

G60



Safety manual

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1 Safety

About this document

Read this document attentively. It contains important information to prevent personal injury while installing and using the G60 projector. Furthermore, it includes several cautions to prevent damage to the G60 projector. Ensure that you understand and follow all safety guidelines, safety instructions and warnings mentioned in this chapter before installing the G60 projector.

Clarification of the term “G60” used in this document

When referring in this document to the term “G60” means that the content is applicable for following Barco products:

- G60-W7, G60-W8, G60-W10

Model certification name

- G60



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 international safety standards IEC60950-1, EN60950-1, UL60950-1 and CAN/CSA C22.2 No.60950-1, which are the safety standards of information technology equipment including electrical business equipment. 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 for G60-W7 series

This product is classified as Class 1 Laser Product-Risk Group 2 of IEC 60825-1 : 2014 and Class 3R Laser product of IEC 60825-1:2007, complying with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated June 24, 2007.

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

- Class 3R Laser product. Do NOT deliberately look into or stare into the beam, which can cause injury to the retina in the back of the eye.
- When turning on the projector, make sure no one within projection range is looking at the lens.
- Keep any reflective objects out of the light path of the projector. Glass and shiny surfaces can reflect the laser beam from the lens as the light path is extensive, and the reflective beam can cause unpredictable incident such as fire hazards or eye injuries.
- 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.
- Failure to follow the control, adjustment or operation procedures may cause damage by the exposure of laser radiation.

Laser safety precautions for G60-W8 series

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 62471:2006 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

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 (2.90 - 5.50 : 1) lens (throw ratio 2.90-5.50).

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

- This projector uses extremely high brightness laser. Never attempt to look directly into the lens or at the laser beam. The bright light may result in permanent eye damage.
- Possibly hazardous optical radiation emitted from this product.
- This projector has a built-in Class 4 laser module. Never attempt to disassemble or modify the laser module.
- Any operation or adjustment not specifically instructed in the User manual creates the risk of hazardous laser radiation exposure.
- Do not stare into beam when the projector is on. When turning on the projector, make sure no one within projection range is looking into the lens.
- Follow the control, adjustment, or operation procedures to avoid damage or injury from exposure of laser radiation.
- The instructions for the assembly, operation, and maintenance include clear warnings concerning precautions to avoid possible exposure to hazardous laser radiation.

Laser safety precautions for G60-W10 series

This product is classified as Class 1 Laser Product-Risk Group 2 (RG2) of IEC 60825-1: 2014 and Class 3R Laser product of IEC 60825-1:2007, complying with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated June 24, 2007.

When installed with G LENS (2.90 - 5.50 : 1) lens (throw ratio 2.90-5.50), this projector may become Class 1 Laser Product-Risk Group 3 (RG3) according to IEC 60825-1:2014, IEC 62471:2006, IEC 62471-5: 2015, and also complying with Immediately in Effect Guidance Document: Classification and Requirements for Laser Illuminated Projectors (LIPs) Guidance for Industry and Food and Drug Administration Staff Document issued on February 18, 2015.

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

- This projector uses extremely high brightness laser. Do not stare into the direct laser beam, as the extremely high brightness may cause permanent eye damage. (Risk Group 2 of IEC 62471-5:2015).
- No direct exposure to the beam shall be permitted. (Risk Group 2/Risk Group 3 of IEC 62471-5:2015).
- This product is not for household use.
- Possibly hazardous optical radiation emitted from this product.
- This projector has a built-in Class 4 laser module. Never attempt to disassemble or modify the laser module.
- Any operation or adjustment not specifically instructed in the User manual creates the risk of hazardous laser radiation exposure.
- Do not stare into beam when the projector is on. When turning on the projector, make sure no one within projection range is looking into the lens.
- Follow the control, adjustment, or operation procedures to avoid damage or injury from exposure of laser radiation.
- The instructions for the assembly, operation, and maintenance include clear warnings concerning precautions to avoid possible exposure to hazardous laser radiation.

Light Intensity Hazard Distance for G60-W8 series

This projector may become CLASS 1 LASER PRODUCT - RISK GROUP 3 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 laser beam within the hazard distance.

