

G62 series



Safety manual

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1 Safety

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About this document

Read this document attentively. It contains important information to prevent personal injury while installing and using the G62 projector. Furthermore, it includes several cautions to prevent damage to the G62 projector. Ensure that you understand and follow all safety guidelines, safety instructions and warnings mentioned in this chapter before installing the G62 projector.

Clarification of the term “G62” used in this document

When referring in this document to the term “G62” means that the content is applicable for following Barco products:

- G62-W9, G62-W11, G62-W14

Model certification name

- G62-W9, G62-W11, G62-14



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.
- IEC 60825-1: 2014 Class 1 RG2
- IEC 62471-5:2015 RG2
- Additional instructions to supervise children, no staring, and not use optical aids.
- Additional instructions to install above the reach of children.
- Notice is given to supervise children and to never allow them to stare into the projector beam at any distance from the projector.
- Notice is given to use caution when using the remote control for starting the projector while in front of the projection lens.
- Notice is given to the user to avoid the use of optical aids such as binoculars or telescopes inside the beam.
- “As with any bright light source, do not stare into the beam, RG2 IEC 62471-5:2015”.
- “WARNING: MOUNT ABOVE THE HEADS OF CHILDREN. The use of a ceiling mount is recommended with this product to place it above the eyes of children.

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.

Laser safety precautions

This product is classified as Class 1 Laser Product-Risk Group 2 of IEC 60825-1:2014 and also complies with 21 CFR 1040.10 and 1040.11 as a Risk Group 2, LIP (Laser Illuminated Projector) as defined in IEC 62471-5:Ed.1.0. For more information see Laser Notice No. 57, dated May 8, 2019.

To ensure safety operation, read all laser safety precautions before installing and operating the projector.

According to IEC 60825-1:2014 and IEC 62471:2006, this projector may become CLASS 1 LASER PRODUCT - RISK GROUP 3 product when installed with G-lens (throw ratio 2.90-5.50).

To ensure safety operation, read all laser safety precautions before installing or operating the projector.

For G62-W9

As with any bright source, do not stare into the direct beam, RG2 IEC 62471-5:2015 This projector is class 1 laser product of IEC/EN 60825-1:2014 and risk group 2 with the requirements of IEC 62471-5:2015 Additional instructions to supervise children, no staring, and not use optical aids.

Notice is given to supervise children and to never allow them to stare into the projector beam at any distance from the projector.

Notice is given to use caution when using the remote control for starting the projector while in front of the projection lens.

Notice is given to the user to avoid the use of optical aids such as binoculars or telescopes inside the beam.

For G62-W11 & G62-W14

As with any bright source, do not stare into the direct beam, RG2 IEC 62471-5:2015 No direct exposure to the beam shall be permitted, RG3 IEC 62471-5:2015 (When Throw Ratio large than 2.9).

This projector is class 1 laser product of IEC/EN 60825-1:2014 and risk group 2 with the requirements of IEC 62471-5:2015.

Operators shall control access to the beam within the hazard distance or install the product at the height that will prevent exposures of spectators' eyes within the hazard distance (When Throw Ratio large than 2.9).

Additional instructions to supervise children, no staring, and not use optical aids.

Notice is given to supervise children and to never allow them to stare into the projector beam at any distance from the projector.

Notice is given to use caution when using the remote control for starting the projector while in front of the projection lens.

Notice is given to the user to avoid the use of optical aids such as binoculars or telescopes inside the beam.

Light Intensity Hazard Distance

This projector may become Class 1 Laser Product-Risk Group 3 (RG3) when installed with G LENS (2.90 - 5.50 : 1) lens (throw ratio 2.90-5.50). Permanent eye injury is possible when exposed to the high intensity light beam within the hazard distance (HD).

For G62-W11

Projection Lens	Throw Ratio	Classification and Requirements for Laser Illuminated Projectors (LIPs)		
G LENS (2.90 - 5.50 : 1)	2.90-5.50	IEC 60825-1:2014	IEC 62471-5:2015	
		CLASS 1	RISK GROUP 3	Hazard distance: 2.30 m

For G62-W14

Projection Lens	Throw Ratio	Classification and Requirements for Laser Illuminated Projectors (LIPs)		
G LENS (2.90 - 5.50 : 1)	2.90-5.50	IEC 60825-1:2014	IEC 62471-5:2015	
		CLASS 1	RISK GROUP 3	Hazard distance: 2.55 m

Follow the precautions to avoid light intensity hazard.

