and perform the show.



Image 13-3 Error

- **Warning:**
Icon composed with a white exclamation mark on a yellow triangle indicates a “Warning”. This warning must be resolved as soon as possible to prevent future issues with the projector and allows providing a complete performance during the show. An unresolved Warning can quickly escalate and become an error.

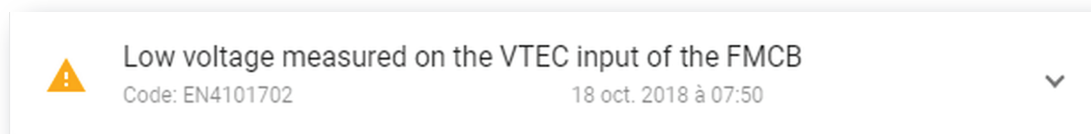


Image 13-4 Warning

- **Info:**
Icon composed with a white exclamation mark on a blue circle indicates an “Information” message. This type of message are used to signal a modification of the projector status or to indicate that maintenance action is needed.

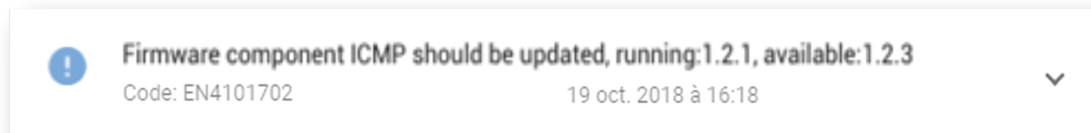


Image 13-5 Info

Diagnostic Companion

Multiple situations and solutions are possible for one error (or warning). If they are available, situations and possible solutions are presented in the extended version of the notification in table form.

How to display

1. While in *Diagnostics > Monitoring > Notifications*, click on the notification.
The notification is displayed in its expanded form with explanations.

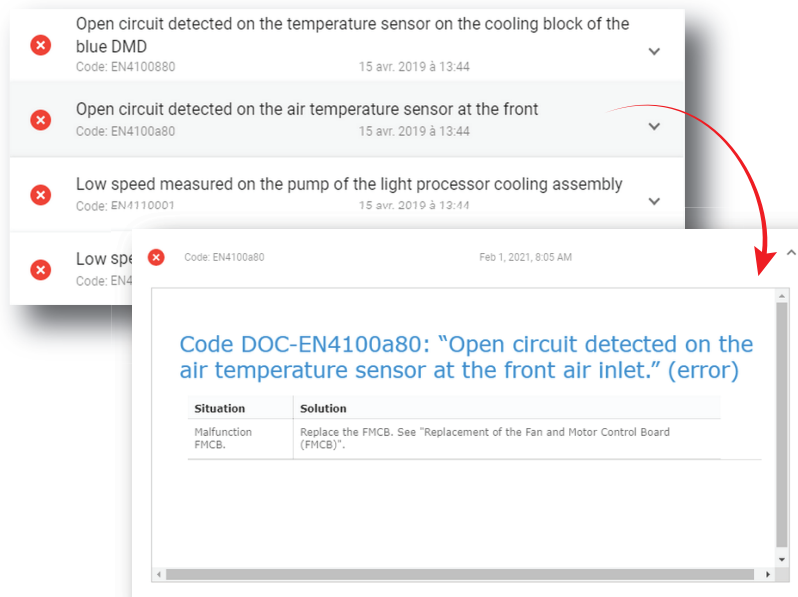


Image 13-6

- Click on the notification again to view it in minimal view.

13.3 Metrics

Location & access

Menu: Diagnostics > Monitoring > Metrics

Level: Administrator, Service technician, Show manager

Overview

All measured values available in the device are listed in this menu.

Values are grouped by type (current, pressure, runtime, speed, temperature, voltage).



This panel is read only.

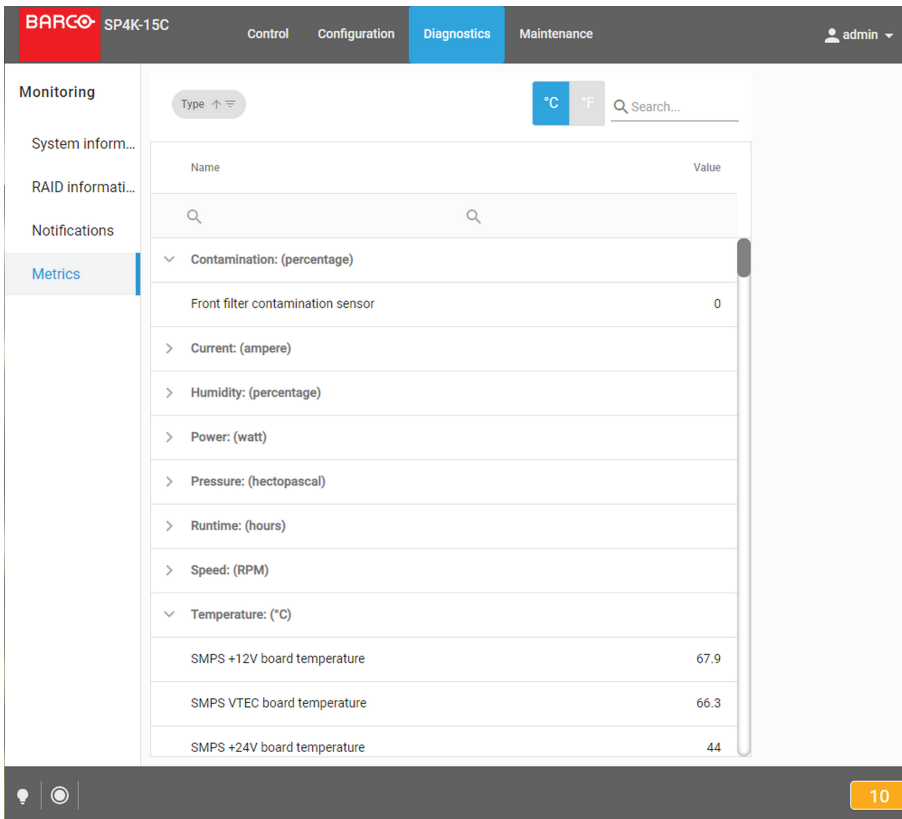


Image 13-7

Available Filters

Filter	Description
Search	See section “Search”, page 59 to obtain more details concerning the Search functionality.
Type selection	Allows to select which types of sensor will be displayed (current, pressure, speed ...). See section dedicated to the type selection below to obtain more information.
Types in alphabetical order / reverse alphabetical order	Allows to display the selected type list in alphabetical order or reverse alphabetical order. Order of sensor names in each type stay identical. Only the order of types is impacted with this filter.
°C / °F	Allows to display temperature degrees Fahrenheit (°F) or Celsius (°C).

How to select/unselect sensor types to display

1. Click **type chooser** icon (located at right on the top bar of the list)

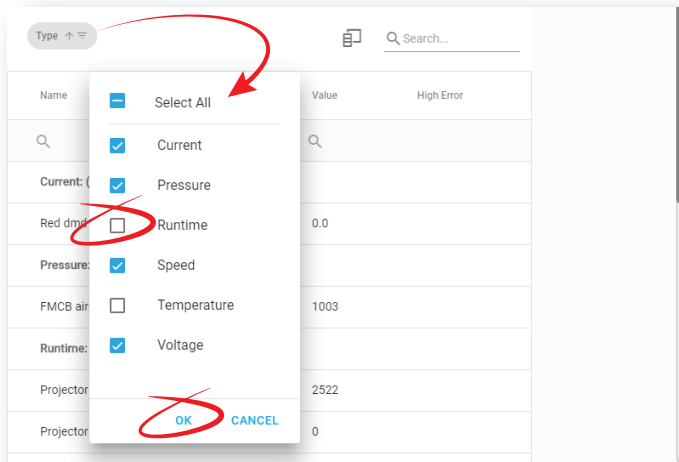


Image 13–8

- Select the types of sensors you want displayed (or hidden) by switched on (or switched off) the check boxes located at right of each type.
- Click **OK** to validate and close the pop-up.
Selected types are now displayed.

Additional columns

When available, additional information could be displayed by adding supplemental columns:

- High Error: indicates the maximum authorized threshold for this sensor. An error is generally raised by the system when this limit is exceeded.
- Low Error: indicates the minimum authorized threshold for this sensor. An error is generally raised by the system when this limit is exceeded.
- High Warning: indicates limit value above which the system raised a warning to indicate possible issue with this sensor.
- Low Warning: indicates limit value under which the system raised a warning to indicate possible issue with this sensor.

How to add/remove column

- Click **Column chooser** icon (located on the top left, near the *Search* icon)
The *Column Chooser* pop-up is displayed.

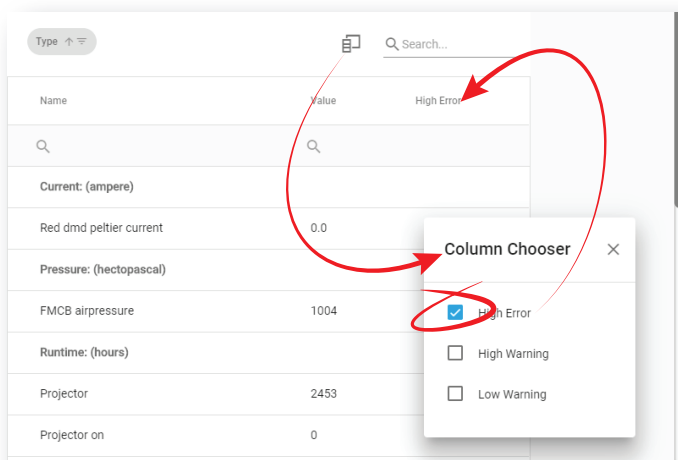


Image 13–9 Add column

2. Select the columns you want add (or remove) by switched on (or switched off) the check boxes located at right.

Columns are automatically added (or removed) in the menu.

3. Use the **X** (cross) to close the pop-up.

Diagnostics - Analysis

14

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About Diagnostic analysis

Menus available in this section contain analysis tools useful to evaluate projector status. Self test menu allows to run predefined test procedures. Diagnostic package menu allows to create one zip file with all logging, version and diagnostics info. A part of this section is also dedicated to explaining “How to read out a diagnostic package” with a cloud application.

14.1 Self test

Location & access

Menu: Diagnostics > Analysis > Self test

Level: Administrator, Service technician

About self test

This menu allows to select and execute one or several tests in the list of tests in order to evaluate projector status.

How to run self test

1. While in *Diagnostics > Analysis > Self test*, check the check box **Select all** (reference 1).

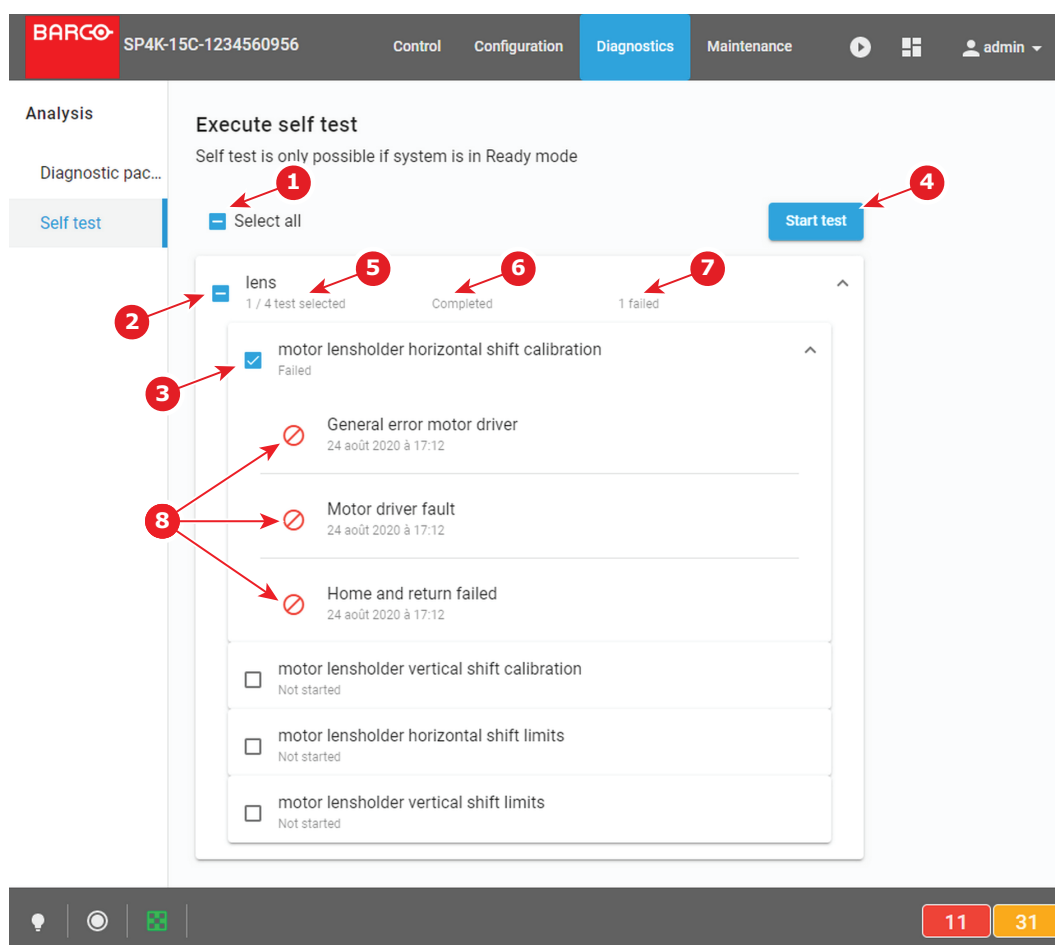


Image 14-1

All tests are selected.

or

use various check boxes (reference 2 and 3) to select (or deselect) a group of tests or a specific test.

Number of selected tests is displayed in each group of test (reference 5).

2. Click **Start test** (reference 4) to run self tests.

A confirmation window is displayed.

