

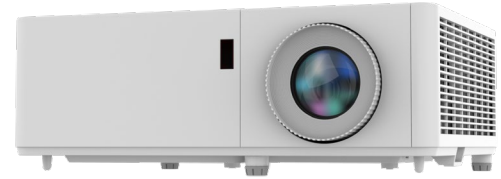
M380HL/M430WL Installation Guide

Ceiling Mounted and Desktop

Rev 1.1

Contents

| | |
|--|--------|
| Product Description, Lens Specs, Notes | Pg 1 |
| Formulas, Diagrams, Distance Charts | Pg 2-4 |
| Cabinet Dimensions | Pg 5-6 |
| Ceiling Mount | Pg 7 |
| Control Codes | Pg 8 |



Product Description

| | | | |
|---------------------------|---|--------------------|--|
| Type: | 1-Chip DLP Projector 0.65" DMD | Dimensions: | 13.3" (W) x 4.7" (H) x 10.4" (D) |
| Resolution: | M380HL: 1920 x 1080 M430WL: 1280 x 800 | Weight: | 9.7 lbs |
| Fan Noise: | 34dB / 31dB @ 1 meter | Brightness: | M380HL: 3800 Lumens M430WL: 4300 Lumens |
| Power Consumption: | 250W (max) / 240W (typical) | BTU's: | 853 BTU/hour |

Lens Specifications

| | | | |
|----------------------|--|---|--|
| Throw Ratio: | M380HL: 1.4 – 2.2:1 (for 100" diagonal) M430WL: 1.5 – 2.3:1 (for 100" diagonal) | Focal Length: | M380HL: 19.2mm – 23.0mm M430WL: 17.4mm – 29.0mm |
| Offset Angle: | M380HL: 7.7° - 15.4° (for 100" diagonal) M430WL: 7.6° - 15.4° (for 100" diagonal) | F/#: | 2.5 – 3.26 |
| Screen Sizes: | 30" - 300" diagonal (16:9) 30" - 300" diagonal (16:10) | Manual Focus/Manual Zoom/Manual Lens Shift | |

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 16:9 or 16:10 aspect ratio.
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary $\pm 5\%$.

M380HL/M430WL Installation Guide

Ceiling Mounted and Desktop

Rev 1.1

Formulas: 16:9 Aspect Ratio

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:

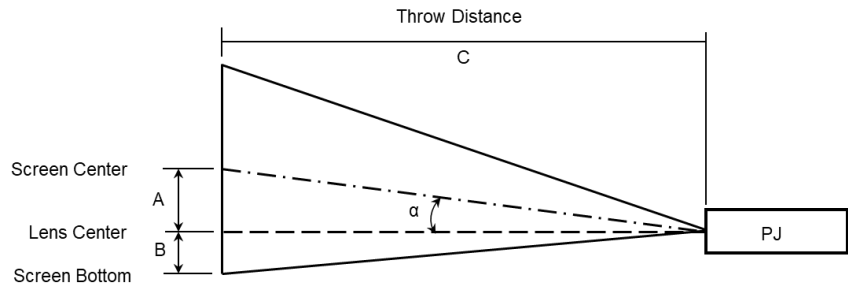
- W = Image Width
- H = Image Height (size)
- B = Vertical distance between lens center and screen center
- C = Throw distance
- D = Vertical distance between lens center and screen top
(screen bottom for desktop application)

16:9 1080p Screen Formulas:

- W = Image Width = H x 16/9
- H = Image Height = W x 9/16
- Screen Diagonal = W x 18.358/16

Projection Formulas:

- C (wide) = 1.4W
- C (tele) = 2.24W
- Vertical Lens Shift Max (Down) = -0.54H
- Vertical Lens Shift Max (Up) = 0.69H
- α (wide) = $\tan^{-1}(B/C(\text{wide}))$
- α (tele) = $\tan^{-1}(B/C(\text{tele}))$



