

G50



User Guide

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The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

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As a global technology leader, Barco is committed to deliver secure solutions and services to our customers, while protecting Barco's intellectual property. When product security concerns are received, the product security incident response process will be triggered immediately. To address specific security concerns or to report security issues with Barco products, please inform us via contact details mentioned on <https://www.barco.com/psirt>. To protect our customers, Barco does not publicly disclose or confirm security vulnerabilities until Barco has conducted an analysis of the product and issued fixes and/or mitigations.

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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 G50 product. Furthermore, it includes several cautions to prevent damage to the unit. Ensure that all safety guidelines, safety instructions and warnings mentioned in this chapter are understood and followed before installing the G50 product.

Clarification of the term “G50” used in this document

References in this document to the term “G50” means that the content is applicable for following Barco products:

- G50-W6, G50-W7, G50-W8

Model certification name

- G50-W6, G50-W7, G50-W8



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 optimal performance. Neglecting this can result in loss of warranty.

1.1 General considerations



WARNING: Be aware of suspended loads.



WARNING: When suspending loads, wear a hard hat to reduce the risk of personal injury.



WARNING: Be careful while working with heavy loads.



WARNING: Mind your fingers while working with heavy loads.



WARNING: In case of emergency, disconnect the device from the mains power supply. In case the power input at the projector side is not accessible, a readily accessible general disconnect device shall be incorporated.

General safety instructions

- Before operating this equipment please read this manual thoroughly and retain it for future reference.
- All warnings on the unit and in its documentation manuals must be adhered to.
- Installation and preliminary adjustments must be performed by qualified Barco personnel or by authorized Barco service dealers.
- This product contains no user serviceable parts. Attempts to modify/replace mechanics or electronics inside the housing or compartments will violate any warranties and may be hazardous.
- All instructions for operating and use of this equipment must be followed precisely.
- All local installation codes must 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 a light source incorporating high brightness lasers. The 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 brightness than native laser light. Nevertheless the projected light can represent 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 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 intensity equals the applicable exposure limit as described in the chapter "Hazard Distance".

This projector is classified as a laser product under IEC 60825-1: 2014, EN 60825-1:2014+A11:2021. The projector, in particular the projection beam, is classified as a Risk Group (RG) under IEC EN 62471-5:2015.



WARNING: This projector has a built-in Class 4 laser module. Never attempt to disassemble or modify the laser module. Service only allowed by qualified service personnel.



WARNING: No direct exposure to the projection beam within the hazard distance shall be permitted for RG3 (Risk Group 3) IEC EN 62471-5:2015. Do not stare into the beam for RG2 (Risk Group 2) 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.

Optical radiation 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.

According to IEC 60825-1:2014, EN 60825-1:2014 +A11:2021 and IEC 62471-5:2015, 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 safe operation, read all laser safety precautions before installing or operating the projector.

- 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.
- 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 60825-1:2014, EN 60825-1:2014+A11:2021 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 RG2 warning against eye exposure for close exposures less than 1m. WARNING: MOUNT ABOVE THE HEADS OF CHILDREN.

Users definition

These projectors are intended "FOR PROFESSIONAL USE ONLY", this means installation can only be carried out by trained and authorized persons.

Throughout this manual, the terms SERVICE PERSONNEL, INSTALLER 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, HIGH TEMPERATURES and HIGH BRIGHTNESS SOURCES) in performing a task, and of measures to minimize the potential risks to themselves or other persons.

The term USER or OPERATOR of RG2 projectors refers to any other person than SERVICE PERSONNEL or INSTALLER. The term USER or OPERATOR of RG3 projectors refers to any person trained and authorized to operate professional RG3 projectors. The USER or OPERATOR may only perform the maintenance tasks set forth in the user manual or the maintenance tasks for which they are trained and authorized. All other maintenance tasks and service tasks must be performed by qualified SERVICE PERSONNEL.

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.
- 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.
- High brightness warning: The projector light source must be switched off when no projection lens is installed. It is hazardous to operate without lens or shield. Always switch the output light off when replacing a lens. Lenses or shields shall be changed if they have become visibly damaged to such extent that their effectiveness is impaired. For example by cracks or deep scratches.
- When installing an interchangeable lens with a throw ratio that makes the projector become an RG3 unit, (See chapter "Available lenses" in the installation manual), refer to chapter "[HD in function of modifying optics](#)", page 19, for information regarding precautions.
- 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: High brightness projector:** This projector embeds 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 diffused within the optical path, representing a larger source and lower radiance value than native laser light. Nevertheless, when RG3, the projected light represents a significant risk for the human eye when exposed directly within the beam. This risk is not specific related to the characteristics of laser light but solely to the high thermal induced energy of the light source; which is comparable with lamp based systems. When RG3, 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 16.

- Always switch off the projector and disconnect from the mains power supply before attempting to remove any of the projector covers or access parts inside the projector.
- This product contains no user serviceable parts. Attempts to modify/replace mechanics or electronics inside the housing or compartments will violate any warranties and may be hazardous.
- For correct physical installation, refer to the Installation manual.
- Only place the projector on a stable surface or mount it securely using an approved ceiling-mount.
- 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 centimetres 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.
- Do not place hands, face, or other objects in front of the projector lens while the projector is operating. Doing so can cause the object to get extremely hot, and possibly result in a fire or damage due to the heat emitted from the light output. Things placed in front of the lens may overheat and burn or start a fire.



CAUTION: Hot surface, Do not touch

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 on the lens side must be at least 100 cm (39.4"). The exclusion zone on all other projector sides must be not less than 50 cm (19.7").
- 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 qualified 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 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

- 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.
- Only connect the projector to signal sources and voltages as described in the technical specification. Connecting to unspecified signal sources or voltages may lead to malfunction and permanent damage of the unit.
- 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 benzene, 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: $t_a = 5\text{ °C}$ (41 °F) to 40 °C (104 °F).
- Rated operating humidity: 10% RH to 85% RH (non-condensing).
- Do not operate the projector outside its temperature and humidity specifications as this may result in overheating and malfunction.
- Do not operate the projector in environments with excessive dust. The projector must be installed in environments where the dust conditions are as low as expected in a standard office environment. The environment should be clean and free from hostile airborne particles which may have harmful effects on the internal parts of the projector (e.g., airborne contaminants produced by smoke or snow machines, contaminants derived from chemical products such as e.g., disinfectants, conducting types of dust, excessive dust).
- If the specified environmental conditions cannot be guaranteed (e.g., construction works), the projector must be removed, or switched off and fully protected until the requirements are fulfilled.
- Contact Barco in case uncertainty exist on the environmental conditions linked to air contamination prior to install and operate the projector.
- Sufficient free space around the projector is critical for proper air circulation and cooling of the unit. The dimensions shown in [Image 1–1](#) indicate the minimum space required.
- For ceiling mounted installations, make sure to leave a minimum space as shown in [Image 1–1](#) between the ceiling mount and the bottom intake vents of the projector.

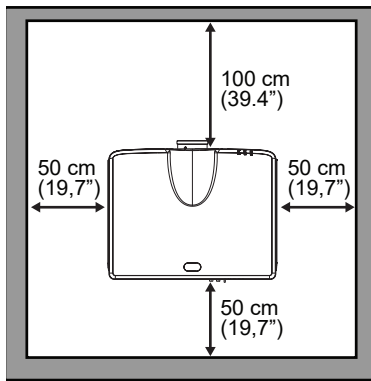
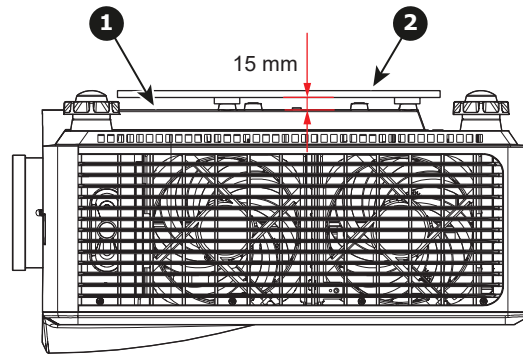


Image 1–1

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



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 unit 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 unit, 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 product 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

Safety labels explanation:

This product is classified as Class 1 Laser Product- Risk Group 2 of IEC 60825-1:2014, EN 60825- 1:2014+A11:2021 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.



"WARNING: MOUNT ABOVE THE HEADS OF CHILDREN."

Additional warning against eye exposure for close exposures less than 1 m.



This projector may become Risk Group 3 product when an interchangeable lens with throw ratio greater than 2.90 (type: A13) 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.

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.



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 eye 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 10.

To protect untrained end users (as venue 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.

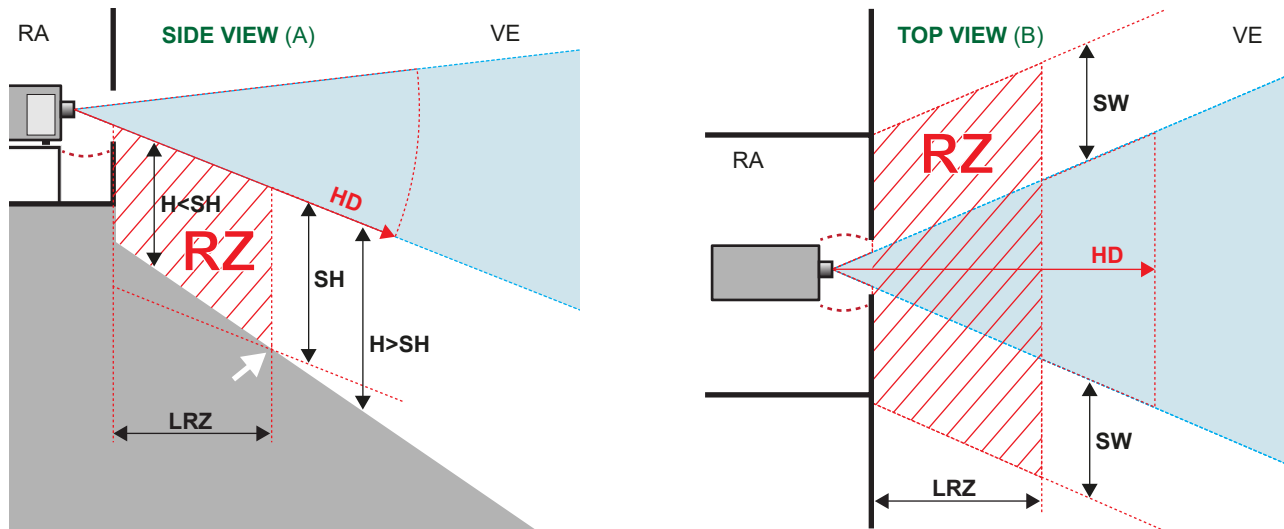


Image 1-2

- A** Side view
- B** Top view
- RA** Restricted Access location (boot area of projector).
- VE** Venue
- RZ** Restriction Zone

- HD** Hazard Distance
- LRZ** Length Restriction Zone
- 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 venue 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.

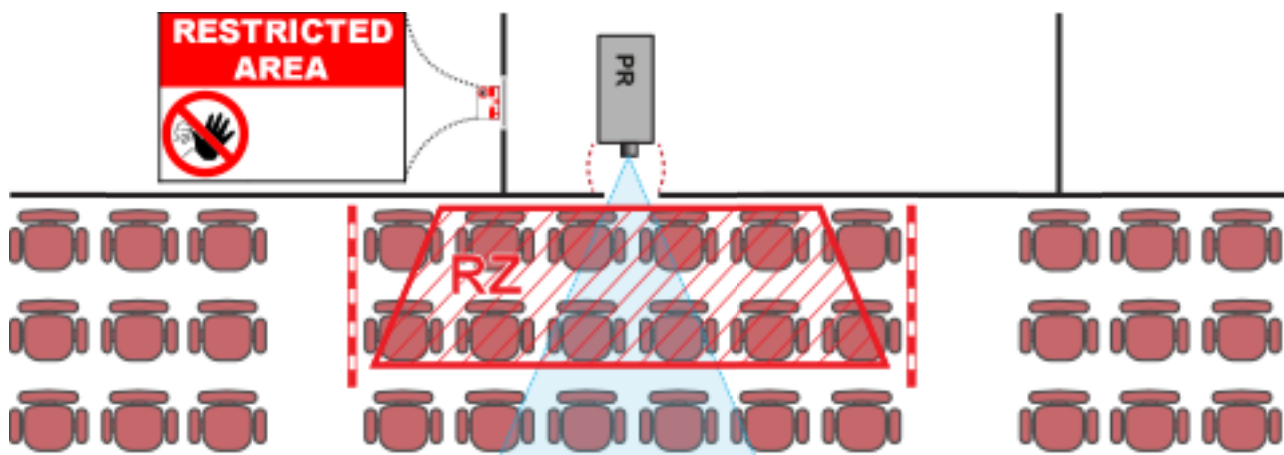


Image 1-3

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. A copy can remain on-site.

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 eye 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 following graphic, two areas should be considered: the restricted enclosed projection area (RA) and the observation area (VE).

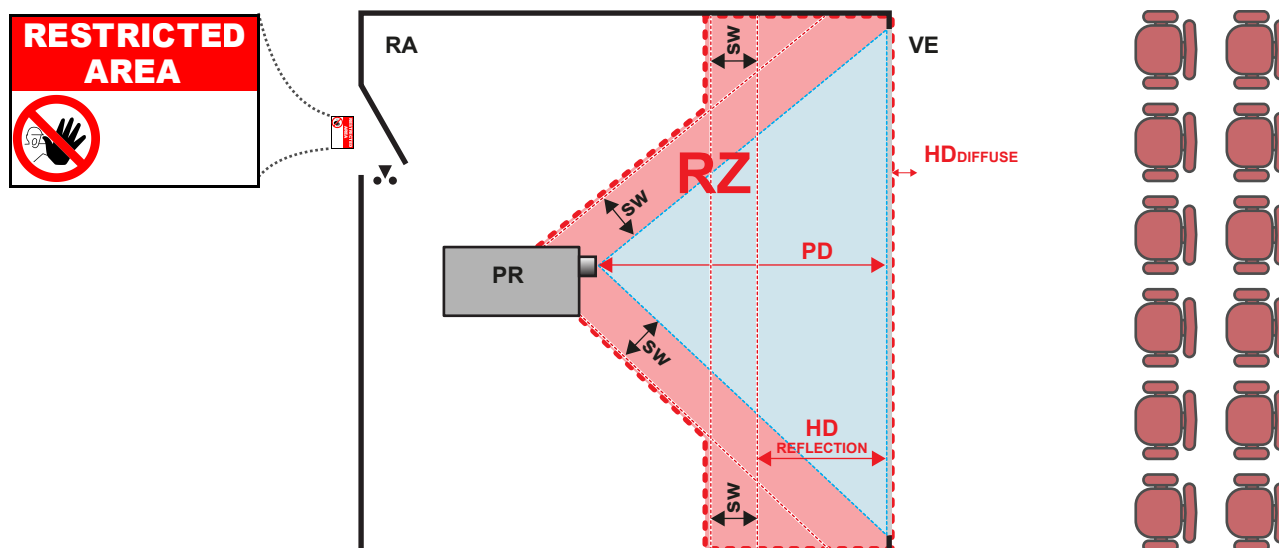


Image 1–4

RA Restricted Access location (enclosed projection area).
PR Projector.
VE Venue (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 16, 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 16, 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 10.

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

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

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).

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 EN 60825-1:2014 +A11:2021	IEC 62471-5:2015

Projection Lens	Throw Ratio	Classification and Requirements for Laser Illuminated Projectors (LIPs)		
		CLASS 1	RISK GROUP 3	Hazard distance - G50-W6: 1.3 meters - G50-W7: 1.5 meters - G50-W8: 2.0 meters

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.

1.7 HD calculation of multi-projector stacks

Sometimes two or more projectors are stacked (projecting on the same surface). In this case, because of the overlap of the images, possibly a system Hazard Distance needs to be applied instead of a single projector hazard distance.

Only projectors stacked along one axis (horizontal or vertical) should be considered. Physical stacking of projectors in two dimensions (for example 2x2), can be reduced to separate "N"x1 systems.

The information needed is:

- The Hazard Distance (**HD**) of a single projector with the given lens.
- The distance (**h**) between two adjacent projector lens centers in the stack.



For 3 or more projectors, in case the distances between adjacent lenses are not equal, take the shortest distance.

