M-Vision Cine 320 3D series

High Brightness Digital Video Projector
16:9 widescreen display
About This Document

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

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

Keep this manual handy for future reference.

Symbols used in this manual

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

⚠️ 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.

翛 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.

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INSTALLATION AND QUICK-START GUIDE

M-Vision Cine 320 3D series

High Brightness Digital Video Projector
16:9 widescreen display
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<td>3D</td>
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</table>
What’s In The Box?

- Remote control (112-961)
- 2x AAA batteries
- Projector
- User Manual on disc (115-759)
- Important Information (110-287)
- 5mm Allen wrench
- 3D sync cable
- Power cable, United Kingdom (102-180)
- Power cable, Europe (102-163)
- Power cable, North America (102-165)

Notes

- Make sure your box contains everything listed. If any pieces are missing, contact your dealer.
- You should save the original box and packing materials, in case you ever need to ship your projector.
The projector uses the standard M-Vision series infrared remote control.

Some of the controls are duplicated on the projector control panel, as shown on the next page.

For full details of how to use the controls and the menu system, see the Operating Guide.
Control panel indicators

Some of the functions on the remote control are duplicated on the projector control panel, as shown here.

**Power indicator (blue light)**

The blue Power indicator will light when the projector is in STANDBY mode, and will flash when the projector is cooling down or warming up, as shown in the chart below. It will be off when the projector is in normal running mode.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Power indicator behaviour (blue light)</th>
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<tbody>
<tr>
<td>Standby</td>
<td>On</td>
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<tr>
<td>Cooling / Warming up</td>
<td>Flashing</td>
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<tr>
<td>Power on (Normal)</td>
<td>Off</td>
</tr>
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</table>

*Notes*

For full details of how to use the controls and the menu system, see the *Operating Guide*. 
### Error codes (red light)

If the projector detects an error, the red Issue indicator will flash as shown in the chart below.

For example, if the lamp door is left open, the red indicator will flash twice followed by a pause, then the sequence will repeat until the error condition is corrected.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Issue indicator behaviour (red light)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamp fail</td>
<td>Flashes once, then pauses, then repeats.</td>
</tr>
<tr>
<td>Lamp door open</td>
<td>Flashes twice, then pauses, then repeats.</td>
</tr>
<tr>
<td>Fan fail</td>
<td>Flashes three times, then pauses, then repeats.</td>
</tr>
<tr>
<td>Over temperature</td>
<td>Flashes four times, then pauses, then repeats.</td>
</tr>
<tr>
<td>System error</td>
<td>On.</td>
</tr>
</tbody>
</table>

For full details of how to use the controls and the menu system, see the *Operating Guide*. 

For full details of how to use the controls and the menu system, see the [Operating Guide](#).
Positioning The Screen And Projector

Consider the following:

- When installing the screen, ensure that it is in the best position for viewing by your audience.
- When positioning the projector, ensure that it is at a suitable distance from the screen for the image to fill the screen.
- Whether you are mounting the projector on the ceiling or standing it on its adjustable feet, ensure that it is level and perpendicular to the screen.

The dimension drawing below shows the positions of the feet for table mounting, and the fixing holes for ceiling mounting.

---

Notes

- All dimensions on the diagram on this page are in mm.
- Ensure that there is at least 30cm (12in) of space between the ventilation outlets and any wall, and 10cm (4in) on all other sides.
- Do not stack more than 3 projectors.
- Do not tilt the projector more than ±12° from side to side when in use, as this may cause serious lamp failure, damage the lamp module and cause extra cost on replacement.
- The projector may be tilted to one side and positioned in portrait mode as long as the exhaust outlet points upward.
- When positioning the projector in portrait mode, ensure adequate airflow to the air inlet.
Switching the projector on
1. Connect the power cable between the mains supply and the projector.
2. When the self-test has completed, the power indicator on the projector control panel shows blue to indicate that the projector is in STANDBY mode and the lamp is switched off. Press and hold for three seconds either of the following:
   - The POWER button on the control panel
   - The ON button on the remote control

The power indicator on the control panel flashes blue for a few seconds whilst the lamp comes up to full brightness. When the projector is fully switched on and ready for use, the power indicator switches off.

Switching the projector off
1. Press POWER on the control panel or the POWER button on the remote control, then press the button again to confirm.
   The lamp will switch off, the power indicator on the control panel will start flashing in blue and the projector will be in STANDBY mode while cooling off.
2. Wait until the power indicator has stopped flashing and the fans have stopped working, then disconnect the power cable.

Notes
- For full details of how to use the controls and the menu system, see the Operating Guide.
- Even if the power indicator has stopped flashing, please allow the lamp to cool off for five minutes before:
  - disconnecting the power
  - moving the projector
  - changing the lamp
**Adjusting the lens**

**Zoom**

Turn the smooth ring on the lens, closest to the case, to adjust the zoom so that the image fills the screen.

**Focus**

Turn the knurled ring at the outer end of the lens, to adjust the focus until the image is sharp.

**Shift**

1. To reveal the adjustment access holes, slide the Digital Projection badge in the direction shown below, then gently lift it off by hand.
2. Use the 5mm Allen wrench to adjust the horizontal and vertical position of the image.

