

DIGITAL **PROJECTION** **OPERATING GUIDE**

HIGHlite 660 series

**High Brightness Digital Video Projector
16:9 widescreen display**



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About this Guide

Please read this guide carefully before using the projector, and keep it handy for future reference.

A serial number is located on the side of the projector. Record it here:

Symbols used in this guide

Warnings



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.

Notes



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. Projectors built prior to this revision of the Operating Guide may therefore not include all the features described.

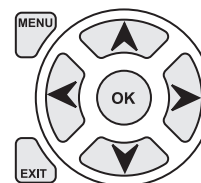
Using the Menus

Use the buttons on the projector control panel or on the remote control, to access the menu system.

- To open or close the on-screen display (OSD), press .

Menus and sub menus

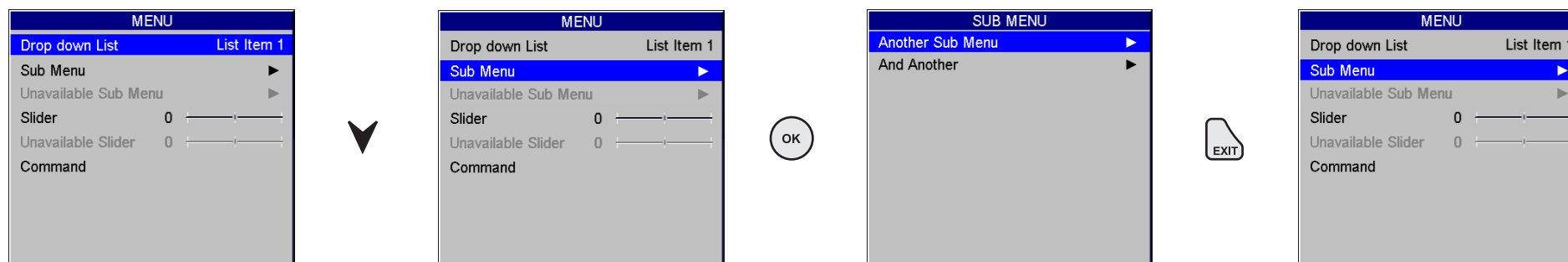
- To open a sub menu, select it using  and , then press .
- To return to the previous menu, press .



Notes

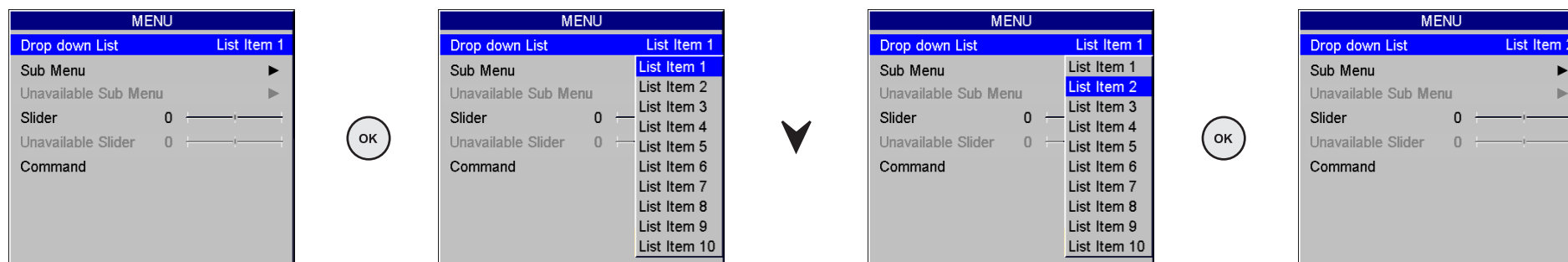


Some menu options and controls may not be available due to settings in other menus. These will be greyed-out on the actual menu.



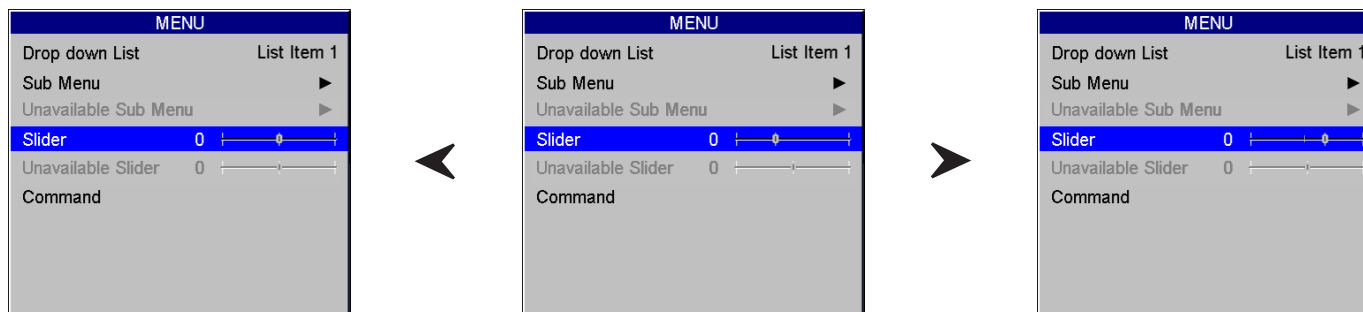
Drop-down lists

- To use a drop-down list, press , select an item using  and , then press  again or press  to exit without changing.



