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# Dell™ 4210X Projector User's Guide



### Notes, Notices, and Cautions



**NOTE:** A NOTE indicates important information that helps you make better use of your projector.



**NOTICE:** A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



/ CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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Model 4210X

Rev A00 December 2008



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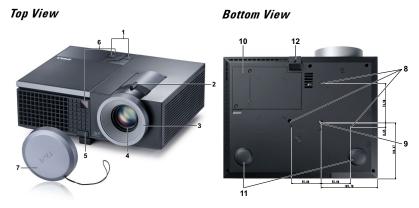
# 1

# Your Dell Projector

Your projector comes with all the items shown below. Ensure that you have all the items, and contact  $Dell^{TM}$  if anything is missing.



#### **About Your Projector**



| 1  | Control panel   |
|----|---|
| 2  | Zoom tab  |
| 3  | Focus ring  |
| 4  | Lens  |
| 5  | Elevator button for height adjustments  |
| 6  | IR receivers  |
| 7  | Lens cap  |
| 8  | Mounting holes for ceiling mount: Screw hole M3 x 6.5mm depth.<br>Recommended torque <8kgf-cm |
| 9  | Mounting hole for tripod: Insert nut 1/4"*20 UNC  |
| 10 | Lamp cover  |
| 11 | Tilt adjustment wheel   |
| 12 | Elevator foot   |

#### FixYou DLP com CAUTION: Safety Instructions

Do not use the projector near appliances that generate a lot of heat. 81-8860

- 2 Do not use the projector in areas where there is an excessive amount of dust. The dust may cause the system to fail and the projector will automatically shutdown.
  - **3** Ensure that the projector is mounted in a well-ventilated area.
  - 4 Do not block the ventilation slots and openings on the projector.
  - **5** Ensure the projector operates between ambient temperatures (5°C to 35°C).

- **6** Do not try to touch the ventilation outlet as it can become very hot after the projector has been turned on or immediately after it is turned off.
- **7** Do not look into the lens while the projector is on as it may cause injury to your eyes.
- **8** Do not place any objects near or in front of the projector or cover its lens while the projector is on as the heat may cause the object to melt or burn.
- **I** NOTE:
  - Do not attempt to ceiling mount the projector yourself. It should be installed by a qualified technician.
  - Recommended Projector Ceiling Mount Kit (P/N: C3505). For more information, see the Dell Support website at support.dell.com.
  - For more information, see the *Safety Information* that shipped with your projector.



# 2

# **Connecting Your Projector**



|     | 1      | Composite video connector              | 10  | Audio output connector                   |
|-----|--------|--|-----|--|
|     | 2      | S-video connector                      | 11  | Audio-B input connector                  |
|     | 3      | VGA-A output<br>(monitor loop-through) | 12  | Audio-A input connector                  |
|     | 4      | VGA-A input (D-sub) connector          | 13  | Audio-C right-channel input<br>connector |
|     | 5      | VGA-B input (D-sub) connector          | 14  | Power cord connector                     |
|     | 6      | HDMI connector                         | 15  | Audio-C left-channel input<br>connector  |
| ixY | ourDL  | USB remote connector                   | 16  | RS232 connector                          |
|     | 8<br>8 | RJ45 connector                         | 17  | +12V DC out connector                    |
| 5C  | GU     | Security cable slot                    | .01 | 11 (800) 281-8800                        |

THE TRUSTED SOURCE FOR PROJECTOR LAMPS AND ACCESSORIES'



CAUTION: Before you begin any of the procedures in this section, follow the Safety Instructions as described on page 7.

# **Connecting to a Computer**

### **Connecting a Computer Using a VGA Cable**



|   | 1     | Power cord          |
|---|-------|---------------------|
| 2 | 2     | VGA to VGA cable    |
| ) | BixYo | USB-AconUSB-B cable |

NOTE: The USB cable is not provided with your projector. 00) 281-8860

**NOTE:** The USB cable must be connected if you want to use the Page Up and RES Page Down features on the remote control.

# 

#### **Monitor Loop-Through Connection Using VGA Cables**

| 1 | Power cord       |
|---|------------------|
| 2 | VGA to VGA cable |

**NOTE:** Only one VGA cable is shipped with your projector. An additional VGA cable can be purchased on the Dell website at **dell.com**.



### **Connecting a Computer Using an RS232 cable**



| 1 | Power cord  |
|---|-------------|
| 2 | RS232 cable |

**NOTE:** The RS232 cable is not shipped with your projector. Consult a professional installer for the cable and RS232 remote control software.



## **Connecting a DVD Player**

### **Connecting a DVD Player Using an S-video Cable**



2 S-video cable

FixYourDLP.com

**NOTE:** The S-video cable is not shipped with your projector. You can purchase the S-Video extension (50 ft/100 ft) cable on the Dell website at **dell.com**.



### **Connecting a DVD Player Using a Composite Video Cable**

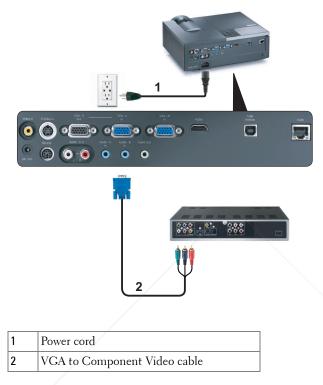


| 1 | Power cord            |
|---|-----------------------|
| 2 | Composite video cable |

**NOTE:** The Composite Video cable is not shipped with your projector. You can purchase the Composite Video Extension (50 ft/100 ft) cable on the Dell website at **dell.com**.



#### **Connecting a DVD Player Using a Component Video Cable**



**NOTE:** The VGA to Component Video cable is not shipped with your projector. You can purchase the VGA to Component Video Extension (50 ft/100 ft) cable on the Dell website at **dell.com**.



### **Connecting a DVD Player Using an HDMI Cable**



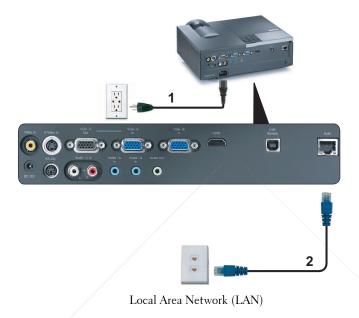
| 1 | Power cord |
|---|------------|
| 2 | HDMI cable |

**NOTE:** The HDMI cable is not shipped with your projector.



### **Connecting to Local Area Network**

To control the projector that is connected to a network through an RJ45 cable.



| 1 | Power cord |
|---|------------|
| 2 | RJ45 cable |

NOTE: The RJ45 cable is not shipped with your projector. FixYourDLP.com Source to CALL Discount-Merchant.com (800) 281-8860 THE TRUSTED SOURCE FOR PROJECTOR LAMPS AND ACCESSORIES

# Professional Installation Options: Installation for Driving Automatic Screen

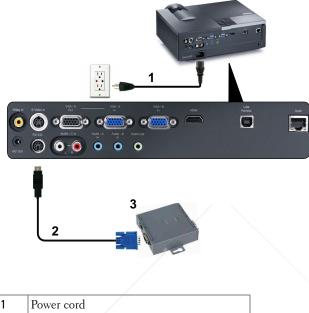


| 1 | Power cord       |
|---|------------------|
| 2 | 12V DC Plug      |
| 3 | Automatic Screen |

**NOTE:** Use the dimension of 12V DC plug in 1.7 mm (ID) x 4.00 mm (OD) x 9.5 mm (shaft) to connect the automatic screen with the projector.



### **Connection With Commercial RS232 Control Box**



| 1 | Power cord                   |
|---|------------------------------|
| 2 | RS232 cable                  |
| 3 | Commercial RS232 control box |

**NOTE:** The RS232 cable is not shipped with your projector. Consult a professional technician to obtain the cable.



3

# **Using Your Projector**

# Turning Your Projector On

- **NOTE:** Turn on the projector before you turn on the source (computer, DVD player, etc.). The **Power** button light blinks blue until pressed.
- 1 Remove the lens cap.
- **2** Connect the power cord and appropriate signal cables. For information about connecting the projector, see "Connecting Your Projector" on page 9.
- **3** Press the **Power** button (see "Using the Control Panel" on page 24 to locate the **Power** button).
- 4 Turn on your source (computer, DVD player, etc.)
- **5** Connect your source to the projector using the appropriate cable. See "Connecting Your Projector" on page 9 for instructions to connect your source to the projector.
- **6** By default, the input source of projector is set to VGA-A. Change the input source of projector if necessary.
- 7 If you have multiple sources connected to the projector, press the **Source** button on the remote control or control panel to select the desired source. See "Using the Control Panel" on page 24 and "Using the Remote Control" on page 27 to locate the **Source** button.

# Turning Your Projector Off

**NOTICE:** Unplug the projector after properly shutting down as explained in the following procedure.

Fix Press Phe Power button.

NOTE: The "Press Power Button to Turn off Projector" message will appear on the screen. The message disappears after 5 seconds or you can press the THE Menu button to clear it. FOR PROJECTOR LAMPS AND ACCESSORIES

**2** Press the **Power** button again. The cooling fans continue to operate for 120 seconds.

**3** To power off the projector quickly, press the Power button and hold for 1 second while the projectors cooling fans are still running.



**NOTE:** Before you turn on the projector again, wait for 60 seconds to allow the internal temperature to stabilized.

4 Disconnect the power cord from the electrical outlet and the projector.

### **Adjusting the Projected Image**

### **Raising the Projector Height**

- 1 Press the Elevator button.
- **2** Raise the projector to the desired display angle, and then release the button to lock the elevator foot into position.
- 3 Use the tilt adjustment wheel to fine-tune the display angle.

### Lowering the Projector Height

- 1 Press the Elevator button.
- **2** Lower the projector, and then release the button to lock the elevator foot into position.



# **Adjusting the Projector Zoom and Focus**

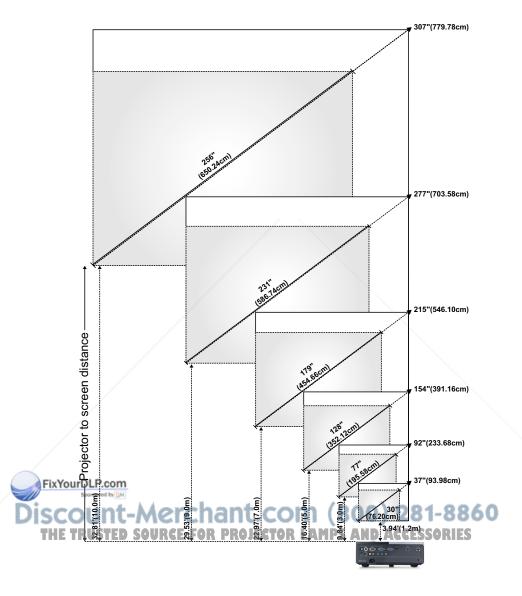
- CAUTION: To avoid damaging the projector, ensure that the zoom lens and elevator foot are fully retracted before moving the projector or placing the projector in its carrying case.
  - **1** Rotate the zoom tab to zoom in and out.
  - **2** Rotate the focus ring until the image is clear. The projector focuses at distances ranging between 3.94 ft to 32.81 ft (1.2 m to 10 m).