- NEVER look into the lens! High intensity light beam.
- Permanent eye injury is possible when exposed to the high intensity light beam within the hazard distance.
- Operators shall control access to the light beam within the hazard distance or install the product at a height that will prevent eye exposure within the hazard distance.
- Do not place any reflective objects in the light path of the projector.

User definition

Throughout this manual, the term SERVICE PERSONNEL refers to Barco authorized 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. Only Barco authorized SERVICE PERSONNEL, knowledgeable of such risks, are allowed to perform service functions inside the product enclosure. The term USER and OPERATOR refers to any person other than SERVICE PERSONNEL. When installing an interchangeable lens with a throw ratio that make the projector become RG3, refer to chapter "Risk Group 3 Safety", page 9. Such combination of projector and lens are intended for professional use only, and are not intended for consumer use.

FOR PROFESSIONAL USE ONLY means installation can only be carried out by Barco AUTHORIZED PERSONNEL familiar with potential hazards associated with high intensity light beams.

1.2 Important safety instructions

To prevent the risk of electrical shock

- This product should be operated from a mono phase AC power source.
- This apparatus must be grounded (earthed) via the supplied 3 conductor AC power cable. If none of the supplied power cables are the correct one, consult your dealer. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.
- Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

- Use only the power cord supplied with your device. While appearing to be similar, other power cords have not been safety tested at the factory and may not be used to power the device. For a replacement power cord, contact your dealer.
- Do not operate the projector with a damaged cord. Replace the cord.
- Do not operate the projector 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 product through cabinet slots as they may touch dangerous voltage points or short out 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 an authorized 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, unplug it from the wall outlet. This will prevent damage to the device 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 connecting to the wall outlet or adjusting the projector.
- To prevent injury, take note of the weight of the projector.
- To prevent injury, ensure that the lens and all covers 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 laser: This projector uses extremely high brightness laser. Never attempt to look directly into the lens or at the laser.
- Before attempting to remove any of the projector's covers, you must turn off the projector and disconnect from the wall outlet.
- When required to switch off the projector, to access parts inside, always disconnect the power cord from the power net.
- The power input at the projector side is considered as the disconnect device. When required to switch off the projector, to access parts inside, always disconnect the power cord at the projector side. In case the power input at the projector side is not accessible (e.g. ceiling 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.
- 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.
- It is hazardous to operate without lens or shield. Lenses, shields or ultra violet 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.
- Exposure to UV radiation: Some medications are known to make individuals extra sensitive to UV radiation. The American Conference of Governmental Industrial Hygienists (ACGIH) recommends occupational UV exposure for an-8 hour day to be less than 0,1 micro-watts per square centimeters of effective UV radiation. An evaluation of the workplace is advised to assure employees are not exposed to cumulative radiation levels exceeding these government guidelines. The exposer of this UV radiation is allowed for only 1 hour per day for maintenance and service persons.

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 100 cm (39.4") for all DLP projectors. The exclusion zone on the lens side must be at least 5 m. Do not cover the projector or the lens with any material while the projector is in operation. Keep flammable and combustible materials away from the projector at all times. 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.
- Let the projector cool down completely before storing. Remove cord from the projector when storing.

To prevent projector damage

- Always remove lens cap before switching on the projector. If the lens cap is not removed, it may melt due to the high energy light emitted through the lens. Melting the lens cap may permanently damage the surface of the projection lens.
- 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 and unimpeded evacuation of the hot air from its cooling system.
- If more than one projector is installed in a common projection booth, the exhaust air flow requirements are valid for EACH individual projector system. Note that inadequate air extraction or cooling will result in decreased life expectancy of the projector as a whole as well as causing premature failure of the lasers.

- In order to ensure that correct airflow is maintained, and that the projector complies with Electromagnetic Compatibility (EMC) requirements, it should always be operated with all of its 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 unplug the mains supply immediately. 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.
- Do not use this equipment near water.
- 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 a laser beam on to the lens can severely damage the Digital Mirror Devices™ in which case there is a loss of warranty.
- Never place the projector in direct sun light. Sun light 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.
- Unplug this product from the wall outlet 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. Stubborn 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. Do not use a damp cloth, detergent solution, or thinner.
- Rated operating ambient temperature: $t_a = 5\text{ }^{\circ}\text{C}$ (41 $^{\circ}\text{F}$) to 40 $^{\circ}\text{C}$ (104 $^{\circ}\text{F}$).
- Rated operating humidity: 10% RH to 85% RH (non-condensing). This projector can be set to any angle within 360° range.
- Allowing proper space around the projector is critical for proper air circulation and cooling of the unit. The dimensions shown here indicate the minimum space required.

