MT1065/1075 Installation Guide

Used with 4:3 and 16:9 screens

v3.1

Contents

Product Description

Type:	3 panel LCD projector, 1.0" p-Si TFT w/MLA	Brightness:	MT1065: 3400 ANSI lumens MT1075: 4200 ANSI lumens
Resolution:	1024 x 768 (4:3) 1024 x 576 (16:9)	Dimensions:	13.14"(W) x 5.48"(H) x 12.71"(D)
		Weight:	13.0 lbs

Lens Specifications

Throw Ratio: 1.5 - 2.1:1(for 100" diagonal)
Offset Angle: 10.4°-13.9° (for 100" diagonal)
Screen Sizes: 25"-500" diagonal (4:3)

Focal Length: 30.8mm – 41.6mm
F/#: 1.74 – 2.18
Power Zoom / Power Focus (w/autofocus)

Screen/Aspect Ratio

Both 4:3 and 16:9 screens are fully supported with proper aspect ratio control for both type sources using NEC developed scaling technology. By selecting the screen type in the menus, Aspect Ratio control is reconfigured for that screen type.

- For a 4:3 screen; select "4:3" in the "Screen" menu for proper aspect ratio control of 4:3 and 16:9 sources.
- For a 16:9 screen; select "16:9" in the "Screen" menu for proper aspect ratio control of 4:3 and 16:9 sources.
  *Factory default "Screen" setting is "4:3".

Notes

- For screen sizes not indicated on the projection charts, use the formulas below.
- If a value in a chart does not match the results of the formulas, use the values in the chart.
- The ceiling must be strong enough to support the projector and the installation must be in accordance with any local building codes.
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary ±5%.

Formulas

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.

Definitions:
W = Image Width
H = Image Height (Size)
B = Vertical distance between lens center and screen center
C = Throw distance
α = Projection angle

Projection Formulas:
B = 0.375W
C (wide) = 1.5419W – 1.922
C (tele) = 2.0738W – 1.922
α (wide) = $\tan^{-1}$ (B/C(wide))
α (tele) = $\tan^{-1}$ (B/C(tele))

4:3 Screen Formulas:
W = H x 4/3
H = W x 3/4
Screen Diagonal = W x 5/4

16:9 Screen Formulas:
W = H x 16/9
H = W x 9/16
Screen Diagonal = W x 18.358/16

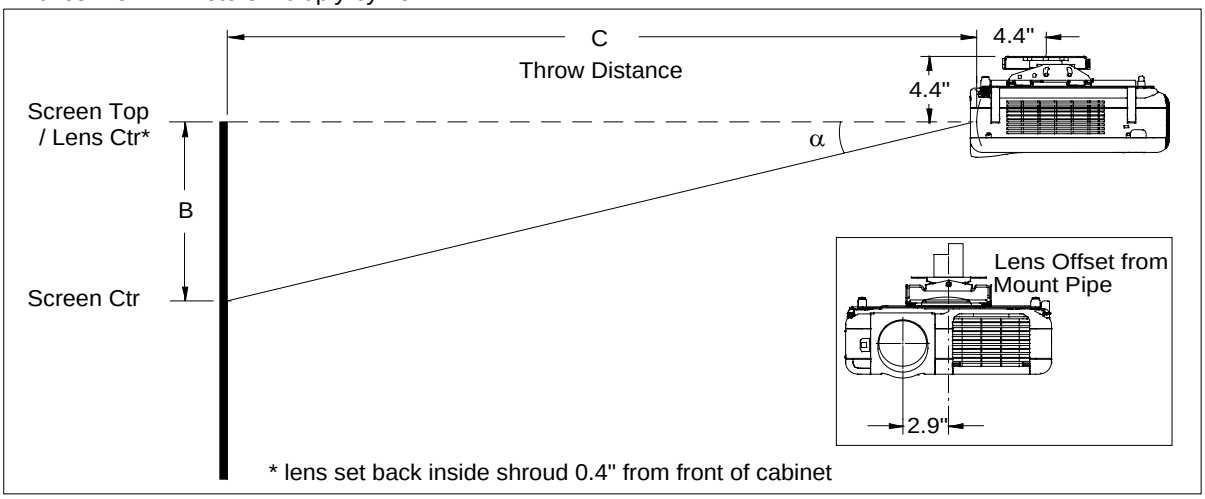
Vertical Position for a 16:9 screen: *The Vertical Position adjustment moves the 16:9 image up and down in the unused portion of the 4:3 panel. This adjustment is only available when the projector is set for '16:9' in the 'Screen' menu. The range of Vertical Position is dependent on aspect ratio and 3D Reform used. If 3D Reform is not used, the approximate range of Vertical Position is +/-0.167H (H=Screen Height) when using a 16:9 screen.*