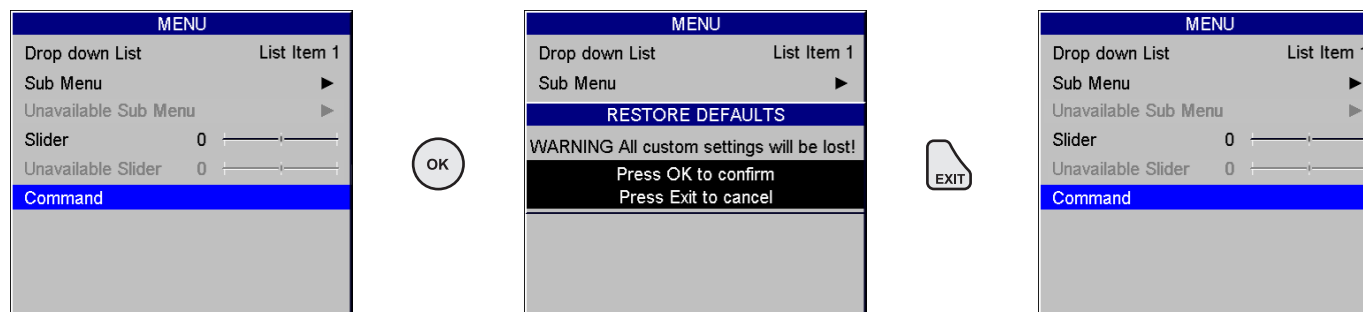
Sliders

- To use a slider, press ◀ and ▶ to adjust it.



Commands

- To use a command, press OK. In the example below, press OK to confirm, or press EXIT to cancel.



Notes

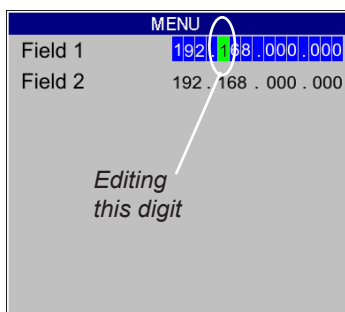


Some menu options and controls may not be available due to settings in other menus. These will be greyed-out on the actual menu.

Editing fields

Some features require a text or numeric field to be edited.

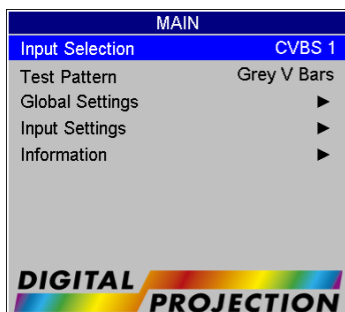
- To edit a field, first select it using ▲ and ▼, then press .
- Use ◀ and ▶ to move the green highlight to the digit or character which is to be changed, then use ▲ and ▼, to adjust it.
- Use ◀ and ▶ to select the next digit or character... etc.
- Press  to accept the new value, or press  to exit without changing.

**Notes**

Some menu options and controls may not be available due to settings in other menus. These will be greyed-out on the actual menu.

A Tour of the Menus

Main Menu



Input Selection

- Select an input source from the drop-down list.

Test Pattern

- Select a test pattern from the drop-down list.

Global Settings

Global Settings are those that affect the whole projector, regardless of which input is being used or what kind of image is being displayed.

More information about this menu can be found later in this section.

Input Settings

The Input Settings are those that affect ONLY the input being displayed. When a new input mode (video or graphics standard) is detected, eg NTSC, HDTV 1080p or SVGA, these settings are saved so that they can be recalled next time that input mode is displayed. In some cases the mode may change for the same input. For example, a DVD player connected to the HDMI input could switch between 1080p24 and 1080i60. The projector is able to save and automatically recall different input settings for these different input modes.

More information about this menu can be found later in this section.

Information

Information about the projector, the current input source, and about Digital Projection.

More information about this menu can be found later in this section.