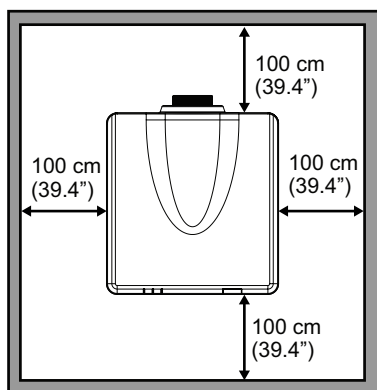
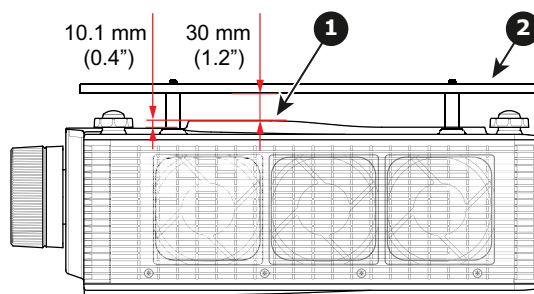


Image 1-1

- 1** Bottom intake vents.
- 2** Ceiling mount plate.



- For ceiling mounted installations, make sure to leave 30 mm (1.2") between the ceiling mount and the bottom intake vents of the projector.

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.

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.

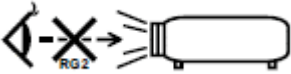


Safety Data Sheets for Hazardous Chemicals

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

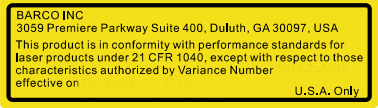

1.3 Product Safety Labels



Light beam related safety labels

For G62-W9

Label image	Label description
	Risk Group 2, IEC60825-1:2014. Do not look into the laser light. The extremely high brightness may cause permanent eye damage.
	IEC 60825-1:2014 CLASS 1 LASER PRODUCT RISK GROUP 2 Complies with 21 CFR 1040.10 and 1040.11 except for conformance as a Risk Group 2 LIP as defined in IEC 62471-5:Ed.1.0. For more information see Laser Notice No. 57, dated May 8, 2019. IEC/EN 60825-1:2014 PRODUIT LASER DE CLASSE 1 GROUPE DE RISQUE 2 Conforme aux normes 21 CFR 1040.10 et 1040.11, à l'exception de la conformité en tant que LIP du groupe de risque 2 définie dans la CEI 62471-5:Ed.1.0. Pour plus d'informations, voir l'avis au laser n° 57 du 8 mai 2019. IEC/EN 60825-1:2014 等级1激光产品RG2风险等级 除73EC 62471-5:Ed.1.0中规定的RG2 LIP 危险等级以外, 应符合21 CFR 1040.10和1040.11, 更多详细信息, 请参阅2019年5月8日的第57号激光公告。 IEC/EN 60825-1:2014 1类激光产品RG2风险等级 除73EC 62471-5:Ed.1.0中规定的RG2 LIP 危险等级以外, 应符合21 CFR 1040.10和1040.11, 更多详细信息, 请参阅2019年5月8日的第57号激光公告。
	Warning: mount above the heads of children Additional warning against eye exposure for close exposures less than 1 m. "AVERTISSEMENT: INSTALLER AU-DESSUS DE LA TÊTE DES ENFANTS." Avertissement supplémentaire contre l'exposition oculaire pour des expositions à une distance de moins de 1 m. "警告: 安装在高于孩童头顶处" 关于小于1 m近距离眼睛暴露的附加警告 "警告: 安装在高于孩童头顶处" 针对1 m以下近距离眼睛暴露的附加警告

