DIGITAL PROJECTION

A Delta Associate Company

Insight Laser 37000 8K

High Brightness Digital Video Projector

INSTALLATION & QUICK START GUIDE

CONNECTION GUIDE

ON SCREEN DISPLAY (OSD) OPERATING GUIDE

REFERENCE GUIDE

123-103A

Rev A January 2023

Introduction

Congratulations on your purchase of this Digital Projection product. Your projector has the following key features:

- 8K-UHD projector.
- Support for Dual Pipe 3D format.
- 3G-SDI with loop-through.
- 12G-SDI with loop-through.
- Red laser assist for enhanced color fidelity.
- Blanking control for custom input window sizing.
- Control via LAN HDBaseT and RS232.
- Motorised lens mount with Shift, Zoom and Focus using compatible lenses.
- Separate control of screen and source aspect ratio.

A serial number is located on the side of the projector. Please record it here for future reference:

Follow the instructions in this manual carefully to ensure safe and long-lasting use of the projector.

Notes

About this document

Symbols used in this document

Many pages in this document have a dedicated area for notes. The information in that area is accompanied by the following symbols:

LASER WARNING: this symbol indicates that there is a potential hazard of eye exposure to laser radiation unless the instructions are closely followed.

LIGHT HAZARD WARNING: this symbol indicates that there is a danger of exposure to intensive light that may result in personal injury unless the instructions are closely followed.

ELECTRICAL WARNING: this symbol indicates that there is a danger of electrical shock unless the instructions are closely followed.

WARNING: this symbol indicates that there is a danger of physical injury to yourself and/or damage to the equipment unless the instructions are closely followed.

NOTE: this symbol indicates that there is some important information that you should read.

Product revision

Because we at Digital Projection continually strive to improve our products, we may change specifications and designs, and add new features without prior notice.

Additional Documentation

Updates to this manual may be available online.

Please use the QR code (also located on the projector) to access the latest Insight projector user guides and other documentation via the Digital Projection website.

Or visit the Digital Projection website to download the latest user guide and other documentation.

Legal notice

Third Party Credits

DMD™, Digital Micromirror Device™ and DLP™ are trademarks of Texas Instruments Inc.

Notes

Electrical and Physical Specifications

Mains Voltage	200-240 VAC 22A 50/60Hz
Operating Temperature	0°C to 35°C (32°F to 95°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Operating Humidity	10% to 80% non-condensing
Storage Humidity	10% to 90% non-condensing
Dimensions	L: 1130 mm (44.5 in), W: 750 mm (29.5in), H 493 mm (19.4in)
Weight	151 kg (333 lb) without lens
Power Consumption	at 240 VAC: 3906 W typical, 4000 W max (Normal Mode) at 240 VAC: 4083 W typical, 4400 W max (Normal Mode)
Standby Power	< 6 W
Thermal Dissipation	at 240 VAC: 13649 BTU/hr (Normal mode) at 240 VAC: 13649 BTU/hr (High Altitude mode)
Fan Noise	51 dBA Max, 53 dBA Typical (Normal mode) 68 dBA Max, 66 dBA Typical (High Altitude)

Specifications are subject to change without notice.

Laser Parameters

Wavelength (Red)	635nm - 647nm
Wavelength (Blue)	450nm - 460nm
Mode of operation	Pulsed, due to frame rate
Pulse duration (Red)	1.77ms
Pulse duration (Blue)	0.87ms
Maximum pulse energy (Red)	0.77mJ
Maximum pulse energy (Blue)	0.45mJ

Laser Power

The laser power for this projector is related to the fitted lens:

Lens (4K)	Lens (8K)	Laser Power
1.13 - 1.72 : 1 zoom	1.21 - 1.83 : 1 zoom	
1.65 : 2.60 : 1 zoom	1.76 : 2.77 : 1 zoom	
2.53 - 4.98 : 1 zoom	2.70 - 5.31 : 1 zoom	

Hazard Distance

The hazard distance for this projector is related to the fitted lens:

Notes

Lens (4K)	Lens (8K)	Hazard Distance
1.13 - 1.72 : 1 zoom	1.21 - 1.83 : 1 zoom	2.5
1.65 : 2.60 : 1 zoom	1.76 : 2.77 : 1 zoom	6
2.53 - 4.98 : 1 zoom	2.70 - 5.31 : 1 zoom	7.5

Light Output

The light output for this projector is 37,000 Lumens.

Notes

Compliance with International Standards

RF Interference

FCC

The Federal Communications Commission does not allow any modifications or changes to the unit EXCEPT those specified by Digital Projection in this manual. Failure to comply with this government regulation could void your right to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant with 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.

Noise

GSGV Acoustic Noise Information Ordinance

The sound pressure level is less than 51 dB (A) at normal operating mode according to ISO 3744 or ISO 7779.

European Waste Electrical and Electronic Equipment (WEEE) Directive

Digital Projection Ltd is fully committed to minimizing Waste Electrical and Electronic Equipment. Our products are designed with reuse, recycling and recovery of all components in mind. To this end, at end of life, your projector may be returned to Digital Projection Ltd or its agent so that the environmental impact can be minimized.

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General Precautions

Warning! Death or Serious Injury could occur if the following precautions are ignored

Eye Hazard! Do not look directly into the lens when the light source is on. The high brightness can cause permanent eye damage

Fire Hazard! Keep any combustible material away from hot surfaces and the projected beam. Ensure cables do not contact hot surfaces

Shock Hazard! Use only authorized components, tools, accessories and replacement parts specified by the manufacturer

Trip Hazard! Locate cables where they cannot be pulled, tripped over or damaged by persons or objects

Operate the product in the specified operating environment and conditions

Product should be powered off and disconnected from the mains before any service or maintenance operation

Keep body parts, hair, clothing and jewelery away from moving parts in the product.

Do not operate the product without a lens installed

Use a lens plug when installing or moving the product

The unit is never to be operated if the unit is defective or the cover or seal is damaged.

No maintenance allowed by end user.

Do not open the cabinet. There are no user serviceable parts inside.

No service is allowed except by authorized personnel.

Service personnel should use effective laser safety goggles during service operations.

Use only the power cable provided.

Ensure that the power outlet includes a Ground connection, as this equipment MUST be earthed.

Take care to prevent small objects such as paper or wire from falling into the projector. If this does happen, switch off immediately, and have the objects removed by authorized service personnel.

Do not expose the projector to rain or moisture, and do not place any liquids on top of the projector.

Unplug before cleaning, and use a damp, not wet, cloth.

Do not touch the power plug with wet hands.

Notes

Do not touch the power plug during a thunder storm.

Handle the power cable carefully and avoid sharp bends. Do not use a damaged power cable.

Do not touch the ventilation outlets, as they will become hot in use.

Do not cover or obstruct the ventilation outlets or inlets.

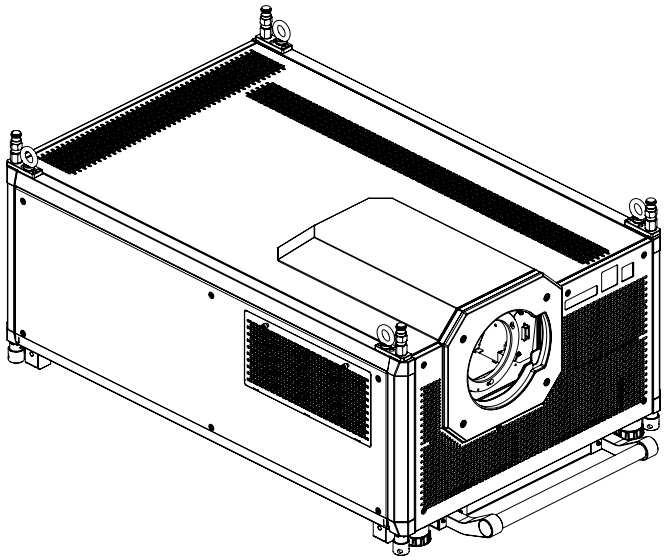
Do not cover the lens whilst the projector is switched on. This could cause a fire.

Always allow the projector to cool for 5 minutes before disconnecting the power or moving the projector.

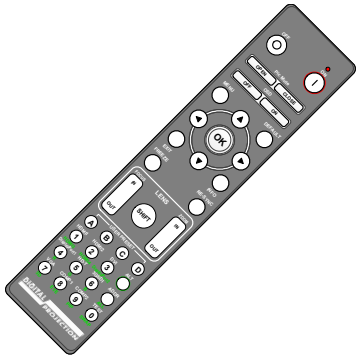
Never use strong detergents or solvents such as alcohol or thinners to clean the projector and lens.

Notes

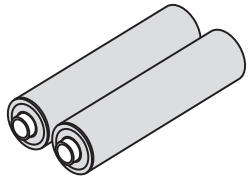
What's in the box?



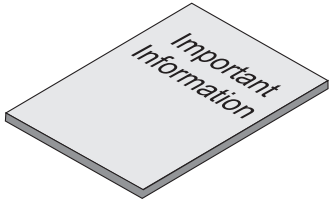
Projector



Remote Control



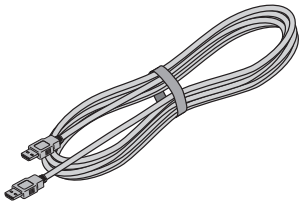
Batteries (2xAAA)



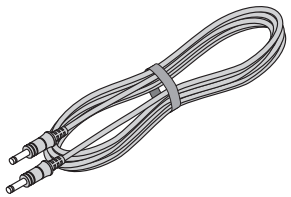
Important Information Book

Power Cable, UK / RoW

Power Cable, USA only



HDMI Cable



Remote Control Cable

Notes

Make sure your box contains everything listed. If any pieces are missing, contact your dealer.

Only one remote is supplied with the projector.

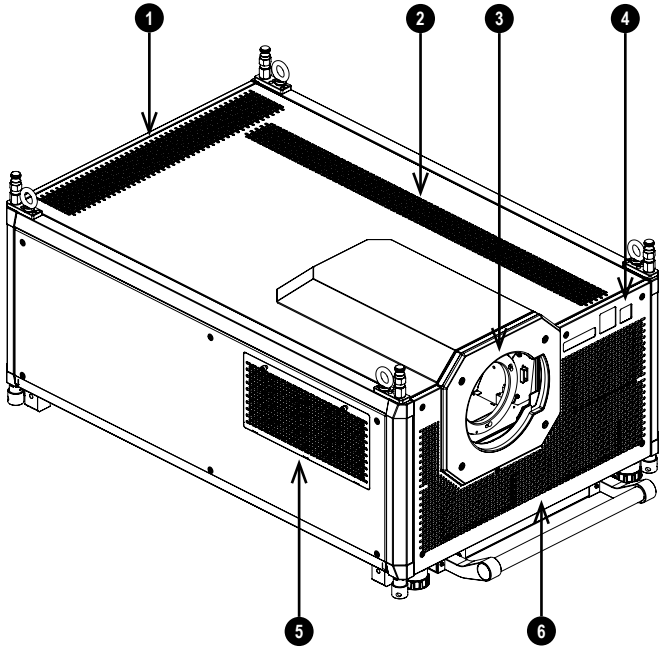
Save and store the original box and packing materials, in case you ever need to ship your projector.

The projector is shipped without a lens.

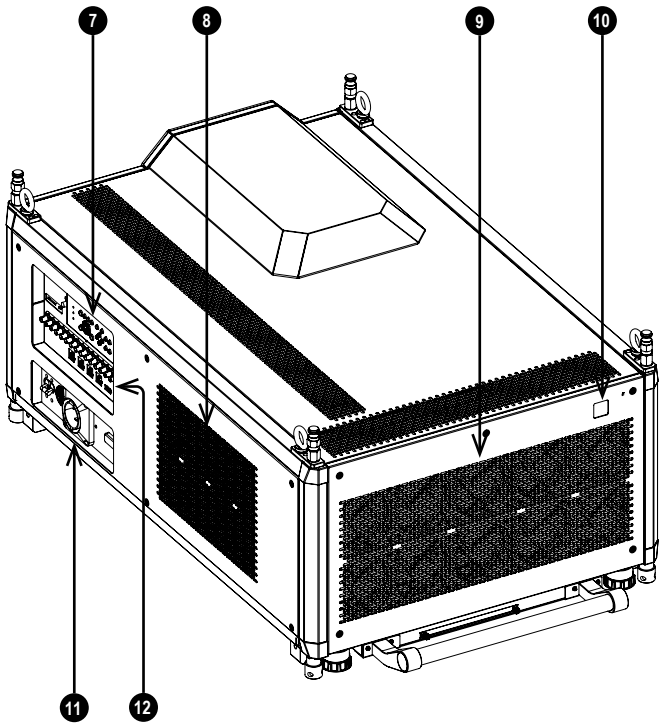
Only the appropriate cable for destination territory is supplied with the projector

Projector overview

1. Air inlet
2. Air inlet
3. Lens mount
4. Front infrared window
5. Air inlet
6. Air inlet
7. Control panel
8. Air outlet
9. Air outlet
10. Rear infrared window
11. Mains socket
12. Connections panel



Front View



Rear View

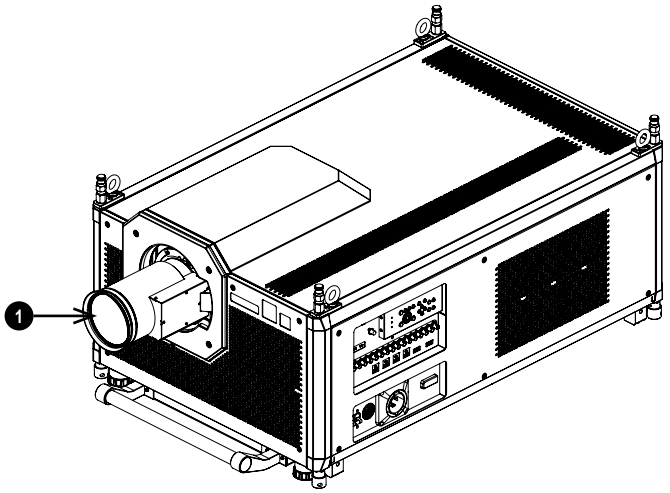
Notes

See Product labels on page 86 for details about the labels that are located on the projector.

Location of Laser Aperture

1. The laser aperture is located as indicated below.

Do not look directly at the light coming from the lens.

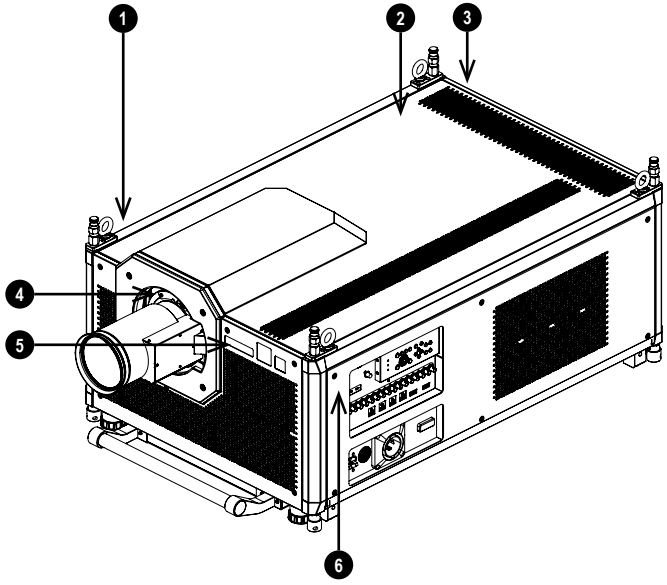


Notes

Interlock Switches

Interlock switches are installed inside the projector. These will power-off the system when activated.

1. Will be activated when the right side cover is removed.
2. Will be activated when the top cover is removed.
3. Will be activated when the rear cover is removed.
4. Will be activated when the projection lens is removed or misplaced.
5. Will be activated when the front cover is removed.
6. Will be activated when the left side cover is removed.



Notes

Installation Precautions

The projector must be installed only by suitably qualified personnel, in accordance with local building codes.

The projector is heavy. Use safe handling techniques when lifting the projector.

Do not drop or knock the projector.

Do not install the projector close to anything that might be affected by its operational heat, for instance, polystyrene ceiling tiles, curtains etc. Place the projector in a dry area away from sources of dust, moisture, steam, smoke, sunlight or heat.

Ensure that the intake vents do not recycle hot air from the exhaust vent.
When operating the projector in an enclosed space, ensure that the surrounding air temperature within the enclosure does not exceed operation temperature while the projector is running, and the air intake and exhaust vents are unobstructed.

All enclosures should pass a certified thermal evaluation to ensure that the projector does not recycle exhaust air, as this may cause the device to shutdown even if the enclosure temperature is with the acceptable operation temperature range.

Avoid installing at high temperature, insufficient cooling and heavy dust locations.
Keep your product away from fluorescent lamps (>1 Meter) to avoid malfunction caused by IR interference.

Avoid installing near an air conditioner duct or a subwoofer.

The projector should be installed as close to the power outlet as possible.

The power connection should be easily accessible, so that it can be disconnected in an emergency.

Please pay attention to projector installation with respect to other staging laser light equipment set-up. These systems can cause permanent damage to the DMD™ imaging devices used in our projectors. This damage is not covered by our warranty.

When using projectors in environments with third party high power laser systems avoid direct laser beams pointing towards the projection lens. This may cause incident light to converge into the optical engine and cause damage to the DLP™ DMD™.

Before installation, make sure that the surface, ceiling or rigging that is to support the projector is capable of supporting the combined weight of the projector and lens.

Backup safety chains or wires should always be used with ceiling mount installations.

When installing a ceiling mount, make sure the weight limit is not exceeded and the projector is firmly secured.

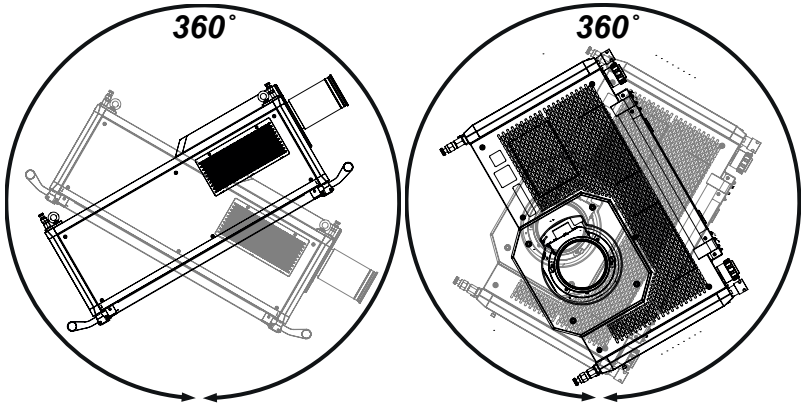
When stacking projectors, the stack MUST be vertical, to ensure that the stresses are distributed to all four chassis corners.

Do not stack more than 3 projectors.

Do not use the provided eye bolts to suspend more than one projector. The eye bolts must not be used with stacks as they can carry the weight of one projector only.

Notes

The projector can be operated any position, as shown in the diagram:



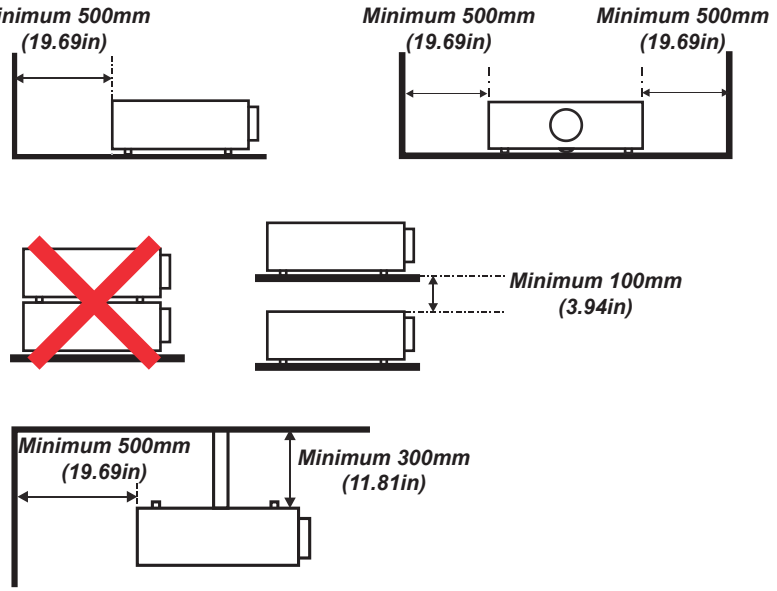
Tilt (Left) and Roll (Right)

The following positions are to be avoided as they can reduce motor life:
Lens facing down
Inputs and outputs facing up

It is recommended to keep the inputs facing upwards when installing the projector in portrait mode.

Notes

Allow at least 50cm (19.7in) of space between the ventilation outlets and any wall, and 30cm (11.8in) on all other sides.



Example Positioning

Notes

Make sure the lens cap is removed from the lens before operating the projector. Light energy levels have been known to cause damage to both the lens and projector optics. This damage is not covered by our warranty.

Make sure the lens cap is removed from the rear of the lens before it is inserted into the projector.

Connect the LAN cable only to a computer LAN connection. Other similar connectors may have a dangerously high voltage source.

The power cord and signal cable should be connected before the projector is powered on. During startup and operation, DO NOT insert or remove the signal cable or the power cord to avoid damaging the projector.

Turn on High Altitude Mode when located in high altitude areas.

The projector generates heat during use. The internal fans dissipate the heat of the projector when shutting down, which could continue for a certain period. After the projector enters STANDBY MODE, remove the power cord. DO NOT remove the power cord during shutdown as it may cause damage to the projector and may affect the service life of the projector.

Do not place heavy objects on top of the projector chassis. Only the chassis corners and the optional rigging frame are capable of withstanding the weight of another projector.

Notes

Laser Safety Precautions

Warning! Death or Serious Injury could occur if the following precautions are ignored

Permanent/Temporary Blindness Hazard

Not for household use.

Class 1 Laser Product, IEC 60825-1:2014.
Class 3R laser product GB7247.1-2012 / IEC 60825-1:2007.
No direct exposure to the beam shall be permitted, RG3 IEC 62471-5:2015.

Operators shall control access to the beam within the hazard distance or install the product at a height that will prevent exposure of the spectator's eyes within the hazard distance.

The product should be installed and operated in accordance with the provisions of IEC 62471-5:2015 and the Important Information document or User Manual by instructed and skilled persons only (IEC 62368-1:2020).

Caution – use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Lens Change should only be carried out by instructed and skilled persons in accordance with the Important Information document or User Manual. If in doubt consult your dealer.

Ensure the projector is switched off and AC power removed before attempting a lens change

Do not attempt to operate the product without covers in place.

Do not look directly into the lens when the light source is on. The high brightness can cause permanent eye damage.

Notes

See Product labels on page 86 for details about the labels that are located on the projector.

Risk Group 3 Laser Hazard Installation Precautions

This product is a Class 1 Risk Group 3 laser product. It must be installed in a safe place and must be handled by qualified and professionally trained personnel.

Do not attempt to access the internal hardware of the projector. Do not a attempt to modify or remove the laser module.

Do not operate the projector without its protective covers.

Do not operate the projector without a lens installed.

Please consult with a qualified professional to install or remove the lens.

This lens will be supplied with the lens hood pre-fitted.

Light Hazard Warning

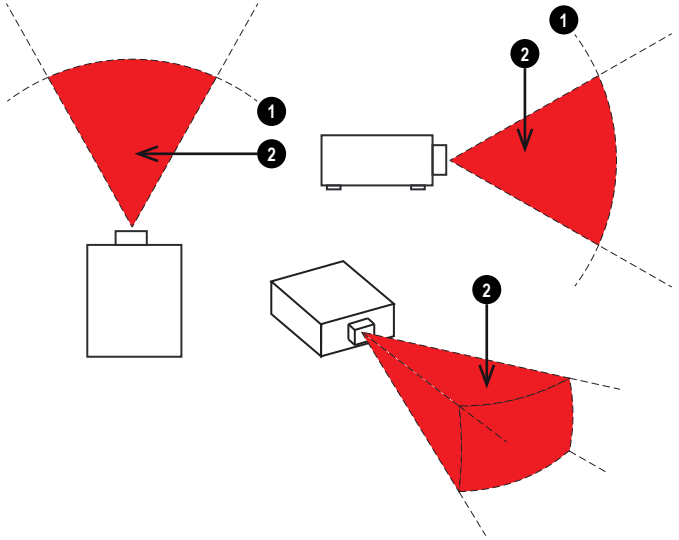
No direct exposure to the beam is permitted, RG3 IEC 62471-5:2015.
Operators should control access to the beam within the hazard distance or install the projector at sufficient height to prevent exposures of spectators' eyes within the hazard area.
When the laser is installed overhead, allow a minimum of 3m between the floor surface and the Risk Group 3 area.

Light Hazard Distance and Hazard Zone

The hazard distance is the distance measured from the projection lens at which the intensity or energy per unit of surface is lower than the applicable exposure limit on the cornea or skin. ❶

The hazard zone is the area from the projection lens up to the hazard distance that encompasses where the projected beam is considered hazardous. ❷

If the person is within the hazard zone, the beam is considered unsafe for exposure.



Notes

Operators should control access to the beam within the hazard distance or install the projector at sufficient height to prevent exposures of spectators' eyes within the hazard area.

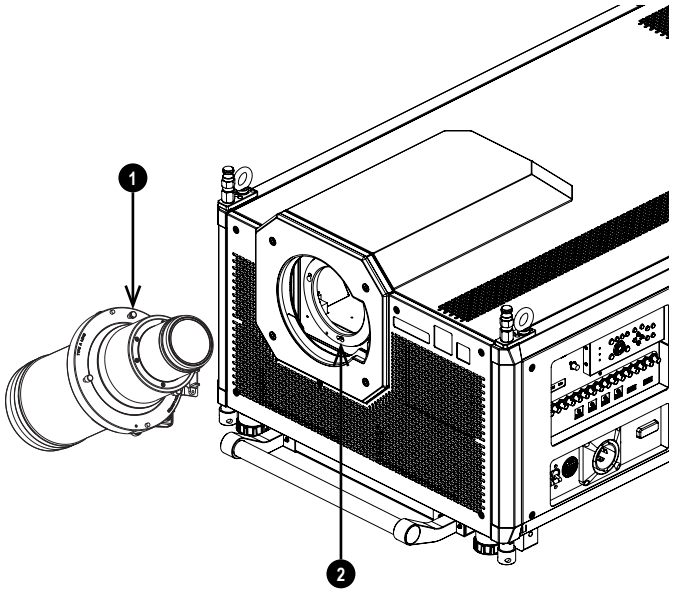
The hazard distance for this projector is related to the fitted lens. See Laser Parameters on page 4 for the light hazard distances for this projector.

When the laser is installed overhead, allow a minimum of 3m between the floor surface and the Light Hazard Zone.

Fitting a lens

Inserting a new lens

1. Remove the lens aperture cap from the projector
2. Remove the lens caps from the lens
3. Align the lens with the lens mount and insert the lens:
    - Use the motor connector to orient the lens with the lens mount
    - The indentation on the lens ring should be aligned with the top of the lens mount
    - Three locating studs ❶ on the lens should be aligned with the three slots ❷ on the lens mount



Notes

The projector must be fully turned off prior to attempting a lens change.

When changing the lens, avoid using excessive force as this may damage the equipment.

Avoid touching the surface of the lens as this may result in image impairment.

FDA regulations requires that a lens hood is permanently fitted when using the 2.53 - 4.98 : 1 zoom lens (4K) or 2.70 - 5.31 : 1 zoom lens (8K) with the Insight Laser range of projectors in the United States of America. This lens will be supplied with the lens hood pre-fitted.

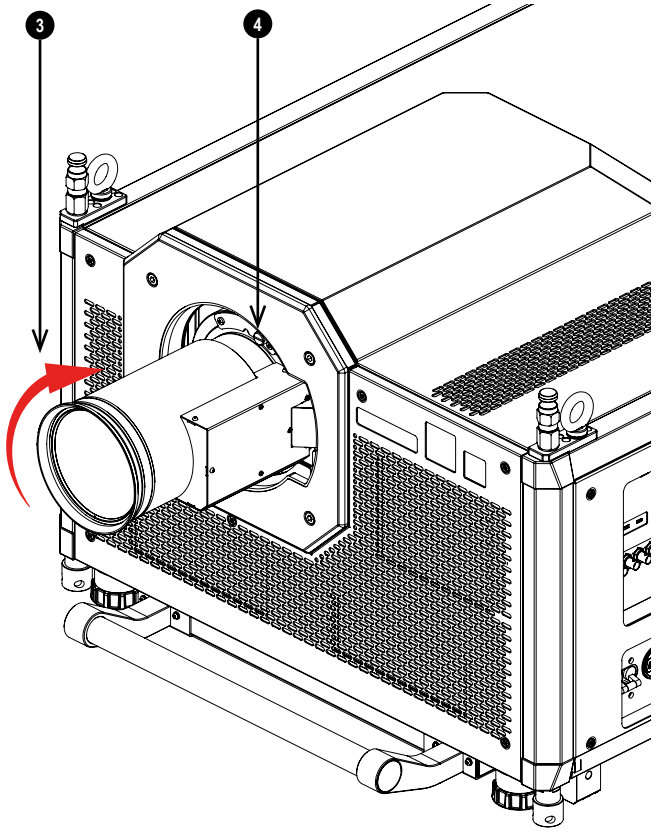
The lens is shipped separately.

Take care to preserve the original lens packaging and protective caps for future use.

The projector will not turn on the light source without a lens fitted.

When a new lens is fitted into the projector, it must be calibrated. See Lens Calibrate on page 1.

