

G60



Installation manual

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Table of contents

1	Introduction	7
1.1	Installation Requirements	8
1.2	Projector package overview	9
1.3	Main unit	10
1.4	Input/Output (I/O) Panel	11
1.5	Control panel	12
1.6	Remote Control Unit (RCU)	13
1.7	Lenses	13
2	Installation	17
2.1	RCU battery installation	18
2.2	Installing the lens	18
2.3	Connecting the projector with the power net	20
2.4	Connecting to a computer or laptop	21
2.5	Connecting to video sources	22
2.6	Ceiling mount installation	22
3	Powering On/Off the projector	25
3.1	Powering On the projector	26
3.2	Powering Off the Projector	26
4	Adjusting the projected image	29
4.1	Adjusting the projector's position	30
4.2	Adjusting the image position on the screen	30
A	Communication protocols	33
A.1	Serial control	34
A.2	LAN	44
	Index	49

Introduction

1

About this chapter

Read this chapter before installing G60 projector. It contains important information concerning installation requirements for the G60 projector, such as minimum and maximum allowed ambient temperature, humidity conditions, required safety area around the installed projector, required power net, etc.

Furthermore, careful consideration of things such as image size, ambient light level, projector placement and type of screen to use are critical to the optimum use of the projection system.

Clarification of the term “G60” used in this document

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

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



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

Overview

- Installation Requirements
- Projector package overview
- Main unit
- Input/Output (I/O) Panel
- Control panel
- Remote Control Unit (RCU)
- Lenses

1.1 Installation Requirements

Environment conditions

Table below summarizes the physical environment in which the G60 projector may be safely operated or stored.

Environment	Operating	Non-Operating
Ambient Temperature	5 °C (41 °F) to 40 °C (104 °F)	-10°C (14°F) to 60°C (140°F)
Humidity	10% to 85% RH Non-Condensed	5% to 90% RH Non-Condensed
Altitude	10000 ft maximum at 0°C to 30°C	

Cooling requirements

The projector is fan cooled and must be installed with sufficient space around the projector head, minimum 100 cm (39.4 inch) to ensure sufficient air flow. It should be used in an area where the ambient temperature, as measured at the projector air inlet, does not exceed +40°C (+104°F).

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

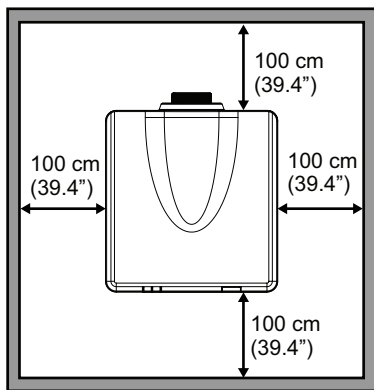
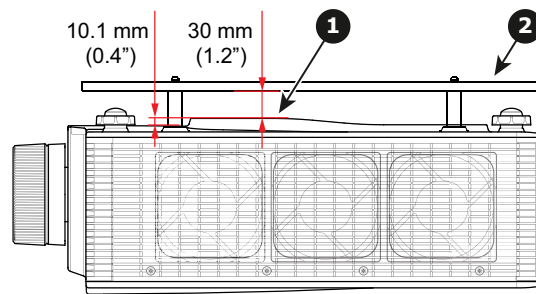


Image 1-1



- 1 Bottom intake vents
- 2 Ceiling mount plate

Clean air environment

The projector must always be mounted in a manner which ensures the free flow of clean air into the projectors ventilation inlets. For installations in environments where the projector is subject to airborne contaminants such as that produced by smoke machines or similar (these deposit a thin layer of greasy residue upon the projectors internal optics and imaging electronic surfaces, degrading performance), then it is highly advisable and desirable to have this contamination removed prior to it reaching the projectors clean air supply. Devices or structures to extract or shield contaminated air well away from the projector are a prerequisite, if this is not a feasible solution then measures to relocate the projector to a clean air environment should be considered.

Only ever use the manufacturer's recommended cleaning kit which has been specifically designed for cleaning optical parts, never use industrial strength cleaners on the projector's optics as these will degrade optical coatings and damage sensitive optoelectronics components. Failure to take suitable precautions to protect the projector from the effects of persistent and prolonged air contaminants will culminate in extensive and irreversible ingrained optical damage. At this stage cleaning of the internal optical units will be noneffective and impracticable. Damage of this nature is under no circumstances covered under the manufacturer's warranty and may deem the warranty null and void. In such a case the client shall be held solely responsible for all costs incurred during any repair. It is the clients responsibility to ensure at all times that the projector is protected from the harmful effects of hostile airborne particles in the environment of the projector. The manufacturer reserves the right to refuse repair if a projector has been subject to knowingly neglect, abandon or improper use.

Main power requirements

The G60 projector operates from a nominal mono phase power net with a separate earth ground PE.

Projector	Power requirements
G60-W7	AC INPUT 100-240V, 50/60Hz
G60-W8	AC INPUT 100-240V, 50/60Hz
G60-W10	AC INPUT 100-240V, 50/60Hz

The power cord required to connect the projector with the power net is delivered with the projector.

Projector weight

Do not underestimate the weight of the projector. Be sure that the pedestal or ceiling mount on which the projector has to be installed is capable of handling five (5) times the complete load of the system.

Projector	Weight (without lens)
G60-W7	17.4 kg
G60-W8	17.4 kg
G60-W10	22.7 kg

1.2 Projector package overview

Box content

This projector comes with all the items shown below. Check to make sure your package is complete. Contact your dealer immediately if anything is missing.

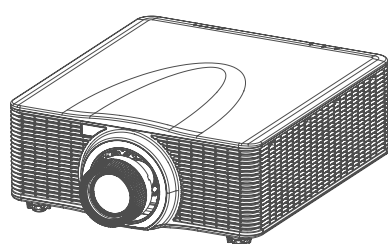


Image 1-2: Projector.

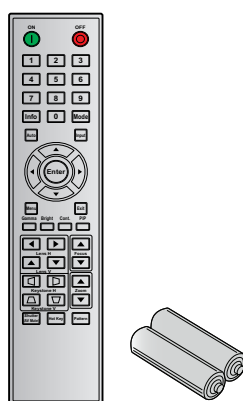


Image 1-3: Remote Control with two AAA size batteries.

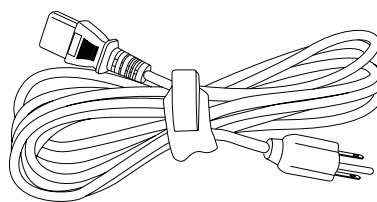


Image 1-4: Power cord.

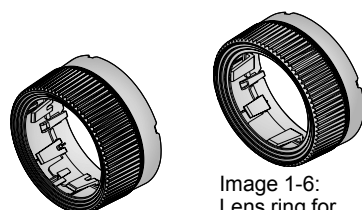


Image 1-5: Lens ring for standard lens.



Image 1-6: Lens ring for Wide-, Long-, and Ultra-Long zoom lens.

The product Safety Manual and Quick Start Guide are also included. Download the complete and latest updated installation manual and user guide from the Barco website.



The projection lens is an optional item, not a standard accessory in the package.



Due to the difference in applications for each country, some regions may have different accessories.