HD calculation:

- For stacking two-projectors:
 - If the single projector hazard distance $HD \geq 9 \cdot h$, then the system hazard distance to implement is $1.15 \cdot HD$.
 - If the single projector hazard distance $HD < 9 \cdot h$, then keep the original HD and risk zone per projector.
- For stacking "N" projectors along the same axis, "N" being 3 or more:
 - If the single projector hazard distance $HD \geq 12 \cdot h$, then the system hazard distance to implement is $(N/2 + 0.15) \cdot HD$.
 - If the single projector hazard distance $9 \cdot h \leq HD < 12 \cdot h$, then the system hazard distance to implement is $1.15 \cdot HD$.
 - If the single projector hazard distance $HD < 9 \cdot h$, then keep the original HD and risk zone per projector.

1.8 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

1.9 Download Product Manual

Download product manual

Product manuals and other related documentation are available online at <https://www.barco.com>. Search or browse to the product support page or scan the QR code on the product ID-label or on the box label. To see all service documentation (e. g., spare part list, service manuals, field loadable software ...) you must be registered and logged in.

IMPORTANT! Read Installation instructions before connecting equipment to the mains power supply.

Product overview

2

2.1	Main unit.....	24
-----	----------------	----

2.1 Main unit

Component location

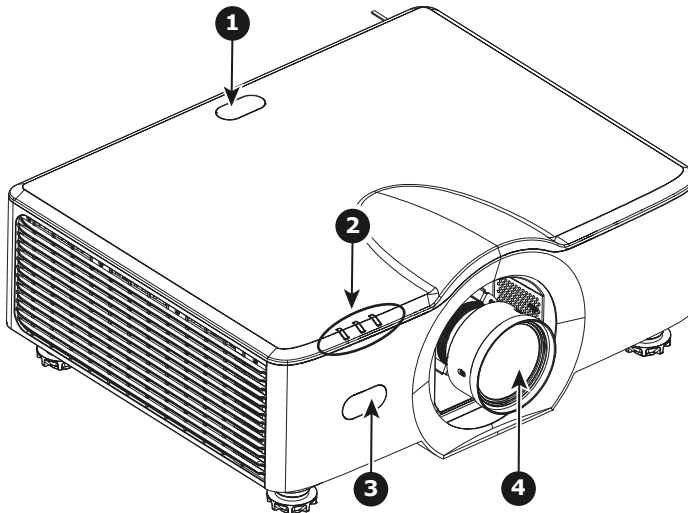


Image 2-1

- 1 Remote receiver (top)
- 2 LED status indicator
- 3 Remote receiver (front)
- 4 Projection lens

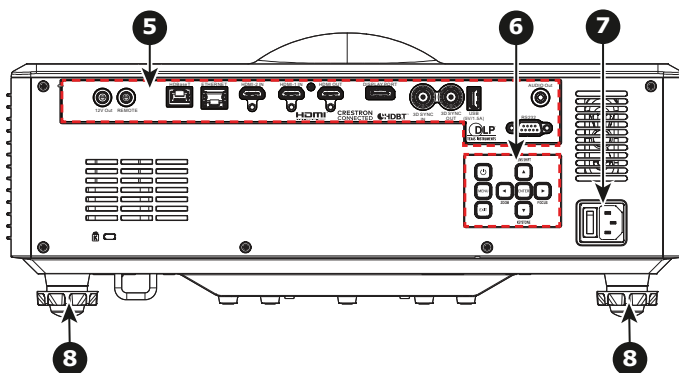


Image 2-2

- 5 Input/Output (I/O) panel
- 6 Control panel
- 7 Power socket
- 8 Adjustable feet

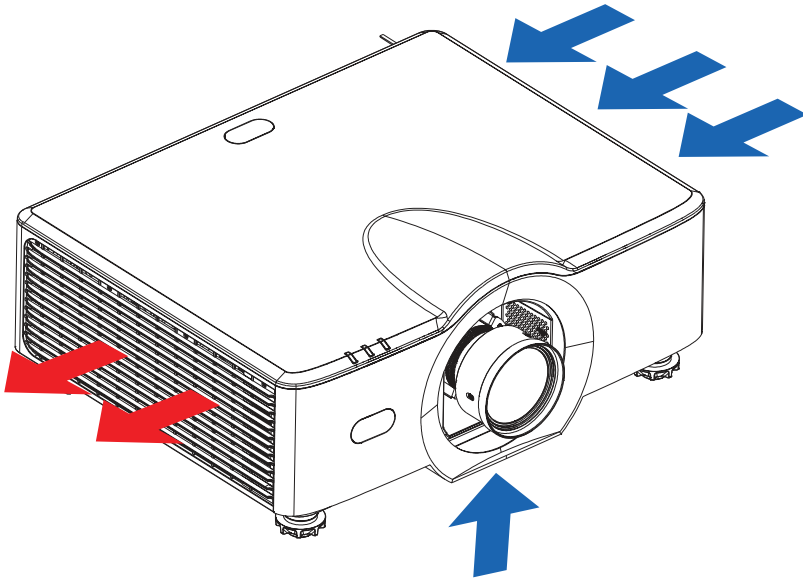
Air flow

Image 2-3

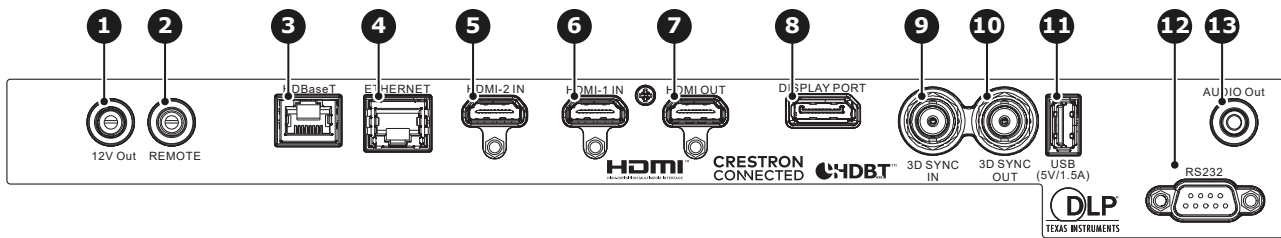
Input & Communication

3

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3.1 Input/Output ports

Input/Output ports



- | | | |
|-------------------------|----------------------|------------------------|
| 1 DC 12V output | 6 HDMI™ input port 1 | 10 3D sync output port |
| 2 Wired remote input | 7 HDMI™ output port | 11 USB port type A |
| 3 HDBaseT™ port | 8 DisplayPort port | 12 RS232 serial port |
| 4 LAN connection (RJ45) | 9 3D sync input port | 13 Audio output port |
| 5 HDMI™ input port 2 | | |

3.2 Control panel

Button functions

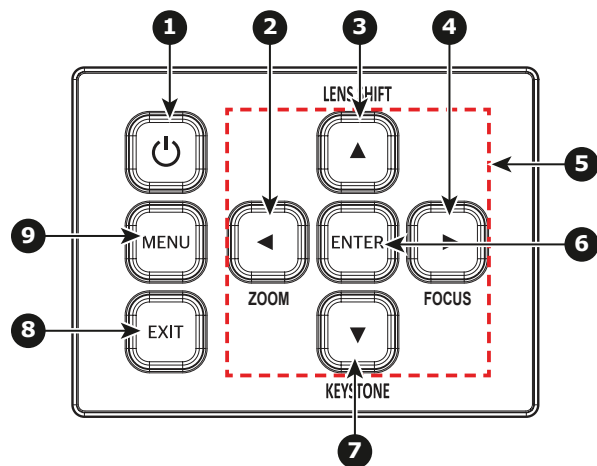


Image 3-1

- | | | |
|---|------------|--|
| 1 | Power | Turn the projector on or off |
| 2 | ZOOM | Adjust the image size |
| 3 | LENS SHIFT | Adjust lens position |
| 4 | FOCUS | Adjust the image focus |
| 5 | Arrow keys | Navigate through the menu |
| 6 | ENTER | Confirm the settings |
| 7 | KEYSTONE | Adjust a horizontally or vertically keystone image |
| 8 | EXIT | Return to previous menu or exit menu if at top level |
| 9 | MENU | Show the main menu on screen |

Remote control unit (RCU)

4

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4.1 RCU battery installation

How to install the batteries of the Remote Control Unit

1. Remove the cover by sliding it in the direction indicated by the arrow
2. Insert two new AAA (alkaline) batteries (observe the polarity).

 **Note:** Batteries are not delivered with the RCU!

3. Replace the cover.

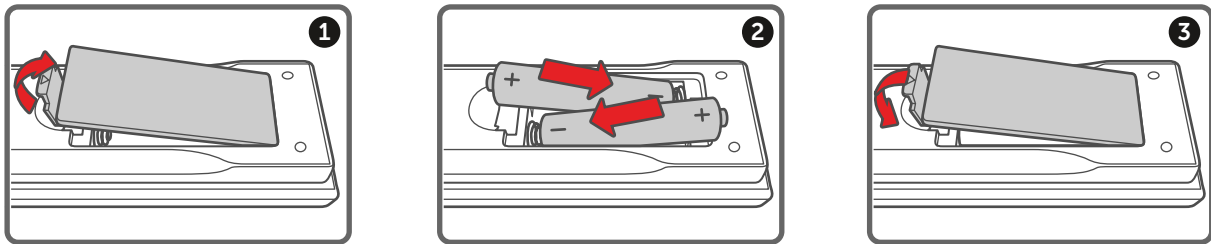


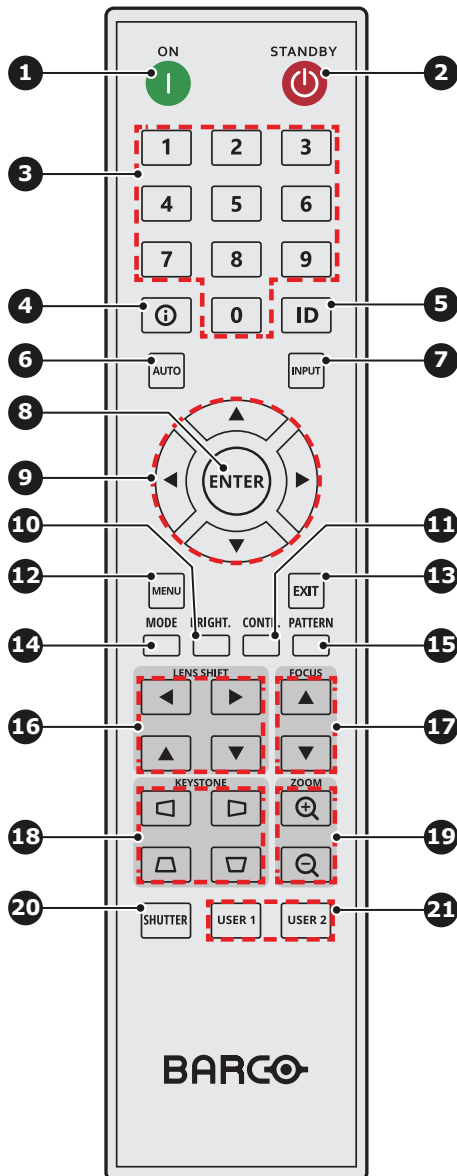
Image 4-1

Notes for the Remote Control Unit

- Be sure to insert the batteries in the corresponding orientations to match the polarities.
- Do not mix new batteries with used batteries as it would shorten the life of new batteries or cause leakage.
- Only used AAA batteries as instructed; do not attempt to insert different types of batteries into the remote control.
- If the remote is going to be unused for long periods of time, be sure to remove the batteries to prevent leakage, which could damage the remote control.
- The liquid contents in the batteries is harmful to the skin; do not touch the leakage with your bare hands directly. When installing fresh batteries, be sure to clean up the leakage thoroughly.
- Under most circumstances, you only need to point the remote control towards the screen and the IR signal would be reflected off the screen and picked up by the IR sensor on the projector. But under specific circumstances, the projector may fail to receive signals from the remote control due to environmental factors. When this happens, orient the remote control at the projector and try again.
- If the range of effective remote control signal reception decreases or if the remote control stops working, replace the batteries.
- If the infrared receiver is exposed to fluorescent lamp or strong sunlight, the remote control may not operate normally.
- Refer to the regulations enforced by your local government on the disposal of used batteries; improper disposal could damage the environment.

4.2 Remote Control Unit

Remote Control Unit (RCU)



- 1 Power On
- 2 Power Off (Standby)
- 3 Number keys 0-9
- 4 Source information
- 5 Projector ID setting
- 6 Auto sync input source
- 7 Select input source
- 8 Confirm menu selection
- 9 Menu navigation
- 10 Adjust brightness
- 11 Adjust contrast
- 12 Open OSD menu
- 13 Back to parent menu or exit menu
- 14 Preset color mode
- 15 Display test patterns
- 16 Adjust lens shift
- 17 Adjust focus
- 18 Adjust horizontal/vertical keystone
- 19 Adjust image size
- 20 Shutter
- 21 User programmable hot key
 Default USER 1 = Audio Mute on/off
 Default USER 2 = Short cut Audio Volume menu

4.3 Projector Address (ID)

About the projector address

The Remote Control supports individual addressing of multiple projectors. The remote receiver on the projector can be set with a specific number from 00 to 99, and the projector only responds to the IR remote set to the same number. The default ID code of the RCU (also known as the broadcast address) is 00. This specific address allows the RCU to control all projectors within its effective range.

How to set the projector address on the RCU

1. Keep **ID Key** pressed in.
2. After few seconds, enter the address with the numeric keys while keeping the **ID Key** pressed in.



Tip: Always enter two digits. E.g. for address 2, enter 02.

3. Release the **ID Key**.



The projector address can be set in: *Communication > Remote setup > Remote code*.

4.4 Using the RCU

Effective range

The Infrared (IR) remote control sensors are located on the front and top sides of the projector. To have the remote control functions correctly, make sure of the following:

- The maximum range between the remote control and the sensor is 30 m (98.4 ft).
- Ensure to hold the remote at the following angles towards one of the IR remote control sensors:
 - horizontally: $\pm 30^\circ$
 - vertically: $\pm 20^\circ$
- Make sure there are no obstacles between the remote control and the IR sensors on the projector.
- Make sure the IR transmitter of the remote control is not directly being shined by sunlight or fluorescent lamps.
- Keep a minimum distance of 2 m between the remote control and nearby fluorescent lamps. If not, the RCU might malfunction.
- If the projector and remote are within very short distance, the RCU may become ineffective.
- When you aim at the screen, the effective distance is less than 5 m from the remote control to the screen and reflecting the IR beams back to the projector. However, the effective range might change depending on type of screen used.

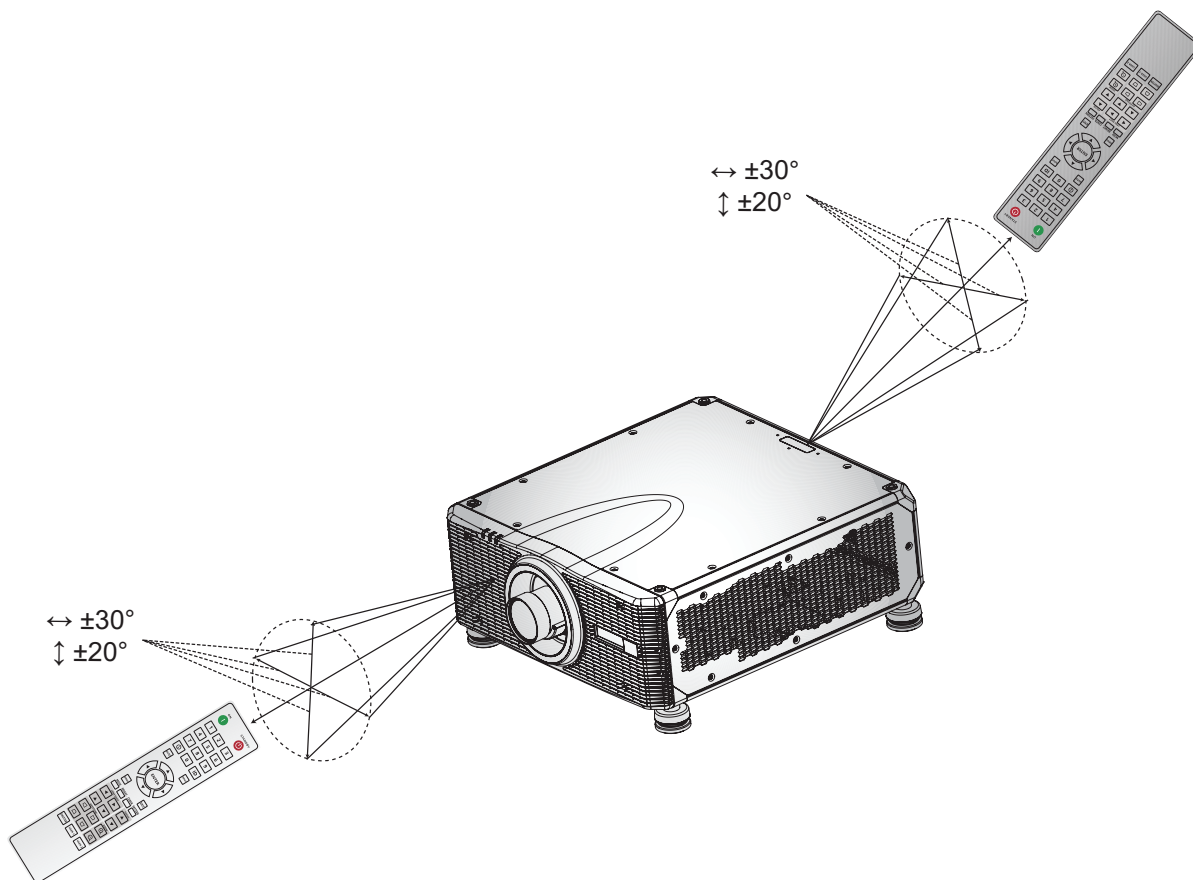


Image 4-2

Powering On/Off the projector

5

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This chapter assumes that the power cord and (all) signal cables are securely connected. For detailed instructions see installation manual.