3. Click **Ok** to continue.

Start test button (reference 4) is replaced by **Stop** button and the test starts. Test could be interrupted at anytime by clicking on **Stop** button.

4. After few moments (depending to de kind of tests), status (reference 6) and error (reference 7) of each test is updated.
5. Click on specific test to expand it and obtain more details (reference 8).

14.2 Diagnostic package

Location & access

Menu: Diagnostics > Analysis > Diagnostic package

Level: Administrator, Service technician

About a diagnostic package

A zip file with all diagnostic files and relevant projector properties inside is created and can be sent to the service technician for further analyze.

Downloading a diagnostic package

1. While in *Diagnostics > Analysis > Diagnostic package*, click **Download** (reference 1).

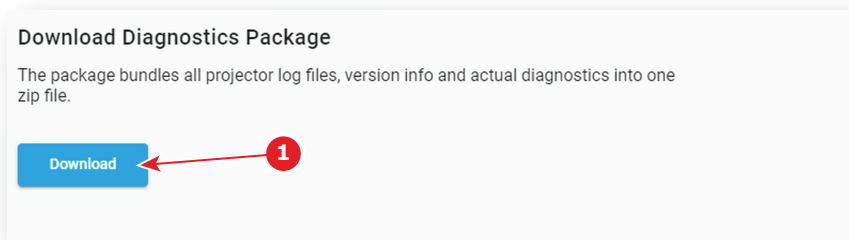


Image 14-2

The diagnostic package is being created and will be downloaded on your local PC in your default download directory.

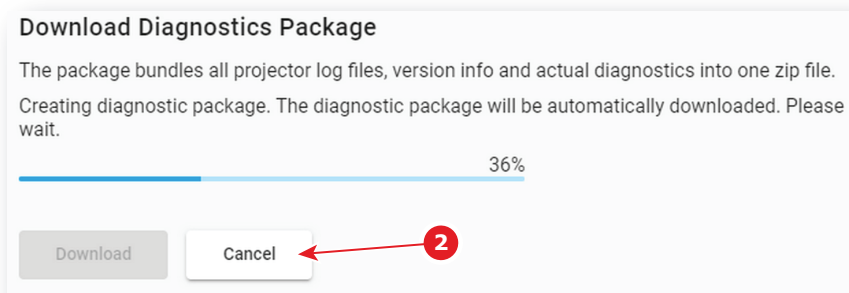


Image 14-3

2. Click **Cancel** (reference 2) allows to abort download.
Diagnostics Package creation continue, but it will not downloaded on local PC.

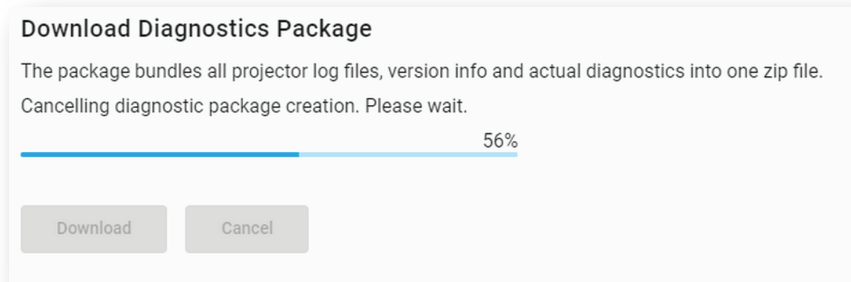


Image 14–4

14.3 Reading a diagnostic package

What can be done

Barco created a cloud application to read out the content of a diagnostic package.

Take into account in order to read a diagnostic package – you require a diagnostic package. For more info on creating a diagnostic package, see “[Diagnostic package](#)”, page 275.

How to read out a diagnostic package

1. Browse to the barco.com/mybarco. Click on *myBarco* and login to get access to secured information. Registration is necessary.

If you are not yet registered, click on *New to myBarco* and follow the instructions. With the created login and password, it is possible to login and access the web analyzer tool.

2. on the myBarco dashboard, click on *My Support > Digital Cinema > Web Analyzer*.



Tip: You can bookmark the resulting page for quick access in the future.

3. Login with your *myBarco* credentials.

The Web Analyzer main page will be displayed.

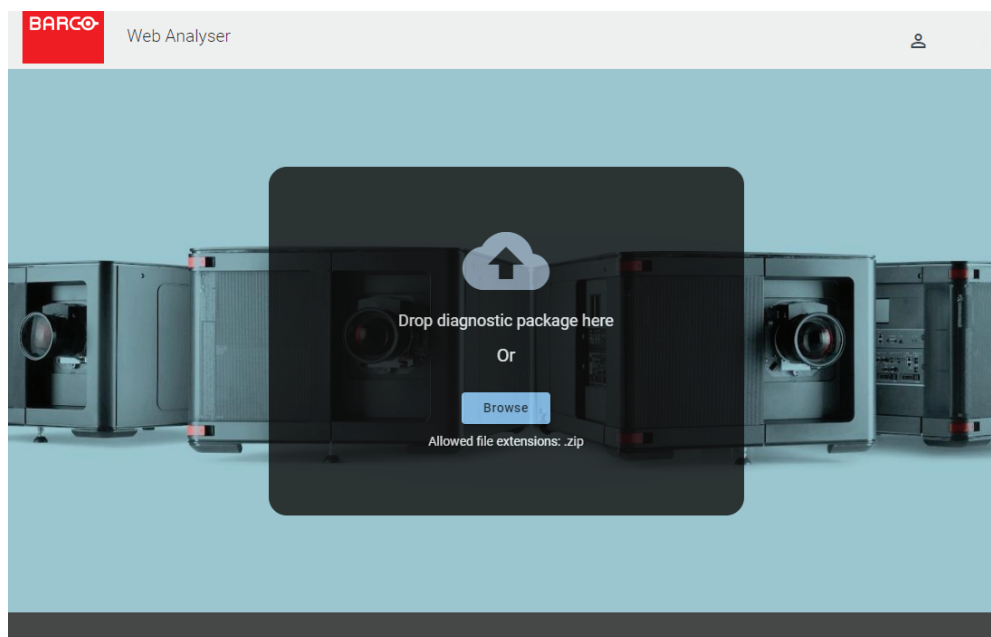


Image 14–5 Web Analyser

4. Drop your created diagnostic package on the *Web Analyzer*

or

click on browse and browse to the diagnostic package.

The package will be analyzed and graphical presentation will be opened in the *Web Analyzer* tool.

The screenshot displays the BARCO Web Analyzer interface for device SP4K-15C R9008822. The dashboard is organized into several sections:

- NOTIFICATIONS (UTC):** Shows 1 Board Warnings and 9 Environment Warnings.
- STATUS:**
 - Light source: Off
 - System state: Ready
 - Dowser: Closed
 - Test pattern: Off
- LENS CALIBRATION:**
 - Shift horizontal: NA
 - Shift Vertical: NA
 - Unknown: Unknown
- SETTINGS:**
 - Input: <DIRECT>
 - 3D: No3D.3D
 - MCGD1: measured.MCGD
 - MCGD2: <DEFAULT>
 - PCF: DCDM_XYZ_auto.PCF
 - Screen: FullScreen.SCREEN
 - TCGD1: DCDM_XYZ_auto.PCF
 - TCGD2: <DEFAULT>
 - Source: DCDM_XYZ_auto.PCF
 - Timezone: UTC
 - Lens: Non-motorized lens
- NETWORK:**
 - Host name: SP4K-15C-256
 - Default gateway: 10.241.82.1
 - IP address: 10.241.82.243
 - Subnet mask: 255.255.254.0
- LICENSE:**
 - HDMI2.0-HDR: 78755 hrs left
 - 87673 hrs total
- INFORMATION:**
 - Firmware version: 1.1.5-rc-n260
 - Log information: Nov 13, 2018 - Dec 10, 2019
 - ICP-D serial number
 - Projector serial number

At the bottom of the dashboard, it states: Package creation date: Dec 10, 2019, 1:06:10 PM (UTC)

Image 14–6 Web Analyzer result

Maintenance

15

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About this menu

This chapter explains how to perform a software update, to create a full system backup and to restore this backup. Next, a RAID initialization and a file system check can be executed.

15.1 Software update

Location and access

Menu: Maintenance > Software update

Level: Administrator

Overview

This menu provides information concerning the projector software version (version history, current status of update) and allows upgrade device with a software package.

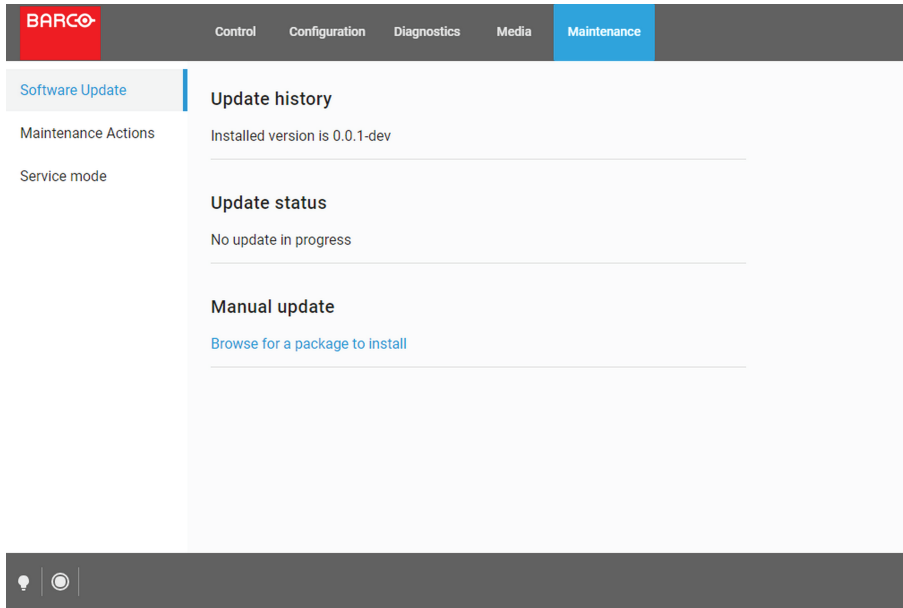



Image 15–1 Example of the Software update menu

Menu item	Explanation
Update History	Indicates the installed software version
Update Status	Indicates if an update is ongoing.
Manual Update	Provides the options for installing an update

How to update the software

1. Download the latest firmware from the Barco website. Click on *myBarco* and login to get access to secured information. Registration is necessary.

If you are not yet registered, click on *New to myBarco* and follow the instructions. With the created login and password, it is possible to login where you can download the software.

 **Note:** Keep in mind to unzip the package. Only *.fw files can be selected for software updates.

2. In the Software Update menu, click *Browse for a package to install*.
An *Open* browse window is prompted.

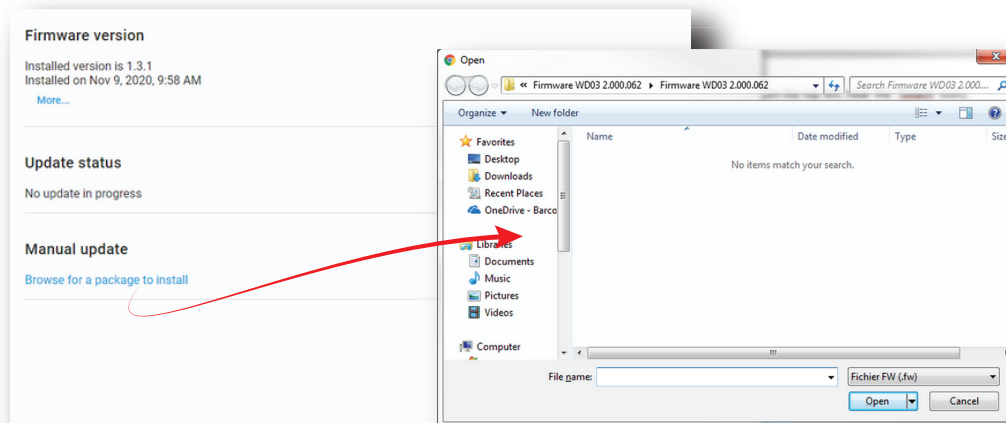


Image 15-2

3. Select the file downloaded from the Barco website.
The selected file will be mentioned under *Manual update*.

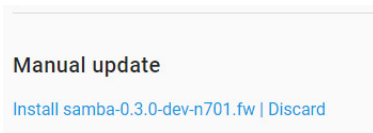


Image 15-3 Example of an update package

4. Click **Install** and confirm.
The software update will start.



Take into account that the projector will be rebooted automatically in order to complete the installation and configuration process.

How to update the software via USB device

1. Download the latest firmware from the Barco website. Click on *myBarco* and login to get access to secured information. Registration is necessary.

If you are not yet registered, click on *New to myBarco* and follow the instructions. With the created login and password, it is possible to login where you can download the software.



Note: Keep in mind to unzip the package. Only *.fw files can be selected for software updates.

2. Plug a USB device with the downloaded file into the USB port of the Cinema Controller.



Note: The USB device should be formatted in FAT-32. It may only contain the firmware file in the root level of the device.

The USB device will be detected and a window will prompt in the Web Communicator.

3. Click Proceed to have the image added in the Manual update section of the page.

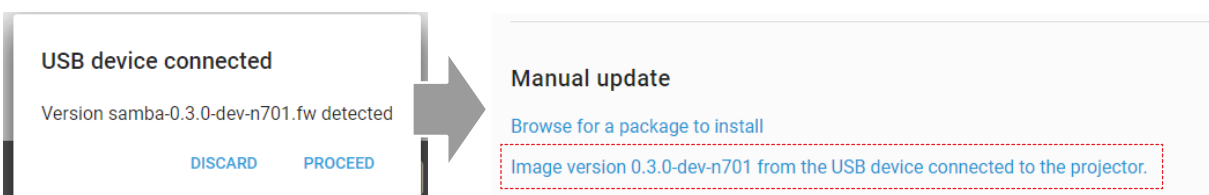


Image 15-4 Example of a software package inserted via USB device

4. Click "*Image [name] from the USB device connected to the projector*" and confirm.

The software update will start.