| 1 | Zoom tab   |
|---|------------|
| 2 | Focus ring |

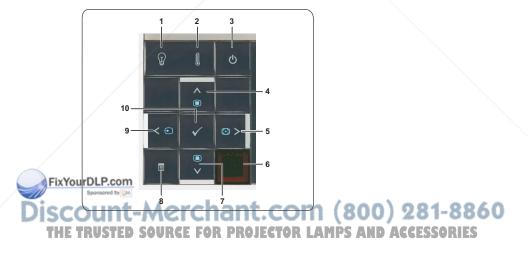


# **Adjusting Projection Image Size**



| 30"<br>(76.20cm)<br>29.53" X<br>22.05"<br>(75cm X<br>56cm)<br>24.8" X 18.5" | 77"<br>(195.58cm)<br>74.02" X<br>55.51"<br>(188cm X<br>141cm)<br>61.42" X | 128"<br>(352.12cm)<br>123.23" X<br>92.13"<br>(313cm X<br>234cm) | 179"<br>(454.66cm)<br>172.44" X<br>129.13"<br>(438cm X<br>328cm) | 231"<br>(586.74cm)<br>221.65" X<br>166.14"<br>(563cm X<br>422cm) | 256"<br>(650.24cm)<br>246.06" X<br>184.65"<br>(625cmX<br>469cm) |
|---|---|---|--|--|---|
| 22.05"<br>(75cm X<br>56cm)  | 55.51"<br>(188cm X<br>141cm)  | 92.13"<br>(313cm X<br>234cm)                                    | 129.13"<br>(438cm X  | 166.14"<br>(563cm X  | 184.65"<br>(625cmX  |
| 56cm)   | Ì41cm)  | 234cm)  |  |  |   |
| 24.8" X 18.5"   | 61.42" X  | 100.000   |  |  | 1.070   |
|   | 46.06"  | 102.36" X<br>76.77"   | 143.70" X<br>107.48"   | 184.65" X<br>138.58"   | 205.12" X<br>153.94"  |
| (63cm X<br>47cm)  | (156cm X<br>117cm)  | (260cm X<br>195cm)  | (365cm X<br>273cm)   | (469cm X<br>352cm)   | (521cm X<br>391cm)  |
| 25.59"<br>(65cm)  | 63.78"<br>(162cm)   | 106.30"<br>(270cm)  | 148.43"<br>(377cm)   | 190.94"<br>(485cm)   | 212.20"<br>(539cm)  |
| 21.26"<br>(54cm)  | 53.15"<br>(135cm)   | 88.58"<br>(225cm)   | 123.62"<br>(314cm)   | 159.06"<br>(404cm)   | 176.77"<br>(449cm)  |
| 204422  | 9.8' (3.0m)   | 16.4' (5.0m)  | 23.0' (7.0m)   | 29.5' (9.0m)   | 32.81'<br>(10.0m)   |
|   |   | (54cm) (135cm)  | (54cm) (135cm) (225cm)   | (54cm) (135cm) (225cm) (314cm)                                   | (54cm) (135cm) (225cm) (314cm) (404cm)                          |

# **Using the Control Panel**



| 1       | LAMP warning light            | If the LAMP amber indicator is on or blinking,<br>one of the following problems could be occurring:<br>• Lamp is reaching its end of usable life<br>• Lamp module is not properly installed<br>• Lamp driver failure<br>• Color wheel failure |
|---------|-------------------------------|---|
|         |                               | For more information, see "Troubleshooting Your<br>Projector" on page 62 and "Guiding Signals" on<br>page 66.   |
| 2       | TEMP warning light            | <ul><li>If the TEMP amber indicator is on or blinking, one of the following problems could be occurring:</li><li>Internal temperature of the projector is too high</li><li>Color wheel failure</li></ul>                                      |
|         |                               | For more information, see "Troubleshooting Your<br>Projector" on page 62 and "Guiding Signals" on<br>page 66.   |
| 3       | Power                         | Turns the projector on or off. For more<br>information, see "Turning Your Projector On" on<br>page 20 and "Turning Your Projector Off" on<br>page 20.   |
| 4       | Up 📐 / Keystone<br>adjustment | Press to navigate through the On-Screen Display<br>(OSD) Menu items.  |
|         |                               | Press to adjust image distortion caused by tilting the projector (+40/-35 degrees).   |
| 5       | Right > / Auto Adjust         | Press to navigate through the On-Screen Display<br>(OSD) Menu items.  |
|         |                               | Press to synchronize the projector to the input source.   |
| ixYourD |                               | <b>NOTE: Auto Adjust</b> does not operate if the on-screen display (OSD) is displayed.  |

| 7  | Down 🔽 / Keystone<br>adjustment | Press to navigate through the On-Screen Display<br>(OSD) Menu items.  |
|----|---------------------------------|---|
|    |                                 | Press to adjust image distortion caused by tilting the projector (+40/-35 degrees).   |
| 8  | Menu 📃                          | Press to activate the OSD. Use the directional keys and the <b>Menu</b> button to navigate through the OSD.   |
| 9  | Left < / Source                 | Press to navigate through the On-Screen Display<br>(OSD) Menu items.  |
|    |                                 | Press to toggle through Analog RGB, Composite,<br>Component (YPbPr via VGA), HDMI, and S-<br>video sources when multiple sources are<br>connected to the projector. |
| 10 | Enter 📈                         | Press to confirm the selection item.  |



### **Using the Remote Control**



| 5        | Aspect Ratio | Press to change aspect ratio of a displayed image.  |
|----------|--------------|---|
| 6        | Page up 🔶    | Press to move to previous page.   |
|          |              | <b>NOTE:</b> The USB cable must be connected if you want to use the Page Up feature.  |
| 7        | Mute 💢       | Press to mute or un-mute the projector speaker.   |
| 8        | Page down 🔶  | Press to move to next page.   |
|          |              | <b>NOTE:</b> The USB cable must be connected if you want to use the Page Down feature.  |
| 9        | Video mode   | The projector has preset configurations that are<br>optimized for displaying data (presentation<br>slides) or video (movies, games, etc.).    |
|          |              | Press the Video Mode button to toggle between<br>Presentation mode, Bright mode, Movie mode,<br>sRGB, or Custom mode.                         |
|          |              | Pressing the Video Mode button once will show<br>the current display mode. Pressing the Video<br>Mode button again will switch between modes. |
| 10       | Blank screen | Press to hide/unhide the image.   |
| 11       | Up 📐         | Press to navigate through the On-Screen Display<br>(OSD) Menu items.  |
| 12       | Left <       | Press to navigate through the On-Screen Display<br>(OSD) Menu items.  |
| 13       | Menu 🔳       | Press to activate the OSD.  |
| 14       | Volume up 🕂  | Press to increase the volume.   |
| 15       | Laser 📺      | Point the remote control at the screen, press and<br>hold the laser button to activate the laser light.                                       |
| ixYou    | arDLP.com    | Caution: Do not look into the laser point<br>when it is on. Avoid shining the laser light<br>into eyes.                                       |
| 16<br>17 | Volume down  | Press to decrease the volume.<br>Press to adjust image distortion caused by tilting<br>the projector (+40/-35 degrees).                       |
| 18       | Source       | Press to switch between Analog RGB, Composite,<br>Component (YPbPr, via VGA), HDMI, and S-<br>video sources.                                  |

| 19 | Auto adjust         | Press to synchronize the projector with the input<br>source. Auto adjust does not operate if the OSD<br>is displayed. |
|----|---------------------|---|
| 20 | Keystone adjustment | Press to adjust image distortion caused by tilting the projector (+40/-35 degrees).                                   |



### **Installing the Remote Control Batteries**

**NOTE:** Remove the batteries from the remote control when not in use. **1** Press the tab to lift the battery compartment cover. 0

2 Check the polarity (+/-) marking on the batteries.

**3** Insert the batteries and align their polarity correctly according to the marking in the battery compartment.

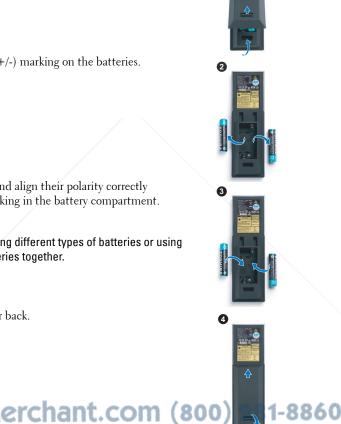


**NOTE:** Avoid mixing different types of batteries or using new and old batteries together.

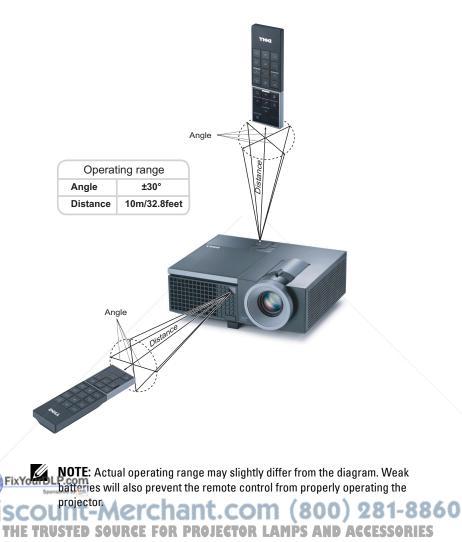
URCE FOR PROJECTOR LAMPS AND ACCE

4 Slip the battery cover back.

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### **Operating Range With Remote Control**



# Using the On-Screen Display

- The projector has a multi-language On-Screen Display (OSD) Menu that can be displayed with or without an input source.
- To navigate through the tabs in the Main Menu, press the  $\leq$  or  $\geq$  buttons on your projectors control panel or remote control.
- To select a submenu, press the 📈 button on your projector's control panel or remote control.
- To select an option, press the 🔊 or 💟 buttons on your projector's control panel or remote control. The color changes to dark blue. When an item is selected, the color changes to dark blue.
- Use the  $\leq$  or  $\geq$  buttons on the control panel or remote control to adjust the settings.
- To go back to Main Menu, go to Back tab and press the 🔽 button on the control panel or the remote control.
- To exit the OSD, go to EXIT tab and press the Menu button directly on the control panel or the remote control.

### Main Menu



### AUTO-ADJUST

Auto Adjust automatically adjusts the projector's **Frequency** and **Tracking** in PC mode. While Auto Adjustment is in progress, the following message appears on the screen:

Please wait...



### **INPUT SELECT**

The Input Select menu allows you to select your projector's input source.



Auto Source—Select Off (the default) to lock the current input signal. If you press the Source button when the Auto Source mode is set to Off, you can manually select the input signal. Select On to auto detect the available input signals. If you press the Source button when the projector is on, it automatically finds the next available input signal.

VGA-A—Press 🔽 to detect VGA-A signal.

VGA-B—Press 🔽 to detect VGA-B signal.

S-VIDEO—Press 📈 to detect S-Video signal.

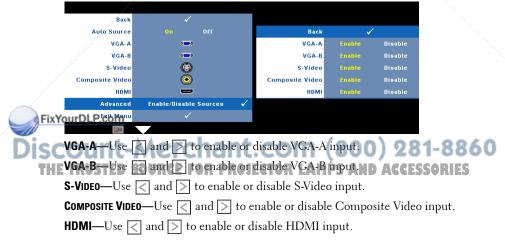
**COMPOSITE VIDEO**—Press **I** to detect Composite Video signal.

HDMI—Press 🔽 to detect HDMI signal.

Advanced—Press in to activate Input Select Advanced menu.

#### INPUT SELECT ADVANCED

The Input Select Advanced menu allows you to enable or disable input sources.

