

***LIGHTNING 30-1080p, 40-1080p***

***LIGHTNING Reference 1080p-30, 1080p-40***

**Super High Brightness Digital Video Projector**

**User Manual**



## General precautions

---

Notes



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

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 authorised 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.

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.



There are no user-serviceable parts inside the lamp module. The whole module should be replaced and returned to Digital Projection for refurbishment.

Take care when removing the lamp module, as it is heavy (>10kg).

Take care not to touch the glass surface of the lamp module. If you do accidentally touch the glass, it should be cleaned before use.

Do not use the lamp for more than 750 hours, as this may cause serious lamp failure, damage the lamp module and cause extra cost on replacement.

Xenon lamps produce high intensity light. Do not look directly at the light coming from the lamp housing, or the lens, or allow items such as magnifying lenses to be placed in the light path. This could result in serious eye damage.

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

Do not cover 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 switching off the power, moving the projector or changing the lamp.

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

# Contents

<b>Declaration of Conformity</b> .....	ii
<b>Important Information</b>	
<b>Symbols used in this guide</b> .....	v
Warnings.....	v
Trademarks .....	v
<b>Product revision</b> .....	v
<b>Manual revision</b> .....	v
<b>General precautions</b> .....	vi
<b>Installation precautions</b> .....	vii
<b>Operation and configuration precautions</b> .....	viii
<b>Compliance with international standards</b> .....	viii
Noise .....	viii
RF Interference.....	viii
European Waste Electrical and Electronic Equipment (WEEE) Directive .....	viii
<b>Digital Projection Contact details</b> .....	ix
<b>1. Introduction</b>	
<b>What's in the box?</b> .....	1.2
<b>Key features of the projector</b> .....	1.3
<b>Getting to know the projector</b> .....	1.4
Chassis – lamp, lens and filter.....	1.4
Lamp-hours meter.....	1.5
Rear panel – connection and control.....	1.6
<b>2. Installation</b>	
<b>Screen requirements</b> .....	2.2
Aspect ratio .....	2.2
Positioning the screen and projector .....	2.5
<b>Choosing a lens</b> .....	2.6
Choosing a lens using the lens charts.....	2.7
Choosing a lens by calculation .....	2.11
<b>Useful lens calculations</b> .....	2.12
<b>Fitting the lens</b> .....	2.13
<b>Shifting the image</b> .....	2.14