1.3 Main unit

Component location

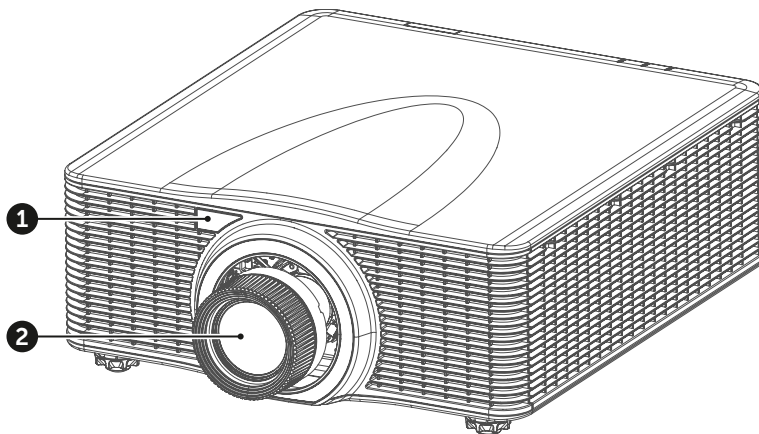


Image 1-7

- 1 Remote receiver (Front)
- 2 Projection lens

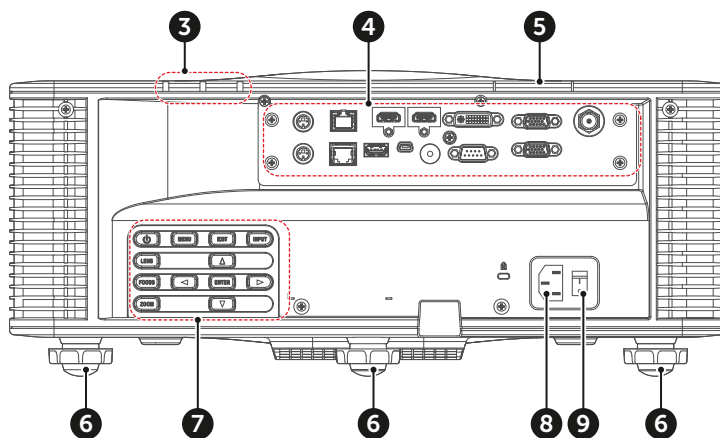


Image 1-8

- 3 LED Status Indicator
- 4 Input/Output (I/O) Panel
- 5 Remote receiver (Top)
- 6 Adjustable feet
- 7 Control panel
- 8 Power socket (AC100-240V, 50-60Hz)
- 9 Power switch

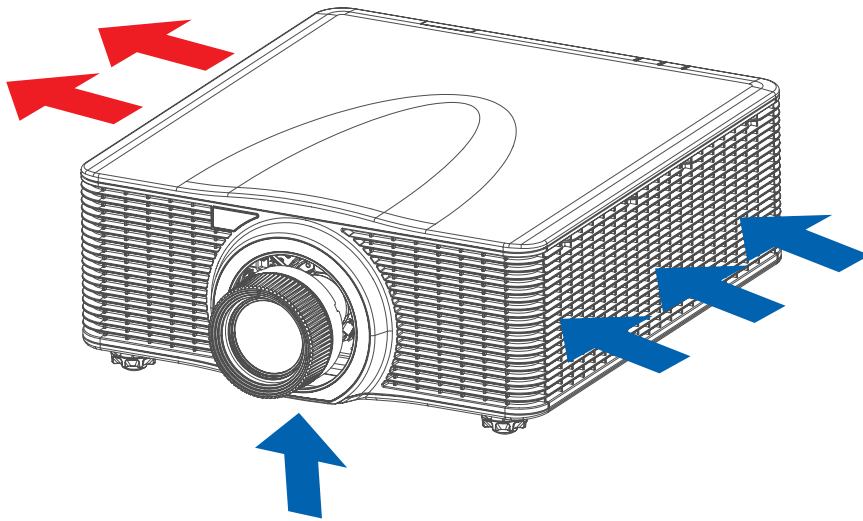
Airflow

Image 1-9

1.4 Input/Output (I/O) Panel

Input and output ports location

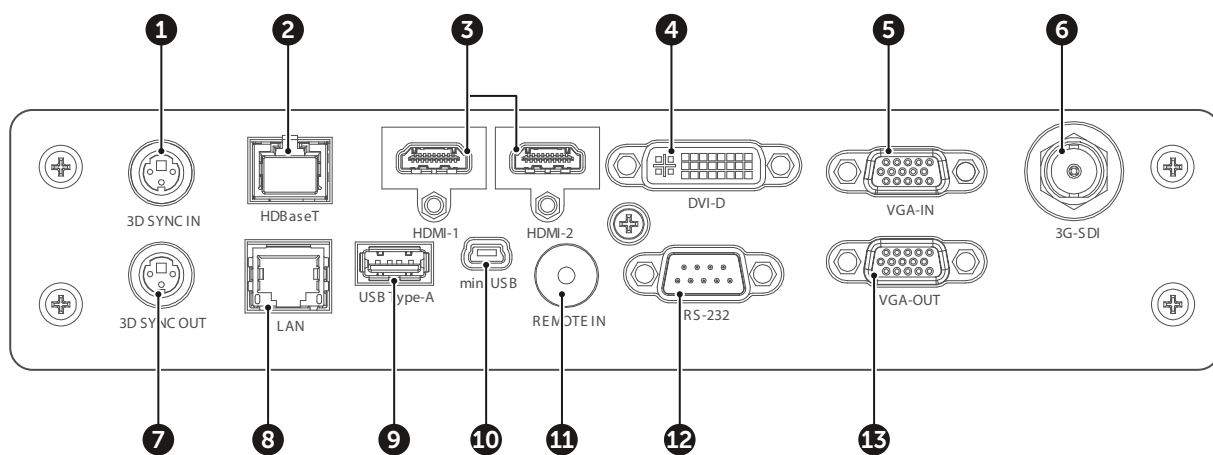


Image 1-10

- | | |
|--------------------------------|--|
| 1 3D SYNC IN | 8 Networking connector RJ45 |
| 2 HDBaseT connector | 9 USB Type-A (Power out 5V, 0.5A) |
| 3 HDMI connector | 10 Mini USB (Service) |
| 4 DVI-D input connector | 11 Wired remote connector |
| 5 VGA-IN connector | 12 RS232 connector |
| 6 3D-SGI connector | 13 VGA-OUT connector |
| 7 3D SYNC OUT | |

1.5 Control panel

Button location

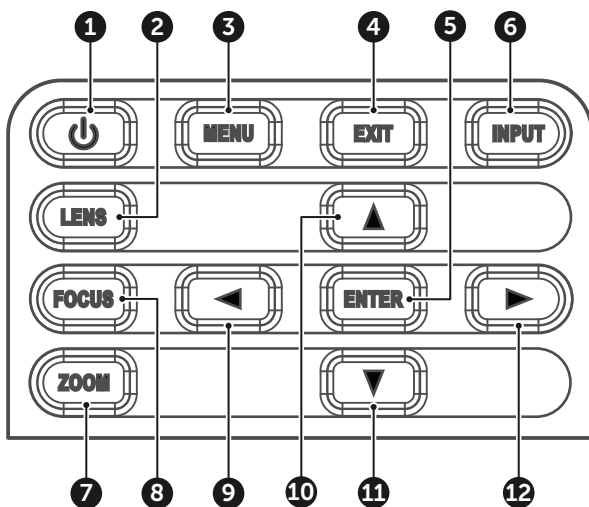


Image 1-11

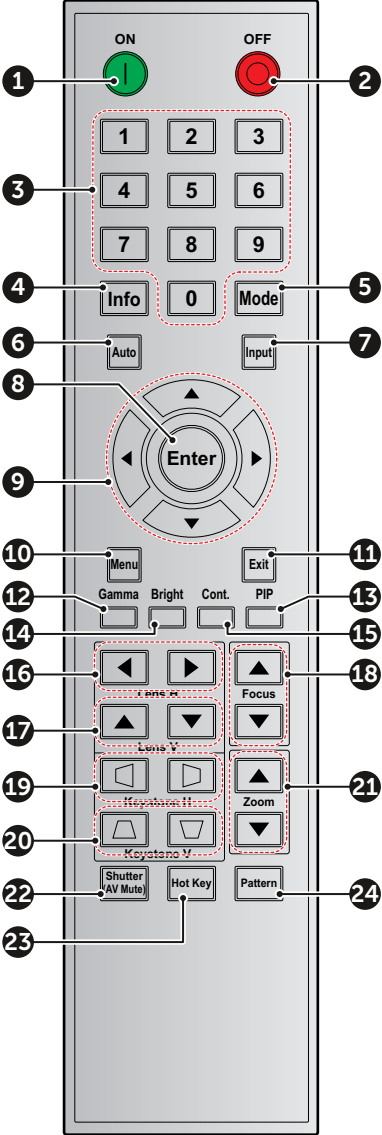
- | | |
|----------------|-----------------|
| 1 POWER | 7 ZOOM |
| 2 LENS | 8 FOCUS |
| 3 MENU | 9 LEFT |
| 4 EXIT | 10 UP |
| 5 ENTER | 11 DOWN |
| 6 INPUT | 12 RIGHT |

Button function

Button	Function
POWER	Turn the projector on or off.
LENS	Adjust lens position.
MENU	Show the main menu on screen.
EXIT	Return to previous menu or exit menu if at top level.
ENTER	Confirm the settings.
INPUT	Select an input source.
ZOOM	Adjust the image size.
FOCUS	Adjust the image focus.
LEFT	Navigate left through the menu.
UP	Navigate up through the menu.
DOWN	Navigate down through the menu.
RIGHT	Navigate right through the menu.