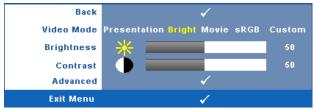




**NOTE:** You cannot disable your current input source. At anytime, a minimum of two input sources have to be enabled.

### PICTURE (in PC Mode)

Using the Picture menu, you can adjust the display settings of your projector. The Picture menu, provides the following options:



VIDEO MODE—Allows you to optimize the display image: Presentation, Bright, Movie, sRGB (provides more accurate color representation), and Custom (set your preferred settings). If you adjust the settings for Brightness, Contrast, Saturation, Sharpness, Tint, and Advanced, the projector automatically switches to Custom.

**NOTE:** If you adjust the settings for **Brightness**, **Contrast**, **Saturation**, Sharpness, Tint, and Advanced the projector automatically switches to Custom.

**BRIGHTNESS**—Use  $\triangleleft$  and  $\triangleright$  to adjust the brightness of the image.

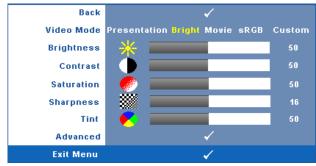
**CONTRAST**—Use  $\triangleleft$  and  $\triangleright$  to adjust the display contrast.

Advanced—Press vi to activate Picture Advance Menu. See "PICTURE ADVANCED" on page 36.



### PICTURE (in Video Mode)

Using the **Picture** menu, you can adjust the display settings of your projectors. The Picture menu, provides the following options:



VIDEO MODE—Allows you to optimize the display image: Presentation, Bright, Movie, sRGB (provides more accurate color representation), and Custom (set your preferred settings). If you adjust the settings for Brightness, Contrast, Saturation, Sharpness, Tint, and Advanced, the projector automatically switches to Custom.

NOTE: If you adjust the settings for Brightness, Contrast, Saturation, Sharpness, Tint, and Advanced, the projector automatically switches to Custom.

**BRIGHTNESS**—Use  $\leq$  and  $\geq$  to adjust the brightness of the image.

**CONTRAST**—Use  $\leq$  and  $\geq$  to adjust the display contrast.

**SATURATION**—Allows you to adjust the video source from black and white to fully saturated color. Press  $\leq$  to decrease the amount of color in the image and  $\geq$  to increase the amount of color in the image.

**SHARPNESS**—Press  $\triangleleft$  to decrease the sharpness and  $\geqslant$  to increase the sharpness.

**TINT**—Press  $\leq$  to increase the amount of green in the image and  $\geq$  to increase the amount of red in the image (available for NTSC only).

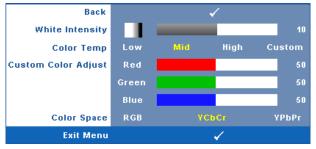
Advanced Press 📈 to activate Picture Advance Menu. See "PICTURE

ADVANCED" below. rchant.com (800) 281-8860

From Composite or S-Video.

## PICTURE ADVANCED

Using the Picture Advanced menu, you can adjust the display settings of your projector. The Picture Advanced menu provides the following options:



**WHITE INTENSITY**—Use  $\leq$  and  $\geq$  to adjust the display white intensity.

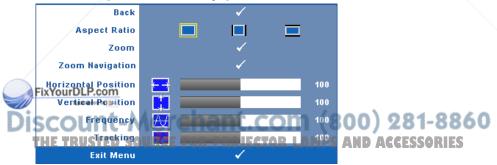
**COLOR TEMP**—Allows you to adjust the color temperature. The screen appears cooler at higher color temperatures and warmer at lower color temperatures. When you adjust the values in the **Color Adjust** menu, the Custom mode is activated. The values are saved in the Custom mode.

**CUSTOM COLOR ADJUST**—Allows you to manually adjust the colors red, green, and blue.

**COLOR SPACE**—Allows you to select the color space, options are: RGB, YCbCr, and YPbPr.

## DISPLAY (in PC Mode)

Using the **Display** menu, you can adjust the display settings of your projector. The Picture menu, provides the following options:



**ASPECT RATIO**—Allows you to select the aspect ratio to adjust how the image appears.

- Original Select Original to maintain the aspect ratio of image projected according to input source.
- 4:3 The input source scales to fit the screen and projects a 4:3 image.
- Wide The input source scales to fit the width of the screen to project a wide screen image.



**ZOOM**—Press **V** to activate **Zoom** menu.

Select the area to zoom and press  $\overline{\mathbb{M}}$  to view zoomed image.



Adjust the image scale by pressing  $\triangleleft$  or  $\searrow$  and press  $\swarrow$  to view.



**ZOOM NAVIGATION**—Press M to activate **Zoom Navigation** menu.

Use  $\triangleleft$   $\triangleright$   $\land$   $\lor$  to navigate projection screen.

**HORIZONTAL POSITION**—Press  $\leq$  to move the image to the left and  $\geq$  to move the image to the right.

**VERTICAL POSITION**—Press  $\triangleleft$  to move the image down and  $\triangleright$  to move the image up.

**FREQUENCY**—Allows you to change the display data clock frequency to match the frequency of your computer graphics card. If you see a vertical flickering wave, use **Frequency** control to minimize the bars. This is a coarse adjustment.

**TRACKING**—Synchronize the phase of the display signal with the graphic card. If you experience an unstable or flickering image, use **Tracking** to correct it. This is a fine adjustment.



## DISPLAY (in Video Mode)

Using the **Display** menu, you can adjust the display settings of your projector. The Picture menu, provides the following options:



**ASPECT RATIO**—Allows you to select the aspect ratio to adjust how the image appears.

- Original Select Original to maintain the aspect ratio of image projected according to input source.
- 🛄 4:3 The input source scales to fit the screen and projects a 4:3 image.
- Wide The input source scales to fit the width of the screen to project a wide screen image.



**ZOOM**—Press **v** to activate **Zoom** menu.

Select the area to zoom and press  $\swarrow$  to view zoomed image. Adjust the image scale by pressing  $\triangleleft$  or  $\triangleright$  and press  $\checkmark$  to view.



Adjust the image scale by pressing  $\triangleleft$  or  $\triangleright$  and press  $\bowtie$  to view.



ZOOM NAVIGATION—Press M to activate Zoom Navigation menu.

Use < > 📐 💟 to navigate projection screen.



## LAMP

Using the Lamp menu, you can adjust the display settings of your projector. The Lamp menu provides the following options:



LAMP MODE—Allows you to select between Normal and ECO mode.

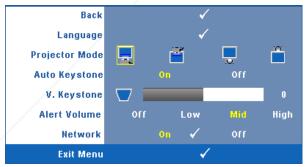
Normal mode operates at full power level. ECO Mode operates at a lower power level which may provide longer lamp life, quieter operation, and dimmer luminance output on the screen.

LAMP HOUR—Displays the operating hours since the last lamp timer reset.

LAMP HOUR RESET—Select Yes to reset the lamp timer.

## SET UP

The Set Up menu allows you to adjust settings for Language, Projector Mode, Keystone, Alert Volume, and Network.



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**LANGUAGE**—Allows you to set the language for the OSD. Press *in* to activate the **Language** menu.



**PROJECTOR MODE**—Allows you to select the projector mode, depending upon how the projector is mounted.

- Front Projection-Desktop This is the default option.
- Front Projection-Ceiling Mount The projector turns the image upside down for ceiling-mounted projection.
- Rear Projection-Desktop The projector reverses the image so that you can project from behind a translucent screen.
- Rear Projection-Ceiling Mount The projector reverses and turns the image upside down. You can project from behind a translucent screen with a ceiling-mounted projection.

**Auto KEYSTONE**—Select **On** to enable the auto correction for vertical image distortion caused by tilting the projector.

V. KEYSTONE—Manually adjust the vertical image distortion caused by tilting the projector. USTED SOURCE FOR PROJECTOR LAMPS AND ACCESSORIES ALERT VOLUME—Allows you to set buzzer alert loudness (Off, Low, Mid or High) for power on/off, warning and command keys. **NETWORK**—Select **On** to activate network connection. Select **Off** to disable network connection. Press **1** to activate **Network** menu. See "NETWORK" on page 41.

## NETWORK

The Network menu allows you to configure the network connection settings.

| Back          |     |     |     | 1            |     |    |     |  |
|---------------|-----|-----|-----|--------------|-----|----|-----|--|
| DHCP          |     | Оп  |     |              | 0   | ff |     |  |
| IP Address    | 192 |     | 168 |              | 4   |    | 137 |  |
| Subnet Mask   | 255 |     | 255 |              | 255 |    | 0   |  |
| Gateway       | 192 |     | 168 |              | 4   |    | 137 |  |
| DNS           | 192 |     | 168 |              |     |    | 4   |  |
| Store         |     |     |     | $\checkmark$ |     |    |     |  |
| Reset Network |     | Yes |     |              |     | No |     |  |
| Exit Menu     |     |     |     | 4            |     |    |     |  |

**IP ADDRESS**—Automatically or manually assigns the IP address to the projector connected to the network.

SUBNET MASK—Configure the Subnet Mask of the network connection.

**GATEWAY**—Check the Gateway address with your network/system administrator if you configure it manually.

**DNS**—Check the DNS Server IP address with your network/system administrator if you configure it manually.

**STORE**—Press view the changes made in network configuration settings.

RESET NETWORK—Select Yes to reset network configuration.

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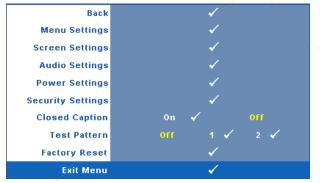
## INFORMATION

The Information menu displays the current projector settings.

| Back           | ✓                        |
|----------------|--------------------------|
| Model Name     | 4210X                    |
| Input Source   | ANALOG RGB 1024X768 60Hz |
| Operating Hour | 10 hr                    |
| PPID           | CN-0Y099J-S0081-46B-0208 |
| IP Address     | 192.168.4.137            |
| Exit Menu      | ✓                        |

## OTHERS

The Others menu allows you to change settings for Menu, Screen, Audio, Power, Security, and Closed Caption (for NTSC only). You can also perform Test Pattern and Factory Reset.



**MENU SETTINGS**—Select and press it to activate menu settings. The menu settings consists of the following options:



**MENU POSITION**—Allows you to change the position of the OSD menu on the screen.

**MENU TRANSPARENCY**—Select to change the transparency level of the OSD background.

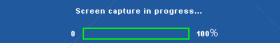
**MENU TIMEOUT**—Allows you to adjust the time for an OSD timeout. By default, the OSD disappears after 20 seconds of non-activity.

**MENU LOCK**—Select **On** to enable Menu Lock and hide the OSD menu. Select **OFF** to disable the Menu Lock. If you want to disable the Menu Lock function and have the OSD disappear, press the **Menu** button on the control panel or remote control for 15 seconds, then disable the function.

**SCREEN SETTINGS**—Select and press *i* to activate screen settings. The screen settings menu consists of the following options:



**CAPTURE SCREEN**—Select and press is to capture the screen display, the following message appears on the screen.



U

**NOTE:** To capture a full image, ensure the input signal that is connected to the projector is 1024 x 768 resolution.

**SCREEN**—Select **Dell** to use the Dell logo as wallpaper. Select **Captured** to set the captured image as wallpaper.