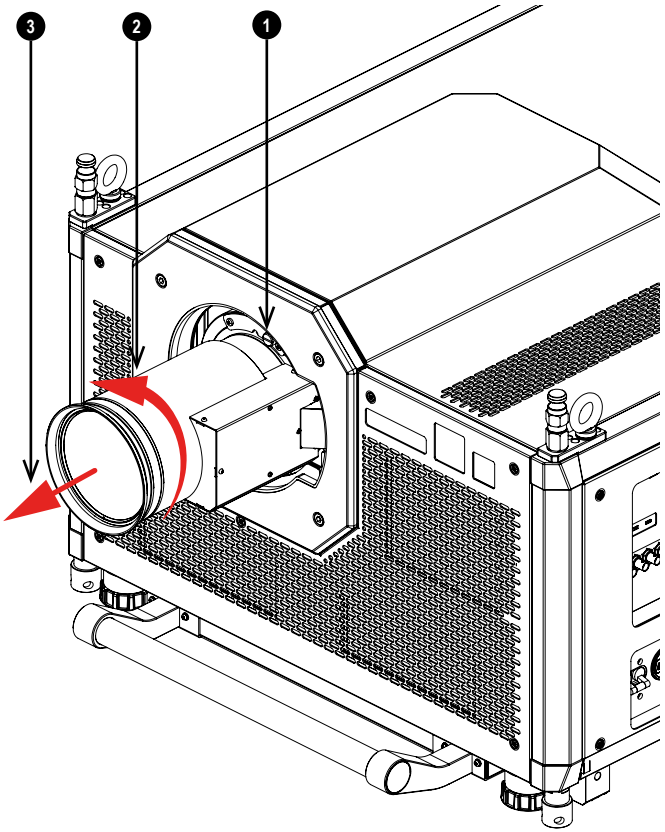
4. Rotate the lens clockwise ❸ until the locating studs are all the way into the slots
5. Tighten the two fixing screws ❹ on the lens collar



Notes

Removing the lens

1. Loosen the two fixing screws on the lens collar
2. Rotate the lens anti-clockwise until the locating studs are out of the slots, then pull the lens out.
3. Fit the lens caps to the lens

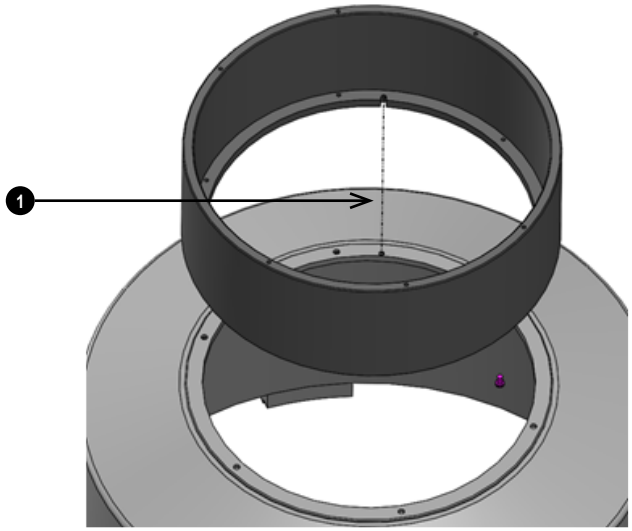


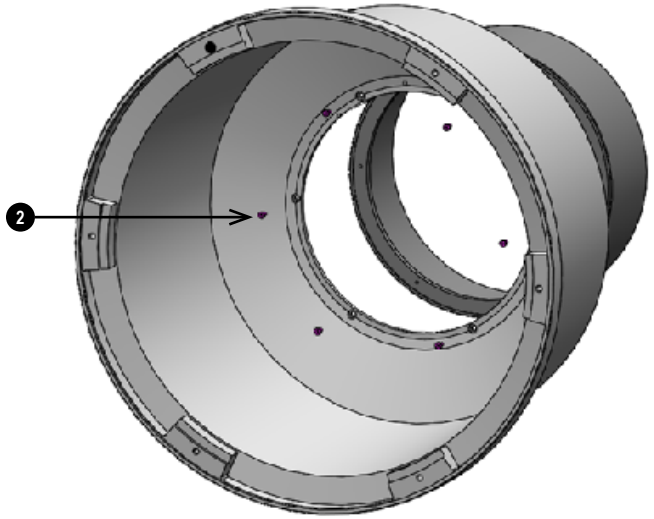
Notes

Fitting a lens hood

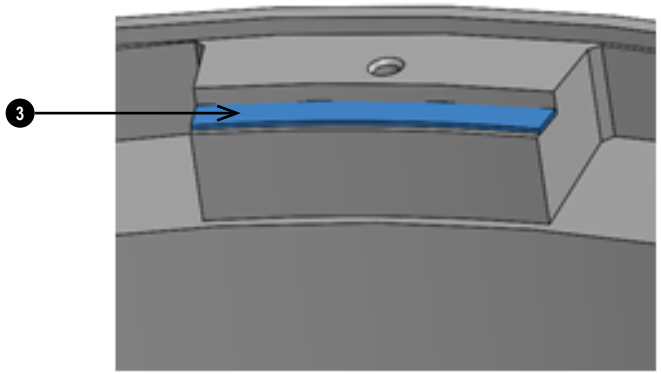
A lens hood can be fitted to the lens before the lens is inserted.

1. Align the guide pin on the adapter ring with the slots on the lens hood and fit the adapter to the lens hood ❶
2. Insert and tighten the six fixing screws to secure the adapter ring to the lens hood ❷





3. Place the lens glass over the lens hood. Make sure the glass is located correctly ❸



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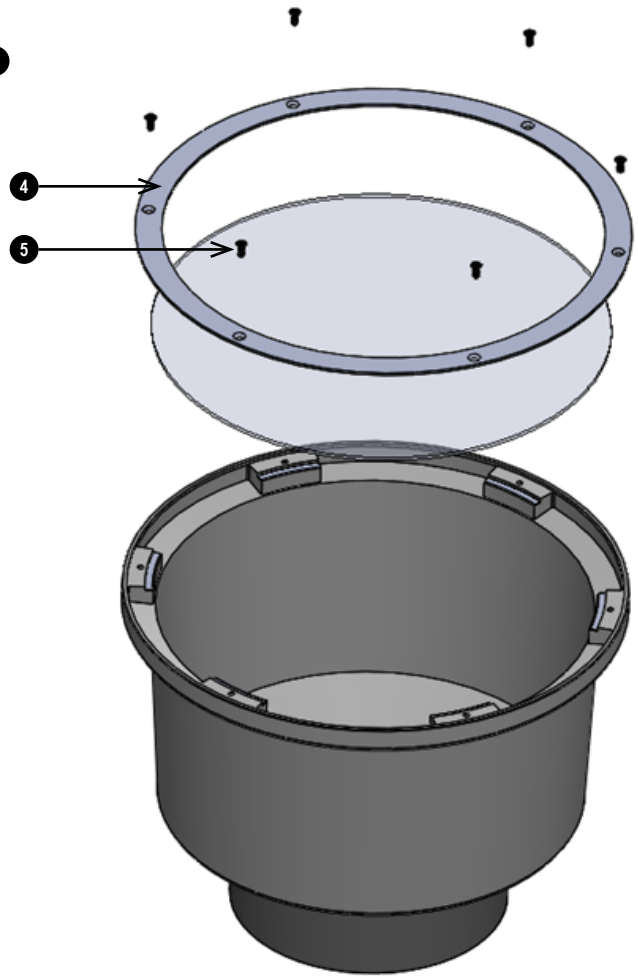
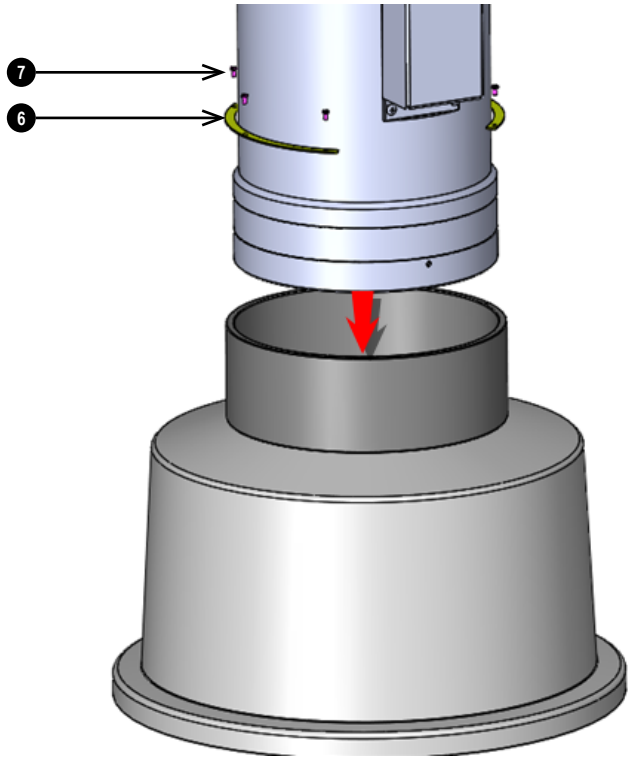
4. Place the plate over the lens glass ❹
5. Insert and tighten the six fixing screws to secure the plate and lens glass to the lens hood ❺



Notes

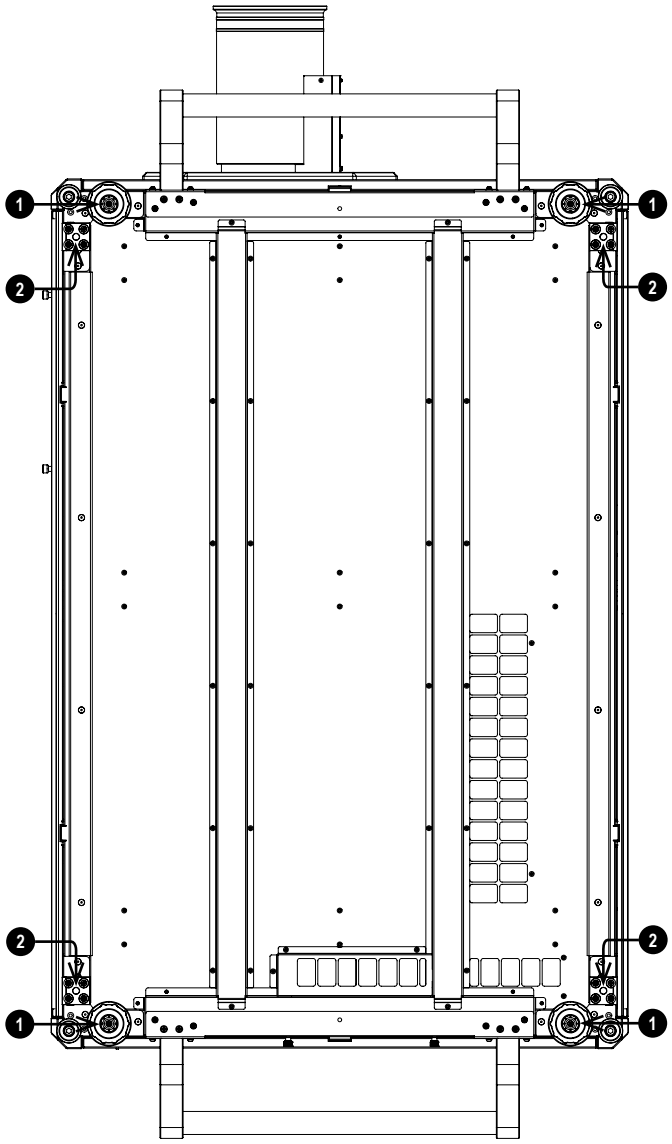
6. Insert the lens into the adapter ring. Make sure the plate ring ❻ is located against the adapter ring.
7. Insert and tighten the six fixing screws to secure the lens to the lens hood ❼



Notes

Positioning the screen and projector

1. Install the screen, ensuring that it is in the best position for viewing by your audience.
2. Mount the projector, ensuring that it is at a suitable distance from the screen for the image to fill the screen.
   The drawing shows the positions of the mounting points:
   - **Four adjustable feet for tabletop mount** ❶.
     Set the adjustable feet so that the projector is level, and perpendicular to the screen.
   - **Four M10 holes for ceiling mount** ❷**.**
     The mounting screws should not penetrate more than 18 mm into the body of the projector.



Projector Bottom

Notes

Always allow the projector to cool for 5 minutes before disconnecting the power or moving the projector.

Ensure that there is at least 50 cm (19.7 in) of space between the ventilation outlets and any wall, and 30 cm (11.8 in) on all other sides.

Do not use the threaded holes for the adjustable feet to hang or mount the projector.

Avoid extending the adjustable feet to the limit of the thread.

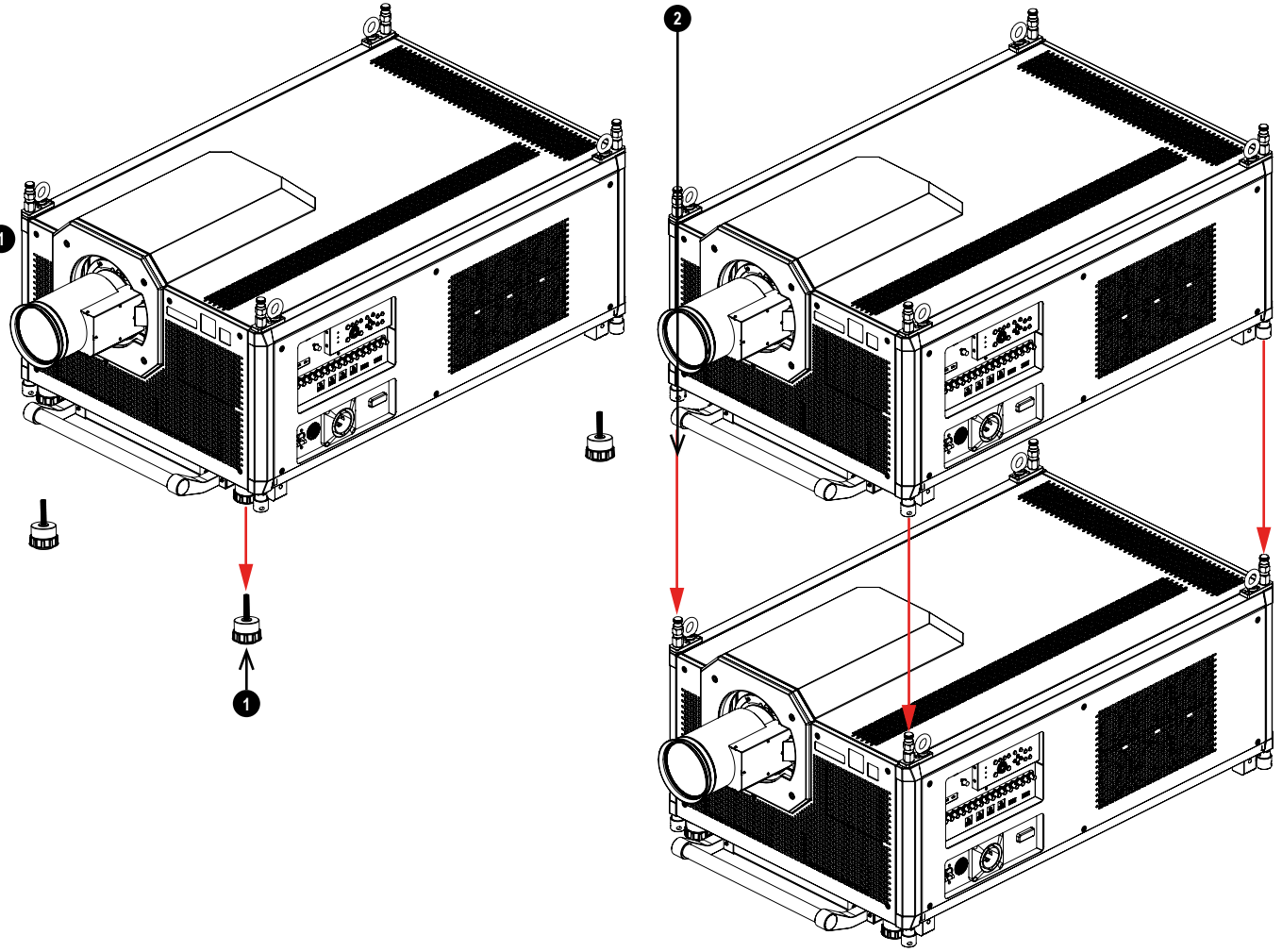
Stacking and rigging

The projector can be stacked using the pin and cups that are located on top and underneath the projector. The pin and cups can also be used to attach a mounting rail. The eye bolts on top of the projector can be used with suspension cables to fly the projector.

Pin and cup stacking

The top of the projector has pins and the bottom of the projector has cups. The pins and cups can connect together and be locked into place with a locking pin.

1. Remove the adjustable feet from the projector that will be stacked on the top. ❶
2. Mount the projector on top of the other projector. Ensure that all four cups are placed over the pins on the bottom projector. ❷



Notes

The projectors must be in a vertical position when they are stacked. This will ensure that the stresses are distributed to all four corners of the chassis.

Do not use the threaded holes for the adjustable feet to hang or mount the projector.

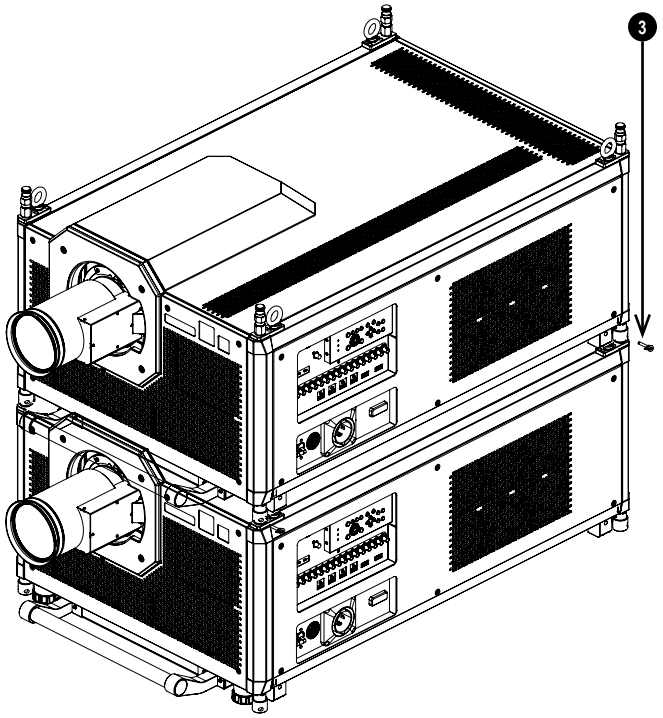
Do not use the carry handles to hang or mount the projector.

Do not stack more than 3 projectors.

Do not use the provided eye bolts to suspend stacked projectors. The eye bolts can only carry the weight of one projector.

It is the customer's responsibility to ensure that the assembly is carried out securely.

3. Push the locking pins into place on each cup and pin. ❸



Notes

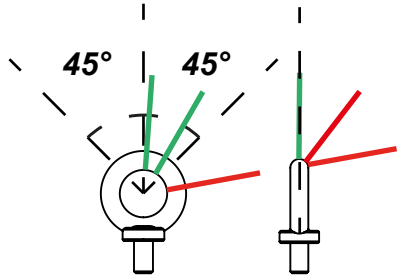
Using the eye bolts

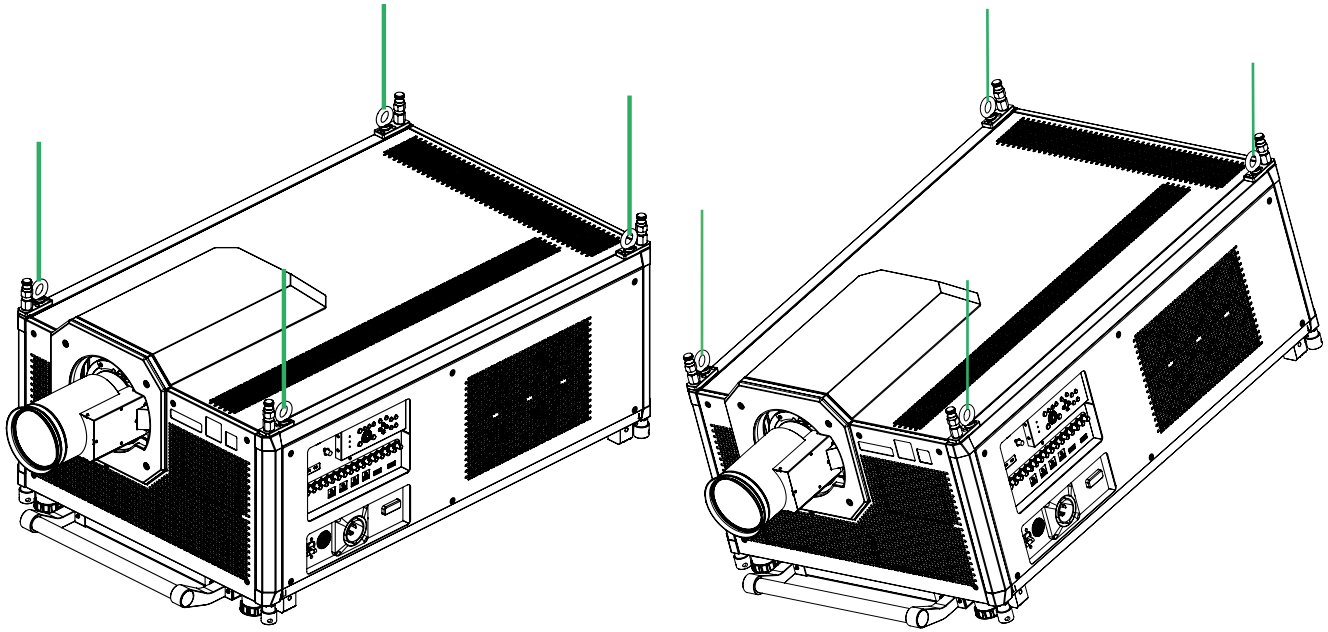
Four eye-bolts are fitted to the top of the projector to enable the flying of the projector using steel wire or chains.

Point-to point connections

Refer to the following guidelines when connecting one end of a suspension cable directly to an eye-bolt and the other to a suspension point.

- The suspension cables can be connected to the eye-bolts at an angle of up to 45° around the eye ring.
- The suspension cables must not be connected to the eye-bolts at any angle across the eye ring.
- The suspension cable must run vertically up from the projector.

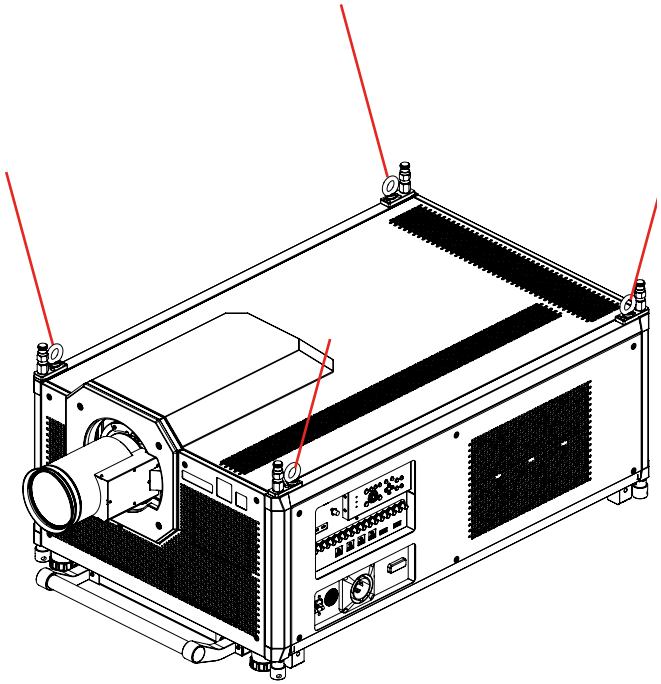




Examples of correct configurations

Notes

This system should only be used to fly a single projector. Do not stack projectors and fly them together.



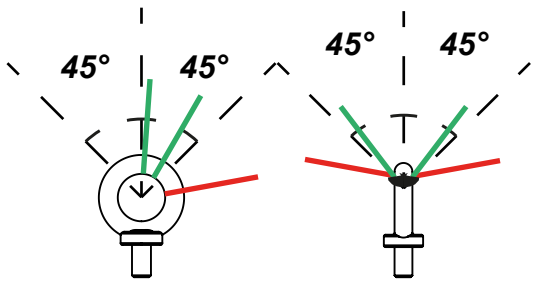
Example of an incorrect configuration

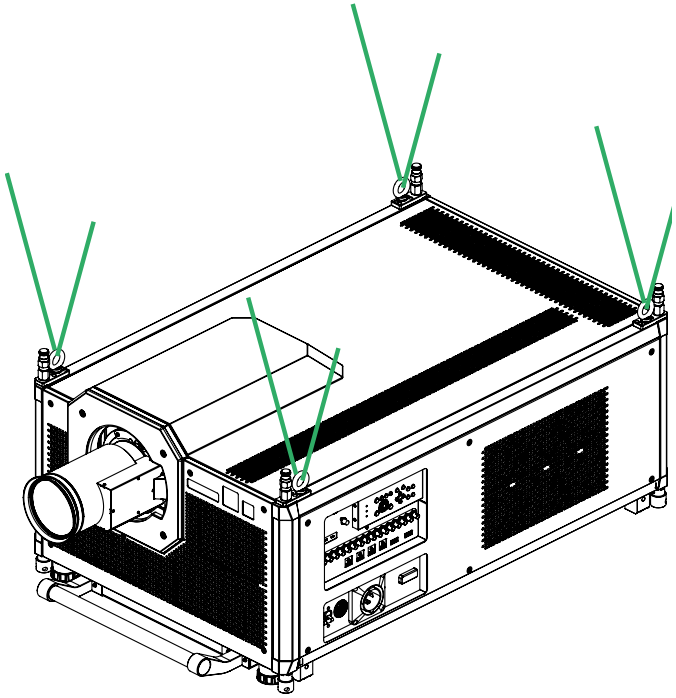
Notes

Threaded suspension cables

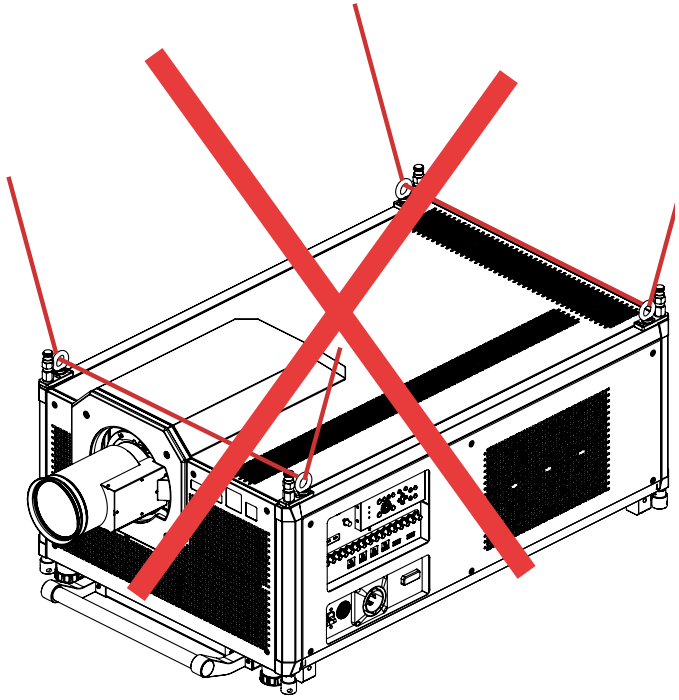
Refer to the following guidelines when threading the suspension cable through the eye-bolts and connecting both ends to suspension points.

- The suspension cable can exit the eye-bolts at an angle of up to 45° around the eye ring.
- The suspension cable can exit the eye-bolts at an angle of up to 45° across the eye ring.
- The suspension cable should not be threaded through 2 or more eye-bolts.





Example of a correct configuration



Example of an incorrect configuration

Notes

Power Supply

AC Power Precautions

Warning! Death or Serious Injury could occur if the following precautions are ignored

Shock Hazard! Only use the AC power cord provided or recommended by the manufacturer

Fire & Shock Hazard! Do not operate the product unless the power cord, socket and plug meet local rating standards

Do not attempt operation if the AC supply is not within the specified parameters

The AC power cord must be inserted into a socket with grounding

Disconnect the product from the AC supply before installing, moving, servicing, cleaning or removing covers

Do not use an AC power cord that appears damaged

Do not overload power sockets or extension cords

Notes

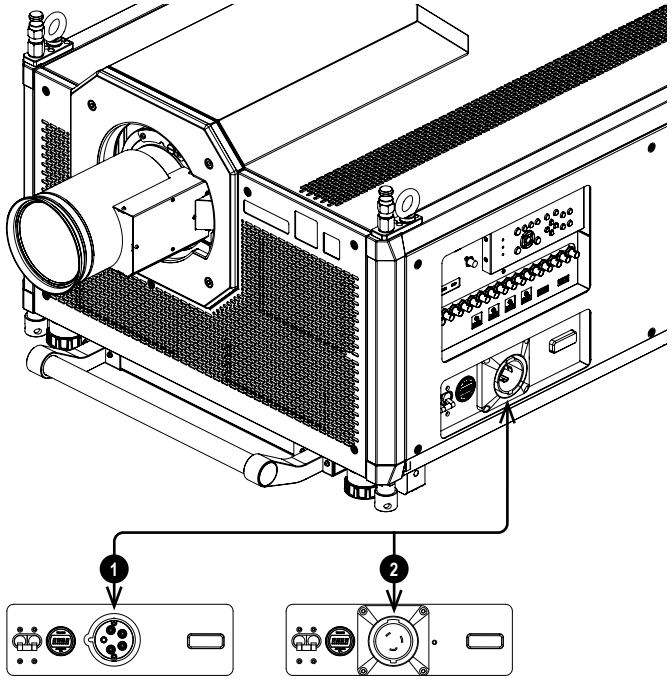
Connecting the power supply

Rest of the World:

1. Firmly push the mains connector into the AC In socket ❶

USA Only

1. Firmly push the mains connector into the socket ❷
2. Rotate the connector 90° clockwise to lock it in place



Notes

Use only the power cable provided.

Ensure that the power outlet includes a ground connection as this equipment MUST be earthed.