For G62-W11 & G62-W14

Label image	Label description
	FDA laser variance (US projectors only). 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 xxxx-x-xxxx effective on [effective date of variance approval]. For the exact Variance Number and effective date see yellow label on the projector.
	IEC 60825-1:2014 CLASS 1 LASER PRODUCT RISK GROUP 2 Complies with 21 CFR 1040.10 and 1040.11 except for conformance as a Risk Group 2 LIP as defined in IEC 62471-5:Ed.1.0. For more information see Laser Notice No. 57, dated May 8, 2019. IEC/EN 60825-1:2014 PRODUIT LASER DE CLASSE 1 GROUPE DE RISQUE 2 Conforme aux normes 21 CFR 1040.10 et 1040.11, à l'exception de la conformité en tant que LIP du groupe de risque 2 définie dans la CEI 62471-5:Ed.1.0. Pour plus d'informations, voir l'avis au laser n° 57 du 8 mai 2019. IEC/EN 60825-1:2014 等级1激光产品RG2风险等级 除73EC 62471-5:Ed.1.0中规定的RG2 LIP 危险等级以外, 应符合21 CFR 1040.10和1040.11, 更多详细信息, 请参阅2019年5月8日的第57号激光公告。 IEC/EN 60825-1:2014 1类激光产品RG2风险等级 除73EC 62471-5:Ed.1.0中规定的RG2 LIP 危险等级以外, 应符合21 CFR 1040.10和1040.11, 更多详细信息, 请参阅2019年5月8日的第57号激光公告。

Label image	Label description
	Warning: mount above the heads of children Additional warning against eye exposure for close exposures less than 1 m.
	This projector may become RG3 when an interchangeable lens with throw ratio greater than 2.90 is installed. Refer to the manual for the lens list and hazard distance before operation. Such combinations of projector and lens are intended for professional use only, and are not intended for consumer use. "No direct exposure to beam shall be permitted, which can cause injury to the retina in the back of the eye." Laser Aperture Do not look into the Lens. Ouverture Rayonnement Laser Ne regarde pas dans la lentille

1.4 Risk Group 3 Safety

1.4.1 General considerations

Notice on optical radiation from G62 Projector when it becomes Risk Group 3.

- For RG3, no direct exposure to the beam shall be permitted.
For RG3, operators shall control access to the beam within the hazard distance or install the product at a height that will prevent eye exposure within the hazard distance.
- This projector has one or several built-in Class 4 laser clusters. Disassembly or modification is very dangerous and should never be attempted.
- Any operation or adjustment not specifically instructed by the user's guide creates the risk of hazardous laser radiation exposure.
- Do not open or disassemble the projector as this may cause damage by the exposure of laser radiation.

FOR PROFESSIONAL USE ONLY means installation can only be carried out by Barco AUTHORIZED PERSONNEL familiar with potential hazards associated with high intensity light beams.



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.

PPE (Personal Protective Equipment) description.

A skilled person or service person shall be worn protective clothes and goggles when access to restricted area.

Possible skin or eye damage.

Disconnect power before servicing.

1.4.2 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 "General considerations", page 3.

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.

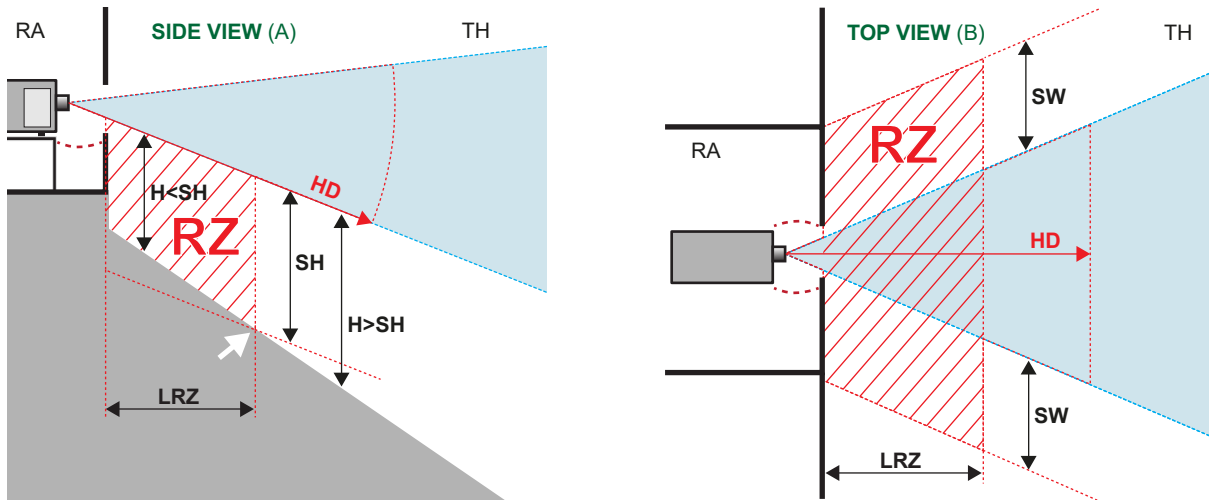


Image 1-2

- 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 1-3 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 1-3.