1.6 Remote Control Unit (RCU)

Button identification

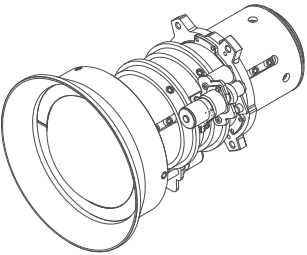
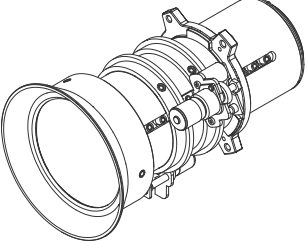
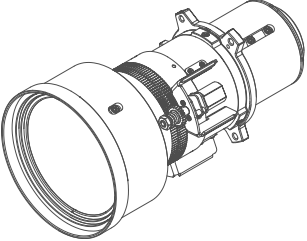
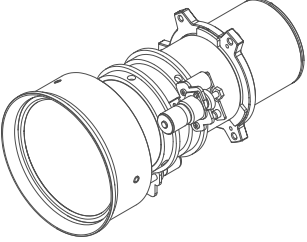
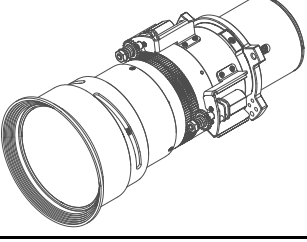
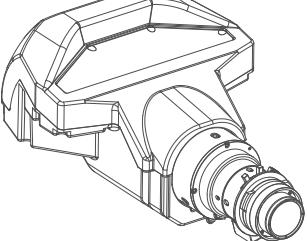
Button location	No.	Button	Function
	1	ON	Turn on the projector.
	2	OFF	Turn off the projector.
	3	Number	Input numbers (0-9).
	4	Info	Displays information on the source image.
	5	Mode	Select a preset picture mode.
	6	Auto	Automatically synchronize the projector to an input source.
	7	Input	Select an input source manually.
	8	Enter	Confirm an selection.
	9	Arrow keys	Use arrow keys to navigate through the menu or select the appropriate settings.
	10	Menu	Show the main menu on the screen.
	11	Exit	Back to previous Menu.
	12	Gamma	Set the gamma of the image.
	13	PIP	Set up the picture in picture (PIP) mode.
	14	Brightness	Set the brightness of the image.
	15	Contrast	Set the contrast of the image.
	16	Lens H	Adjust the image position horizontally.
	17	Lens V	Adjust the image position vertically.
	18	Focus	Adjust the image focus.
	19	Keystone H	Adjust a horizontally keystone image.
	20	Keystone V	Adjust a vertically keystone image.
	21	Zoom	Adjust the image size.
	22	Shutter	Momentarily turn off/on the screen (AV Mute).
	23	Hot Key	Select a specific function set as the hot key.
	24	Pattern	Display test patterns.

1.7 Lenses



The table below is subject to changes and was last updated on 2019-01-03. Consult Barco's web site for the most recent information about available lenses.

Available lenses

Order No	Description	Throw Ratio	Image
R9832781	G Lens - Short Throw (includes lens ring for G60-W series)	0.75 - 0.95 : 1 (WUXGA)	
R9832755	G Lens - Wide zoom	0.95 - 1.22 : 1 (WUXGA)	
R9801784	G Lens - Standard	1.22 - 1.52 : 1 (WUXGA)	
R9832756	G lens - Long Zoom	1.52 - 2.92 : 1 (WUXGA)	
R9832778	G lens - Ultra Long Zoom	2.90 - 5.50 : 1 (WUXGA)	
R9801785	G lens - Ultra Short Throw (*) (*) This lens has special installation instructions. See separated lens installation manual (available on the Barco website)	0.361 : 1 (WUXGA)	

Lens specification table

Projection Lens			R9801785	R9832755		R9801784		R9832756		R9832778		R9832781	
			Ultra Short Throw	Wide Zoom		Standard		Long Zoom		Ultra Long Zoom		Short Throw	
Throw Ratio			0.361 (120")	0.95-1.22		1.22-1.52		1.52-2.92		2.90-5.50		0.75-0.95	
Zoom Ratio			NA	1.28X		1.25X		1.9X		1.9X		1.26X	
Throw Distance			0.96~3.01m	1.01~7.98m		1.30~9.96m		1.61~19.00-m		3.18~34.77-m		0.79~6.21m	
Screen size			Projection distance (m)										
Throw Ratio			0.361 (120")	0.95	1.22	1.22	1.53	1.52	2.92	2.9	5.5	0.75	0.95
Diagonal (inch)	Height (m)	Width (m)	(m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)
50	0.67	1.08	NA	1.01	1.31	1.29	1.62	1.61	3.12	3.18	5.89	0.79	1.01
60	0.81	1.29	NA	1.22	1.57	1.56	1.95	1.94	3.76	3.78	7.05	0.96	1.22
70	0.94	1.51	NA	1.43	1.84	1.82	2.29	2.27	4.39	4.39	8.20	1.12	1.43
80	1.08	1.72	NA	1.63	2.11	2.09	2.62	2.60	5.03	5.00	9.36	1.28	1.64
90	1.21	1.94	NA	1.84	2.38	2.35	2.95	2.94	5.66	5.61	10.51	1.45	1.85
100	1.35	2.15	NA	2.05	2.64	2.62	3.28	3.27	6.30	6.21	11.67	1.61	2.05
110	1.48	2.37	NA	2.26	2.91	2.89	3.62	3.60	6.93	6.82	12.82	1.78	2.26
120	1.62	2.58	0.96	2.47	3.18	3.15	3.95	3.94	7.57	7.43	13.98	1.94	2.47
130	1.75	2.80	1.04	2.67	3.44	3.42	4.28	4.27	8.20	8.04	15.13	2.10	2.68
140	1.88	3.02	1.11	2.88	3.71	3.69	4.61	4.60	8.84	8.65	16.29	2.27	2.89
150	2.02	3.23	1.18	3.09	3.98	3.95	4.95	4.94	9.47	9.25	17.44	2.43	3.09
160	2.15	3.45	1.26	3.30	4.24	4.22	5.28	5.27	10.11	9.86	18.60	2.60	3.30
170	2.29	3.66	1.33	3.51	4.51	4.48	5.61	5.60	10.74	10.47	19.75	2.76	3.51
180	2.42	3.88	1.40	3.72	4.78	4.75	5.94	5.93	11.38	11.08	20.91	2.92	3.72
190	2.56	4.09	1.48	3.92	5.05	5.02	6.27	6.27	12.01	11.69	22.06	3.09	3.93
200	2.69	4.31	1.55	4.13	5.31	5.28	6.61	6.60	12.65	12.29	23.22	3.25	4.13
250	3.37	5.38	1.91	5.17	6.65	6.61	8.27	8.27	15.82	15.33	28.99	4.07	5.17
300	4.04	6.46	2.28	6.21	7.98	7.95	9.93	9.93	19.00	18.37	34.77	4.89	6.21
350	4.71	7.54	2.65	NA									
400	5.38	8.62	3.01										

Installation

Overview

- RCU battery installation
- Installing the lens
- Connecting the projector with the power net
- Connecting to a computer or laptop
- Connecting to video sources
- Ceiling mount installation

2.1 RCU battery installation

How to install the batteries of the Remote Control Unit

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

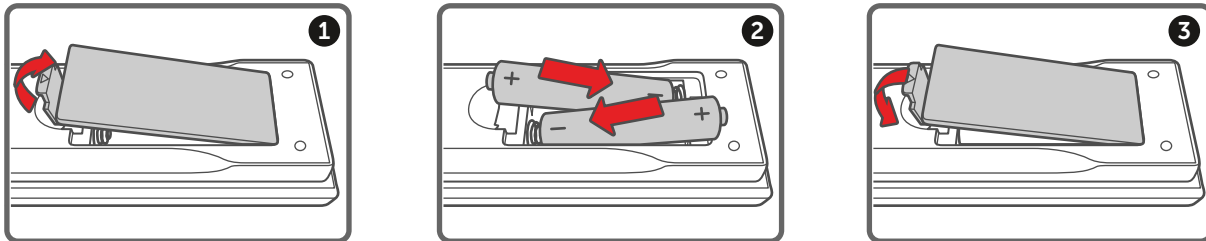


Image 2-1

Notes for the Remote Control Unit

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

2.2 Installing the lens



WARNING: This procedure may only be performed by qualified technical service personnel.