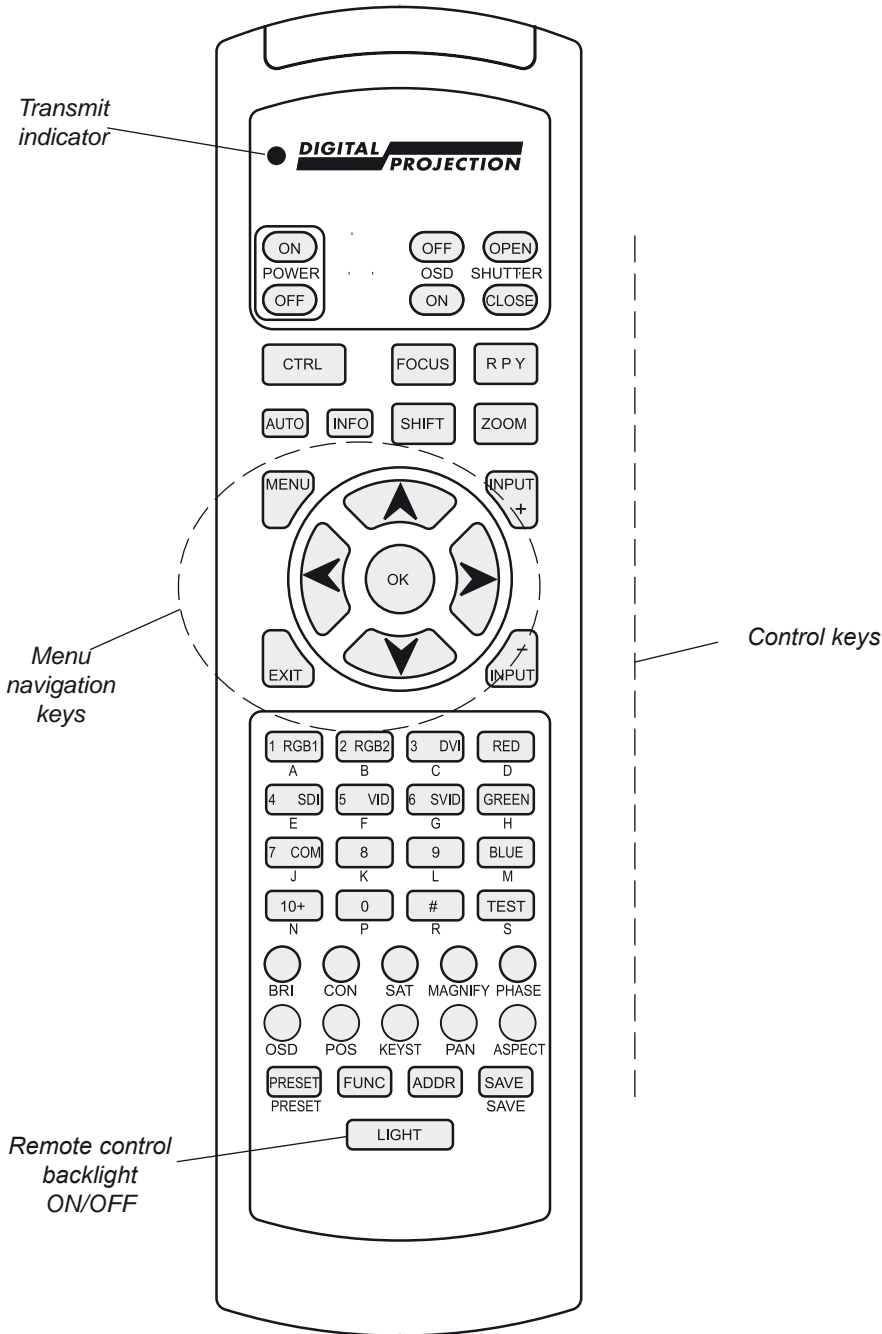
*continued*

<b>Mounting the projector</b> .....	2.15
Adjustment for table mounting .....	2.15
Adjusting the rigging frame .....	2.15
<b>Stacking projectors</b> .....	2.17
<b>Connecting the projector</b> .....	2.18
Signal Inputs .....	2.18
Control connection examples .....	2.19
Power connection .....	2.20
<b>3. Getting started</b>	
<b>Switching the projector on</b> .....	3.2
<b>Selecting an input or test pattern</b> .....	3.2
Input .....	3.2
Test pattern .....	3.2
<b>Adjusting the lens</b> .....	3.3
Focus .....	3.3
Zoom .....	3.3
Shift.....	3.3
<b>Adjusting the projected image</b> .....	3.4
Picture settings .....	3.4
Geometry settings.....	3.4
<b>Switching the projector off</b> .....	3.4
<b>4. Controlling the projector</b>	
<b>Overview</b> .....	4.4
Controlling the projector.....	4.4
Input modes and settings.....	4.5
<b>Indicators</b> .....	4.7
Input status indicators .....	4.7
<b>The control panel</b> .....	4.8
Keypad layout.....	4.8
Projector status indicators.....	4.8
<b>The remote control</b> .....	4.9
Layout .....	4.9
Timeout.....	4.9

*continued*

## The remote control

### Layout



### Notes

Many features are controlled from the menus using the **menu navigation keys** on the remote control or keypad.

For more information about using the menus, see later in this section, **Using the menus**.

Some of the menu features, for example brightness, contrast and input preset operations, can be accessed directly using the **control keys** at the bottom of the remote control.

Other features, eg zoom and focus, are controlled using the **control keys** at the top of the remote control and keypad.

For more information about using the control keys, see later in this section, **Using the control keys**.

The following keys are **NOT** used on this projector:

- CTRL**
- R P Y**
- FUNC**
- 10+** (but N is used)
- #** (but R is used)

There are two infra-red windows - see **Getting to know the projector**, in section 1. Introduction.