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

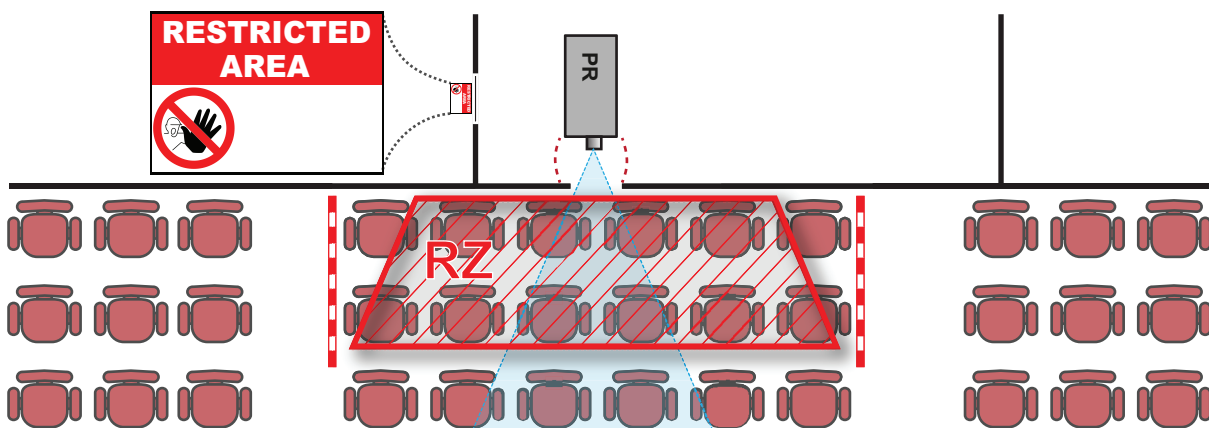


Image 1-3

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.

1.4.3 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 1–4](#) two areas should be considered: the restricted enclosed projection area (RA) and the observation area (TH).

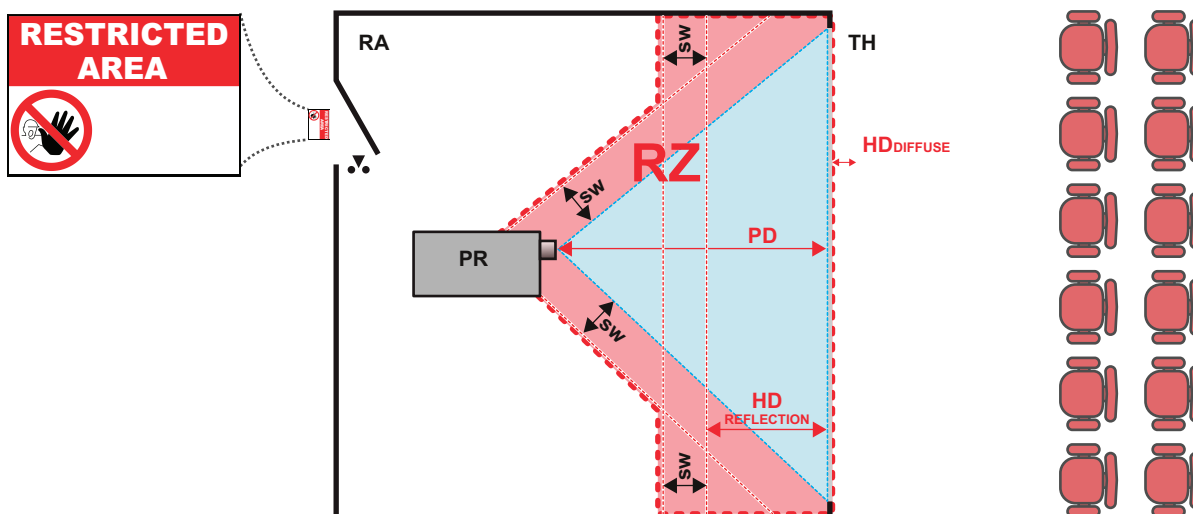


Image 1–4

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 8](#), 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 8](#), 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.

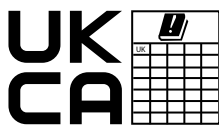
The $HD_{\text{reflection}}$ distance equals 25% of the difference between the determined HD distance and the projection distance to the rear projection screen. To determine the HD distance for the used lens and projector model see chapter "[General considerations](#)", [page 3](#).

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

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.

1.5 Regulatory

UK Compliance



This product is fit for use in the UK.

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L'information des consommateurs sur la règle de tri





R5914652 /05 | 2022-10-18

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