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Product Description

Type: 3 panel LCD projector. Dimensions: 19.7”(W) x 6.5”(H) x 14.4”(D)

Resolution: 1024 x 768 (4:3) 1920 x 1200 (16:10)

Fan Noise: PA500X: 38 dB / 31dB @ 1 meter
PA500U: 38 dB / 31dB @ 1 meter
PA550W: 38 dB / 31dB @ 1 meter
PA600X: 38 dB / 31dB @ 1 meter

Power Consumption: PA500X/PA550W: 464W (max)
PA600X: 464W (max)
PA500U: 477W (max)

Network Ready, integrated wired and wireless adapter
Manual: Lens Shift, Horizontal & Vertical /Zoom/ Focus

Lens Specifications

NP11FL: Throw Ratio: ~ 0.8:1 Focal Length: 13.2mm
Screen Sizes: 60”-150” F/#:2.3

NP14ZL: Throw Ratio: 2.97 – 4.79:1 Focal Length: 48.5 – 77.6mm
Screen Sizes: 60” - 200” F/#:2.2 - 2.64

NP12ZL: Throw Ratio: 1.19 - 1.56:1 Focal Length: 19.4 – 25.3mm
Screen Sizes: 40” - 200” F/#:2.2 – 2.69

NP15ZL: Throw Ratio: 4.70 - 7.02:1 Focal Length: 76.6 - 116.5mm
Screen Sizes: 80” - 200” F/#:2.2 - 2.7

NP13ZL: Throw Ratio: 1.50 - 3.02:1 Focal Length: 24.4 – 48.6mm
Screen Sizes: 40” - 200” F/#:1.7 – 2.37

NP30ZL: Throw Ratio: 0.79 – 1.04:1 Focal Length: 13.2 – 17.2mm
Screen Sizes: 40” - 200” F/#:1.9 - 2.1

Screen/Aspect Ratio

4:3, 16:9 and 16:10 screens are fully supported with proper aspect ratio control for both type sources using NEC developed scaling technology. Menu selections have settings for each screen type and aspect ratio control for each source type.

Notes

- For screen sizes not indicated on the projection tables, use the formulas below.
  - If the figures on the tables do not match the results of formulas, use the figures in the table.
  - Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary ±5%.
Formulas: 4:3 Aspect Ratio (PA500X/PA600X—XGA)

The Projection Formulas use the image width for calculation. Image width is the same for all aspect ratios, only vertical image size varies. For proper projector placement, determine the image width for a desired screen size. Use the Screen Formulas below to calculate all screen dimensions. Plug in the image width for “W” in the Projection Formulas.

Refer to the diagrams and charts for popular screen sizes on page 2 and 3:

**Projection Formulas:**

NP11FL: \( C = 0.827W - 1.374 \)

NP12ZL: \( C(Wide) = 1.214W - 1.794 \quad C(Tele) = 1.578W - 1.794 \)

NP13ZL: \( C(Wide) = 1.524W - 1.974 \quad C(Tele) = 3.043W - 1.972 \)

NP14ZL: \( C(Wide) = 3.034W - 4.844 \quad C(Tele) = 4.855W - 4.844 \)

NP15ZL: \( C(Wide) = 4.797W - 7.630 \quad C(Tele) = 7.291W - 7.630 \)

NP30ZL: \( C(Wide) = 0.827W - 1.587 \quad C(Tele) = 1.078W - 1.587 \)

**Definitions:**

- \( W = \) Image Width
- \( H = \) Image Height (size)
- \( r = \) Throw distance
- Diagonal = \( W \times 5/4 \)