Note that plugging in the remote control cable will disable the infra-red.



### Timeout

There is a 10 second timeout for the three Lens adjustment keys (see note on next page).

There is a separate, adjustable timeout for the On Screen Menus (see **On Screen Display**, in **Setup Menu**, later in this section).

## Using the control keys



### Power

- Press POWER  and hold for 3 seconds, to switch the projector ON.
- Press POWER  and hold for 3 seconds, to switch the projector OFF.





### Shutter

- Press SHUTTER  to OPEN the shutter.
- Press SHUTTER  to CLOSE the shutter.





### On-Screen-Display

- Press OSD  to switch the On-Screen-Display OFF.  
This includes ALL menus, controls and on-screen messages.
- Press OSD  to switch the On-Screen-Display ON.







### Focus

- Press  followed by  and  to adjust the focus.  
When adjustment is finished, press .


### Zoom


- Press  followed by  and  to adjust the zoom.  
When adjustment is finished, press .


### Shift


- Press  followed by , ,  or  to shift the lens up, down, left or right.  
When adjustment is finished, press .

### Notes

 Closing the shutter produces a better black than simply removing the signal, as the light source will be completely blocked by the shutter blade.

 When the OSD is OFF:

- all menu navigation keys are disabled.
- keys such as  **BRI** (brightness) will still function, but the slider bars will not be visible on screen.


 When any of the three Lens adjustment keys is pressed, the blue Transmit indicator on the remote control will light for 10 seconds:

- after 10 seconds, if no adjustment has been made, the indicator will go out and the Lens adjustment key must be pressed again to resume adjustment.

- to end the adjustment before 10 seconds has elapsed, press

the  key.

- all other adjustments will be locked out until the Lens adjustment is ended.

 For more information about the amount of lens shift available, see **section 2. Installation.**

**Red, Green and Blue**

- Press ,  or  to switch the red, green or blue components OFF or ON.

**Test pattern**

- Press  to select a test pattern.

**Picture settings**

- Press a  key, followed by  and  to adjust these picture settings:

- Brightness  BRI
- Contrast  CON
- Saturation  SAT
- Phase  PHASE
- Aspect ratio  ASPECT

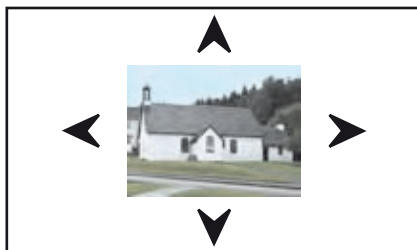
**Geometry settings**

Keystone adjustment is used to correct for distortion caused by the projector being mounted higher or lower than the screen.


- Press Keystone  KEYST,  
followed by  and  to adjust the keystone correction:





- Press Position  POS,  
followed by , ,  and  to adjust the picture position, for images smaller than the DMD:




**Notes**

 The red, green and blue keys are disabled when the OSD is switched OFF.

 The **Saturation** control is available for Composite, S-Video and Component inputs only.

 The **Phase** control is available for RGB inputs only.

 For all adjustments on this page that require more than one key to be pressed:

- after 10 seconds, if no adjustment has been made, the  key must be pressed again to resume adjustment.

- to end the adjustment before 10 seconds has elapsed, press a different adjustment key, or



press the  key.

 When the OSD is OFF:

- the  keys will still function, but the controls will not be visible on screen.





## Magnify and pan

- Press Magnify  MAGNIFY

followed by  and  to adjust the size of the picture.



- Press Pan  PAN

followed by , ,  and  to adjust the position of the magnified image.



## On-screen-display size

- Press Size  SIZE

to switch the size of the OSD between large and small.

## Remote control address

The projector and the remote control need to be set to matching addresses. Read the note to the right on this page, and follow the instructions in the order shown below:

- Set the projector address as shown in **Setup menu**, later in this section.
- Set the remote control address:

- Press and hold 


whilst pressing two numbered keys  0 – 9

to set the remote control address to any number between 00 and 99.  
(leading zeros must be used for numbers less than 10)


## Remote control backlight


- Press  to switch the backlight on and off.