---

**Notes**

- **Do NOT prise off the badge using a tool.**
- **Lens shift controls are not available on projectors fitted with the fixed 0.73:1 lens.**
Selecting an input signal or test pattern

**Input signal**
Connect an image source to the projector. The signal should be automatically detected by the projector, and should be displayed within two or three seconds.

If more than one signal is connected, select the image you want to display in one of the following ways:

- Access the **Main** menu (either from the remote control or from the control panel) and then go to **Input Select**.
- On the remote control, select from the inputs using the number buttons 1 to 6.
- On the control panel, press **SOURCE** to cycle through all the inputs.

**Test pattern**
If you have no image source connected to the projector, you can display a test pattern instead. To display a test pattern, do either of the following:

- Press the **TEST** button on the remote control to cycle through all test patterns.
- Access the **Service** menu and select a test pattern.

*Notes*
For full details of how to use the controls and the menu system, see the Operating Guide.
Adjusting the image

Orientation
To change the image orientation, access the System menu and then open the Rear Projection and Ceiling Mode settings.

Aspect ratio
To set up an aspect ratio for your image, do either of the following:

- Press the ASPECT RATIO button on the remote control to cycle through the available settings.
- Access the Main menu and then select the Aspect Ratio setting.

Picture
To change brightness and contrast, do either of the following:

- Press BRIGHTNESS or CONTRAST on the remote control, then use the arrow buttons to move the sliders.
- Access the Image menu and adjust the Brightness and Contrast settings.

3D
In the Main menu, use the 3D Control sub-menu.
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M-Vision Cine 320 3D series

High Brightness Digital Video Projector
16:9 widescreen display
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Signal Inputs

Component 1 and 2

**RGsB only (not RGBs)**

In the Advanced Image menu, set Colorspace to Auto, or if necessary to RGB Video.

**YPbPr/YCbCr**

In the Advanced Image menu, set Colorspace to Auto, or if necessary to REC709 or REC601.

**RGB**

In the Advanced Image menu, set Colorspace to Auto, or if necessary to RGB PC.

HDMI 1 and 2

If you are using a Dual Pipe 3D signal, connect the left signal to one input and the right signal to the other.

If necessary, the images can be swapped using the 3D Settings sub-menu of the Main menu.

Notes

For a complete listing of pin configurations for all signal and control connectors, see Wiring Details later in this guide.
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<th>Resolution</th>
<th>Frame Rate (Hz)</th>
<th>3D Support</th>
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<td>Side by Side (Horizontal)</td>
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</tr>
</tbody>
</table>
Control Connections

Service port
The service port is used to download firmware updates issued from time to time by Digital Projection.

LAN and RS232
All of the projector’s features can be controlled via a LAN or serial connection using the text strings described in the Remote Communications Guide.

Connecting to the projector via a web-based interface is described in the next chapter, LAN IP configuration utility.

Wired remote control
You can connect a wired remote control to the projector via a 3.5mm jack. You can also use this socket to connect an external IR repeater if needed.

Trigger 1 and 2 outputs
The Trigger outputs are activated by one of the three following conditions, as set in the Control menu:

- Screen trigger: can be connected to an electrically operated screen, automatically deploying the screen when the projector starts up, and retracting the screen when the projector shuts down.
- Aspect ratio trigger: can be used to control screen shuttering for different aspect ratios.
- RS232 trigger: can be used to control the screen or screen shuttering on receipt of an RS232 command.

3D Sync output
Connect the Sync Out connector to a Z Screen or 3D IR emitter as appropriate.

Notes
- For a complete listing of pin configurations for all signal and control connectors, see Wiring Details later in this guide.
- Plugging in the wired remote control disables the infrared.
LAN IP Configuration Utility

LAN IP configuration can be carried out using a web browser:

1. Point your browser at the projector by typing the LAN IP address into the address bar, then press the **ENTER** key. The embedded IP Configuration webpage should appear.

2. Enter the settings as required, then click **Save**.

The IP Configuration page

Notes
## Wiring Details

### Signal inputs

**Component 1**

3 x RCA Phono connector

**Component 2**

3 x 75 ohm BNC

<table>
<thead>
<tr>
<th>RGsB</th>
<th>YCbCr</th>
<th>YPbPr</th>
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<tr>
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<td>Cr</td>
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<td>G</td>
<td>Y</td>
</tr>
<tr>
<td>G + Sync</td>
<td>Cb</td>
<td>B</td>
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### RGB input

15 way D-type 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**

For full details of all input settings, see the *Main menu* section in the *Operating Guide*.
## HDMI inputs

19 way type A connector

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<td>TMDS Data 2+</td>
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<tr>
<td>2</td>
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</tr>
<tr>
<td>3</td>
<td>TMDS Data 2-</td>
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<tr>
<td>4</td>
<td>TMDS Data 1+</td>
</tr>
<tr>
<td>5</td>
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</tr>
<tr>
<td>6</td>
<td>TMDS Data 1-</td>
</tr>
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<td>7</td>
<td>TMDS Data 0+</td>
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<tr>
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<td>SCA (DDC Data)</td>
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<td>DDC/CEC Ground</td>
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<td>18</td>
<td>+5 V Power</td>
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### Pin view of panel connector