**4:3 Screen Formulas:**

- \( C = \) 3.034W - 4.844
- \( C = \) 4.855W - 4.844
- \( C = \) 7.291W - 7.630
- \( C = \) 1.078W - 1.587

**Note:** Tilting the front of the projector up or down by more than 45° from level could reduce lamp life by up to 20%.

### Distance Chart for popular 4:3 screens

<table>
<thead>
<tr>
<th>Screen Size (4:3)</th>
<th>Rear Lens</th>
<th>Zoom Lenses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NP11FL</td>
<td>NP30ZL</td>
</tr>
<tr>
<td>Diagonal (inches)</td>
<td>Width(W)</td>
<td>Height (H)</td>
</tr>
<tr>
<td>40</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>60</td>
<td>48</td>
<td>36</td>
</tr>
<tr>
<td>67</td>
<td>54</td>
<td>40</td>
</tr>
<tr>
<td>72</td>
<td>58</td>
<td>43</td>
</tr>
<tr>
<td>84</td>
<td>67</td>
<td>50</td>
</tr>
<tr>
<td>90</td>
<td>72</td>
<td>54</td>
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<tr>
<td>100</td>
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<tr>
<td>120</td>
<td>96</td>
<td>72</td>
</tr>
<tr>
<td>150</td>
<td>120</td>
<td>90</td>
</tr>
<tr>
<td>180</td>
<td>144</td>
<td>108</td>
</tr>
<tr>
<td>210</td>
<td>168</td>
<td>126</td>
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<tr>
<td>240</td>
<td>192</td>
<td>144</td>
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<td>270</td>
<td>216</td>
<td>162</td>
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<td>320</td>
<td>240</td>
</tr>
<tr>
<td>350</td>
<td>350</td>
<td>250</td>
</tr>
</tbody>
</table>

Definitions:

- \( C = \) Throw distance
- \( H = \) Image Height (size)
- \( W = \) Image Width

Note: Tilting the front of the projector up or down by more than 45° from level could reduce lamp life by up to 20%.
Formulas: 16:10 Aspect Ratio (PA550W—WXGA)

The Projection Formulas use the image width for calculation. Image width is the same for all aspect ratios, only vertical image size varies. For proper projector placement, determine the image width for a desired screen size. Use the Screen Formulas below to calculate all screen dimensions. Plug in the image width for “W” in the Projection Formulas.

Refer to the diagrams and charts for popular screen sizes on page 2 and 3:

### Projection Formulas:

- **NP11FL:**
  \[ C = 0.819W - 1.354 \]

- **NP12ZL:**
  \[ C(Wide) = 1.203W - 1.794 \]
  \[ C(Tele) = 1.564W - 1.794 \]

- **NP13ZL:**
  \[ C(Wide) = 1.51W - 1.974 \]
  \[ C(Tele) = 3.014W - 1.972 \]

- **NP14ZL:**
  \[ C(Wide) = 3.005W - 4.844 \]
  \[ C(Tele) = 4.808W - 4.844 \]

- **NP15ZL:**
  \[ C(Wide) = 4.751W - 7.630 \]
  \[ C(Tele) = 7.221W - 7.630 \]

### Screen Formulas:

\[ W = \text{Image Width} \]
\[ H = \text{Image Height} \]
\[ C = \text{Throw distance} \]
\[ \text{Screen Diagonal} = W \times 16.868/16 \]

### Distance Chart for popular 16:10 Screens (WXGA)

<table>
<thead>
<tr>
<th>Screen Size (16:10)</th>
<th>Rear Lens [NP11FL]</th>
<th>[NP30ZL]</th>
<th>[NP12FL]</th>
<th>[NP12ZL]</th>
<th>[NP13FL]</th>
<th>[NP13ZL]</th>
<th>[NP14FL]</th>
<th>[NP14ZL]</th>
<th>[NP15FL]</th>
<th>[NP15ZL]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagonal</strong> (W)</td>
<td><strong>Width(W)</strong></td>
<td><strong>Height (H)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>inches</td>
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<td>34</td>
<td>21</td>
<td>26.49</td>
<td>25.9</td>
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<td>39.1</td>
<td>51.4</td>
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<td>40.42</td>
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<td>52.2</td>
<td>59.6</td>
<td>78.0</td>
<td>75.0</td>
<td>151.7</td>
<td>148.4</td>
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<td>36</td>
<td>45.33</td>
<td>44.5</td>
<td>58.5</td>
<td>66.8</td>
<td>87.4</td>
<td>84.1</td>
<td>169.8</td>
<td>166.4</td>
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<td>121.1</td>
<td>159.7</td>
<td>182.3</td>
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<td>111</td>
<td>142.3</td>
<td>141.3</td>
<td>186.1</td>
<td>212.3</td>
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<td>266.8</td>
<td>534.5</td>
<td>530.0</td>
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<td>163.3</td>
<td>162.3</td>
<td>213.5</td>
<td>243.6</td>
<td>317.3</td>
<td>306.1</td>
<td>612.9</td>
<td>608.2</td>
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<td>182.5</td>
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<td>683.3</td>
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<td>159</td>
<td>203.7</td>
<td>202.7</td>
<td>266.2</td>
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<td>271.4</td>
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<tr>
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<td>265</td>
<td>341.1</td>
<td>340.1</td>
<td>445.4</td>
<td>508.3</td>
<td>661.3</td>
<td>638.3</td>
<td>1276.0</td>
<td>1269.3</td>
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</tbody>
</table>
### Formulas: 16:10 Aspect Ratio (PA500U—WUXGA)

The Projection Formulas use the image width for calculation. Image width is the same for all aspect ratios, only vertical image size varies. For proper projector placement, determine the image width for a desired screen size. Use the Screen Formulas below to calculate all screen dimensions. Plug in the image width for “W” in the Projection Formulas.