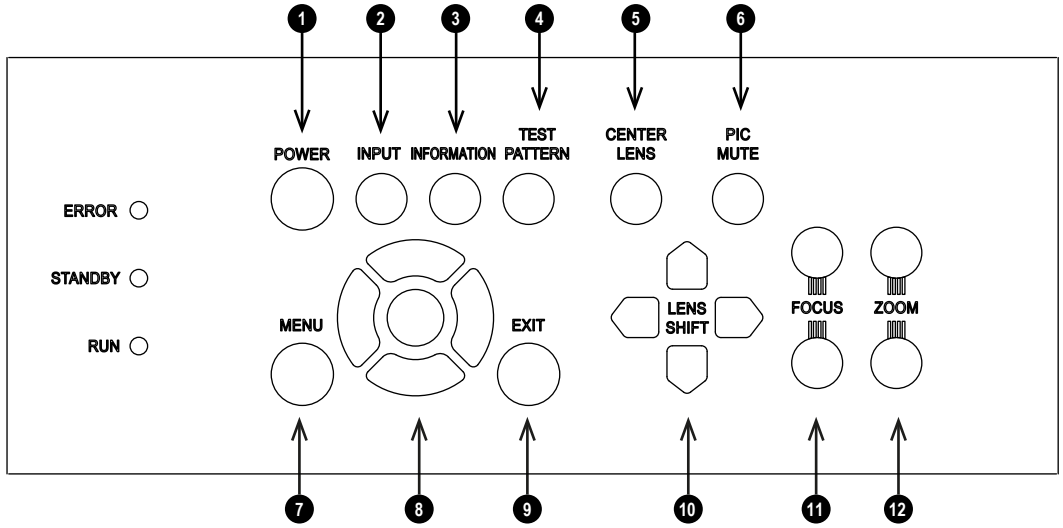
Handle the power cable carefully and avoid sharp bends. Do not use a damaged power cable.

Operating the projector

The projector has the following controls:

- Remote control
- Control panel

Control panel



Control Panel

1. **POWER**
   Switches the projector on and off (STANDBY).
2. **INPUT**
   Displays the input selection menu.
3. **INFORMATION**
   Displays information about the projector.
4. **TEST PATTERN**
   Cycles through the test patterns:*Off, White, Black, Red, Green, Blue, Checkerboard, Grid, ColorBars, Cyan, Yellow, Magenta, Ramp.*
5. **CENTER LENS**
   Centers the lens.
6. **PIC MUTE**
   Shows and hides the projected image. When muted, the light source is completely switched off and the screen is blank.
7. **MENU**
   Displays and exits the OSD.
8. **Arrow buttons & ENTER**
   Press an arrow button to open the keystone menu. Use the arrow buttons to adjust vertical and horizontal keystone. After opening the OSD, use the arrow buttons to highlight menu entries. Press **ENTER** to open or execute the highlighted menu entry.
9. **EXIT**
   Exits the current OSD page and enters the level above.
10. **LENS SHIFT**
    Arrow buttons move the lens in the specified direction.
11. **FOCUS**
    Plus and minus buttons move the focus in and out.
12. **ZOOM**
    Plus and minus buttons zoom in and out.

Notes

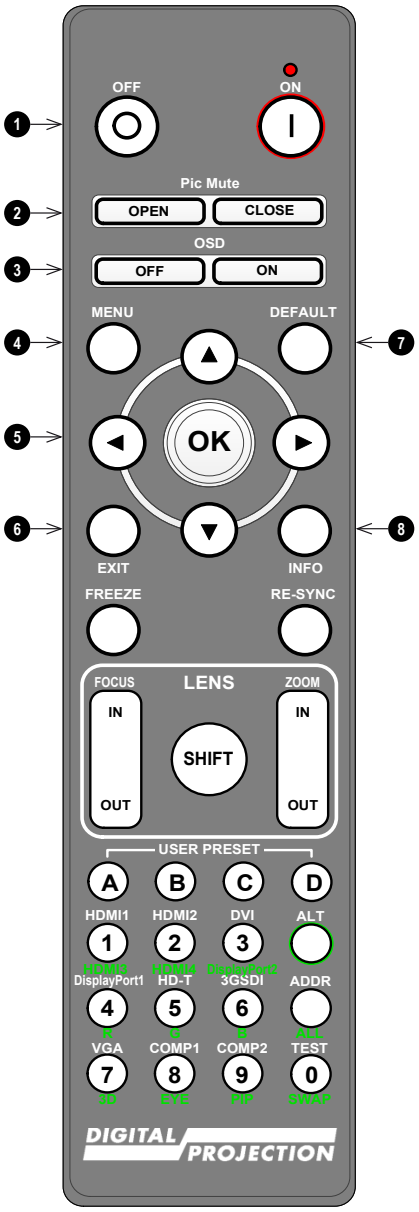
See Connecting the power supply on the previous page.

The self-test is running when all the LEDs on the control panel are lit.

See Introduction to the OSD on page 58 for full details of how to use the menu system.

Remote control

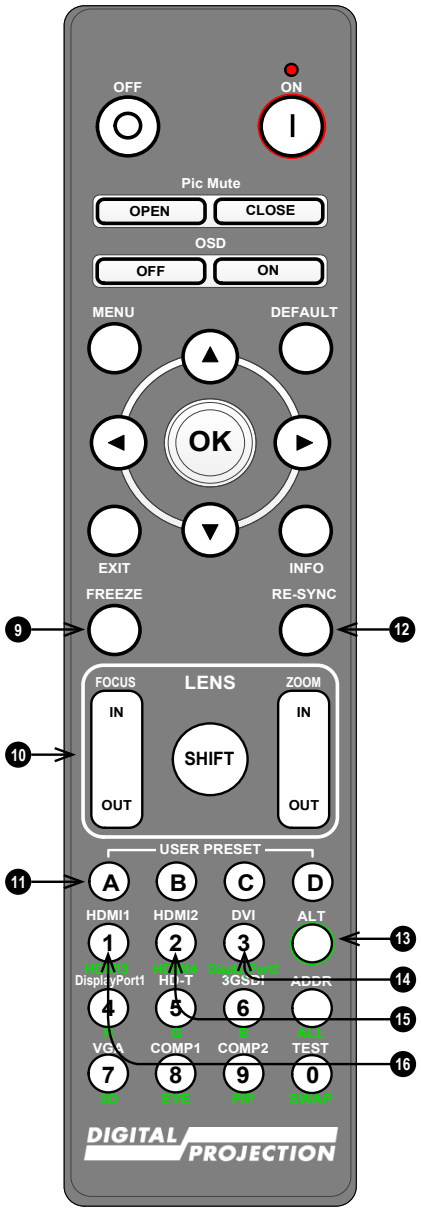
1. **Power ON / OFF**
   Turns power on and off.
2. **Pic Mute OPEN / CLOSE**
   - Press CLOSE to hide the projected image. When closed, the light source is completely switched off and the screen is blank.
   - Press OPEN to display the hidden image.
3. **OSD ON / OFF**
   Enable and disable screen timeout messages and control whether to show the OSD during projection.
4. **MENU**
   Access the on screen display (OSD). If the OSD is open, press this button to go back to the previous menu.
5. **Navigation (arrows and OK)**
   OSD mode: Navigate through the menus with the arrows, confirm your choice with **OK**.
   Lens adjustment modes: Press OK to switch between **Shift Adjustment** and **Zoom / Focus Adjustment**. Use the arrows to shift, zoom or focus the lens. See **10** below.
6. **EXIT**
   Go up one level in the OSD. When the top level is reached, press to close the OSD.
7. **DEFAULT**
   When editing a parameter, press this button to restore the default value.
8. **INFO**
   Access information about the projector.



Remote Control

Notes

9. **FREEZE**
   Freeze the current frame.
10. **LENS adjustment**
    - **FOCUS IN / OUT**: adjust focus.
    - **SHIFT**: press and hold this button, then use the Navigation arrow buttons to move the lens.
    - **ZOOM IN / OUT**: adjust zoom.
11. **USER PRESET A, B, C, D**
    Load user presets.
12. **RE-SYNC**
    Re-synchronise with the current input signal
13. **ALT**
    Press and hold this button to access alternative functions for other buttons on the remote.
14. **DVI / DisplayPort2 / numeric input 3**
    There is no DVI input on this projector.
    Use with **ALT** to select the DisplayPort 2 input.
15. **HDMI 2 / HDMI 4 / numeric input 2**
    Select the HDMI 2 input.There is no HDMI 2 input on this projector.
    Use with **ALT** to select the HDMI 4 input.There is no HDMI 4 input on this projector
16. **HDMI 1 / HDMI 3 / numeric input 1**
    Select the HDMI 1 input.
    Use with **ALT** to select the HDMI 3 input.There is no HDMI 3 input on this projector



Remote Control

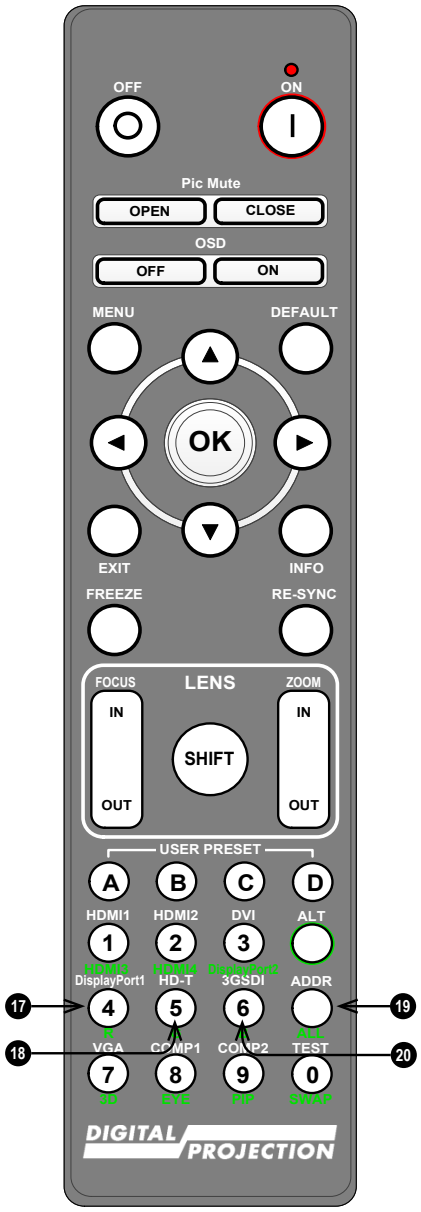
Notes

FREEZE and RE-SYNC are not available when the projector uses input HDMI 3 or 4.

This projector does not use the following options on the remote:
HDMI2
HDMI3
HDMI4
DVI

17. **DISPLAYPORT 1 / R / numeric input 4**
    Select DisplayPort 1 input.
18. **HD-T / G / numeric input 5**
    There is no HDBaseT input on this projector.
19. **ADDR / ALL (with red indicator at the top)**
    Assign and unassign an IR remote address.
    To assign an IR remote address:
    1. Press and hold this button until the red indicator starts flashing.
    2. Release this button and while the red indicator is still flashing, enter a two-digit address using the numeric input buttons. The indicator will flash three times quickly to confirm the change.

    To unassign an address and return to the default address 00:
    1. Press and hold ALT and this button simultaneously until the red indicator flashes to confirm the change.
20. **3GSDI / B / numeric input 6**
    Select the 3G-SDI input.

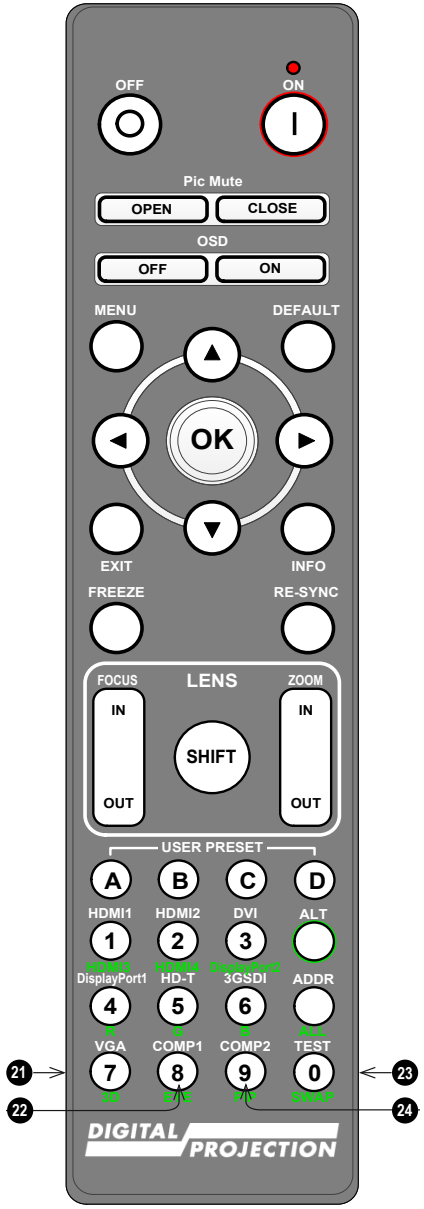


Remote Control

Notes

This projector does not use the following options on the remote: HD-T

21. **VGA / 3D / numeric input 7**
    There is no VGA input on this projector.
    Use with **ALT** to toggle the 3D Format setting between Off and Auto.
22. **COMP1 / EYE / numeric input 8**
    There is no Component 1 input on this projector.
    Use with **ALT** to switch between left and right eye 3D dominance.
23. **TEST / SWAP / numeric input 0**
    Show a test pattern. Press again to show the next test pattern: *White, Black, Red, Green, Blue, Checkerboard, Crosshatch, V Burst, H Burst, Color Bar, Screen Layout, Off.*
    When **PIP** mode is on, use this button with **ALT** to swap the main and sub images.
24. **COMP2 / PIP / numeric input 9**
    There is no Component 2 input on this projector.
    Use with **ALT** to switch on **Picture In Picture (PIP)** mode.



Remote Control

Notes

This projector does not use the following options on the remote:
VGA
COMP 1
COMP 2

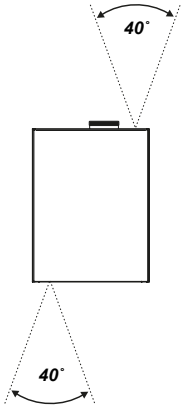
3D is only available on the HDMI 3 and 4 inputs.

PIP is not available when the projector uses input HDMI 3 or 4.

Infrared reception

The projector has infrared sensors at the front and rear.

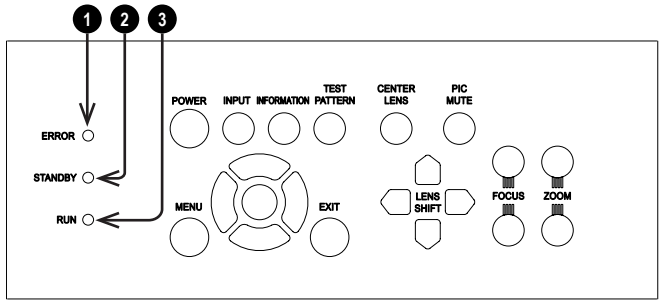
The angle of acceptance is 40°. Make sure that the remote control is within the angle of acceptance when trying to control the projector.



Notes

Projector indicators

1. **ERROR**
   Flashing red (cycle of single flashes) = cover error or failure to light up during power up
   Flashing red (cycles of double flashes) = unexpected light off when projector is on
   Flashing red (cycles of four flashes) = fan error
   Flashing red (continuous) = temperature error
   On, red = system error
2. **STANDBY**
   On, green = standby mode
   Flashing green = projector is warming up
3. **RUN**
   On, blue = projector is switched on
   Flashing blue = projector is cooling down



Indicators

Notes

Switching the projector on

1. Make sure a lens is fitted. Connect the power cable between the mains supply and the projector.
   The **RUN** indicator begins flashing blue. The projector will start warming up. The **RUN** indicator is lit blue and the **STANDBY** indicator is lit green when the projector has finished warming up. The projector is on and in standby mode.
2. Press one of the following buttons:
   - On the remote control, the **ON** button
   - On the projector control panel, the **POWER** button.

   The source will light up and the shutter will open. The projector is now switched on.

Switching the projector off

1. Press **OFF** on the remote control or **POWER** on the control panel, then press again to confirm your choice.
   The light source will go out. The **RUN** indicator will start flashing blue. The fans stop running, the **RUN** indicator is lit blue and the **STANDBY** indicator is lit green when the projector enters Standby mode.
2. If you need to switch the projector off completely, wait until the projector enters Standby mode, then disconnect the AC power cable from the projector.

Notes

Interlock reset

In the event of the laser illumination turning off as a result of an Interlock break:

1. Make sure all interlocks are in place. See Interlock Switches on page 15
2. Turn ON the laser illumination. See Switching the projector on on the previous page

Selecting an input signal

1. Connect one or more image sources to the projector.
2. Select the input you want to display:
    - Press one of the input buttons on the remote control or control panel.
    - Alternatively, open the On-screen display (OSD) by pressing **MENU**. Highlight **Input** from the main menu, press **ENTER/OK** and then highlight **Input Selection** and press **ENTER/OK**. Use the **UP** and **DOWN** arrow buttons to highlite an input and press **ENTER/OK** to confirm your choice.

Selecting a test pattern

The following test patterns are available: *Off, White, Black, Red, Green, Blue, Checker Board, Crosshatch, Color Bar, Cyan, Yellow, Magenta, Gray Scale.*

Use one of the following methods to display a test pattern:

- Press **TEST** on the remote control.
  Use the **LEFT** and **RIGHT** arrow buttons to cycle through the test patterns.
- Press **MENU** open the OSD. Highlight **Test Patterns** from the main menu, then select a test pattern using the **LEFT** and **RIGHT** arrow buttons.

After the final test pattern, the projector exits test pattern mode and returns to the main image. To view test patterns again, you need to press **TEST** again. If you wish to exit the test patterns before you reach the final one, press **TEST** or **EXIT** at any time.

Notes

Please refer to the connection guide for details about connecting a signal source. See Signal inputs on page 50

Adjusting the lens

You can use the following options to adjust the lens:

- Control panel. See Control panel on page 36
- Remote control. See Remote control on page 37
- On screen display (OSD). See Lens on page 64

Adjusting the image

Orientation

This can be set from the **System** menu. See System on page 1 for guidance.

Highlight **Projection Mode** and choose from **Front Desktop**, **Front Ceiling**, **Rear Desktop** and **Rear Ceiling**.

Picture

Settings such as **Gamma**, **Brightness** and **Contrast** can be set from the **Image** menu. See Image on page 66 for guidance.

Notes

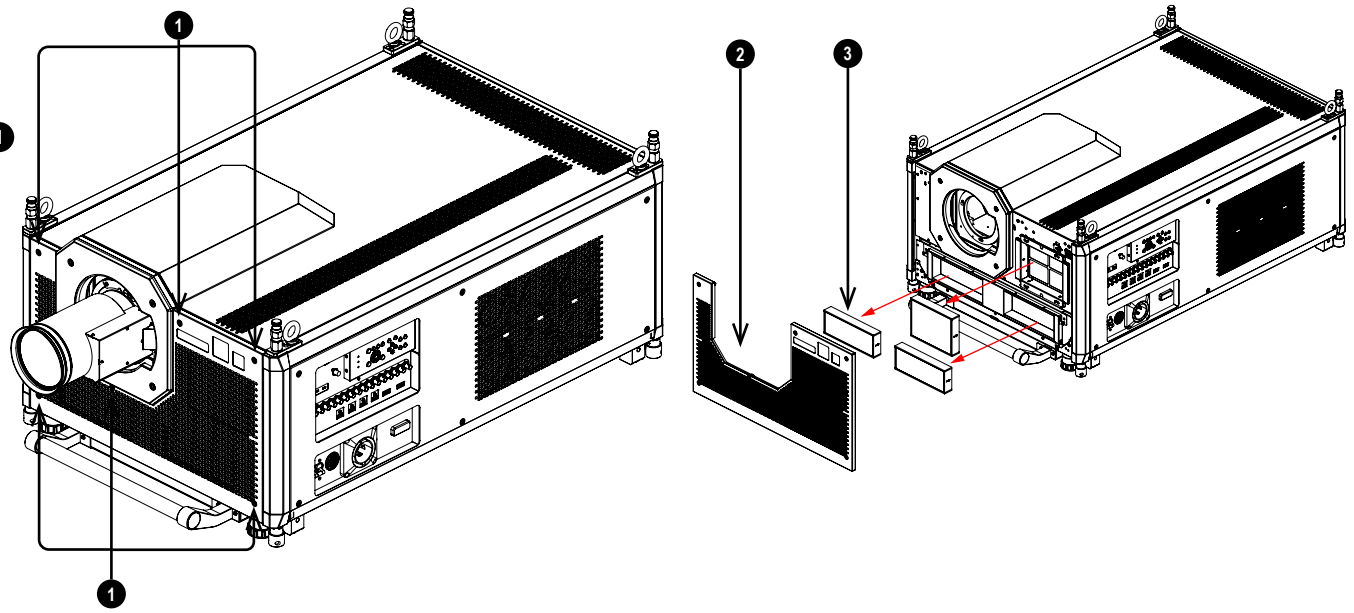
Neither of the settings under Picture are available with the HDMI 3 and 4 inputs.

Changing the Filters

Air filters are located at the front of the projector and the left side.

To change the filters on the front of the projector:

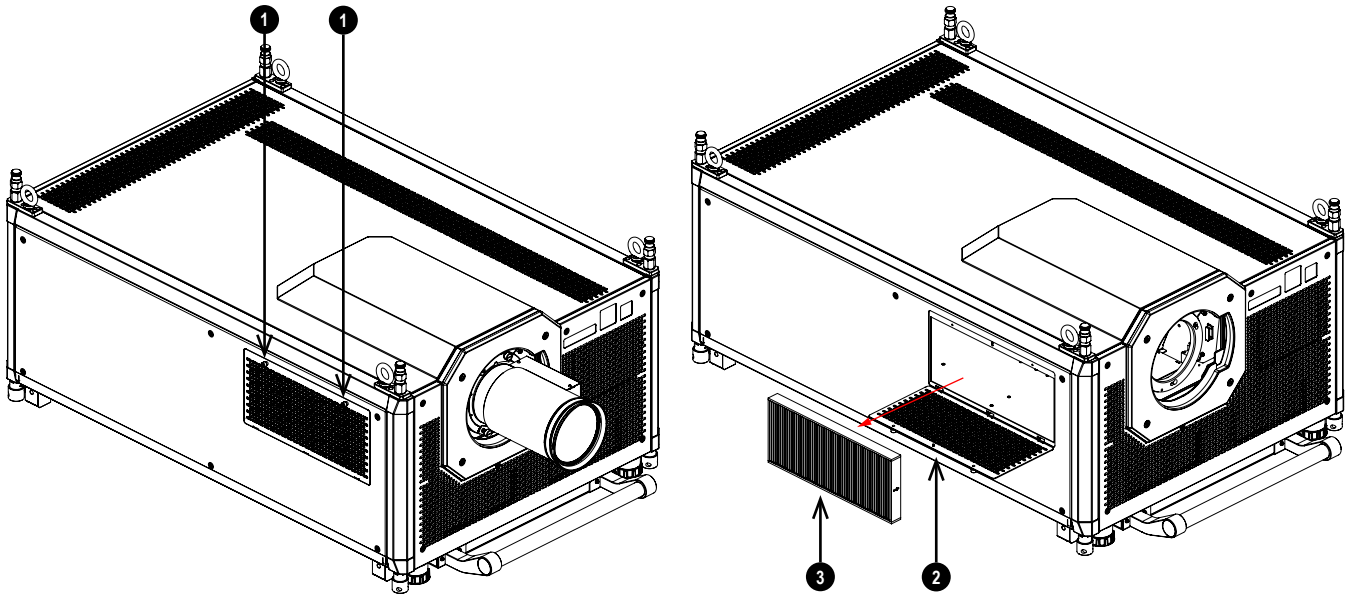
1. Loosen the six captive screws on the front panel. ❶
2. Remove the front panel. ❷
3. Replace the filters. ❸
4. Replace the front panel.
5. Tighten the six captive screws to secure the front panel in place.



Notes

To change the filters on the left side of the projector:

1. Loosen the two captive screws on the left side filter vent. ❶
2. Open the left side filter vent. ❷
3. Replace the filters. ❸
4. Close the left side filter vent.
5. Tighten the two captive screws to secure the left side filter vent in place.



Notes

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DIGITAL PROJECTION

A Delta Associate Company

Insight Laser 37000 8K

High Brightness Digital Video Projector

CONNECTION GUIDE

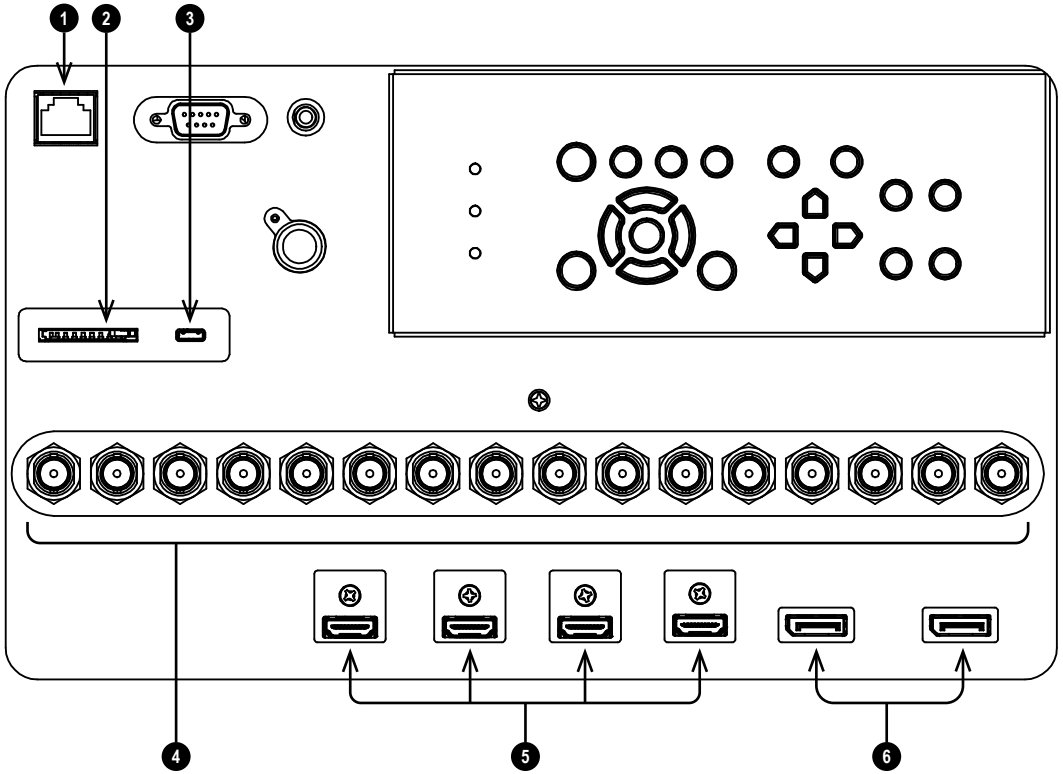
123-103A

Rev A January 2023

Signal inputs

Digital inputs and outputs

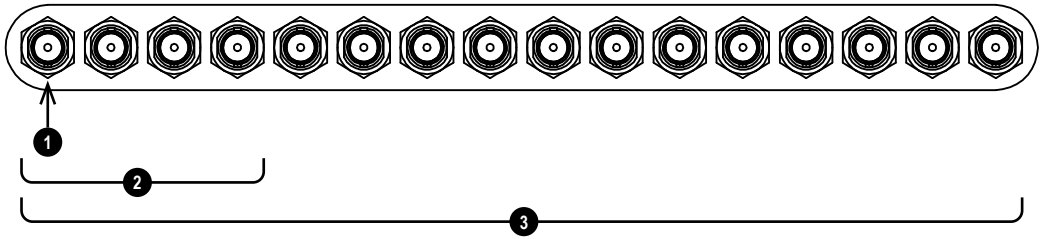
1. **LAN**
   Provides LAN connectivity via an ethernet cable.
2. **SD Card Slot**
3. **Micro USB**
   USB 5V / 1.5A output. Connect a USB cable to supply power to an external device.
4. **3G-SDI in / 12G-SDI in**
5. **HDMI 1 / HDMI 2 / HDMI 3 / HDMI 4**
   HDMI 2.0b inputs supporting HDCP 2.2. Connect an **HDMI** cable to the connector.
6. **DisplayPort 1 / DisplayPort 2**
   DisplayPort 1.4 input supporting HDCP 2.2. Connect a DisplayPort cable to the connector. Supports sources up to 4K-UHD @ 60Hz and 8K-UHD @ 59.94Hz using 2 ports, resolution at 60 Hz.



Using SDI inputs for 4K or 8K

The SDI inputs can be used to receive 4K or 8K signals:

- 4K:
  - Connect 1 12G-SDI connector ❶, or;
  - Connect 4 3G-SDI connectors ❷
- 8K:
  - Connect 4 12G-SDI connectors ❷, or;
  - Connect 16 3G-SDI connectors ❸



Notes

See 2D formats on page 98 for information about supported 2D signal input modes.

See 3D connections on page 52 for information about 3D signal inputs.

EDID on the DisplayPort and HDMI inputs

If you are using a computer graphics card or another source that obeys the EDID protocol, the source will automatically configure itself to suit the capability of the projector.