Notes



See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu



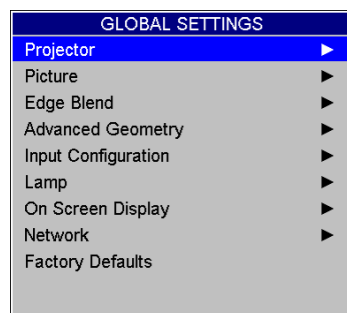
The Test Pattern will be not be displayed until **Test Pattern** is selected from the Input Selection drop-down list.



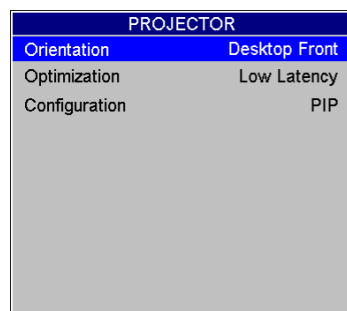
Test Patterns are subject to image controls, so brightness, contrast etc. will affect their appearance on screen.

Global Settings Menu

Global Settings are those that affect the whole projector, regardless of which input is being used or what signal type is being displayed.



Projector



Orientation

- Depending on how the projector is mounted, select the appropriate setting from the drop-down list

Optimisation

Affects interlaced sources only. For fastest response, the **Low Latency** setting gives minimum frame delay. For improved performance with films involving motion sequences, the **Motion** setting uses adaptive de-interlacing and interpolation, but takes longer to process.

- Select the appropriate setting from the drop-down list.

Configuration

- Select **PIP**, if the projector is to display two images at the same time, using **PIP**, **PAP** or **POP** mode. More information about this feature can be found later in this section.
- Select **PIP**, if this is a lone projector displaying a single image, but make sure that **PIP Option** is turned off.
- Select **Edge Blend** if this projector is part of an array of projectors, each one showing a part of one large image. More information about the Edge Blend feature can be found later in this section.

Notes



See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu Global Settings

Main Menu Global Settings Projector



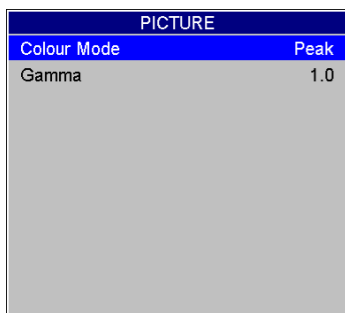
Switching from **PIP** to **Edge Blend** will cause a short delay whilst the projector reconfigures. No control will be possible during this period.



PIP and **Edge Blend** are mutually exclusive modes of operation. When in **PIP** mode, **Edge Blend** is not available, and vice versa.

Picture

These settings in the Global Picture Menu affect all images, regardless of which input is being used or what signal type is being displayed.



Colour Mode

- Select one of the preset Colour Modes from the drop-down list.

Gamma

- Select a Gamma setting from the drop-down list.

Notes



See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu
Global Settings
Picture

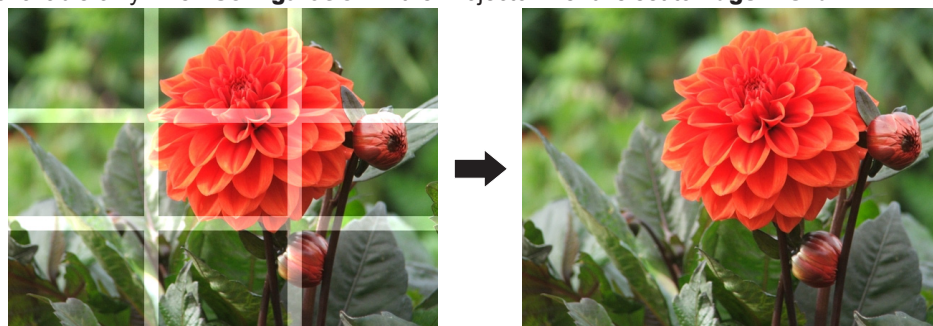


There are two **Picture** menus – one in the **Global Menu**, and one in the **Input Settings Menu**.

Edge Blend

When several projectors are used to create a large tiled image, the edges need to be blended to avoid the overlaps appearing brighter than the rest of the image. The Edge Blend menu is available only when **Configuration** in the Projector menu is set to **Edge Blend**.

EDGE BLEND	
Array Width	1
Array Height	1
Array H Position	0
Array V Position	0
Blending	Off
Segmentation	Off
Blend Width	▶
Black Level Uplift	▶
Reduce Black Level Uplift Width	▶



Array Width and Height

- Set this to the total number of projectors in the array. None of the other options are available until one of these two settings is greater than 1. The maximum number of projectors is 4 x 4.