**RESET**—Select and press *in* to delete the captured picture and set back to the default setting.

**AUDIO SETTINGS**—Select and press *M* to change audio settings. The audio settings menu consists of the following options:



**AUDIO INPUT**—Select the Audio input source, options are: Audio-A, Audio-B, Audio-C, and HDMI.

**VOLUME**—Press  $\leq$  to decrease the volume and  $\geq$  to increase the volume.

**SPEAKER**—Select **On** to enable speaker. Select **Off** to disable speaker.

**MUTE**—Allows you to mute the sounds for audio input and audio output.

**POWER SETTINGS**—Select and press *i* to activate power settings. The power settings menu consists of the following options:

| Back           |     |       | √  |       |        |
|----------------|-----|-------|--|-------|--------|
| Power Saving   | Off | 30min | 60min  | 90min | 120min |
| Quick Shutdown |     | Yes   |  | No    |        |
| Exit Menu      |     |       | <ul> <li>Image: A second s</li></ul> |       |        |

**POWER SAVING**—Select Off to disable Power Saving mode. By default, the projector is set to enter power saving mode after 120 minutes of no activity. A warning message appears on screen showing a 60-second countdown before switching to power saving mode. Press any key buttons during countdown period to stop power saving mode.

You can also set a different delay period to enter power saving mode. The delay period is the time you want the projector to wait without an input signal. Power saving can be set to 30, 60, 90, or 120 minutes.

If an input signal is not detected during the delay period, the projector turns off the lamp and goes into power saving mode. If an input signal is detected within the delay period, the projector automatically turns on. If an input signal is not detected within two hours during power saving mode, the projector switches from Power Saving mode to Power Off mode. To turn on the projector press the Power button.

**QUICK SHUTDOWN**—Select **Yes** to turn off the projector with a single press of the **Power** button. This function allows the projector to quick power off with an accelerated fan speed. Slightly higher acoustic noise is expected during quick power off.

MOTE: Before you turn on the projector again, wait for 60 seconds to allow the internal temperature to stabilize. The projector will take a longer time to turn on fryou try to power on immediately. Its cooling fan will run at full speed for about 30 seconds to stabilize the internal temperature. LAMPS AND ACCESSORIES

**SECURITY SETTINGS**—Select and press *M* to activate security settings. The security settings menu allows you to enable and set password protection.

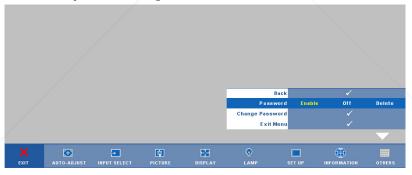


**PASSWORD**—When Password Protect is enabled, a Password Protect screen requesting you to enter a password will be displayed when the power plug is inserted into the electrical outlet and the power for the projector is first turned on. By default, this function is disabled. You can enable this feature, by selecting **Enabled**. If the password has been set before, key in the password first and select the function. This password security feature will be activated the next time you turn on the projector. If you enable this feature, you will be asked to enter the projector's password after you turn on the projector:

**1** First time password input request:

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**a** Go to **Others** menu, press i and then select **Password** to **Enable** the password setting.



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**b** Enabling the Password function will pop up a character screen, key in a 4-digit number from the screen and press 1.



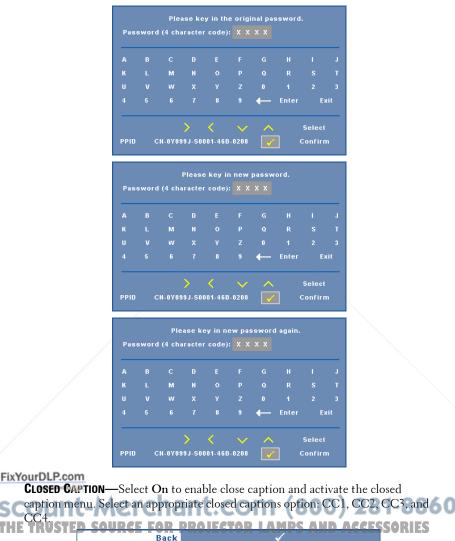
- c To confirm, enter the password again.
- **d** If the password verification is successful, you may resume with accessing the projector's functions and its utilities.
- 2 If you have entered an incorrect password, you will be given another 2 chances. After the three invalid attempts, the projector will automatically turn off.



**NOTE:** If you forget your password, contact DELL<sup>™</sup> or a qualified service personnel.

- **3** To disable the password function, select Off to disable the function.
- 4 To delete the password, select Delete.





Select

Exit Menu

**CHANGE PASSWORD**—Key in the original password, then enter the new password and confirm the new password again.

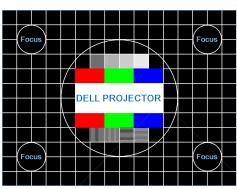
CC4

V

**NOTE:** Closed caption option is available for NTSC only.

**TEST PATTERN**—Test Pattern is used to test focus and resolution.

You can enable or disable the **Test Pattern** by selecting **Off**, 1 or 2. You can also invoke the **Test Pattern** 1 by pressing and holding down and buttons on the control panel simultaneously for 2 seconds. You can also invoke the test pattern 2 by pressing and holding down and simultaneously for 2 seconds.



Test Pattern 1:

Test Pattern 2:



**FACTORY RESET**—Select and press *in* to reset all settings to its factory default, the warning message below appears.



## Managing the Projector From Web Management

## **Configuring the Network Setting**

If the projector is connected to a network, you can access the projector using a web browser by configuring the network setting (TCP/IP). When using the network function, the IP address should be unique. For configuring the network setting, refer to "NETWORK" on page 41.

## **Accessing Web Management**

Use Internet Explorer 5.0 and above or Netscape Navigator 7.0 and above and enter the IP address. You can now access Web Management and manage the projector from a remote location.



## **Managing Properties**

#### Home

|                              |  | www.dell.co |
|------------------------------|--|-------------|
| DOLL 4210X Web Mana          | igement  |             |
|                              |  |             |
| ▶ Home                       | Home   |             |
| Network Setting              | Welcome to DELL 4210X Web Management.                      |             |
|                              | Projector Information                                      |             |
| Projector Status and Control | Model Name: 4210X  |             |
|                              | Projector Name:  |             |
| E-mail Alert                 | Location:  |             |
|                              | Contact:   |             |
| Password Setting             | Status: Lamp ON  |             |
|                              | Lamp Hours: 1 hr<br>Operation Hours: 0 hr                  |             |
| Eirmware Update              | IP Address: 192.168.3.75                                   |             |
|                              | MAC Address: 102.100.375<br>MAC Address: 00.1E/C9/BA/71.46 |             |
|                              | Admin Password: Not Set!                                   |             |
|                              | PPID:  |             |
|                              |  |             |
|                              | Language   |             |
|                              | English V Submit   |             |
|                              | Lingist  |             |
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|                              |  |             |

- Access the Web Management Home page by entering the projector's IP address at the web browser. See "NETWORK" on page 41.
- Language: Allows you to set the language for web management.



#### **Network Settings**

See OSD section on page 41.

| lome  | Network Settings   |  |
|---|--|--|
| letwork Setting<br>Projector Status and Control | Model Name: [2210X Projector Name: Lection:  |  |
| -mail Alert<br>assword Setting                  | Contact:   |  |
| irmware. Update                                 | OHCP         @ Manual           P Addres         152:163.75           Submit Mask         255.255.00           Gateway         152:163.354           DNS Server         152:163.134           DNS Server         152:163.134 |  |
|   |  |  |

- Set up the Model Name, Projector Name, Location and Contact information (up to 21 characters for each field). Press Save to store the settings.
- Choose **DHCP** to assign an IP address to the projector from a DHCP server automatically, or **Manual** to assign an IP address manually.



## **Projector Status and Control Page**

| DOLL 4210X Web Mana          | gement           |                            |                       |
|------------------------------|------------------|----------------------------|-----------------------|
| Home                         | Projector St     | atus and Control           |                       |
| Network Setting              | Projector Status |                            | Refresh               |
| Projector Status and Control | Projector Status | Lamp ON                    | Power ON<br>Power OFF |
| E-mail Alert                 | Power Saving     | Off 💌                      |                       |
| Password Setting             | Alert Status     |                            | Clear                 |
| Firmware Update              | Image Control    |                            |                       |
|                              | Operation Mode   | Normal Mode     O ECO Mode |                       |
|                              | Projector Mode   | Front Projection-Desktop   |                       |
|                              | Source Select    | Select 💌                   |                       |
|                              | Video Mode       | Presentation Mode          |                       |
|                              | Blank screen     | ⊙ On ⊙ Off                 |                       |
|                              | Aspect Ratio     | Original 04:3 OWide        |                       |
|                              | Brightness       | 0 (0=100)                  | Set                   |
|                              | Contrast         | 0 (0~100)                  | Set                   |
|                              | Auto Adjust      |                            |                       |
|                              | Audio Control    |                            |                       |
|                              | Audio Input      | Select ¥                   |                       |
|                              | Volume           | 0 (0~20)                   | Set                   |
|                              | Speaker          | 00n 00f                    |                       |
|                              | Alert Volume     | Select 🔽                   |                       |
|                              | Factory Reset    |                            |                       |
|                              |                  |                            |                       |

- Projector Status: There are 4 status: Lamp On, Standby, Power Saving and Cooling. Click the Refresh button to refresh the status and control settings.
- Power Saving: Power Saving can be set to Off, 30, 60, 90, or 120 minutes. Refer to page 44.
- Alert Status: There are 4 error status: Lamp warning, Low lamp life, Temperature warning, and Non-original lamp error. Your projector might lock up in protection mode if any of the alerts is activated. To exit protection mode, click the **Clear** button to clear the Alert Status before you could Power ON your projector.
- Projector Mode: Allows you to select the projector mode, depending upon how the projector is mounted. There are 4 projection modes: Front Projection-Desktop, Front Projection-Ceiling Mount, Rear Projection-FixYouDesktop Mount
  - Source Select: The Source Select menu allows you to select your projector

input source. You can select VCA-A, VGA-B, S-VIDEO, COMPOSITE VIDEO,

- IE and HDMI SOURCE FOR PROJECTOR LAMPS AND ACCESSORIES
- Video Mode: Select a mode to optimize the display image based on how the projector is being used:

- Presentation: Best for presentation slides.

- Bright: Maximum brightness and contrast.
- Movie: For viewing movie & photo.
- sRGB: Provide a more accurate color representation.
- Custom: User preferred settings.
- Blank Screen: You can select On or Off.
- Aspect Ratio: Allows you to select the aspect ratio to adjust how the image appears.
- Brightness: Select value to adjust the brightness of the image.
- Contrast: Select value to adjust the display contrast.
- Audio Input: You can select Audio-A, Audio-B, Audio-C and HDMI for the input source
- Volume: You can select the value  $(0 \sim 20)$  for the audio volume
- **Speaker**: You can select On to enable the audio function or select Off to disable the audio function.
- Alert Volume: Set the alert loudness (Off, Low, Mid, or High) for power on/off, warning and command keys.



## E-mail Alert

|                              | www.deli.com                                      |
|------------------------------|---|
| DOLL 4210X Web Manag         | rement  |
|                              |   |
|                              | E well Alext                                      |
| E Home                       | E-mail Alert                                      |
|                              |   |
| Network Setting              | E-mail Alert O Enable O Disable E-mail Alert Test |
|                              | TO  |
| Projector Status and Control |   |
| E-mail Alert                 |   |
|                              |   |
| Password Setting             | Subject 4210% Alert                               |
|                              |   |
| Eirmware Update              | SMTP Setting                                      |
|                              | Out going SMTP server                             |
|                              | User name   |
|                              | Password  |
|                              | Alert Condition                                   |
|                              | Lamp warning                                      |
|                              | Low lamp life                                     |
|                              | Temperature warning                               |
|                              | Non-original lamp module                          |
|                              | Save  |
|                              |   |
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- E-mail Alert: You can set whether to be notified by email (Enable) or not (Disable).
- To/CC/From: You can enter email address of sender (From) and recipients (To/Cc) to receive notification when an abnormality or warning occurs.
- Alert Condition: You can select the abnormalities or warnings to be notified by email. When any of the alert conditions occur, an email will be sent to the recipients (To/Cc).
- Out going SMTP server, User name and Password should be provided by your network administrator or MIS.