How to install the lens

1. Remove the lens cap counterclockwise.



Caution: Lens cap should be removed before installing the lens. If not it will damage the projector.

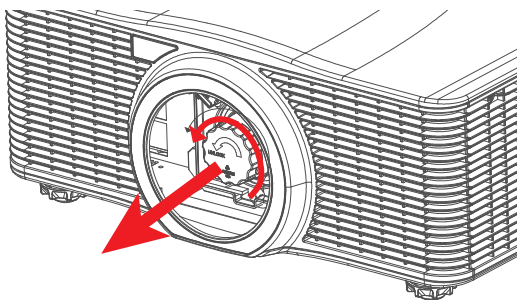


Image 2-2

2. Gently insert the lens in the lens holder. Ensure that the label “TOP” (reference 1) is upwards oriented while inserting the lens.

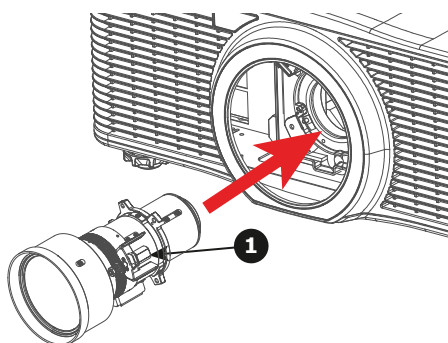


Image 2-3

3. Rotate the lens clockwise to lock the lens.

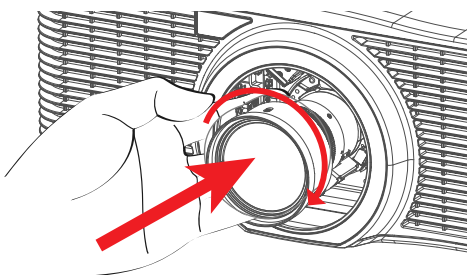


Image 2-4

4. Put the lens ring on the lens. An audible click should be noticed.

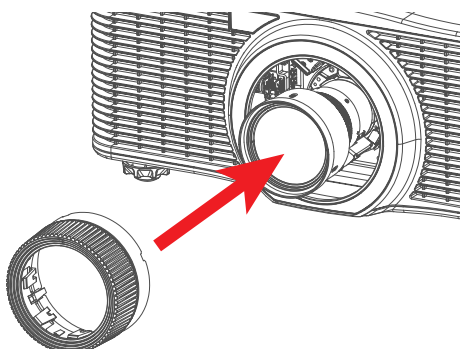


Image 2-5



CAUTION: Do not transport the projector with any lens installed.

2.3 Connecting the projector with the power net



CAUTION: Use only the power cord provided with the projector.

How to connect with local power net

1. Ensure that the power switch stands in the '0' (OFF) position (reference 1)
2. Connect the female side of the power cord with the power input socket of the projector (reference 2)

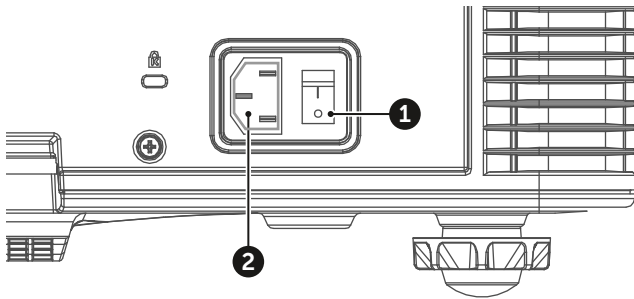


Image 2-6

3. Connect the male side of the power cord to the local power net.



Caution: Ensure that the power net meets the power requirements of the projector.



WARNING: Do not attempt operation if the AC supply and cord are not within the specified voltage and power range.

2.4 Connecting to a computer or laptop

Wiring diagram

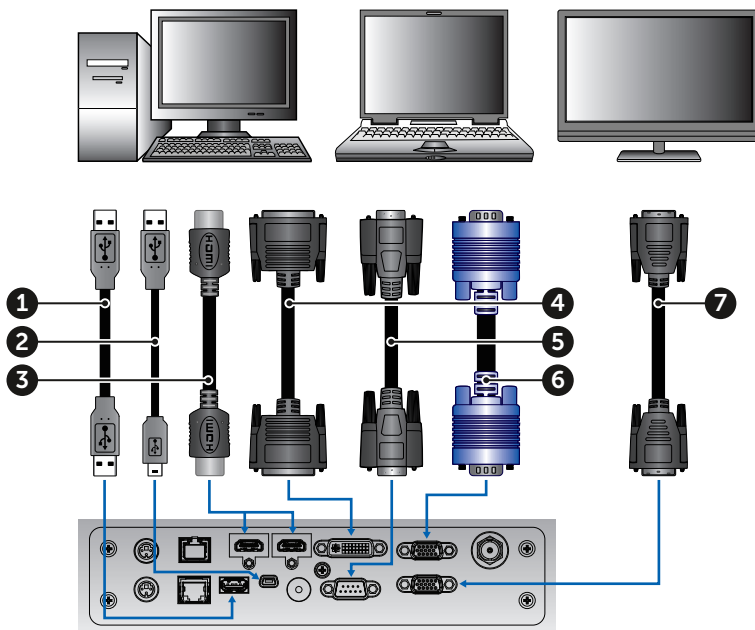


Image 2-7

- | | |
|-------------------------|------------------------|
| 1 USB cable | 5 RS232 cable |
| 2 Mini USB cable | 6 VGA in cable |
| 3 HDMI cable | 7 VGA out cable |
| 4 DVI cable | |

Notes on wiring diagram:

- The diagram shows the cables/connectors that may be used to connect to various devices.
- Due to the difference in applications for each country, the accessories required in some regions may be different from those shown.
- This diagram is for illustrative purposes only, and does NOT indicate that these accessories are supplied with the projector.

2.5 Connecting to video sources

Wiring diagram

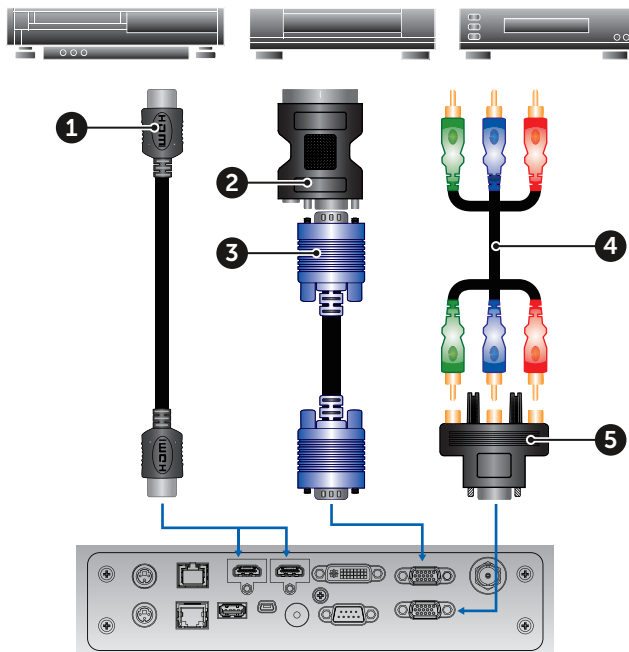


Image 2-8

- | | |
|--|--|
| <p>1 HDMI cable</p> <p>2 VGA to RGB scart</p> <p>3 VGA in cable</p> | <p>4 RCA component cable</p> <p>5 15-pin to 3 RCA component/HDTV adapter</p> |
|--|--|

Notes on wiring diagram:

- The diagram shows the cables/connectors that may be used to connect to various devices.
- Due to the difference in applications for each country, the accessories required in some regions may be different from those shown.
- This diagram is for illustrative purposes only, and does NOT indicate that these accessories are supplied with the projector.