Array H Position and V Position

- These two parameters need to be set correctly for each projector in the array, so that it can determine which edges are to be blended. Sometimes only one edge overlaps, sometimes two, three or four.

Blending

- Set this to **Off** for a lone projector, **On** to enable Edge Blending, or **Align Pattern** to help adjust the physical position of the projectors.

Segmentation

- Set this to **On**, if you want the projector to divide up the image into tiles, or **Off** if you have external equipment to do this.

Blend Width

- Use this to set the width of the blended regions.

BLEND WIDTH	
Top Blend Region	100
Bottom Blend Region	100
Left Blend Region	100
Right Blend Region	100

Black Level Uplift

- Use this to correct for non-zero black levels in the blended regions.

BLACK LEVEL UPLIFT	
Unblended Region	0
Upper Left	0
Upper Middle	0
Upper Right	0
Middle Left	0
Middle Right	0
Lower Left	0
Lower Middle	0
Lower Right	0

Reduce Black Level Uplift Width

- Use this to correct for stray light from the DMD's non-addressable border.

REDUCE BLACK LEVEL UPLIFT WIDTH	
Upper Left X	0
Upper Left Y	0
Upper Right X	0
Upper Right Y	0
Lower Left X	0
Lower Left Y	0
Lower Right X	0
Lower Right Y	0

Notes

See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu Global Settings Edge Blend

This menu is available only when **Configuration** in the Projector menu is set to **Edge Blend**.

None of the other blend options are available until either the **Width** or **Height** setting is greater than 1.

Note that the position numbering starts from zero:
So the top left projector is at position **H 0, V 0**.

Which settings are available in these menus depends on:

- how many projectors there are in the array
- the position of the projector in the array

PIP

Two images can be combined, in three different ways using this feature. The PIP menu is available only when **Configuration** in the Projector menu is set to **PIP**.

PIP	
Option	Off
Input	CVBS 1
Size	Medium
Position	Top Left
Custom H-Position	5
Custom V-Position	5

Option

- Select **PIP**, **PAP**, or **POP** mode from the drop-down list.

Input

- Select an **Input** from the drop-down list. The inputs are divided into two groups – the main image must be from one group, and the sub-image must be from the other group.
 - Group A: **CVBS 1**, **CVBS 2**, **S-VIDEO** and **3G-SDI**
 - Group B: **COMPONENT**, **VGA**, **DVI**, **HDMI** and **DVI-A**

Size

- Select a size for the sub-image from the drop-down list.

Position

- Select one of the preset positions for the sub-image from the drop-down list.

Custom Position

- If you have chosen Custom from the Position drop-down list, then you can use the sliders to position the image manually.

**PIP: Picture In Picture****PAP: Picture And Picture****POP: Picture Opposite Picture****Notes**

See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu
Global Settings
PIP



This menu is available only when **Configuration** in the Projector menu is set to **PIP**.



PIP, **PAP** and **POP** are NOT possible when **Input** is set to **Test Pattern**.



In these examples, the flower is the main image, and the window is the sub-image, shown at the **Medium** size setting.



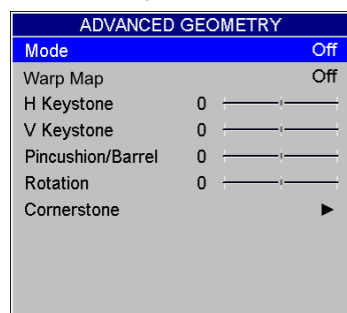
The two images MUST be from different **Input groups**.



The **Position** settings apply ONLY to **PIP** mode. **PAP** and **POP** are always as shown in these examples.

Advanced Geometry

These settings in the Global Menu affect all images, regardless of which input is being used or what signal type is being displayed.



Mode

- Select **Keystone**, **Cornerstone**, **Rotation**, **Warp Map** or **Off** from the **Mode** drop-down list.

Warp

- Using an external Digital Projection computer application, up to eight customised warp maps can be created and uploaded to the projector. If **Warp Mode** is selected, and any warp maps have been uploaded, you can select from the drop-down list.

Horizontal and Vertical Keystone

- If **Keystone Mode** is selected, you can set these two sliders to correct for any distortion caused by the projector being in a different horizontal or vertical plane to the screen.

Pincushion/Barrel

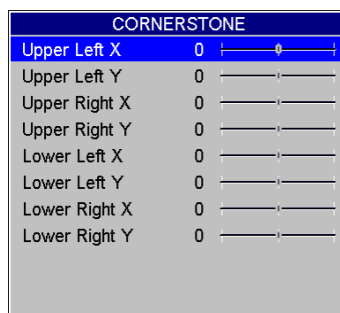
- You can set this slider to correct for any distortion caused by the screen being concave or convex.