For full details of all input settings, see the Main menu section in the Operating Guide.
**Control connections**

**Wired remote control connection**

3.5mm mini jack

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<td>Ring</td>
<td>Signal</td>
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<tr>
<td>Sleeve</td>
<td>Ground</td>
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</table>

**Serial control input**

1. unused
2. Received Data (RX)
3. Transmitted Data (TX)
4. unused
5. Signal Ground
6. unused
7. unused
8. unused
9. unused

**Straight-through cable**

(used to connect the projector to a computer)

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<tr>
<th>RX</th>
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**Serial port settings**

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<td>Parity</td>
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<tr>
<td>Flow control</td>
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**Notes**

- Plugging in the remote control cable disables the infrared.
- Only one remote connection should be used at any one time.
**Digital Projection M-Vision Cine 320 3D Series**

**WIRING DETAILS**

**Trigger 1 & 2 outputs**

3.5 mm mini jack

<table>
<thead>
<tr>
<th>Tip</th>
<th>Signal</th>
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</thead>
<tbody>
<tr>
<td>Sleeve</td>
<td>Ground</td>
</tr>
</tbody>
</table>

**LAN connection**

TCP Port number: 7000

10BaseT Unshielded Twisted Pair cable

**3D sync connection**

Pin 1  +5V
Pin 2  Ground
Pin 3  Stereo sync

VESA 3-pin Mini DIN

---

**Notes**
M-Vision Cine 320 3D series

High Brightness Digital Video Projector
16:9 widescreen display
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Using The Menus

Opening the OSD
Access the various menus using either the projector control panel or the remote control. On either device,

- press the **MENU** button.

The on-screen display (OSD) opens showing the list of available menus.

Opening a menu
Move up and down the list using the **UP** and **DOWN** arrow buttons.
To open a menu,

- press **ENTER** (on the remote control) or **SELECT** (on the control panel).

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

Exiting menus and closing the OSD
To go back to the previous page,

- press **MENU**.

When you reach the top level, pressing **MENU** will close the OSD.

Notes
Initially the OSD opens with the top item highlighted. Every time it is opened thereafter, it will show the last highlighted item. When the projector is restarted, the OSD opens with the top item highlighted again.
Inside a menu

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

- Title bar at the top
  Shows which menu (and sub-menu) you have accessed.
- Highlighted item
- Available and unavailable items
  Unavailable items appear grayed out. Whether an item is available may depend on other settings.
- Text next to each item
  Shows whether the item:
    - has a value that can be changed (shows the current value)
    - opens a sub-menu (says <Sub-menu>)
    - executes a command (says <Execute>)

Accessing sub-menus

Use the UP ▲ and DOWN ▼ arrow buttons to highlight the sub-menu, then press ENTER/SELECT.

Executing commands

If the item contains a command, press ENTER/SELECT to execute it.

You may be asked for confirmation. Use the LEFT ◀ and RIGHT ▶ arrow buttons to select your answer and then press ENTER/SELECT.

Notes

The highlighted item has a blue background.
**Editing projector settings**

If the highlighted menu item is a setting with a list of values to choose from, you can change the value in two different ways.

**Choosing a value from a list**

To access the list of values and then make a selection:

1. Highlight the menu item and press **ENTER/SELECT**.
2. On the new page that opens, use the **UP ▲** and **DOWN ▼** arrow buttons to highlight a value, then press **ENTER/SELECT** again. A green “check” symbol ✔ marks the current selection.
3. Press **MENU** to exit the list.

**Changing the value without viewing the list**

To switch to the next or previous value without viewing the list,

- press the **LEFT ◀** or **RIGHT ►** arrow button.

**Using a slider to set a value**

Some parameters with a numeric value open a slider. To set such a parameter:

1. Press the **LEFT ◀** or **RIGHT ►** arrow button, or **ENTER/SELECT**. The arrow buttons will open the slider and adjust the value at the same time. **ENTER/SELECT** 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 **MENU** to exit the slider.
A Tour Of The Menus

The projector settings are grouped into six menus as shown in the illustration.

Main menu

Selecting Main from the top level opens the Main menu.

Notes
Main menu continued from previous page

**Aspect Ratio**

This setting allows you to switch between **16:9**, **TheaterScope**, **4:3**, **4:3 Narrow** and **Native**.

**Examples**

- 16:9 image using the **Native** setting
- 16:9 image using the 16:9 setting
- 4:3 image using the **Native** setting
- 4:3 image using the 4:3 setting

**Examples with anamorphic lens**

- 2.35:1 image using **16:9** without anamorphic lens
- 2.35:1 image using **TheaterScope** without anamorphic lens
- 2.35:1 image using **TheaterScope** with anamorphic lens
- **4:3 Narrow** without anamorphic lens
- **4:3 Narrow** with anamorphic lens
Presets
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.

Up to four custom presets can be stored for each input source you use.