Update progress explanation

The update will proceed as follows:

1. The software package will be installed on the projector.

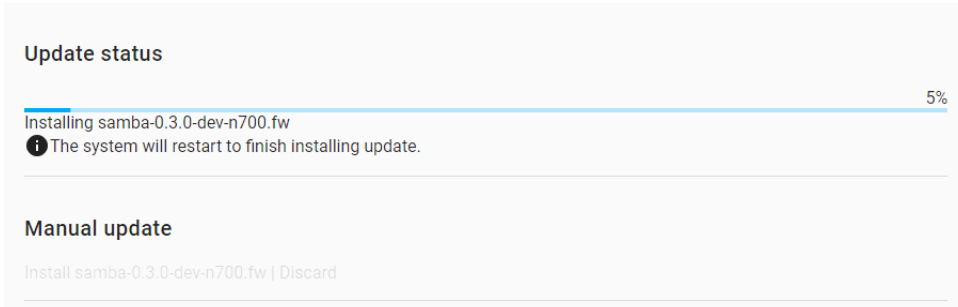


Image 15–5 Example of an update in progress

2. Once the software package has been installed, the following message will be prompted and the projector will reboot.

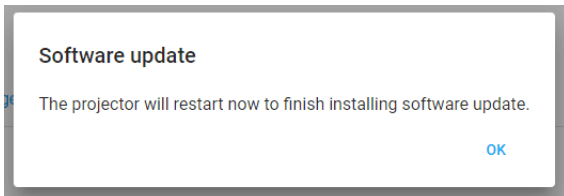


Image 15–6 Example of the prompted reboot message

3. **Take note:** While rebooting, you will lose connection to the projector.
4. Once rebooted, every projector component will be updated to the version included in the software package. Take into account that it might take a while until all components have been updated.

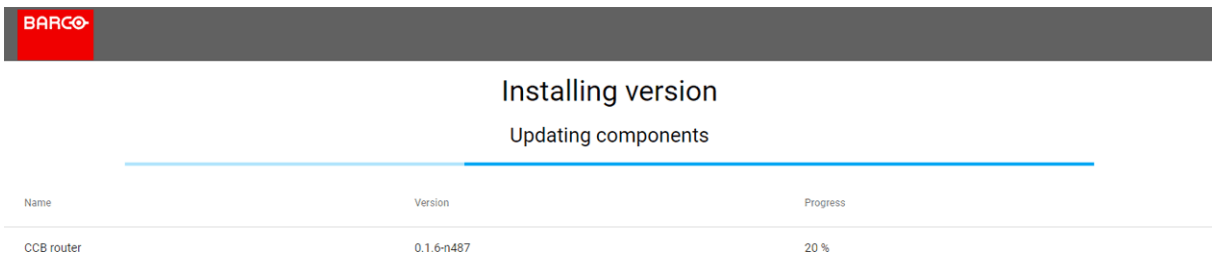


Image 15–7 Example of the components update page.

5. Once every component has been updated, you will be redirected to the Web Communicator login page.

In case of error

This supplemental menu item appears to indicate an error if an error was raised during the software update (e.g. **Selected package for update is invalid*).



Any triggered errors will also be visible in the notification menu. For more details on error and , please refer to “Notifications”, page 267.

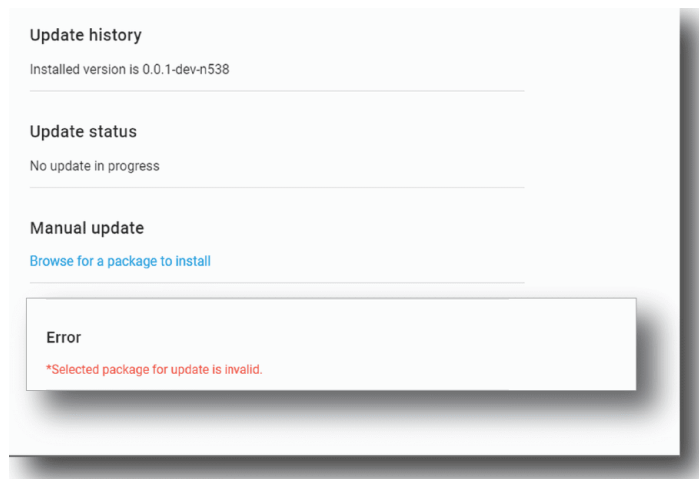


Image 15–8

15.2 Service mode

Location & access

Menu: Maintenance > Service mode

Level : Administrator, Service technician

About service mode

The service mode is only necessary when a service intervention must be done on the light source. For more information, see “*service manual*”.

15.3 Download and restore full system backup

Location & access

Menu: Maintenance > Backup and restore

Level : Administrator, Service technician

What can be done

A backup package allows to create a specific backup which contains all of the custom configuration of a device. It is recommended to create such a backup package (e. g. after initial installation) and store it offline.

Afterwards such a backup package can be restored either

- on the same projector: all data from the backup package can be restored and applied.
- on a different projector: only partial data from the backup package can be restored.

In both cases, service technician decides what he wants to restore (partial or complete restoration).

How to download

1. While in *Maintenance > Backup and restore*, click **Download** in the *full system backup pane* (reference 1).

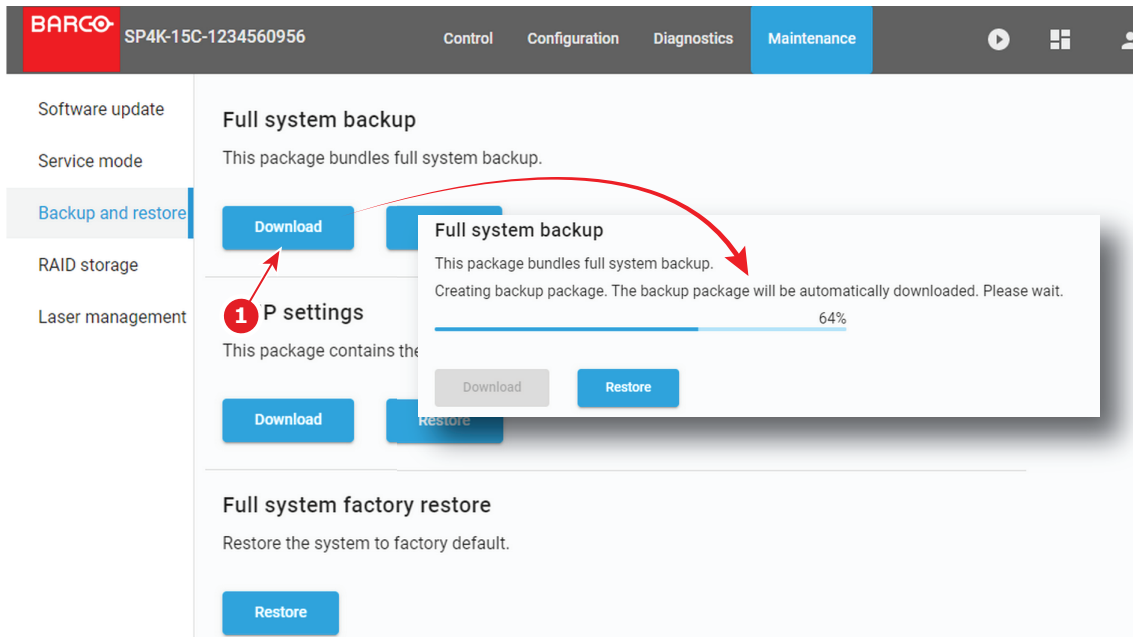


Image 15–9

A full backup tar file is created. The name of file contains the projector type, serial number and a time stamp. E.g. FULL-backup-SP4K-15C-2590153431-2019-04-10T061205Z.tar

The file is stored on your local PC in your default download directory.

How to restore

1. While in *Maintenance > Backup and restore*, click **Browse** in the *full system backup* pane (reference 1).

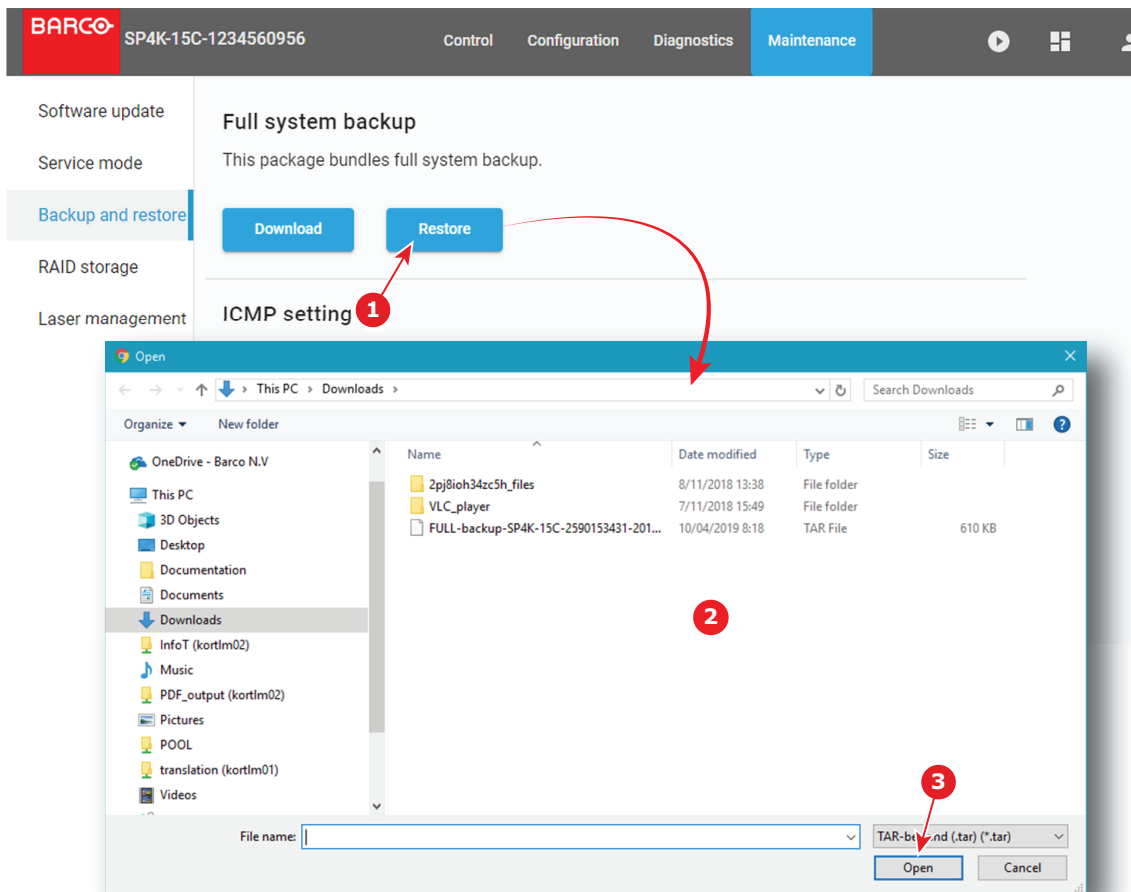


Image 15–10

A browser window opens.

2. Browse to the full backup file (reference 2). A backup file has the extension tar.
3. Click **Open** (reference 3).

A progress bar is displayed to indicate the status of the upload process, then after few moments select settings window is displayed.

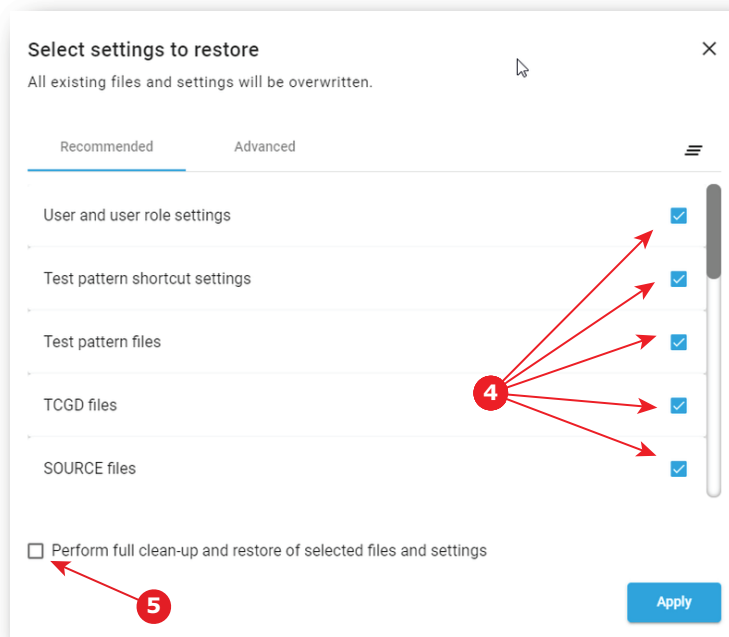


Image 15–11

4. If there are any undesired file selected, deselect the undesired files (reference 4). Check *Perform full clean-up and restore of selected settings* (reference 5) allows to clean up (and restore the default values) of selected files before applying the new settings.

5. Click **Apply**.

Current projector configuration will be overwritten with selected one.

15.4 Factory restore

Location & access

Menu: Maintenance > Backup and restore

Level : Administrator, Service technician

About restoring factory settings

When a factory restore is request, the following is restored:

- restore the mainboard values to defaults
- restore the calibrated mainboard values to factory calibrated values
- restore the "default clone package"

The restore settings feature allows to replace the current settings with the default factory values.