Rotation

- If **Rotation Mode** is selected, you can set this slider to rotate the image on the screen.

Cornerstone

- If **Cornerstone Mode** is selected, you can use the sliders to stretch the image from each of the four corners.



Notes



See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu Global Settings Advanced Geometry



See also **Geometry** in the **Input Settings** menu, later in this guide.



Which settings are available in these menus depends on:

- which **Mode** is selected in the first drop-down list

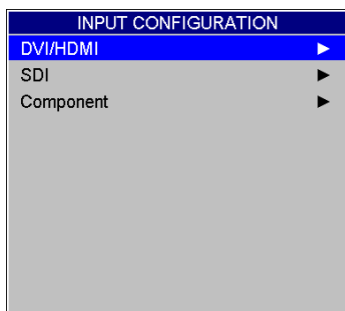
- and the **Pincushion/Barrel** slider can be used on its own, or in conjunction with **Keystone** or **Rotation**, but not with **Cornerstone** or **Warp**.



All of these modes may result in some reduction in resolution. If it is possible to correct the image by repositioning the screen or projector, then this is preferable.

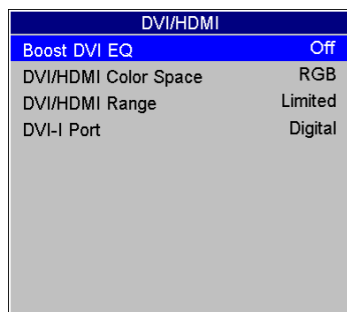
Input Configuration

These menus allow adjustment of various technical parameters specific to each of the signal inputs, regardless of which input is being used.



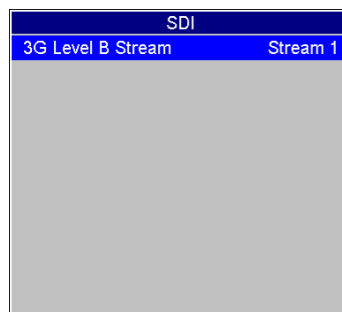
DVI/HDMI

- **Boost DVI EQ** should normally be set to **Off**, except when you are having problems with a long DVI cable.
- **DVI/HDMI Colour Space** should normally be set to **Auto**, except when the projector has problems identifying the correct colour space.
- **DVI/HDMI Range** should normally be set to **Auto**, except when you are having contrast problems with some DVI sources.
- Set **DVI-I Port** to choose between the **Analog** and **Digital** signals from a DVI-I source.



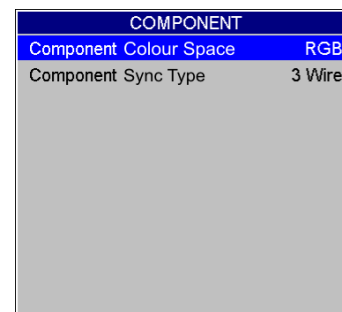
SDI

- If two video streams are being transmitted, use **3G Level B Stream** to choose between the two streams.



Component

- Set **Component Colour Space** to choose between **RGB** and **YPbPr**.
- **Component Sync Type** should be set to **Auto**, except when the projector has problems selecting between **3 Wire** (RGsB) and **4 Wire** (RGSB).



Notes



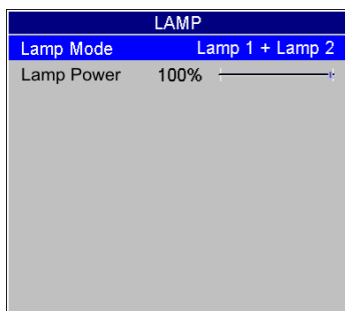
See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu Global Settings Input Configuration



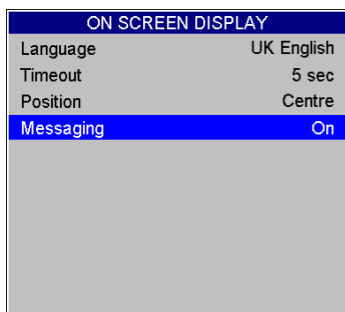
All these settings will remain as set in this menu, regardless of which input is being used.

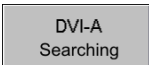
Lamp



- Set **Lamp Mode** to choose between **Lamp 1**, **Lamp 2**, and **Lamp 1 + Lamp 2**.
- Set the slider to vary the lamp power between 85% and 100%.

On Screen Display



- Select a display **Language** from the drop-down list.
- The menus will disappear if no buttons are pressed within the **Time** selected from the drop-down list. If you want the menus to stay on screen permanently, then select **Infinite**.
- Select a **Position** from the drop-down list.
- If you do not want projector status messages to be displayed, for instance: , then set **Messaging** to **Off**.