### **Password Setting**

| ome   | Password Setting   |  |
|---|--|--|
| etwork Setting<br>rojector Status and Control | Please set your password if you enable this feature for first-time. If password is<br>set, you will require to enter with your password upon you connect to the Web<br>Management. |  |
| mail Alert                                    | Administrator Password OEnable Submit  |  |
| assword Setting                               | New Password   |  |
| irmware Update                                | Confirm Password   |  |
|   | Set Security For SNMP  |  |
|   | Write Community private Submit   |  |
|   |  |  |
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|   |  |  |

Use Password Setting to set up an administrator password to access the **Web Management**. When enabling password for the first time, set the password before enabling it. When the password function is enabled, the administrator password will be required for accessing the **Web Management**.

- New Password: Enter new password
- · Confirm Password: Enter password again and submit
- Write Community: Set security for SNMP. Enter password and submit.

**NOTE:** Contact Dell if you forget your administrator password.

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## Login Page

|   | www.dell.com  |
|---|---------------|
| DOLL 4210X Web Management                   | Version: N02e |
|   |               |
|   |               |
|   |               |
|   |               |
| Welcome to DELL 4210X Web Management.       |               |
|   |               |
| Administrator Password:                     |               |
| Login                                       |               |
|   |               |
| Projector Information<br>Projector Name:    |               |
| Projector Name:<br>IP Address: 192.168.3.75 |               |
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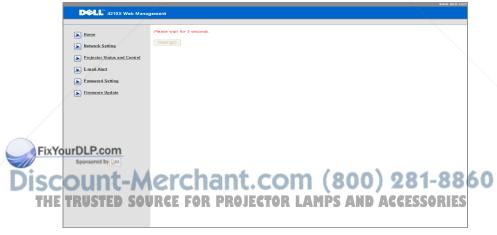
• Administrator Password: Enter the Administrator Password and click Login.



## **Firmware Update**

|  |  | www.dell.com |
|--|--|--------------|
| D≪LL <sup>™</sup> 4210X Web Management |  |              |
|  |  |              |
|  |  |              |
| ► Home                                 | Firmware Update  |              |
|  | Compared and the state of the s |              |
| Network Setting                        | Firmware update will take about a minute. Do not interrupt the process<br>once it has begun. Keep the connection established until completion of<br>process. The network system will auto rebot and you can re-login after   |              |
| Projector Status and Control           | process. The network system will auto reboot and you can re-login after<br>update is complete.   |              |
|  | update is complete.  |              |
| E-mail Alert                           | Network Firmware Version: N02e   |              |
| Password Setting                       |  |              |
| Password Setting                       | Update   |              |
| Firmware Update                        | obene overes   |              |
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Use the Firmware Update page to update your projector's firmware. Press Update to start.



• Please wait till the count reaches 0.

|                                     | www.dell.com               |
|-------------------------------------|----------------------------|
| D∕CLL <sup>™</sup> 4210X Web Mana   | ngement                    |
|                                     |                            |
| Mome                                | Please wait for 3 seconds. |
| Network Setting                     | Continue                   |
| <b>Projector Status and Control</b> |                            |
| E-mail Alert                        |                            |
| Password Setting                    |                            |
| Firmware Update                     |                            |

• Wait for 3 seconds and it will proceed to the next step automatically.

| Upgrade Firmware  |                |
|---|----------------|
| Please select a file (~.bin) to upgrade : D:\network FW\4210X and Browse                                    |                |
| Upgrade Cancel  |                |
| (Upgrading firmware may take 60 seconds)  |                |
| DISCOUNT-Mugarade must NOT be interrupted in (800) 281<br>THE TRUSTED SOURCE FOR PROJECTOR LAMPS AND ACCESS | -8860<br>ORIES |

• Select the file to upgrade and click the **Upgrade** button. When upgrading is in progress, the **Cancel** button is disabled.

| Please wait.<br>Click on button to proc | eed after 8 seconds. |
|---|----------------------|
| Waiting(6)                              |                      |

• Please wait till the count reaches 0.

| Please wait.<br>Click on button to proceed after 8 seconds. |  |
|---|--|
| Re Login  |  |

• When upgrade is complete, please click the **ReLogin** button to go back to the Web Management Home Page.



I would like remote access the projector via Internet. What is the better setting for the browser? To have a better setting for the browser, please follow the steps below:

- 1 Open Control Panel → Internet Options → General tab → Temporary Internet Files → Settings → Tick Every visit to the pages.
- **2** Some firewall or anti-virus may block the HTTP application, if possible turn off the firewall or anti-virus.

I would like to remote access the projector via Internet. What socket port number should I open for it in the firewall? The following are TCP/IP socket ports which projector uses.

| UDP/TCP | Port<br>Number | Description   |
|---------|----------------|---|
| тср     | 80             | Web configuration<br>(HTTP)                             |
| UDP/TCP | 25             | SMTP: used for email<br>routing between mail<br>servers |
| UDP/TCP | 161            | SNMP: Simple<br>Network<br>Management<br>Protocol       |
| UDP     | 9131           | AMX: used for AMX<br>discovery                          |

Why am I unable to access the projector via Internet?

FixYourDLP.com

**1** Check whether your computer/laptop is connected to the Internet.

**2** Check with your MIS or network administrator whether your computer/laptop is in the same subnet.

Discount-Merchant.com (800) 281-8860 THE TRUSTED SOURCE FOR PROJECTOR LAMPS AND ACCESSORIES

| Why am I unable to access the<br>SMTP server?   | <ol> <li>Check with your MIS or network<br/>administrator whether the SMTP server<br/>function is open for the projector and the IP<br/>assigned to the projector is allowed to access<br/>the SMTP server. The projector's SMTP<br/>socket port number is 25, this cannot be<br/>changed.</li> <li>Check if the out going SMTP server, user<br/>name, and password are set correctly.</li> <li>Some SMTP servers will check whether the<br/>mail address of "From" correlates with the<br/>"User name" and "Password". For example,<br/>you use test@dell.com<br/>account information for the User name and<br/>the password to log in the SMTP server.</li> </ol> |
|---|---|
| Why am I unable to receive the<br>test alert email even though the<br>projector already indicates the<br>test mail is already sent? | It could be because the SMTP server<br>recognized the alert mail as a spam mail or<br>because of the SMTP server restriction. Check<br>with your MIS or network administrator for<br>the SMTP server's setting.   |



# 4

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# **Troubleshooting Your Projector**

If you experience problems with your projector, see the following troubleshooting tips. If the problem persists, contact Dell<sup>™</sup>. See Contacting Dell<sup>™</sup> on page 75.

## Problem

FixYourDLP.com

No image appears on the screen



#### **Possible Solution**

- Ensure that the lens cap is removed and the projector is turned on.
- Ensure that the INPUT SELECT is set correctly in the OSD menu.
- Ensure the external graphics port is enabled. If you are using a Dell<sup>™</sup> portable computer, press m m (Fn+F8). For other computers, see your respective documentation. The output signal from the computer is not according to industry standards. Should this happen, upgrade the video driver of the computer. For Dell computer, see support.dell.com.
- Ensure that all the cables are securely connected. See "Connecting Your Projector" on page 9.
- Ensure that the pins of the connectors are not bent or broken.
- Ensure that the lamp is securely installed (see "Changing the Lamp" on page 68).
- Use **Test Pattern** in the **Others** menu. Ensure that the colors of the test pattern are

Cannot switch to particular<br/>Input Source.For Control Advanced Enable/Disable Sources, SSORIES<br/>ensure that particular Input Source is set to<br/>Enable.

correct.

| Problem <i>(continued)</i>   | Possible Solution (continued)  |  |  |
|--|--|--|--|
| Partial, scrolling, or incorrectly displayed image                     | <b>1</b> Press the <b>Auto Adjust</b> button on the remote control or the control panel.   |  |  |
|  | 2 If you are using a Dell <sup>™</sup> portable computer,<br>set the resolution of the computer to XGA<br>(1024 x 768):  |  |  |
|  | <ul> <li>a Right-click the unused portion of your<br/>Microsoft<sup>®</sup> Windows<sup>®</sup> desktop, click</li> <li>Properties and then select Settings tab.</li> </ul>  |  |  |
|  | <ul> <li>b Verify that the setting is 1024 x 768 pixels for the external monitor port.</li> <li>c Press m Image (Fn+F8).</li> </ul>  |  |  |
|  | If you experience difficulty in changing<br>resolutions or your monitor freezes, restart all<br>the equipment and the projector.   |  |  |
|  | If you are not using a Dell <sup>™</sup> portable<br>computer, see your documentation. The<br>output signal from the computer may not be<br>according to industry standards. Should this<br>happen, upgrade the video driver of the<br>computer. For a Dell computer, see<br><b>support.dell.com</b> .   |  |  |
| The screen does not display your presentation                          | If you are using a portable computer, press          If you are using a portable computer, press         Image: Graph of the second seco |  |  |
| Image is unstable or flickering  | Adjust the tracking in the OSD <b>Display</b> sub-<br>menu (in PC Mode only).  |  |  |
| Image has vertical flickering bar                                      | Adjust the frequency in the OSD <b>Display</b> sub-<br>menu (in PC Mode only).   |  |  |
| Image color is incorrect FixYourDLP.com Sponsored by [M]               | <ul> <li>If the display receives the wrong signal output from the graphics card, please set the signal type to RGB in the OSD Display tab.</li> <li>Use Test Pattern in the Others menu.</li> </ul>  |  |  |
| Discount-Merchal<br>THE TRUSTED SOURCE FOR PL<br>Image is out of focus | Ensure that the colors of the test pattern are<br>correct.<br>1 Adjust the focus ring on the projector lens.   |  |  |
|  | <b>2</b> Ensure that the projection screen is within the required distance from the projector  |  |  |

| Problem (continued)  | Possible Solution (continued)   |
|--|---|
| The image is stretched when displaying a 16:9 DVD              | The projector automatically detects the input<br>signal format. It will maintain the aspect ratio<br>of the projected image according to input<br>signal format with an Original setting.                           |
|  | If the image is still stretched, adjust the aspect<br>ratio in the <b>Set Up</b> menu in the OSD.   |
| Image is reversed  | Select <b>Set Up</b> from the OSD and adjust the projector mode.  |
| Lamp is burned out or makes<br>a popping sound                 | When the lamp reaches its end of life, it may<br>burn out and may make a loud popping sound.<br>If this occurs, the projector does not turn back<br>on. To replace the lamp, see "Changing the<br>Lamp" on page 68. |
| LAMP light is solid amber                                      | If the LAMP light is solid amber, replace the lamp.   |
| LAMP light is blinking amber                                   | If the LAMP light is blinking amber, Lamp<br>module connection may be disrupted. Please<br>check the lamp module and ensure that it is<br>properly installed.   |
|  | If the LAMP light and the Power light are<br>blinking amber, the lamp driver has failed and<br>the projector will automatically shut down.  |
|  | If the <b>LAMP</b> and <b>TEMP</b> light are blinking<br>amber and the <b>Power</b> light is solid blue, the<br>color wheel has failed and the projector will<br>automatically shut down.                           |
|  | To clear the protection mode, press and hold the POWER button for 10 seconds.   |
| TEMP light is solid amber<br>FixYourDLP.com<br>Sporsored by DM | The projector has overheated. The display<br>automatically shuts down. Turn the display on<br>again after the projector cools down. If the<br>problem persists, contact Dell <sup>™</sup> .                         |
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| Problem <i>(continued)</i>  | Possible Solution (continued)   |
|---|---|
| TEMP light is blinking amber  | A projector fan has failed and the projector<br>will automatically shut down. Try to clear the<br>projector mode by pressing and holding the<br><b>POWER</b> button for 10 seconds. Please wait<br>for about 5 minutes and try to power up again.<br>If the problem persists, contact Dell <sup>™</sup> . |
| The OSD does not appear on the screen   | Try to press the Menu button on the panel for 15 seconds to unlock the OSD. Check the <b>Menu Lock</b> on page 43.  |
| The remote control is not<br>operating smoothly or works<br>only within a limited range | The battery may be low. Check if the laser<br>beam transmitted from the remote is too dim.<br>If so, replace with 2 new AAA batteries.  |