The following settings are saved in a preset:
- From the Main menu — Aspect Ratio and Overscan
- From the Image menu — Brightness, Contrast, Saturation, Hue, Sharpness and Noise Reduction
- From the Advanced Image menu — Colorspace, Gamma, Color Temperature, Color Gamut, RGB Adjust, RGB Gains, Brilliant Color and Adaptive Contrast

To save a preset:
1. From the Main menu, open Presets.
2. Highlight Save Preset on the left and then move to the list on the right. Select the preset you wish to save and press ENTER/SELECT.

To recall a saved preset:
1. From the Main menu, open Presets.
2. Highlight Recall Preset on the left and move to the list on the right. Select the preset you wish to recall, then press ENTER/SELECT.

Press MENU to leave the Presets page.
Alternatively, you can recall presets A, B and C with the USER MEMORY buttons on your remote control.

Notes
- Settings are saved ONLY for the current input source.
- Preset D is only accessible through the Presets page of the menu, and not through the remote.
Main menu continued from previous page

**Overscan**
This setting, if switched on, removes unwanted artefacts from the edges of your image by cropping the edges or increasing the size of the image to force the edges off-screen.

Unwanted artefacts along the image edges usually occur when the projector is connected to a low quality input source.

Choose from **Off**, **Crop** or **Zoom**.

**3D Control**
Use this sub-menu to enable, disable and set up 3D input, as follows:

- **Enable 3D** — On and Off
- **3D Format** — Auto (recommended), **Side by Side**, **Top and Bottom**, **Dual Pipe**
- **DLP Link** — On (if you are using 3D glasses that can utilise the DLP Link® signal embedded in the image) and Off
- **3D Swap** — Normal and Reverse (set to Reverse if the 3D images are displayed in the wrong order)
- **Dark Time** — 1ms, 1.5ms, 2ms and 2.5ms. Set to reduce the effect of images overlapping whilst the glasses are switching
- **Sync Delay** — use the LEFT ♠ and RIGHT ▼ arrow buttons to set the value in milliseconds, to compensate for signal processing delays in the projector.
- **1080p24 3D Display** — if you set this to 144Hz, 30 lines are cropped from the top and bottom of the frame; 96 Hz displays the full frame.

Notes

For a list of supported 3D formats, see the **Connection Guide**.

3D video is only possible on the **HDMI** inputs.

Most of the **3D Control** settings, including **Enable 3D**, will be unavailable if **3D Format** is set to **Auto** and the projector is not receiving a 3D image from the source. To activate the Enable 3D setting, change **3D Format** to something other than **Auto**.

If **Enable 3D** is available but set to **Off** and you decide to change the value of the **3D Format** setting, your action will switch **Enable 3D** on.

The **Frame Packing** format is automatically detected by the projector.
Main menu continued from previous page

**Input Select**
This setting controls the input source used by the projector. Choose from the following input sources:

- HDMI 1
- HDMI 2
- RGB
- COMP 1
- COMP 2

To change the input source, highlight **Input Select**, and then:

- Either toggle between the available sources using the **LEFT** and **RIGHT** arrow buttons
- Or press **ENTER/SELECT** and then select a source from the list.

**Resync**
Press **ENTER/SELECT** to force the projector to resynchronize with the current input signal.

---

**Notes**

See the [Connection Guide](#) for further information about the available inputs and connections.
Image menu
Highlight the setting you wish to edit, and then press ENTER/SELECT, or the LEFT ‹ or RIGHT › arrow button to open the slider.

Use the LEFT ‹ and RIGHT › arrow buttons to adjust the slider.
Press MENU to close the slider.

<table>
<thead>
<tr>
<th>IMAGE &gt;&gt;</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brightness</td>
<td>100</td>
</tr>
<tr>
<td>Contrast</td>
<td>100</td>
</tr>
<tr>
<td>Saturation</td>
<td>100</td>
</tr>
<tr>
<td>Hue</td>
<td>100</td>
</tr>
<tr>
<td>Sharpness</td>
<td>0</td>
</tr>
<tr>
<td>Noise Reduction</td>
<td>0</td>
</tr>
</tbody>
</table>
Advanced Image menu

Colorspace
In most cases, the Auto setting determines the correct colorspace to use. If it does not, you can choose a specific colorspace:

- REC709 sets the colorspace to that defined in ITU-R BT.709.
- REC601 sets the colorspace to that defined in ITU-R BT.601.
- RGB-PC uses RGB colorspace and sets black at 0 and white at 255. Known as Full Range.
- RGB-Video uses RGB colorspace and sets black at 16 and white at 235. Known as Limited Range.

Gamma
Choose a de-gamma curve from Film (2.2), Video, Punch (2.0), Graphics and CRT (2.5).

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.

Color Temperature
Choose a value from 5500 (warmer) to 9300 (cooler) or Native (no correction).

Highlight the setting you wish to edit, and then either press ENTER/SELECT to access it, or use the LEFT ◀ and RIGHT ▶ arrow buttons to switch between values.

Press MENU to go back.
Advanced Image menu continued from previous page

**Color Gamut**
In most cases, the *Auto* setting will determine the correct color gamut to use. If it does not, you can select the appropriate setting manually.

Each setting defines the precise hue of each primary (red, green and blue) and secondary (yellow, cyan and magenta) color component used to generate the image.