Notes



See also *Using the Menus*, earlier in this guide and *Menu Map*, later in this guide.

Main Menu
Global Settings
Lamp

Main Menu
Global Settings
On Screen Display

Network

The fields at the bottom of the menu show the current settings. Any new settings will not be effective until the projector has been turned off, then back on again.

NETWORK	
DHCP	Off
IP Address	192 . 168 . 000 . 000
Subnet	255 . 255 . 255 . 000
New settings effective after reboot	
DHCP Status	Off
IP Address	192.168.0.100
Subnet	255.255.255.0
MAC Address	9C.5E.73.00.26.0F

- Set **DHCP** to **On** if the IP Address is to be assigned by a DHCP server, or **Off** if it is to be set here.
- If **DHCP** is set to **On**:
It will not be possible to edit either IP Address or Subnet.
- If **DHCP** is set to **Off**:
Edit **IP Address** to the correct value.
Edit the **Subnet** to the correct value.

Factory Defaults

GLOBAL SETTINGS	
Projector	▶
Picture	▶
Edge Blend	▶
Advanced Geometry	▶
Input Configuration	▶
Lamp	▶
On Screen Display	▶
Network	▶
Factory Defaults	

GLOBAL SETTINGS	
Projector	▶
Picture	▶
Edge Blend	▶
RESTORE DEFAULTS	
WARNING All custom settings will be lost!	
Press OK to confirm	
Press Exit to cancel	
Network	▶
Factory Defaults	

- Press  to restore all settings to their factory defaults. When the warning message appears, press  to confirm, or press  to cancel.

Notes

See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu
Global Settings
Network



Any new settings will not be effective until the projector has been turned off, then back on again.

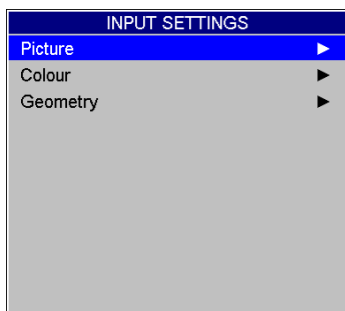
Main Menu
Global Settings
Factory Defaults



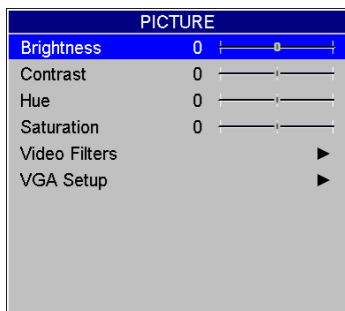
Do NOT do this unless you are sure that you want to restore ALL the current settings to their factory defaults.

Input Settings Menu

The Input Settings are those that affect ONLY the input being displayed. When a new input mode (video or graphics standard) is detected, eg NTSC, HDTV 1080p or SVGA, these settings are saved so that they can be recalled next time that input mode is displayed. In some cases the mode may change for the same input. For example, a DVD player connected to the HDMI input could switch between 1080p24 and 1080i60. The projector is able to save and automatically recall different input settings for these different input modes.



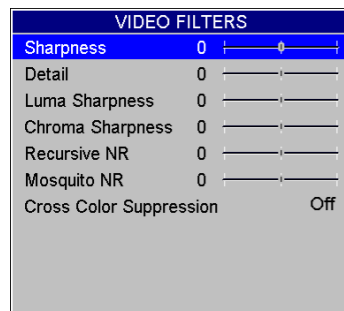
Picture



Brightness, Contrast, Gamma, Hue, Saturation

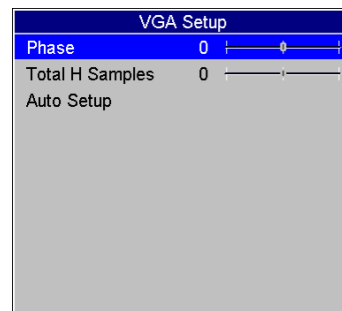
- Set the slider or select from the drop-down list as required, to improve the quality of the image.

 There are two **Picture** menus – one in the **Global Menu**, and one in the **Input Settings Menu**.



Video Filters

- Set the sliders or select from the drop-down list as required, to improve the quality of the image.



VGA Setup

- Set the **Phase** slider to correct for shimmering or poor quality definition on, for example, fine text.
 - Set the **Total H Samples** slider to match the resolution of the incoming video signal,
- or Use **Auto Setup** to allow the projector to detect the appropriate settings automatically.

Notes

 See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

Main Menu Input Settings

 When a new input mode is detected (eg NTSC, HDTV 1080p, SVGA etc), all the **Input Settings** are saved so that they can be recalled next time that input mode is displayed.