### Notes

 The magnify feature utilises a digital zoom. Used with the pan control, this can be used to:

- enlarge a section of the image
- enable the use of multiple projectors to construct a large image from tiles.

 The pan control is available only when the image has been magnified.

 If the OSD moves off screen due to a change in image size, then pressing the size key will restore its readability.

 When fresh batteries are inserted in the remote control it will default to address **00**. Remote control **00** is a **master control**, able to control all projectors.

If two or more projectors are set to the same address, they can be controlled from one remote control, provided they are connected by cable or in range of the infra red.

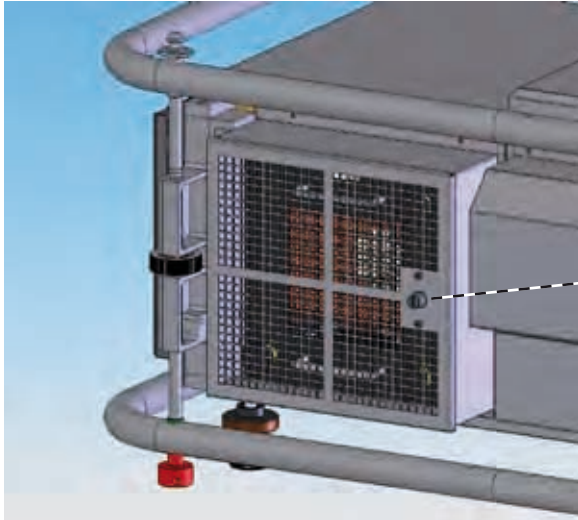


## Changing the lamp

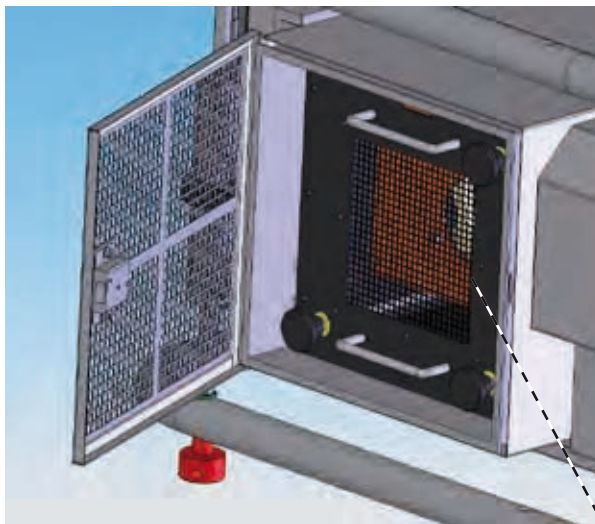
The lamp should be changed after 750 hours of use, as indicated on the lamp-hours meter. The meter is located on the front of the lamp module, and is accessible inside the lamp compartment door.

To open the lamp compartment door:

- Give the catch half a turn anti-clockwise, to release the catch.



*Door catch*



*Lamp module*

### Notes



**Always allow the lamp to cool for 5 minutes before removing the lamp module.**



**There are no user-serviceable parts inside the lamp module. The whole module should be replaced and returned to Digital Projection for refurbishment.**



**Do not use the lamp for more than 750 hours, as this may cause serious lamp failure, damage the lamp module and cause extra cost on replacement.**

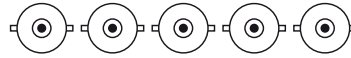


**Xenon lamps produce high intensity light. Do not look directly at the light coming from the lamp housing or the lens.**

## Input connections

### 1. RGB1 input

5 x 75 ohm BNC



Used for computer, progressive video and analog HD video.

RGsB	RGBS	RGBHV	YCrCb
R	R	R	Pr/Cr
G + Sync	G	G	Y
B	B	B	Pb/Cb
	Sync	H Sync	
		V Sync	

### 2. RGB2 input

15 way D-type connector



*pin view of female connector*

1	R
2	G
3	B
4	unused
5	Digital Ground (H Sync)
6	R Ground
7	B Ground
8	G Ground
9	+5v
10	Digital Ground (V Sync/DDC)
11	unused
12	SDA
13	H Sync
14	V Sync
15	SCL

*Notes*