How to restore

1. While in *Maintenance > Backup and restore*, click **Restore** in the *Full system factory restore* pane (reference 1)

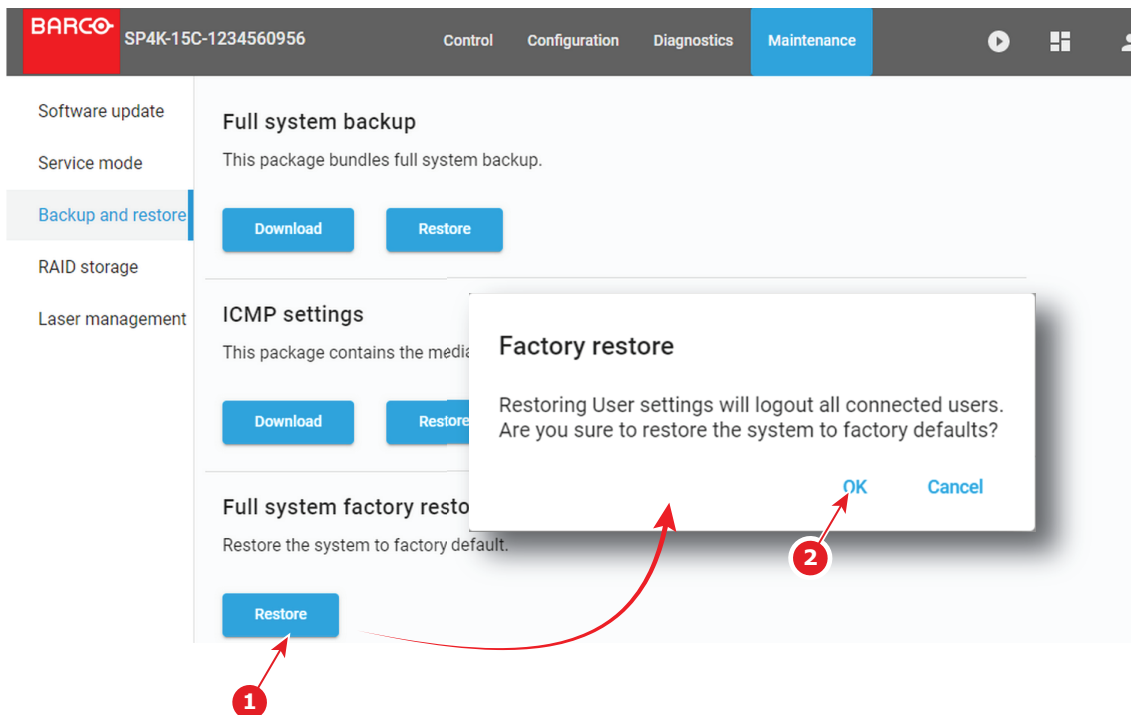


Image 15-12

A Factory restore window opens with a warning that the user settings will be restored and all connected users will be logged out.

2. If you want to continue with the factory restore, click **OK** (reference 2).

15.5 Laser Bank status

Location & access

Menu: Maintenance > Laser Management

Level : Administrator, Service technician

Overview

Depending to the projector model, light source are build up with different Red, Green or Blue 2 or 3 banks laser plates.

While in *Maintenance > Laser Management*, the status of each laser bank can be found by selecting a laser color source (reference 1) then clicking on a laser plate (reference 2) to display banks combined inside.

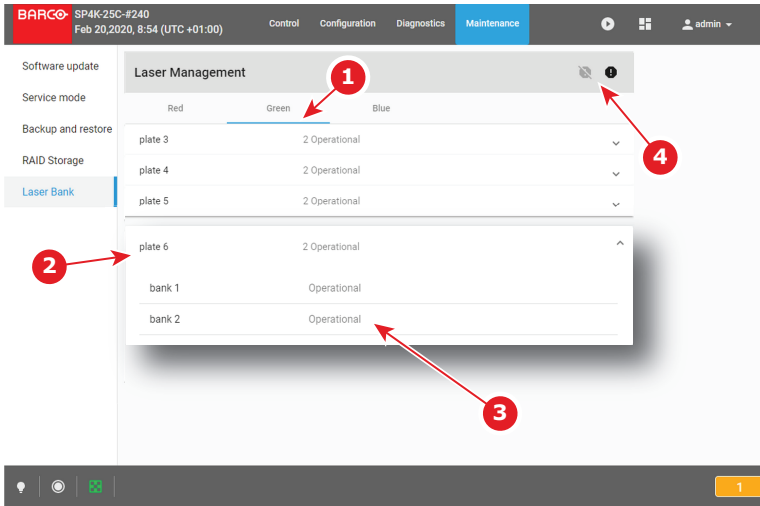


Image 15–13

Status (reference 3) is *Operational* when laser bank is up and running.

If the system detect an issue on a laser bank its status (reference 3) is change to *warning*. A non-functional laser bank doesn't prevent projector operation, but multiple notifications will be triggered regularly.

Use **deactivate** and **activate** buttons (reference 4) to hide/unhide these notifications. When the Laser Bank notifications was deactivated, status (reference 3) of concerned banks is change to *blocked*.



It's recommended to resolve laser bank issues as soon as possible to prevent future issues with the projector and allows providing a complete performance during the show.

How deactivate/activate Laser Bank notifications

1. While in *Maintenance > Laser Management*, click on *deactivate* button (reference 2) to hide notifications triggered by system when some laser banks are in *warning* status (reference 1).

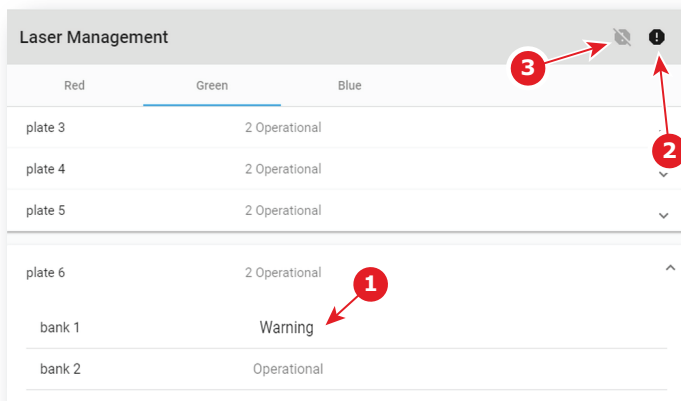


Image 15–14

Status of all Laser banks currently in *Warning* status changes to *Blocked* and related notifications are no longer raised.

2. Click on *activate* button (reference 3) to activate again notifications triggered by system when some laser banks are not non-functional.

All Laser banks currently in *Blocked* status changes to *Warning* status and notifications related to these issues are send again.

Preventive maintenance actions

16

16.1	1 month maintenance actions	290
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Maintenance program

The maintenance program is subdivided in time frames. The maintenance actions described in this chapter can be done by a trained projectionist. Note that there are also annually and 4 yearly maintenance actions (not included in this manual) which must be done by certified service personnel who are familiar with potential hazards of the product and all product safety checks. Contact your service partner for more information about maintenance services.

16.1 1 month maintenance actions

MAINTENANCE TYPE A (perform every month)



The 1 month maintenance actions, listed below, may be performed by a trained projectionist who is familiar with potential hazards associated with the product.

No.	Maintenance action	Remarks
1	Check the surface of the lens output side for dust. (it is not needed to remove the lens from the projector). Only clean if necessary.	Clean the lens output side in case dust is clearly visible upon the surface. Note: if the lens was removed from the projector, a manual "Lens Home & Return" action must be executed to calibrate the position of the lens in relation to the Lens Holder. This way the references of the existing 'lens files' remain valid. See user guide for more information.
2	Check the porthole (both sides) for dust.	Clean the porthole in case dust is clearly visible upon the surface. Use an optical cloth.

16.2 3 month maintenance actions

MAINTENANCE TYPE B (perform every three months)



The 3 month maintenance actions, listed below, may be performed by a trained projectionist who is familiar with potential hazards associated with the product.

No.	Maintenance action	Remarks
1	Clean the front/back/side air inlet vents.	Use a vacuum cleaner.
2	Clean the housing of your projector.	Removal overall dust accumulation on projector covers. See cleaning instructions in this manual.

16.3 Maintenance procedures



WARNING: All procedures described in this chapter may only be performed by TRAINED PROJECTIONISTS or qualified SERVICE PERSONNEL.

About this chapter

This chapter describes several maintenance procedures for your XDM projector.

16.3.1 Checking the front filters

Required tools

No tools required.

How to check the front dust filters

1. Remove the front cover. For more info, refer to ["Removal of the front cover"](#), page 298.

2. Detach the dust filter from the holder.

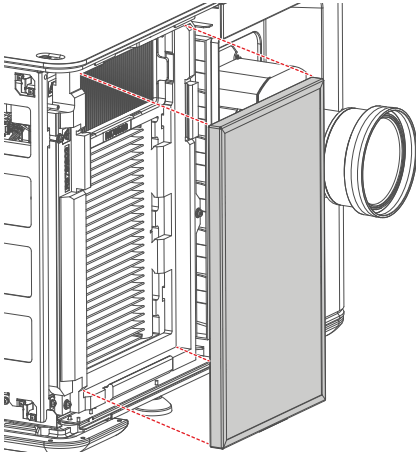


Image 16-1

The DMD filter becomes visible.

3. Detach the DMD filter from its holder.

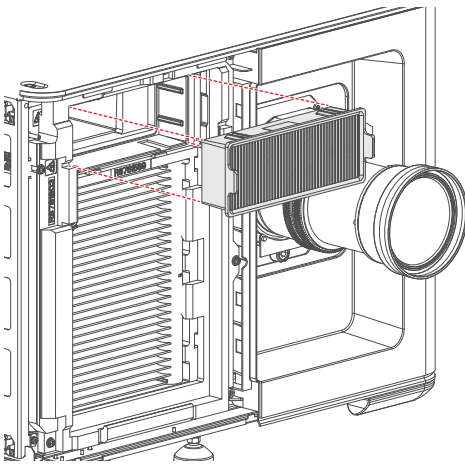


Image 16-2

4. Check the “air in” side of the dust filters for **dust** and/or **grease**.

In case the filter is contaminated with grease wash and dry the dust filter. See cleaning procedure “[Washing and drying the dust filters](#)”, page 294.

In case the filter contains dust but doesn't feel greasy then vacuum clean the dust filter. See procedure “[Vacuum cleaning of the dust filters](#)”, page 293.



Note: Grease on the filter can build up after several months in an environment contaminated with greasy air. Note that areas where popcorn is consumed are subject to greasy air.



Tip: Take into account that the time needed to dry the dust filters may be 24 hours or more. For that, it's recommended to have a second set of dust filters which can be used while cleaning the first set.

5. Place clean dust filters in the filter holder. Make sure the filters are fully inserted and respect the airflow of the filter, which should be pointed inwards.



Caution: UNDER NO CIRCUMSTANCES SHOULD WET FILTERS BE INSTALLED BACK INTO THE PROJECTOR. THIS CAN HAVE SERIOUS SAFETY CONSEQUENCES AS WELL AS JEOPARDIZE THE INTERNAL OPTICS OF THE SYSTEM.

6. Mount the front cover. For more info, refer to “[Mounting the front cover](#)”, page 303.

16.3.2 Checking the rear dust filters

Required tools

No tools required.

How to check the rear dust filters

1. Remove the rear cover. For more info, refer to [“Removal of the rear cover”](#), page 298.
2. Detach the desired dust filter (left, right or both) from the holder.

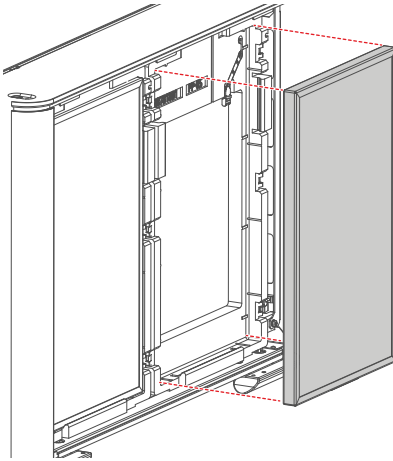


Image 16-3

3. **Check** the “air in” side of the dust filter for **dust** and/or **grease**.

In case the filter is contaminated with grease wash and dry the dust filter. See cleaning procedure [“Washing and drying the dust filters”](#), page 294.

In case the filter contains dust but doesn't feel greasy then vacuum clean the dust filter. See procedure [“Vacuum cleaning of the dust filters”](#), page 293.



Note: Grease on the filter can build up after several months in an environment contaminated with greasy air. Note that areas where popcorn is consumed are subject to greasy air.



Tip: Take into account that the time needed to dry the dust filters may be 24 hours or more. For that, it's recommended to have a second set of dust filters which can be used while cleaning the first set.

4. Place a clean dust filter in the filter holder. Make sure the filter is fully inserted and respect the airflow of the filter, which should be pointed inwards.



Caution: UNDER NO CIRCUMSTANCES SHOULD WET FILTERS BE INSTALLED BACK INTO THE PROJECTOR. THIS CAN HAVE SERIOUS SAFETY CONSEQUENCES AS WELL AS JEOPARDIZE THE INTERNAL OPTICS OF THE SYSTEM.

5. Mount the front cover. For more info, refer to [“Mounting the rear cover”](#), page 302.

16.3.3 Checking the LDM dust filter

Required tools

No tools required.

How to check the LDM dust filters

1. Check the exact location of the LDM dust filter. It is located on the operator side, underneath the LDM and the elca box.
2. Detach the dust filter from the holder and slide it out.

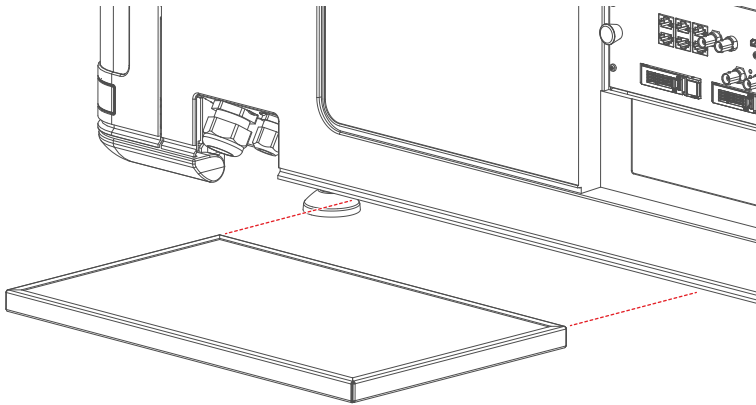




Image 16-4


3. Check the “air in” side of the dust filter for **dust** and/or **grease**.

In case the filter is contaminated with grease wash and dry the dust filter. See cleaning procedure “[Washing and drying the dust filters](#)”, page 294.