Note: For screen sizes not indicated on the projection

| Screen Size (16:9) | | | C wide - tele | | Vertical Lens Shift Range (A) | | Vertical Lens Shift Range (B) | | α wide - tele (Lens Shift Min) | | α wide - tele (Lens Shift Max) | |
|--------------------|--------------------|----------------------|------------------|---------|----------------------------------|---------|----------------------------------|--------|---|-------|---|-------|
| Diagonal inches | Width(W) inches | Height (H) inches | inches | | inches | | inches | | degrees | | degrees | |
| 30 | 26 | 15 | 36.6 | - 58.6 | 7.9 | - 10.1 | 0.6 | - 2.8 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 40 | 35 | 20 | 48.8 | - 78.1 | 10.6 | - 13.5 | 0.8 | - 3.7 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 50 | 44 | 25 | 61.0 | - 97.6 | 13.2 | - 16.9 | 1.0 | - 4.7 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 60 | 52 | 29 | 73.2 | - 117.1 | 15.9 | - 20.3 | 1.2 | - 5.6 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 70 | 61 | 34 | 85.4 | - 136.7 | 18.5 | - 23.7 | 1.4 | - 6.5 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 80 | 70 | 39 | 97.6 | - 156.2 | 21.2 | - 27.1 | 1.6 | - 7.5 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 90 | 78 | 44 | 109.8 | - 175.7 | 23.8 | - 30.4 | 1.8 | - 8.4 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 100 | 87 | 49 | 122.0 | - 195.2 | 26.5 | - 33.8 | 2.0 | - 9.3 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 120 | 105 | 59 | 146.4 | - 234.3 | 31.8 | - 40.6 | 2.4 | - 11.2 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 150 | 131 | 74 | 183.0 | - 292.8 | 39.7 | - 50.7 | 2.9 | - 14.0 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 180 | 157 | 88 | 219.6 | - 351.4 | 47.7 | - 60.9 | 3.5 | - 16.8 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 200 | 174 | 98 | 244.0 | - 390.5 | 52.9 | - 67.7 | 3.9 | - 18.6 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 240 | 209 | 118 | 292.8 | - 468.5 | 63.5 | - 81.2 | 4.7 | - 22.4 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 270 | 235 | 132 | 329.4 | - 527.1 | 71.5 | - 91.3 | 5.3 | - 25.1 | 12.2 | - 7.7 | 15.5 | - 9.8 |
| 300 | 261 | 147 | 366.1 | - 585.7 | 79.4 | - 101.5 | 5.9 | - 27.9 | 12.2 | - 7.7 | 15.5 | - 9.8 |

M380HL/M430WL Installation Guide

Ceiling Mounted and Desktop

Rev 1.1

Formulas: 16:10 Aspect Ratio

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:

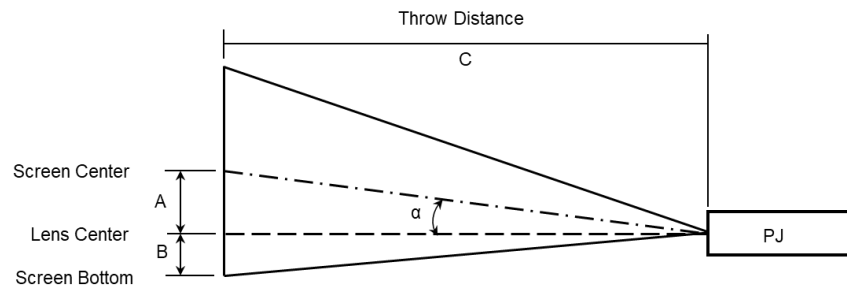
- W = Image Width
- H = Image Height (size)
- B = Vertical distance between lens center and screen center
- C = Throw distance
- D = Vertical distance between lens center and screen top
(screen bottom for desktop application)

16:10 WXGA Screen Formulas:

- W = Image Width = H x 16/10
- H = Image Height = W x 10/16
- Screen Diagonal = W x 18.868/16

Projection Formulas:

- C (wide) = 1.47W
- C (tele) = 2.35W
- Vertical Lens Shift Max (Down) = -0.5H
- Vertical Lens Shift Max (Up) = 0.65H
- α (wide) = \tan^{-1} (B/C(wide))
- α (tele) = \tan^{-1} (B/C(tele))



Note: For screen sizes not indicated on the projection

| Screen Size (16:10) | | | C wide - tele inches | Vertical Lens Shift Range (A) | | Vertical Lens Shift Range (B) | | α wide - tele (Lens Shift Min) degrees | α wide - tele (Lens Shift Max) degrees | | | | | | | | |
|---------------------|--------------------|----------------------|----------------------------|----------------------------------|-------|----------------------------------|-----|--|--|---|------|------|---|-----|------|---|-----|
| Diagonal inches | Width(W) inches | Height (H) inches | | Min | Max | Min | Max | | | | | | | | | | |
| 30 | 25 | 16 | 37.4 | - | 59.8 | 7.9 | - | 10.3 | 0.0 | - | 2.4 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 40 | 34 | 21 | 49.9 | - | 79.7 | 10.6 | - | 13.8 | 0.0 | - | 3.2 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 50 | 42 | 26 | 62.3 | - | 99.6 | 13.2 | - | 17.2 | 0.0 | - | 4.0 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 60 | 51 | 32 | 74.8 | - | 119.6 | 15.9 | - | 20.7 | 0.0 | - | 4.8 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 70 | 59 | 37 | 87.3 | - | 139.5 | 18.5 | - | 24.1 | 0.0 | - | 5.6 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 80 | 68 | 42 | 99.7 | - | 159.4 | 21.2 | - | 27.6 | 0.0 | - | 6.4 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 90 | 76 | 48 | 112.2 | - | 179.4 | 23.8 | - | 31.0 | 0.0 | - | 7.2 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 100 | 85 | 53 | 124.7 | - | 199.3 | 26.5 | - | 34.4 | 0.0 | - | 7.9 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 120 | 102 | 64 | 149.6 | - | 239.1 | 31.8 | - | 41.3 | 0.0 | - | 9.5 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 150 | 127 | 79 | 187.0 | - | 298.9 | 39.7 | - | 51.7 | 0.0 | - | 11.9 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 180 | 153 | 95 | 224.4 | - | 358.7 | 47.7 | - | 62.0 | 0.0 | - | 14.3 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 200 | 170 | 106 | 249.3 | - | 398.6 | 53.0 | - | 68.9 | 0.0 | - | 15.9 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 240 | 204 | 127 | 299.2 | - | 478.3 | 63.6 | - | 82.7 | 0.0 | - | 19.1 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 270 | 229 | 143 | 336.6 | - | 538.1 | 71.5 | - | 93.0 | 0.0 | - | 21.5 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |
| 300 | 254 | 159 | 374.0 | - | 597.8 | 79.5 | - | 103.3 | 0.0 | - | 23.8 | 12.0 | - | 7.6 | 15.4 | - | 9.8 |