Refer to the diagrams and charts for popular screen sizes on page 2 and 3:

#### Projection Formulas:

- **NP11FL:**
  \[ C = 0.807W - 1.354 \]
- **NP12ZL:**
  \[ C(Wide) = 1.185W - 1.794 \quad C(Tele) = 1.541W - 1.794 \]
- **NP13ZL:**
  \[ C(Wide) = 1.488W - 1.974 \quad C(Tele) = 2.970W - 1.972 \]
- **NP14ZL:**
  \[ C(Wide) = 2.961W - 4.844 \quad C(Tele) = 4.737W - 4.844 \]
- **NP15ZL:**
  \[ C(Wide) = 4.681W - 7.630 \quad C(Tele) = 7.115W - 7.630 \]
- **NP30ZL:**
  \[ C(Wide) = 0.808W - 1.537 \quad C(Tele) = 1.054W - 1.537 \]

#### Definitions:

- W = Image Width
- H = Image Height (size)
- C = Throw distance
- Screen Diagonal = W x 18.868/16

#### Distance Chart for popular 16:10 Screens (WUXGA)

<table>
<thead>
<tr>
<th>Screen Size (16:10)</th>
<th>Rear Lens</th>
<th>Zoom Lenses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NP11FL</td>
<td>NP30ZL</td>
</tr>
<tr>
<td>Diagonal Width (W)</td>
<td>0.8:1</td>
<td>0.79 - 1.04:1</td>
</tr>
<tr>
<td>Height (H)</td>
<td>inches</td>
<td>inches</td>
</tr>
<tr>
<td>40</td>
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<td>60</td>
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<td>212</td>
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<tr>
<td>500</td>
<td>424</td>
<td>265</td>
</tr>
</tbody>
</table>

Note: For screen sizes not indicated in projection tables, refer to formulas above respective charts.
Ceiling Mount Installation

Note: Lens Shift Feature is not available to NP11FL. This lens should only be used for “zero degree”/“no-offset” applications. See below.

Desktop Installation

Only for NP12ZL, NP13ZL, NP14ZL, NP15ZL and NP30ZL Lenses
Lens Shift Adjustable Range

Lens Shift Range for Desktop and Ceiling Mount Application
The diagram below shows the location of the image position in the lens. The lens can be shifted within the shaded area as shown using the normal projection position as a starting point.

Note: Lens shift feature is not available with NP11FL (rear lens). NP11FL should be used only for “zero degree” / “no-offset” applications.

Maximum Possible Range for NP12ZL, NP13ZL, NP14ZL, NP15ZL, NP30ZL:
- Towards ceiling/floor: 0.5H (0.6H for PA550W)
- Away from ceiling/floor: 0.1H
- Right: 0.3W
- Left: 0.3W
(W: width of projected image, H: height of projected image)

Note: Horizontal lens shift range for the PA500U is 0.15W at a 200” projected image with NP13ZL.
Cabinet Dimensions
The following diagrams show the cabinet dimensions for the PA500U/PA500X/PA550W/PA600X.
Dimensions are in inches. For millimeters multiply by 25.4.
Note: Dimensions below shown with the NP13ZL lens
Optional Terminal Cover (Part #: NP02CV)

NP13ZL & NP02CV

NP02CV

NP13ZL

Dimensions:
- Height: 17.99 in
- Width: 6.0 in
- Depth: 5.9 in
- Height of NP13ZL: 3.6 in
- Height of NP02CV: 4.0 in
Optional Lens Dimensions (NP11FL and NP12ZL)

NP11FL

NP12ZL
Optional Lens Dimensions (NP14ZL and NP15ZL)

NP14ZL

NP15ZL
Optional Ceiling Mount Dimensions (Part #: NP3250CM)
The following diagrams show ceiling mount dimensions for the NP3250CM. Dimensions are in inches. For millimeters multiply by 25.4.
PC Control Codes