In case the filter contains dust but doesn't feel greasy then vacuum clean the dust filter. See procedure “[Vacuum cleaning of the dust filters](#)”, page 293.

-  **Note:** Grease on the filter can build up after several months in an environment contaminated with greasy air. Note that areas where popcorn is consumed are subject to greasy air.
-  **Tip:** Take into account that the time needed to dry the dust filters may be 24 hours or more. For that, it's recommended to have a second set of dust filters which can be used while cleaning the first set.

4. Place a clean dust filter in the filter holder. Make sure the filter is fully inserted and respect the airflow of the filter, which should be pointed inwards.

-  **Caution:** UNDER NO CIRCUMSTANCES SHOULD WET FILTERS BE INSTALLED BACK INTO THE PROJECTOR. THIS CAN HAVE SERIOUS SAFETY CONSEQUENCES AS WELL AS JEOPARDIZE THE INTERNAL OPTICS OF THE SYSTEM.

16.3.4 Vacuum cleaning of the dust filters

When to vacuum clean the dust filters?

The dust filters should be checked every month. If the filters are contaminated with dust then cleaning the filters with a vacuum cleaner should be sufficient. In case the filters feel greasy these must be washed. See cleaning procedure “[Washing and drying the dust filters](#)”, page 294.



Grease on the filter can build up after several months in an environment contaminated with greasy air. Note that areas where popcorn is consumed are subject to greasy air.





This procedure assumes that the dust filters are removed from their slots.


Required tools

Vacuum cleaner with soft brush suction nozzle.

How to vacuum-clean the dust filter?

- 1.** Carefully vacuum the air inlet side of the dust filter. Use a vacuum cleaner with a soft brush suction nozzle. The air inlet side of the dust filter is the side which is surrounded with a glue edge.
 -  **Tip:** Lightly tap the filter on its dusty side to expel heavy dust contamination.

 **Tip:** Compressed air is also permitted to clean the filters but take care not to damage them.

 **Caution:** Do not damage the dust filter. Replace damaged dust filters immediately.

16.3.5 Washing and drying the dust filters

About filter washing and drying

For environments where popcorn grease and such can contaminate the filters, Barco advises the client to purchase one extra set of filters to cover drying time, as well as taking following extra precautions and instructions pertaining to filter cleaning and drying.

Cleansing agent

To clean sticky, greasy dust filters we suggest usage of **Sodium carbonate** crystals (Na_2CO_3). Sodium carbonate (Often called **washing soda**, **soda crystals**, or **sal soda** in the detergent section of stores) is widely used to effectively remove oil, grease, alcohol stains ... The product itself is relatively safe, sodium carbonate is used in toothpastes and as a food additive (E500). Potential Hazards are described in the section "Hazards", page 324.

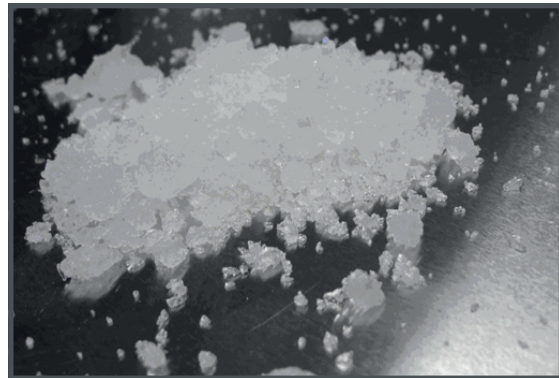


Image 16-5 Sodium carbonate crystals.



This cleaning procedure assumes that the filters are already removed from their slots.



Take into account that the time needed to dry the dust filters may be 24 hours or more. For that, it's recommended to have a second set of dust filters which can be used while cleaning the first set.

Required tools


- Bucket with hot water
- Sodium carbonate, 30 gram (handful) per liter hot water

How to wash and dry the dust filters?

1. Make a solution with a ratio of 30 gram (a handful) sodium carbonate to 1 liter **hot water**.
2. Soak the dust filters in the solution for **30 to 60 minutes**. The grease should be dissolved after 1 hour.
3. If the dust filter is still clogged repeat this procedure from step 1.
4. Rinse the dust filters with clean water to flush all grease residue away.
5. Shake out all excess liquid by repeatedly swinging the filter to-and-fro in a centrifugal action.
6. Then allow the filters to **dry thoroughly**.



Note: Drying time of the dust filters can be up to 24h or more. Drying time can be shorter when being done in a well-ventilated area.

 *Tip:* To speed-up drying, allow the filter(s) to dry at 50°C max in a well ventilated room.



CAUTION: UNDER NO CIRCUMSTANCES SHOULD WET FILTERS BE INSTALLED BACK INTO THE PROJECTOR. THIS CAN HAVE SERIOUS SAFETY CONSEQUENCES AS WELL AS JEOPARDIZE THE INTERNAL OPTICS OF THE SYSTEM.



CAUTION: Do not install/use damaged dust filters. Replace damaged dust filters immediately with new dust filters of the same type. See <https://my.barco.com> for the correct replacement part.

16.3.6 Cleaning the lens



To minimize the possibility of damage to optical coatings, or scratches to lens surfaces follow the cleaning procedure as described here precisely.

Required tools

- Compressed air
- Clean micro fiber lens cleaning cloth (e.g. Toraysee® cloth(s))
- Clean cotton cloth
- Lens cleaner (e.g. ZEISS lens cleaner, Purosol™ or other water based lens cleaner products)

How to clean the lens?

1. Blow off dust with clean compressed air (or pressurized air cans³).
2. Clean with lens cleaner together with a clean lens cleaning cloth to remove the dust and contamination. Use big wipes in one single direction.



Warning: Do not wipe back and forwards across the lens surface as this tends to grind dirt into the coating.

3. Use a dry lens cleaning cloth to remove left liquid or stripes. Polish with small circles.
4. If there are still fingerprints on the surface, wipe them off with lens cleaner together with a clean lens cleaning cloth. Polish again with a dry one.



If smears occur when cleaning lenses, replace the cloth. Smears are the first indication of a dirty cloth.

16.3.7 Cleaning the exterior of the projector

How to clean the exterior of the projector ?

1. Switch off the projector and unplug the projector from the mains power net.
2. Clean the housing of the projector with a damp cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution.

3. Pressurized air cans are not efficient if there is too much dust on the surface, the pressure is too low

Projector covers

17

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About this chapter

Most installation, maintenance and service procedures demand removing one or more of the projector covers to gain access to the parts to maintain or to service. To avoid redundancy, all procedures about cover removing or installing are grouped together in this chapter. The maintenance and servicing procedures also refer to this chapter if required. The procedures in this chapter describe, with detailed step by step actions and illustrations, how to remove or install the projector covers. Note that the covers may only be removed by qualified service personnel.



WARNING: All procedures described in this chapter may only be performed by TRAINED PROJECTIONISTS or qualified SERVICE PERSONNEL.



WARNING: Always switch off the projector and unplug the power cord before removing one of the covers, unless otherwise stated.

17.1 Removal of the front cover



If the front cover is the only cover you need to remove (e.g. when checking / replacing the filter), there is no need to turn off the projector.

Required tools

Allen wrench 4 mm

How to remove

1. Unlock the safety bracket on the side of the projector. Use a 4 mm Allen wrench to remove the hex screw locking the bracket (reference 1).

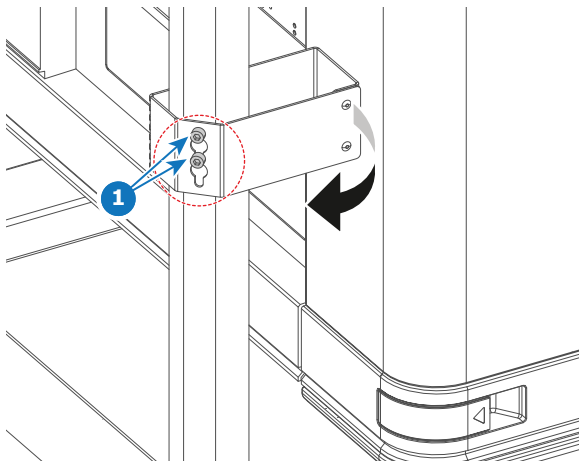


Image 17-1

2. Rotate and move the bracket to a position it won't hinder you while removing the front cover.
3. Slide the front cover to the side of the Input & Communication Unit towards the frame bar (reference 2) and remove it (reference 3).



Note: The handles do not click open. They are fixed into the cover.

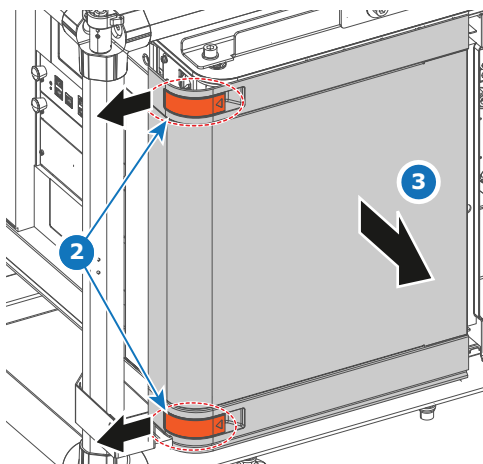


Image 17-2 Sliding the front cover towards the frame bar and removing it.

17.2 Removal of the rear cover



If the rear cover is the only cover you need to remove (e.g. when checking / replacing the filter), there is no need to turn off the projector.

Required tools

Allen wrench 4 mm

How to remove

1. Unlock the safety bracket on the side of the projector. Use a 4 mm Allen wrench to remove the hex screw locking the bracket (reference 1).

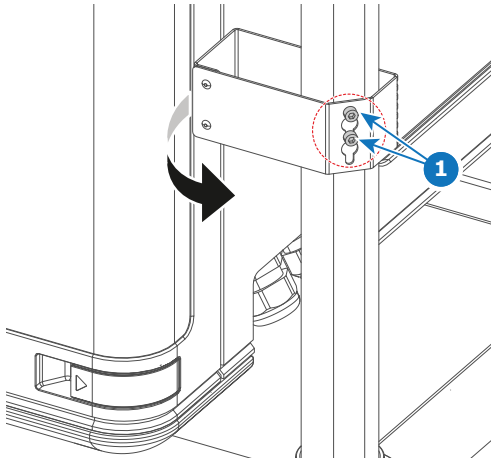



Image 17-3

2. Rotate and move the bracket to a position it won't hinder you while removing the rear cover.
3. Slide the rear cover towards the bar of the frame (reference 2) as much as possible.

 **Note:** The handles do not click open. They are fixed into the cover.

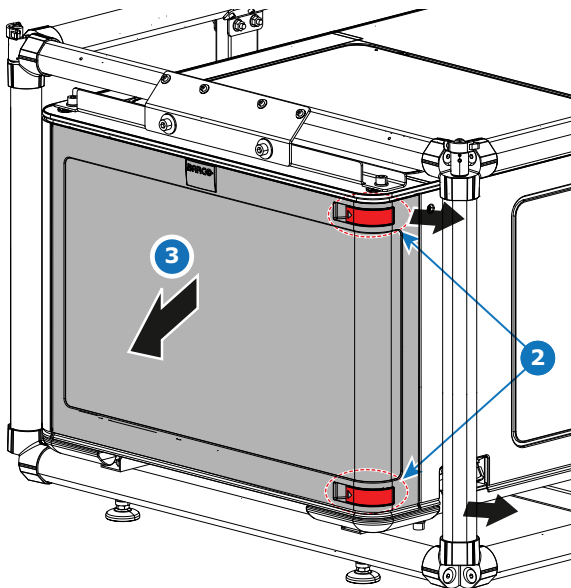


Image 17-4 Sliding the front cover towards the frame bar and removing it.

4. Tilt the rear cover a bit and remove it (reference 3).

17.3 Removal of the operator side cover

Required tools

Torx screwdriver T20

How to remove

1. Remove the front and rear cover of the projector.
2. Release the two screws at the top of the side cover (reference 1). Use a T20 Torx screwdriver.

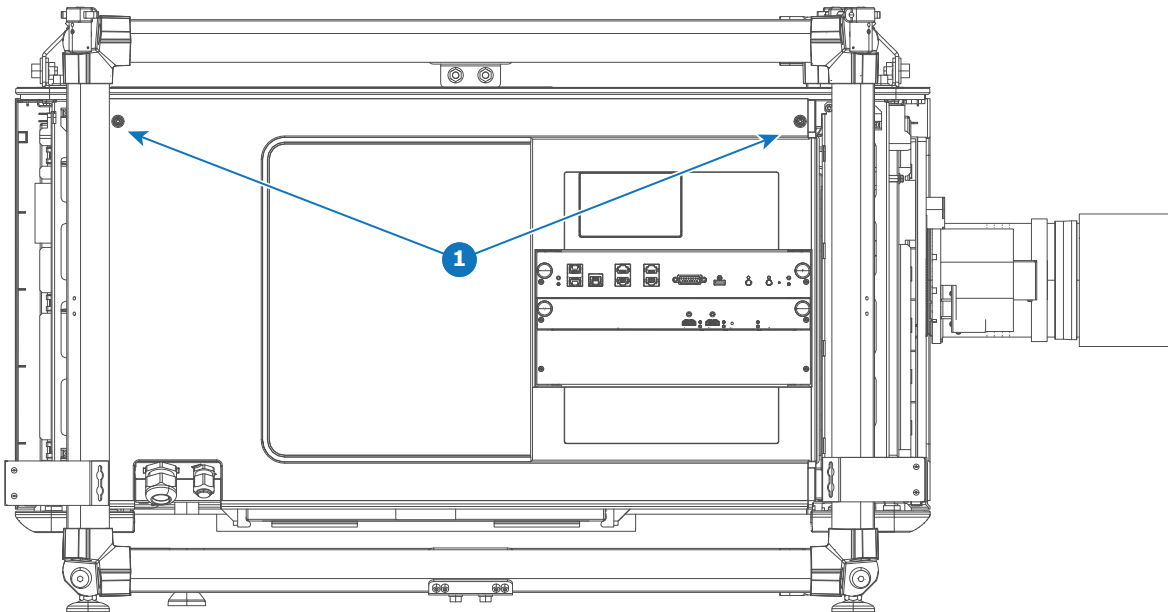


Image 17-5 Location of the set screws

3. Slightly turn over the top side of the cover (reference 2).
4. Lift up the operator side cover and remove it either through the front or the back of the frame (reference 3).