M380HL/M430WL Installation Guide

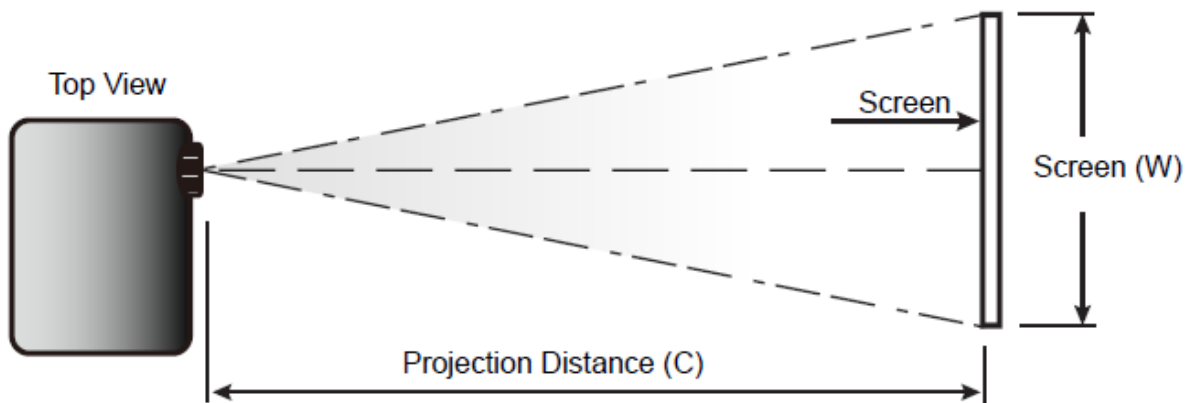
Ceiling Mounted and Desktop

Rev 1.1

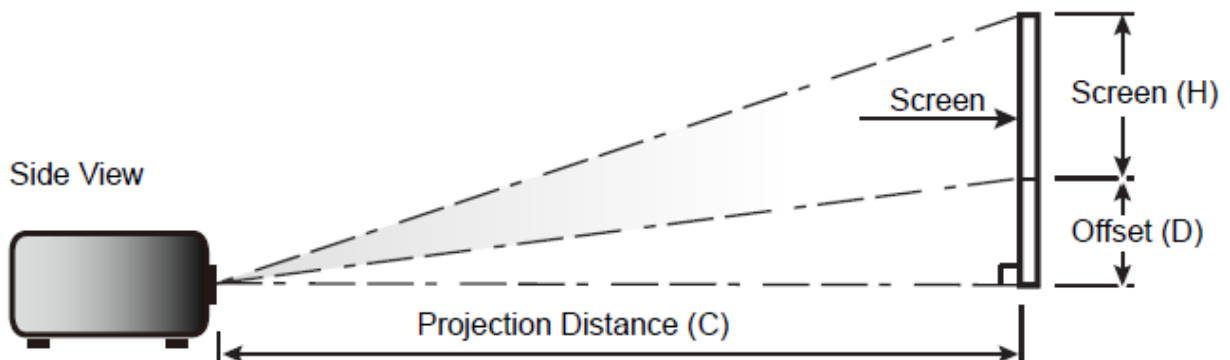
Diagrams (M430WL/M380HL)