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 62471:2006
		CLASS 1	RISK GROUP 3 HD: 2.15 meters

Follow the precautions to avoid light intensity hazard.

- NEVER look into the lens! High intensity laser beam.
- Permanent eye injury is possible when exposed to the high intensity laser light within the hazard distance.
- Do not place any reflective objects in the light path of the projector.

Light Intensity Hazard Distance for G60-W10 series

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 laser beam within the hazard distance (HD).

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 62471:2006	IEC 62471-5: 2015
		CLASS 1	RISK GROUP 3 HD: 8.0 meters	RISK GROUP 3 HD: 3.0 meters

Follow the precautions to avoid light intensity hazard.

- NEVER look into the lens! High intensity laser beam.
- Permanent eye injury is possible when exposed to the high intensity laser light within the hazard distance.
- 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.
- 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 exposure 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.
- 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 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). yy 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.

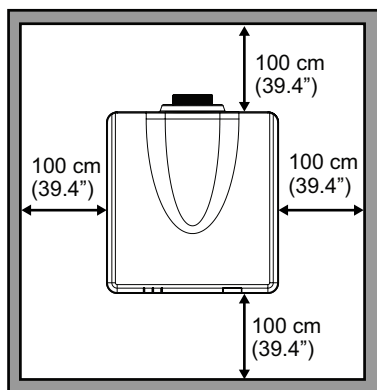
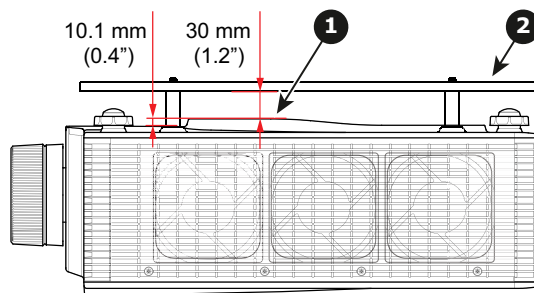


Image 1-1



- 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.



- 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.
- 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.

Safety Data Sheets for Hazardous Chemicals

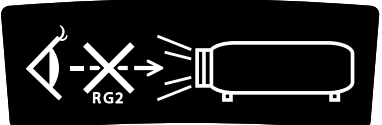
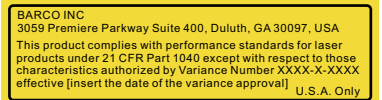
For safe handling information on chemical products, consult the Safety Data Sheet (SDS). SDSs are available upon request via safetydatasheets@barco.com.

1.3 Product safety labels

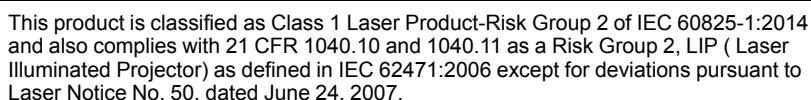
Light beam related safety labels for G60-W7 series

Label image	Label description
	Risk Group 2 of IEC60825-1:2014 and Class 3R Laser product of IEC 60825-1:2007. Do not look into the laser light. The extremely high brightness may cause permanent eye damage.
	This product is classified as Class 1 Laser Product-Risk Group 2 of IEC 60825-1 : 2014 and Class 3R Laser product of IEC 60825-1:2007, complying with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated June 24, 2007.

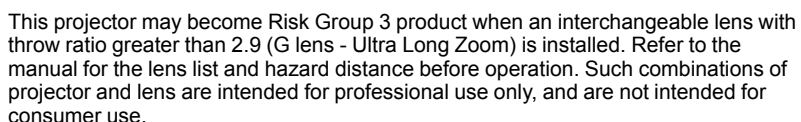
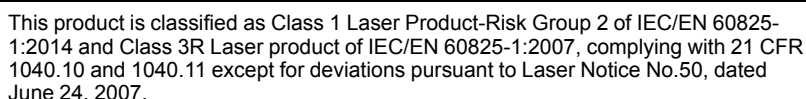
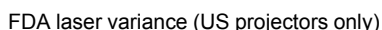
Light beam related safety labels for G60-W8 series

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.
	FDA laser variance (US projectors only)

Label description



Label description



Not for household use.

No direct exposure to beam shall be permitted, which can cause injury to the retina in the back of the eye.