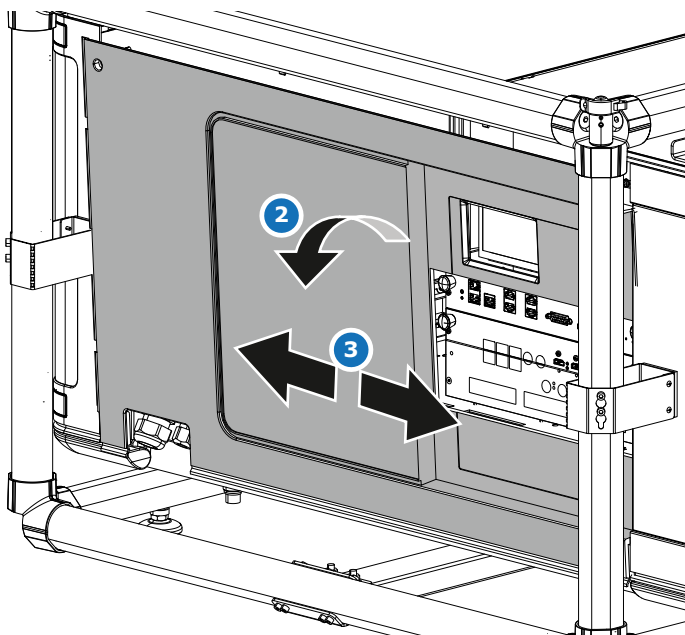


Image 17-6 Removing the side cover

17.4 Mounting the operator side cover



The right side cover can only be mounted when the front and rear cover are removed. This procedure assumes these two covers have been removed.

Required tools

Torx screwdriver T20

How to mount

1. Slide the side cover towards the projector, either from the front or the rear part of the frame (reference 1, [Image 17-7](#)).

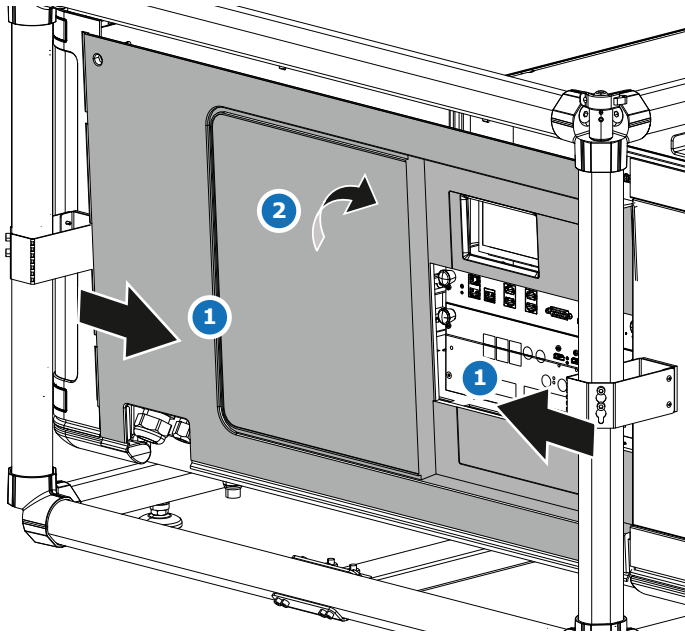


Image 17-7 Mounting the side cover

2. Carefully place the side cover onto the three cover hooks, located on the bottom frame of the projector.



Tip: Place the cover in a slightly tilted angle so you can clearly see the hooks while mounting the cover.



Image 17-8

3. Push the upper side of the cover towards the projector to close it (reference 2, [Image 17-7](#)).
4. Fasten the side cover with the two top screws (reference 1, [Image 17-9](#)). Use a T20 Torx screwdriver.

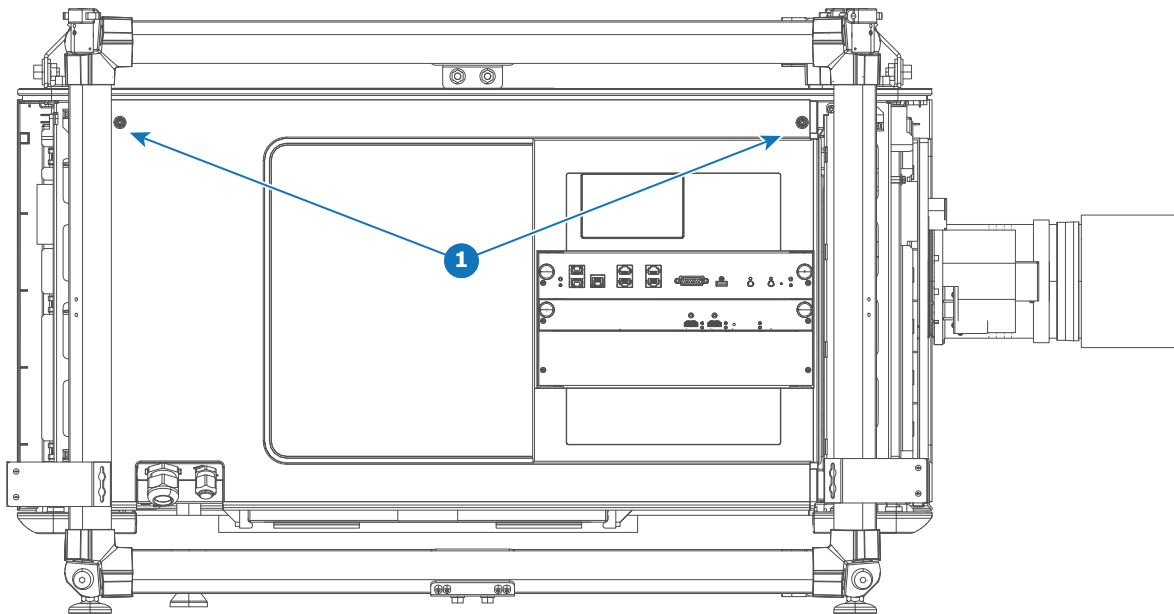


Image 17-9 Location of the set screws

17.5 Mounting the rear cover

Required tools

Allen wrench 4 mm

How to mount

1. Place the cover over the cover hook on the bottom of the projector frame (reference 1), while making sure it fits next to the frame bar.
2. Place the topside of the cover near the cover hooks on the top of the rear frame (reference 2).
3. Slide the clips in the rear cover over the cover hooks.

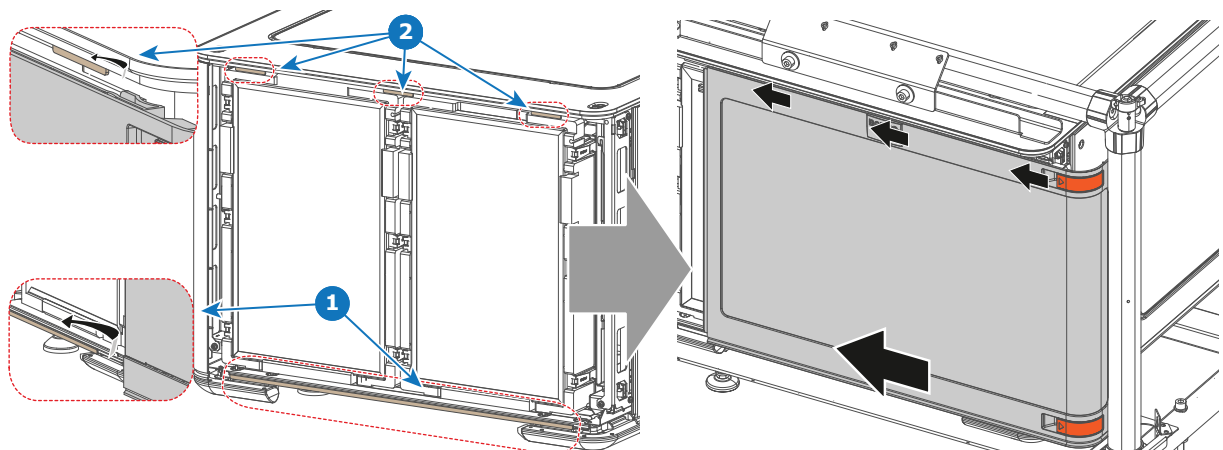


Image 17-10 Sliding in the rear cover

4. Move the locking bracket (reference 3) to the position of the holes in the frame bar (reference 4).

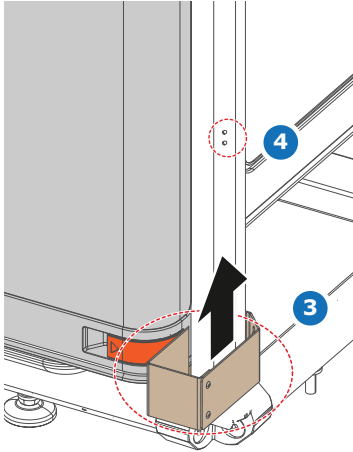


Image 17-11 Positioning the safety bracket

5. Lock the safety bracket in its place. Use a 4 mm Allen wrench to drive in the screw.

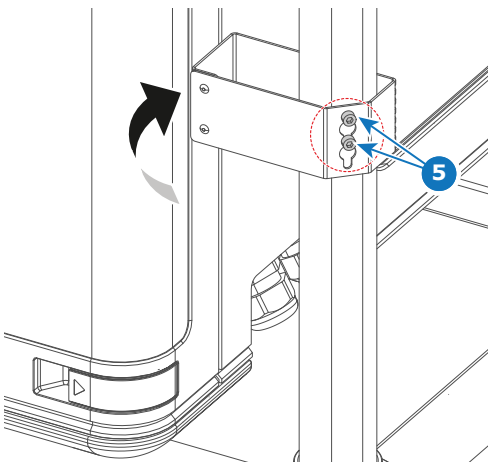


Image 17-12 Locking the safety bracket

17.6 Mounting the front cover

Required tools

Allen wrench 4 mm

How to mount

1. Place the cover over the longer cover hook on the bottom of the projector frame (reference 1).
2. Slide the clips in the front cover over the smaller cover hooks in the top of the frame (reference 2).

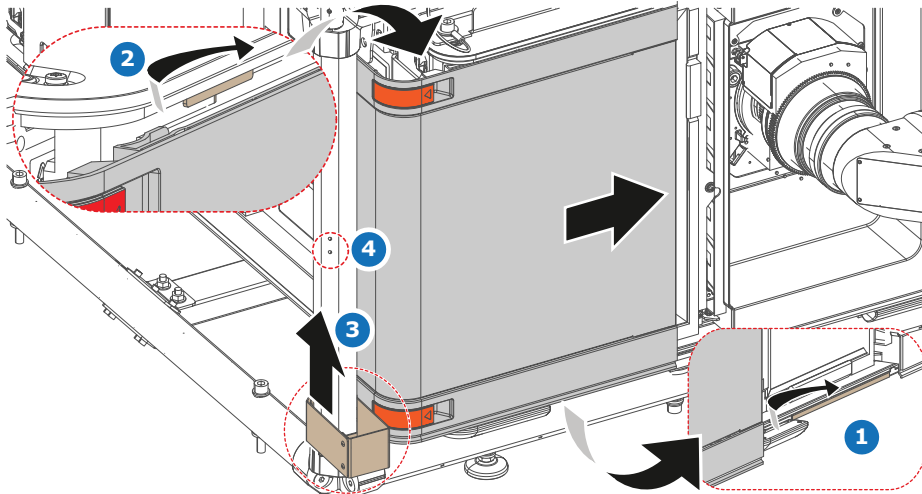


Image 17-13 Sliding in the front cover

3. Move the locking bracket (reference 3) to the position of the holes in the frame bar (reference 4)
4. Lock the safety bracket in place. Use a 4 mm Allen wrench to drive in the two screws.

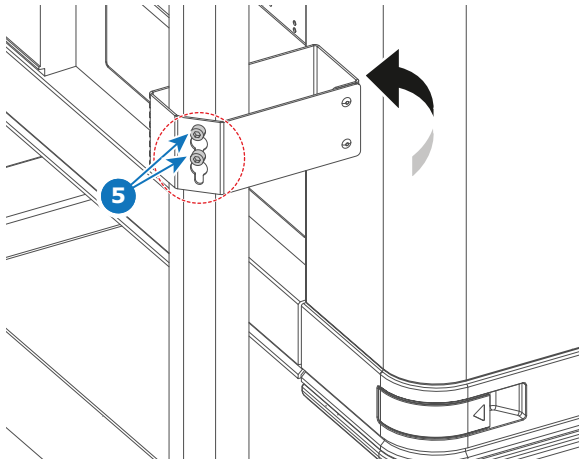


Image 17-14 Locking the safety bracket

Specifications

A

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A.1 Specifications

Specifications of the XDM-4K25C

Native brightness	23,500 lumens (typical)
Native contrast ratio	2300:1 (typical)
Digital MicroMirror Device™	3x 0.98" DC4K TRP
Resolution	native 4K: 4096 x 2160
Color gamut	DCI P3 (98.5% of Rec.2020; when measured in xy-color coordinates) - RGB light source
Prime lenses	0.38:1; 0.64-0.82:1; 0.8 -1.16:1 ; 1.09 -1.40:1; 1.3 -1.8; 1.8 -2.4:1; 2.4 -3.9:1 ; 3.9-6.5:1; 6.5-9.7:1 TLD+ lenses
Long-term brightness stability	40,000 hrs @ average usage conditions
Housing	integrated cooling design and patented sealed optical assembly
Dimensions (WxLxH)	Projector incl feet: 710 x 1070 x 547 mm/ 27,95 x 42,13 x 21,54 inches
Weight	140kg / 308.6lbs (weight projector in frame)
Power requirements	single phase or triple phase 200-240V 16A
Heat load (max. power)	7750 BTU/hr
Exhaust airflow	400CFM
Ambient temperature	40°C/104F Max.
Ambient humidity	85% Max.
Inputs	HDMI 2.0
Input Frequencies	max. 4096 x 2160 @ 60Hz
Noise Level	50dB(A) @ 1m and @ 25°C ambient temperature
3D systems	Active glasses systems and polarization systems on silver screens are supported. Color separation systems are not supported.
Safety requirements	Class 1 risk group 3
Power consumption	2.4kW (3W in Eco standby mode)
User interface	Touch Display and/or web based
24/7 operation	Yes*
*	* For optimal performance, switch off the projector regularly. For details please consult the manual.