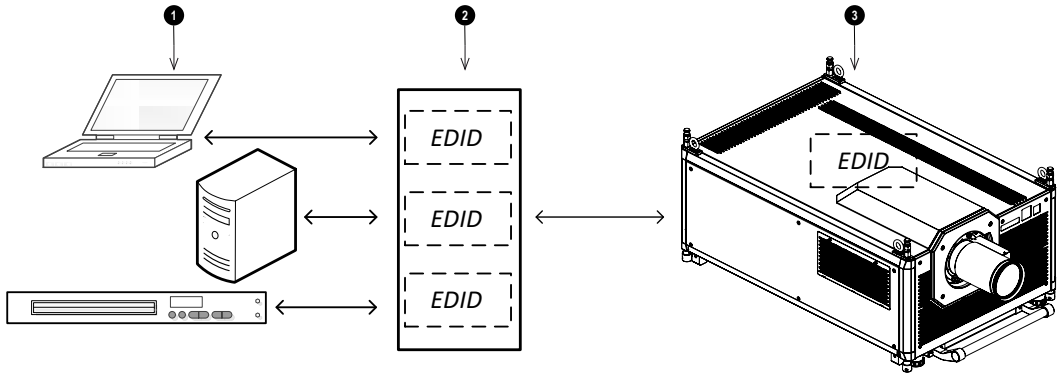
Otherwise refer to the documentation supplied with the source to manually set the resolution to the DMD™ resolution of the projector or the nearest suitable setting. Switch off the source, connect to the projector, then switch the source back on again.

Using DisplayPort / HDMI switchers with the projector

When using a DisplayPort/HDMI source switcher with the projector, it is important to set the switcher so that it passes the projector EDID through to the source devices.

If this is not done, the projector may not be able to lock to the source or display the source correctly as its video output timings may not be compatible with those of the projector. Sometimes this is called transparent, pass-through or clone mode. See your switcher's manual for information on how to set this mode.

1. Sources
2. Switcher
3. Projector

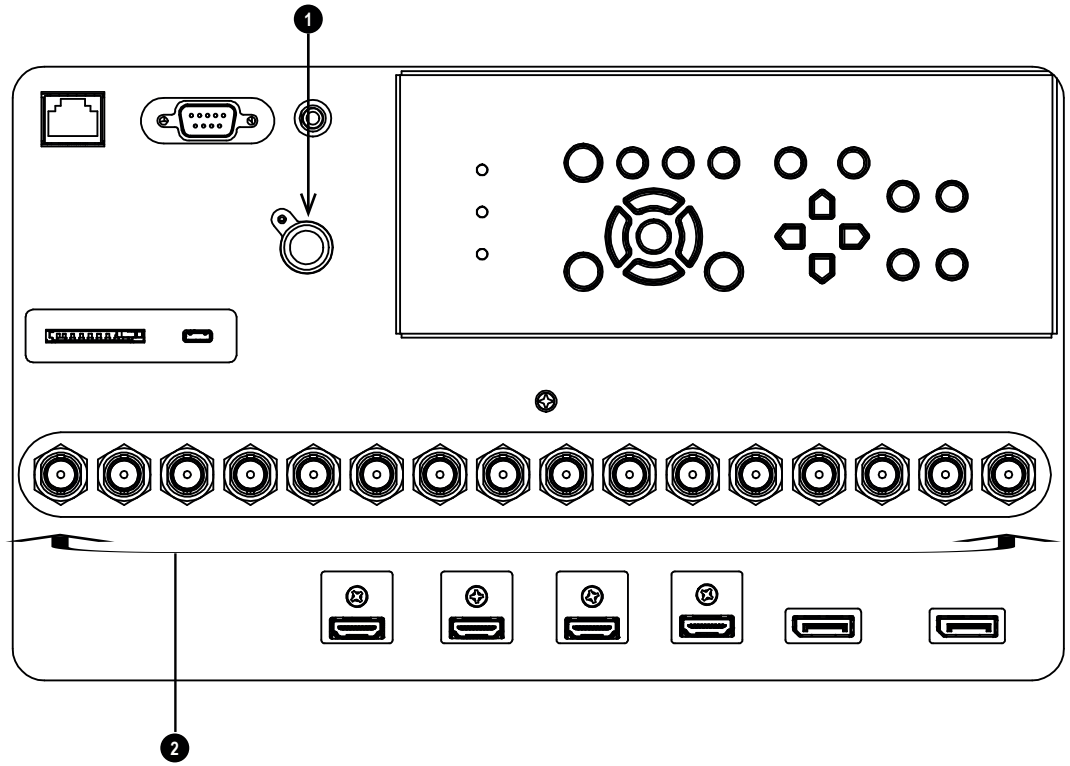


The EDIDs in the switcher should be the same as the one in the projector.

Notes

3D connections

1. **Sync Out**
   3D sync output signal. This is affected by settings in the 3D menu such as Dark Time and 3D Sync Offset. Use a 3-pin DIN connector to connect this to an IR emitter or ZScreen.



Dual Pipe (Left/Right)

1. Connect the appropriate input cables:
   - Connect the 12G-SDI input cables to the **SDI** sockets (2). See "Using SDI inputs for 4K or 8K" on page 50.
   - Connect the left eye output to the **HDMI 1** socket and the right eye output to the **HDMI 2** socket.

Notes

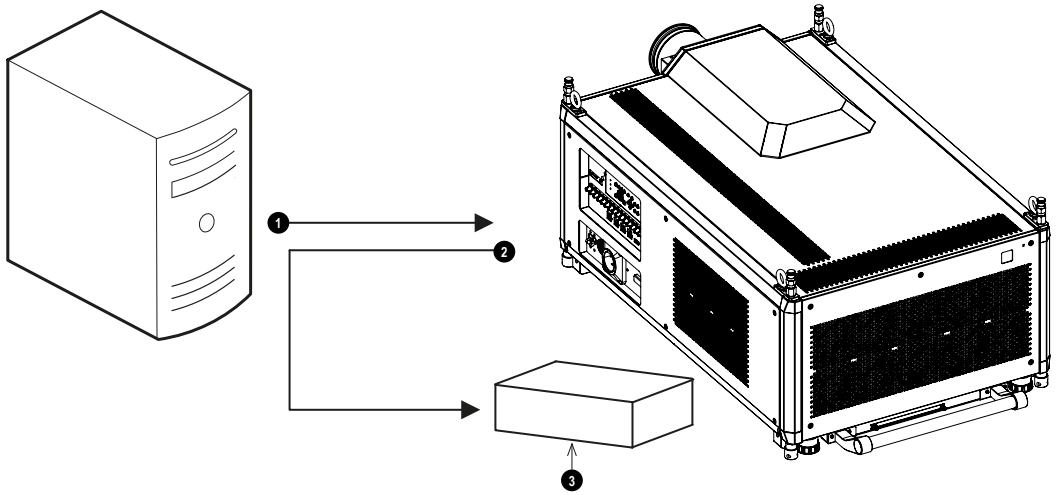
*Set **3D Format** in the 3D menu to match the format of the incoming signal. See 3D on page 77.*

See 3D formats on page 99 for information about supported 3D signal input modes.

See 3D formats on page 99 for information about supported 3D dual pipe formats.

3D Sync

1. 3D Input
2. 3D Sync Out
3. IR emitter or Z-Screen

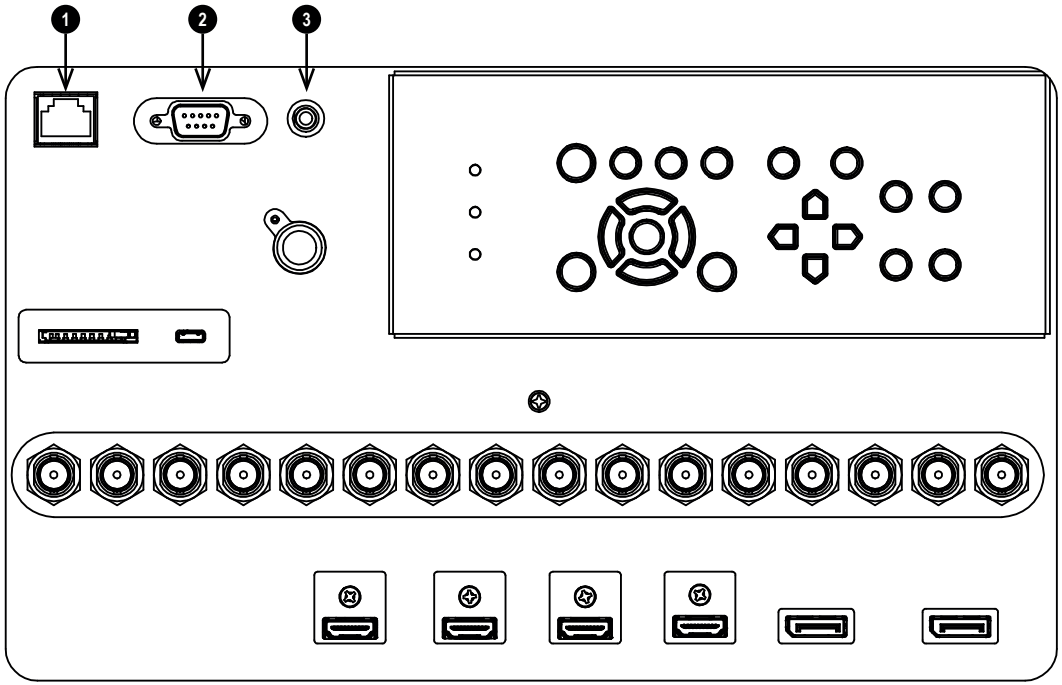


Notes

See 3D formats on page 99 for information about supported 3D sync formats.

Control connections

1. **LAN**
   The projector's features can be controlled via a HDBase-T or LAN connection, using a terminal-emulation program.
2. **RS232**
   All of the projector's features can be controlled via a serial connection, using commands described in the **Protocol Guide**. Use a crossover cable to connect directly to a computer.
3. **Wired Remote**
   The remote control can be connected using a standard 3.5 mm mini jack cable (tip-ring-sleeve, or TRS).



Notes

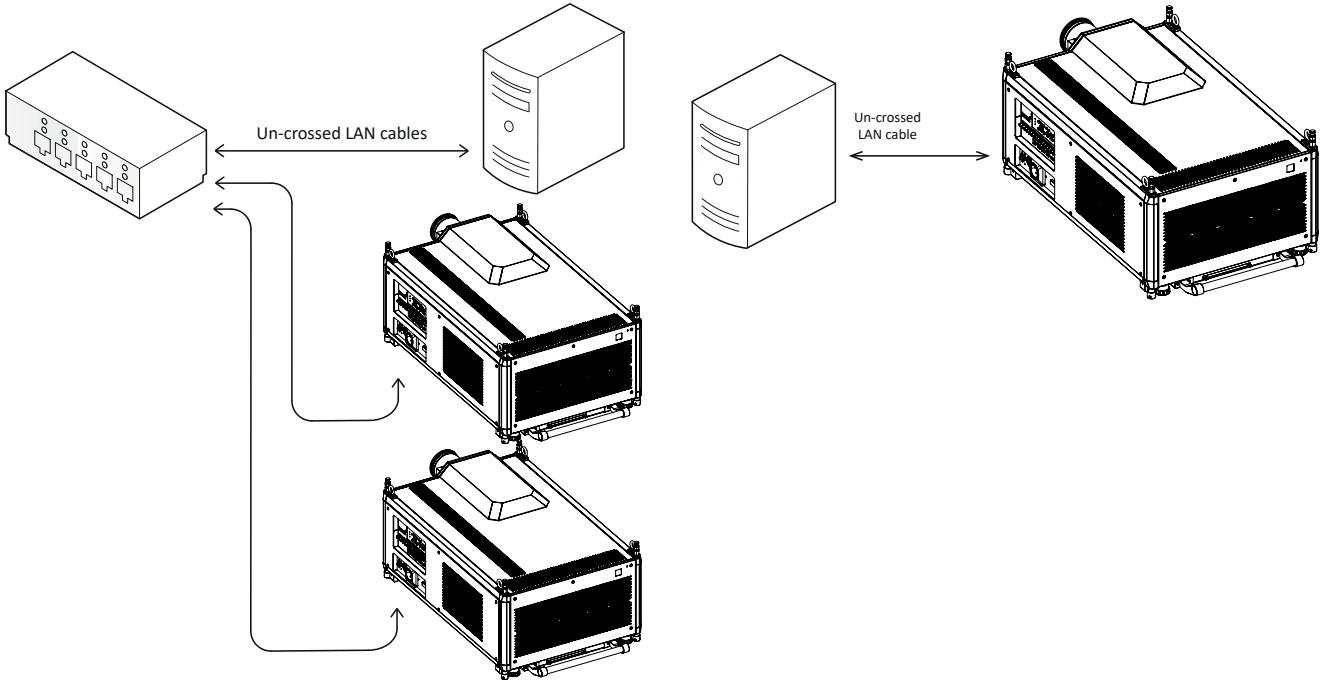
*For a list of all commands used to control the projector via LAN, see the **Protocol Guide** (available separately).*

Only one control connection should be used at any one time.

***Trigger 1** and **Trigger 2** are not available with HDMI 3 and 4 inputs.*

LAN connection examples

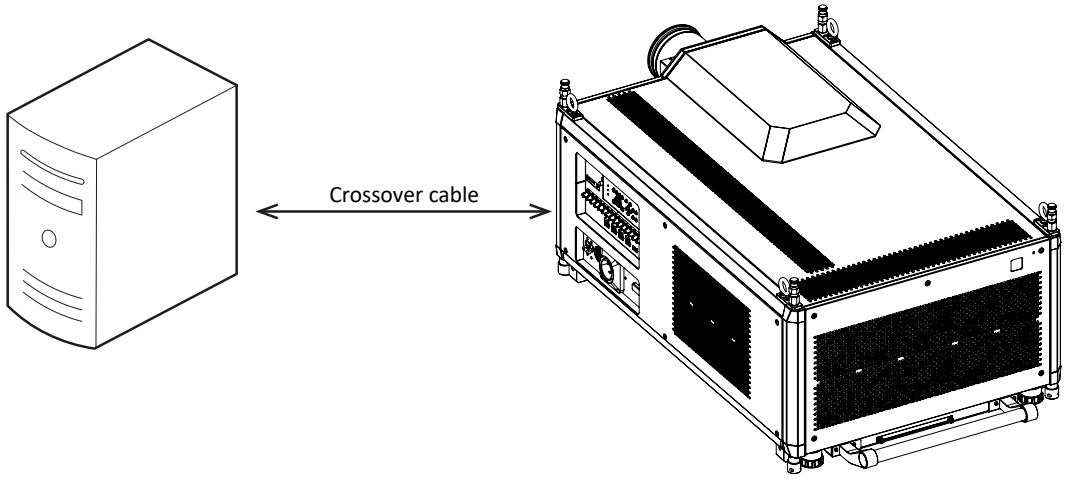
The projector's features can be controlled via a LAN connection, using a terminal emulation program.



Notes

RS232 connection example

All of the projector's features can be controlled via a serial connection, using commands described in the **Protocol Guide**.



Computer to Projector

Notes

*The **Protocol Guide** is available separately*

DIGITAL PROJECTION

A Delta Associate Company

Insight Laser 37000 8K

High Brightness Digital Video Projector

ON SCREEN DISPLAY (OSD) OPERATING GUIDE

123-103A

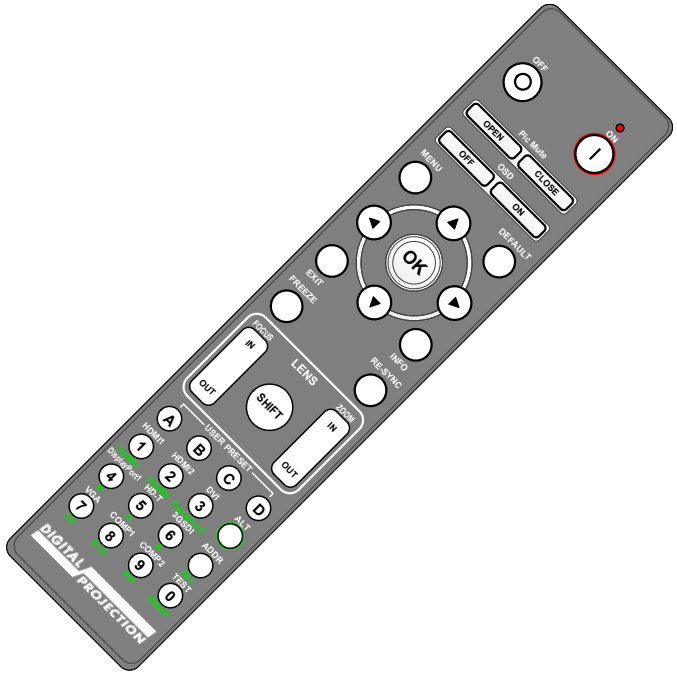
Introduction to the OSD

This section describes the operation of the OSD.

Opening the Menu

Use the projector control panel or the remote control to open the on-screen display (OSD). On either device:

1. Press the **MENU** button.
   The OSD opens showing the list of available menus



Remote control

Opening a submenu

1. Move up and down the list using the **UP** and **DOWN** arrow buttons.
2. Press **ENTER** on the control panel or **OK** on the remote control to open a submenu.

This guide refers to the above two buttons as **ENTER/OK**.

Notes

Exiting menus and closing the OSD

To go back to the previous page:

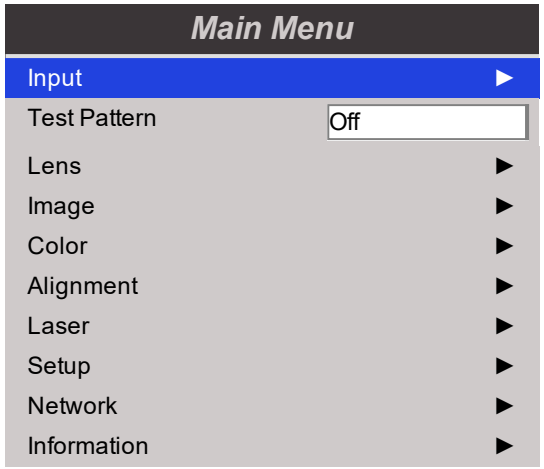
1. Press **EXIT**.

To close the OSD:

1. Press **MENU**.

Or:

1. Go back to the top level menu
2. Press **EXIT**.

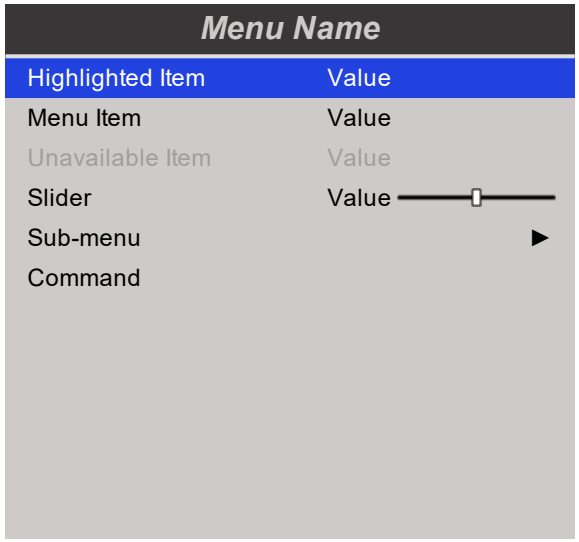


On Screen Display (OSD): Top Level Menu

Inside a menu

When you open a menu, the page consists of the following elements:

- Title bar at the top shows which menu you have accessed.
- Highlighted item
- Available and unavailable items Unavailable items appear a pale gray color. Whether an item is available may depend on other settings.
- The text or symbol to the right of an item shows whether the item:
  - has a value that can be changed (the current value is shown)
  - opens a sub-menu (an arrow button is displayed)
  - executes a command (the space to the right of the item is blank).



Inside a menu

Accessing sub menus

Use the **UP** and **DOWN** arrow buttons to highlight the sub-menu, then press **ENTER/OK**.

Notes

The highlighted item has blue background.

Executing commands

Some items contain a command, such as an OK button.

Press **ENTER/OK** to execute the highlighted command.

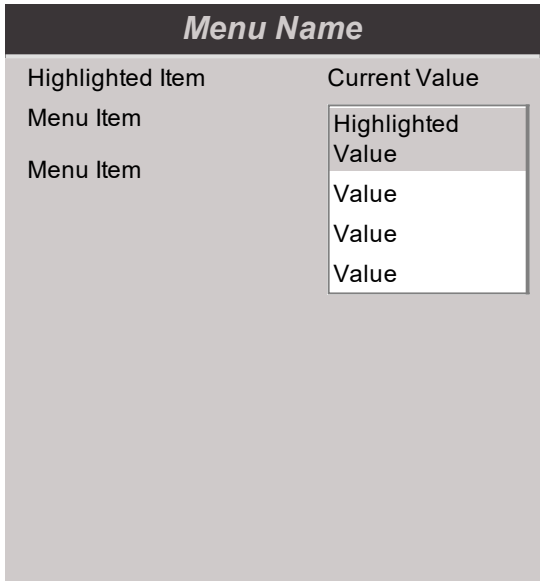
You may be asked for confirmation. Use the **ENTER/OK** to confirm, or **EXIT** to cancel.

Command

Editing projector settings

If the highlighted menu item contains a list of values to choose from, you can change the value by doing the following:

1. Highlight the menu item and press **ENTER/OK**.
2. In the list of values that opens, use the **UP** and **DOWN** arrow buttons to highlight a value, then press **ENTER/OK** again to select the highlighted value.



List of Values

Notes

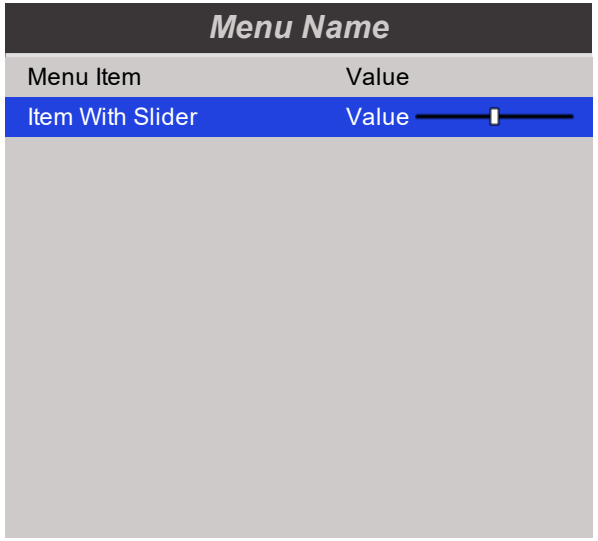
Some menu items may be unavailable due to settings in other menus. Unavailable menu items appear gray

Please wait for any value changes to be applied

Using a slider to set a value

Some parameters show a slider. To set such a parameter:

1. Press the **LEFT** or **RIGHT** arrow button, or **ENTER/OK**. The arrow buttons will open the slider and adjust the value at the same time. **ENTER/OK** will open the slider without altering the initial value.
2. Use the **LEFT** and **RIGHT** arrow buttons to move the slider.
3. When ready, press **RETURN** to exit the slider and return to the menu.

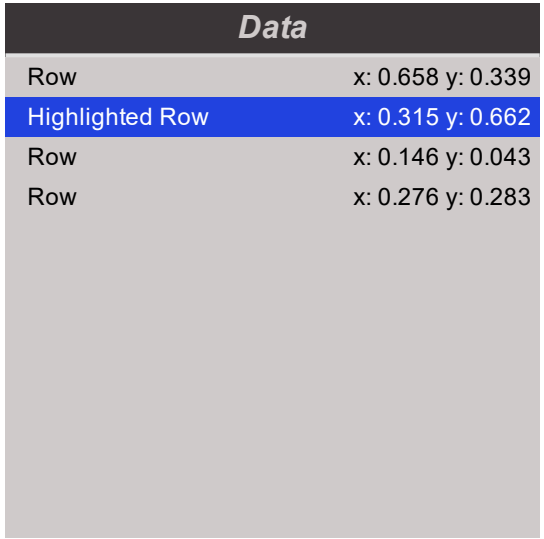


Slider

Editing numeric values

Some parameters take numeric values without using sliders - for example, color matching values or IP addresses.

1. Use the **UP** and **DOWN** arrow buttons to highlight the row containing the numeric field you wish to edit.
2. Press **ENTER/OK** to enter edit mode. A numeric field in edit mode is white text on blue background.
3. In edit mode:
   - Use the **UP** arrow button to increase the numeric value.
   - Use the **DOWN** arrow button to decrease the numeric value.
4. Use the **LEFT** and **RIGHT** arrow buttons to edit the next or previous numeric fields within the same row.
5. Once ready, press **ENTER/OK** to exit edit mode.

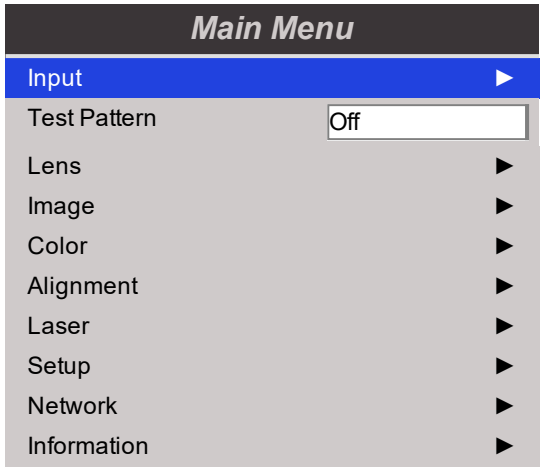


Notes

Using the projector

Main Menu

- **Input.**
  Press **ENTER/OK** to open these menus and access various settings.
- **Test Pattern.**
  Select a Test Pattern to display. The Test Pattern will be displayed instead of any other image from an input source. Choose from Off, White, Black, Red, Green, Blue, Checker Board, Crosshatch, Color Bar, Cyan, Yellow, Magenta, Gray Scale.
- **Lens, Image, Color, Alignment, Laser, Setup, Network, Information.**
  Press **ENTER/OK** to open these menus and access various settings.



On Screen Display (OSD): Top Level Menu

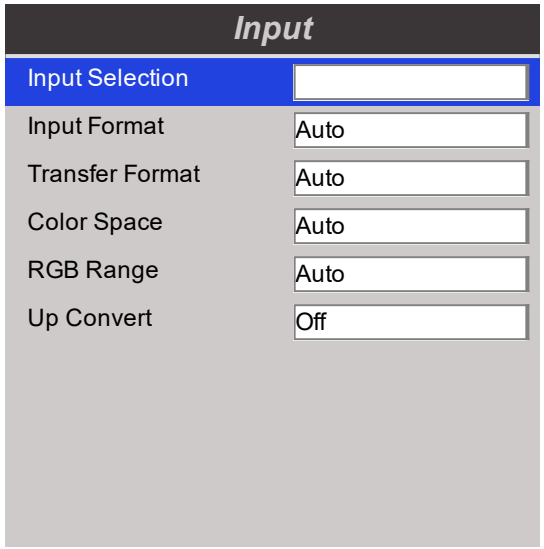
Notes

*Selecting a test pattern hides the OSD. Press **EXIT** to hide the test pattern, and then press **MENU** to show the OSD.*

Test Patterns are not affected by any color adjustments.

Input

- **Input Selection**
  Select. Choose from:
  - Auto
  - For 2D signals, choose from HDMI, DP (DisplayPort), SDI
  - For 3D signals, choose SDI
- **Input Format**
  Select the format of the input source. Choose from:
  - Auto
  - For SDI sources, choose from 8K, 4K, HD, 8K 120 Hz
  - For DP sources, choose from 8K, 4K, HD
  - For HDMI sources, choose from 8K, 4K, HD
- **Transfer Format**
  This is only used for SDI sources. Select the transfer format for the SDI signal. Choose from Auto, 2-SI, SQD
- **Color Space**
  Select the Color Space for the input signal. Choose from Auto, Rec 709, Rec 2020.
- **RGB Range**
  Select the RGB Range setting for the input signal. Choose from Auto, Full, Limited.
- **Up Convert**
  Select On to

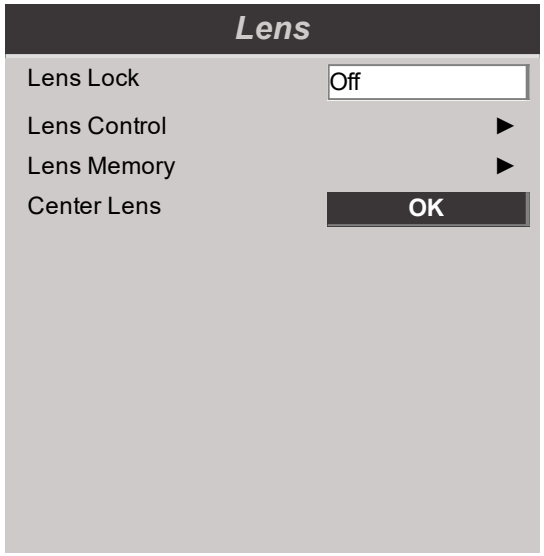


Notes

See Digital inputs and outputs on page 50 and See 3D connections on page 52 for guidance on how to connect an input source.

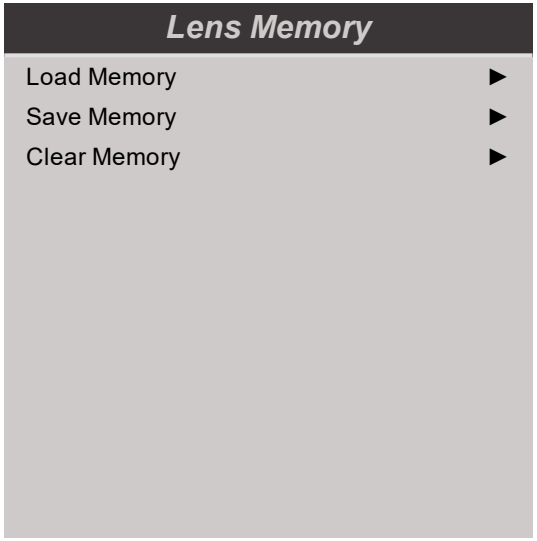
Lens

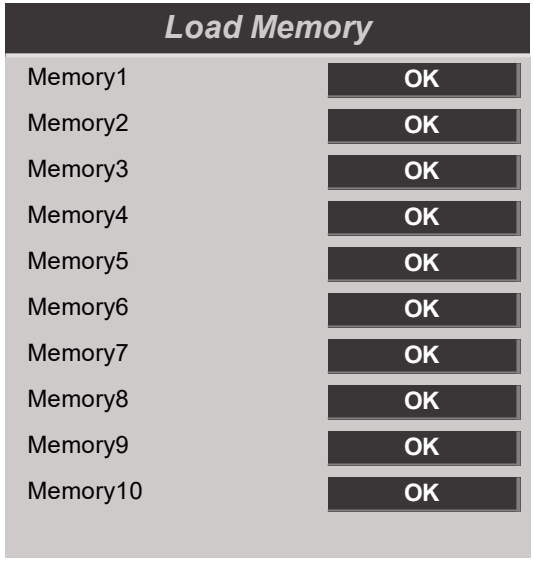
- **Lens Lock**
  Select **On** to lock the lens settings. All other Lens menu items are disabled when the lens lock is on.
- **Lens Control, Lens Memory**
  Opens a sub-menu, see below.
- **Center Lens**
  Select **OK** to center the Lens.