Use the **LEFT** and **RIGHT** arrow buttons to select from:
- **Auto**
- **SMPTE-C** for NTSC, 480i and 480p sources
- **EBU** for PAL, SECAM, 576i and 576p sources
- **REC709** for most other sources
- **Native** — no correction

**Brilliant Color®**

Allows for increased projector brightness at the expense of accurate color reproduction.

**Adaptive Contrast**

Expands the light and dark portions of the contrast curve of the image, depending on the mean luminance of the image.

**RGB Adjust**

Adjust the RGB offset and gain settings to improve the color balance of the projected image.

Highlight the setting you wish to edit, and then either press **ENTER/SELECT** to access it, or use the **LEFT** and **RIGHT** arrow buttons to switch between values.

Press **MENU** to go back.
Advanced Image menu continued from previous page

Fine Sync

- **V Position** and **H Position**
  Set the sliders as required.

- **Phase**
  Adjusts the phase of the pixel sampling clock relative to the incoming signal. Adjust the phase if noise is visible.

- **Tracking**
  Adjusts the frequency of the pixel sampling clock. Flicker or vertical banding indicate poor tracking.

- **Sync Level**
  Adjusts the voltage level of the signal detection circuitry. Adjust if the projector loses sync during scenes where the signal drops below black.

Highlight the Fine Sync setting, and then either press ENTER/SELECT to access it, or use the LEFT and RIGHT arrow buttons to switch between values.

Press MENU to go back.

**Color Mode**

This setting adjusts the lamp driver waveform and color wheel programming according to the image requirements of the user. Use the LEFT and RIGHT arrow buttons to select from:

- **Mode 1**
- **Mode 2**

<table>
<thead>
<tr>
<th>ADVANCED IMAGE &gt;&gt; Fine Sync</th>
</tr>
</thead>
<tbody>
<tr>
<td>V Position</td>
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<tr>
<td>H Position</td>
</tr>
<tr>
<td>Phase</td>
</tr>
<tr>
<td>Tracking</td>
</tr>
<tr>
<td>Sync Level</td>
</tr>
</tbody>
</table>

Notes

Some of the settings within the Fine Sync sub-menu, Phase, Tracking and Sync Level, affect only RGB and Component input sources. These settings are not available if the projector is using a different source.

Adjust the Phase after adjusting Tracking.
System menu
This menu contains the following settings:

• **OSD Settings**
  Controls the positioning and behavior of the OSD.

• **Blank Screen**
  Defines what appears on the screen while the projector is running with no input signal.

• **Auto Power Off**
  Set this to On if you want the projector to go into STANDBY mode when no input source is detected for 20 minutes.

• **Auto Power On**
  If this is On, the projector will start up as soon as the mains is connected. If Off, the projector will go into STANDBY mode.

• **Projection Mode**
  Tabletop is for a unit standing on its feet; set to Ceiling if the projector is mounted upside down. Front and Rear define whether the projector is in front of the screen or behind it.

• **Startup Splash**
  Show or hide the Digital Projection logo at startup.

• **Altitude**
  High increases the fan speed to compensate for reduced air density at high altitude.

Highlight the setting you wish to edit, and then either press ENTER/SELECT to access it, or use the LEFT and RIGHT arrow buttons to switch between values.

Press MENU to go back.
Control menu

- **Triggers**
  Choose from **Screen, 16:9, TheaterScope, 4:3, 4:3 Narrow or RS232** to determine what will cause each trigger output to activate.

- **Auto-Source**
  If this setting is **On**, the projector will automatically search for an input source in case its current input is disconnected.

- **Infrared Remote**
  Switch the remote control on and off.

Service menu

**Factory Reset**
To restore the factory default settings:

1. Navigate to **Factory Reset** and press **ENTER/SELECT**.
2. When prompted, use the **LEFT ▼ and RIGHT ►** arrow buttons to highlight the **Yes** button and then press **ENTER/SELECT** to confirm your choice.

**Test patterns**
Highlight this setting and then use the **LEFT ▼ and RIGHT ►** arrow buttons to switch between the various patterns.

---

<table>
<thead>
<tr>
<th><strong>CONTROL &gt;&gt;</strong></th>
<th></th>
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<tbody>
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<td><strong>Screen</strong></td>
</tr>
<tr>
<td>Trigger 2</td>
<td>16:9</td>
</tr>
<tr>
<td>Auto-Source</td>
<td>Off</td>
</tr>
<tr>
<td>Infrared Remote</td>
<td>On</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th><strong>SERVICE &gt;&gt;</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model Name</strong></td>
<td>M-Vision 320 3D</td>
</tr>
<tr>
<td><strong>Serial Number</strong></td>
<td>C932XXXXX00238</td>
</tr>
<tr>
<td><strong>Software Version</strong></td>
<td>MD07-GE07-00011-010203</td>
</tr>
<tr>
<td><strong>Active Source</strong></td>
<td>HDMI 2</td>
</tr>
<tr>
<td><strong>Signal Format</strong></td>
<td>1080p/60Hz TAB</td>
</tr>
<tr>
<td><strong>Pixel Clock</strong></td>
<td>148.50 MHz</td>
</tr>
<tr>
<td><strong>Refresh Rate</strong></td>
<td>H: 67.25 KHz V: 60 Hz</td>
</tr>
<tr>
<td><strong>Lamp Hours</strong></td>
<td>18 HRS</td>
</tr>
<tr>
<td><strong>Factory Reset</strong></td>
<td>&lt;Execute&gt;</td>
</tr>
<tr>
<td><strong>Test Pattern</strong></td>
<td>Off</td>
</tr>
</tbody>
</table>

---

**Reset Everything**

Yes  No

---

**Notes**

- If you turn the remote control off, you can only turn it back on again from the control panel.