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

Top View



Side View

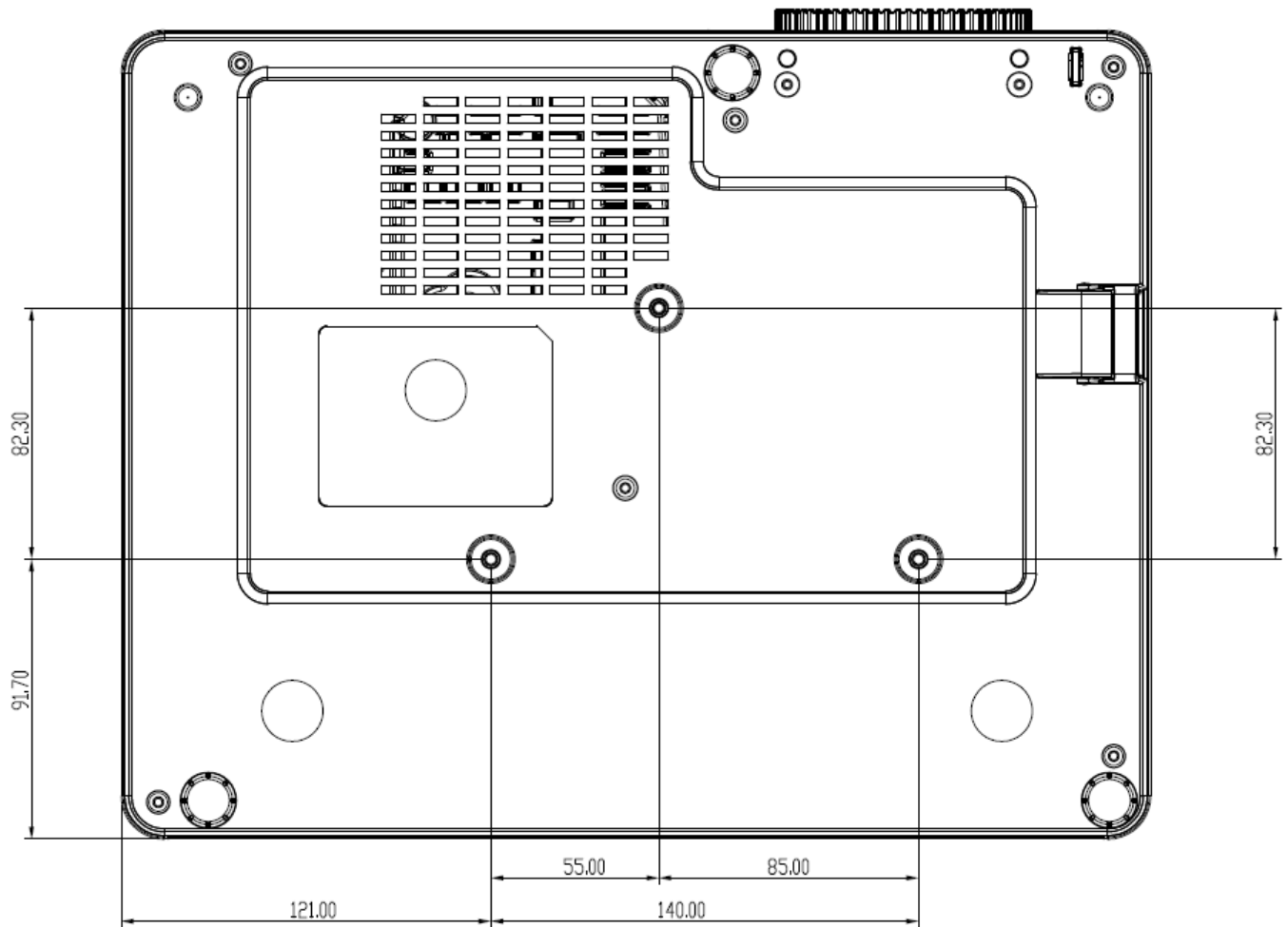


M380HL/M430WL Installation Guide

Ceiling Mounted and Desktop

Cabinet Dimensions

The following drawings show the cabinet dimensions.
Dimensions are in millimeters. For inches divide by 25.4.