<table>
<thead>
<tr>
<th>Function</th>
<th>Code Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER ON</td>
<td>02H 00H 00H 00H 00H 02H</td>
</tr>
<tr>
<td>POWER OFF</td>
<td>02H 01H 00H 00H 00H 03H</td>
</tr>
<tr>
<td>INPUT SELECT COMPUTER 1</td>
<td>02H 03H 00H 00H 02H 01H 01H 09H</td>
</tr>
<tr>
<td>INPUT SELECT COMPUTER 2</td>
<td>02H 03H 00H 00H 02H 01H 02H 0AH</td>
</tr>
<tr>
<td>INPUT SELECT COMPUTER 3</td>
<td>02H 03H 00H 00H 02H 01H 03H 0BH</td>
</tr>
<tr>
<td>INPUT SELECT HDMI</td>
<td>02H 03H 00H 00H 02H 01H 1AH 22H</td>
</tr>
<tr>
<td>INPUT SELECT DisplayPort</td>
<td>02H 03H 00H 00H 02H 01H 1BH 23H</td>
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<tr>
<td>INPUT SELECT VIDEO</td>
<td>02H 03H 00H 00H 02H 01H 06H 0EH</td>
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<tr>
<td>INPUT SELECT S-VIDEO</td>
<td>02H 03H 00H 00H 02H 01H 0BH 13H</td>
</tr>
<tr>
<td>INPUT SELECT VIEWER</td>
<td>02H 03H 00H 00H 02H 01H 1FH 27H</td>
</tr>
<tr>
<td>INPUT SELECT NETWORK</td>
<td>02H 03H 00H 00H 02H 01H 20H 28H</td>
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<tr>
<td>PICTURE MUTE ON</td>
<td>02H 10H 00H 00H 00H 12H</td>
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<tr>
<td>PICTURE MUTE OFF</td>
<td>02H 11H 00H 00H 00H 13H</td>
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<tr>
<td>SOUND MUTE ON</td>
<td>02H 12H 00H 00H 00H 14H</td>
</tr>
<tr>
<td>SOUND MUTE OFF</td>
<td>02H 13H 00H 00H 00H 15H</td>
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<tr>
<td>ON SCREEN MUTE ON</td>
<td>02H 14H 00H 00H 00H 16H</td>
</tr>
<tr>
<td>ON SCREEN MUTE OFF</td>
<td>02H 15H 00H 00H 00H 17H</td>
</tr>
</tbody>
</table>

ASPECT RATIO (4:3 Screen)

| 4:3                             | 03H 10H 00H 00H 05H 18H 00H 00H 00H 00H 00H 30H |
| LETTERBOX                       | 03H 10H 00H 00H 05H 18H 00H 00H 01H 00H 31H |
| WIDESCREEN                     | 03H 10H 00H 00H 05H 18H 00H 00H 02H 00H 32H |
| ZOOM                            | 03H 10H 00H 00H 05H 18H 00H 00H 03H 00H 33H |

ASPECT RATIO (RGB)

| 4:3 WINDOW                      | 03H 10H 00H 00H 05H 18H 00H 00H 00H 00H 00H 30H |
| 16:9                            | 03H 10H 00H 00H 05H 18H 00H 00H 02H 00H 32H |
| 5:4                             | 03H 10H 00H 00H 05H 18H 00H 00H 0BH 00H 3BH |
| 16:10                           | 03H 10H 00H 00H 05H 18H 00H 00H 0CH 00H 3CH |
| 15:9                            | 03H 10H 00H 00H 05H 18H 00H 00H 0DH 00H 3DH |

AUTO ADJUST                     | 02H 0FH 00H 00H 02H 05H 00H 18H |

Cable Connection

Communication Protocol:
- **Baud Rate:** 38400 bps (for cable lengths longer than 20’, it is recommended changing to 9600 bps in setup menu)
- **Data Length:** 8 bits
- **Parity:** No Parity
- **Stop Bit:** One bit
- **X on/off:** None
- **Communications:** Full duplex

PC Control Connector (D-Sub 9P)

**NOTE 1:** Pins 1, 4, 6, and 9 are used inside the projector.

**NOTE 2:** For long cable runs it is recommended to set communication speed within the projector to 9600 bps.

**NOTE 3:** Jumper “Request to Send” and “Clear to Send” together on both ends of the cable to simplify cable connection.