- Test patterns are not available in 3D mode.
<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menus and settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Aspect Ratio</strong> 16:9, TheaterScope, 4:3, 4:3 Narrow, Native</td>
</tr>
<tr>
<td></td>
<td><strong>Presets</strong> Recall A, B, C, D, Default</td>
</tr>
<tr>
<td></td>
<td>Save A, B, C, D</td>
</tr>
<tr>
<td></td>
<td><strong>Overscan</strong> Off, Crop, Zoom</td>
</tr>
<tr>
<td></td>
<td><strong>3D Control</strong> 3D Enable Off, On</td>
</tr>
<tr>
<td></td>
<td>3D Format Auto, Side by Side, Top and Bottom, Dual Pipe</td>
</tr>
<tr>
<td></td>
<td>DLP Link Off, On</td>
</tr>
<tr>
<td></td>
<td>3D Swap Normal, Reverse</td>
</tr>
<tr>
<td></td>
<td>Dark Time 1ms, 1.5ms, 2ms, 2.5ms</td>
</tr>
<tr>
<td></td>
<td>Sync Delay value between -3.0ms and 3.0ms (0.0ms)</td>
</tr>
<tr>
<td></td>
<td>1080p24 3D Display 96 Hz, 144 Hz</td>
</tr>
<tr>
<td></td>
<td><strong>Input Select</strong> HDMI 1, HDMI 2, RGB, COMP 1, COMP 2</td>
</tr>
<tr>
<td></td>
<td><strong>Resync</strong></td>
</tr>
<tr>
<td>IMAGE</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Brightness</strong> value between 0 and 200 (100)</td>
</tr>
<tr>
<td></td>
<td><strong>Contrast</strong> value between 0 and 200 (100)</td>
</tr>
<tr>
<td></td>
<td><strong>Saturation</strong> value between 0 and 200 (100)</td>
</tr>
<tr>
<td></td>
<td><strong>Hue</strong> value between 0 and 200 (100)</td>
</tr>
<tr>
<td></td>
<td><strong>Sharpness</strong> value between 0 and 200 (0)</td>
</tr>
</tbody>
</table>
### ADVANCED IMAGE

**Colorspace**  
- Auto, REC709, REC601, RGB PC, RGB Video

**Gamma**  
- Film (2.2), Video, Punch (2.0), Graphics, CRT (2.5)

**Color Temperature**  
- 5500, 6500, 7500, 9300, Native

**Color Gamut**  
- Auto, REC709, SMPTE-C, EBU, Native

**BrilliantColor**  
- Off, On

**Adaptive Contrast**  
- Off, On

**RGB Adjust**
- Red Offset value between 0 and 200 (100)
- Green Offset value between 0 and 200 (100)
- Blue Offset value between 0 and 200 (100)
- Red Gain value between 0 and 200 (100)
- Green Gain value between 0 and 200 (100)
- Blue Gain value between 0 and 200 (100)

**Fine Sync**
- V Position value between 0 and 200 (100)
- H Position value between 0 and 200 (100)
- Phase value between 0 and 200 (100)
- Tracking value between 0 and 200 (100)
- Sync Level value between 0 and 200 (100)

**Color Mode**  
- Mode 1, Mode 2

---

**Notes**  
- The **underlined text** represents the factory default value for each setting.
**SYSTEM**

**OSD Settings**
- Menu Position: Left-Upper, Right-Upper, Left-Bottom, Right-Bottom, Center
- Menu Transparency: 0%, 25%, 50%, 75%
- Time Out: 10 sec, 30 sec, 60 sec, Always On
- Message Box: Off, On
- Blank Screen: Splash, Black, Blue, White

**Auto Power Off** Off, On
**Auto Power On** Off, On

**Projection Mode** Front Tabletop, Front Ceiling, Rear Tabletop, Rear Ceiling

**Starting Splash** Off, On
**Altitude** High, Auto

**CONTROL**

**Trigger 1** Screen, 16:9, TheaterScope, 4:3, 4:3 Narrow, RS232
**Trigger 2** Screen, 16:9, TheaterScope, 4:3, 4:3 Narrow, RS232

**Auto-Source** Off, On
**Infrared Remote** Off, On

**SERVICE**

**Information** Model Name, Serial Number, Software Version, Active Source, Signal Format, Pixel Clock, Refresh Rate, Lamp Hours

**Factory Reset** (Projector will ask for confirmation before restoring factory default settings.)

**Test Patterns** Off, White, Black, Red, Green, Blue, Cyan, Magenta, Yellow, Chequer Board, Alignment Grid, Vertical Burst, Horizontal Burst, Color Bars
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M-Vision Cine 320 3D series

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

The projector can be controlled by using an external control system or a PC via an RS232 or LAN interface, using a terminal-emulation program, such as HyperTerminal.