## **Guiding Signals**

| Projector                           |   | Control Buttons   |                   |              | Indicator         |                   |
|-------------------------------------|---|-------------------|-------------------|--------------|-------------------|-------------------|
| Status                              | Description   | Power             | Menu              | Others       | TEMP<br>(Amber)   | LAMP<br>(Amber)   |
| andby mode                          | Projector in Standby mode. Ready to power on.   | BLUE<br>Flashing  | OFF               | OFF          | OFF               | OFF               |
| /arming up<br>ode                   | Projector takes some time to warm up and power on.  | BLUE              | BLUE              | BLUE         | OFF               | OFF               |
| amp on                              | Projector in Normal mode, ready to<br>display an image.<br>Note: The OSD menu is not accessed.  | BLUE              | BLUE              | OFF          | OFF               | OFF               |
| ooling mode                         | Projector is cooling to shutdown.   | BLUE              | OFF               | OFF          | OFF               | OFF               |
| ower Saving<br>ode                  | Power Saving mode has been activated.<br>The projector will automatically enter<br>standby mode, if an input signal is not<br>detected in two hours.  | AMBER<br>Flashing | OFF               | OFF          | OFF               | OFF               |
| ooling before<br>ower Saving<br>ode | The projector takes 60 seconds to cool<br>down before entering Power Saving<br>mode.  | AMBER             | OFF               | OFF          | OFF               | OFF               |
| rojector<br>/erheated               | Air vents might be blocked or ambient<br>temperature may be above 35°C. The<br>projector automatically shuts down.<br>Ensure that the air vents are not blocked<br>and that the ambient temperature is<br>within operational range. If the problem<br>persists, contact Dell. | OFF               | OFF               | OFF          | AMBER             | OFF               |
| amp<br>/erheated                    | The lamp is overheated. The air vents<br>may be blocked. The projector<br>automatically shuts down. Turn the<br>display on again after the projector cools<br>down. If the problem persists, contact<br>Dell.   | BLUE              | OFF               | OFF          | AMBER             | OFF               |
| amp driver<br>/erheated             | The lamp driver is overheated. The air<br>vents may be blocked. The projector<br>automatically shuts down. Turn the<br>display on again after the projector cools<br>down. If the problem persists, contact<br>Dell.  | AMBER             | OFF               | OFF          | AMBER             | OFF               |
| an breakdown                        | One of the fans has failed. The projector<br>automatically shuts down. If the problem<br>persists, contact Dell.  | ÒFF               | OFF               | OFF          | AMBER<br>Flashing | OFF               |
| amp driver<br>eakdown<br>Sponsore   | The lamp driver has failed. The projector<br>automatically shuts down. Unplug the<br>power cord after three minutes then turn<br>the display on again. If this problem<br>persists, contact Dell.   | AMBER<br>Flashing | OFF               | OFF          | OFF               | AMBER<br>Flashing |
| olor Wheel<br>eakdown US            | Color wheel cannot start. The projector<br>has failed and the projector<br>automatically shuts down. Unplug the<br>power cord after three minutes and then<br>turn on the projector. If this problem<br>persists, contact Dell.   | BLUE              | <b>LAM</b><br>OFF | PS AN<br>OFF | AMBER<br>Flashing | AMBER<br>Flashing |

| Lamp failure Lamp is defective. Replace the lamp.  |  | OFF               | OFF | OFF | OFF   | AMBER             |
|--|--|-------------------|-----|-----|-------|-------------------|
| Fault - DC     Power supply has been interrupted. The projector automatically shuts down. Unplug the power cord after three minutes and then turn on the projector. If this problem persists, contact Dell.  |  | AMBER<br>Flashing | OFF | OFF | AMBER | AMBER             |
| Fault - DC         Power supply has been interrupted. The projector automatically shuts down.           (secondary)         Unplug the power cord after three minutes and then turn on the projector. If this problem persists, contact Dell.      |  | AMBER<br>Flashing | OFF | OFF | AMBER | OFF               |
| Lamp module         Lamp module connection may be           connection         disrupted. Check the lamp module and           failed         ensure that it is properly installed. If the           problem persists, contact Dell.         failed |  | OFF               | OFF | OFF | OFF   | AMBER<br>Flashing |



## **Changing the Lamp**



🕂 CAUTION: Before you begin any of the procedures in this section, follow the Safety Instructions as described on page 7.

Replace the lamp when the message "Lamp is approaching the end of its useful life in the operation. Replacement suggested! www.dell.com/lamps" appears on the screen. If this problem persists after replacing the lamp, contact Dell<sup>™</sup>. For more information, see Contacting Dell<sup>™</sup>on page 75.



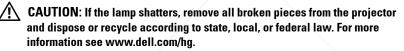
CAUTION: Use an original lamp to ensure safe and optimal working condition of your projector.



/! CAUTION: The lamp becomes very hot when in use. Do not attempt to replace the lamp until the projector has been allowed to cool down for at least 30 minutes.



CAUTION: Do not touch the bulb or the lamp glass at any time. Projector lamps are very fragile and may shatter if touched. The shattered glass pieces are sharp and can cause injury.



- **1** Turn off the projector and disconnect the power cord.
- 2 Let the projector cool for at least 30 minutes.
- 3 Loosen the two screws that secure the lamp cover, and remove the cover.
- 4 Loosen the two screws that secure the lamp.
- **5** Pull the lamp up by its metal handle.
- **NOTE:** Dell<sup>™</sup> may require lamps replaced under warranty to be returned to Dell<sup>™</sup>. Otherwise, contact your local waste disposal agency for the address FixYourDLP.com the nearest deposit site.

8 Replace the lamp cover and tighten the two screws.

**6** Replace with the new lamp. 7 Tighten the two screws that

lamp

**9** Reset the lamp usage time by selecting "Yes" for Lamp Reset in the OSD Lamp tab (see Lamp menu on page 39). When a new lamp module has been changed, the projector will automatically detect and reset the lamp hours.

CAUTION: Lamp Disposal (for the US only) (a) LAMP(S) INSIDE THIS PRODUCT CONTAIN MERCURY AND MUST BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL, STATE OR FEDERAL LAWS. FOR MORE INFORMATION, GO TO WWW.DELL.COM/HG OR CONTACT THE ELECTRONIC INDUSTRIES ALLIANCE AT WWW.EIAE.ORG. FOR LAMP SPECIFIC DISPOSAL INFORMATION CHECK WWW.LAMPRECYCLE.ORG.



# 5

## **Specifications**

Light Valve Brightness Contrast Ratio Uniformity Number of Pixels Displayable Color Color Wheel Speed Projection Lens

Projection Screen Size Projection Distance Video Compatibility

Power Supply Power Consumption

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0.55" XGA DMD Type X, DarkChip2™ 3500 ANSI Lumens (Max.) 2000:1 Typical (Full On/Full Off) 85% Typical (Japan Standard - JBMA) 1024x 768 (XGA) 16.7M colors 2X F-Stop: F/ 2.4~2.66 Focal length, f=18.2~21.8 mm

1.2X manual Zoom Lens Throw ratio =  $1.6 \sim 1.92$  wide and tele

30-307 inches (diagonal)

3.94~32.81 ft (1.2 m~10 m)

Composite Video / S-Video: NTSC (J, M, 4.43), PAL (B, D, G, H, I, M, N, Nc, 60), SECAM (B, D, G, K, K1, L)

Component Video via VGA & HDMI: 1080i/p, 720p, 576i/p, 480i/p

Universal AC90-264 50/60 Hz with PFC input

Normal mode: 360W ± 10% @ 110Vac (Network On)

Eco mode: 320W ± 10% @ 110Vac (Network On)

Power saving mode: <23W (Network On, fan speed 8860 at minimum) STED SOURCE FOR PROJECTOR TAINING ACCESSORIES Standby mode: 1.65W ± 10% @ 110Vac (Network On)

< 1W (Network Off)

2 speakers x 5watt RMS

Audio

Noise Level Weight Dimensions (W x H x D) 35 dB(A) Normal mode, 32 dB(A) Eco mode 6.35 lbs (2.88 kg)

11.26 x 4.33 x 9.76 inches (286 x 110 x 247.8 mm)



Environmental

I/O Connectors

Power: One AC power socket (3-pins - C14 inlet)

Operating temperature: 5°C - 35°C (41°F- 95°F)

Storage temperature: 0°C to 60°C (32°F to 140°F)

Humidity: 80% maximum

Humidity: 90% maximum

Humidity: 90% maximum

(-4°F to 140°F)

Shipping temperature: -20°C to 60°C

VGA input: Two 15-pins D-sub connectors (Blue), VGA-A & VGA-B, for analog RGB/Component input signals.

VGA output: One 15-pins D-sub connector (Black) for VGA-A loop through.

S-Video input: One standard 4-pins min-DIN S-Video connector for Y/C signal.

Composite video input: One Yellow RCA jack for CVBS signal.

HDMI input: One HDMI connector for supporting HDMI 1.3. HDCP compliant.

Analog Audio input: Two 3.5mm stereo jack (Blue) & one pair of RCA connecte (Red/White).

Variable audio output: One 3.5mm stereo mini phone jack (Green).



USB port: One USB slave for remote support.

RS232 port: One mini-DIN 6-pins for RS232 communication.

RJ45 port: One RJ45 connector for control of projector through network.

12V output: One 12V DC / 200mA max. relay output for driving automatic screen.

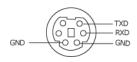
Lamp

Philips 280W user-replaceable lamp (up to 2500 hours in eco mode)

**NOTE:** The lamp life rating for any projector is a measure of brightness degradation only, and is not a specification for the time it takes a lamp to fail and cease light output. Lamp life is defined as the time it takes for more than 50 percent of a lamp sample population to have brightness decrease by approximately 50 percent of the rated lumens for the specified lamp. The lamp life rating is not guaranteed in any way. The actual operating life span of a projector lamp will vary according to operating conditions and usage patterns. Usage of a projector in stressful conditions which may include dusty environments, under high temperatures, many hours per day and abrupt powering-off will most likely result in a lamp's shortened operating life span or possible lamp failure.



## **RS232 Pin Assignment**



#### RS232 Protocol

Communication Settings

| Connection settings | Value |
|---------------------|-------|
| Baud Rate:          | 19200 |
| Data Bits:          | 8     |
| Parity              | None  |
| Stop Bits           | 1     |

Command types

To pop up the OSD menu and adjust the settings.

- Control command Syntax (From PC to Projector) [H][AC][SoP][CRC][ID][SoM][COMMAND]
- Example: Power ON Command (Send low byte firstly)
   --> 0xBE, 0xEF, 0x10, 0x05, 0x00, 0xC6, 0xFF, 0x11, 0x11, 0x01, 0x00, 0x01
- Control Commands List

To view the latest RS232 code, go to the Dell Support site at: support.dell.com.