Main Menu Input Settings Picture

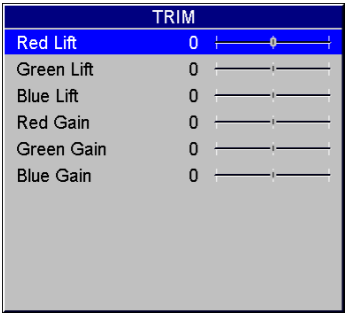
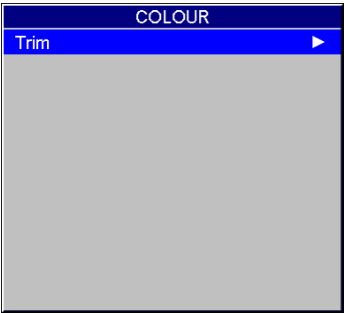
Main Menu Input Settings Picture Video Filters

Main Menu Input Settings Picture VGA Setup

 Hue applies only to NTSC signals.

 Auto Setup will not function unless a signal is present.

Colour



Trim

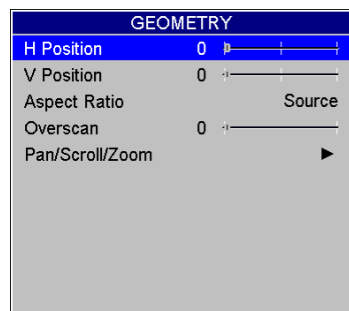
- Set the sliders as required.

Notes

-  See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.
-  When a new input mode is detected (eg NTSC, HDTV 1080p, SVGA etc), all the **Input Settings** are saved so that they can be recalled next time that input mode is displayed.

Main Menu
Input Settings
Colour

Main Menu
Input Settings
Colour
Trim

Geometry

- Set the **H Position** and **V Position** sliders as required.
- Set the **Overscan** slider to compensate for noisy or badly defined image edges.
- Set **Aspect Ratio** to choose between **Source**, **Fill**, **Fill & Crop** and **Anamorphic**.

Some devices (eg certain DVD players) pack a 16:9 image into a 4:3 aspect ratio. In such cases to display the image correctly, choose the Anamorphic aspect ratio.



16:9 image packed into a 4:3 box



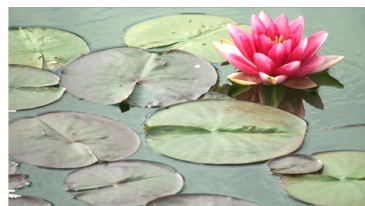
Source: fills the DMD height whilst maintaining the aspect ratio



Fill: stretches the image to fill the DMD



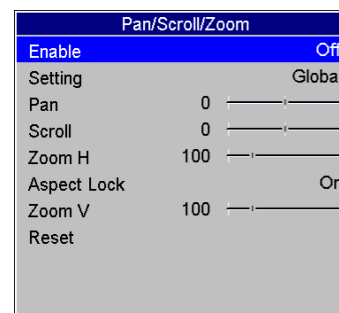
Fill & Crop: stretches the image to fill the DMD width, but crops to maintain the aspect ratio



Anamorphic: stretched to display the image correctly

Pan/Scroll/Zoom

- Set **Enable** to **On** or **Off**.
- Use **Setting** to choose:
Global, in which case these settings will be applied to all input signals,
or Per Mode, in which case these settings will be applied only to the current input signal.
- Set the **Pan**, **Scroll** and **Zoom** sliders as required.
- When **Aspect Lock** is set to **On**, the **Zoom V** slider is disabled.
- Select **Reset** and press  to reset all the sliders to zero.

**Notes**

See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.

**Main Menu
Input Settings
Geometry**



When a new input mode is detected (eg NTSC, HDTV 1080p, SVGA etc), all the **Input Settings** are saved so that they can be recalled next time that input mode is displayed.



See also **Advanced Geometry** in the **Global Settings** menu, earlier in this guide.

**Main Menu
Input Settings
Geometry
Pan/Scroll/Zoom**

Information Menu

The sub-menus give information about lamp operating times, software and hardware configurations, the input source and Digital Projection.

Projector

INFORMATION	
Projector	▶
Source	▶
Digital Projection	▶

PROJECTOR INFORMATION	
Lamps	▶
Configuration	▶

LAMPS		
	Time	Strikes
Lamp 1	93 : 17	348
Lamp 2	94 : 9	357

CONFIGURATION	
Scaler	BL 07 FW 2-3-0F 7430 DP
Interface	49.09
OSD	0.9
Hardware	20

Source

SOURCE INFORMATION	
Input	DVI
Standard	1024x768p 60Hz

Digital Projection



Notes

 See also *Using the Menus*, earlier in this guide and *Menu Map*, later in this guide.