5.1 Powering On the projector

How to power On the projector

1. Power on the AC switch (1) and wait until the power button on the control panel is solid red.

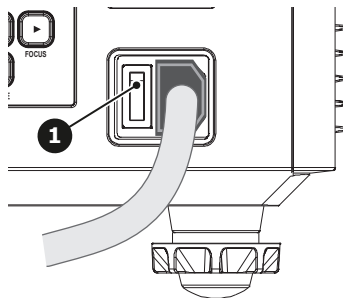


Image 5-1

2. Turn on the projector by pressing the POWER button (2) on the control panel or the ON key (3) on the remote control.

The status LED (4) will flash orange. The startup screen will display and the status LED will turn to solid green.

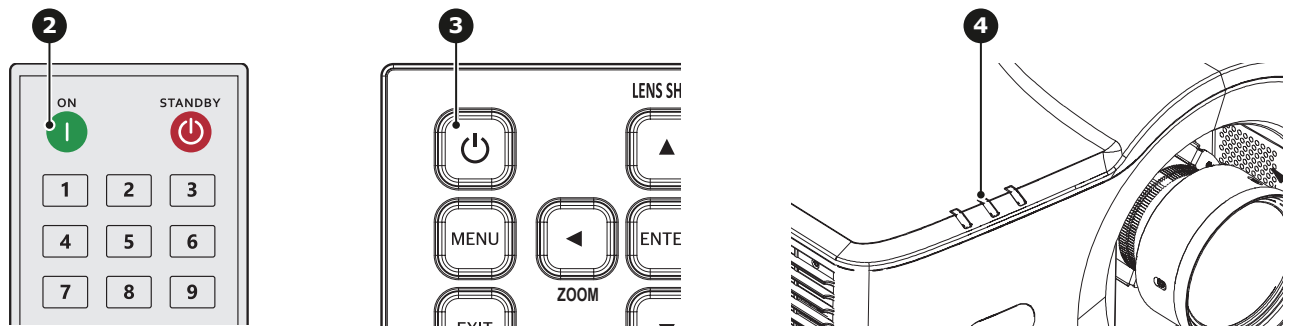


Image 5-2

3. Is this the first time that the projector starts up? (First installation or after a factory reset)
► If yes, a popup window appears with the request to accept Barco's End User License Agreement (EULA). Select CONTINUE to accept the EULA terms and to proceed using the projector. If you do not accept the EULA terms (CANCEL), the projector will be switched off.

 **Note:** Use the remote control or control panel to select your choice.



Image 5-3

 **Note:** The [EULA](#) can be downloaded from the Barco website.

4. Turn on your source. The projector detects the source you selected and displays the image.

 **Note:** If you connect multiple input sources at the same time, press the **Input** key on the control panel or on the remote control to switch inputs.



WARNING: Do not look directly into the lens when the projector is on. The strong light may cause permanent eye damage.

5.2 Power off the projector

How to power off the projector

1. Press the **Standby** button (reference 2) on the remote control or the **Power On/Off** button (reference 3) on the control panel.

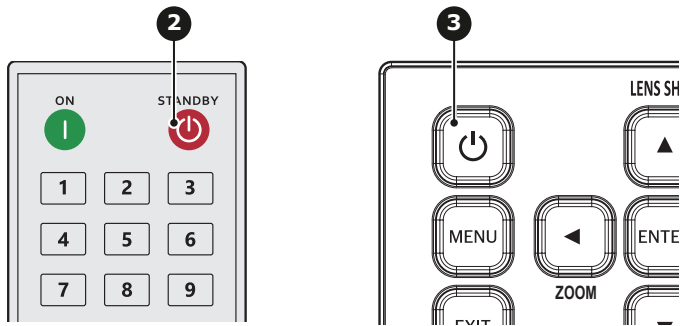


Image 5-4

A confirmation request will be prompted on the screen.

2. Press the same button again to confirm.



Note: If not confirmed after five seconds, the confirmation request will disappear and the projector will remain on.



CAUTION: Don't power on the projector again immediately after entering standby mode.



CAUTION: Don't switch off or disconnect the projector from the power net until the cooling down cycle is completed.

User controls

6

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-----	------------------------------	----

6.1 On-Screen Display Menus

About OSD

The projector has On-Screen Display (OSD) menus that allow you to make image adjustments and change a variety of settings.

Follow the steps below to use the OSD menu to configure the projector settings.

How to operate

1. To open the OSD menu, press **Menu** key on the control panel or remote control.
2. Use arrow keys to navigate through the menus and select appropriate settings.
3. Press **Enter** to enter the submenu or confirm a setting.
4. Press **Exit** to return to the previous menu or exit OSD menu if at top level.

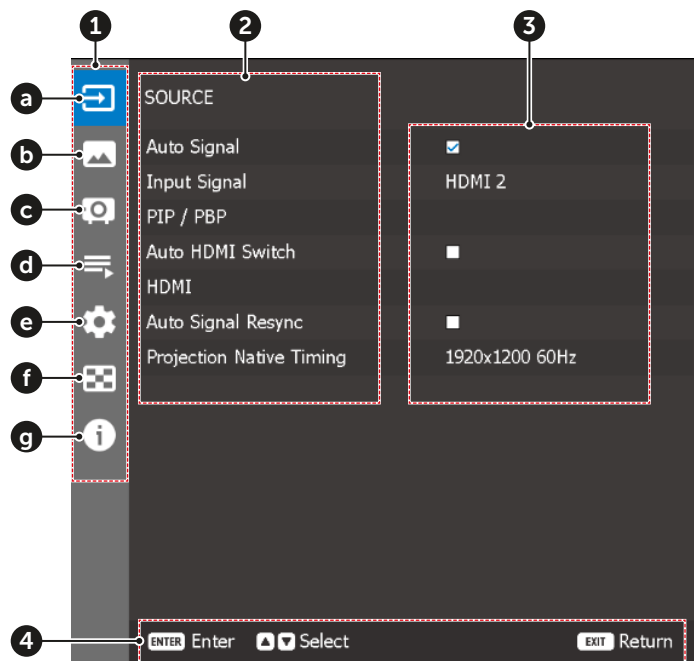


Image 6-1

- | | |
|------------------|------------------------|
| 1 Main menus bar | c Installation menu |
| 2 Submenus | d Profiles menu |
| 3 Settings | e System settings menu |
| 4 Navigation bar | f Test pattern menu |
| a Source menu | g Status menu |
| b Image menu | |

User controls — Source menu

7

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7.1 Source menu overview

Menu overview

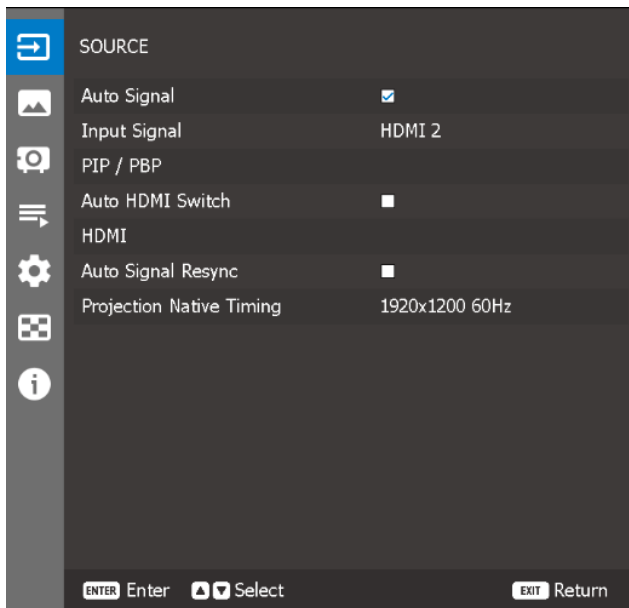


Image 7–1 Example of the Source menu

Auto signal

Select the *Auto Signal* checkbox to enable the feature. When *Auto Signal* is enabled, the projector automatically detects and selects the input signal.

Once an input source is selected, you can still press the Input button on the remote control or keypad to switch to other available sources.

Input signal

Select an input signal from the source list. The available input sources are:

- HDMI 1
- HDMI 2
- HDBaseT
- DisplayPort

PIP/PBP

The feature to enable picture-in-picture or picture-by-picture. For more info, see [“Picture-in-Picture and Picture-By-Picture”, page 41](#).

Auto HDMI Switch

Select the *Auto HDMI Switch* checkbox to enable the feature. If enabled, the projector will only look at HDMI 1 and HDMI 2 as input sources.

HDMI2 has a higher priority than HDMI1. This means that in case the current input is HDMI1, the input signal will be forced to HDMI2 if a valid signal is detected on the HDMI2 input.. The input signal will automatically switch back to HDMI1 if you remove the HDMI2 signal.



When *Auto HDMI Switch* is enabled, you can **only** choose HDMI1 and HDMI2 as valid input sources.

HDMI

This submenu helps set up the projector's HDMI ports:

- **Output:** Select an I/O port to output the signal
- **EDID:** When receiving an HDMI signal, the EDID option sets the projector's EDID compatibility to display the signal correctly.
e.g. Select 1.4 for the input devices with HDMI 1.4. Alternatively, select 2.0 for HDMI 2.0 devices.
- **HDMI 1:** Select the HDMI EDID type for the HDMI 1 port.
- **HDMI 2:** Select the HDMI EDID type for the HDMI 2 port.

Auto Signal Resync

Select the *Auto Signal Resync* checkbox to enable the feature.

Once enabled, the system will automatically synchronize the projector to the recent connected input source every time you switch the input source.

Projection Native Timing

You can change the native timing to either:

- 1920 x 1200 @ 60 Hz (default)
- 1920 x 1080 @ 60 Hz

7.2 Picture-in-Picture and Picture-By-Picture

About

PIP (Picture in Picture) and PBP (Picture By Picture) allows the display of two images from two input sources simultaneously.

PIP/PBP

Select the appropriate PIP/PBP mode, or disable the function:

- **Off:** Disables the PIP/PBP mode.
- **PIP:** Display one input source on the main screen and the other input source in an insert window.
- **PBP:** Display two images of the same size on the screen.

Main source

Select an input source for the main image. The available input sources are HDMI1, HDMI2, and HDBaseT.

Sub source

Select an input source for the second image. The available input sources are HDMI1, HDMI2, and HDBaseT.

Swap source

Swap the main source and sub source.

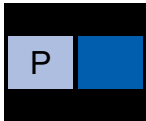
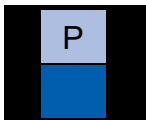
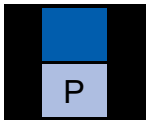
Sub image size

Change the display size of the sub source in PIP mode.

Sub Position

Sub Position: Adjust the position of the sub image. In the following layout charts, the "P" indicates the main image:

PBP Layout chart:

PBP Layout	
PBP, Main Left 	PBP, Main Right 
PBP, Main Top 	PBP, Main Bottom 

PIP Layout chart:

PIP Layout	PIP Size		
	Small	Medium	Large
PIP, Bottom Right			
PIP, Bottom Left			
PIP, Top Left			
PIP, Top Right			

PBP/PIP Compatibility Chart:

PIP/BPB Matrix	HDMI-1	HDMI-2	HDBaseT
HDMI-1	—	V	V
HDMI-2	V	—	V
HDBaseT	V	V	—

Sub brightness

Adjust the luminous brightness of the sub image to adapt to different ambient light.

Sub Contrast

Adjust the contrast ratio of the sub image.

Sub Color Space

Select a color space for the sub image.

User control — Image menu

8

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8.1 Image menu overview

Overview

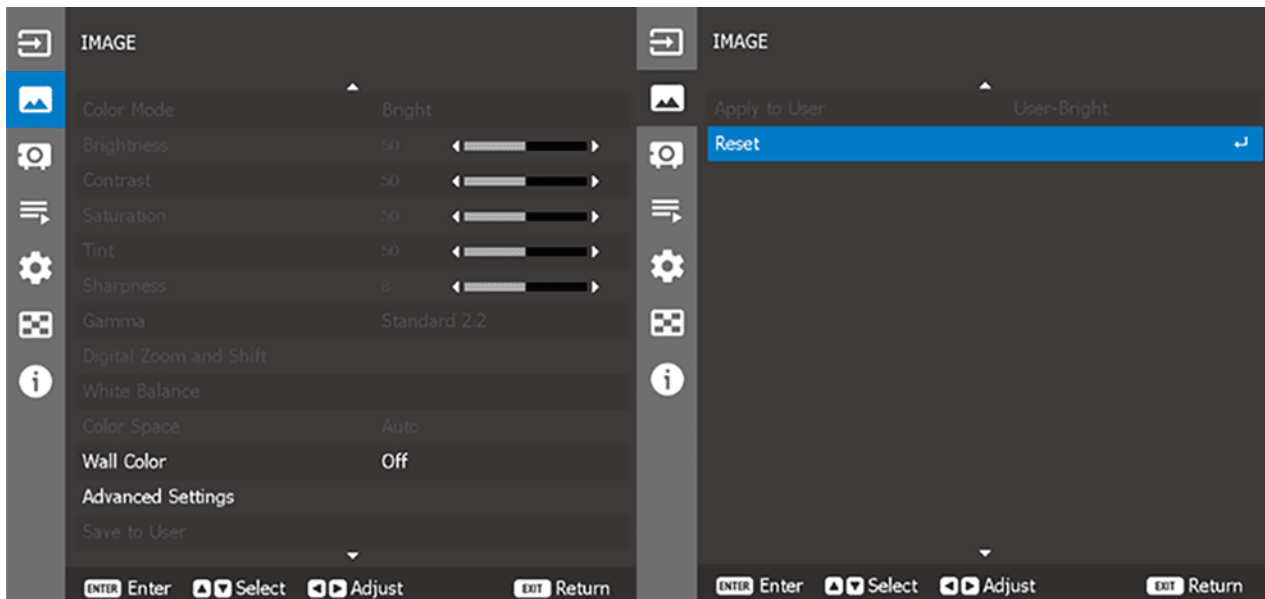


Image 8–1 Example of the Image menu

Color mode

Select one of the predefined color presets. For more info, see [“Color Mode”, page 46](#)

Brightness

Adjust the slider will change the luminous brightness of the projected image. Use this to adapt the projected image to the ambient light situation.

Contrast

Adjusting the slider will change the contrast ratio of the projected image. The contrast controls the degree of difference between the lightest and darkest parts of the image.

Saturation

Adjusting the slider will change the intensity of the image colors.

Tint

Adjusting the slider will change the color balance of red and green in video images.

Sharpness

Adjust the slider will change the clarity of details in the projected image. Use this to make the image more clear and sharp.

Gamma

Adjusts the gamma levels of the image, using a number of presets. For more info, see [“Gamma”, page 46](#).

Digital Zoom and Shift

The Digital zoom and shift function will digitally scale the image size and position to fit onto the actual projection surface. For more info, see [“Digital Zoom and Shift”, page 46](#).

White Balance

Use this feature to adjust the overall tint of the image to optimize the white color performance. For more info, see [“White balance”, page 47](#).