Operation commands are used to simulate menu operations and determine the settings of the projector, and use the following format:

- All commands consist of ASCII text strings starting with the letters ‘op’, and ending with an ASCII Carriage Return character:
  
  \[
  \text{op \ <operation> \ <command> \ [CR]}
  \]

- The <operation> string determines which setting the command will affect. For example, “aspect” stands for aspect ratio.

- The <command> string can take one of the following formats:

<table>
<thead>
<tr>
<th>Command</th>
<th>&lt;command&gt;</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set</td>
<td>= &lt;value&gt;</td>
<td>Makes the setting take that value.</td>
</tr>
<tr>
<td>Get</td>
<td>?</td>
<td>Asks what the current value is.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The value is returned as an ASCII text string.</td>
</tr>
<tr>
<td>Increment</td>
<td>+</td>
<td>Adds 1 to the current value.</td>
</tr>
<tr>
<td>Decrement</td>
<td>–</td>
<td>Subtracts 1 from the current value.</td>
</tr>
<tr>
<td>Execute</td>
<td>(none)</td>
<td>Performs an action.</td>
</tr>
</tbody>
</table>

**Examples**

- op aspect = 1 [CR] sets the aspect ratio to TheaterScope.
- op aspect ? [CR] asks what is the current aspect ratio.
- op bright + [CR] increments the brightness setting.
- op contrast – [CR] decrements the contrast setting.
- op resync [CR] commands the projector to attempt to re-synchronise to the current input source.

**Notes**

- See how to connect to the projector using the RS232 or LAN input in the Connection Guide.

- Spaces in commands are necessary, therefore:
  - op aspect = 1 is correct;
  - opaspect=1 is incorrect.
## Command Guide

<table>
<thead>
<tr>
<th>&lt;operation&gt;</th>
<th>&lt;command&gt;</th>
<th>&lt;values&gt;</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main menu</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aspect</td>
<td>= ?</td>
<td>0 = 16:9  1 = TheaterScope  2 = 4:3  3 = 4:3 Narrow  4 = Native</td>
<td></td>
</tr>
<tr>
<td>recall.mem</td>
<td>= ?</td>
<td>0 = Preset A  1 = Preset B  2 = Preset C  3 = Preset D  4 = Default</td>
<td></td>
</tr>
<tr>
<td>save.mem</td>
<td>=</td>
<td>0 = Preset A  1 = Preset B  2 = Preset C  3 = Preset D</td>
<td></td>
</tr>
<tr>
<td>overscan</td>
<td>= ?</td>
<td>0 = Off  1 = Crop  2 = Zoom</td>
<td></td>
</tr>
<tr>
<td>s3d.mode</td>
<td>= ?</td>
<td>0 = 2D mode (3D mode off)  1 = 3D mode - SBS Dual (side by side)</td>
<td>If the projector is in one 3D mode and you intend to switch to the other 3D mode, you MUST first switch back to 2D and then switch to the other 3D mode.  If you try switching straight from one 3D mode to the other, the projector will not execute the command.</td>
</tr>
<tr>
<td>s3d.chswap</td>
<td>= ?</td>
<td>0 = Normal  1 = Swap</td>
<td>If the 3D images are displayed in the wrong order, set this to Swap.</td>
</tr>
<tr>
<td>input</td>
<td>= ?</td>
<td>0 = HDMI 1  1 = HDMI 2  2 = RGB (D-sub)  3 = YPbPr 1 (RCA)  4 = YPbPr 2 (BNC)</td>
<td></td>
</tr>
<tr>
<td>resync</td>
<td>(none)</td>
<td>(none)</td>
<td></td>
</tr>
</tbody>
</table>

*Notes*

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*continued on next page...*
### Image menu

<table>
<thead>
<tr>
<th>&lt;operation&gt;</th>
<th>&lt;command&gt;</th>
<th>&lt;values&gt;</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>brightness</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>contrast</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>saturation</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>hue</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>sharpness</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>nr</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
</tbody>
</table>

### Advanced Image menu

<table>
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<tr>
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<th>&lt;command&gt;</th>
<th>&lt;values&gt;</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>colorspace</td>
<td>= ?</td>
<td>0 = Auto</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = YPbPr (= REC709)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = YCbCr (= REC601)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = RGB-PC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = RGB-Video</td>
<td></td>
</tr>
<tr>
<td>gamma</td>
<td>= ?</td>
<td>0 = CRT</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = Film</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = Video</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = Punch</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = Graphics</td>
<td></td>
</tr>
<tr>
<td>color.temp</td>
<td>= ?</td>
<td>0 = 5500K</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = 6500K</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = 7500K</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = 9300K</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = Native</td>
<td></td>
</tr>
<tr>
<td>color.gamut</td>
<td>= ?</td>
<td>0 = Auto</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = REC709</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = SMPTE C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = EBU</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = Native</td>
<td></td>
</tr>
<tr>
<td>bc</td>
<td>= ?</td>
<td>0 = Off</td>
<td>BrilliantColor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = On</td>
<td></td>
</tr>
<tr>
<td>adcontrast</td>
<td>= ?</td>
<td>0 = Off</td>
<td>Adaptive Contrast</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = On</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>&lt;operation&gt;</th>
<th>&lt;command&gt;</th>
<th>&lt;values&gt;</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>red.offset</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>green.offset</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>blue.offset</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>red.gain</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>green.gain</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>blue.gain</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>vert.pos</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>hori.pos</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>phase</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>tracking</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>sync.level</td>
<td>= ? + -</td>
<td>0 - 200</td>
<td></td>
</tr>
<tr>
<td>color.mode</td>
<td>= ?</td>
<td>0 = Mode 1&lt;br&gt;1 = Mode 2</td>
<td></td>
</tr>
</tbody>
</table>