Main Menu
Information
Projector

Main Menu
Information
Source

Main Menu
Information
Digital Projection

Menu Map

Main Menu

Sub Menus

Input Selection

CVBS 1, CVBS 2, S-Video, Component, VGA, HD-SDI, DVI, HDMI, Test Pattern

Test Pattern

Grey V Bars, Grey H Bars, Aspect Test, Alignment Grid, Warp Adjust, SMPTE, Chequerboard, White Field, Black Field

Global Settings

Projector

Orientation *Desktop Front, Ceiling Front, Desktop, Rear, Ceiling Rear*

Optimization *Low Latency, Motion*

Configuration *PIP, Edge Blend*

Picture

Colour Mode *Peak, HDTV, SDTV, Colour Temperature, User 1, User 2*

Gamma *1.0 to 2.8*

Edge Blend

Array Width

Array Height

Array H Position

Array V Position

Blending *Off, On, Align Pattern*

Segmentation *Off, On*

Blend Width *Top, Bottom, Left, Right Blend Region*

Black Level Uplift *Unblended Region, Upper Left, Upper Middle, etc*

Reduce Black Level Uplift Width *Upper Left X, Y, Upper Right X, Y, etc*

PIP

Option *Off, PIP, PAP, POP*

Input *select from Group A or Group B*

Size *Small, Medium, Large*

Position *Top Left, Bottom Right etc*

Custom H Position

Custom V Position

Notes



Some of the information in this menu map is summarised. See the actual menu on the projector for full detail.



Some menu options and controls may not be available due to settings in other menus. These will be greyed-out on the actual menu.



Where it would be helpful, some menu options are described in more detail earlier in this operating guide.



There are two **Picture** menus – one in the **Global Menu**, and one in the **Input Settings Menu**.



PIP and **Edge Blend** are mutually exclusive modes of operation. When in PIP mode, Edge Blend is not available, and vice versa.

Main Menu**Sub Menus****Global Settings** *(continued)***Advanced Geometry**Mode *Off, Keystone, Cornerstone, Rotation, Warp*Warp Map *Off, 1 to 8, Reset*

H Keystone

V Keystone

Pincushion/Barrel

Rotation

Cornerstone *Upper Left X, Y, Upper Right X, Y, etc***Input Configuration**DVI/HDMI *Boost DVI EQ, DVI/HDMI Colour Space, DVI/HDMI Range, DVI Port*SDI *3G Level B Stream*Component *Colour Space, Sync Type***Lamp**Lamp Mode *Lamp 1 + Lamp 2, Lamp 1, Lamp 2*Lamp Power *85% to 100%***On Screen Display**Language *US English, UK English*Timeout *Number of seconds, Infinite*Position *Centre, Top Left, Top Right, Bottom Left, Bottom Right*Messaging *Off, On***Network**DHCP *Off, On*

IP Address

Subnet

DHCP Status *Information only:*

IP Address

Subnet

MAC Address

Factory Defaults *Projector will ask for confirmation before restoring all settings to factory defaults.***Notes***Some of the information in this menu map is summarised. See the actual menu on the projector for full detail.**Some menu options and controls may not be available due to settings in other menus. These will be greyed-out on the actual menu.**Where it would be helpful, some menu options are described in more detail earlier in this operating guide.*

Main Menu	Sub Menus
Input Settings	Picture Brightness Contrast Hue Saturation Video Filters <i>Sharpness, Detail, Noise Reduction, Cross Colour Suppression</i> VGA <i>Phase, Total H Samples, Auto setup</i> Colour Trim <i>RGB Lift and Gain</i> Geometry H Position V Position Aspect Ratio <i>Source, Fill, Fill & Crop, Anamorphic</i> Overscan Pan/Scroll/Zoom <i>Enable, Disable, Global, Per Mode, Pan, Scroll, Zoom H, Aspect Lock, Zoom V, Reset</i>

Information

- Projector** *Information only:*
- Lamps *Hours, Strikes*
 - Configuration *Scaler, Interface, OSD, Hardware*
- Source** *Information only:*
- Input
 - Standard
- Digital Projection** *Information only:*
- Contact Information

Notes

-  Some of the information in this menu map is summarised. See the actual menu on the projector for full detail.
-  Some menu options and controls may not be available due to settings in other menus. These will be greyed-out on the actual menu.
-  Where it would be helpful, some menu options are described in more detail earlier in this operating guide.
-  There are two **Picture** menus – one in the **Global Menu**, and one in the **Input Settings Menu**.