Color Space

Select a color space that has been specifically tuned for the input signal. The available options are:

- Auto (default),
- RGB (0 - 255),
- RGB (16 - 235),
- REC709,
- REC601

Wall Color

By setting the wall color of the projected surface, the projector will achieve the best color performance for the selected wall color type. The available options are:

- Off (default),
- Blackboard,
- Light Yellow,
- Light Green,
- Light Blue,
- Pink,
- Gray

Advanced Settings

Configure advanced color settings to improve the color performance. For more info, see [“Advanced Settings”, page 47](#).

Save to user

Save the image settings to the User Mode. Select the correct format according to the image format, which includes 2D Image, 3D Image, and Blending Image.

Apply to User

Apply the current image settings to one of the following users:

- User-Presentation,
- User-Bright,
- User-Super Bright,
- User-Cinema,
- User-HDR,
- User-RGB,
- User-DICOM SIM.,
- User-Blending,
- User-3D, or
- User-2D High Speed.

Reset

Reset all the image settings to factory default values.

8.2 Color Mode

About color mode

There are a number of color modes that are preset for different types of images.

- **Presentation:** Best for displaying presentation slides in a bright room.
- **Bright:** Best for the installations requiring high brightness images.
- **Super Bright:** Best for images with the brightness above the standard level.
- **Cinema:** Best for videos projected in a dark room.
- **HDR:** Best for displaying High Dynamic Range (HDR) content.
- **sRGB:** Standardized image color that matches the sRGB color standard.
- **DICOM SIM.:** Best for projecting monochrome medical images, such as X-ray diagram.
- **Blending:** Best for multiple projector installations.
- **3D:** Best for playing 3D videos.
- **2D High Speed:** This mode is used for displaying 2D input signal at 120Hz.
- **User:** Image settings saved by the user.

8.3 Gamma

About gamma

Adjust the gamma levels of the image. The available options are:

- 1.8,
- 2.0,
- Standard 2.2,
- 2.4,
- 2.6,
- Graphic,
- Video,
- CRT(Vivid),
- Enhanced,
- Film,
- DICOM
- HDR

In general, the smaller the value, the brighter the dark areas of the image will become.

8.4 Digital Zoom and Shift

About scale

The Digital zoom and shift menu will digitally scale the image size and position to fit onto the actual projection surface.

Digital Zoom

Digitally adjust the size of the projected image.

- **Proportional:** Enable the function to have the image's height and width changed at the same time.
- **Horizontal:** Change the width of the projected image.
- **Vertical:** Change the height of the projected image.

Digital Shift

Adjust the position of the display area within the lens offset range. You need to digitally zoom the image before using the Digital Shift function.

- **Horizontal:** Horizontally shift the image.

- **Vertical:** Vertically shift the image.

Reset

Reset the function settings to factory default values.

8.5 White balance

About white balance

Adjust the overall tint of the image to optimize the white color performance.

Color temperature

Select the color temperature of the projected image.

The available options are:

- Warm
- Standard (**default**)
- Cool

Gain/Offset (RGB)

Gain and offset are individual controls for each RGB channels used to set grey scale. The Gains calibrate the color of the dark parts and Bias calibrate the white parts.

- **Red / Green / Blue Gain:**
Adjust the color of the image's bright areas.
- **Red / Green / Blue Offset:**
Adjust the color of the image's dark areas.

White peaking

Adjusts the image color brightness while providing more vibrant colors, in increments from 0 to 10.

Reset

Reset the function settings to factory default values.

8.6 Advanced Settings

About advanced color

Configure advanced color settings to improve the color performance.

Realcolor P7

Change the color of a projected image by adjusting each color component in the image. The adjustable color includes Red, Green, Blue, Cyan, Yellow, and Magenta (R / G / B / C / Y / M).

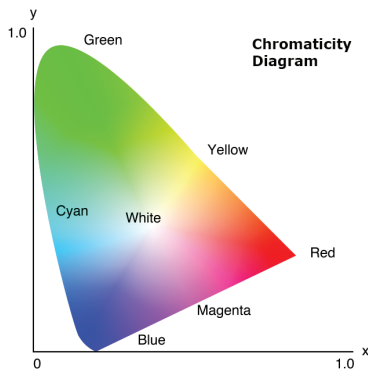


Image 8–2

- **Auto Test Pattern:** Enable the function to view a specific color pattern while adjusting.
- **R / G / B / C / M / Y:** Select a color for further adjustment.
- **Hue:** Adjust the hue of the selected color. The value reflect the number of degrees of rotation around the chromaticity diagram from the original color. Increasing value indicates counterclockwise rotation, and decreasing value, clockwise rotation.
- **Saturation:** Adjust the saturation of the selected color. The value indicates the color shifts from or towards the white in the center of the chromaticity diagram.
- **Gain:** Adjust the gain of the selected color. Increase the value to brighten the image (add white to a color) or decrease the value to darken the image (add black to a color).
- **Reset:** Reset the function settings to factory default values.

HDR

Configure the settings for the High Dynamic Range (HDR) function.

- **HDR**
 - **Off:** Turn off the projector's HDR function, and the projector announces that it does not support HDR content so that the input device only sends out SDR signals.
 - **Auto:** When receiving HDR signals, the projector automatically changes to HDR display mode.
- **HDR Picture Mode**
 - **Bright:** Increase the color saturation for bright images.
 - **Standard:** Make the images look more realistic and natural.
 - **Film:** Improve the image details for videos.
 - **Detail:** Improve image details in dark scenes.

Dynamic Black

Set up the Dynamic Contrast to maximizing the contrast for dark content.

- **Dynamic Black:** Enable the function to automatically adjust the contrast ratio for video sources. It improves the black level in dark scenes by reducing the light output.
 - **Speed:** Adjust the speed of the light source correction. The value ranges from 1 to 15. A lower value makes the correction slower and less aggressive while a higher value results in the faster correction.
 - **Strength:** Set the strength of the dynamic contrast adjustment. The value ranges from 0 to 3, the higher the value the stronger the correction.
 - **Level:** Adjust the light source when the brightness level of the current content gets lower than the set value. The value ranges from 50% to 100%. The higher the value, the larger the range to adjust the light source.
- **Extreme Black:** Enable the function to automatically increase the contrast ratio by turning off the laser light when black image is detected.
 - **Light Out Timer:** Set a timer for the laser light to turn off after detecting black content. The set value ranges from 0s to 20s.
 - **Light Out Signal Level:** Set a black level value as the threshold for the Real Black function. The value can be selected from 0 to 255, with 0 being the darkest black and 255 being the brightest.
- **Reset:** Reset the function settings to factory default values.

User controls — Installation

9

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9.1 Image menu overview

Overview

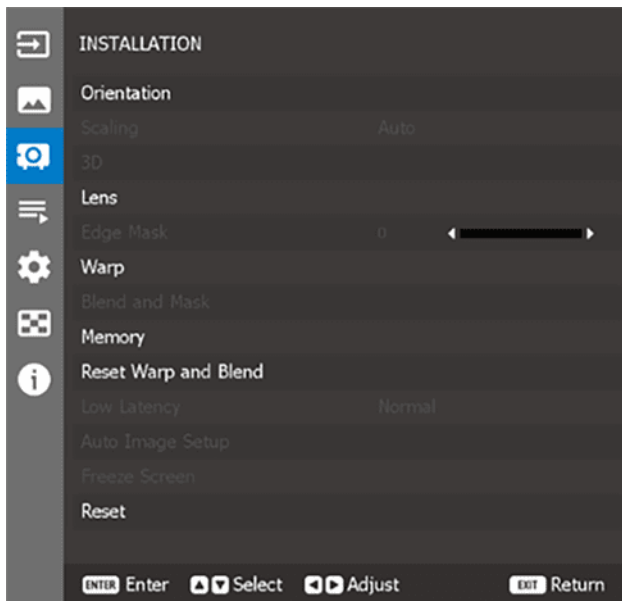


Image 9–1

Orientation

Configure the projector orientation. For more info, see [“Orientation”, page 51](#).

Scaling

Set the aspect ratio of the projected image. For more info, see [“Scaling”, page 51](#).

3D

3D settings submenu. For more info, see [“3D”, page 51](#).

Lens

Configure the lens settings to adjust the image quality and position. For more info, see [“Lens”, page 52](#).

Edge Mask

The edge blending function allows you to hide one or multiple edges of the projected image.

You can use this slider to remove the video encoding noise on the edges of the video images.

Geometric Correction

Configure the geometric settings to reshape the image for different projection surface. For more info, see [“Geometric Correction”, page 53](#).

Low Latency

Use this function to enable/disable the system to reduce response times (input latency) during gaming.

- **Normal:** Without reduce the latency.
- **2D Ultra:** Reduce the latency of image that can display image simultaneously.

Freeze Screen

Select to pause the display screen despite any change in the source device.

Reset

Reset all the installation settings to factory default values.

9.2 Orientation

About orientation

Configure the projection orientation according to the projector's installation direction.

Ceiling Mount

Enable the orientation function for ceiling mount installation.

Direction

Select *Front Projection* or *Rear Projection* based on the projector's relative position to the screen.

9.3 Scaling

Possible aspect ratios

Set the aspect ratio of the projected image. The available options are:

- Auto (default)
- 4:3
- 16:9
- 16:10
- Letter boxing
- Native

Select *Auto* to display the detected image size.

9.4 3D

About the 3D menu

3D video file combines two slightly different images (frames) of the same scene representing the different views that the left and right eyes see. When these frames are displayed fast enough and viewed with 3D glasses synchronized with the left and right frames, the viewer's brain then assemble the separate images into a single 3D image.

3D Menu provides options to set up the 3D functions to correctly display 3D videos.

- **3D Sync Out:** Set up the transmission of the 3D sync output signal.
 - **To Emitter:** Send the 3D sync signal to the emitter connected to the 3D sync out port.
 - **To Next Projector:** Send the 3D sync signal to next projector when using multiple projectors.
- **3D Invert:** When the 3D video does not appear correctly, use this function to invert the 3D left and right frames.
- **Frame Delay:** Set a frame delay value for the projector to correct the time difference between the 3D signal being given and the result being executed. This function works only when L/R Reference is set to Field GPIO. When performing 3D blending on multiple projectors, set the frame delay for each projector to correct the non-synchronous images.
- **Reset:** Reset the function settings to factory default values.

3D mode

Enable or disable the 3D function.

3D Format

Select a proper 3D format for the 3D input signal. The available options are:

- Auto,
- Frame Packing,
- Side by Side,
- Top and Bottom, and
- Frame Sequential.

3D Tech

Select a proper 3D technology according to how the 3D sync signal is processed.

- **DLP-Link:** Select DLP-Link when the 3D sync signal is generated by the DLP Link technology built-in the projector. DLP Link works only with the glasses that are compatible with DLP 3D technology and the 3D function is enabled
- **3D Sync:** Select 3D Sync when the 3D sync out signal is sent to an emitter or another projector through the 3D sync out port.

3D-2D

Transform the 3D content to 2D images. Choose one of the following:

- **3D:** Play the 3D content normally.
- **2D-Left:** Play the left images of the 3D content.
- **2D-Right:** Play the right images of the 3D content.

3D Sync in select

Specify the source of the 3D sync input signal. Choose one of the following:

- **Auto:** If an external 3D sync input is detected, the projector uses automatically the external sync input. If no external 3D sync input is detected, the projector uses the internal 3D sync to display the content.
- **Internal:** The projector generates the 3D sync internally and content is displayed.
- **External:** The projector uses an external 3D sync input to display the content.

3D Sync Out

Set up the transmission of the 3D sync output signal.

- **To Emitter:** Send the 3D sync signal to the emitter connected to the 3D sync out port.
- **To Next Projector:** Send the 3D sync signal to next projector when using multiple projectors.

3D Invert

When the 3D video does not appear correctly, use this function to invert the 3D left and right frames.

Frame delay

Set a frame delay value for the projector to correct the time difference between the 3D signal being given and the result being executed. This function works only when L/R Reference is set to Field GPIO. When performing 3D blending on multiple projectors, set the frame delay for each projector to correct the non-synchronous images.

Reset

Reset the function settings to factory default values.

9.5 Lens

About lens settings

Configure the lens settings to adjust the image quality and position.

Focus

Adjust the focus of the image.

Zoom

Adjust the size of the projected image.

Lens Shift

Adjust the lens position to shift the projected area.



CAUTION: For a UST lens mounted in its support, refrain from executing any lens movements when the UST lens is fixed in the Lens Support.

Lens memory

This projector can save up to five lens shift positions:

- **Save Memory:** Select a record from 1 to 5 to save the current lens shift position.
- **Apply Memory:** Select a record from 1 to 5 to apply the lens shift position.
- **Clear Memory:** Clear the saved lens records.

Lens Calibration

Calibrate the lens position to return it to the center. To prevent damage to the projector and the lens, always perform lens calibration before replacing the lens.

Lens Lock

Lock the lens to prevent the lens motors from moving, which disables all lens functions.

Reset

Reset the function settings to factory default values.

9.6 Geometric Correction

About geometric correction

This menu allows you to configure the geometric shape of the projected image. Do this to reshape the image for different projection surfaces.

Warp control

Configure warp settings.

- **Basic:** Configure basic settings, such as keystone, pincushion, and 4-corner.
- **Advanced:** Configure advanced settings, such as grid points, warp inner, warp sharpness, and more.

Basic Warp

Configure basic warp settings.

- **Keystone:** Keystone function is used to adjust the images in asymmetric rectangle shape.
 - **H. Keystone :** Adjust the left and right side of the projected image to make it an even rectangle. It is used for the images with unequal left and right sides.

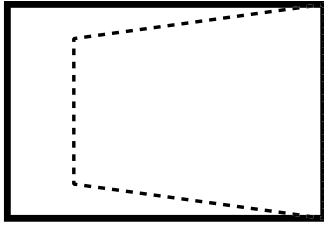
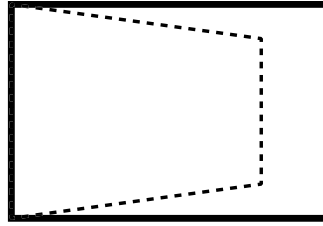


Image 9-2



- **V. Keystone** : Adjust the top and bottom side of the projected image to make it an even rectangle. It is used for the images with unequal top and bottom sides.

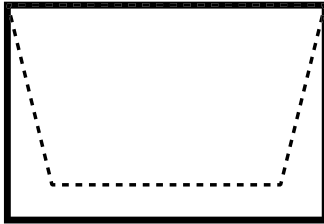
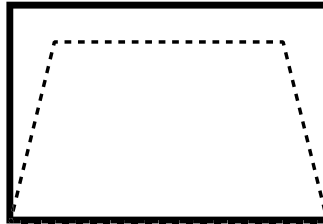


Image 9-3



- **Pincushion**: Pincushion function is used to adjust the image with barrel or pincushion distortion.
 - **Horizontal**: Correct the projected image with horizontal barrel or pincushion distortion

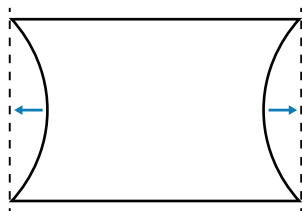
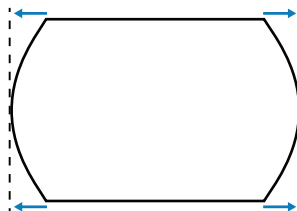


Image 9-4



- **Vertical**: Correct the projected image with vertical barrel or pincushion distortion.

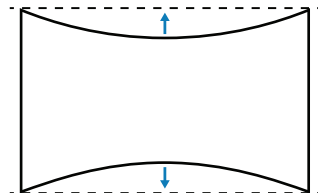
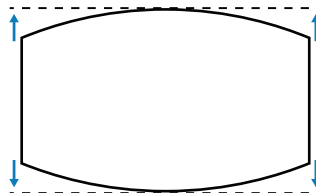


Image 9-5



- **4 - corner** : Reshape the image by moving the 4 corners of the image to have it fit a specific projection surface.

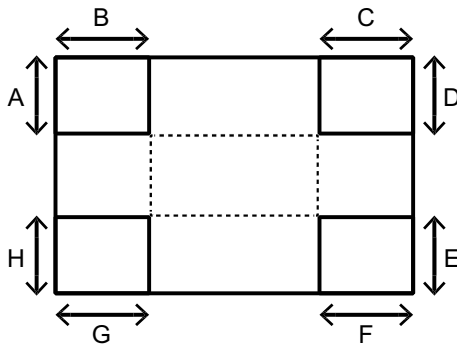


Image 9-6

Advanced Warp

Configure advanced warp settings.