2.6 Ceiling mount installation

Requirements

To prevent damage to your projector, please use a Barco recommended ceiling mount. Ensure the screws used to install the mount to the projector meet the following specifications:

- Screw type: M6 x 4
- Mounting holes (reference 1, see illustration below)

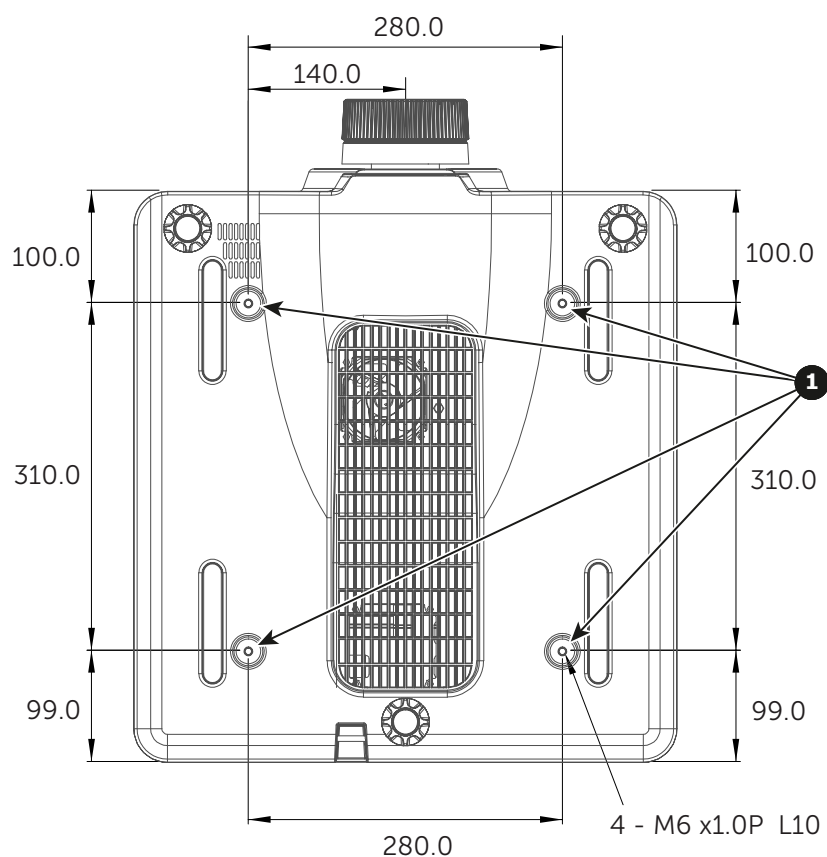


Image 2-9: Dimensions given in millimeters.



Damage resulting from incorrect installation will void the warranty.

Powering On/Off the projector

3



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

Overview

- Powering On the projector
- Powering Off the Projector

3.1 Powering On the projector

How to power On the projector

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

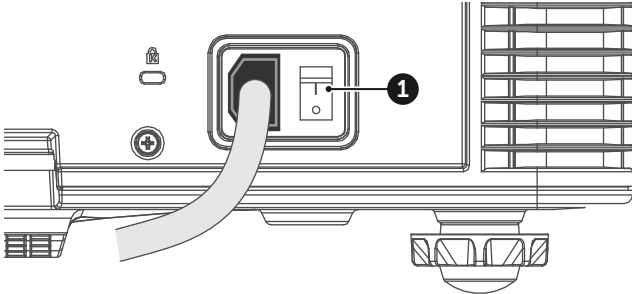


Image 3-1

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



Image 3-2

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

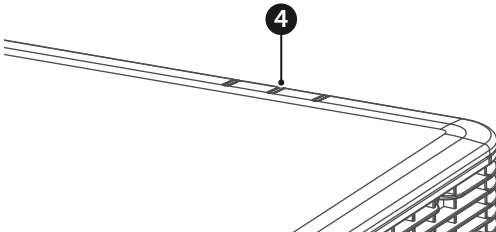


Image 3-3

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



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



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

3.2 Powering Off the Projector

How to power Off the projector

1. Press the POWER button (2) on the control panel or the OFF key (5) on the remote control, a message displays on the screen.

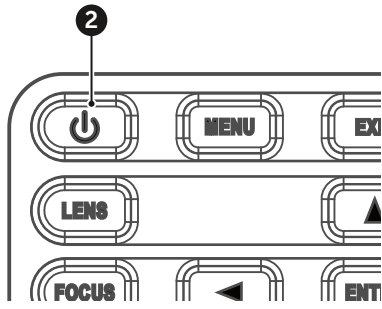
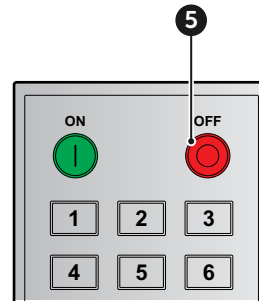


Image 3-4



2. Press the POWER button or OFF key again to confirm, otherwise the message disappears after 5 seconds and the projector remains on.



CAUTION: Don't turn on the projector immediately after entering Standby mode.

Adjusting the projected image

4

Overview

- Adjusting the projector's position
- Adjusting the image position on the screen

4.1 Adjusting the projector's position

Positioning the projector

To determine where to position the projector, consider the size and shape of your screen, the location of your power outlets, and the distance between the projector and the rest of your equipment. Here are some general guidelines:

- Position the projector on a flat surface at a right angle to the screen.
- Position the projector to the desired distance from the screen. The distance between the lens and the screen, the zoom settings, and the video format determine the size of the projected image. For projection distances of each lens, see chapter "Lenses", page 13.
- 360 degree free orientation installation:

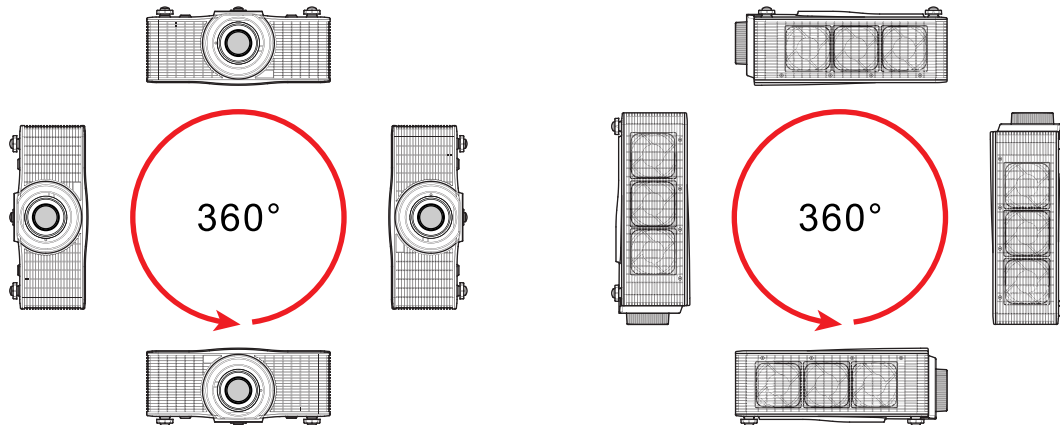


Image 4-1

4.2 Adjusting the image position on the screen

On axis / off axis projection

The position of the projector with reference to the screen may also be different depending on the installation. Basically the projector can be positioned in On-Axis or Off-Axis configuration. On-Axis configuration means that the projector is positioned so as to have the centre of the lens coinciding with the centre of the screen. Off-Axis projection is obtained by shifting the lens up, down, left or right.

Shift range

The lens can be shifted with respect to the DMD (P) which result in a shifted image on the screen (Off-Axis). A 100% shift means that the centre point of the projected image is shifted by half the screen size. In other words, the centre point of the projected image falls together with the outline of the image in an On-Axis projection. Due to mechanical and optical limitations it's recommended to keep the shift values within the field of view (F) as illustrated below. Within these shift ranges the projector and lens perform excellently. Configuring the projector outside these shift ranges will result in a slight decline of image quality.