## Compatibility Modes (Analog/Digital)

| 640 x 350         70.087         \$1.469         25.175           640 x 480         59.940         \$1.469         25.175           720 x 480 p60         59.940         \$1.469         27.000           720 x 576 p50         50.000         \$1.250         27.000           720 x 576 p50         50.000         \$1.250         27.000           720 x 576 p50         50.000         \$1.250         27.000           720 x 400         70.087         \$1.469         28.322           640 x 480         75.000         \$1.500         31.500           848 x 480         60.000         \$1.020         \$3.750           640 x 480         75.000         46.575         49.500           800 x 600         63.17         37.879         40.000           800 x 600         85.061         53.674         56.250           1024 x 768         60.004         48.363         65.000           1280 x 720 p50         50.000         28.125         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i50         60.003         33.750         74.250           1280 x 720 p60         60.000         40.702         83.500  |      | Resolution         | Refresh Rate (Hz) | Hsync Frequency<br>(KHz) | Pixel Clock (MHz) |               |
|---|------|--------------------|-------------------|--------------------------|-------------------|---------------|
| 640 x 480 p60         59,940         31,469         25,175           720 x 450 p60         59,940         31,469         27,000           720 x 576 p50         50,000         31,250         27,000           720 x 400         70,087         31,469         28,322           640 x 480         75,000         37,500         31,500           848 x 480         60,000         31,020         33,750           640 x 480         85,008         43,269         36,000           800 x 600         60,317         37,879         40,000           800 x 600         75,000         46,875         49,500           800 x 600         85,061         53,674         56,250           1024 x 768         60,004         48,363         65,000           1280 x 720 p50         50,000         37,500         74,250           1920 x 1080 i50         50,000         28,125         74,250           1920 x 1080 i50         50,000         28,750         28,500           1280 x 720 p50         50,000         33,750         74,250           1280 x 720 p50         50,000         33,750         74,250           1280 x 720 p50         50,000         33,750         74,250   |      | 640 x 350          | 70.087            | 31.469                   | 25.175            |               |
| 720 x 480 p60         59.940         31.469         27.000           720 x 576 p50         50.000         31.250         27.000           720 x 400         70.087         31.469         28.322           640 x 480         75.000         37.500         31.50           848 x 480         60.000         31.020         33.750           640 x 480         85.008         43.269         36.000           800 x 600         60.317         37.879         40.000           800 x 600         75.000         46.875         49.500           800 x 600         85.061         53.674         56.250           1024 x 768         60.004         48.363         65.000           1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 720         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 760         59.810         49.702         83.500           13660 x 768         60.015         47.712         85.500   |      |                    | 59.940            | 31.469                   | 25.175            |               |
| 720 x 576 p 50         50.000         31.250         27.000           720 x 400         70.087         31.469         28.322           640 x 480         75.000         37.500         31.500           848 x 480         60.000         31.020         33.750           640 x 480         55.005         43.269         36.000           800 x 600         60.317         37.879         40.000           800 x 600         75.000         46.875         49.500           800 x 600         85.061         53.674         56.250           1024 x 768         60.004         48.363         65.000           1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p60         60.000         45.000         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1024 x 768         75.029         60.023         78.750           1280 x 720         59.855         44.772         74.500           1024 x 768         60.015         47.712         85.500           1366 x 768         59.790         47.712         85.500 <t< td=""><td></td><td>640 x 480 p60</td><td>59.940</td><td>31.469</td><td>25.175</td><td></td></t<>   |      | 640 x 480 p60      | 59.940            | 31.469                   | 25.175            |               |
| 720 x 400         70.087         31.469         28.322           640 x 480         75.000         37.500         31.500           848 x 450         60.000         31.020         33.750           640 x 480         85.008         43.269         36.000           800 x 600         60.317         37.579         40.000           800 x 600         75.000         46.875         49.500           800 x 600         85.061         53.674         56.250           1024 x 768         60.000         45.000         74.250           1280 x 720 p50         50.000         28.125         74.250           1280 x 720         59.855         44.772         74.500           1280 x 720         59.855         44.772         74.500           1280 x 768         75.029         60.023         78.750           1280 x 768         59.790         47.712         85.500           1360 x 768         60.015         47.712         85.500  |      | 720 x 480 p60      | 59.940            | 31.469                   | 27.000            |               |
| 640 x 480         75.00         37.500         31.500           848 x 480         60.000         31.020         33.750           640 x 480         85.008         43.269         36.000           800 x 600         60.317         37.879         40.000           800 x 600         75.000         46.875         49.500           800 x 600         75.001         46.875         49.500           1024 x 768         60.004         48.363         65.000           1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p50         50.000         37.500         74.250           1920 x 1080 i60         60.000         33.750         74.250           1920 x 1080 i60         60.000         33.750         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 720         59.855         44.722         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1360 x 768         60.015         47.712         85.500           1140 x 900         59.887         55.935         106.500  |      | 720 x 576 p50      | 50.000            | 31.250                   | 27.000            |               |
| 848 x 480         60.000         31.020         33.750           640 x 480         85.008         43.269         36.000           800 x 600         60.317         37.879         40.000           800 x 600         75.000         46.875         49.500           800 x 600         85.061         53.674         56.250           1024 x 765         60.004         483.63         65.000           1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p50         50.000         28.125         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 702         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1400 x 900         59.857         55.935         106.500 <td></td> <td>720 x 400</td> <td>70.087</td> <td>31.469</td> <td>28.322</td> <td></td>  |      | 720 x 400          | 70.087            | 31.469                   | 28.322            |               |
| 640 x 480         85.008         43.269         36.000           800 x 600         60.317         37.879         40.000           800 x 600         75.000         46.875         49.500           800 x 600         85.061         53.674         56.250           1024 x 768         60.004         48.363         65.000           1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p60         60.000         45.000         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 720         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1366 x 768         59.790         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000  |      | 640 x 480          | 75.000            | 37.500                   | 31.500            |               |
| S00 x 600         60.317         37.879         40.000           800 x 600         75.000         46.875         49.500           800 x 600         85.061         53.674         56.250           1024 x 768         60.004         48.363         65.000           1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p50         50.000         28.125         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         37.500         74.250           1280 x 720         59.855         44.772         74.500           1280 x 720         59.855         44.772         74.500           124 x 768         75.029         60.023         78.750           1280 x 768         60.015         47.712         85.500           1366 x 768         59.790         47.712         85.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         65.000         70.95         119.651           1400 x 1050         59.978         65.317         121.750  |      | 848 x 480          | 60.000            | 31.020                   | 33.750            |               |
| 800 x 600         75,000         46.875         49,500           800 x 600         85,061         53,674         56,250           1024 x 768         60,004         48,363         65,000           1280 x 720 p50         50,000         37,500         74,250           1280 x 720 p50         50,000         28,125         74,250           1920 x 1080 i50         50,000         28,125         74,250           1920 x 1080 i60         60,000         33,750         74,250           1920 x 1080 i60         60,000         33,750         74,250           1920 x 1080 i60         60,000         33,750         74,250           1024 x 768         75,029         60,023         78,750           1280 x 800         59,810         49,702         83,500           1366 x 768         69,790         47,712         85,500           1044 x 768         84,997         68,677         94,500           1440 x 900         59,887         55,935         106,500           1152 x 864         75,000         67,500         108,000           1280 x 1024         60,020         63,981         108,000           1280 x 1024         75,025         79,976         135,000   |      | 640 x 480          | 85.008            | 43.269                   | 36.000            |               |
| 800 x 600         85.061         53.674         56.250           1024 x 768         60.004         48.363         65.000           1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p60         60.000         45.000         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 720         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1024 x 768         60.015         47.712         85.500           1044 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.995         119.651  |      | 800 x 600          | 60.317            | 37.879                   | 40.000            |               |
| 1024 x 768         60.004         48.363         65.000           1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p60         60.000         45.000         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 720         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1366 x 768         59.790         47.712         85.500           1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.954         65.317         121.750   |      | 800 x 600          | 75.000            | 46.875                   | 49.500            |               |
| 1280 x 720 p50         50.000         37.500         74.250           1280 x 720 p60         60.000         45.000         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 720         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1360 x 768         60.015         47.712         85.500           1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 1024         75.025         79.976         135.000   |      | 800 x 600          | 85.061            | 53.674                   | 56.250            |               |
| 1280 x 720 p60         60.000         45.000         74.250           1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 720         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1360 x 768         60.015         47.712         85.500           1360 x 768         60.015         47.712         85.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.925         79.976         135.000     <   |      | 1024 x 768         | 60.004            | 48.363                   | 65.000            |               |
| 1920 x 1080 i50         50.000         28.125         74.250           1920 x 1080 i60         60.000         33.750         74.250           1280 x 720         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1360 x 768         60.015         47.712         85.500           1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         0.46.250           1280 x 960         85.002         85.938         48.500 <td></td> <td>1280 x 720 p50</td> <td>50.000</td> <td>37.500</td> <td>74.250</td> <td></td>  |      | 1280 x 720 p50     | 50.000            | 37.500                   | 74.250            |               |
| 1920 x 1080 i60         60.000         33,750         74,250           1280 x 720         59,855         44,772         74,500           1024 x 768         75,029         60.023         78,750           1280 x 800         59,810         49,702         83,500           1366 x 768         59,790         47,712         85,500           1360 x 768         60.015         47,712         85,500           1024 x 768         84,997         68,677         94,500           1440 x 900         59,887         55,935         106,500           1152 x 864         75,000         67,500         108,000           1280 x 1024         60,020         63,981         108,000           1152 x 864         85,000         77,095         119,651           1400 x 1050         59,978         65,317         121,750           1280 x 800         84,880         71,554         122,500           1280 x 1024         75,025         79,976         135,000           1280 x 1050         59,954         65,290         146,250           1280 x 1050         59,954         65,290         146,250           1280 x 960         85,002         85,938         148,500   |      | 1280 x 720 p60     | 60.000            | 45.000                   | 74.250            |               |
| 1280 x 720         59.855         44.772         74.500           1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1360 x 768         60.015         47.712         85.500           1360 x 768         60.015         47.712         85.500           1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         60.020         63.981         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 X 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.259           1280 x 1050         59.954         65.290         146.250      <  |      |                    | 50.000            | 28.125                   | 74.250            |               |
| 1024 x 768         75.029         60.023         78.750           1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1360 x 768         60.015         47.712         85.500           1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1440 x 1050         59.978         65.317         121.750           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.250           1280 x 960         85.002         85.938         148.500           1400 X 1050         74.867         82.278         156.000   |      | 1920 x 1080 i60    | 60.000            | 33.750                   | 74.250            |               |
| 1280 x 800         59.810         49.702         83.500           1366 x 768         59.790         47.712         85.500           1360 x 768         60.015         47.712         85.500           1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 1024         60.020         63.981         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.250           1280 x 1050         74.867         82.278         156.000 <td></td> <td>1280 x 720</td> <td>59.855</td> <td>44.772</td> <td>74.500</td> <td></td>  |      | 1280 x 720         | 59.855            | 44.772                   | 74.500            |               |
| 1366 x 768         59.790         47.712         85.500           1360 x 768         60.015         47.712         85.500           1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 960         60.000         60.000         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.250           1680 x 1050         59.954         65.290         146.250           1280 x 960         85.002         85.938         148.500           1400 X 1050         74.867         82.278         156.000           1400 X 1050         74.867         82.278         156.000 <td></td> <td>1024 x 768</td> <td>75.029</td> <td>60.023</td> <td>78.750</td> <td></td>  |      | 1024 x 768         | 75.029            | 60.023                   | 78.750            |               |
| 1360 x 768         60.015         47.712         85.500           1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 960         60.000         60.000         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         136.750           1680 x 1050         59.954         65.290         146.250           1280 x 960         85.002         85.938         148.500           1400 X 1050         74.867         82.278         156.000           1400 X 1050         74.867         82.278         156.000 <td></td> <td>1280 x 800</td> <td>59.810</td> <td>49.702</td> <td>83.500</td> <td></td>   |      | 1280 x 800         | 59.810            | 49.702                   | 83.500            |               |
| 1024 x 768         84.997         68.677         94.500           1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 960         60.000         60.000         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.250           1680 x 1050         59.954         65.290         146.250           1280 x 260         85.002         85.938         148.500         1680           1400 X 1050         74.867         82.278         156.000         1280 x 1024         85.024         91.146         157.000  |      | 1366 x 768         | 59.790            | 47.712                   | 85.500            |               |
| 1440 x 900         59.887         55.935         106.500           1152 x 864         75.000         67.500         108.000           1280 x 960         60.000         60.000         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.250           1680 x 1050         59.954         65.290         146.250           1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1400 X 1024         85.024         91.146         157.000  |      | 1360 x 768         | 60.015            | 47.712                   | 85.500            |               |
| 1152 x 864         75.000         67.500         108.000           1280 x 960         60.000         60.000         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.250           1280 x 1050         59.954         65.290         148.500           1280 x 960         85.002         85.938         148.500           1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000   |      | 1024 x 768         | 84.997            | 68.677                   | 94.500            |               |
| 1280 x 960         60.000         60.000         108.000           1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.250           1680 x 1050         59.954         65.290         146.250           1280 x 960         85.002         85.938         148.500           THI TRUS1920 x 1080URCE         FO60.000 OJI ETO 67.500 MPS         AN 148.500 ES           1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1440 X 900         84.842         80.430         157.000   |      | 1440 x 900         | 59.887            | 55.935                   | 106.500           |               |
| 1280 x 1024         60.020         63.981         108.000           1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1050         59.954         65.290         146.250           1680 x 1050         59.954         65.290         146.250           1280 x 960         85.002         85.938         148.500           THI TRUS1920 x 1080URCE         FO60.000 OJI ETO 67.500 MPS         AN 148.500 ES           1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1440 X 900         84.842         80.430         157.000  |      | 1152 x 864         | 75.000            | 67.500                   | 108.000           |               |
| 1152 x 864         85.000         77.095         119.651           1400 x 1050         59.978         65.317         121.750           1280 x 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           Fix         Fix         70.635         136.750           50000         74.984         70.635         136.750           1680 x 1050         59.954         65.290         146.250           1280 x 960         85.002         85.938         148.500           THUS1920 x 1080URC1         F060.000 (0)1 (410 (7) 500 MPS)         AM 148.500 (15)           1400 x 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1440 X 900         84.842         80.430         157.000  |      |                    | 60.000            | 60.000                   | 108.000           |               |
| 1400 x 1050         59.978         65.317         121.750           1280 x 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           urDLP-PARX 900         74.984         70.635         136.750           1680 x 1050         59.954         65.290         146.250           1280 x 960         85.002         85.938         148.500           THUS1920 x 1080URCE         F060.000 (0) COT 67 500 MPS         AM 148.500 (ES)           1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1440 X 900         84.842         80.430         157.000   |      | 1280 x 1024        | 60.020            | 63.981                   | 108.000           |               |
| 1280 X 800         84.880         71.554         122.500           1280 x 1024         75.025         79.976         135.000           1280 x 1024         75.025         79.976         135.000           1280 x 1020         74.984         70.635         136.750           1680 x 1050         59.954         65.290         146.250           1280 x 960         85.002         85.938         148.500           1280 x 1050         74.867         82.278         156.000           1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1440 X 900         84.842         80.430         157.000  |      | 1152 x 864         | 85.000            | 77.095                   | 119.651           |               |
| Iz80 x 1024         75.025         79.976         135.000           Fix         Iz80 x 1024         75.025         79.976         135.000           Source Fix         900         74.984         70.635         136.750           Ic80 x 1050         59.954         65.290         146.250         -888           THE TRUS1920x 1080URC1         FOIO.009(0)1         67500MPS         AM 148.500         -888           1400 X 1050         74.867         82.278         156.000         1280 x 1024         85.024         91.146         157.000           1440 X 900         84.842         80.430         157.000         1440 X 900         84.842         80.430         157.000  |      |                    | 59.978            | 65.317                   | 121.750           |               |
| Fix YourDL-Common Section 2000         74.984         70.635         136.750           1680 x 1050         59.954         65.290         146.250         -           1280 x 960         85.002         85.938         148.500         -           1400 X 1050         74.867         82.278         156.000         -           1400 X 1050         74.867         82.278         156.000         -           1280 x 1024         85.024         91.146         157.000         -   |      |                    | 84.880            | 71.554                   | 122.500           |               |
| Image: Spensor Life (1, 2)         1/1,384         1/0,555         1/150,750           I680 x 1050         59,954         65,290         1/46,250         1/46,250           I280 x 960         85,002         85,938         1/48,500         886           I1400 X 1050         74,867         82,278         156,000         1280 x 1024         85,024         91,146         157,000           I1400 X 900         84,842         80,430         157,000         157,000         160,000   | EivV |                    |                   |                          |                   |               |
| Image: Note of the image: No | FIAT | Sponsored by X 900 | 74.984            | 70.635                   | 136.750           |               |
| THE TRUS1920x 1080URCE FO60.000 OJ ECTO 67500 MPS         AND 148.500 TES         SORIES           1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1440 X 900         84.842         80.430         157.000   | Dicc | $\alpha$           | chant.            | com / c                  | 146.250           | 1.00/         |
| 1400 X 1050         74.867         82.278         156.000           1280 x 1024         85.024         91.146         157.000           1440 X 900         84.842         80.430         157.000  | DISC |                    | 85.002            | 85.938                   |                   |               |
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# **Appendix: Glossary**