- **Grid Points:** Set the grid points of warp pattern.
- **Warp Inner:** Enable or disable warp inner control.
Note: the warp inner does not support 2x2 grid points.
- **Warp Sharpness:** When the grid lines are warped from straight into curve, the grid lines will be distorted and become jagged. To avoid the line jagged are too obvious, users can adjust the warp sharpness to blur or sharpen the edge of the images.
- **Grid Color:** Select a grid color for warp and blend pattern.
- **Grid Background:** Select the grid background.
- **Blend Setting:** Configure the blend settings directly on the projector to merge two or more adjacent images into one larger and seamless image.
 - **Blend Width:** Set the blend pattern width.
 - **Overlap Grid Number:** Set the blend overlap grid number.
 - **Gamma:** Set the gamma value of the blend area to adjust the curvature of the blending effect.

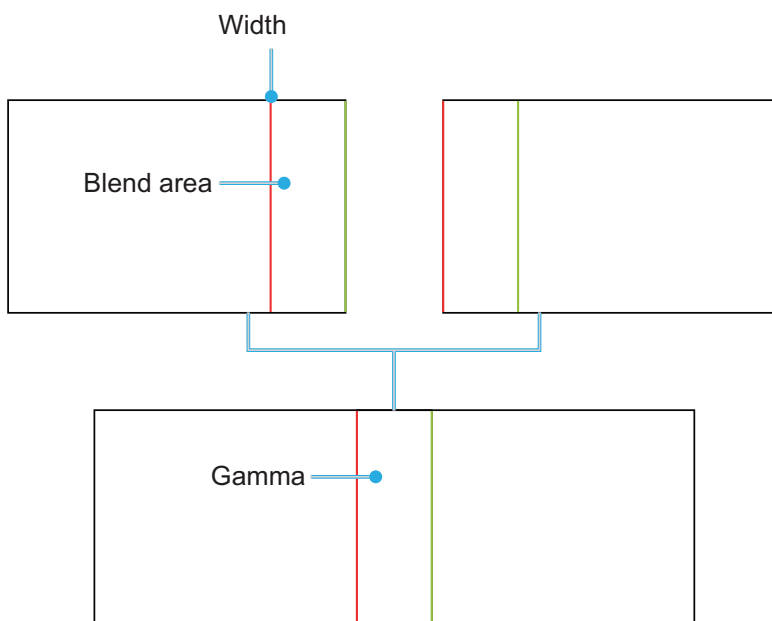


Image 9-7

Reset

Reset the geometry settings to factory default values.

Save Memory

Select a record from 1 to 5 to save the current geometric correction settings.

Apply Memory

Select a record from 1 to 5 to apply the geometric correction settings.

Clear Memory

Clear the saved geometric correction records.

User controls — Profiles menu

10

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10.1 Profiles menu overview

Overview

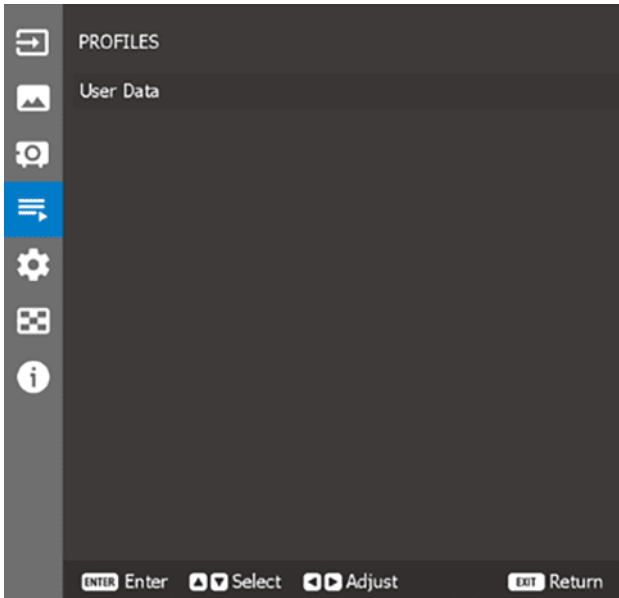


Image 10–1 Example of the Profiles menu

User data

User can save the projector settings as user data and reload the settings later. For more info, see [“User data”, page 58](#).

10.2 User data

About user data

User can save the projector settings as user data and reload the settings later.

Save all settings

Save all of the current projector settings as user data in a profile.

Using this method, you can save up to 5 profiles.

Load all settings

Load the previously saved user data.

Clear Memory

Clear the saved user data records.

User controls — Settings menu

11

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11.1 Settings menu overview

Overview

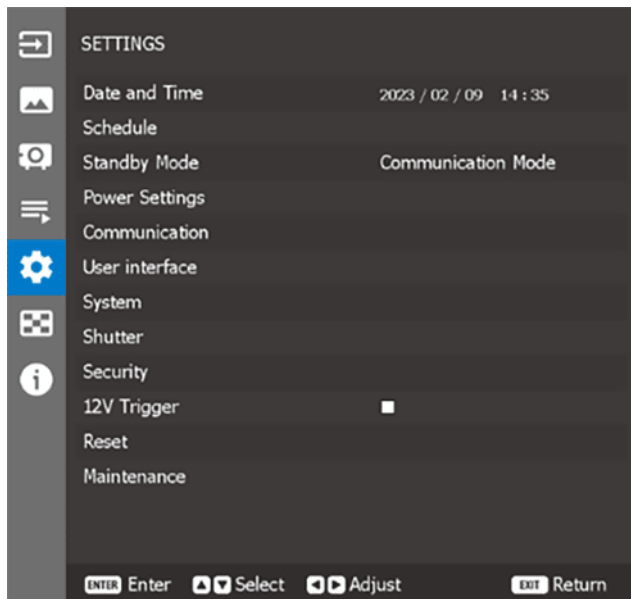


Image 11–1 Example of the settings menu

Date and time

Sets up the date and time for the projector. For more info, see [“Date and Time”, page 61](#).

Schedule

Schedule the project functions to operate automatically at the set time. For more info, see [“Schedule”, page 62](#).

Standby mode

Setup the projector standby mode. For more info, see [“Standby Mode”, page 64](#).

Power Settings

Configure the projector’s power settings. For more info, see [“Power Settings”, page 64](#).

Communication

Configure the settings that allow the projector to communicate with other projectors or control devices. For more info, see [“Communication”, page 64](#).

Language

Select a language for the OSD menu. For more info, see [“Language”, page 69](#).

User interface

Configure the user interface related settings. For more info, see [“User interface”, page 69](#).

System

Configure the system related settings. For more info, see [“System”, page 70](#).

Shutter

Set up the shutter behavior. For more info, see [“Shutter”, page 71](#).

Security

Set up the projector security options. For more info, see [“Security”, page 71](#).

12V trigger

Sets the trigger. For more info, see [“12V Trigger”, page 71](#).

Audio

Configure the audio related settings. For more info, see [“Audio”, page 71](#).

Reset

Reset the projector settings to factory default values. For more info, see [“Reset”, page 72](#).

Maintenance

Enter the Maintenance / service menu after entering the servicing password. For more info, see [“Maintenance”, page 72](#).

11.2 Date and Time

About date and time

Set up the date and time for the projector.

Clock mode

Set the clock mode to Use NTP Server (network-based) or Manual.



If the clock mode is set to NTP Server, make sure the projector has access to the Internet.

Date

Set a date for the projector. The date format is in Year/Month/Date.

Time

Set the time for the projector.

Daylight Saving Time

Configure the daylight saving settings if required.

NTP Server

Select a NTP Server for the network clock mode.

Time Zone

Set a time zone for the network clock mode.

Update Interval

Set the date and time update interval.

Apply

Apply date and time modifications.

11.3 Schedule

About schedule

Schedule the project functions to operate automatically at the set time.

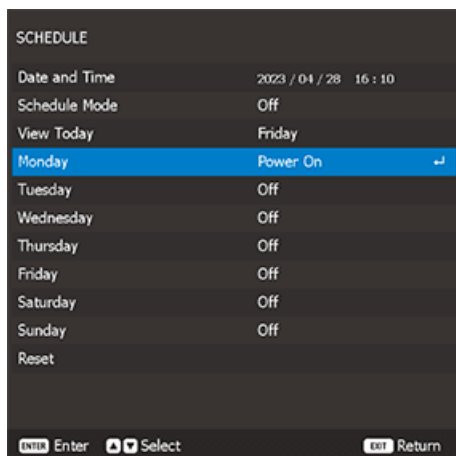


Image 11-2 Example of the Schedule menu

Date and Time

Check or adjust the date and time for the projector.

Schedule Mode

Enable or disable the schedule function. If the projector is controlled via external devices or software, the Schedule Mode displays AP Mode, and the projector's schedule functions are grayed out.

View Today

View the event list scheduled for today.

Monday to Sunday

Set up the schedule for days of a week. On the Schedule menu page, select a day and configure the schedule settings.

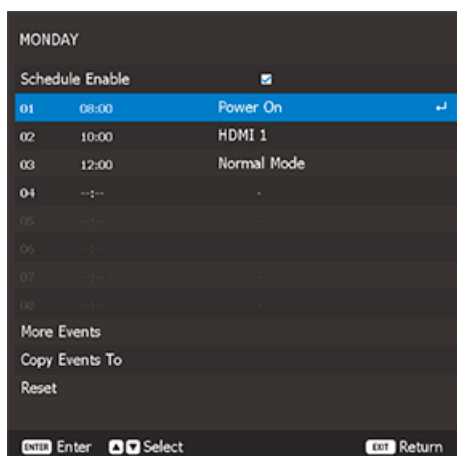


Image 11-3 Example of the Schedule for Monday

- **Schedule Enable:** Enable or disable the schedule function for the selected day.
- **Event 01-08 / Event 09-16:** Select an event record number, and set up the schedule details.
 - **Time:** Set the time for the event.
 - **Function:** Set the function. The available functions are Power Settings, Input Source, Light Source Mode, and Shutter.

- **Event:** Select a function for the event, which operates automatically at the set time.
- **Event Reset:** Reset the event settings.

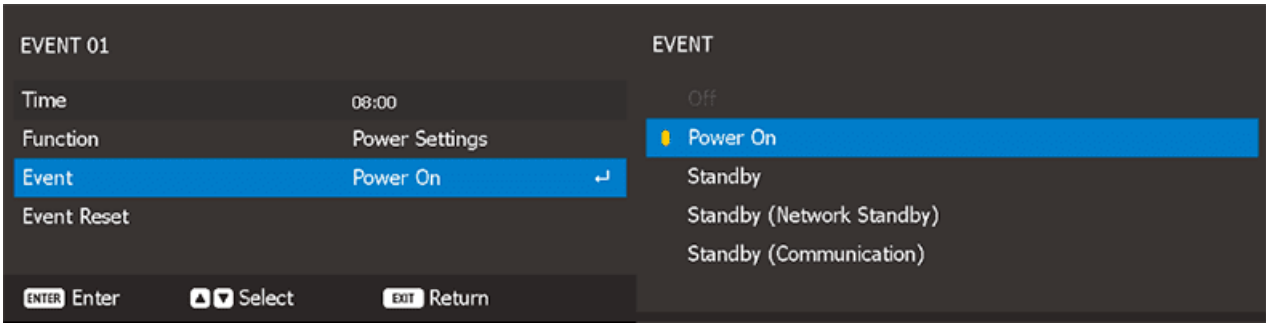


Image 11-4 Example of selecting an event for Monday: Power On

- **More Events / Previous Events (Event 01-16):** Swaps the menu between the first set of eight events (01–08) and the second set of eight events (09–16).

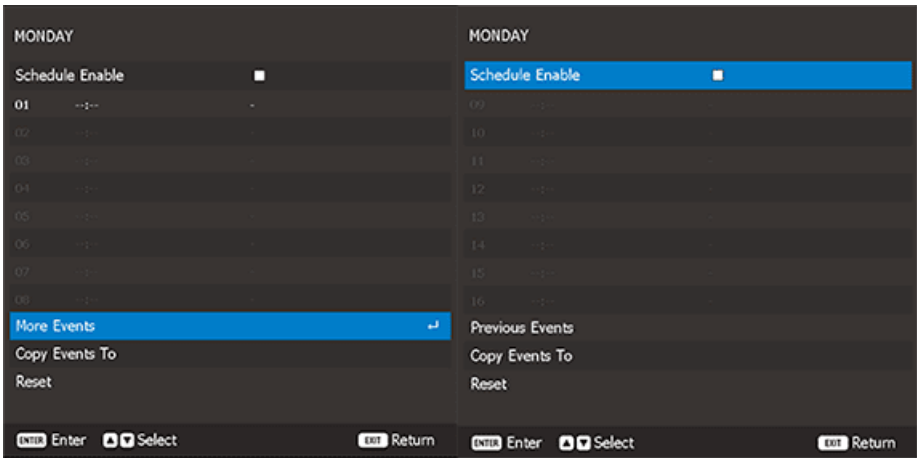


Image 11-5 Example of the two sets of eight events for Monday

- **Copy Events To:** Copy the events setup for the day to another day.

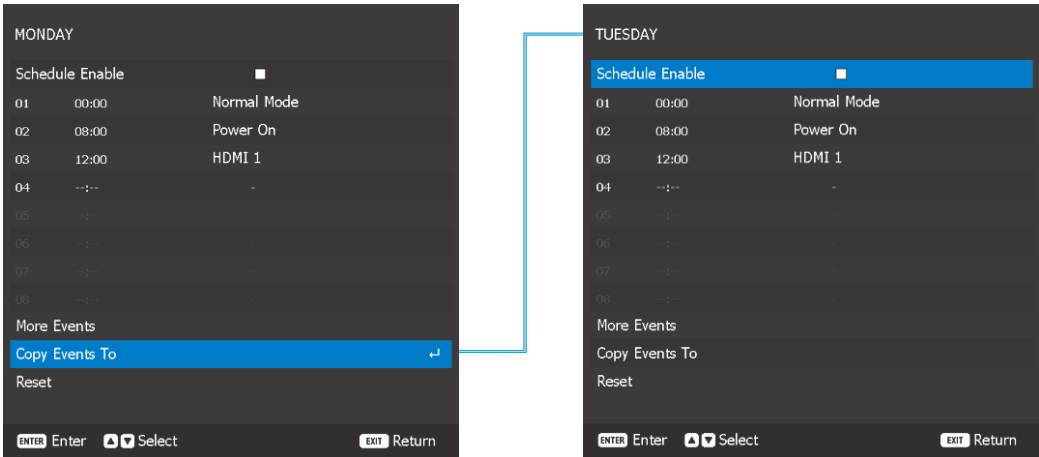


Image 11-6 Example of copying the events from Monday to Tuesday

- **Reset:** Reset the schedule settings for the day.

Reset

Reset all of the schedule settings.

11.4 Standby Mode

About standby mode

Setup the projector standby mode.

- **Standby Mode:** Minimum power consumption (0.5 Watt) which does not allow network controlling.
- **Network Standby Mode:** Low power consumption (< 2 Watt) which allows the LAN module to enter sleep mode and supports to be woken by Wake on LAN (WoL). When the LAN module is woken by WoL, the projector is ready to receive commands over the network.
- **Communication Mode:** More power consumption that allows controlling the projector over the network.

11.5 Power Settings

About power settings

Configure the projector's power settings. When going on or going to sleep.

Fast Power On

Turn on this function to have the projector automatically turning on when connected to HDMI input sources.

Signal Power On

Enable this function to have the projector automatically powering on when an input source is connected.

This feature is designed specifically for HDMI 1 & HDMI 2. The HDMI sources must be connected in order to activate this function.

Auto Power Off

Set an interval timer for the projector to automatically turn off if no signal is detected within the specified time period.

Press the ◀ and ▶ buttons to increase or reduce time. The available time range is 0-180 minutes.

Sleep Timer

Set an interval timer for the projector to automatically turn off after operating for the specified amount of time. The available time range is 0-16 hours.

Reset

Reset the power settings to factory default values.

11.6 Communication

11.6.1 Projector ID

About projector ID

Assign an remote code for the projector from 00 to 99. Use this code as the projector ID when controlling the projector by RS232, HDBaseT, Telnet or other control methods.

11.6.2 Remote Setup

About remote setup

Configure the settings of the Infra-Red (IR) remote control.