G60 Vertical Shift range: 100%

G60 Horizontal Shift range: 30%

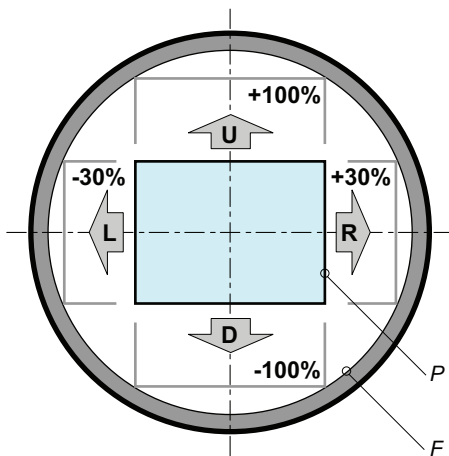
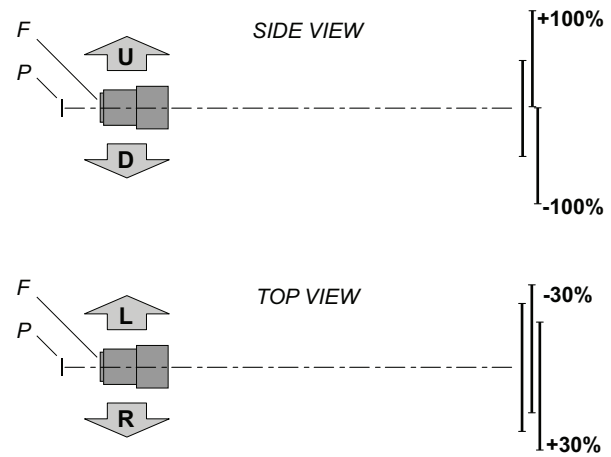


Image 4-2

- D** DMD
- F** Field of view

See user guide for instructions on how to shift the lens holder (Screen Menu > Horz/Vert Position)



Communication protocols

A

A.1 Serial control

RS232 Configuration

RS232 protocol

Baud Rate	115200 bps (default)
Data Length	8 bit
Parity Check	None
Stop Bit	1 bit
Flow Control	None

RS232 protocol table (v00.14)

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command											
Picture	Display Mode	Bright			Bright	[	D	P	M	O	0	]					
		Presenta-tion				[	D	P	M	O	1	]					
		Movie				[	D	P	M	O	2	]					
		sRGB				[	D	P	M	O	3	]					
		Blending				[	D	P	M	O	4	]					
		DICOM SIM.				[	D	P	M	O	5	]					
		User				[	D	P	M	O	8	]					
	Wall color	White			White	[	C	C	A	G	+	W	A	L	L	0	]
		Gray 130				[	C	C	A	G	+	W	A	L	L	1	]
	Bright-ness	0 ~ 100			50	[	B	R	I	G	*	*	*	]			
	Contrast	0 ~ 100			50	[	C	O	N	T	*	*	*	]			
	Sharp-ness	0 ~ 10			6	[	S	H	R	P	*	]					
	Color	0 ~ 100			50	[	C	O	L	R	*	*	*	]			
	Tint	0 ~ 100			50	[	T	I	N	T	*	*	*	]			
	Gamma	Video			Bright	[	G	A	M	M	0	]					
		Film				[	G	A	M	M	1	]					
		Bright				[	G	A	M	M	2	]					
		CRT				[	G	A	M	M	3	]					
		DICOM				[	G	A	M	M	4	]					
	White Peaking	0 ~ 100			100	[	W	H	P	K	*	*	*	]			
	Color Temper-ature	Warm			Normal	[	C	T	M	P	0	]					
		Normal				[	C	T	M	P	1	]					
		Cool				[	C	T	M	P	2	]					
	Color Wheel Speed	2X			3X	[	C	W	S	P	0	]					
		3X				[	C	W	S	P	1	]					
	HSG Adjust-ment	Red	Hue	1~199		[	H	G	R	H	*	*	*	]			
			Satura-tion	0 ~ 199		[	H	G	R	S	*	*	*	]			
			Gain	1 ~ 199		[	H	G	R	G	*	*	*	]			
		Green	Hue	1~199		[	H	G	G	H	*	*	*	]			
			Satura-tion	0 ~ 199		[	H	G	G	S	*	*	*	]			

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command												
			Gain	1 ~ 199		[	H	G	G	G	*	*	*	]				
		Blue	Hue	1~199		[	H	G	B	H	*	*	*	]				
			Satura- tion	0 ~ 199		[	H	G	B	S	*	*	*	]				
			Gain	1 ~ 199		[	H	G	B	G	*	*	*	]				
		Cyan	Hue	1~199		[	H	G	C	H	*	*	*	]				
			Satura- tion	0 ~ 199		[	H	G	C	S	*	*	*	]				
			Gain	1 ~ 199		[	H	G	C	G	*	*	*	]				
		Magenta	Hue	1~199		[	H	G	M	H	*	*	*	]				
			Satura- tion	0 ~ 199		[	H	G	M	S	*	*	*	]				
			Gain	1 ~ 199		[	H	G	M	G	*	*	*	]				
		Yellow	Hue	1~199		[	H	G	Y	H	*	*	*	]				
			Satura- tion	0 ~ 199		[	H	G	Y	S	*	*	*	]				
			Gain	1 ~ 199		[	H	G	Y	G	*	*	*	]				
		White Gain	Red	1 ~ 199		[	H	G	W	R	*	*	*	]				
			Green	1 ~ 199		[	H	G	W	G	*	*	*	]				
			Blue	1 ~ 199		[	H	G	W	B	*	*	*	]				
		Reset to Default				[	H	G	R	T	1							
	Contrast En- hance- ment	Off			Off	[	D	Y	B	K	0							
		Dynamic Black				[	D	Y	B	K	1							
		Extreme Black				[	D	Y	B	K	2							
	Color Space	Auto			Auto	[	C	S	P	A	0							
		RGB (0- 255)				[	C	S	P	A	1							
		RGB (16- 235)				[	C	S	P	A	2							
		YUV				[	C	S	P	A	3							
	Save to User	Yes/No				[	D	P	S	U	1							
Screen	Aspect Ratio	Auto			Auto	[	A	S	P	R	0							
		4:03				[	A	S	P	R	1							
		16:09				[	A	S	P	R	2							
		16:10				[	A	S	P	R	3							
		Native				[	A	S	P	R	4							
	Pixel Phase	0 ~ 100			depend on analog source detect	[	P	H	A	S	*	*	*	]				
	Pixel Track	0 ~ 100			depend on analog source detect	[	C	L	C	K	*	*	*	]				
	Horz Position	0 ~ 100			depend on analog	[	H	P	O	S	*	*	*	]				

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command											
					source detect												
	Vert Position	0 ~ 100			depend on analog source detect	[	V	P	O	S	*	*	*	]			
	Digital Horz Zoom	0 ~ 10			0	[	H	D	Z	M	*	*	*	]			
	Digital Vert Zoom	0 ~ 10			0	[	V	D	Z	M	*	*	*	]			
	Digital Horz Shift	0 ~ 100			50	[	H	D	S	H	*	*	*	]			
	Digital Vert Shift	0 ~ 100			50	[	V	D	S	H	*	*	*	]			
	Ceiling Mount	Off			Auto	[	C	E	M	O	0	]					
		On				[	C	E	M	O	1	]					
		Auto				[	C	E	M	O	2	]					
	Rear Projection	Off			Off	[	R	E	P	J	0	]					
		On				[	R	E	P	J	1	]					
	Geometric Correction	H. Keystone	0~40		20	[	H	K	E	S	*	*	]				
		V.Keystone	0~40		20	[	V	K	E	S	*	*	]				
		4 - Corner	Top Left Horz Adjust	N		[	T	L	C	X		1	]				
						[	T	L	C	X		2	]				
						[	T	L	C	X		3	]				
						[	T	L	C	X		4	]				
			Top Left Vert Adjust	N		[	T	L	C	Y		1	]				
						[	T	L	C	Y		2	]				
						[	T	L	C	Y		3	]				
						[	T	L	C	Y		4	]				
			Top Right Horz Adjust	N		[	T	R	C	X		1	]				
						[	T	R	C	X		2	]				
						[	T	R	C	X		3	]				
						[	T	R	C	X		4	]				
			Top Right Vert Adjust	N		[	T	R	C	Y		1	]				
						[	T	R	C	Y		2	]				
						[	T	R	C	Y		3	]				
						[	T	R	C	Y		4	]				
			Bottom Left Horz Adjust	N		[	B	L	C	X		1	]				