Specifications of the XDM-4K25B

Native brightness	23,500 lumens (typical)
Native contrast ratio	2300:1 (typical)
Digital MicroMirror Device™	3x 0.98" DC4K TRP

Resolution	native 4K: 4096 x 2160
Color gamut	DCI P3 (98.5% of Rec.2020; when measured in xy-color coordinates) - RGB light source
Prime lenses	0.38:1; 0.64-0.82:1; 0.8 -1.16:1 ; 1.09 -1.40:1; 1.3 -1.8; 1.8 -2.4:1; 2.4 -3.9:1 ; 3.9-6.5:1; 6.5-9.7:1 TLD+ lenses
Long-term brightness stability	40,000 hrs @ average usage conditions
Housing	integrated cooling design and patented sealed optical assembly
Dimensions (WxLxH)	Projector incl feet: 710 x 1070 x 547 mm/ 27,95 x 42,13 x 21,54 inches
Weight	140kg / 308.6lbs (weight projector in frame)
Power requirements	single phase or triple phase 200-240V 16A
Heat load (max. power)	7750 BTU/hr
Exhaust airflow	400CFM
Ambient temperature	40°C/104F Max.
Ambient humidity	85% Max.
Inputs	HDMI 2.0
Input Frequencies	max. 4096 x 2160 @ 60Hz
Noise Level	50dB(A) @ 1m and @ 25°C ambient temperature
3D systems	Active glasses systems and polarization systems on silver screens are supported. Color separation systems are not supported.
Safety requirements	Class 1 risk group 3
Power consumption	2.4kW (3W in Eco standby mode)
User interface	Touch Display and/or web based
24/7 operation	Yes*
*	* For optimal performance, switch off the projector regularly. For details please consult the manual.

A.2 ICP-D HDMI 2.0 specifications

HDMI



HDMI (High-Definition Multimedia Interface) is a compact audio/video interface for transferring uncompressed video data and compressed/uncompressed digital audio data from a HDMI-compliant device ("the source device") to a compatible computer monitor, video projector, digital television, or digital audio device. HDMI is a digital replacement for existing analog video standards.



Only video data will be processed. Audio component from HDMI standard is not supported by ICP-D.

HDMI 2.0 specifications

HDMI

Both HDMI 2.0 inputs are fully compliant with the HDMI 1.4, 1.4a, 1.4b, 2.0 and 2.0a revisions of the HDMI specification.

Full Range and Limited Range Quantization are supported for all specified formats.

BT.709 and DCI-P3 are supported for all formats. For HDR content (UHD and 4K only) the BT.2020 color coding is supported.

All video streams should have a progressive scan order, with the exception of 1920x1080i 60 fps (interlaced scan).

HDCP

Both HDMI 2.0 inputs are HDCP 1.4 & HDCP 2.2 compliant.

HDR (SMPTE ST 2084)

HDR (High Dynamic Range) is supported on all UHD and 4K formats.

This includes SMPTE ST 2084 (static metadata) and BT.2020 color coding. Requires a license!

HDMI 2.0 Cable requirements

All HDMI cables should work with HDMI 2.0 receivers. There is no such thing as a “4K HDMI cable” even though this is sometimes sold this way. But of course there are quality differences. The “high-speed” cables would be preferred over the “standard-speed” cables. They usually work at higher cable lengths than the standard-speed ones.



The “Premium Certified HDMI” cables are tested to work with high bandwidth as is the case with 4K HDR content. These can be more expensive though. When using active and/or optical cables you should verify if the integrated receiver and sender are HDMI certified to guarantee to work compliant with the HDMI protocol. You can request the HDMI certificate to the manufacturer of the cable.



The ICP-D is not supporting Ethernet-over-HDMI and such specific cables are thus not required.

HDMI 2.0 Validated 2D Formats



For the sake of clarification, this lists only include the most used formats in the audiovisual world. If your configuration is not listed here, do not hesitate to contact your supplier.

Format	Frame Rate	Color coding	Bit depth
800 × 600	60	RGB 4:4:4	8
	85	RGB 4:4:4	8
1024 x 768	60	RGB 4:4:4	8
	70	RGB 4:4:4	8
	120	RGB 4:4:4	8
1280x720	23,976	YCbCr 4:4:4	8
	24	YCbCr 4:4:4	8
	25	YCbCr 4:4:4	8
	29.97	YCbCr 4:4:4	8
	30	YCbCr 4:4:4	8
	50	YCbCr 4:4:4	8

Format	Frame Rate	Color coding	Bit depth
	59.94	YCbCr 4:4:4	8
	60	YCbCr 4:4:4	8
	100	YCbCr 4:4:4	8
	119.88	YCbCr 4:4:4	8
	120	YCbCr 4:4:4	8
1920x1080	23,976	YCbCr 4:4:4	8
	24	YCbCr 4:4:4	8
	25	YCbCr 4:4:4	8
	29.97	YCbCr 4:4:4	8
	30	YCbCr 4:4:4	8
	50	YCbCr 4:4:4	8
	59.94	YCbCr 4:4:4	8
	60	YCbCr 4:4:4	8
	100	YCbCr 4:4:4	8
	119.88	YCbCr 4:4:4	8
	120	YCbCr 4:4:4	8
2048x1080	23,976	YCbCr 4:4:4	10
	24	YCbCr 4:4:4	10
	25	YCbCr 4:4:4	10
	29.97	YCbCr 4:4:4	10
	30	YCbCr 4:4:4	10
	50	YCbCr 4:4:4	10
	59.94	YCbCr 4:4:4	10
	60	YCbCr 4:4:4	10
3840x2160	23,976	YCbCr 4:4:4	8
	24	YCbCr 4:2:2	8
	24	YCbCr 4:4:4	8
	24	YCbCr 4:4:4	10
	24	YCbCr 4:4:4	12
	24	RGB 4:4:4	8
	24	RGB 4:4:4	10
	24	RGB 4:4:4	12
	25	YCbCr 4:4:4	8
	29.97	YCbCr 4:4:4	8
	30	YCbCr 4:4:4	8
	50	YCbCr 4:4:4	8
	59.94	YCbCr 4:4:4	8
	60	YCbCr 4:4:4	8
4096x2160	23,976	YCbCr 4:4:4	8
	24	YCbCr 4:4:4	8
	25	YCbCr 4:4:4	8

Format	Frame Rate	Color coding	Bit depth
	29.97	YCbCr 4:4:4	8
	30	YCbCr 4:4:4	8
	50	YCbCr 4:4:4	8
	59.94	YCbCr 4:4:4	8
	60	YCbCr 4:4:4	8

HDMI 2.0 Validated 3D Formats



For the sake of clarification, this lists only include the most used formats in the audiovisual world. If your configuration is not listed here, do not hesitate to contact your supplier.

Format	Frame Rate	Color coding	Bit depth
Side by side (BluRay 3D)			
1920x1080	23,976	YCbCr 4:4:4	8
	24	YCbCr 4:4:4	8
	25	YCbCr 4:4:4	8
	29.97	YCbCr 4:4:4	8
	30	YCbCr 4:4:4	8
	50	YCbCr 4:4:4	8
	59.94	YCbCr 4:4:4	8
	60	YCbCr 4:4:4	8
	100	YCbCr 4:4:4	8
	119.88	YCbCr 4:4:4	8
120	YCbCr 4:4:4	8	
Top Bottom			
1920x1080	23,976	YCbCr 4:4:4	8
	24	YCbCr 4:4:4	8
	25	YCbCr 4:4:4	8
	29.97	YCbCr 4:4:4	8
	30	YCbCr 4:4:4	8
	50	YCbCr 4:4:4	8
	59.94	YCbCr 4:4:4	8
	60	YCbCr 4:4:4	8
	100	YCbCr 4:4:4	8
	119.88	YCbCr 4:4:4	8
120	YCbCr 4:4:4	8	
Frame packing			
1920x1080	23,976	YCbCr 4:4:4	8
	24	YCbCr 4:4:4	8
	25	YCbCr 4:4:4	8
	29.97	YCbCr 4:4:4	8
	30	YCbCr 4:4:4	8
	50	YCbCr 4:4:4	8

Format	Frame Rate	Color coding	Bit depth
	59.94	YCbCr 4:4:4	8
	60	YCbCr 4:4:4	8
	100	YCbCr 4:4:4	8
	119.88	YCbCr 4:4:4	8
	120	YCbCr 4:4:4	8

HDMI 2.0 Validated Dual (Twin) Link Formats (2D formats only)

Format	Frame Rate	Color coding	Bit depth
1920x1080 2048x1080	23.976	RGB	8
	24	YCbCr 4:4:4	
	25	YCbCr 4:2:2	
	29.97		
	30		
	50		
	59.94		
	60		
3840x2160 4096x2160	23.976	RGB	8
	24	YCbCr 4:4:4	
	25	YCbCr 4:2:2	
	29.97		
	30		
	50		
	59.94		
	60		



Both HDMI2 inputs (port A & port B) should have to same Format, Frame Rate and Color coding.



Port A should contain the 8 most significant bits of the pixel data, where port B should contain the 8 least significant bits of the pixel data. The pixel data will be reconstructed using the all 8 bits of port A and using the 4 most significant bits of port B.

HDMI 2.0 Validated Passive 3D Formats (3D formats only)

Format	Frame Rate	Color coding	Bit depth
1920x1080 2048x1080	24	RGB	8
	30	YCbCr 4:4:4 YCbCr 4:2:2	10 12
1920x1080 2048x1080	60	RGB	8
		YCbCr 4:4:4 YCbCr 4:2:2	
3840x2160 4096x2160	24	RGB	8
	30	YCbCr 4:4:4 YCbCr 4:2:2	



Both HDMI2 inputs (port A & port B) should have to same Format, Frame Rate and Color coding.



In Passive 3D HDMI2 input port A should contain the pixel data of Left Eye and HDMI2 input port B should contain the pixel data for Right Eye.

Pin configurations

B

B.1 About General Purpose Inputs & Outputs (GPIO)

General Purpose inputs

The Barco Cinema Controller has each eight (8) opto-isolated general purpose inputs available. These inputs are used to trigger the execution of macro files. For more explanation about the association of a macro to a GPI, consult the user guide of the Communicator.

Input voltage

The inputs can be directly driven from a TTL or CMOS output.

- The shape of the pulse must be rectangular.
- The duration of the pulse must be at least 50 milliseconds (shorter pulses are considered as a switch bounce)
- Minimum voltage : $V_{\min} = +5 \text{ V}$
- Maximum voltage Cinema Controller: $V_{\max} = +24 \text{ VDC}$

External power supply

When interfacing with contact closure outputs, an external power supply needs to be provided. Depending upon the configuration a suitable pull-up resistor needs to be added as well.

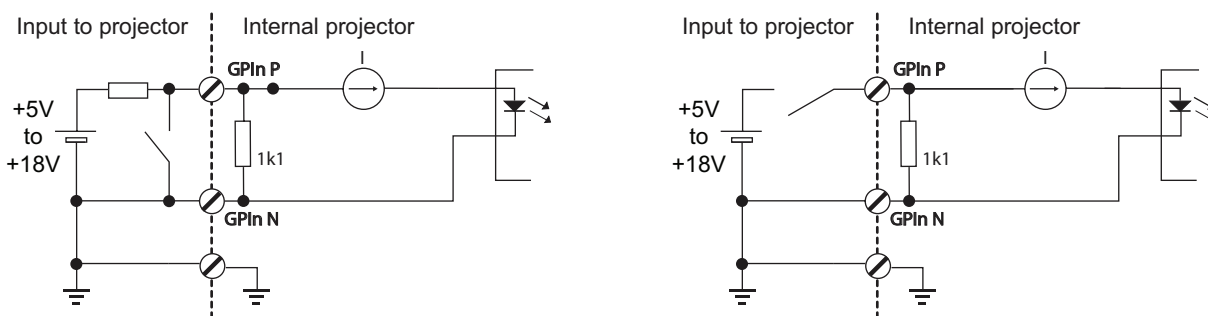


Image B-1

Cables

When long cable connections are required the use of shielded cables with twisted pairs is recommended. One twisted pair is to be assigned to each GP Input pair.

How to make the connection

When the power supply used to provide the DC voltage is isolated from ground (for example in the case of an AC adapter) it is recommended that the minus pole of that power supply is connected to ground (or to the projector chassis). This will avoid high common mode voltages at the projector GP Inputs. If that same power supply is used for other parts of the system, take care not to create ground loops. In any case when shielded cables are used that shield should be connected to the projector chassis.

General Purpose outputs

The Barco Cinema Controller have each eight (8) opto-isolated outputs available. Four (4) of the outputs on the Cinema Controller are dedicated for TI. The other general purpose outputs can be controlled via software.