Lens Control

Lens Memory

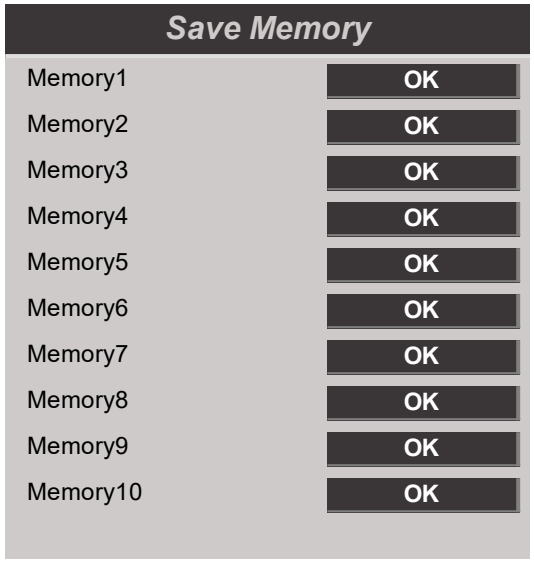


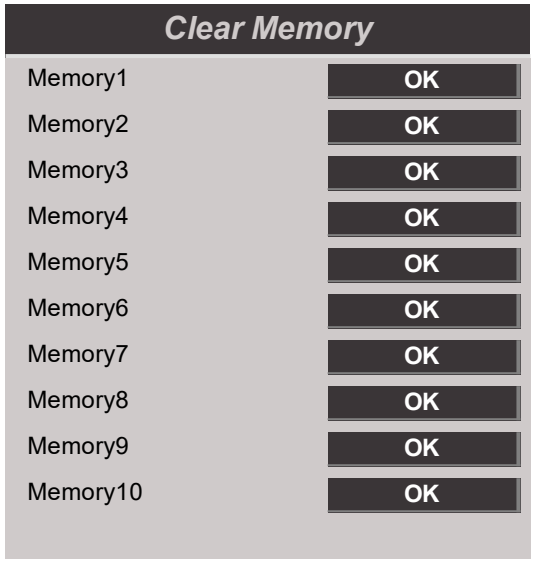


Notes

If using different screen sizes and aspect ratios, you can save zoom, focus and positioning for each screen size and aspect ratio as a memory option.

- **Load Memory**
  Open the sub menu and select a memory option to load the position, zoom, focus and shift adjustment information that has been stored.
- **Save Memory**
  Adjust the lens position, zoom, focus and shift as required. Open the sub menu and select a memory to save the information. This will overwrite the current information associated with that memory option.
- **Clear Memory**
  Open the sub menu and select a memory option to clear all information that has been stored.

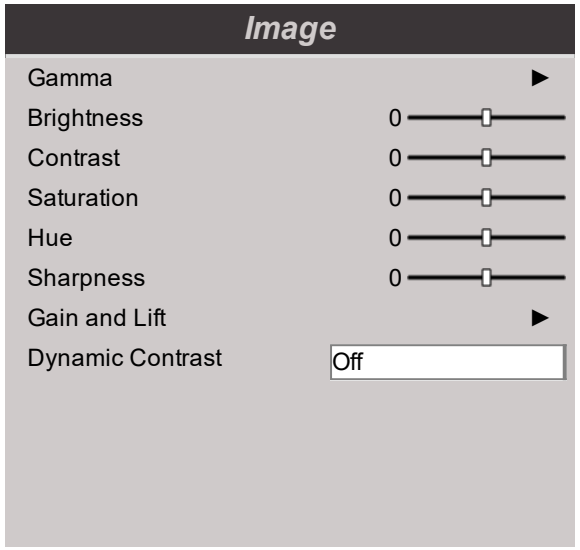




Notes

Image

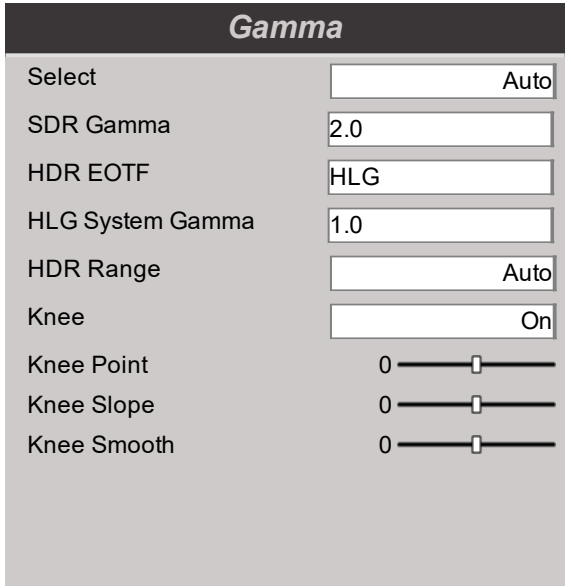
- **Gamma**
  Press **ENTER/OK** to open these menus and access various settings.
- **Brightness**
  Adjust the brightness level of the projected image as required.
- **Contrast**
  Adjust the contrast of the projected image as required.
- **Saturation**
  Adjust the color saturation of the projected image as required.
- **Hue**
  Adjust the color hue of the projected image as required.
- **Sharpness**
  Adjust the sharpness of the projected image as required.
- **Gain and Lift**
  Press **ENTER/OK** to open these menus and access various settings.
- **Dynamic Contrast**
  Select On to



Gamma

Used correctly, the **Gamma** setting can improve contrast while maintaining good details for blacks and whites.
If excess ambient light washes out the image and it is difficult to see details in dark areas, lower the **Gamma** setting to compensate. This improves contrast while maintaining good details for blacks. Conversely, if the image is washed out and unnatural, with excessive detail in black areas, increase the setting.

- **Select**
  Select the Gamma type. Choose from: Auto, SDR, HDR
- **SDR Gamma**
  Select the SDR Gamma value when the Gamma Type is set to SDR. Choose from: 2.0, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8
- **HDR EOTF**
  Select the HDR EOTF type when the Gamma Type is set to HDR. Choose from:
  - HLG. Hybrid Log Gamma is a broadcast version of HDR or live TV and events
  - PQ. Perceptual Quantizer is the digitizing concept for capture and display and provides metadata to enable the display to understand the coding of the content.
- **HLG System Gamma**
  Select the HLG System Gamma value when the HDR EOTF is set to HLG. Choose from: 1.0, 1.1, 1.2, 1.3, 1.4, 1.5

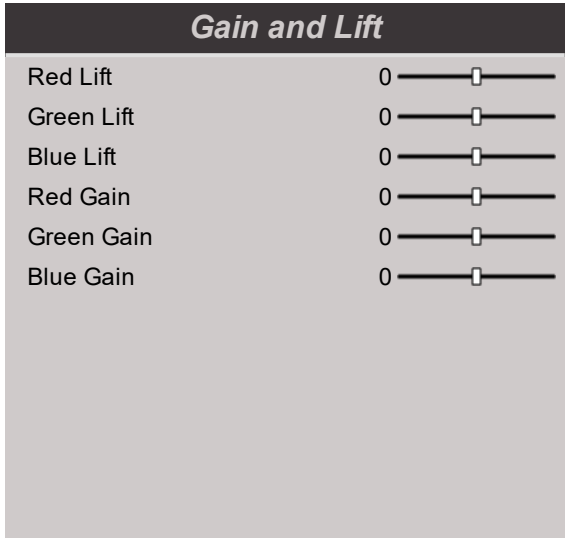


Notes

- **HDR Range**
  Select the HDR Range when the Gamma Type is set to HDR. Choose from Auto, Narrow Range, Full Range
- **Knee**
  Select **On** to activate the knee settings when the Gamma Type is set to HDR.
- **Knee Point, Knee Slope, Knee Smooth**
  Adjust the slider to set the Knee values as required.

Gain and Lift

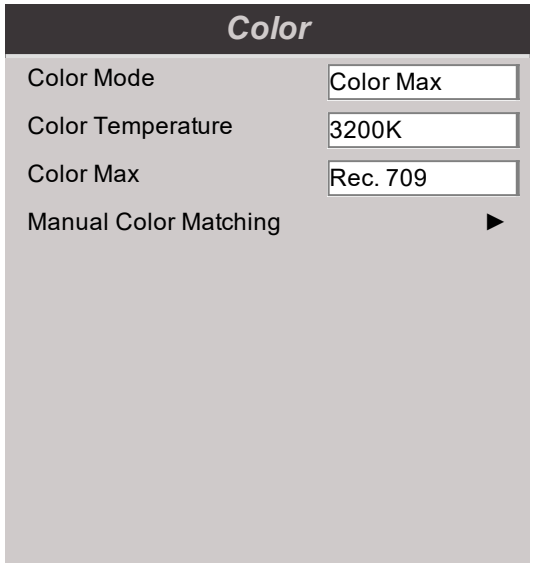
- **Lifts**
  Color lifts adjust black levels of an individual color on the projected image.
- **Gains**
  Color gains adjust the bright part of an individual color on the projected image.



Notes

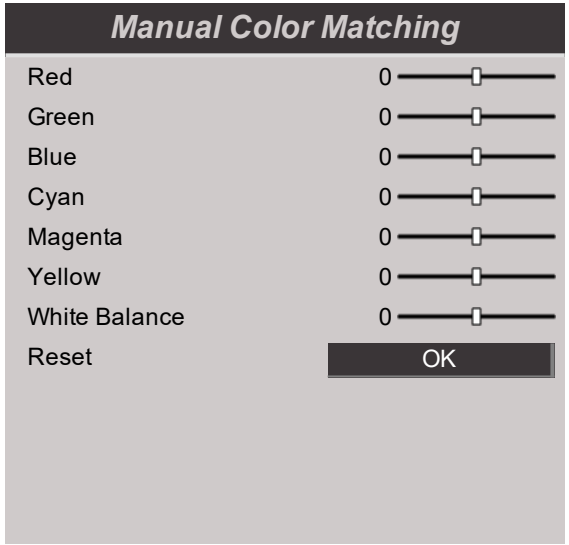
Color

- **Color Mode**
  Choose from Color Max, Manual Color.
- **Color Temperature**
  Choose from 3200K, 5400K, 6500K, 7500K, 9300K.
- **Color Max**
  Choose the Color Max setting when Color mode is set to Color Max. Choose from Rec. 709, Rec. 2020, DCI-P3, Native, User 1, User 2
    - **Manual Color Matching**
      Press **ENTER/OK** to open the sub menu when Color Mode is set to Manual Color.



Manual Color Matching

- Adjust **Hue**, **Saturationand** Gain settings for each individual color to improve the color balance of the projected image.
- Adjust white balance RGB values.
- Reset all values.



Notes

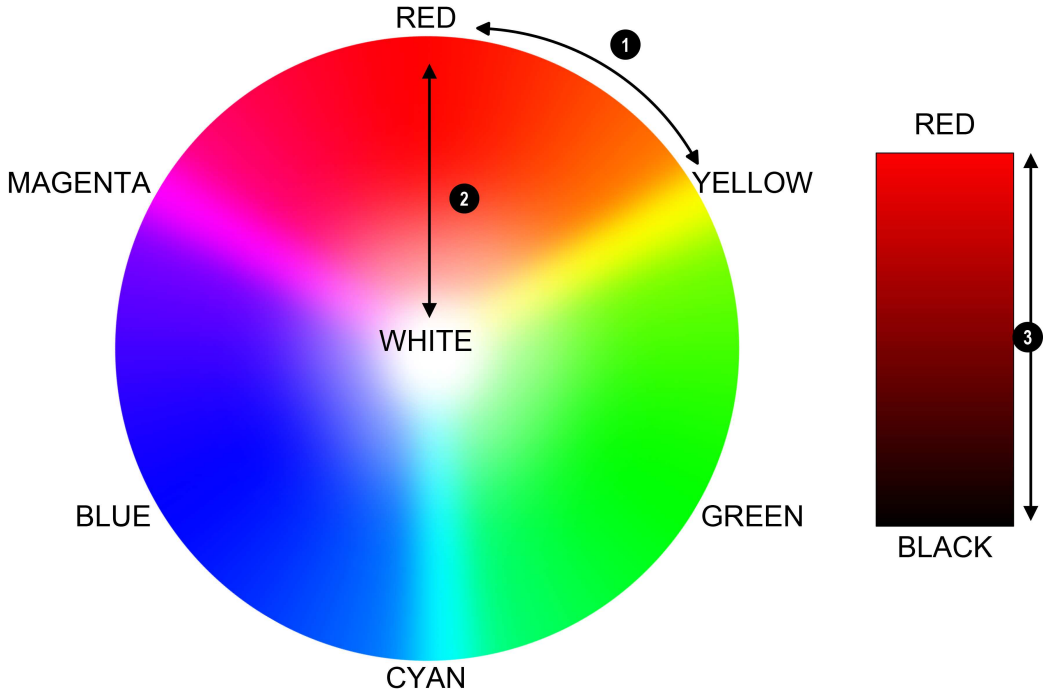
You can enter your own gamut values for the Color Max setting from the setup menu. See Color Max on page 73

See Color matching parameters explained on the facing page for more details about the Hue, Saturation and Gain settings.

Color matching parameters explained

The levels of hue, saturation and gain in the Manual Color Matching menu change the color values in the following ways:

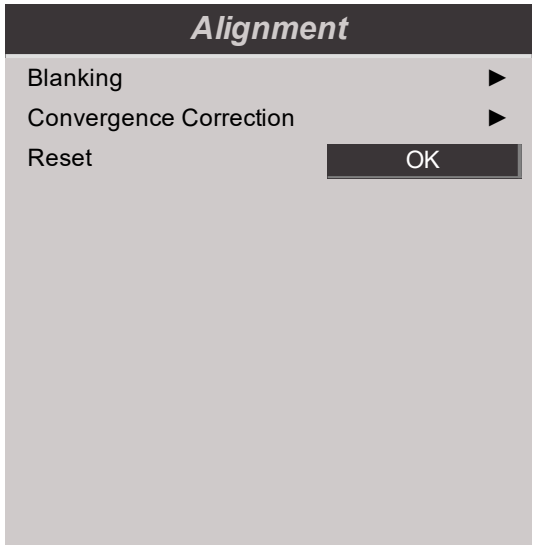
1. **Hue** Specifies the position of each color (red, yellow, green, cyan, blue and magenta) relative to its neighboring colors.
2. **Saturation** Specifies the level of white in each color (i.e. how “pale” each color is).
3. **Gain** Controls the amount of light that goes into each color, i.e. the lowest gain would produce black.



Notes

Alignment

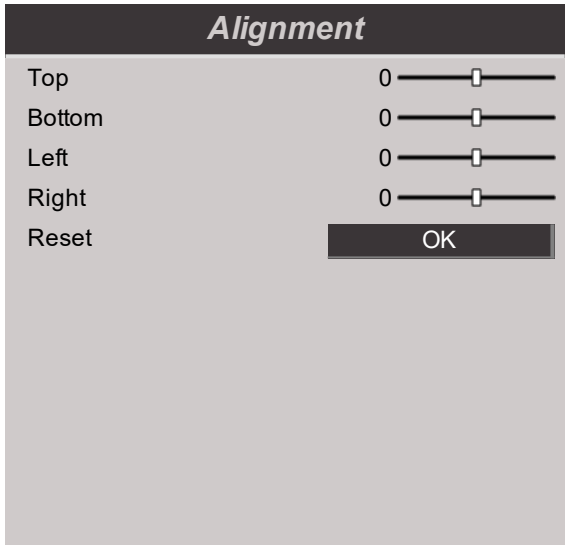
- **Blanking, Convergence Correction**
  Press **ENTER/OK** to open the sub menu.
- **Reset**
  Press **OK** to reset the alignment settings.



Blanking

Use this feature to, fit an odd-sized screen, cut off timecode dots in the top line of a picture, cut off subtitles, etc.

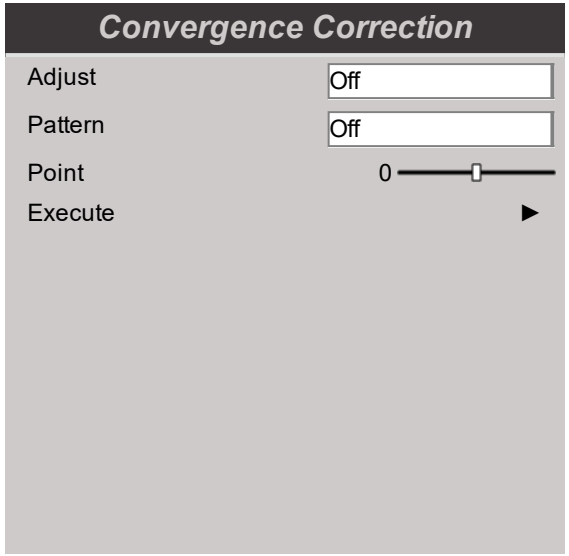
- **Top, Bottom, Left, Right**
  Select the edge you wish to blank and use the **LEFT** and **RIGHT** arrow buttons to determine the amount of correction.
- **Reset**
  Select **OK** to restore blanked edges.



Notes

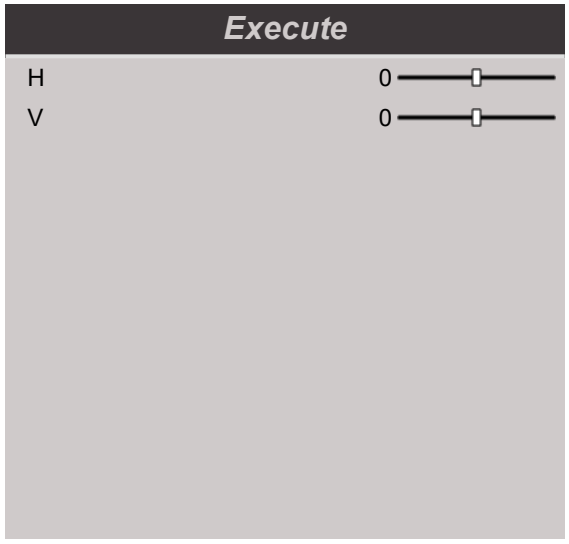
Convergence Correction

- **Adjust**
  Select **On** to.
- **Pattern**
  Select **On** to.
- **Point**
  Adjust the slider to.
- **Execute**
  Press **ENTER/OK** to open the submenu.



Execute

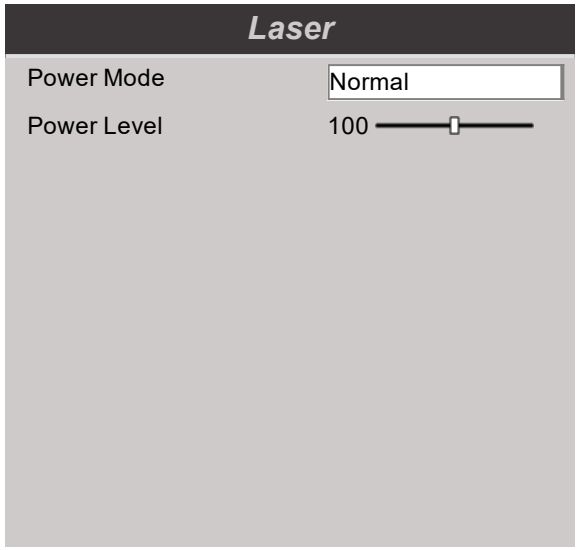
- **H**
  Adjust the slider to.
- **V**
  Adjust the slider to.



Notes

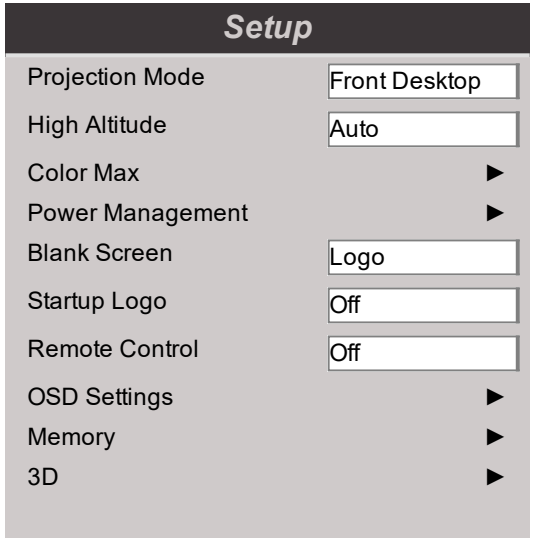
Laser

- **Power Mode**
  Choose from **Normal**, **ECO** and **Custom**.
- **Power Level**
  Choose a value between 30 and 100, ranging from 30% to 100% laser power when Power Mode is set to Custom.



Setup

- **Projection Mode**
  Select the orientation of the projected image. Choose from Front Desktop, Front Ceiling, Rear Desktop, Rear Ceiling.
- **High Altitude**
  Select the High Altitude mode setting. Chose from On, Auto.
- **Color Max, Power Management**
  Press **ENTER/OK** to open the submenu.
- **Blank Screen**
  Select what to display when screen blanking is activated. Choose from Logo, Black, Blue White.
- **Startup Logo**
  Select **ON** to display the logo on startup.
- **Remote Control**
  Select **ON** to enable use of the remote control.
- **OSD Settings, Memory, 3D**
  Press **ENTER/OK** to open the submenu.



Notes

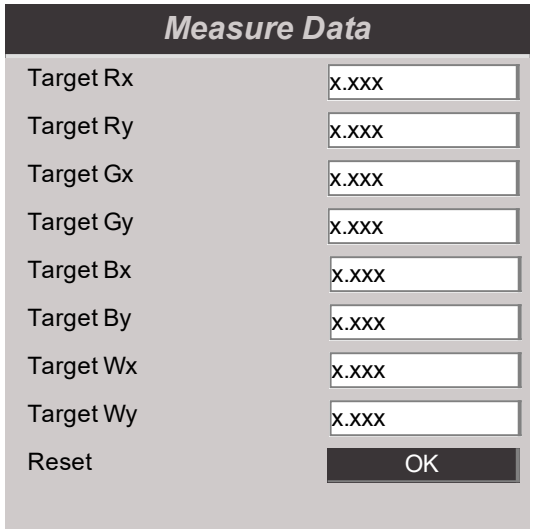
Color Max

ColorMax permits seven point color matching of red, green, blue, yellow, cyan, magenta and white.

You can enter your own gamut values here, or edit values you have imported using the **Projector Controller** software.

Defining your own colorspace with individual x and y coordinates for each color enables you to match not only the whites but each individual color as well.

- **Measure Data, Target Data User 1, Target Data User 2**
  Press **ENTER/OK** to open the submenu. Adjust the x and y coordinates for each color as required.
- **Main Menu**
  Go back to the main menu.



Notes

*The **Projector Controller** software is available for download from the Digital Projection website, free of charge.*

This tool is best used in conjunction with a specialized light meter (a photo spectrometer) to measure color parameters within a particular installation. However, the preloaded generic factory default data set is designed to give more than satisfactory results.

You can also set a default color gamut for the Color Max setting.
See on page 1

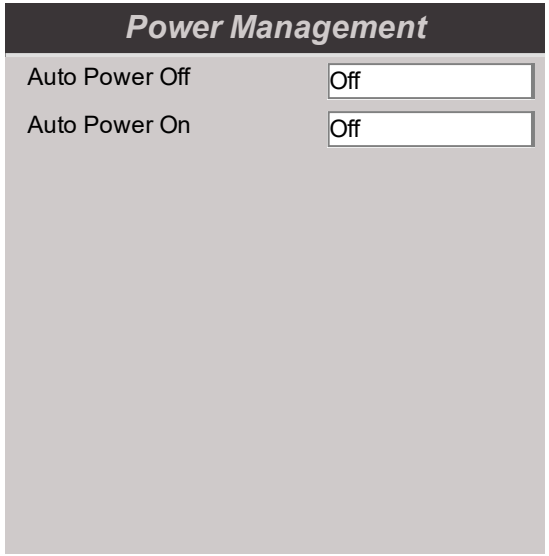
Target Data User 1	
Target Rx	x.xxx
Target Ry	x.xxx
Target Gx	x.xxx
Target Gy	x.xxx
Target Bx	x.xxx
Target By	x.xxx
Target Cx	x.xxx
Target Cy	x.xxx
Target Mx	x.xxx
Target My	x.xxx
Target Yx	x.xxx
Target Yy	x.xxx
Target Wx	x.xxx
Target Wy	x.xxx
Reset	OK

Target Data User 2	
Target Rx	x.xxx
Target Ry	x.xxx
Target Gx	x.xxx
Target Gy	x.xxx
Target Bx	x.xxx
Target By	x.xxx
Target Cx	x.xxx
Target Cy	x.xxx
Target Mx	x.xxx
Target My	x.xxx
Target Yx	x.xxx
Target Yy	x.xxx
Target Wx	x.xxx
Target Wy	x.xxx
Reset	OK

Notes

Power Management

- **Auto Power Off**
  Select **On** to activate the Auto Power Off mode. When on, the projector will switch into Standby mode if no input signal is detected for 20 minutes.
- **Auto Power On**
  Select **On** to activate the Auto Power On mode. When off the projector will switch into Standby mode when the power is connected.



OSD Settings

- **Language**
  Choose the language for the OSD.
- **Position**
  Choose the position where the OSD will be displayed on the projected image when it is activated. Choose from Top-Left, Top-Right, Bottom Left, Bottom Right.
- **Menu Transparency**
  Choose the transparency percentage level of the menu. Choose from 0, 25, 50, 75.
- **Timeout**
  Choose how long the OSD should remain on screen if no buttons are pressed. Choose from Always On, 10 Seconds, 30 Seconds, 60 Seconds.
- **Message Box**
  Enable this to trigger a confirmation message box when a command is used in the OSD.

Notes

Memory

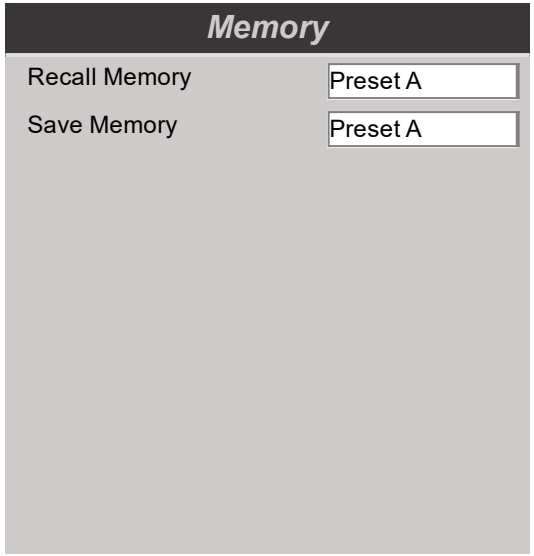
The current image settings can be saved as a preset, which you can recall later. The default settings can be recalled at any time as well.

The following settings are saved in a preset:

From the Image menu, Gamma, Brightness, Contrast, Saturation, Hue, Sharpness, Gain and Lift

From the Color menu, Color Mode, Color Temperature, ColorMax

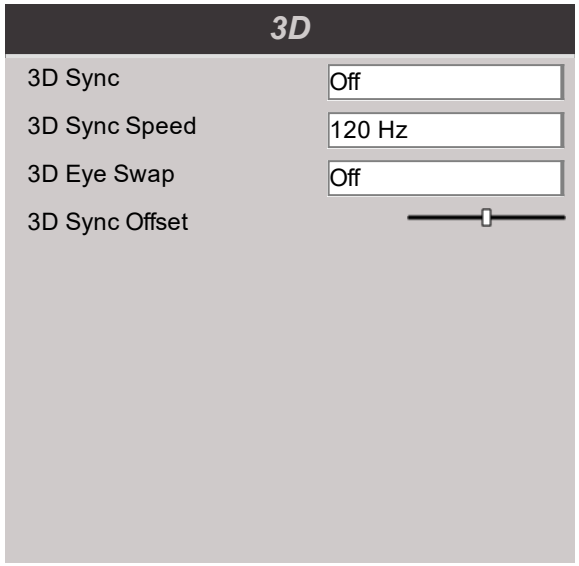
- **Recall Memory**
  Select a memory to recall the saved settings. Choose from Preset A, Preset B, Preset C, Preset D, Default.
- **Save Memory**
  Select a memory to save the current settings to. Choose from Preset A, Preset B, Preset C, Preset D.



Notes

3D

- **3D Sync**
  Select On to enable 3D sync.
- **3D Sync Speed**
  Select the appropriate 3D sync speed when 3D sync is enabled.
- **3D Eye Swap**
  Select on to swap from left eye dominance to right eye dominance.
- **3D Sync Offset**
  Adjust the slider to compensate for image overlapping (ghosting) when viewed through 3D glasses.



Notes

A frame rate multiplier is available via the projector controller application

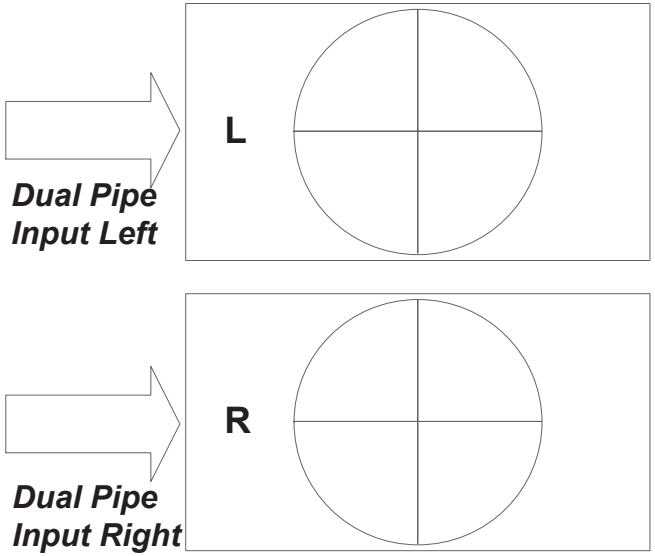
Dark Time is only applied if it is applicable to the source frame rate.