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command											
						[	B	L	C	X		2	]				
				P		[	B	L	C	X		3	]				
						[	B	L	C	X		4	]				
			Bottom Left Vert Adjust	N		[	B	L	C	Y		1	]				
						[	B	L	C	Y		2	]				
				P		[	B	L	C	Y		3	]				
						[	B	L	C	Y		4	]				
			Bottom Right Horz Adjust	N		[	B	R	C	X		1	]				
						[	B	R	C	X		2	]				
				P		[	B	R	C	X		3	]				
						[	B	R	C	X		4	]				
			Bottom Right Vert Adjust	N		[	B	R	C	Y		1	]				
						[	B	R	C	Y		2	]				
				P		[	B	R	C	Y		3	]				
						[	B	R	C	Y		4	]				
		Grid Color	Green		Green	[	C	N	R	G	+	G	R	C	O	0	]
			Purple			[	C	N	R	G	+	G	R	C	O	1	]
		Reset	Yes/No			[	W	R	E	G		1	]				
		PC Mode	Off		Off	[	P	C	M	O		0	]				
			On			[	P	C	M	O		1	]				
	PIP-PBP	PIP / PBP Enable	PIP		Off	[	P	I	B	P		2	]				
			PBP			[	P	I	B	P		1	]				
			Off			[	P	I	B	P		0	]				
		Main Source	VGA		Current Source	[	M	S	R	C		0	]				
			HDMI-1			[	M	S	R	C		1	]				
			HDMI-2			[	M	S	R	C		2	]				
			DVI			[	M	S	R	C		3	]				
			HDBa-seT			[	M	S	R	C		4	]				
			3G-SDI			[	M	S	R	C		5	]				
		Sub Source	VGA		Depend on current source	[	S	S	R	C		0	]				
			HDMI-1			[	S	S	R	C		1	]				
			HDMI-2			[	S	S	R	C		2	]				
			DVI			[	S	S	R	C		3	]				
			HDBa-seT			[	S	S	R	C		4	]				
			3G-SDI			[	S	S	R	C		5	]				
		Layout	Top Left		Top Left	[	P	P	P	G		0	]				
			Top Right			[	P	P	P	G		1	]				

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command									
			Bottom Left			[P P P G 2]									
			Bottom Right			[P P P G 3]									
		Size	Large			[P H S G 2]									
			Medium			[P H S G 1]									
			Small			[P H S G 0]									
		Swap				[P I S W 1]									
	Source key	Change Sources				[A S R C 0]									
		List all Sources				[A S R C 1]									
		Auto Source				[A S R C 2]									
	Auto Image	Normal			Wide	[T M G G 0]									
		Wide				[T M G G 1]									
	Source Info	Active Source				[M S R C ?]									
		Signal Format				[M S S F ?]									
		Aspect Ratio				[M S A R ?]									
		Resolution				[M S R S ?]									
		Vert Refresh				[M S V R ?]									
		Horz Refresh				[M S H R ?]									
		Pixel Clock				[M S P C ?]									
		Sync Type				[M S S T ?]									
		Color Space				[M S C S ?]									
		PIP/PBP													
		(When PIP/PBP active)													
		Active Source				[S S R C ?]									
		Signal Format				[S S S F ?]									
		Aspect Ratio				[S S A R ?]									
		Resolution				[S S R S ?]									
		Vert Refresh				[S S V R ?]									
		Horz Refresh				[S S H R ?]									
		Pixel Clock				[S S P C ?]									
		Sync Type				[S S S T ?]									
		Color Space				[S S C S ?]									
Settings	Language	English			English	[L A N G 0]									
		Simplified Chinese				[L A N G 1]									
		French				[L A N G 2]									
		German				[L A N G 3]									
		Italian				[L A N G 4]									
		Japanese				[L A N G 5]									
		Korean				[L A N G 6]									

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command									
		Russian				[L A N G 7]									
		Spanish				[L A N G 8]									
		Portuguese				[L A N G 9]									
		Indonesian				[L A N G 1 0]									
		Dutch				[L A N G 1 1]									
	Menu Location	Left Top			Left Top	[M E L G 0]									
		Right Top				[M E L G 1]									
		Center				[M E L G 2]									
		Left Bottom				[M E L G 3]									
		Right Bottom				[M E L G 4]									
	Standby Power Mode	Standby mode			Standby mode	[S B P M 0]									
		Network standby mode				[S B P M 1]									
		Communication mode				[S B P M 2]									
	Test Pattern	None			None	[T P R N 0]									
		Grid				[T P R N 1]									
		White				[T P R N 2]									
		Black				[T P R N 3]									
		Checker-board				[T P R N 4]									
		Color Bars				[T P R N 5]									
	Direct Power On	Off			Off	[D P O N 0]									
		On				[D P O N 1]									
	Source in Power On	Off			Off	[S P O N 0]									
		On			Only source HDMI1, HDMI2 and Standby Power Mode is Communication	[S P O N 1]									
	Hot-Key settings	Blank Screen			Blank Screen	[H K S T 0]									
		Aspect Ratio				[H K S T 1]									
		Freeze Screen				[H K S T 2]									
		Projector Info				[H K S T 3]									
	Reset to Default	Yes/No	Command			[F R S T 1]									
	Service	(Note 1.)													
Light source	Light Source Mode	Constant Power			Constant Power	[L P M O 0]									
		Constant Intensity				[L P M O 1]									
		ECO				[L P M O 2]									

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command									
	Constant Power	0 to 99			99	[	L	P	P	W	*	*	]		
	Light Source Info	LD Hours				[	L	S	H	S	?	]			
Options	Back-ground color	Logo			Logo	[	B	G	C	L	0	]			
		Blue				[	B	G	C	L	1	]			
		Black				[	B	G	C	L	2	]			
		White				[	B	G	C	L	3	]			
	Auto shut-down	0~120 (one step: 5 mins)			20	[	A	P	O	F	*	*	]		
	Sleep Timer	0~990 (one step: 10 mins)			0	[	S	L	T	M	*	*	]		
	Lens function	Focus	Com-mand	Focus in - motor go step		[	F	C	S	I	1	]			
				Focus out - motor go step		[	F	C	S	O	1	]			
		Zoom	Com-mand	Zoom in - motor go step		[	Z	O	M	I	1	]			
				Zoom out - motor go step		[	Z	O	M	O	1	]			
		Lens Shift	Com-mand	Left shift up - motor go step		[	L	S	V	U	1	]			
				Left shift down - motor go step		[	L	S	V	D	1	]			
				Left shift right - motor go step		[	L	S	H	R	1	]			
				Left shift left - motor go step		[	L	S	H	L	1	]			
		Lens Memory	Apply Position	1		[	L	M	A	P	1	]			
				2		[	L	M	A	P	2	]			
				3		[	L	M	A	P	3	]			
				4		[	L	M	A	P	4	]			
				5		[	L	M	A	P	5	]			
			Save Current Position	1		[	L	M	S	P	1	]			
				2		[	L	M	S	P	2	]			
				3		[	L	M	S	P	3	]			
				4		[	L	M	S	P	4	]			
				5		[	L	M	S	P	5	]			
		Lens Lock	Off		Off	[	L	E	L	O	0	]			

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command												
			On			[	L	E	L	O	1	]						
		Lens Calibration	Com-mand				[	L	E	C	A	1	]					
	High Altitude	Off			Off	[	H	I	A	L	0	]						
		On					[	H	I	A	L	1	]					
	PIN	PIN protect	Off/On		Off	[	P	I	N	P	"	*	*	*	*	*	"	
		Change PIN					[	P	I	N	C	"	*	*	*	*	*	,
	Remote Settings	Top	Off/On		On	[	T	O	P	P	*	]						
		Front	Off/On		On	[	F	R	N	T	*	]						
		HDBaseT	Off/On		On	[	H	D	B	T	*	]						
		Projector Address	0 ~ 99		0	[	P	J	A	D	*	]						
	Show mes-sage	Off			On	[	S	M	S	G	0	]						
		On					[	S	M	S	G	1	]					
	LED settings	Keypad LED	On		On	[	K	L	E	D	0	]						
			Off				[	K	L	E	D	1	]					
		Status LED	On		On	[	S	L	E	D	0	]						
			Off				[	S	L	E	D	1	]					
			Warn-ings/ Errors Only					[	S	L	E	D	2	]				
	Informa-tion	Model Name					[	S	S	T	G	?	]					
		Serial Number																
		Native Resolution																
		MCU FW																
		DDP FW																
		M9813 FW																
		Motor FW																
		LAN FW																
		Front end FW																
		LD Driver FW		G60-W10 only														
		Main Input																
		Main Signal Format																
		Main Pixel Clock																
		Main Sync Type																
		Main Horz Refresh																
		Main Vert Refresh																
		PIP/PBP Input																
		PIP/PBP Signal Format																