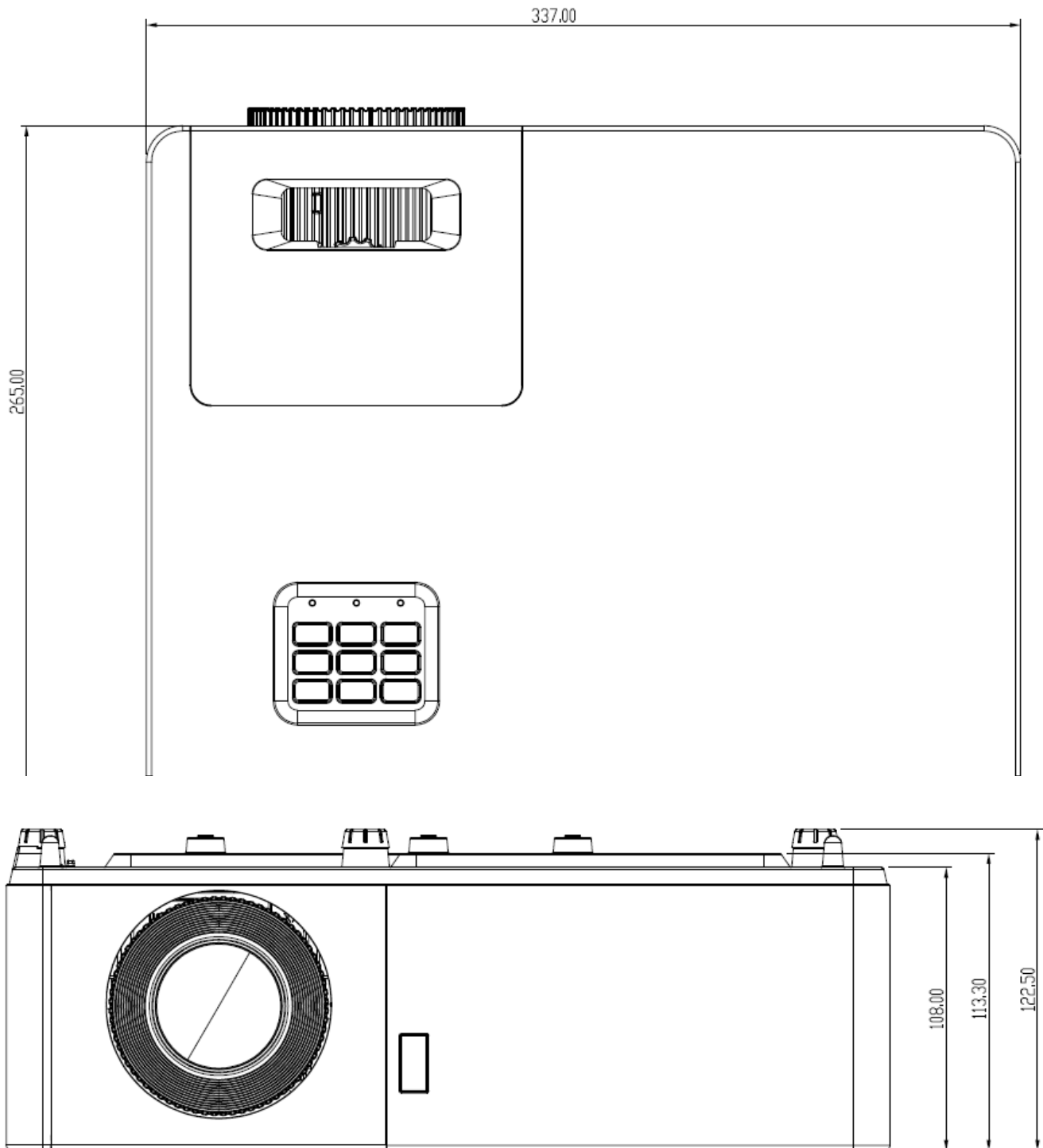


M380HL/M430WL Installation Guide

Ceiling Mounted and Desktop

Cabinet Dimensions (continued)

The following drawings show the cabinet dimensions.
Dimensions are in millimeters. For inches divide by 25.4.

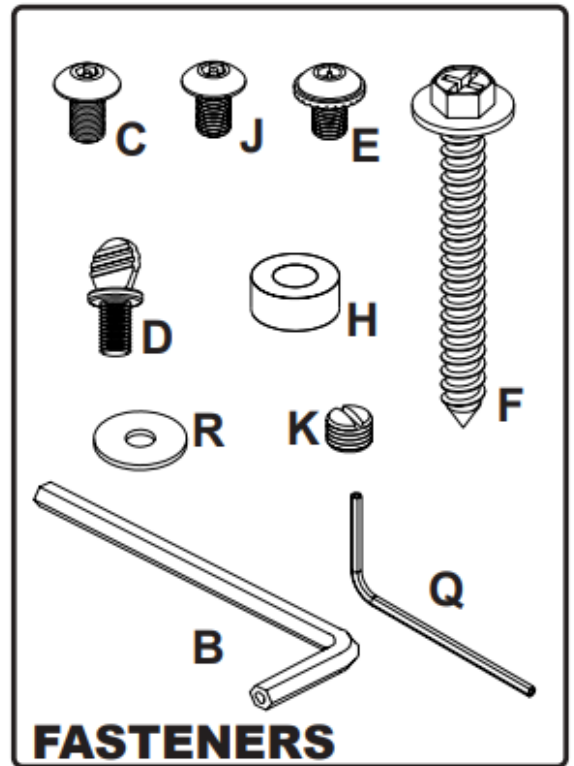
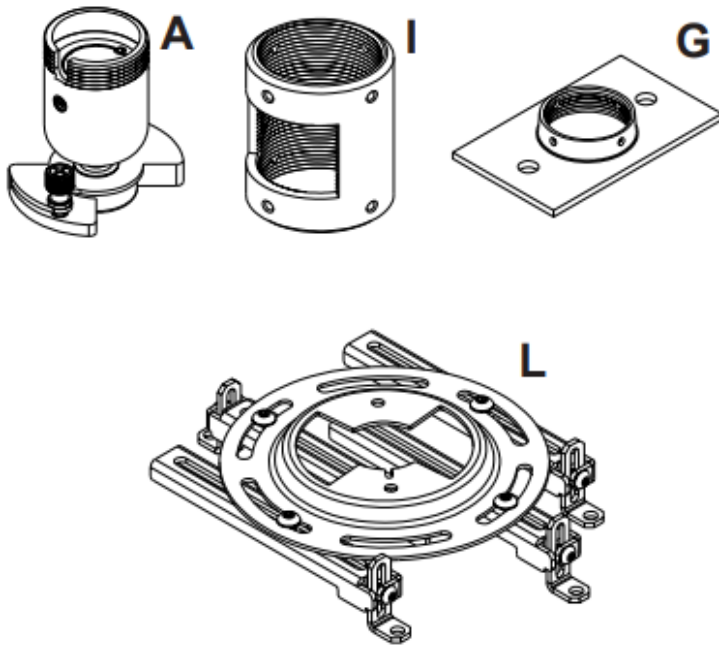