About an output

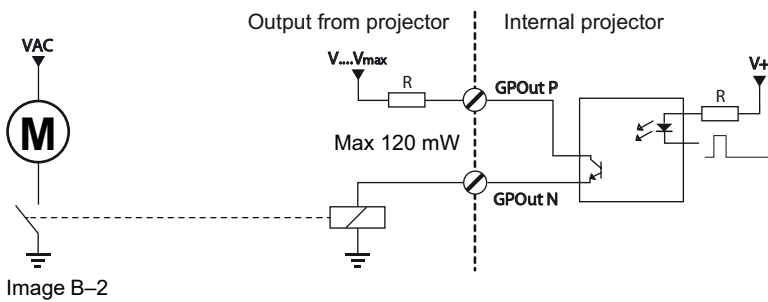
The output can generate a falling edge, rising edge, toggle or continuous toggle.

- **Generate Falling Edge** – generate a falling edge on the external GPO port if the present state of the output is high. If the present state of the external GPO is low, no edge will be generated.
- **Generate Rising Edge** – generate a rising edge on the external GPO port if the present state of the output is low. If the present state of the external GPO is high, no edge will be generated.

- **Generate Toggle** – generate a toggle on the external GPO port. If the present state of the output is low, a rising edge will be generated, followed by a falling edge. If the present state of the output is high, a falling edge will be generated, followed by a rising edge. Pulse width = 20 milliseconds.
- **Generate Continuous Toggle** - This command will generate a continuous toggle of the external GPO port. This toggle will continue until a *Generate Falling Edge*, *Generate Rising Edge*, or *Generate Toggle* command is received. The rate of toggle is 24 Hz. .

Output transistor

- Maximum output driving voltage : $V_{max} = 24\text{ V}$
- Maximum current : $I_{max} = 30\text{ mA}$
- Maximum power dissipation : 120 mW



When the GPO driver inside the projector becomes powerless the GPO state changes to the default state. The default GPO state depends on the external system connected with the GPO port (pull-up or pull-down circuitry).

GPIO and projector ECO mode

The XDM projector is equipped with an “ECO” mode, in which a minimum of features are available. Entering or leaving ECO mode can be done with GPIO of the Cinema Controller via a predefined Macro (not editable).

GPO and projector switching On or Off

The GPO signals of the Cinema Controller will return to their default output level when the projector is switched to OFF. This could generate unexpected "Falling Edge" triggers at the output pins. Also during power-on the GPO signals may generate unexpected "Rising Edge" events.

B.2 Pin configurations of the communication ports

Ethernet port

			10/100 Base-T — RJ45 port	1000 Base-T — RJ45 port
Pin	Pair	Color	Description	Description
1	3	white/green	TXD+	TX0+
2	3	green	TXD-	TX0-
3	2	white/orange	RXD+	RX0+
4	1	blue	—	TX1+
5	1	white/blue	—	TX1-
6	2	orange	RXD-	RX0-
7	4	white/brown	—	Rx1+
8	4	brown	—	RX1-

General Purpose Input (GPI):

GPI 1-4		
RJ-45 pin nr	Definition	GPI Name
1	GPI 1 P	GPI 1, reserved for 3D L/R input reference
2	GPI 1 N	
3	GPI 2 P	GPI 2, reserved for 3D L/R display reference
4	GPI 2 N	
5	GPI 3 P	GPI 3, reserved for power control
6	GPI 3 N	
7	GPI 4 P	GPI 4 (free)
8	GPI 4 N	

GPI 5-8		
RJ-45 pin nr	Definition	GPI Name
1	GPI 5 P	GPI 5 (free)
2	GPI 5 N	
3	GPI 6 P	GPI 6 (free)
4	GPI 6 N	
5	GPI 7 P	GPI 7 (free)
6	GPI 7 N	
7	GPI 8 P	GPI 8 (free)
8	GPI 8 N	

General Purpose Output (GPO):

GPO 1-4		
RJ-45 pin nr	Definition	GPI Name
1	GPO 1 P	GPO 1, reserved for 3D L/R output reference
2	GPO 1 N	
3	GPO 2 P	GPO 2, reserved
4	GPO 2 N	
5	GPO 3 P	GPO 3, reserved
6	GPO 3 N	
7	GPO 4 P	GPO 4 (free)
8	GPO 4 N	

GPO 5-8		
RJ-45 pin nr	Definition	GPI Name
1	GPO 5 P	GPO 5 (free)
2	GPO 5 N	
3	GPO 6 P	GPO 6 (free)
4	GPO 6 N	

GPO 5-8		
RJ-45 pin nr	Definition	GPI Name
5	GPO 7 P	GPO 7 (free)
6	GPO 7 N	
7	GPO 8 P	GPO 8 (free)
8	GPO 8 N	

Peripheral Port

Pin	Name
1	+5V
2	SCL
3	SDA
4	+24V
5	GND

3D connector

Pin	Name	Pin	Name
1	+12V	9	+12V
2	Grnd	10	3D Input Reference -
3	Grnd	11	3D Display Reference +
4	RS232 RX	12	3D Display Reference -
5	RS232 TX	13	CONN_3D MODE -
6	CONN_3D_MODE +	14	CONN_SYNC -
7	CONN_SYNC +	15	-
8	3D Input Reference +		

B.3 Pin configurations of the inputs

DVI-D

DVI IN A & B							
1	RX2-	7	DDC Data	13	nc	19	RX0 Shield
2	RX2+	8	nc	14	+5V	20	nc
3	RX2 Shield	9	RX1-	15	GND	21	nc
4	nc	10	RX1+	16	Hot Plug Detect	22	TMDS Clock Shield
5	nc	11	RX1 Shield	17	RX0-	23	TMDS RXC+
6	DDC Clock	12	nc	18	RX0+	24	TMDS RXC-

Regulatory information

C

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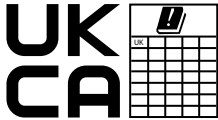
C.1 Product compliance

EurAsian Conformity (EAC)



This product complies with the Safety of Low-Voltage Equipment (LVE Technical Regulation 004/2011, CU TR 004/2011) and the Electromagnetic Compatibility of Technical Products (EMC Technical regulation, CU TR 020/2011)

UK Compliance



This product is fit for use in the UK.

Authorised Representative: Barco UK Ltd

Address: Building 329, Doncastle Road
Bracknell RG12 8PE, Berkshire, United Kingdom

Federal Communications Commission (FCC Statement)

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference at his own expense

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

FCC responsible: Barco Inc.
3059 Premiere Parkway Suite 400
30097 Duluth GA, United States
Tel: +1 678 475 8000

EMC notices

EN55032/CISPR32 Class A MME (MultiMedia Equipment)

Warning : This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

GB/T 9254.1 A級ITE(信息技术设备)

警告：在居住环境中，运行此设备可能会造成无线电干扰。

BSMI Taiwan Class A statement:

警告使用者：此為甲類資訊技術設備，於居住環境中使用，可能會造成射頻擾動，在此情況下，使用者會被要求採取某些適當的對策。

BSMI Reporting Obligor Information / 報驗義務人資訊

- 一、 商品在國內產製時，為商品之產製者或輸出者。
但商品委託他人產製，並以在國內有住所或營業所之委託者名義，於國內銷售或輸出時，為委託者。
- 二、 商品在國外產製時，為商品之輸入者。
但商品委託他人輸入，並以在國內有住所或營業所之委託者名義，於國內銷售時，為委託者。
- 三、 商品之產製者、輸出者、委託產製或委託輸出者不明或無法追查時，為銷售者。
前項所稱產製者，包括具有下列情形之一者：
 - 一、 組裝者：商品由個別零組件以組裝銷售。
 - 二、 修改者：符合檢驗規定之商品於進入市場前，為銷售目的而修改。

EMI Korean Class A warning

기종별	사용자안내문
A급기기 (업무용방송통신기자재)	이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

C.2 Taiwan RoHS compliance

限用物質含有情況標示聲明書 (Declaration of the Presence Condition of the Restricted Substances Marking)

設備名稱：數位電影投影機， 型號 (型式)：XDM-4K25 Equipment name: Digital Cinema Projector, Type designation: XDM-4K25						
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr6+)	多溴聯苯 Polybromi- nated biphenyls (PBB)	多溴二苯醚 Polybromi- nated diphenyl ethers (PBDE)
印製電路板配件 Printed Circuit Assemblies	—	○	—	○	○	○
外接電 (線) 纜 External Cables	—	○	○	○	○	○
內部線路 Internal wiring	—	○	○	○	○	○
鏡頭支架 Lens holder	—	○	○	○	○	○
光學鏡頭 Optical lenses	—	○	○	○	○	○
鐳射 Laser	—	○	○	○	○	○
螺帽, 螺釘 (栓), 螺旋 (釘), 墊圈, 緊固件 Nuts, bolts, screws, washers, fasteners	—	○	○	○	○	○
電源供應器 Power Supply Unit	—	○	○	○	○	○
風扇 Fan	—	○	○	○	○	○

設備名稱： 數位電影投影機， 型號 (型式)： XDM-4K25						
Equipment name: Digital Cinema Projector, Type designation: XDM-4K25						
限用物質及其化學符號 Restricted substances and its chemical symbols						
單元 Unit	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr6+)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
泵 Pump	—	○	○	○	○	○
備考1. “超出0.1 wt %” 及 “超出0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。 Note 1: “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition. 備考2. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。 Note 2: “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence. 備考3. “—” 係指該項限用物質為排除項目。 Note 3: The “—” indicates that the restricted substance corresponds to the exemption.						

C.3 China RoHS compliance

中国大陆 RoHS (Chinese Mainland RoHS)

根据中国大陆《电器电子产品有害物质限制使用管理办法》（也称为中国大陆RoHS），以下部分列出了Barco产品中可能包含的有毒和/或有害物质的名称和含量。中国大陆RoHS指令包含在中国信息产业部MCV标准：“电子信息产品中有毒物质的限量要求”中。

According to the “Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products” (Also called RoHS of Chinese Mainland), the table below lists the names and contents of toxic and/or hazardous substances that Barco’s product may contain. The RoHS of Chinese Mainland is included in the MCV standard of the Ministry of Information Industry of China, in the section “Limit Requirements of toxic substances in Electronic Information Products”.

零件项目(名称) Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr6+)	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印制电路配件 Printed Circuit Assemblies	X	○	X	○	○	○
外接电(线)缆 External cables	X	○	○	○	○	○
内部线路 Internal wiring	X	○	○	○	○	○
镜头支架 Lens holder	X	○	○	○	○	○
光学镜头 Optical lenses	X	○	○	○	○	○
激光发生器 Laser	X	○	○	○	○	○

零件项目(名称) Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
螺帽,螺钉(栓),螺旋(钉),垫圈, 紧固件 Nuts, bolts, screws, washers, fasteners	X	O	O	O	O	O
电源供应器 Power Supply Unit	X	O	O	O	O	O
风扇 Fan	X	O	O	O	O	O
泵 Pump	X	O	O	O	O	O

本表格依据SJ/T 11364的规定编制
This table is prepared in accordance with the provisions of SJ/T 11364.

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 标准规定的限量要求。
X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572.



在中国大陆销售的相应电子信息产品 (EIP) 都必须遵照中国大陆《电子电气产品有害物质限制使用标识要求》标准贴上环保使用期限 (EFUP) 标签。Barco产品所采用的EFUP标签 (请参阅实例, 徽标内部的编号使用于指定产品) 基于中国大陆的《电子信息产品环保使用期限通则》标准。

All Electronic Information Products (EIP) that are sold within Chinese Mainland must comply with the "Marking for the restriction of the use of hazardous substances in electrical and electronic product" of Chinese Mainland, marked with the Environmental Friendly Use Period (EFUP) logo. The number inside the EFUP logo that Barco uses (please refer to the photo) is based on the "General guidelines of environment-friendly use period of electronic information products" of Chinese Mainland.

C.4 Turkey RoHS compliance

Turkey RoHS compliance



Türkiye Cumhuriyeti: AEEE Yönetmeliğine Uygundur.
[Republic of Turkey: In conformity with the WEEE Regulation]

C.5 Disposal information

Disposal Information



Waste Electrical and Electronic Equipment (WEEE)

This symbol on the product indicates that, under the European Directive 2012/19/EU governing waste from electrical and electronic equipment, this product must not be disposed of with other municipal waste. Please dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

For more information about recycling of this product, please contact your local city office or your municipal waste disposal service. For details, please visit the Barco website at: <http://www.barco.com/AboutBarco/weee>

Disposal of batteries in the product



This product contains batteries covered by the Directive 2006/66/EC which must be collected and disposed of separately from municipal waste.

If the battery contains more than the specified values of lead (Pb), mercury (Hg) or cadmium (Cd), these chemical symbols will appear below the crossed-out wheeled bin symbol.

By participating in separate collection of batteries, you will help to ensure proper disposal and to prevent potential negative effects on the environment and human health.

C.6 Hazards

Safety notice Sodium Carbonate (Na₂CO₃)

According to the Safety Data Sheet (SDS), Sodium Carbonate could cause serious eye irritation.

Safety Data Sheets for Hazardous Chemicals

For safe handling information on chemical products, consult the Safety Data Sheet (SDS). SDSs are available upon request via safetydatasheets@barco.com.

C.7 Production address

Factories

Barco NV (BELGIUM)

President Kennedypark 35, B-8500 Kortrijk

CFG Barco (Beijing) Electronics Co., Ltd.

中影巴可 (北京) 电子有限公司*

No. 16, Changsheng Road Changping Park, Changping District, 102200, Beijing, P.R.C

北京市昌平区中关村科技园区昌盛路16号巴可工厂第三层: 102200

Made in information

The made in country is indicated on the product ID label on the product itself.

Production date

The month and year of production is indicated on the product ID label on the product itself.

C.8 Contact information

Barco contact information

Registered office address: President Kennedypark 35, 8500 Kortrijk, Belgium

Contact address: Beneluxpark 21, 8500 Kortrijk, Belgium

Importers contact information

To find your local importer, contact Barco directly or one of Barco's regional offices via the contact information given on Barco's web site, www.barco.com.

C.9 Download Product Manual

Download Product Manual

Product manuals and documentation are available online at www.barco.com/td.

Registration may be required; follow the instructions given on the website.

IMPORTANT! Read Installation Instructions before connecting equipment to the mains power supply.

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