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command															
		PIP/PBP Pixel Clock																			
		PIP/PBP Sync Type																			
		PIP/PBP Horz Refresh																			
		PIP/PBP Vert Refresh																			
		Light Source Power																			
		Light Source Hours																			
		Standby Mode																			
		Lens Lock Settings																			
		IP Address																			
		DHCP																			
		System Temperature																			
3D	3D	Auto			Auto	[	T	D	N	G	0	]									
		On				[	T	D	N	G	1	]									
	3D Invert	Off			Off	[	T	D	I	V	0	]									
		On				[	T	D	I	V	1	]									
	3D Format	Frame Packing			Depend on input signal, If a HDMI source with AVINFO data existed then display 3D mode automatically.	[	T	D	E	N	1	]									
		Side-by-Side (Half)				[	T	D	E	N	2	]									
		Top and Bottom				[	T	D	E	N	3	]									
		Frame Sequential				[	T	D	E	N	4	]									
	3D sync out	To Emitter			To Emitter	[	S	O	S	G	0	]									
		To Next Projector				[	S	O	S	G	1	]									
	Frame Delay	1~200			1~n (by timing, max 200)	[	F	D	Y	G	*	]									
	L/R Reference	1ST Frame			1ST Frame	[	L	R	R	G	0	]									
		Field GPIO				[	L	R	R	G	1	]									
	DLP Link	Off			Off	[	T	D	D	L	0	]									
		On				[	T	D	D	L	1	]									
Communications	LAN	DHCP			By set	[	L	D	H	C	0	]									
		IP Address				[	L	I	P	A	"***.***.***.***"						]				

Level 1	Level 2	Level 3	Level 4	Level 5	Default	Uart Command										
		Subnet Mask				[	L	S	U	B	**** * ***			]		
		Default Gateway				[	L	G	A	T	**** * ***			]		
		MAC Address				[	L	M	A	C	?	]				
		Apply	Com- mand			[	L	A	P	Y	1	]				
	Network	Projector Name			By set	[	N	P	J	N	?	]				
		Show Network Messages	On/Off			[	N	S	H	O	1	]				
		Network Factory Reset...	Com- mand			[	N	F	R	S	1	]				
	Serial Port Baud Rate	1200			115200	[	S	P	B	R	0	]				
		2400				[	S	P	B	R	1	]				
		4800				[	S	P	B	R	2	]				
		9600				[	S	P	B	R	3	]				
		14400				[	S	P	B	R	4	]				
		19200				[	S	P	B	R	5	]				
		38400				[	S	P	B	R	6	]				
		57600				[	S	P	B	R	7	]				
		115200				[	S	P	B	R	8	]				
	Serial Port Echo	Off/On			Off	[	S	E	C	G	*	]				
Serial Port Path	RS232			RS232	[	S	P	P	A	0	]					
	HDBaseT				[	S	P	P	A	1	]					

Other UART Commands

Power On	[POWR1]
Power Off	[POWR0]
AV Mute Enable	[PMUT1]
AV Mute Disable	[PMUT0]
Freeze Screen	[FRZE1]
Unfreeze Screen	[FRZE0]
Power Off	KEYG 50
1	KEYG 51
2	KEYG 52
3	KEYG 53
4	KEYG 54
5	KEYG 55
6	KEYG 56
7	KEYG 57
8	KEYG 58
9	KEYG 59
Info	KEYG 40
Command	Range or Explanation

0	KEYG 60
Mode	KEYG 36
Auto	KEYG 41
Input	KEYG 46
Up	KEYG 10
Left	KEYG 11
Enter	KEYG 12
Right	KEYG 13
Down	KEYG 14
Menu	KEYG 20
Exit	KEYG 72
Gamma	KEYG 61
Bright	KEYG 19
Cont.	KEYG 62
PIP	KEYG 63
Lens H(Left)	KEYG 64
Lens H(Right)	KEYG 65
Focus(Up)	KEYG 34
Lens V(Up)	KEYG 66
Lens V(Down)	KEYG 67
Focus(Down)	KEYG 35
Keystone H(Left)	KEYG 68
Keystone H(Right)	KEYG 69
Zoom(Up)	KEYG 32
Keystone V(Up)	KEYG 15
Keystone V(Done)	KEYG 16
Zoom(Down)	KEYG 33
Shutter(AV Mute)	KEYG 24
Hot Key	KEYG 70
Pattern	KEYG 71
Command	Range or Explanation



Freeze can be released by menu key, exit key and direct source key.

A.2 LAN

LAN function

Item	Specifications
Crestron	RoomView, Port: 41794 Control system
PJ-Link	Support v1.0, Port: 4352,
AMX	Device discovery only, Port: 9131
Telnet	Port: 3023
Web page	English only, Port 80

Creston command list

Item	Type	Join Number
Assign To Name	Serial	5051
Brightness Level	Analog	5002
Brightness Minus	Digital	5110
Brightness Plus	Digital	5109
Color Level	Analog	5001
Color Minus	Digital	5108
Color Plus	Digital	5107
Contrast Level	Analog	5003
Contrast Minus	Digital	5112
Contrast Plus	Digital	5111
Control System IP Address	Serial	5045
Control System IP ID	Serial	5046
Control System Port	Serial	5047
Cooling Down	Digital	5161
Cooling Down Progress	Analog	5011
Current Source	Serial	5010
Default Gateway	Serial	5042
DHCP Disable	Digital	5211
DHCP Enable	Digital	5210
DNS Server	Serial	5043
Down	Digital	5152
Enter	Digital	5156
Exit	Digital	5155
Firmware Version	Serial	5056
Freeze Off	Digital	5106
Freeze On	Digital	5105
IP Address	Serial	5040
Lamp Hours	Serial	5004
Lamp Mode	Serial	5003
Left	Digital	5153
Location	Serial	5052
MAC Address	Serial	5044
Max Lamp Life	Analog	5040
Menu	Digital	5150
Power Off	Digital	5
Power On	Digital	6
Power Status	Serial	5002
Preset Mode	Serial	5055
Projector Name	Serial	5050
Projector Position	Serial	5053
Re-sync	Digital	5171
Resolution	Serial	5054

Item	Type	Join Number
Right	Digital	5154
Sharpness Level	Analog	5004
Sharpness Minus	Digital	5114
Sharpness Plus	Digital	5113
Source Name 1 (read only)	Serial	5070
Source Name 2 (read only)	Serial	5071
Source Name 3 (read only)	Serial	5072
Source Name 4 (read only)	Serial	5073
Source Name 5 (read only)	Serial	5074
Source Search	Digital	5090
Source Select 1	Digital	5070
Source Select 2	Digital	5071
Source Select 3	Digital	5072
Source Select 4	Digital	5073
Source Select 5	Digital	5074
Status Message	Serial	5001
Subnet Mask	Serial	5041
Up	Digital	5151
Warm Up	Digital	5160
Warm Up Progress	Analog	5010

PJ-Link command list

Description	Command
Power control instruction	POWR
Power status query	POWR?
Input switch instruction	INPT
Input switch query	INPT?
Mute instruction	AVMT
Mute status query	AVMT?
Error status query	ERST?
Lamp number/lighting hour query	LAMP?
Input toggling list query	INST?
Projector name query	NAME?
Manufacture name information query	INF1?
Production name information query	INF2?
Other information query	INFO?
Class information query	CLSS?

Extron command list

Description	Command
Power On	[POWR1]
Power Off	[POWR0]
Video Mute	[PMUT1]

Description	Command
Video Mute Query	[PMUT?]
Freeze	[FREZ1]
Freeze Query	[FREZ?]
Main Source	[MSRC#]
Main Source Query	[MSRC?]
Sub Source	[SSRC#]
Sub Source Query	[SSRC?]
Aspect Ratio	[ASPR#]
Aspect Ratio Query	[ASPR?]
Display Mode	[DPMO#]
Display Mode Query	[DPMO?]

Index

A

Adjustments 29

B

Box content 9

C

Ceiling mount 22
Communication protocols 33
Connections 21
Control panel 12

I

Input/Output 11
Install
 Lens 18
Installation 17
Installation Requirements 8
Introduction 7

L

LAN 44
Lens offset 30
Lens specifications 14
Lenses 13

M

Main unit 10

O

Off axis 30
On axis 30
On/Off 25

P

Position 30
Power 25
Power cord 20
Power Off 26
Power On 26

R

RCU 13
 Battery 18

S

Serial control 34
Shift range 30

V

Video sources 22