3D types

To display a 3D image it is first necessary to select the 3D format of the source:

- **Dual Pipe (LEFT and RIGHT)**
  The left and right eye images are delivered on two separate inputs, which the projector will interleave for 3D display. The left input delivers all images for the left eye, the right input delivers all images for the right eye.

3D Sync Offset needs to be set only once, to optimize the image for the glasses in use.



Dual Pipe Left/Right

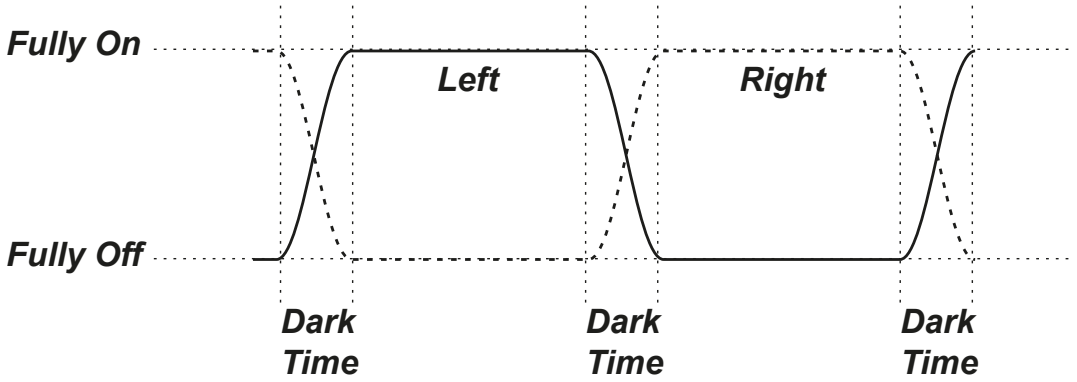
Notes

See 3D connections on page 52 for guidance on the 3D input connections.

Some 3D settings explained

3D Sync Speed

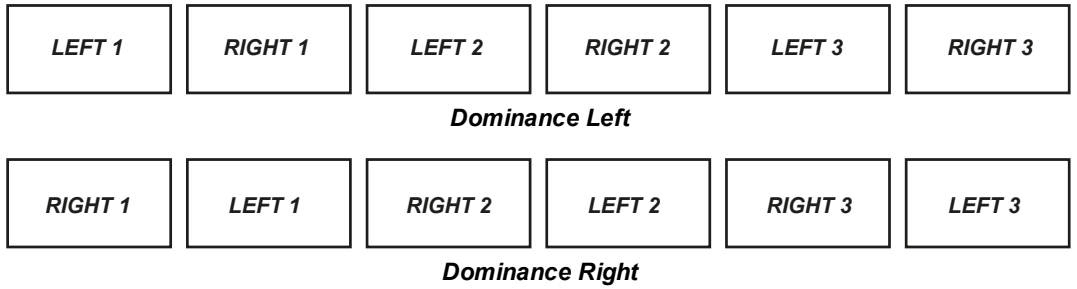
Banding can be caused if the image is displayed before each eye of the 3D switching glasses or ZScreen is not fully open. **3D Sync Speed** allows you to minimize this effect.



Source Dominance

The outgoing 3D frames are in pairs - the dominant frame being presented first. You can determine which frame should be the dominant one.

By convention the default setting is **Left**.

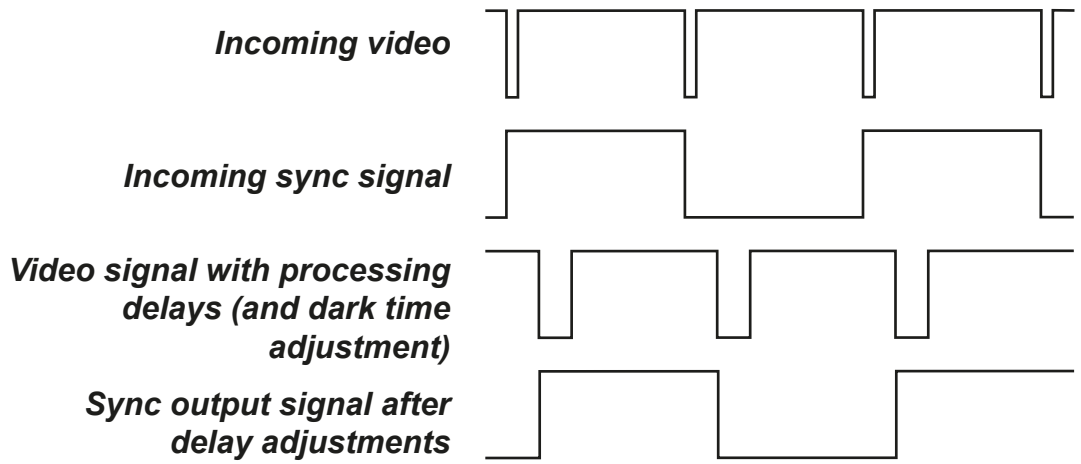


Notes

In order to achieve maximum light output and a smooth grayscale, whilst eliminating ghosting, the following procedure is recommended:
1. *Set **Dark Time** to a value appropriate to the glasses or ZScreen, say 1.3 ms or 1.95 ms. Set **3D Sync Speed** to a value appropriate to the glasses or ZScreen.*
2. *Adjust **3D Sync Offset** time to eliminate ghosting and achieve a smooth grayscale.*
3. *Repeat steps 1 and 2 until the best result is obtained.*

3D Sync Offset

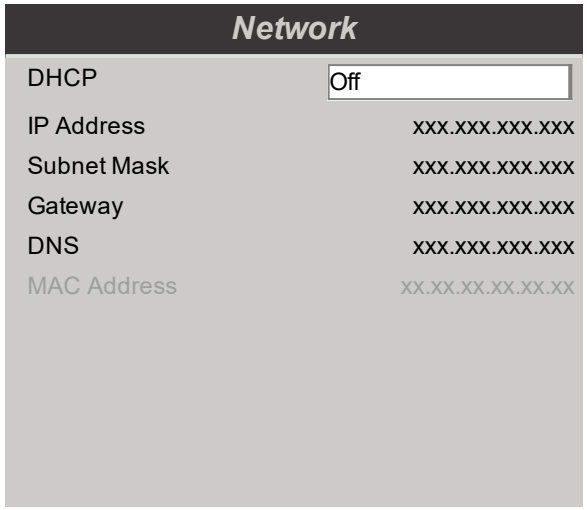
The sync signal from the 3D server will be in phase with the frames generated by its graphics card. However, to compensate for switching delays in the glasses or Z-Screen, **Sync Offset** is used to adjust the sync output signal sent to the Z-Screen or 3D glasses to minimise overlapping (ghosting in the image when viewed through the 3D glasses).



Notes

Network

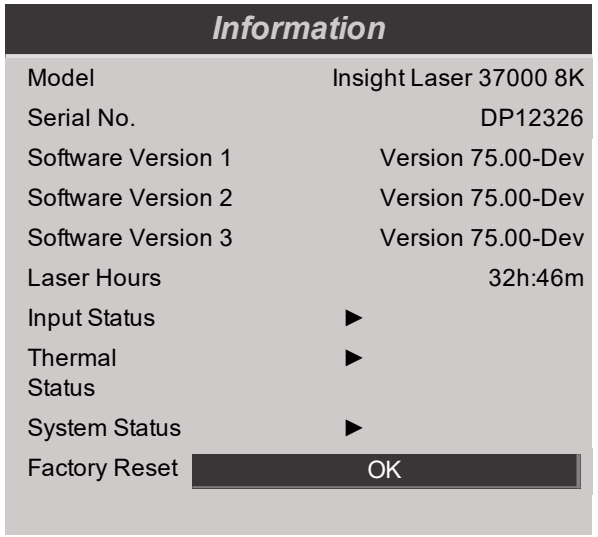
- **DHCP, IP Address, Subnet Mask, Gateway, DNS**
  Enable **DHCP** to assign the Network address via a DHCP server.
  If **DHCP** is not enabled, edit the IP address, Subnet Mask, Gateway and DNS as required.
- **MAC Address**
  Information only. This shows the current MAC Address.



Notes

Information

- **Model, Serial No., Software Version 1, Software Version 2, Software Version 3, Laser Hours.**
  Information only.
- **Input Status, Thermal Status, System Status.**
  Press **ENTER/OK** to open the sub menu.
- **Factory Reset**
  Select **OK** to restore the default factory settings.



Notes

Input Status

Information Only.

Input Status
Format
Ch 1
Ch 2
Ch 3
Ch 4
Ch 5
Ch 6
Ch 7
Ch 8
Ch 9
Ch 10
Ch 11
Ch 12
Ch 13
Ch 14
Ch 15
Ch 16

Notes

Thermal Status

Information only.

Thermal Status
Inlet Temp
DMD Temp
LD Temp
Fan 1-6 Speed
Fan 7-12 Speed
Fan 13-18 Speed
Fan 19-24 Speed
Fan 25-30 Speed
Fan 31-36 Speed
Fan 37-42 Speed
Water Pump

System Status

Information only.

System Status
Wheel Speed
Atmospheric Pressure
Altitude Mode
Laser Power
Filter Hours

Notes

DIGITAL PROJECTION

A Delta Associate Company

Insight Laser 37000 8K

High Brightness Digital Video Projector

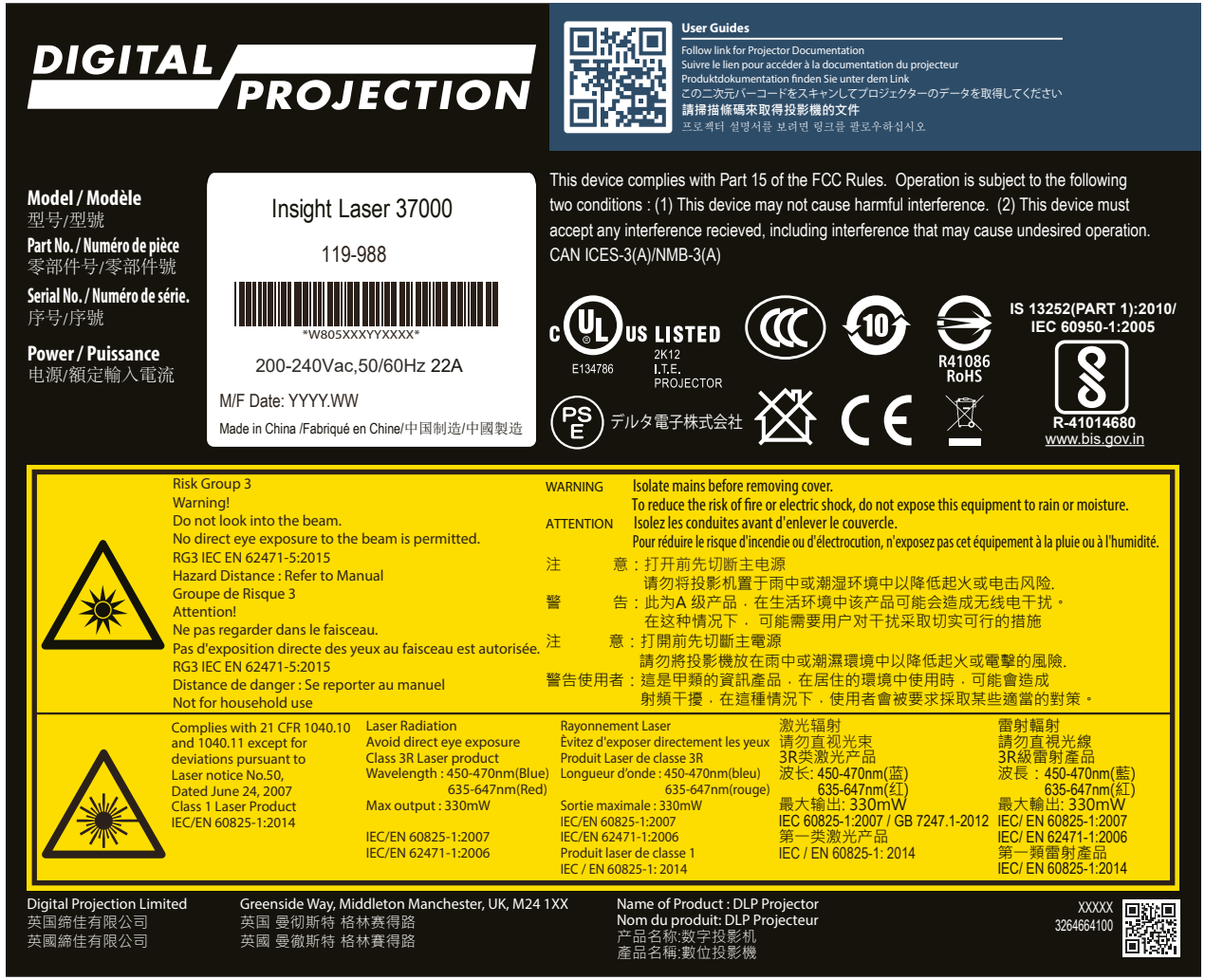
REFERENCE GUIDE

123-103A

Rev A January 2023

Appendix A: Product labels

Projector

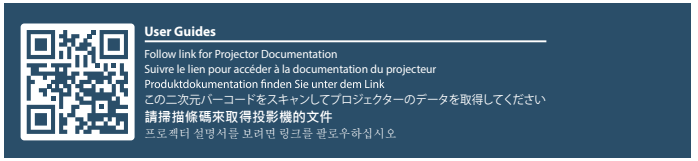


Manufacturers Label

Notes

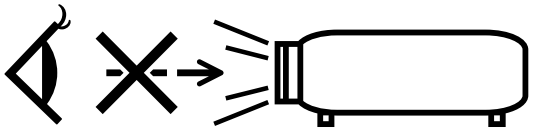
Laser Aperture Label

Laser Warning Label

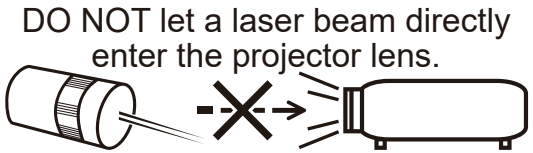


User Guides Label

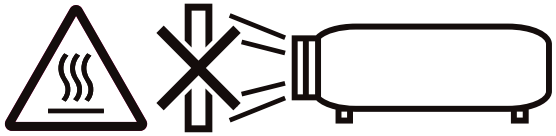
Electrical Safety Label



Laser Hazard Warning

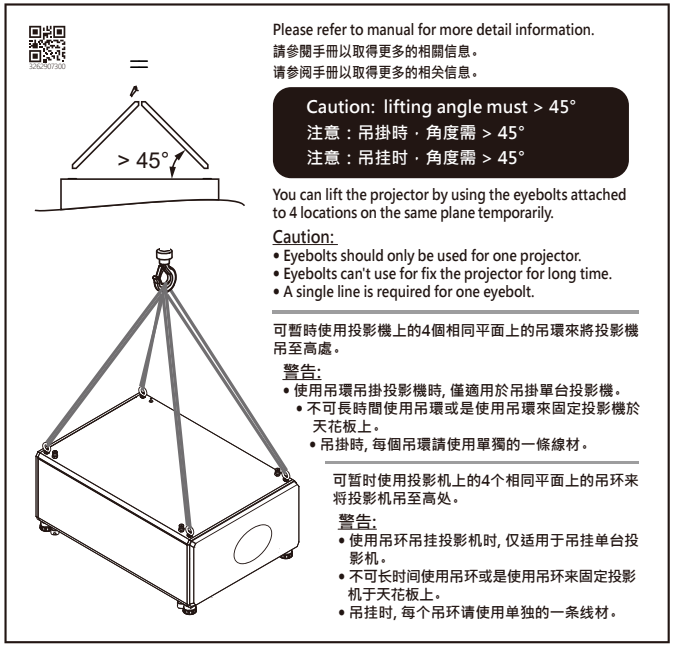


Lens Safety Label



Lens Obstruction Hazard Label

Notes



Lifting Guidance Label

Lens Hood

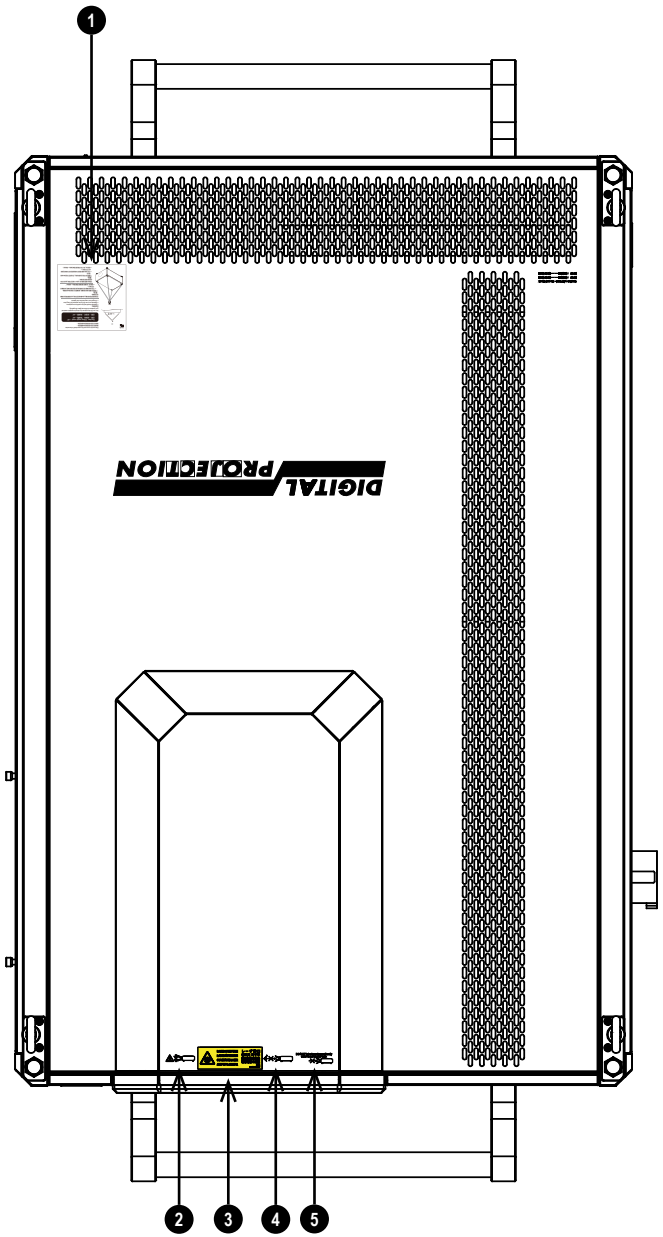
Laser Warning Label

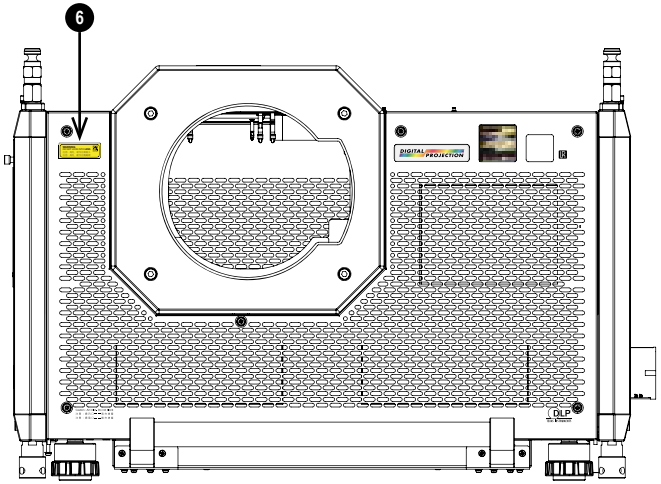
Notes

The lens hood is supplied with the lens. It is pre-fitted to the 2.53 - 4.98 : 1 zoom lens (4K) or2.70 - 5.31 : 1 zoom lens (8K) for use in the United States of America.

Label Locations

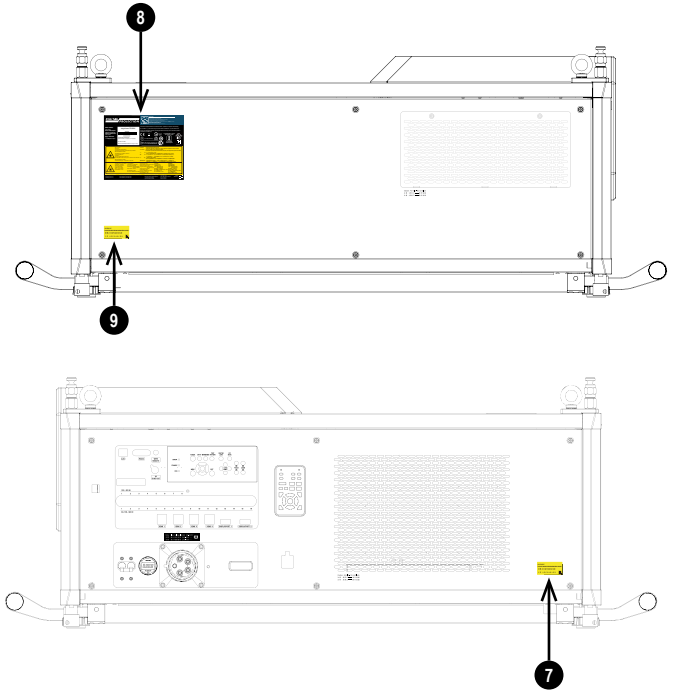
1. Location of the Lifting Guidance Label on the top of the projector.
2. Location of the Lens Obstruction Hazard Label on the top of the projector.
3. Location of the Laser Aperture Label on the top of the projector.
4. Location of the Laser Hazard Warning Label on the top of the projector.
5. Location of the Lens Safety Label on the top of the projector.
6. Location of the Laser Warning Label on the front of the projector.





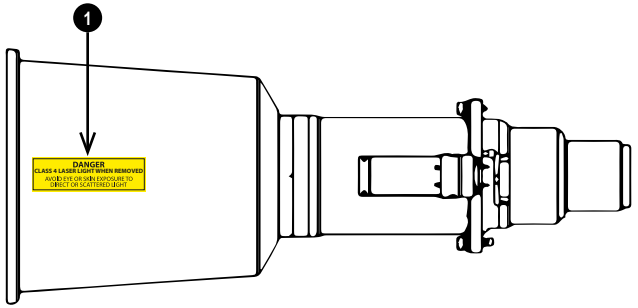
Notes

7. Location of the Electrical Safety Label on the left side of the projector.
8. Location of the Manufacturer's ID Label with Explanatory, Certification Statement and Risk Statement on the right side of the projector.
9. Location of the Electrical Safety Label on the right side of the projector.



Lens Hood

1. Location of the Laser Warning Label on the lens hood



Notes

Appendix B: Choosing a lens

A number of lenses are available. Which lens you choose depends on the screen size, image aspect ratio, throw distance and light output.

The following table shows all available lenses in order of their throw ratios:

Full 4K Throw Ratios

Throw ratios	Lens extension	Lens shift	Optimized focus range	Part number
0.93 : 1 fixed	257 mm (10.1 in)	V: 0.210 (U) 0.210 (D) frame H: 0.08 (L) 0.08 (R)	0.5 m - 40 m (1.6 ft - 130 ft)	117-310 (Does not support 8K resolution)
1.13 - 1.72 : 1 zoom	225 mm (8.9 in)	At 1.13:1 zoom: V: 0.340 (U) 0.190 (D) frame H: 0.09 (L) 0.09 (R) frame At 1.72:1 zoom: V: 0.500 (U) 0.190 (D) frame H: 0.16 (L) 0.16 (R) frame	2.5 m - 40+ m (8.2 ft - 130+ ft) at 1.13:1 0.5 m - 40+ m (1.6 ft - 130+ ft) at 1.72:1	115-627
1.65 - 2.60 : 1 zoom	195 mm (7.7 in)	At 1.65:1 zoom: V: 0.400 (U) 0.200 (D) frame H: 0.13 (L) 0.13 (R) frame At 2.60:1 zoom: V: 0.500 (U) 0.200 (D) frame H: 0.17 (L) 0.17 (R) frame	3.5 m - 40+ m (11.5 ft - 130+ ft) at 1.65:1 1.0 m - 40+ m (3.3 ft - 130+ ft) at 2.60:1	115-630
2.53 - 4.98 : 1 zoom	195 mm (7.7 in)	At 2.53:1 zoom: V: 0.375 (U) 0.200 (D) frame H: 0.13 (L) 0.13 (R) frame At 4.98:1 zoom: V: 0.500 (U) 0.195 (D) frame H: 0.16 (L) 0.16 (R) frame	1.5 m - 40+ m (4.9 ft - 130+ ft) at 2.53:1 4.5 m - 40+ m (14.8 ft - 130+ ft) at 4.98:1	115-632

4K-UHD 3840x2160 Throw Ratios

Throw ratios	Lens extension	Lens shift	Optimized focus range	Part number
0.99 : 1 fixed	257 mm (10.1 in)	V: 0.210 (U) 0.210 (D) frame H: 0.13 (L) 0.13 (R)	0.5 m - 40+ m (1.6 ft - 130 ft)	117-310
1.21 - 1.83 : 1 zoom	225 mm (8.9 in)	V: 0.40 (U) 0.20 (D) frame H: 0.08 (L) 0.14 (R) frame	2.5 m - 40+ m (8.2 ft - 130+ ft)	115-627
1.76 - 2.77 : 1 zoom	195 mm (7.7 in)	V: 0.45 (U) 0.20 (D) frame H: 0.13 (L) 0.17 (R) frame	3.5 m - 40+ m (11.5 ft - 130+ ft)	115-630
2.70 - 5.31 : 1 zoom	195 mm (7.7 in)	V: 0.42 (U) 0.20 (D) frame H: 0.13 (L) 0.17 (R) frame	4.5 m - 40+ m (14.8 ft - 130+ ft)	115-632

To choose a lens, calculate the ***throw ratio*** required. Allow a tolerance of +/- 3% in the throw ratio calculation.

Notes

Throw distance calculations are based on the distance from the outer end of the lens, which varies from lens to lens.
The lens extension is the distance between the front of the projector chassis and the outer end of the lens when it is fully extended.

Refer to the projector CAD drawings for individual lens extension figures.

See Fitting a lens hood on page 25 for more information about using the right lens and hood

Basic calculation

Identify the required lens by calculating the ***throw ratio***.

A ***throw ratio*** is the ratio of the throw distance ❷ to the screen width ❶:

$$ThrowRatio = ThrowDistance / ScreenWidth$$

1. Use the formula above to obtain the required throw ratio.
2. Allow a tolerance of +/- 3% in the throw ratio calculation and match the throw ratio with a lens from the table below:

Full 4K Throw Ratios

Throw ratios	Optimized focus range
0.93 : 1 fixed	0.5 m - 40+ m
1.13 - 1.72 : 1 zoom	At 1.13:1 zoom: 2.5 m - 100+ m At 1.72:1 zoom: 0.5 m - 100+ m
1.65 - 2.60 : 1 zoom	At 1.65:1 zoom: 3.5 m - 100+ m At 2.60:1 zoom: 1.0 m - 100+ m
2.53 - 4.98 : 1 zoom	At 2.53:1 zoom: 1.5 m - 100+ m At 4.98:1 zoom: 4.5 m - 100+ m

4K-UHD 3840x2160 Throw Ratios

Throw ratios	Optimized focus range
0.99 : 1 fixed	0.5 m - 40+ m
1.21 - 1.83 : 1 zoom	2.5 m - 100+ m
1.76 - 2.77 : 1 zoom	3.5 m - 100+ m
2.70 - 5.31 : 1 zoom	4.5 m - 100+ m

3. Ensure the required throw distance is within the range covered by the lens.

Notes

The basic calculation on this page does not take into consideration DMD™ and image size, which could affect the throw ratio. See Full lens calculation on page 94 for a more complex and realistic calculation.

When calculating the throw ratio, be sure to use identical measurement units for both the throw distance and the screen width.

See Choosing a lens on the previous page for information about individual lens part numbers

See Fitting a lens hood on page 25 for more information about using the right lens and hood

Basic calculation example

1. Calculate the throw ratio using the formula.
   Your screen is ***4.5m*** wide and you wish to place the projector approximately ***11m*** from the screen. The throw ratio will then be *11 ÷ 4.5*= ***2.44***
2. Match the result with the lens table.
   The lens matching a throw ratio of 2.44 is the ***1.65 : 2.60 : 1 zoom***.
3. Check whether the lens covers the required throw distance.
   The focus range quoted for the 1.65 : 2.60 : 1 zoom lens is **1 - 100m**.The required distance of 11m is within the range.

INFORMATION YOU NEED FOR THIS CALCULATION

The throw ratio formula:

$$ThrowRatio = ThrowDistance / ScreenWidth$$

Allow a tolerance of +/- 3% in the throw ratio calculation.

The lens table:

Full 4K Throw Ratios

Throw ratios	Optimized focus range
0.93 : 1 fixed	0.5 m - 40+ m
1.13 - 1.72 : 1 zoom	At 1.13:1 zoom: 2.5 m - 100+ m At 1.72:1 zoom: 0.5 m - 100+ m
1.65 - 2.60 : 1 zoom	At 1.65:1 zoom: 3.5 m - 100+ m At 2.60:1 zoom: 1.0 m - 100+ m
2.53 - 4.98 : 1 zoom	At 2.53:1 zoom: 1.5 m - 100+ m At 4.98:1 zoom: 4.5 m - 100+ m

4K-UHD 3840x2160 Throw Ratios

Throw ratios	Optimized focus range
0.99 : 1 fixed	0.5 m - 40+ m
1.21 - 1.83 : 1 zoom	2.5 m - 100+ m
1.76 - 2.77 : 1 zoom	3.5 m - 100+ m
2.70 - 5.31 : 1 zoom	4.5 m - 100+ m

Notes

The basic calculation on this page does not take into consideration DMD™ and image size, which could affect the throw ratio.See Full lens calculation on the next page for a more complex and realistic calculation.