**System menu**

<table>
<thead>
<tr>
<th>&lt;operation&gt;</th>
<th>&lt;command&gt;</th>
<th>&lt;values&gt;</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>osd.timer</td>
<td>= ?</td>
<td>0 = Always On&lt;br&gt;1 = Display OSD for 10 sec.&lt;br&gt;2 = Display OSD for 30 sec.&lt;br&gt;3 = Display OSD for 60 sec.</td>
<td>The default setting is 30 seconds.</td>
</tr>
<tr>
<td>blank.screen</td>
<td>= ?</td>
<td>0 = Logo&lt;br&gt;1 = Black&lt;br&gt;2 = Blue&lt;br&gt;3 = White</td>
<td></td>
</tr>
<tr>
<td>auto.poweroff</td>
<td>= ?</td>
<td>0 = Off&lt;br&gt;1 = On</td>
<td></td>
</tr>
<tr>
<td>auto.poweron</td>
<td>= ?</td>
<td>0 = Off&lt;br&gt;1 = On</td>
<td></td>
</tr>
<tr>
<td>altitude</td>
<td>= ?</td>
<td>0 = Auto&lt;br&gt;1 = High</td>
<td></td>
</tr>
<tr>
<td>proj.mode</td>
<td>= ?</td>
<td>0 = Front Tabletop&lt;br&gt;1 = Front Ceiling&lt;br&gt;2 = Rear Tabletop&lt;br&gt;3 = Rear Ceiling</td>
<td></td>
</tr>
</tbody>
</table>

*continued on next page...*
## Control menu

<table>
<thead>
<tr>
<th>Command</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
</table>
| `trig1` | 0 = Screen  
1 = 16:9  
2 = TheaterScope  
3 = 4:3  
4 = 4:3 Narrow  
5 = RS232  
6 = On  
7 = Off | 0: Trigger occurs when the projector is in IMAGING mode. |
| `trig 2` | 0 = Screen  
1 = 16:9  
2 = TheaterScope  
3 = 4:3  
4 = 4:3 Narrow  
5 = RS232  
6 = On  
7 = Off | 0: Trigger occurs when the projector is in IMAGING mode. |
| `auto.source` | 0 = Off  
1 = On | |
| `ir.enable` | 0 = Disable  
1 = Enable | IR Remote Control enable |

## Service menu

<table>
<thead>
<tr>
<th>Command</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>model.name</code></td>
<td>&lt;string&gt;</td>
<td></td>
</tr>
<tr>
<td><code>soft.version</code></td>
<td>&lt;string&gt;</td>
<td></td>
</tr>
</tbody>
</table>
| `act.source` | 0 = HDMI 1  
1 = HDMI 2  
2 = RGB (D-sub)  
3 = YPrPb 1 (RCA)  
4 = YPrPb 2 (BNC) | Active Source |
| `signal` | <string> | |
| `pixel.clock` | <number> MHz | |
| `h.refresh` | <number> kHz | |
| `v.refresh` | <number> Hz | |
| `lamp.hours` | <number> | |

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<table>
<thead>
<tr>
<th><strong>&lt;operation&gt;</strong></th>
<th><strong>&lt;command&gt;</strong></th>
<th><strong>&lt;values&gt;</strong></th>
<th><strong>Notes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>total.hours</td>
<td>?</td>
<td>&lt;number&gt;</td>
<td></td>
</tr>
<tr>
<td>factory.reset</td>
<td>(none)</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>pattern</td>
<td>= ?</td>
<td>0 = Off</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = White</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = Black</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = Red</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = Green</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 = Blue</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 = Cyan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 = Magenta</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 = Yellow</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 = Chequer Board</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 = Alignment Grid</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 = Vertical Burst</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 = Horizontal Burst</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>13 = Color Bars</td>
<td></td>
</tr>
</tbody>
</table>

**Miscellaneous commands**

| **blue.only** | =            | 0 = Off     |           |
|               |              | 1 = On      |           |
| **powon**     | (none)       | (none)      | Power on  |
| **powoff**    | (none)       | (none)      | Power off (puts projector into Standby mode) |
| **status.check** | ?          | 0 = standby |           |
|               |              | 1 = warm up |           |
|               |              | 2 = imaging |           |
|               |              | 3 = cooling |           |
|               |              | 4 = error   |           |
| **frame.rate** | = ?          | 0 = Auto    |           |
|               |              | 1 = 48 Hz   |           |
|               |              | 2 = 50 Hz   |           |
|               |              | 3 = 60 Hz   |           |