M380HL/M430WL Installation Guide

Ceiling Mounted and Desktop

Optional Universal Ceiling Mount Dimensions (Model #: NP01UCM)

The following drawings show the ceiling mount dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.



Note: Actual parts may appear slightly different than illustrated.

M380HL/M430WL Installation Guide Ceiling Mounted and Desktop

Input / Output Panel



PC Control Codes

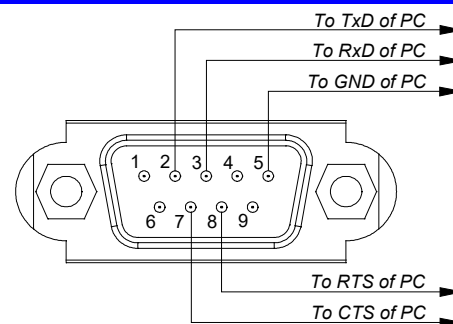
| Function | Code Data |
|----------------------------------|---------------------------------|
| POWER ON | 02H 00H 00H 00H 00H 02H |
| POWER OFF | 02H 01H 00H 00H 00H 03H |
| INPUT SELECT COMPUTER1 | 02H 03H 00H 00H 02H 01H 01H 09H |
| INPUT SELECT HDMI 1 | 02H 03H 00H 00H 02H 01H 1AH 22H |
| INPUT SELECT HDMI 2 | 02H 03H 00H 00H 02H 01H 1BH 23H |
| INPUT SELECT VIDEO | 02H 03H 00H 00H 02H 01H 06H 0EH |
| INPUT SELECT VIEWER (USB-A) | 02H 03H 00H 00H 02H 01H 1FH 27H |
| INPUT SELECT NETWORK | 02H 03H 00H 00H 02H 01H 20H 28H |
| INPUT SELECT USB DISPLAY (USB-B) | 02H 03H 00H 00H 02H 01H 22H 2AH |
| PICTURE MUTE ON | 02H 10H 00H 00H 00H 12H |
| PICTURE MUTE OFF | 02H 11H 00H 00H 00H 13H |
| SOUND MUTE ON | 02H 12H 00H 00H 00H 14H |
| SOUND MUTE OFF | 02H 13H 00H 00H 00H 15H |
| PROJECTOR INFORMATION REQUEST | 00H BFH 00H 00H 01H 02H C2H |
| ERROR STATUS REQUEST | 00H 88H 00H 00H 00H 88H |
| INFORMATION REQUEST | 03H 8AH 00H 00H 00H 8DH |

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.