Remote code

Assign an remote code from 00 to 99 for the remote receivers on the projector. The projector only responds to the IR remote control set with the same remote code.

Remote receiver

Set the remote receiver for the projector to control the communication between the projector and the IR remote.

- **Front:** Enable or disable the front remote receiver.
- **Top:** Enable or disable the top remote receiver.
- **HDBaseT:** Select **On** to set the HDBaseT terminal as the remote receiver.

User Button 1 / User Button 2

Assign a function to the User 1 / User 2 button on the remote control. It allows you to use the function easily without going through the OSD menus. The available functions for the User 1 / User 2 button are:

- Freeze Screen
- Blank Screen
- Save to User
- PIP/PBP
- Aspect Ratio
- Show Message
- User Data
- Network Setup
- Projector ID
- Orientation
- Custom RGBCMY
- Multi-Projection
- Reset Selective

11.6.3 Network Setup

About network setup

Configure the projector's network settings.

Ethernet

Configure the projector's Ethernet settings when connecting to a wired network using an RJ-45 cable.

- **LAN Interface:** Specify the LAN interface to RJ-45 or HDBaseT.
- **MAC Address:** Display the MAC address. (Read only)
- **Network Status:** Display the network connection status. (Read only)
- **DHCP:** Turn on DHCP to automatically acquire IP address, subnet mask, gateway, and DNS.
- **IP Address:** Assign the projector's IP address.
- **Subnet Mask:** Assign the projector's subnet mask.
- **Gateway:** Assign the projector's gateway.
- **DNS:** Assign the projector's DNS.
- **Apply:** Apply the wired network settings.

Reset

Reset all network settings to default factory values.

11.6.4 Control

About control

This projector can be controlled remotely by a computer or other external devices through wireless or wired network connection. It allows the user to control one or more projectors from a distant control center, such as powering the projector on or off, and adjusting the image brightness or contrast.

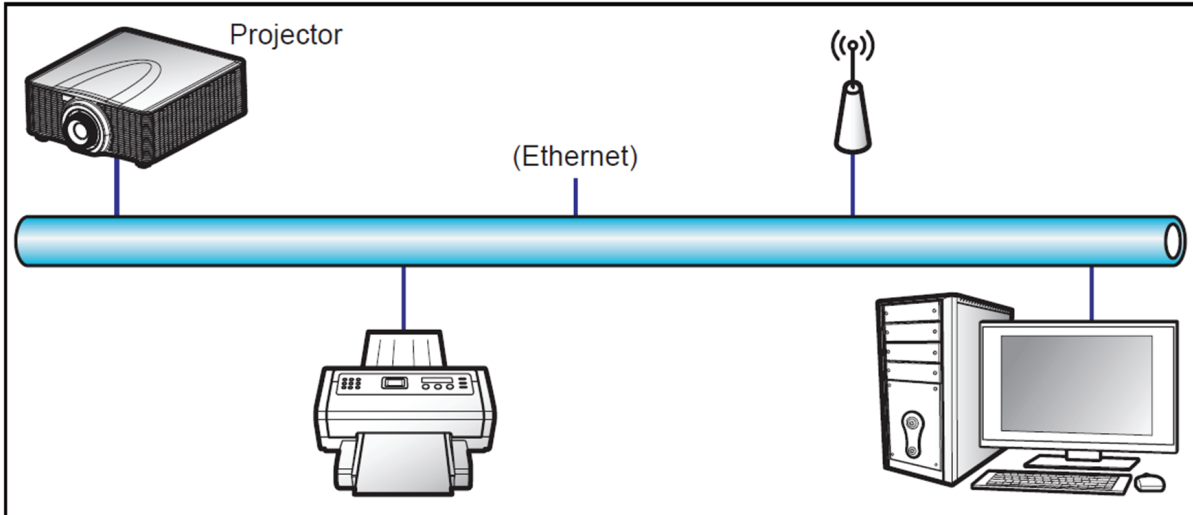


Image 11-7

Crestron

Control the projector with Crestron controller and related software. (Port: 41794)

You can configure the IP Address, IPID, and Port for the network connection. For more information, please visit <http://www.crestron.com>.

Extron

Control the projector with Extron devices (port 3023).

For more information, please visit <http://www.extron.com>.

PJ Link

Control the projector with PJLink v1.0 commands (port 4352).

You can configure the IP Address (Service) for the network connection. For more information, please visit <http://pjlink.jbmia.or.jp/english>.

AMX

Control the projector with AMX devices (port 9131).

For more information, please visit <http://www.amx.com>.

Telnet

Control the projector using RS232 commands though Telnet connection (port 3023).

HTTP

Control the projector with web browser (port 80).

Reset

Reset the function settings to default factory values.



- Crestron is a registered trademark of Crestron Electronics, Inc. of the United States.
- Extron is a registered trademark of Extron Electronics, Inc. of the United States.
- AMX is a registered trademark of AMX LLC of the United States.
- PJLink applied for trademark and logo registration in Japan, the United States of America, and other countries by JBMIA.
- For more information about the various types of external devices which can be connected to the LAN/ RJ45 port and remotely control the projector, as well as the supported commands for these external devices, please contact the Support-Service directly.

11.6.5 Using the web control center

About web control center

Web control panel allows the user to configure various projector settings using a web browser from any personal computer or mobile devices.

System requirement

To use the web control panel, make sure your devices and software meet the minimum system requirements.

- RJ45 cable (CAT-5e) or wireless dongle
- PC, laptop, mobile phone, or tablet installed with a web browser
- Compatible web browsers:
 - Internet Explorer 11 or higher version
 - Microsoft Edge 40 or higher version
 - Firefox 57 or higher version
 - Chrome 63 or higher version
 - Safari 11 or higher version
- Operating system of the mobile devices:
 - iOS 10 or higher version
 - Android 5 or higher version

Accessing the web control panel

When network is available, connect the projector and the computer to the same network. Use the projector address as the web URL to open the web control panel in a browser.

1. Check the projector address using the OSD menu.
 - In a wired network, select *Communication > Network Setup > Ethernet*.
 - Make sure *DHCP* is enabled.
 - Select *IP Address*
 - In a wireless network, select *Communication > Network Setup > Wireless > IP Address*.
2. Open a web browser and type the projector address in the address bar and confirm.
The web page redirects to the web control panel.



When network is not available, see *Directly connect the projector to a computer*.

Directly connect the projector to a computer

When a network is not available to you, connect the projector to you computer directly using a RJ-45 cable, and configure the network settings manually.

1. Assign IP address to the projector
 - In the menu, select *Communication > Network Setup > Ethernet*.
 - Turn off DHCP, and manually set the projector's IP Address, Subnet Mask, and Gateway.
 - Press **Enter** to confirm the settings.
2. Assign an IP address to the computer
 - Set the Default Gateway and Subnet Mask of the computer to match the projector.

- Set the IP address of the computer to match the first three numbers of the projector.
For example, if the projector IP address is 192.168.000.100, set the computer IP address to 192.168.000. xxx, where xxx is not 100.

3. Open a web browser and type the projector address in the address bar.

The web page redirects to the web control panel.

11.6.6 Using RS232 command by Telnet

How to use

This projector supports using RS232 commands through Telnet connection.

- 1.** Set up direct connection between the projector and computer. See block [Directly connect the projector to a computer](#), in [“Using the web control center”, page 67](#)
- 2.** Disable the firewall on the computer.
- 3.** Open the command dialogue on the computer. For Windows 7 operating system, select *Start > All Programs > Accessories > Command Prompt*.
- 4.** Input the command “telnet ttt.xxx.yyy.zzz 3023”.
Replace “ttt.xxx.yyy.zzz” with the projector IP address.
- 5.** Press **Enter** on the computer keyboard.

Specification for RS232 by Telnet

- Telnet: TCP
- Telnet port: 3023 (contact service team for more details)
- Telnet utility: Windows “TELNET.exe” (console mode).
- Disconnection for RS232-by-Telnet control normally: Close
- Below are the limitations for using Windows Telnet utility directly after TELNET connection is ready:
 - There is less than 50 bytes for successive network payload for Telnet-Control application.
 - There is less than 26 bytes for one complete RS232 command for Telnet-Control.
 - Minimum delay for next RS232 command must be more than 200 (ms).

11.6.7 Baud Rate

About baud rate

Set the baud rate for the serial port.

Serial Port In

Set the baud rate for Serial Port In. The available options are:

- 1200
- 2400
- 4800
- 9600
- 19200
- 38400
- 57600
- 115200 (default)

11.6.8 Reset

About reset

Reset all the communication settings to factory default values.

11.7 Language

About language

Select a language for the OSD menu.

The available languages are:

- English,
- Simplified Chinese,
- French,
- German,
- Italian,
- Japanese,
- Korean,
- Russian,
- Spanish,
- Portuguese,
- Indonesian,
- Dutch

11.8 User interface

About the User Interface menu

Configure the user interface related settings.

11.8.1 On Screen Display

About on screen display

Set up the on screen display menus.

Menu Location

Select the menu location from Top Left, Top Right, Center, Bottom Left, and Bottom Right.

Menu Transparency

Set the menu transparency level.

Menu Timer

Set the length of time the menu displays on the screen.

Show Message

Enable or disable the corner information messages, such as input source, IP address, and so on.

Background

Set a background color to display when no input signal is detected. The available options are Blue, Black, White, and Logo.

Reset

Reset the menu settings to default factory values.

11.8.2 Logo Setup

About logo setup

Set up the logo for the startup screen.

Change Logo

Change the logo for the startup screen. Apart from the Default logo, user can select also Captured Logo.

- **Default Logo:** The default startup screen.
- **Captured Logo:** The logo is saved via the Logo Capture function.

Logo Capture

Capture an image as the logo for the startup screen.

- **Save:** Save the captured logo

Delete Logo

Delete the saved Captured Logo.

11.8.3 Backlight

About backlight

Set up the projector backlight options for the keypad and power key.

Keypad

Enable or disable the keypad backlight.

Power Key

Enable or disable the backlight for the power key.

11.9 System

About the system menu

Configure the system related settings.

High altitude

Check the *High Altitude* option to increase the fan speed. To ensure the image quality and prevent damage to the projector, enable High Altitude mode in high temperature, high humidity, or high altitude environment.

Operational mode

Set up the desired light source mode to control the projector brightness. Select a light source mode depending on the installation requirements.

The available options are:

- Normal
- Eco Mode
- Custom Mode

Custom brightness

Set up the custom brightness level.

11.10 Shutter

About the shutter

Set up the shutter behavior.

Fade-In

This function allows the fading in effect when turning off shutter. The time for the fading effect can be adjusted from 0.5s to 5s.

Fade-Out

This function allows the fading out effect when turning on shutter. The time for the fading effect can be adjusted from 0.5s to 5s.

Startup

Select the shutter behavior when turning on the projector.

11.11 Security

About security

Set up the projector security options.

Security

Enable to protect the projector with a password. If the user enters incorrect password three times, a message will pop up warning that the projector shuts down in 10 seconds.

Security Timer

Specify the length of time the projector can be used without the password. Once the timer counts to 0, the user must enter a password to use the projector. The timer restarts every time the projector is turned on.

Change Password

Change the password required to operate the projector.

11.12 12V Trigger

About 12V trigger

When enabled, the projector screen is automatically raised or lowered when the projector is turned on or off. This function only works when the projector is connected to an electrical projector screen.

11.13 Audio

About Audio menu

The Audio menu configures the audio related settings.

Audio mute

Enable this feature to temporarily turn off the sound.

Audio volume

Adjust the audio volume level.

11.14 Reset

About reset

Reset the projector settings to factory default values.

- **Reset System Settings:** Reset the settings of the system menu to factory default values.
- **Reset All Settings:** Reset all of the projector settings.
- **Reset Selective:** Reset the settings of one of the main menus. User can choose from INSTALLATION, IMAGE, COMMUNICATION, and SYSTEM.

11.15 Maintenance

About maintenance and servicing

Input the service password to enter the service menu. In the Service menu, you can:

- reset all settings to the factory defaults,
- set filter index,
- phosphor index,
- view error log,
- total projector hours,
- light source hours, and
- perform lens calibration.

User controls — Test pattern menu

12

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12.1 Test pattern menu overview

Overview

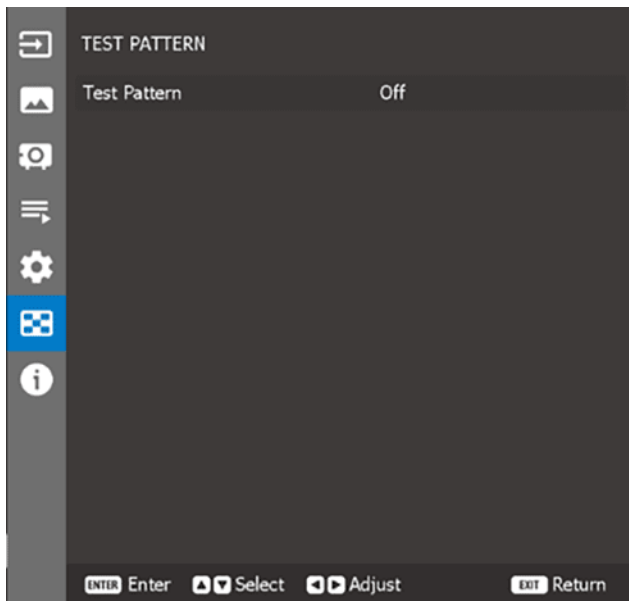


Image 12-1

Test pattern

Select a test pattern. The available options are:

- Off,
- Green Grid,
- Magenta Grid,
- White Grid,
- White,
- Black,
- Red,
- Green,
- Blue,
- Yellow,
- Magenta,
- Cyan,
- ANSI Contrast 4x4,
- Color bar,
- Full screen

User controls — Status menu

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13.1 Status menu overview

Overview

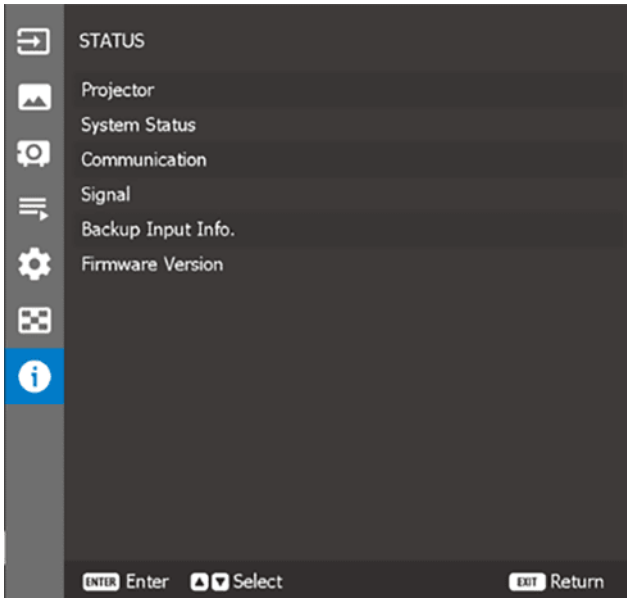


Image 13–1 Example of the status menu

About the Status menu

View information about the projector status and projector settings. The projector information is read only.

Projector

- Model Name
- Serial Number
- Total Projector Hours
- Lens Type

System status

- Standby Mode
- Light Source Mode
- Light Source Hours
 - Normal
 - Eco Mode
 - Custom Mode
- Temperature

Communication

- Projector ID
- Remote Code
- Ethernet
 - LAN Interface
 - MAC Address
 - Network Status
 - DHCP
 - IP Address
 - Subnet Mask
 - Gateway
 - DNS

- Control
 - Crestron
 - Extron
 - PJLink
 - AMX
 - Telnet
 - HTTP

Signal

- Input signal
 - Resolution
 - Signal Format
 - Pixel Clock
 - Horz Refresh
 - Vert Refresh
 - Color Space
- Second signal
 - Resolution
 - Signal Format
 - Pixel Clock
 - Horz Refresh
 - Vert Refresh
 - Color Space

Firmware version

- Main Version
- I-SCALER Version
- F-MCU Version
- A-MCU Version
- LAN Version
- Formatter Version
- HDBaseT Version

Maintenance

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About this chapter

This chapter contains general maintenance procedures.

14.1 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.

Prerequisites

Switch off the projector and wait at least 30 minutes to let everything cool down.

Required tools

- Compressed air
- Clean cotton cloth
- Clean micro fiber lens cleaning cloth (e.g. Toraysee® cloth(s))
- Lens cleaner (e.g. Zeiss lens cleaner, Purosol® or any water based lens cleaner)

How to clean the lens?