See Choosing a lens on page 91 for information about individual lens part numbers.

Full lens calculation

Introducing TRC

The choice of lens will affect the image size and will address discrepancies between the DMD™ resolution and the source.

When an image fills the height of the DMD™ but not the width, it uses less than 100% of the DMD™ surface. A lens chosen using the basic formula may produce an image that is considerably smaller than the actual screen.

To compensate for loss of screen space in such situations, you need to increase the throw ratio using a **Throw Ratio Correction (TRC)**.

Example

Fig. 1 illustrates a 4:3 image within a 16:9 display

When a 16:9 projector is used for a 4:3 image, the image does not fill the width of the DMD™, creating a **pillarboxing** effect - blank spaces to the left and right.

Fig. 2 shows the same image projected on a 4:3 screen using a standard lens (chosen with the basic calculation).

The DMD™ accurately fills the width of the screen; however, the pillarboxing is now part of the projected image and is transferred to the screen.

The DMD™ does not fill the height of the screen, which has caused **letterboxing** - further blank spaces at the top and bottom of the screen.

The image is now surrounded by blank space, which can be removed if the throw ratio is increased.

Fig. 3 shows the image projected on the same screen with a lens chosen using TRC. The increased throw ratio has allowed the 4:3 image to fill the 4:3 screen seamlessly

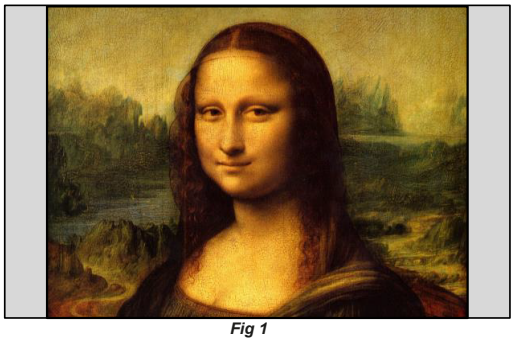


Fig 1

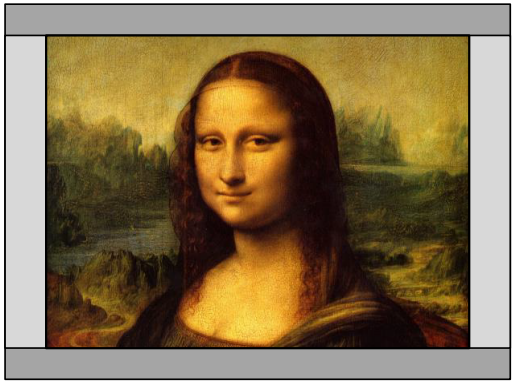


Fig 2

Fig 3

Notes

TRC can only be applied if greater than 1. If TRC is 1 or less, disregard it and calculate the throw ratio using the basic formula.

Calculating TRC

To calculate TRC, use the following formula:

TRC table

Alternatively, you can save time by referencing the following table, which shows the TRC value for some popular image formats:

2.35:1 (Scope)

1.85:1 (Flat)

1.78:1 (16:9)

1.66:1 (Vista)

1.6:1 (16:10)

1.33:1 (4:3)

1.25:1 (5:4)

Calculating the throw ratio with TRC

1. For TRC > 1, amend the basic throw ratio formula as follows:

   $$ThrowRatio = ThrowDistance/ScreenWidth * TRC$$

   Allow a tolerance of +/- 3% in the throw ratio calculation.
2. Once a throw ratio is established, identify the matching lens from the table:

Full 4K Throw Ratios

Throw ratios	Optimized focus range
0.93 : 1 fixed	0.5 m - 40+ m
1.13 - 1.72 : 1 zoom	At 1.13:1 zoom: 2.5 m - 100+ m At 1.72:1 zoom: 0.5 m - 100+ m
1.65 - 2.60 : 1 zoom	At 1.65:1 zoom: 3.5 m - 100+ m At 2.60:1 zoom: 1.0 m - 100+ m
2.53 - 4.98 : 1 zoom	At 2.53:1 zoom: 1.5 m - 100+ m At 4.98:1 zoom: 4.5 m - 100+ m

4K-UHD 3840x2160 Throw Ratios

Throw ratios	Optimized focus range
0.99 : 1 fixed	0.5 m - 40+ m
1.21 - 1.83 : 1 zoom	2.5 m - 100+ m
1.76 - 2.77 : 1 zoom	3.5 m - 100+ m
2.70 - 5.31 : 1 zoom	4.5 m - 100+ m

3. Ensure the required throw distance is within the range of the matching lens.

Notes

TRC can only be applied if greater than 1. If TRC is 1 or less, disregard it and calculate the throw ratio using the basic formula.

TRC can only be applied if greater than 1. If TRC is 1 or less, disregard it and calculate the throw ratio using the basic formula

See Fitting a lens hood on page 25 for more information about using the right lens and hood

Full lens calculation example

Your screen is **4.5m** wide; you wish to place the projector approximately **11m** from the screen. The source is **4:3**.

1. Calculate TRC as follows:
2. Calculate the throw ratio:
3. Allow a tolerance of +/- 3% in the throw ratio calculation and find a match in the lens table.
4. Check whether the lens covers the required throw distance.

INFORMATION YOU NEED FOR THESE CALCULATIONS

The TRC formula

$$TRC = DMD™\ AspectRatio/SourceAspectRatio$$

The TRC table (to use instead of the formula)

2.35:1 (Scope)

1.85:1 (Flat)

1.78:1 (16:9)

1.66:1 (Vista)

1.6:1 (16:10)

1.33:1 (4:3)

1.25:1 (5:4)

The throw ratio formula

$$ThrowRatio = ThrowDistance/ScreenWidth * TRC$$

Allow a tolerance of +/- 3% in the throw ratio calculation.

The lens table:

Full 4K Throw Ratios

Throw ratios	Optimized focus range
0.93 : 1 fixed	0.5 m - 40+ m
1.13 - 1.72 : 1 zoom	At 1.13:1 zoom: 2.5 m - 100+ m At 1.72:1 zoom: 0.5 m - 100+ m
1.65 - 2.60 : 1 zoom	At 1.65:1 zoom: 3.5 m - 100+ m At 2.60:1 zoom: 1.0 m - 100+ m
2.53 - 4.98 : 1 zoom	At 2.53:1 zoom: 1.5 m - 100+ m At 4.98:1 zoom: 4.5 m - 100+ m

4K-UHD 3840x2160 Throw Ratios

Throw ratios	Optimized focus range
0.99 : 1 fixed	0.5 m - 40+ m
1.21 - 1.83 : 1 zoom	2.5 m - 100+ m
1.76 - 2.77 : 1 zoom	3.5 m - 100+ m
2.70 - 5.31 : 1 zoom	4.5 m - 100+ m

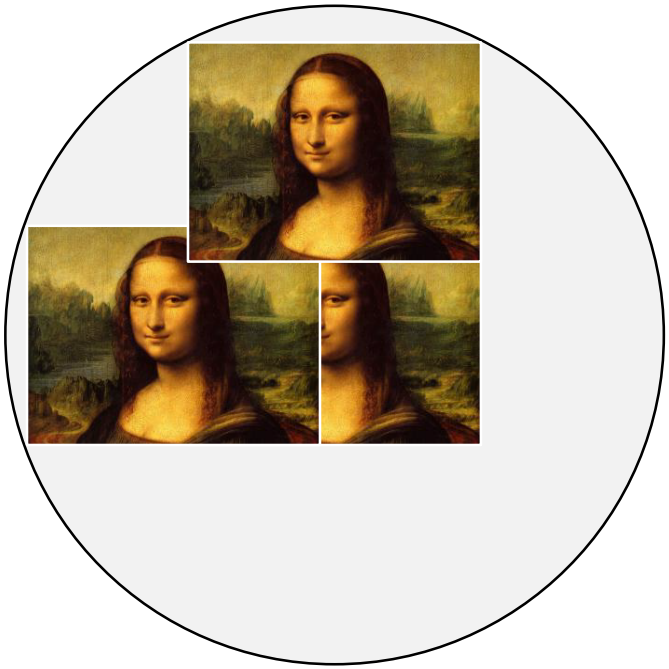
Notes

Appendix C: Positioning the image

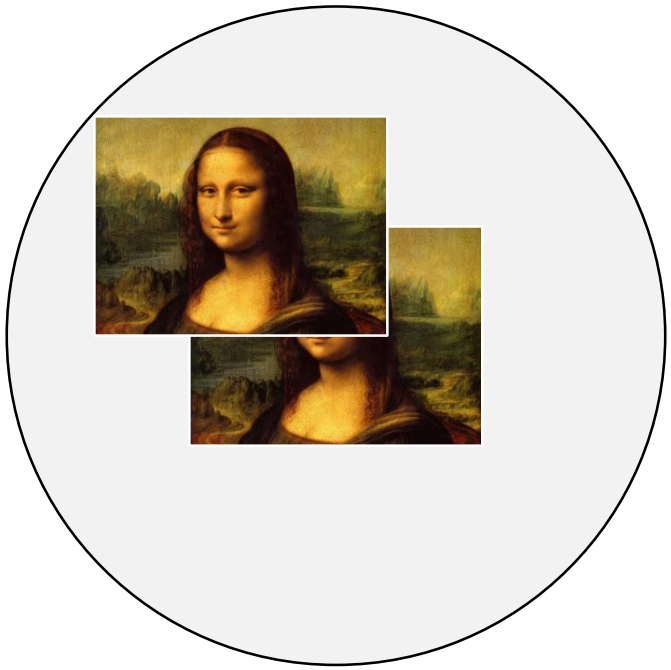
The normal position for the projector is at the center of the screen. However, you can set the projector above or below the center, or to one side, and adjust the image using the **Lens shift** feature (known as **rising and falling front**) to maintain a geometrically correct image.

Any single adjustment outside the ranges specified on the following page may result in an unacceptable level of distortion, particularly at the corners of the image, due to the image passing through the periphery of the lens optics.

If the lens is to be shifted in two directions combined, the maximum range without distortion will be somewhat less, as can be seen in the illustrations.



Full horizontal or vertical shift



Combined shift is reduced

Notes

Whenever possible, position the projector so that the lens is centered for the highest quality image

Appendix D: Supported signal input modes

2D formats

Notes

3D formats

Notes

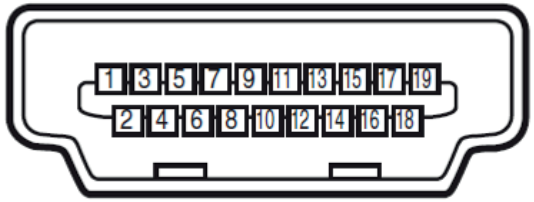
Appendix E: Wiring details

Signal inputs and outputs

HDMI

19 way type A connector

1. TMDS Data 2+
2. TMDS Data 2 Shield (Ground)
3. TMDS Data 2-
4. TMDS Data 1+
5. TMDS Data 1 Shield (Ground)
6. TMDS Data 1-
7. TMDS Data 0+
8. TMDS Data 0 Shield (Ground)
9. TMDS Data 0-
10. TMDS Clock+
11. TMDS Clock Shield (Ground)
12. TMDS Clock-
13. CEC
14. not connected
15. SCL (DDC Clock)
16. SCA (DDC Data)
17. DDC/CEC Shield (Ground)
18. +5 V Power
19. Hot Plug Detect



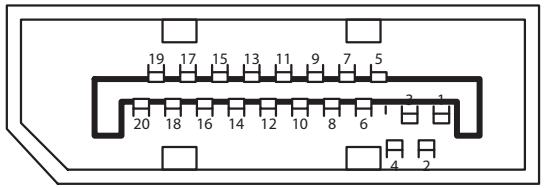
HDMI: pin view of panel connector

Notes

DisplayPort

DisplayPort 1.2

Pin 1	ML_Lane 0 (p)	Lane 0 (positive)
Pin 2	GND	Ground
Pin 3	ML_Lane 0 (n)	Lane 0 (negative)
Pin 4	ML_Lane 1 (p)	Lane 1 (positive)
Pin 5	GND	Ground
Pin 6	ML_Lane 1 (n)	Lane 1 (negative)
Pin 7	ML_Lane 2 (p)	Lane 2 (positive)
Pin 8	GND	Ground
Pin 9	ML_Lane 2 (n)	Lane 2 (negative)
Pin 10	ML_Lane 3 (p)	Lane 3 (positive)
Pin 11	GND	Ground
Pin 12	ML_Lane 3 (n)	Lane 3 (negative)
Pin 13	CONFIG1	Connected to Ground1
Pin 14	CONFIG2	Connected to Ground1
Pin 15	AUX CH (p)	Auxiliary Channel (positive)
Pin 16	GND	Ground
Pin 17	AUX CH (n)	Auxiliary Channel (negative)
Pin 18	Hot Plug	Hot Plug Detect
Pin 19	Return	Return for Power
Pin 20	DP_PWR	Power for connector (3.3 V 500 mA)



DisplayPort: pin view of panel connector

Notes

3G-SDI in, 3G-SDI out

75 ohm BNC

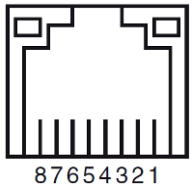
3G-SDI connector

Control connections

LAN

RJ45 socket

1. TX+
2. TX-
3. TXC
4. Ground
5. Ground
6. RXC
7. RX+
8. RX-

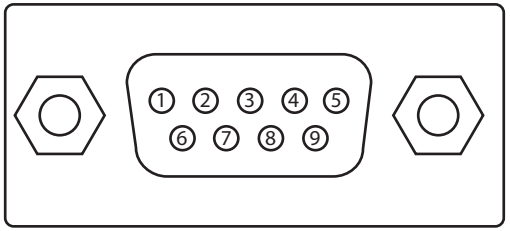


LAN: pin view of panel connector

RS232

9 way D-type connector

1. not connected
2. Received Data (RX)
3. Transmitted Data (TX)
4. not connected
5. Ground
6. not connected
7. Short with pin8
8. Short with pin7
9. not connected



RS232: pin view of panel male connector

Notes

Only one remote connection (RS232 or LAN) should be used at any one time.

Appendix F: Served web pages

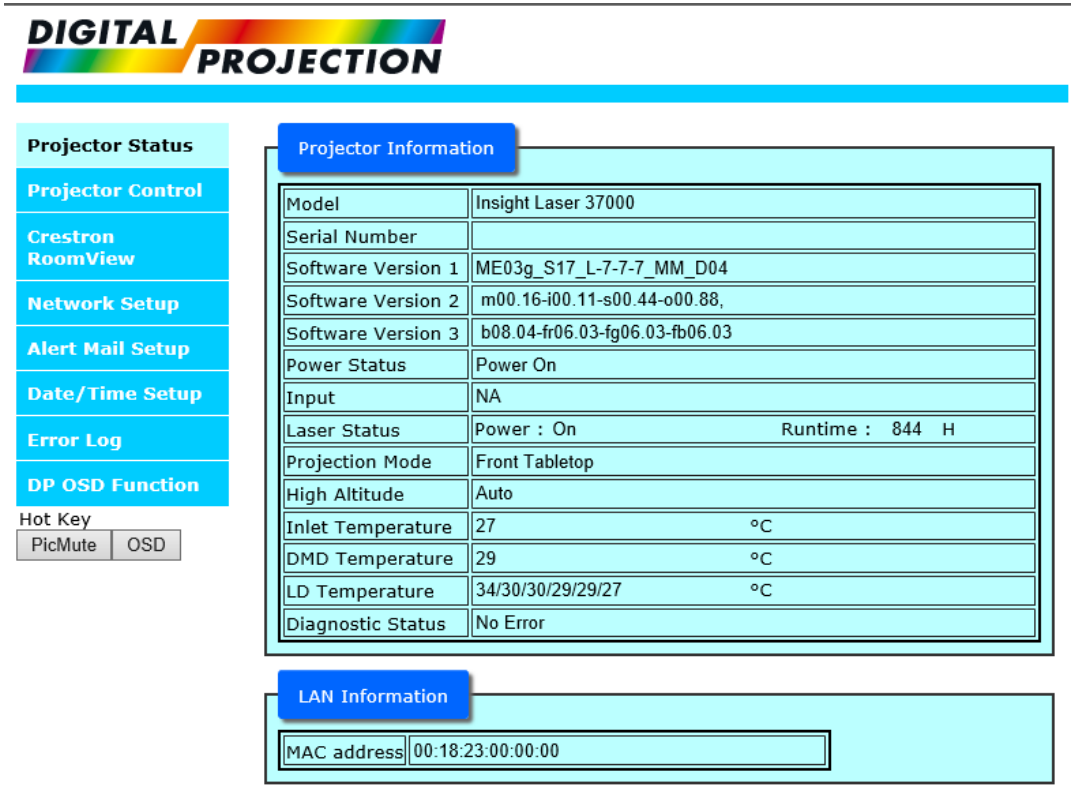
The device you use to access the served web pages must be connected to the same network as the projector. Use a web browser to access the served web pages.

The default IP address is ***192.168.0.100***.

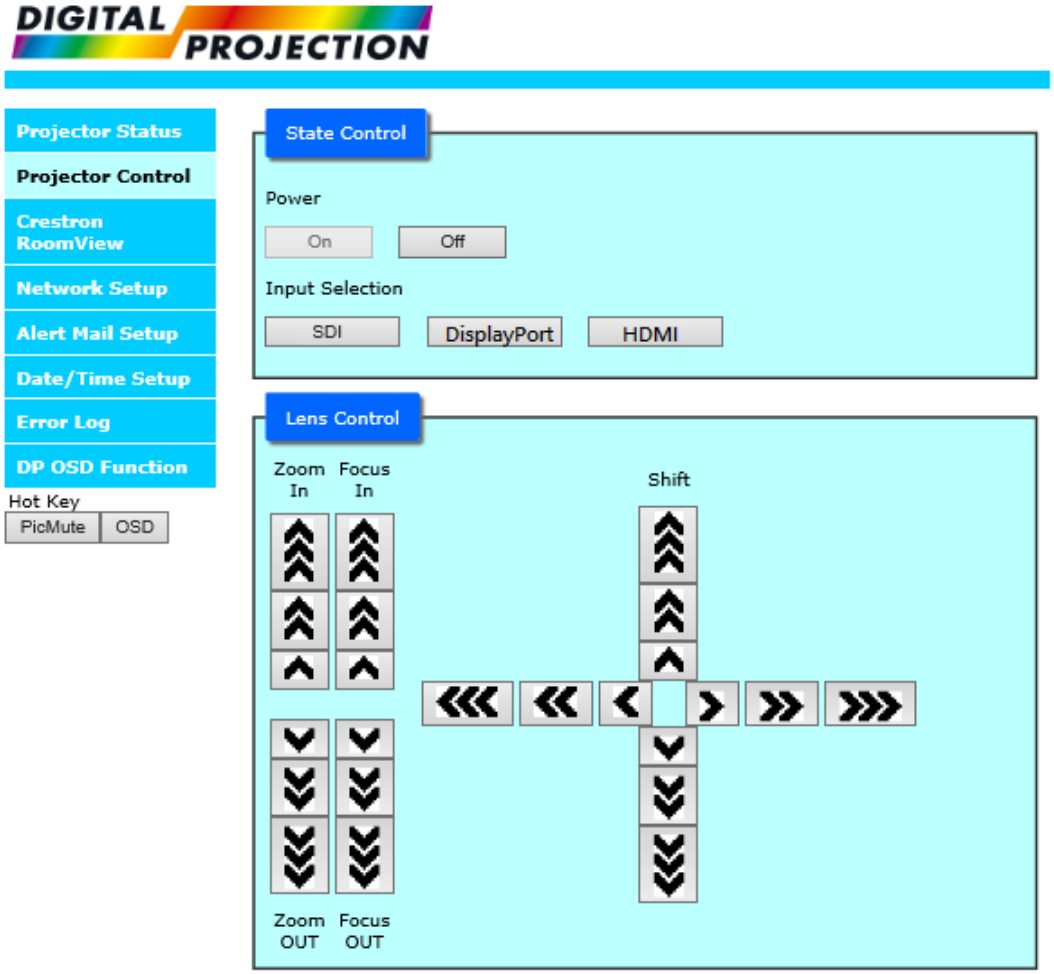
Notes

See Control connections on page 54 for guidance on connecting to the projector via LAN.

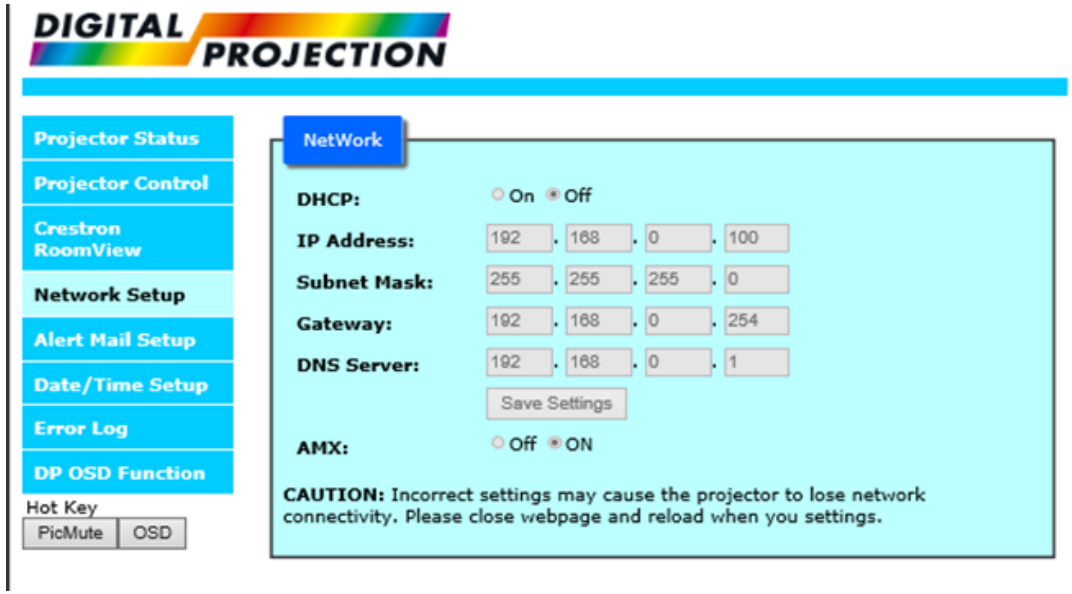
The IP address for the projector can be changed in the OSD. See Network on page 81.


DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute
OSD
Projector Information
Model
Insight Laser 37000
Serial Number
Software Version 1
ME03g_S17_L-7-7-7_MM_D04
Software Version 2
m00.16-i00.11-s00.44-o00.88,
Software Version 3
b08.04-fr06.03-fg06.03-fb06.03
Power Status
Power On
Input
NA
Laser Status
Power : On
Runtime : 844 H
Projection Mode
Front Tabletop
High Altitude
Auto
Inlet Temperature
27 °C
DMD Temperature
29 °C
LD Temperature
34/30/30/29/29/27 °C
Diagnostic Status
No Error
LAN Information
MAC address
00:18:23:00:00:00

Notes


DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute
OSD
State Control
Power
On
Off
Input Selection
SDI
DisplayPort
HDMI
Lens Control
Zoom In
Focus In
Shift
Zoom OUT
Focus OUT

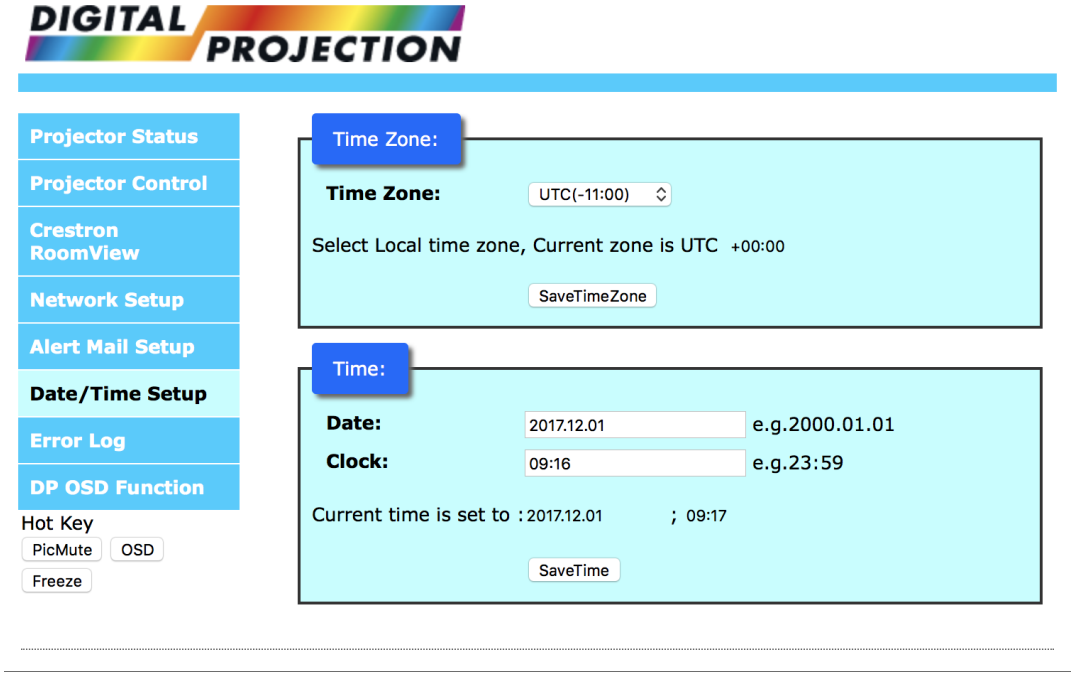
Notes


DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute
OSD
NetWork
DHCP:
On
Off
IP Address:
192 . 168 . 0 . 100
Subnet Mask:
255 . 255 . 255 . 0
Gateway:
192 . 168 . 0 . 254
DNS Server:
192 . 168 . 0 . 1
Save Settings
AMX:
Off
ON
CAUTION: Incorrect settings may cause the projector to lose network connectivity. Please close webpage and reload when you settings.