**ANSI LUMENS** — A standard for measuring the brightness. It is calculated by dividing a square meter image into nine equal rectangles, measuring the lux (or brightness) reading at the center of each rectangle, and averaging these nine points.

**ASPECT RATIO** — The most popular aspect ratio is 4:3 (4 by 3). Early television and computer video formats are in a 4:3 aspect ratio, which means that the width of the image is 4/3 times the height.

**Brightness** — The amount of light emitting from a display or projection display or projection device. The brightness of projector is measured by ANSI lumens.

**Color Temperature** — The color appearance of white light. Low color temperature implies warmer (more yellow/red) light while high color temperature implies a colder (more blue) light. The standard unit for color temperature is Kelvin (K).

**Component Video** — A method of delivering quality video in a format that consists of the luminance signal and two separate chrominance signals and are defined as Y'Pb'Pr' for analog component and Y'Cb'Cr' for digital component. Component video is available on DVD players.

**Composite Video** — A video signal that combines the luma (brightness), chroma (color), burst (color reference), and sync (horizontal and vertical synchronizing signals) into a signal waveform carried on a single wire pair. There are three kind of formats, namely, NTSC, PAL and SECAM.

**Compressed Resolution** — If the input images are of higher resolution than the native resolution of the projector, the resulting image will be scaled to fit the native resolution of the projector. The nature of compression in a digital device means that some image content is lost.

**Contrast Ratio** — Range of light and dark values in a picture, or the ratio between their maximum and minimum values. There are two methods used by the projection industry to measure the ratio:

**1** *Full On/Off* — measures the ratio of the light output of an all white image (full on) and the light output of an all black (full off) image.

**2** ANSI — measures a pattern of 16 alternating black and white rectangles. The average light output from the white rectangles is divided by the average light output of the black rectangles to determine the ANSI contrast ratio. **ACCESSORIES** 

*Full On/Off* contrast is always a larger number than ANSI contrast for the same projector.

**dB** — decibel — A unit used to express relative difference in power or intensity, usually between two acoustic or electric signals, equal to ten times the common logarithm of the ratio of the two levels.

**Diagonal Screen** — A method of measuring the size of a screen or a projected image. It measures from one corner to the opposite corner. A 9FT high, 12FT wide, screen has a diagonal of 15FT. This document assumes that the diagonal dimensions are for the traditional 4:3 ratio of a computer image as per the example above.

**DHCP** — Dynamic Host Configuration Protocol — A network protocol that enables a server to automatically assign a TCP/IP address to a device.

**DLP<sup>®</sup>** — Digital Light Processing<sup>™</sup> — Reflective display technology developed by Texas Instruments, using small manipulated mirrors. Light passes through a color filter is sent to the DLP mirrors which arrange the RGB colors into a picture projected onto screen, also known as DMD.

**DMD** — Digital Micro-Mirror Device — Each DMD consists of thousands of tilting, microscopic aluminum alloy mirrors mounted on a hidden yoke.

**DNS** — Domain Name System — An internet service that translates domain names into IP addresses.

Focal Length — The distance from the surface of a lens to its focal point.

**Frequency** — It is the rate of repetition in cycles per seconds of electrical signals. Measured in Hz (Hertz).

**HDCP** — High-Bandwidth Digital-Content Protection — A specification developed by Intel<sup>™</sup> Corporation to protect digital entertainment across digital interface, such as DVI, HDMI.

**HDMI** — High-Definition Multimedia Interface — HDMI carries both uncompressed high definition video along with digital audio and device control data in a single connector.

Hz (Hertz) — Unit of frequency.

**Keystone Correction** — Device that will correct an image of the distortion (usually a wide-top narrow-bottom effect) of a projected image caused by **FixYourDopcopm**ojector to screen angle.

**Maximum Distance** — The distance from a screen the projector can be to cast an image that is usable (bright enough) in a fully darkened room.

**Maximum Image Size** — The largest image a projector can throw in a darkened room. This is usually limited by focal range of the optics.

**Minimum Distance** — The closest position that a projector can focus an image onto a screen.

**NTSC** — National Television Standards Committee. North American standard for video and broadcasting, with a video format of 525 lines at 30 frames per second.

**PAL** — Phase Alternating Line. A European broadcast standard for video and broadcasting, with a video format of 625 lines at 25 frames per second.

**Reverse Image** — Feature that allows you to flip the image horizontally. When used in a normal forward projection environment text, graphics, etc. are backwards. Reverse image is used for rear projection.

**RGB** — Red, Green, Blue — typically used to describe a monitor that requires separate signals for each of the three colors.

**S-Video** — A video transmission standard that uses a 4-pin mini-DIN connector to send video information on two signal wires called luminance (brightness, Y) and chrominance (color, C). S-Video is also referred to as Y/C.

**SECAM** — A French and international broadcast standard for video and broadcasting, closely related to PAL but with a different method of sending color information.

SVGA — Super Video Graphics Array — 800 x 600 pixels count.

SXGA — Super Extended Graphics Array, — 1280 x 1024 pixels count.

**UXGA** — Ultra Extended Graphics Array — 1600 x 1200 pixels count.

VGA — Video Graphics Array — 640 x 480 pixels count.

XGA — Extended Video Graphics Array — 1024 x 768 pixels count.

**Zoom Lens** — Lens with a variable focal length that allows operator to move the view in or out making the image smaller or larger.

**Zoom Lens Ratio** — Is the ratio between the smallest and largest image a lens can projector from a fixed distance. For example, a 1.4:1 zoom lens ratio means that a 10 foot image without zoom would be a 14 foot image with full zoom.

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