1. Blow off dust with clean compressed air (or pressurized air cans¹).
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.

14.2 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.

1. Pressurized air cans are not efficient if there is too much dust on the surface, the pressure is too low

Troubleshooting

15

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15.1 Projector Problems

No image appears on-screen

- Check if all the cables and the AC power are correctly connected. For more details, refer to the installation manual.
- Check if the pins of the connectors are not crooked or broken.
- Check if the “Shutter (AV Mute)” function is disabled.

Partial, scrolling or incorrectly displayed image

- Press “Auto” on the remote control to detect input signal automatically.
- If you are using a PC, set the PC’s resolution lower or equal to WUXGA (1920 × 1200).
- If you are using a Notebook:
 - Set the resolution lower or equal to WUXGA (1920 × 1200).
 - Press the appropriate keys listed below for your notebook manufacturer to send signal out from notebook to projector. Example: [Fn]+[F4]

Acer	[Fn]+[F5]
Asus	[Fn]+[F8]
Dell	[Fn]+[F8]
Gateway	[Fn]+[F4]
BM/Lenovo	[Fn]+[F7]
HP/Compaq	[Fn]+[F4]
NEC	[Fn]+[F3]
Toshiba	Fn]+[F5]
Mac Apple	System Preference > Display > Arrangement > Mirror display

- If you experience difficulty changing resolutions or your monitor freezes, restart all equipment including the projector.

Image is fuzzy and blurry

- Press the “Focus ▲” or “Focus ▼” button on the remote control or control panel to adjust the image focus until it is sharp and clear. To adjust focus from OSD menu, select “Installation > Lens > Focus”.
- Make sure the projection screen is in proper distance with the projector. For projection distances of each lens, see chapter *Lens specifications* in the installation manual.

Stretched when displaying 16:10 DVD videos

- Set appropriate aspect ratio for the projector by selecting “Installation > Aspect Ratio” from the OSD menu.
- Set the aspect ratio to 16:10 on the DVD player.

Image is too small or too large

- Adjust the image size by pressing the “Zoom ▲” or “Zoom ▼” button on the remote control or control panel, or selecting “Installation > Lens > Zoom” from the OSD menu.
- Adjust the distance between the projector and the screen.
- Adjust the aspect ratio by selecting “Installation > Aspect Ratio” from the OSD menu.

Image is not an even rectangle

- Perform keystone correction by pressing the “Keystone H” and “Keystone V” button on the remote control, or using “Installation > Geometry Correction > Basic Warp > Keystone Horizontal or Vertical” from the OSD menu.

Image is reversed

- To reverse the image, enable rear projection by selecting "Installation > Orientation > Direction > Rear Projection" from the OSD menu.

The projector stops responding to all controls

- If possible, turn off the projector, then unplug the power cord and wait at least 60 seconds before reconnecting power.

If the remote control does not work

- Check if the operating angle of the remote control is pointed within $\pm 30^\circ$ (front and back) to the remote receivers on the projector. Make sure there are any obstructions between the remote control and the projector.
- Check the remote batteries. Make sure batteries are inserted correctly. Replace the batteries if they are used up.
- Ensure you have set the correct IR code to the remote control. See "Remote Settings" in the chapter "Remote Setup", page 64.

15.2 Projector LED indication chart

LED diagnostics

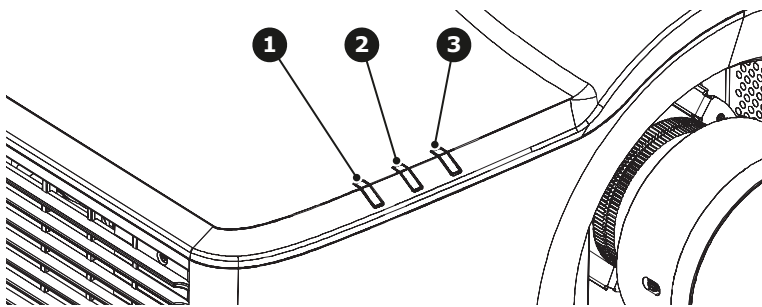


Image 15-1

- 1 Light LED
- 2 Status LED
- 3 AV Mute LED

Message	Light LED (1)			Status LED (2)			AV Mute LED (3)	
	Green	Orange	Red	Green	Orange	Red	Green	Orange
Standby State								
Power On Warm up					Flashing			
Power On & Laser diode on	Steady			Steady			Steady	
Power Off Cooling down					Flashing			
AV mute is off Image displayed	Steady			Steady			Steady	
AV mute is on Image is black	Steady			Steady				
Projector communication	Steady			Flashing			Steady	
Firmware upgrade				Flashing	Flashing			
Burn-in		Flashing			Flashing			
Factory reset			Steady	Steady				

Message	Light LED (1)			Status LED (2)			AV Mute LED (3)	
	Green	Orange	Red	Green	Orange	Red	Green	Orange
Error Over temperature						Steady		
Error Fan failure						Flashing		
Error Color Wheel failure						Flashing		

Specifications

A

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A.1 Specifications for G50–W6

Projector type	Single chip DLP laser phosphor projector
Technology	Single chip DLP laser phosphor projector
Resolution	1,920 x 1,200 (WUXGA)
Brightness	5,400 ANSI lumens 6,000 center lumens 6,400 ISO lumens
Brightness uniformity	90%
Contrast ratio	1,200:1 sequential; 6,000:1 dynamic; Extreme black: 750,000:1
Light source	Laser phosphor
Light source lifetime	Up to 20,000hrs
Aspect ratio	16:10
Orientation	360° rotation, no restrictions
Sealed DLP™ core	Yes
Color correction	Yes
CLO (constant light output)	Yes
Keystone correction	Yes
Image processing	Embedded warp & blend possible via Ptoolset
3D	Active stereoscopic 3D
Lens type	G-lenses - 0.37-0.4:1 / 0.65-0.75:1 / 0.75-0.95:1 / 0.95-1.22:1 / 1.22-1.53:1 / 1.52-2.92:1 / 2.90-5.50:1
Optical lens shift	Vertical up to 100%, depending on lens Horizontal up to 30%, depending on lens Motorized zoom and focus Motorized lens shift
Inputs	2 x HDMI™ In (Compliant with HDMI™ 2.0b, HDCP2.2) / 1 x Display Port (1.2a) / 1 x HDBaseT (HDCP1.4) / 1 x 3D SYNC In
Output	1 x HDMI™ Out (Loop through HDMI™ 1/HDMI™ 2/HDBaseT/DP) 1 x 3D SYNC Out 1 x DC 12V Out 1 x Audio out, 3.5mm phone jack
Input resolutions	Up to 4K @60Hz Refresh rates: 24Hz to 60Hz for WUXGA and 4K/4KUHD (4096 x 2160 / 3840 x 2160) 4K input signals will be scaled to the projector's output resolution
Software tools	Projector Toolset
Control	1 x RS232 (D-sub 9 pin) (PC Control) 1 x Wired In (3.5mm phone jack) (Remote In) 1 x RJ45 (LAN)
Network connection	10/100 Ethernet, RJ45

Speakers	10W / 6 Ohm *2
Power requirements	100-240V / 50-60Hz
Power consumption	300W @110V 290W @220V
Standby power	less than 0.5W
BTU per hour	1024 @110V 990 @220V
Noise level (typical at 25°C/ 77°F)	32dB(A) - 36dB(A) depending on the used mode
Operating temperature	0 ~ 40 °C (sea level)
Operating humidity	10 - 85% RH, non-condensing
Storage temperature	-10 ~ 60 °C
Storage humidity	5 - 90% RH, non-condensing
Dimensions (WxLxH)	without feet: 486 x 376 x 181.2mm
Weight	without lens: 11 kg / 24.25 lbs
Standard accessories	Power cord, wireless remote control
Certifications	CE, FCC Class A, cTUVUS, CCC, EAC, KCC, RCM, BIS, BSMI
Warranty	Limited 3 years parts and labor
*Note	Brightness levels +/- 10%

A.2 Specifications for G50–W7

Projector type	Single chip DLP laser phosphor projector
Resolution	1,920 x 1,200 (WUXGA)
Brightness	6,300 ANSI lumens 7,000 center lumens 7,400 ISO lumens
Brightness uniformity	90%
Contrast ratio	1,200:1 sequential; 6,000:1 dynamic; Extreme black: 750,000:1
Light source	Laser phosphor
Light source lifetime	Up to 20,000hrs
Aspect ratio	16:10
Orientation	360° rotation, no restrictions
Sealed DLP™ core	Yes
Color correction	Yes
CLO (constant light output)	Yes
Keystone correction	Yes

Image processing	Embedded warp & blend possible via Ptoolset
3D	Active stereoscopic 3D
Lens type	G-lenses - 0.37-0.4:1 / 0.65-0.75:1 / 0.75-0.95:1 / 0.95-1.22:1 / 1.22-1.53:1 / 1.52-2.92:1 / 2.90-5.50:1
Optical lens shift	Vertical up to 100%, depending on lens Horizontal up to 30%, depending on lens Motorized zoom and focus Motorized lens shift
Inputs	2 x HDMI™ In (Compliant with HDMI™ 2.0b, HDCP2.2) / 1 x Display Port (1.2a) / 1 x HDBaseT(HDCP1.4) / 1 x 3D SYNC In
Output	1 x HDMI™ Out (Loop through HDMI™ 1/HDMI™ 2/HDBaseT/DP) 1 x 3D SYNC Out 1 x DC 12V Out 1 x Audio out, 3.5mm phone jack
Input resolutions	Up to 4K @60Hz Refresh rates: 24Hz to 60Hz for WUXGA and 4K/4KUHD (4096 x 2160 / 3840 x 2160) 4K input signals will be scaled to the projector's output resolution
Software tools	Projector Toolset
Control	1 x RS232 (D-sub 9 pin) (PC Control) 1 x Wired In (3.5mm phone jack) (Remote In) 1 x RJ45 (LAN)
Network connection	10/100 Ethernet, RJ45
Speakers	10W / 6 Ohm *2
Power requirements	100-240V / 50-60Hz
Power consumption	390W @110V 380W @220V
Standby power	less than 0.5W
BTU per hour	1331 @110V 1297 @220V
Noise level (typical at 25°C/ 77°F)	32dB(A) - 36dB(A) depending on the used mode
Operating temperature	0 ~ 40 °C (sea level)
Operating humidity	10 - 85% RH, non-condensing
Storage temperature	-10 ~ 60 °C
Storage humidity	5 - 90% RH, non-condensing
Dimensions (WxLxH)	without feet: 486 x 376 x 181.2 mm
Weight	without lens: 11.8 kg / 26.01 lbs
Standard accessories	Power cord, wireless remote control
Certifications	CE, FCC Class A, cTUVUS, CCC, EAC, KCC, RCM, BIS, BSMI
Warranty	Limited 3 years parts and labor
*Note	Brightness levels +/- 10%

A.3 Specifications for G50–W8

Projector type	Single chip DLP laser phosphor projector
Resolution	1,920 x 1,200 (WUXGA)
Brightness	7,500 ANSI lumens 8,300 center lumens 8,900 ISO lumens
Brightness uniformity	90%
Contrast ratio	1,200:1 sequential; 6,000:1 dynamic; Extreme black: 750,000:1
Light source	Laser phosphor
Light source lifetime	Up to 20,000hrs
Aspect ratio	16:10
Orientation	360° rotation, no restrictions
Sealed DLP™ core	Yes
Color correction	Yes
CLO (constant light output)	Yes
Keystone correction	Yes
Image processing	Embedded warp & blend possible via Ptoolset
3D	Active stereoscopic 3D
Lens type	G-lenses - 0.37-0.4:1 / 0.65-0.75:1 / 0.75-0.95:1 / 0.95-1.22:1 / 1.22-1.53:1 / 1.52-2.92:1 / 2.90-5.50:1
Optical lens shift	Vertical up to 100%, depending on lens Horizontal up to 30%, depending on lens Motorized zoom and focus Motorized lens shift
Inputs	2x HDMI™ In (compliant with HDMI™ 2.0b, HDCP2.2) / 1 x Display Port (1.2a) / 1 x HDBaseT(HDCP1.4) / 1 x 3D SYNC In
Output	1 x HDMI™ Out (Loop through HDMI™ 1/HDMI™ 2/HDBaseT/DP) 1 x 3D SYNC Out 1 x DC 12V Out 1 x Audio out, 3.5mm phone jack
Input resolutions	Up to 4K @60Hz Refresh rates: 24Hz to 60Hz for WUXGA and 4K/4KUHD (4096 x 2160 / 3840 x 2160) 4K input signals will be scaled to the projector's output resolution
Software tools	Projector Toolset
Control	1 x RS232 (D-sub 9 pin) (PC Control) 1 x Wired In (3.5mm phone jack) (Remote In) 1 x RJ45 (LAN)
Network connection	10/100 Ethernet, RJ45
Speakers	10W / 6 Ohm *2

Power requirements	100-240V / 50-60Hz
Power consumption	500W @110V 490W @220V
Standby power	less than 0.5W
BTU per hour	1706 @110V 1672 @220V
Noise level (typical at 25°C/ 77°F)	34dB(A) - 38dB(A) depending on the used mode
Operating temperature	0 ~ 40 °C (sea level)
Operating humidity	10 - 85% RH, non-condensing
Storage temperature	-10 ~ 60 °C
Storage humidity	5 - 90% RH, non-condensing
Dimensions (WxLxH)	without feet: 486 x 376 x 181.2 mm
Weight	without lens: 13 kg / 28.66 lbs
Standard accessories	Power cord, wireless remote control
Certifications	CE, FCC Class A, cTUVUS, CCC, EAC, KCC, RCM, BIS, BSMI
Warranty	Limited 3 years parts and labor
*Note	Brightness levels +/- 10%

Supported formats

B

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B.1 Video Timings list – HDMI1 and HDMI2

Timing table HDMI – PC

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
XGA	1024x768	1.33	4:3	60	QD804B	V	V	V	V	V	V	V
				70		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
				120	Chroma 2235	V	V	V	V	V	V	V
SXGA	1152x864	1.33	4:3	75	QD804B	V	V	V	V	V	V	V
	1152x870	1.32		75		V	V	V	V	V	V	V
WXGA	1280x768	1.67	5:3	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
	1280x800	1.6	16:10	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
SXGA	1280x960	1.33	4:3	60		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
	1280x1024	1.25	5:4	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
						V	V	V	V	V	V	V
WXGA	1360x765	1.78	16:9	60	PC NB	V			V			
	1360x768			60	QD804B	V	V	V	V	V	V	V
	1366x768			60		V	V	V	V	V	V	
SXGA+	1400x1050	1.33	4:3	60		V	V	V	V	V	V	V
WXGA+	1440x900	1.6	16:10	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
WXGA++	1600x900	1.78	16:9	60		V	V	V	V	V	V	V
UXGA	1600x1200	1.33	4:3	50		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
WSXGA+	1680x1050	1.6	16:10	60		V	V	V	V	V	V	V
WUXGARB	1920x1200RB ²	1.6	16:10	50		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V

2. RB = Reduced Blanking

Timing table HDMI — TV

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	
HDTV (720p)	1280x720	1.78	16:9	50	QD804B	V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
				120	Chroma 2235	V	V	V	V	V	V	V
HDTV (1080i)	1920x1080	1.78	16:9	50	QD804B	V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
HDTV (1080p)	1920x1080	1.78	16:9	23.98	QD804B	V	V	V	V	V	V	V
				24		V	V	V	V	V	V	V
				25		V	V	V	V	V	V	V
				29.97		V	V	V	V	V	V	V
				30		V	V	V	V	V	V	V
				50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
				120		V	V	V	V			V

Timing table HDMI — Mandatory 3D

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	
Frame Packing (1080p)	1920x1080	1.78	16:9	23.98	Chroma 2235	V	V	V	V	V	V	V
				24		V	V	V	V	V	V	V
Frame Packing (720p)	1280x720	1.78	16:9	50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
Side by Side (1080i)	1920x1080	1.78	16:9	50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
Side by Side (1080p)	1920x1080	1.78	16:9	24								
				50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
Top and Bottom (720p)	1280x720	1.78	16:9	50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
Top and	1920x1080	1.78	16:9	23.98		V	V	V	V	V	V	V

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
Bottom (1080p)				24		V	V	V	V	V	V	V
				25.9		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V