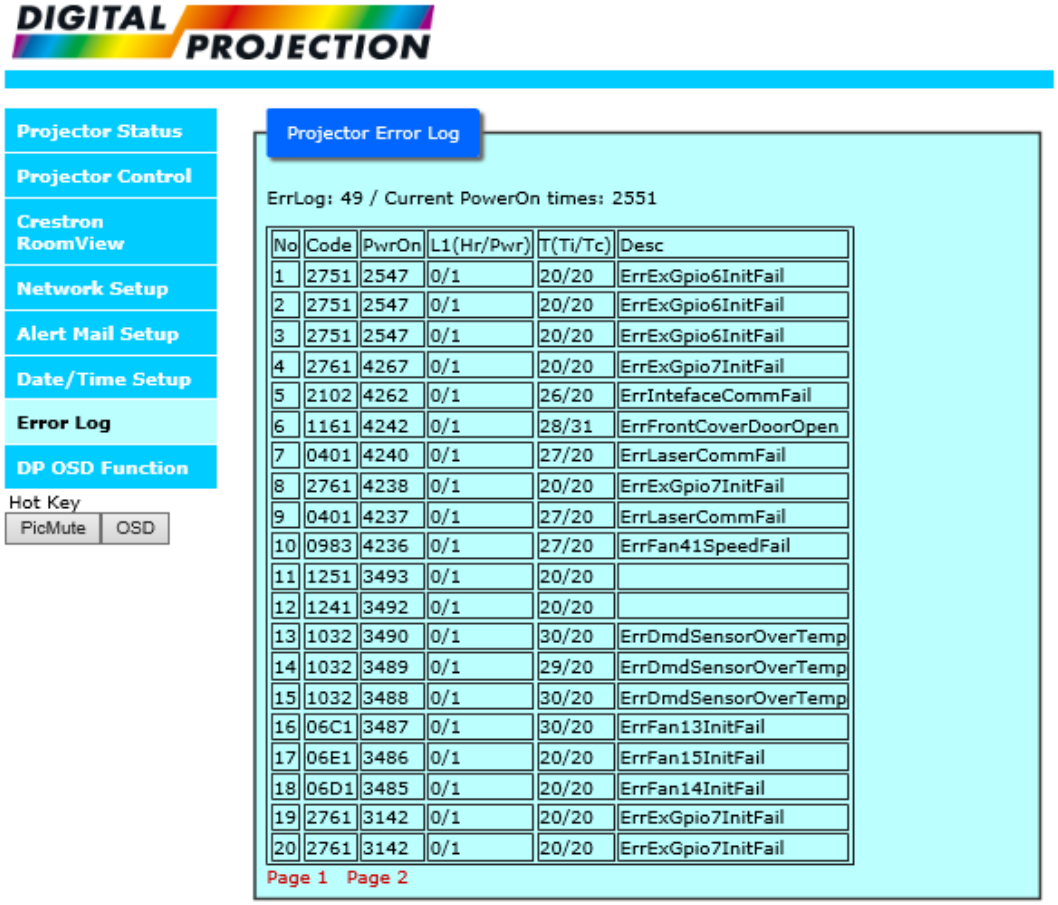
Notes


DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute
OSD
Freeze
Server Setup
SMTP Server:
Port:
25
User Name:
Password:
Apply
Mail
E-mail Alert:
Enable
Disable
From:
To:
CC:
Projector Name:
W714ZETCY0003
Location:
Apply
Test
Send Test Mail
Periodic Report
days
Sun Mon Tue Wed Thu Fri Sat
Times
00:00 01:00 02:00 03:00
04:00 05:00 06:00 07:00
08:00 09:00 10:00 11:00
12:00 13:00 14:00 15:00
16:00 17:00 18:00 19:00
20:00 21:00 22:00 23:00
reset
Save Set

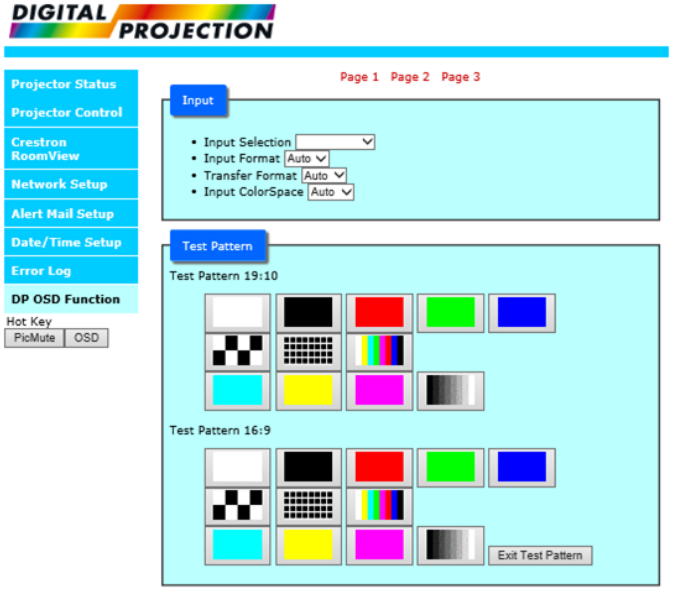
Notes


DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute
OSD
Freeze
Time Zone:
Time Zone:
UTC(-11:00)
Select Local time zone, Current zone is UTC +00:00
SaveTimeZone
Time:
Date:
2017.12.01
e.g.2000.01.01
Clock:
09:16
e.g.23:59
Current time is set to : 2017.12.01 ; 09:17
SaveTime

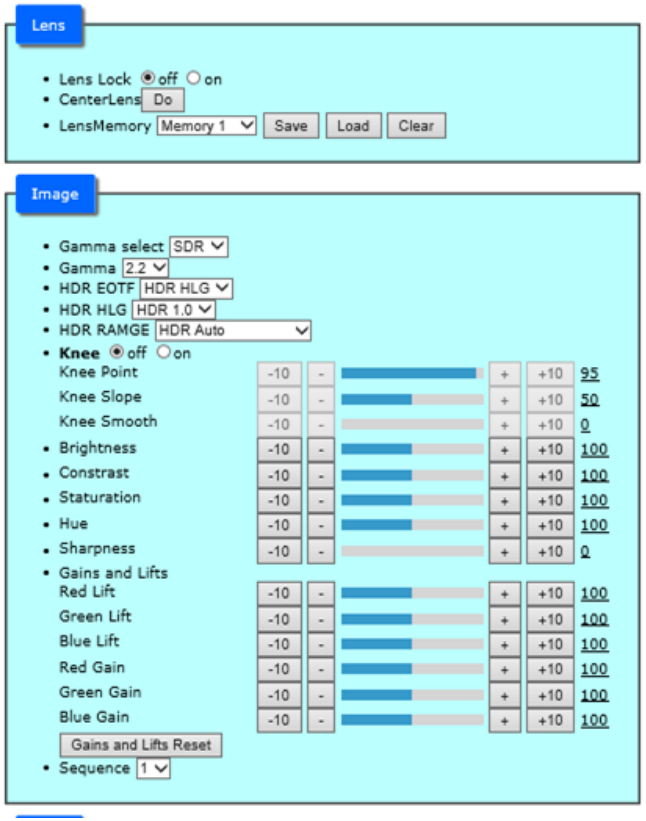
Notes


DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute
OSD
Projector Error Log
ErrLog: 49 / Current PowerOn times: 2551
No Code PwrOn L1(Hr/Pwr) T(Ti/Tc) Desc
1 2751 2547 0/1 20/20 ErrExGpio6InitFail
2 2751 2547 0/1 20/20 ErrExGpio6InitFail
3 2751 2547 0/1 20/20 ErrExGpio6InitFail
4 2761 4267 0/1 20/20 ErrExGpio7InitFail
5 2102 4262 0/1 26/20 ErrIntefaceCommFail
6 1161 4242 0/1 28/31 ErrFrontCoverDoorOpen
7 0401 4240 0/1 27/20 ErrLaserCommFail
8 2761 4238 0/1 20/20 ErrExGpio7InitFail
9 0401 4237 0/1 27/20 ErrLaserCommFail
10 0983 4236 0/1 27/20 ErrFan41SpeedFail
11 1251 3493 0/1 20/20
12 1241 3492 0/1 20/20
13 1032 3490 0/1 30/20 ErrDmdSensorOverTemp
14 1032 3489 0/1 29/20 ErrDmdSensorOverTemp
15 1032 3488 0/1 30/20 ErrDmdSensorOverTemp
16 06C1 3487 0/1 30/20 ErrFan13InitFail
17 06E1 3486 0/1 20/20 ErrFan15InitFail
18 06D1 3485 0/1 20/20 ErrFan14InitFail
19 2761 3142 0/1 20/20 ErrExGpio7InitFail
20 2761 3142 0/1 20/20 ErrExGpio7InitFail
Page 1 Page 2

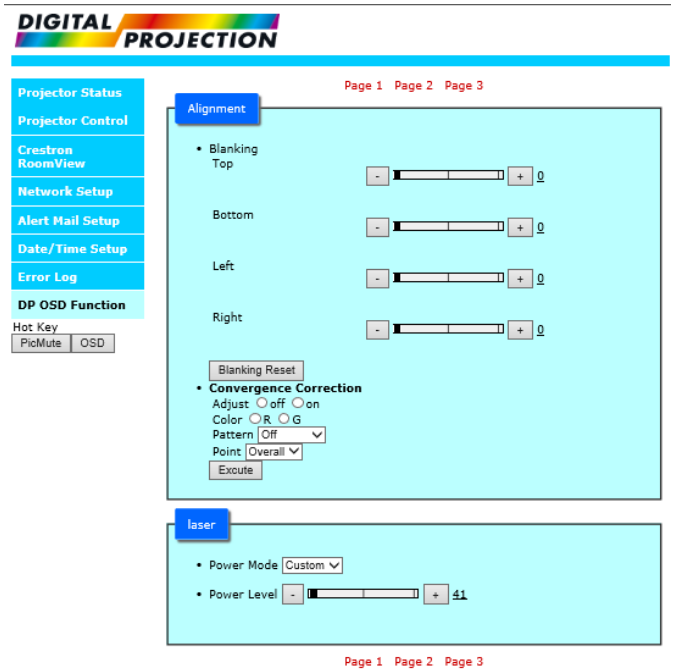
Notes

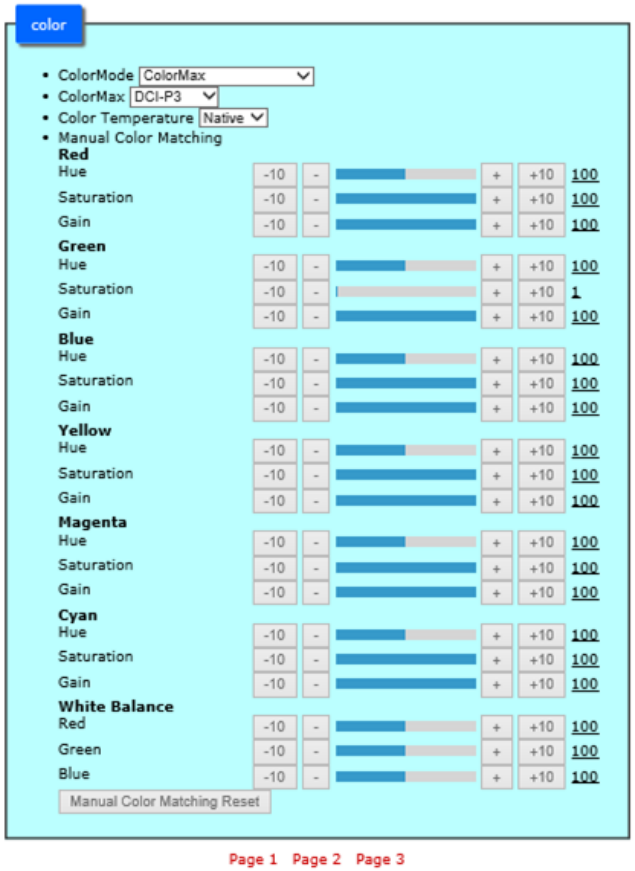

DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute
OSD
Page 1 Page 2 Page 3
Input
Input Selection
Input Format Auto
Transfer Format Auto
Input ColorSpace Auto
Test Pattern
Test Pattern 19:10
Test Pattern 16:9
Exit Test Pattern

Notes

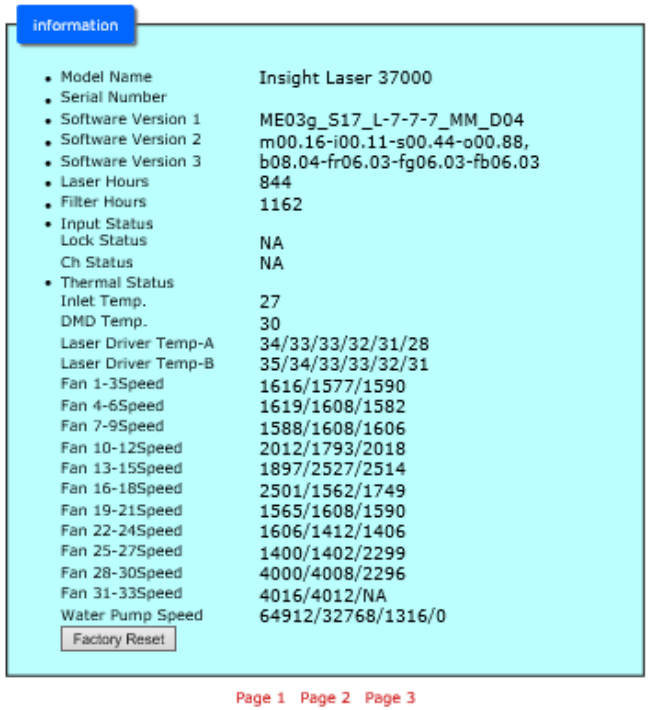

Lens
Lens Lock off on
CenterLens Do
LensMemory Memory 1 Save Load Clear
Image
Gamma select SDR
Gamma 2.2
HDR EOTF HDR HLG
HDR HLG HDR 1.0
HDR RAMGE HDR Auto
Knee off on
Knee Point -10 - + +10 95
Knee Slope -10 - + +10 50
Knee Smooth -10 - + +10 0
Brightness -10 - + +10 100
Constrast -10 - + +10 100
Staturation -10 - + +10 100
Hue -10 - + +10 100
Sharpness -10 - + +10 0
Gains and Lifts
Red Lift -10 - + +10 100
Green Lift -10 - + +10 100
Blue Lift -10 - + +10 100
Red Gain -10 - + +10 100
Green Gain -10 - + +10 100
Blue Gain -10 - + +10 100
Gains and Lifts Reset
Sequence 1

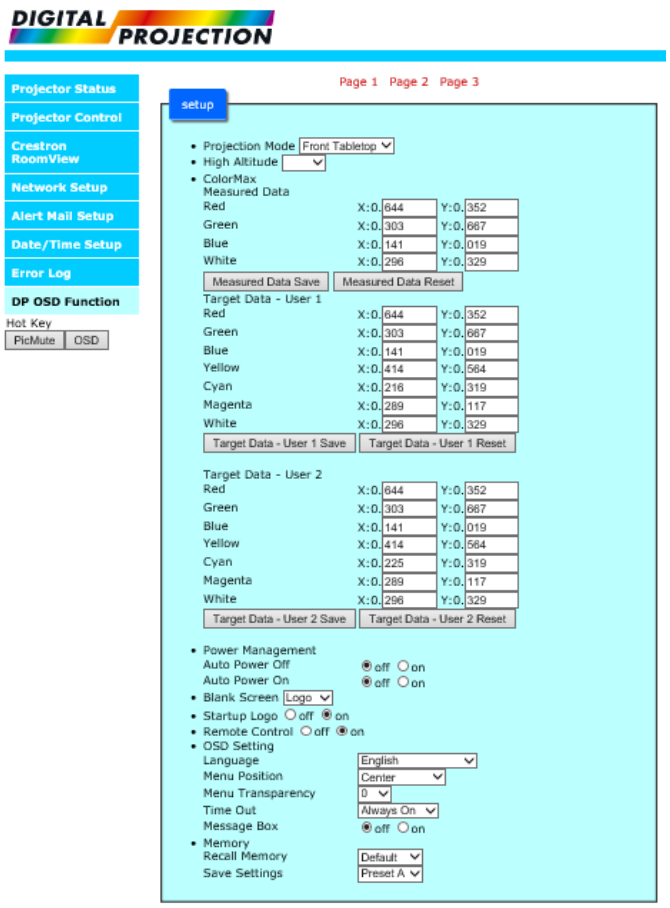
Notes


DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute
OSD
Page 1 Page 2 Page 3
Alignment
Blanking
Top
Bottom
Left
Right
Blanking Reset
Convergence Correction
Adjust off on
Color R G
Pattern Off
Point Overall
Excute
laser
Power Mode Custom
Power Level
Page 1 Page 2 Page 3


color
ColorMode ColorMax
ColorMax DCI-P3
Color Temperature Native
Manual Color Matching
Red
Hue
Saturation
Gain
Green
Hue
Saturation
Gain
Blue
Hue
Saturation
Gain
Yellow
Hue
Saturation
Gain
Magenta
Hue
Saturation
Gain
Cyan
Hue
Saturation
Gain
White Balance
Red
Green
Blue
Manual Color Matching Reset
Page 1 Page 2 Page 3

Notes


information
Model Name Insight Laser 37000
Serial Number
Software Version 1 ME03g_S17_L-7-7-7_MM_D04
Software Version 2 m00.16-i00.11-s00.44-o00.88,
Software Version 3 b08.04-fr06.03-fg06.03-fb06.03
Laser Hours 844
Filter Hours 1162
Input Status
Lock Status NA
Ch Status NA
Thermal Status
Inlet Temp. 27
DMD Temp. 30
Laser Driver Temp-A 34/33/33/32/31/28
Laser Driver Temp-B 35/34/33/33/32/31
Fan 1-3Speed 1616/1577/1590
Fan 4-6Speed 1619/1608/1582
Fan 7-9Speed 1588/1608/1606
Fan 10-12Speed 2012/1793/2018
Fan 13-15Speed 1897/2527/2514
Fan 16-18Speed 2501/1562/1749
Fan 19-21Speed 1565/1608/1590
Fan 22-24Speed 1606/1412/1406
Fan 25-27Speed 1400/1402/2299
Fan 28-30Speed 4000/4008/2296
Fan 31-33Speed 4016/4012/NA
Water Pump Speed 64912/32768/1316/0
Factory Reset
Page 1 Page 2 Page 3


DIGITAL PROJECTION
Projector Status
Projector Control
Crestron RoomView
Network Setup
Alert Mail Setup
Date/Time Setup
Error Log
DP OSD Function
Hot Key
PicMute OSD
Page 1 Page 2 Page 3
setup
Projection Mode Front Tabletop
High Altitude
ColorMax
Measured Data
Red X:0.644 Y:0.352
Green X:0.303 Y:0.667
Blue X:0.141 Y:0.019
White X:0.296 Y:0.329
Measured Data Save
Measured Data Reset
Target Data - User 1
Red X:0.644 Y:0.352
Green X:0.303 Y:0.667
Blue X:0.141 Y:0.019
Yellow X:0.414 Y:0.564
Cyan X:0.216 Y:0.319
Magenta X:0.289 Y:0.117
White X:0.296 Y:0.329
Target Data - User 1 Save
Target Data - User 1 Reset
Target Data - User 2
Red X:0.644 Y:0.352
Green X:0.303 Y:0.667
Blue X:0.141 Y:0.019
Yellow X:0.414 Y:0.564
Cyan X:0.225 Y:0.319
Magenta X:0.289 Y:0.117
White X:0.296 Y:0.329
Target Data - User 2 Save
Target Data - User 2 Reset
Power Management
Auto Power Off off on
Auto Power On off on
Blank Screen Logo
Startup Logo off on
Remote Control off on
OSD Setting
Language English
Menu Position Center
Menu Transparency 0
Time Out Always On
Message Box off on
Memory
Recall Memory Default
Save Settings Preset A

Notes

Appendix G: Glossary of terms

Notes

1

1080p
An HDTV resolution which corresponds to 1920 x 1080 pixels (a widescreen aspect ratio of 16:9).

3

3D active glasses
Wireless battery-powered glasses with LCD shutters. Synchronization information is communicated to the glasses by means of an infrared (IR) or radio frequency (RF) emitter which is connected to the Sync Out terminal on the projector. IR or RF pulses are transmitted by the emitter to signal when the left eye and right eye images are being displayed. The glasses incorporate a sensor which detects the emitter's signal and synchronizes the left and right eye shutters with the projected image.

3D passive glasses
Passive glasses do not require a power source to work. Light with left-hand polarization can pass through the left lens and light with right hand polarization can pass through the right-hand lens. These glasses are used in conjunction with another device which polarizes the image, such as a ZScreen.

4

4K-UHD
The 4K-UHD resolution of 3840 × 2160 is the dominant 4K resolution used in the consumer media and display industries. This resolution has an aspect ratio of 16 ∶9, with 8,294,400 total pixels.

A

Adjust lines
A pattern applied to the image where its edge is to be blended with another image. Adjust lines are used to position the projectors in the array during the edge blend process.

Anamorphic lens
A special lens which, when used with the TheaterScope aspect ratio, allows watching 2.35:1 content packed in a 16:9 source.

Aperture
The opening of the lens that determines the angle through which light travels to come into focus.

Aspect ratio
The proportional relationship between the width and the height of the projected image. It is represented by two numbers separated by a colon, indicating the ratio of image width and height respectively: for example, 16:9 or 2.35:1. Not to be confused with resolution.

B

Blanking (projection)
The ability to intentionally turn off, that is, set to black, areas around the edges of the projected image. It is sometimes referred to as “curtains” since it can be used to blank an area of image that literally falls on the curtains at the side of the screen in a movie theater. Usually no image resizing or geometric correction takes place and the “blanked” part of the image is lost. Not to be confused with horizontal and vertical blanking (video signal).

Blanking (video signal)
The section of the video signal where there is no active video data. Not to be confused with blanking (projection).

Blend region
The area of the image that is to overlap with another image in an edge blend setup. Sometimes called overlapping region.

Brightness (electronic control)
A control which adds a fixed intensity value to every pixel in the display, moving the entire range of displayed intensities up or down, and is used to set the black point in the image (see Contrast). In Component Video signals, brightness is the same as luminance.

Brightness (optical)
Describes how ‘bright’ an image that is projected onto a screen appears to an observer.

C

C
Also known as ‘Chrominance’, this is the component, or pair of components, of a Component Video signal which describes color difference information.

Chrominance
Also known as ‘C’, this is the component, or pair of components, of a Component Video signal which describes color difference information.

Color difference
In Component Video signals, the difference between specified colors and the luminance component. Color difference is zero for monochrome images.

Color gamut
The spectrum of color available to be displayed.

Color temperature
The position along the black body curve on the chromaticity diagram, normally quoted in Kelvin. It takes into account the preset values for color balance in the service set-up to take up the variations in the prism. The projector allows you to adjust this temperature (i.e. adjust the picture color temperature).

Notes

Component video
A three-wire or four-wire video interface that carries the signal split into its basic RGB components or luminance (brightness) and two-color difference signals (YUV) and synchronization signals.

Contrast (electronic control)
The adjustment of the white point of the image without affecting the black point. This increases the intensity range of the displayed image.

Contrast (optical)
The intensity difference between the darkest and lightest areas of the screen.

Cr, Cb
Color difference signals used with 'Y' for digital Component Video inputs. They provide information about the signal color. Not to be confused with Pr, Pb.

Crop
Remove part of the projected image. Alternatively, fit an image into a frame with a different aspect ratio by removing part of the image. The image is resized so that either its length or its width equals the length or width of the frame, while the other dimension has moved outside the frame; the excess area is then cut out.

D

Dark time
The time inserted between frames when using 3D active glasses, to avoid ghosting caused by switching time between left and right eye.

DDC (Display Data Channel)
A communications link between the source and projector. DDC is used on the HDMI, DVI and VGA inputs. The link is used by the source to read the EDID stored in the projector.

Deinterlacing
The process of converting interlaced video signals into progressive ones.

DHCP (Dynamic Host Configuration Protocol)
A network protocol that is used to configure network devices so that they can communicate on an IP network, for example by allocating an IP address.

DMD™ (Digital Micromirror Device™)
The optical tool that transforms the electronic signal from the input source into an optical image projected on the screen. The DMD™ of a projector has a fixed resolution, which affects the aspect ratio of the projected image. A Digital Micromirror Device™ (DMD™) consists of moving microscopic mirrors. Each mirror, which acts as a pixel, is suspended between two posts by a thin torsion hinge. It can be tilted to produce either a bright or dark pixel.

Notes

E

Edge blend
A method of creating a combined image by blending the adjoining edges of two or more individual images.

Edge tear
An artifact observed in interlaced video where the screen appears to be split horizontally. Edge tears appear when the video feed is out of sync with the refresh rate of the display device.

EDID (Extended Display Identification Data)
Information stored in the projector that can be read by the source. EDID is used on the HDMI, DVI and VGA inputs, allowing the source to automatically configure to the optimum display settings.

EDTV (Enhanced Definition Television)
A progressive digital television system with a lower resolution than HDTV.

F

Field
In interlaced video, a part of the image frame that is scanned separately. A field is a collection of either all the odd lines or all the even lines within the frame.

Frame
One of the many still images displayed in a sequence to create a moving picture. A frame is made of horizontal lines of pixels. For example, a 1920x1080 frame consists of 1080 lines, each containing 1920 pixels. In analog video frames are scanned one at a time (progressive scanning) or split into fields for each field to be scanned separately (interlaced video).

Frame rate
The number of frames shown per second (fps). In TV and video, a frame rate is the rate at which the display device scans the screen to “draw” the frame.

Frame rate multiplication
To stop low frame rate 3D images from flickering, frame rate multiplication can be used, which increases the displayed frame rate by two or three times

G

Gamma
A nonlinear operation used to code and decode luminance. It originates from the Cathode Ray Tube technology used in legacy television sets.

Ghosting
An artifact in 3D image viewing. Ghosting occurs when an image intended for one eye is partially seen by the other eye. Ghosting can be removed by optimizing the dark time and sync delay.

Notes

H

HDCP (High-bandwidth Digital Content Protection)
An encryption scheme used to protect video content.

HDTV (High Definition Television)
A television system with a higher resolution than SDTV and EDTV. It can be transmitted in various formats, notably 1080p and 720p.

Hertz (Hz)
Cycles per second.

Horizontal Scan Rate
The rate at which the lines of the incoming signal are refreshed. The rate is set by the horizontal synchronization from the source and measured in Hertz.

Hs + Vs
Horizontal and vertical synchronization.

Hue
The graduation (red/green balance) of color (applicable to NTSC).

I

Interlacing
A method of updating the image. The screen is divided in two fields, one containing every odd horizontal line, the other one containing the even lines. The fields are then alternately updated. In analog TV interlacing was commonly used as a way of doubling the refresh rate without consuming extra bandwidth.

Interleaving
The alternation between left and right eye images when displaying 3D.

L

LED (Light Emitting Diode)
An electronic component that emits light.

Letterboxing
Black margins at the top and bottom of the image. Letterboxing appears when a wider image is packed into a narrower frame without changing the original aspect ratio.

Notes

Lumen
A photometric unit of radiant power. For projectors, it is normally used to specify the total amount of emitted visible light.

Luminance
Also known as 'Y', this is the part of a Component Video signal which affects the brightness, i.e. the black and white part.

N

Noise
Electrical interference displayed on the screen.

NTSC (National Television Standards Committee)
The United States standard for television - 525 lines transmitted at 60 interlaced fields per second

O

OSD (on-screen display)
The projector menus allowing you to adjust various settings.

Overlapping region
The area of the image that is to overlap with another image in an edge blend setup. Sometimes called overlapping region.

P

PAL (Phase Alternate Line)
The television system used in the UK, Australia and other countries - 625 lines transmitted at 50 interlaced fields per second.

Pillarboxing
Black margins at the left and right of the image. Pillarboxing appears when a narrower image is packed into a wider frame without changing the aspect ratio.

Pixel
Short for Picture Element. The most basic unit of an image. Pixels are arranged in lines and columns. Each pixel corresponds to a micromirror within the DMD™; resolutions reflect the number of pixels per line by the number of lines. For example, a 1080p projector contains 1080 lines, each consisting of 1920 pixels.

Pond of mirrors
Area around the periphery of the DMD™ containing inactive mirrors. The pond of mirrors may cause artifacts, for example during the edge blending process.

Notes

Pr, Pb
Color difference signals used with 'Y' for analog Component Video inputs. They provide information about the signal color. Not to be confused with Cr, Cb.

Primary colors
Three colors any two of which cannot be mixed to produce the third. In additive color television systems the primary colors are red, green and blue.

Progressive scanning
A method of updating the image in which the lines of each frame are drawn in a sequence, without interlacing.

Pulldown
The process of converting a 24 fps film footage to a video frame rate (25 fps for PAL/SECAM, 30 fps for NTSC) by adding extra frames. DP projectors automatically carry out reverse pulldown whenever possible.

R

Resolution
The number of pixels in an image, usually represented by the number of pixels per line and the number of lines (for example, 1920 x 1200).

RGB (Red, Green and Blue)
An uncompressed Component Video standard.

S

Saturation
The amount of color in an image.

Scope
An aspect ratio of 2.35:1.

SDTV (Standard Definition Television)
An interlaced television system with a lower resolution than HDTV. For PAL and SECAM signals, the resolution is 576i; for NTSC it is 480i.

SECAM (Sequential Color with Memory)
The television system used in France, Russia and some other countries - 625 lines transmitted at 50 interlaced fields per second.

Smooth picture
A feature that can display a higher resolution source than the native resolution of the projector without loosing any pixel data.

SX+
A display resolution of 1400 x 1050 pixels with a 4:3 screen aspect ratio. (Shortened from SXGA+, stands for Super Extended Graphics Array Plus.)

Notes

Synchronization
A timing signal used to coordinate an action.

T

Test pattern
A still image specially prepared for testing a projection system. It may contain various combinations of colors, lines and geometric shapes.

TheaterScope
An aspect ratio used in conjunction with a special anamorphic lens to display 2.35:1 images packed into a 16:9 frame.

Throw distance
The distance between the screen and the projector.

Throw ratio
The ratio of the throw distance to the screen width.

TRC (Throw ratio correction)
A special number used in calculating throw distances and throw ratios when the image does not fill the width of the DMD™. TRC is the ratio of the DMD™ aspect ratio to the image source aspect ratio: TRC = DMD™ aspect ratio / Source aspect ratio TRC is only used in calculations if it is greater than 1.

U

UXGA
A display resolution of 1600 x 1200 pixels with a 4:3 screen aspect ratio. (Stands for Ultra Extended Graphics Array.)

V

Vertical Scan Rate
The rate at which the frames of the incoming signal are refreshed. The rate is set by the vertical synchronization from the source and measured in Hertz.

Vignetting
Optical cropping of the image caused by the components in the projection lens. This can happen if too much offset is applied when positioning the image using the lens mount.

Vista
An aspect ratio of 1.66:1.

Notes

W

WUXGA
A display resolution of 1920 x 1200 pixels with a 16:10 screen aspect ratio. (Stands for Widescreen Ultra Extended Graphics Array.)

Y

Y
This is the luminance input (brightness) from a Component Video signal.

YUV
Color difference signals used with 'Y' for analog Component Video inputs. They provide information about the signal color. Not to be confused with Cr, Cb.

Z

ZScreen
A special kind of light modulator which polarizes the projected image for 3D viewing. It normally requires that images are projected onto a silver screen. The ZScreen is placed between the projector lens and screen. It changes the polarization of the projected light and switches between left- and right-handed circularly polarized light at the field rate.

Notes

DIGITAL PROJECTION

A Delta Associate Company

Contact Information:

Europe

Digital Projection Limited

Greenside Way, Middleton, Manchester, M24 1XX, UK

Registered in England No. 2207264
Registered Office: As Above

Tel: (+44) 161 947 3300
Fax: (+44) 161 684 7674

enquiries@digitalprojection.co.uk
service@digitalprojection.co.uk

www.digitalprojection.co.uk

North America

Digital Projection Inc.

55 Chastain Road, Suite 115, Kennesaw, GA 30144, USA

Tel: (+1) 770 420 1350
Fax: (+1) 770 420 1360

powerinfo@digitalprojection.com

www.digitalprojection.com

China

Digital Projection China

中国 北京市 朝阳区 芍药居北里101号 世奥国际中心A座2301室(100029)

Rm A2301, ShaoYaoJu 101 North Lane, Shi Ao International Center, Chaoyang District, Beijing 100029, PR CHINA

Tel: (+86) 10 84888566
Fax: (+86) 10 84888566-805

techsupport@dp-china.com.cn

www.dp-china.com.cn

Japan

Digital Projection Japan

〒105-0012 東京都港区芝大門 2-1-14

2-1-14 Shibadaimon, Minato-ku, Tokyo, Japan 105-0012

japan@digitalprojection.co.uk

www.digitalprojection.com/jp

Taiwan

Digital Projection Taiwan

186 Ruey Kuang Rd, Neihu District, Taipei, 114 Taiwan

Tel: +886-8797-2088 x8854

Taiwan@digitalprojection.co.uk

Korea

Digital Projection Korea

1511, Byucksan Digital Valley 6-cha, Gasan-dong, Geumcheon-gu, Seoul, Korea

Tel: (+82) 2 515 5303 #1417

Korea@digitalprojection.co.uk

India

Digital Projection India

Plot-43, Sector-35, HSIIDC, Gurgaon Haryana -122001

Tel: +91-124-4874900#4275

india@digitalprojection.co.uk