M353WS Installation Guide
Ceiling Mounted and Desktop

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Product Description
Type: 1 Chip DLP Projector
Dimensions: 14.5” (W) x 5.3” (H) x 11.5” (D)
Weight: 8.2 lbs
Resolution: 1280 x 800
Brightness: 3500 Lumens
BTU’s: 1208 BTU/hour
Fan Noise: 39 dB / 33dB @ 1 meter
Power Consumption: 354W (max)

Lens Specifications
Throw Ratio: 0.48:1 (for 100” diagonal)
Offset Angle: 40.8° (for 100” diagonal)
Screen Sizes: 60” - 150” diagonal (16:10)
Focal Length: 17.5mm – 29.0mm
F/#: 1.7 - 2.1
Manual Focus

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.
- All calculations are based on a 16:10 aspect ratio.
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary ±5%.

Formulas
The Projection Formulas use the image width for calculation. For proper projection placement, determine the image width for the desired screen size. Use the Screen Formulas below to calculate all screen dimensions. Plug in the width for “W” in the Projection Formulas.
Refer to the diagrams and charts for popular screen sizes on page 2:

Definitions:
W = Image Width
H = Image Height (size)
B = Vertical distance between lens center and screen center
C = Throw distance
D = Vertical distance between lens center and screen top
( screen bottom for desktop application)
α = Throw Angle

16:10 Screen Formulas:
W = H x 16/10
H = W x 10/16
Screen Diagonal = W x 18.868/16

Projection Formulas:
B = 0.405W - 0.0181
C = 0.473W – 1.819
D = 0.092W + 0.029
α = tan⁻¹(B/C)
Diagrams and Distance Charts

The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mounted

![Diagram of Ceiling Mounted Installation]

Desktop

![Diagram of Desktop Installation]

Distance Chart for popular 16:10 screens

<table>
<thead>
<tr>
<th>Diagonal (inches)</th>
<th>Width (W)</th>
<th>Height (H)</th>
<th>B (inches)</th>
<th>C (inches)</th>
<th>D (inches)</th>
<th>α (degrees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>51</td>
<td>32</td>
<td>21</td>
<td>22</td>
<td>5</td>
<td>42.8</td>
</tr>
<tr>
<td>70</td>
<td>59</td>
<td>37</td>
<td>24</td>
<td>26</td>
<td>5</td>
<td>42.5</td>
</tr>
<tr>
<td>79</td>
<td>67</td>
<td>42</td>
<td>27</td>
<td>30</td>
<td>6</td>
<td>42.2</td>
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<td>91</td>
<td>77</td>
<td>48</td>
<td>31</td>
<td>35</td>
<td>7</td>
<td>42.0</td>
</tr>
<tr>
<td>100</td>
<td>85</td>
<td>53</td>
<td>34</td>
<td>38</td>
<td>8</td>
<td>41.9</td>
</tr>
<tr>
<td>104</td>
<td>88</td>
<td>55</td>
<td>36</td>
<td>40</td>
<td>8</td>
<td>41.8</td>
</tr>
<tr>
<td>110</td>
<td>93</td>
<td>58</td>
<td>38</td>
<td>42</td>
<td>9</td>
<td>41.8</td>
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<tr>
<td>120</td>
<td>102</td>
<td>64</td>
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<td>46</td>
<td>9</td>
<td>41.7</td>
</tr>
<tr>
<td>130</td>
<td>110</td>
<td>69</td>
<td>45</td>
<td>50</td>
<td>10</td>
<td>41.6</td>
</tr>
<tr>
<td>140</td>
<td>119</td>
<td>74</td>
<td>48</td>
<td>54</td>
<td>11</td>
<td>41.5</td>
</tr>
<tr>
<td>150</td>
<td>127</td>
<td>79</td>
<td>51</td>
<td>58</td>
<td>12</td>
<td>41.4</td>
</tr>
</tbody>
</table>

Note: For screen sizes not indicated on the projection table, use the formulas on page 1.
Cabinet Dimensions

The following drawings show the cabinet dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.
Cabinet Dimensions (continued)
The following drawings show the cabinet dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.
Optional Ceiling Mount Dimensions (Model #: MP300CM)
The following drawings show the ceiling mount dimensions. Dimensions are in inches. For millimeters multiply by 25.4.

M300WS with Optional Ceiling Mount (Model #: MP300CM)
Input / Output Panel

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 COMPUTER1</td>
<td>02H 03H 00H 00H 02H 01H 01H 09H</td>
</tr>
<tr>
<td>INPUT SELECT COMPUTER2</td>
<td>02H 03H 00H 00H 02H 01H 02H 0AH</td>
</tr>
<tr>
<td>INPUT SELECT HDMI</td>
<td>02H 03H 00H 00H 02H 01H 1AH 22H</td>
</tr>
<tr>
<td>INPUT SELECT VIDEO</td>
<td>02H 03H 00H 00H 02H 01H 0EH 13H</td>
</tr>
<tr>
<td>INPUT SELECT S-VIDEO</td>
<td>02H 03H 00H 00H 02H 01H 1FH 27H</td>
</tr>
<tr>
<td>INPUT SELECT VIEWER</td>
<td>02H 03H 00H 00H 02H 01H 20H 28H</td>
</tr>
<tr>
<td>INPUT SELECT USB DISPLAY</td>
<td>02H 03H 00H 00H 02H 01H 22H 2AH</td>
</tr>
<tr>
<td>PICTURE MUTE ON</td>
<td>02H 10H 00H 00H 00H 12H</td>
</tr>
<tr>
<td>PICTURE MUTE OFF</td>
<td>02H 11H 00H 00H 00H 13H</td>
</tr>
<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>
</tr>
<tr>
<td>PROJECTOR INFORMATION REQUEST</td>
<td>00H BFH 00H 00H 01H 02H C2H</td>
</tr>
<tr>
<td>ERROR STATUS REQUEST</td>
<td>00H 88H 00H 00H 00H 88H</td>
</tr>
<tr>
<td>INFORMATION REQUEST</td>
<td>03H 8AH 00H 00H 00H 8DH</td>
</tr>
</tbody>
</table>

Note: Contact your NEC rep for codes not listed.

Cable Connection

Communication Protocol:
- Baud Rate: 38400 bps
- 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.