Timing table HDMI — Field Sequential 3D

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
XGA	1024x768	1.33	4:3	120	ASUS 3D PC	V	V	V	V	V	V	V
HDTV	1280x720	1.78	16:9	120		V	V	V	V	V	V	V
WXGA	1280x800	1.60	16:10	120		V	V	V	V	V	V	V
1080p	1920x1080	1.78	16:9	120		V	V	V	V			V
				60		V	V	V	V	V	V	
WUX-GA	1920x1200	1.6	16:10	60		V	V	V	V	V	V	V

Timing table HDMI — 4K

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
3840x2160	3840x2160	1.78	16:9	24	Chroma 2238	V	V	V	V	V	V	V
				25		V	V	V	V	V	V	V
				30		V	V	V	V	V	V	V
				50		V			V			V
				60		V			V			V
4096x2160 SMPT-E	4096x2160	1.9		24		V	V	V	V	V	V	V
				25		V	V	V	V	V	V	V
				30		V	V	V	V	V	V	V
				50		V			V			V
				60		V			V			V

B.2 Video Timings list — DisplayPort

Timing table DP – PC

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
XGA	1024x768	1.33	4:3	60	QD804B	V	V	V	V	V	V	
				70		V	V	V	V	V	V	
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
				120	Chroma 2235	V	V	V	V	V	V	V
SXGA	1152x864	1.33	4:3	75	QD804B	V	V	V	V	V	V	V
	1152x870	1.32		75		V	V	V	V	V	V	
WXGA	1280x768	1.67	5:3	60		V	V	V	V	V	V	
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	
	1280x800	1.6	16:10	60		V	V	V	V	V	V	
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
SXGA	1280x960	1.33	4:3	60		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
	1280x1024	1.25	5:4	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
						V	V	V	V	V	V	V
WXGA	1360x765	1.78	16:9	60	PC NB	V			V			
	1360x768			60	QD804B	V	V	V	V	V	V	V
	1366x768			60		V	V	V	V	V	V	V
SXGA+	1400x1050	1.33	4:3	60		V	V	V	V	V	V	
WXGA+	1440x900	1.6	16:10	60		V	V	V	V	V	V	
				75		V	V	V	V	V	V	
				85		V	V	V	V	V	V	V
WXGA++	1600x900	1.78	16:9	60		V	V	V	V	V	V	V
UXGA	1600x1200	1.33	4:3	50		V	V	V	V	V	V	
				60		V	V	V	V	V	V	
WSXGA+	1680x1050	1.6	16:10	60		V	V	V	V	V	V	
WUXGARB	1920x1200RB ²	1.6	16:10	50		V	V	V	V	V	V	
				60		V	V	V	V	V	V	V

Timing table DP — TV

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
HDTV (720p)	1280x720	1.78	16:9	50	QD804B	V	V	V	V	V	V	
				59.94		V	V	V	V	V	V	
				60		V	V	V	V	V	V	V
				120	Chroma 2235	V	V	V	V	V	V	V
HDTV (1080i)	1920x1080	1.78	16:9	50	QD804B	V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
HDTV (1080p)	1920x1080	1.78	16:9	23.98		V	V	V	V	V	V	V
				24		V	V	V	V	V	V	V
				25		V	V	V	V	V	V	V
				29.97		V	V	V	V	V	V	V
				30		V	V	V	V	V	V	V
				50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
				120		V	V	V	V			V

Timing table DP — Mandatory 3D

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
Frame Packing (1080p)	1920x1080	1.78	16:9	23.98	Chroma 2235							
				24								
Frame Packing (720p)	1280x720	1.78	16:9	50								
				59.94								
				60								
Side by Side (1080i)	1920x1080	1.78	16:9	50								
				59.94								
				60								
Side by Side (1080p)	1920x1080	1.78	16:9	24								
				50								
				59.94								
Top and Bottom (720p)	1280x720	1.78	16:9	60								
				50								
				59.94								
Top and	1920x1080	1.78	16:9	23.98								

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
Bottom (1080p)				24								
				25.9								
				60								

Timing table DP — Field Sequential 3D

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
XGA	1024x768	1.33	4:3	120	ASUS 3D PC							
HDTV	1280x720	1.78	16:9	120		V	V	V	V	V	V	V
WXGA	1280x800	1.60	16:10	120		V	V	V	V			V
1080p	1920x1080	1.78	16:9	120		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
WUXGA	1920x1200	1.6	16:10	60		V	V	V	V	V	V	V

Timing table DP — 4K

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
3840x2160	3840x2160	1.78	16:9	24	Chroma 2238	V	V	V	V	V	V	V
				25		V	V	V	V	V	V	V
				30		V	V	V	V	V	V	V
				50		V	V	V	V			V
				60		V	V	V	V			V
4096x2160 SMPTE	4096x2160	1.9		24		V	V	V	V	V	V	V
				25		V	V	V	V	V	V	V
				30		V	V	V	V	V	V	V
				50		V	V	V	V			V
				60		V	V	V	V			V

B.3 Video Timings list – HDBaseT

Timing table HDBaseT – PC

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
XGA	1024x768	1.33	4:3	60	QD804B	V	V	V	V	V	V	V
				70		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
				120	Chroma 2235	V	V	V	V	V	V	V
SXGA	1152x864	1.33	4:3	75	QD804B	V	V	V	V	V	V	V
	1152x870	1.32		75		V	V	V	V	V	V	V
WXGA	1280x768	1.67	5:3	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
	1280x800	1.6	16:10	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
SXGA	1280x960	1.33	4:3	60		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
	1280x1024	1.25	5:4	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V		V
WXGA	1360x765	1.78	16:9	60	PC NB	V			V			
	1360x768			60	QD804B	V	V	V	V	V	V	V
	1366x768			60		V	V	V	V	V	V	V
SXGA+	1400x1050	1.33	4:3	60		V	V	V	V	V	V	V
WXGA+	1440x900	1.6	16:10	60		V	V	V	V	V	V	V
				75		V	V	V	V	V	V	V
				85		V	V	V	V	V	V	V
WXGA++	1600x900	1.78	16:9	60		V	V	V	V	V	V	V
UXGA	1600x1200	1.33	4:3	50		V	V	V	V	V	V	V
				60		V	V	V	V	V		V
WSXGA+	1680x1050	1.6	16:10	60		V	V	V	V	V	V	V
WUXGARB	1920x1200RB ²	1.6	16:10	50		V	V	V	V	V	V	V
				60		V	V	V	V	V		V

Timing table HDBaseT — TV

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
HDTV (720p)	1280x720	1.78	16:9	50	QD804B	V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
				120	Chroma 2235	V	V	V	V	V	V	V
HDTV (1080i)	1920x1080	1.78	16:9	50	QD804B	V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
HDTV (1080p)	1920x1080	1.78	16:9	23.98		V	V	V	V	V	V	V
				24		V	V	V	V	V	V	V
				25		V	V	V	V	V	V	V
				29.97		V	V	V	V	V	V	V
				30		V	V	V	V	V	V	V
				50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
				120		V	V	V	V			V

Timing table HDBaseT — Mandatory 3D

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
Frame Packing (1080p)	1920x1080	1.78	16:9	23.98	Chroma 2235	V	V	V	V	V	V	V
				24		V	V	V	V	V	V	V
Frame Packing (720p)	1280x720	1.78	16:9	50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
Side by Side (1080i)	1920x1080	1.78	16:9	50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
Side by Side (1080p)	1920x1080	1.78	16:9	24								
				50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
Top and Bottom (720p)	1280x720	1.78	16:9	50		V	V	V	V	V	V	V
				59.94		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
Top and	1920x1080	1.78	16:9	23.98		V	V	V	V	V	V	V

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
Bottom (1080p)				24		V	V	V	V	V	V	V
				25.9		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V

Timing table HDBaseT — Field Sequential 3D

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
XGA	1024x768	1.33	4:3	120	ASUS 3D PC	V	V	V	V	V	V	V
HDTV	1280x720	1.78	16:9	120		V	V	V	V	V	V	V
WXGA	1280x800	1.60	16:10	120		V	V	V	V	V	V	V
1080p	1920x1080	1.78	16:9	120		V	V	V	V	V	V	V
				60		V	V	V	V	V	V	V
WUXGA	1920x1200	1.6	16:10	60		V	V	V	V	V	V	V

Timing table HDBaseT — 4K

Signal format	Resolution	Aspect Ratio		V Sync (Hz)	Equipment	RGB			YCbCr 4:4:4			YCb-Cr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
3840x2160	3840x2160	1.78	16:9	24	Chroma 2238	V	V	V	V	V	V	V
				25		V	V	V	V	V	V	V
				30		V	V	V	V	V	V	V
				50								
				60								
4096x2160 SMPT-E	4096x2160	1.9		24		V			V			V
				25		V			V			V
				30		V			V			V
				50								
				60								

B.4 Compatibility mode

PBP/PIP Compatibility Chart:

PIP/BPB Matrix	HDMI-1	HDMI-2	HDBaseT
HDMI-1	—	V	V
HDMI-2	V	—	V
HDBaseT	V	V	—

B.5 EDID table

HDMI 1.4 / DisplayPort / HDBaseT

Established timing	Standard timing	Detail timing	Supported video timing
720x400 @70Hz	1024x768 @120Hz	1920x1200 @59Hz	640x480 @60Hz
720x400 @88Hz	1280x800 @75Hz	1920x1080 @60Hz	720x480 @60Hz
640x480 @60Hz	1280x1024 @60Hz		1280x720 @60Hz
640x480 @67Hz	1360x765 @60Hz		1920x1080i @60Hz
640x480 @72Hz	800x600 @120Hz		720x480i @60Hz
640x480 @75Hz	1400x1050 @60Hz		720x576 @50Hz
800x600 @56Hz	1600x1200 @60Hz		1280x720 @50Hz
800x600 @60Hz	1680x1050 @60Hz		1920x1080i @50Hz
800x600 @72Hz			720x576i @50Hz
800x600 @75Hz			1920x1080 @50Hz
832x624 @75Hz			1920x1080 @24Hz
1024x768 @60Hz			1440x480 @60Hz
1024x768 @70Hz			1920x1080 @25Hz
1024x768 @75Hz			1280x720 @120Hz
1280x1024 @75Hz			1920x1080 @120Hz
1152x870 @75Hz			3840x2160 @24Hz
			3840x2160 @25Hz
			3840x2160 @30Hz
			4096x2160 @24Hz
			4096x2160 @25Hz
			4096x2160 @30Hz

HDMI 2.0

Established timing	Standard timing	Detail timing	Supported video timing
720x400@70Hz	1024x768@120Hz	1920x1200@59Hz	640x480@60Hz
720x400@88Hz	1280x800@75Hz	1920x1080@60Hz	720x480@60Hz
640x480@60Hz	1280x1024@60Hz		1280x1080i@60Hz
640x480@67Hz	1360x765@60Hz		1920x1080i@60Hz
640x480@72Hz	800x600@120Hz		720x480i@60Hz
640x480@75Hz	1400x1050@60Hz		720x576@50Hz
800x600@56Hz	1600x1200@60Hz		1280x720@50Hz
800x600@60Hz	1680x1050@60Hz		1920x1080i@50Hz
800x600@72Hz			720x576i@50Hz
800x600@75Hz			1920x1080@50Hz
832x624@75Hz			1920x1080@24Hz
1024x768@60Hz			1440x480@60Hz
1024x768@70Hz			1920x1080@25Hz
1024x768@75Hz			1280x720@120Hz
1280x1024@75Hz			1920x1080@120Hz
1152x870@75Hz			3840x2160@24Hz
			3840x2160@25Hz
			3840x2160@30Hz
			3840x2160@50Hz
			3840x2160@60Hz

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C.1 Product and contact references

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.

Manufacturer address

Refer to the cover page of this manual for the manufacturer address.

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, <https://www.barco.com>.

C.2 Product compliance EU

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: <https://www.barco.com/about/sustainability/waste-of-electronic-equipment-customers>

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.

EMC notices Europe

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.

C.3 Product compliance UK

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

C.4 Product compliance Turkey

Turkey RoHS compliance



Türkiye Cumhuriyeti: AEEE Yönetmeliğine Uygundur.
[Republic of Turkey: In conformity with the WEEE Regulation]

C.5 Product compliance Russia

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) and Restriction of use of Hazardous Substances in radio and electronic devices (RoHS Technical regulation, CU TR 037/2016).

C.6 Product compliance US

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

C.7 Product compliance Taiwan

EMC notices Taiwan

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。

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： 投影機， 型號 (型式)： G50-W6, G50-W7, G50-W8 Equipment name: Projector, Type designation: G50-W6, G50-W7, G50-W8						
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)
塑膠外殼 Plastic shell	—	○	○	○	○	○
電源供應器 Power supply	—	○	○	○	○	○
印刷電路板 Printed circuit board	—	○	○	○	○	○
絕緣墊片 Insulating gasket	○	○	○	○	○	○
光學鏡片 Optical lenses	—	○	○	○	○	○
雷射模組 Laser module	—	○	○	○	○	○
風扇模組 Fan module	—	○	○	○	○	○
鐵件 Iron frame	—	○	○	○	○	○
線材 wire (interlock switch/power cord)	—	○	—	○	○	○
喇叭 Speaker	—	○	○	○	○	○
馬達 Motor	—	○	○	○	○	○
自復式保險絲 Resettable fuse (polyswitch)	○	○	○	○	○	○
配件 (如:遙控器等) Accessories (remote control, etc.)	—	○	○	○	○	○
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.8 Product compliance China

EMC notices China

GB/T 9254.1 A级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。

产品中有害物质的名称及含有信息表 (China RoHS compliance)

根据中华人民共和国《电器电子产品有害物质限制使用管理办法》规定，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。

部件名称 Component name	有害物质 Hazardous Substances or Elements									
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr ⁶⁺)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	邻苯二甲酸二正丁酯 (DBP)	邻苯二甲酸二异丁酯 (DIBP)	邻苯二甲酸丁基苄酯 (BBP)	邻苯二甲酸二(2-乙基)己酯 (DEHP)
外壳 Shell	X	O	O	O	O	O	O	O	O	O
主板 Motherboard	X	O	O	O	O	O	O	O	O	O
引擎模块 Engine module	X	O	O	O	O	O	O	O	O	O
雷射光源模组 Laser light source module	X	O	O	O	O	O	O	O	O	O
风扇 Fan	X	O	O	O	O	O	O	O	O	O
铁件 Iron frame	X	O	O	O	O	O	O	O	O	O
线材 Wire	X	O	O	O	O	O	O	O	O	O
遥控器 Remote control	X	O	O	O	O	O	O	O	O	O
包装 Package	O	O	O	O	O	O	O	O	O	O
注1: O：表示该有害物质在该部件所有均质材料中的含量均不超出电器电子产品有害物质限制使用国家标准要求。 X：表示该有害物质至少在该部件的某一均质材料中含量超出电器电子产品有害物质限制使用国家标准要求。 注2: 以上未列出的部件，表明其有害物质含量均不超出电器电子产品有害物质限制使用国家标准要求。										



Image C-1

C.9 Product compliance Korea

KC Korea

기종별 사용자안내문

A급기기 (업무용방송통신기자재) 이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

C.10 Trademark notice

HDMI™

The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

DisplayPort™

DisplayPort™, the DisplayPort™ logo and DisplayPortHDR™ logo are trademarks owned by the Video Electronics Standards Association (VESA®) in the United States and other countries.

HDBaseT™

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PJLink™

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DLP™

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AMX™

AMX™ is a registered trademark of AMX LLC.



All other trademarks and registered trademarks are trademarks or registered trademarks of their respective holders. In this manual, ™ and ® marks are not specified.

C.11 Product privacy statement

About

Learn more about Barco's Product Privacy Statement:

<https://www.barco.com/en/about/trust-center/product-privacy-statement>.

Which data is captured and why

Following data³ is captured for general secure operation of the product.

- IP addresses
- User ID information
- Date and time information
- Mobile network information
- Network configuration information
- Device identification information
- Device operational conditions
- Device environmental conditions
- Device performance metric
- Device configuration information
 - Resolution
 - Brightness
- Device input configuration
 - Active inputs
 - Input resolution

Data retention mechanism

An administrator should modify or delete a user (upon user request, or when the user does not work for the company anymore), either via the Users feature, or via a factory reset executed as administrator.

Logs may contain user names and IP addresses and are subject to the retention policy, but cannot be deleted by the user. The user can send a request to dataprotection@barco.com.

3. Only if applicable for the product type and model.

Glossary

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 eye 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.

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