Note: *To avoid premature lamp failure, do not tilt the front of the projector up or down by more than 75° from level. Tilting the front of the projector up or down from 15° to 75° might reduce lamp life by up to 25%.*

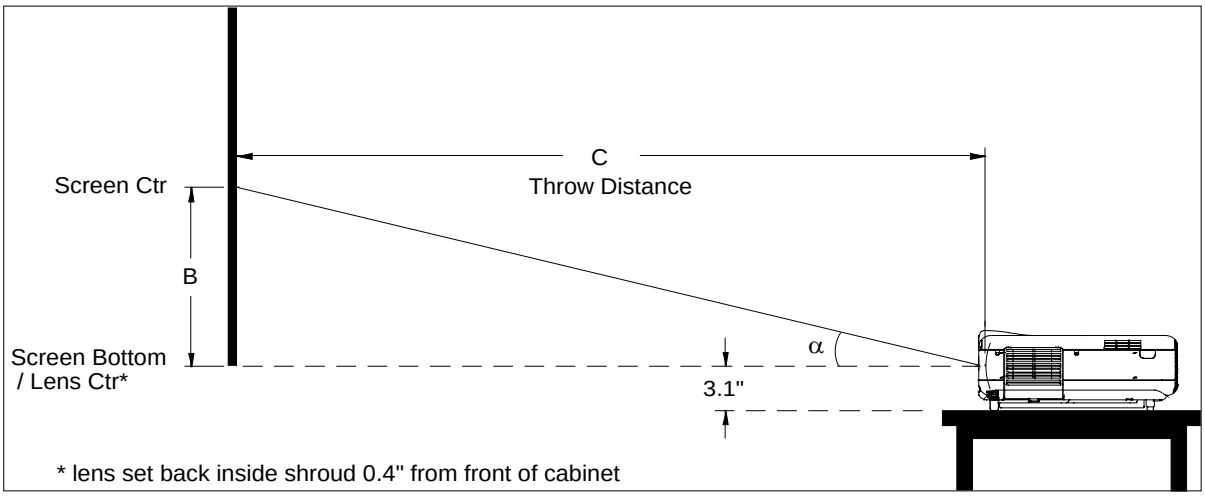
4:3 Screens

The following diagrams show the relationship between projector position and the screen. Refer to the chart below for data. Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mounted



Desktop



Note: *To avoid premature lamp failure, do not tilt the front of the projector up or down by more than 75° from level. Tilting the front of the projector up or down from 15° to 75° might reduce lamp life by up to 25%.*

Distance chart for popular 4:3 screens

Screen Size (4:3)			**B**	**C**	**α**
Diag	W	H		wide - tele	wide - tele
inches	inches	inches	inches	inches	degrees
25	20	15	7.5	NA - 39.6	NA - 10.7
60	48	36	18.0	72.1 - 97.6	14.0 - 10.4
72	57.6	43.2	21.6	86.9 - 117.5	14.0 - 10.4
84	67.2	50.4	25.2	101.7 - 137.4	13.9 - 10.4
90	72	54	27.0	109.1 - 147.4	13.9 - 10.4
100	80	60	30.0	121.4 - 164.0	13.9 - 10.4
120	96	72	36.0	146.1 - 197.2	13.8 - 10.3
150	120	90	45.0	183.1 - 246.9	13.8 - 10.3
180	144	108	54.0	220.1 - 296.7	13.8 - 10.3
200	160	120	60.0	244.8 - 329.9	13.8 - 10.3
250	200	150	75.0	306.5 - 412.8	13.8 - 10.3
300	240	180	90.0	368.1 - 495.8	13.7 - 10.3
350	280	210	105.0	429.8 - 578.7	13.7 - 10.3
400	320	240	120.0	491.5 - NA	13.7 - NA
450	360	270	135.0	553.2 - NA	13.7 - NA
500	400	300	150.0	614.8 - NA	13.7 - NA

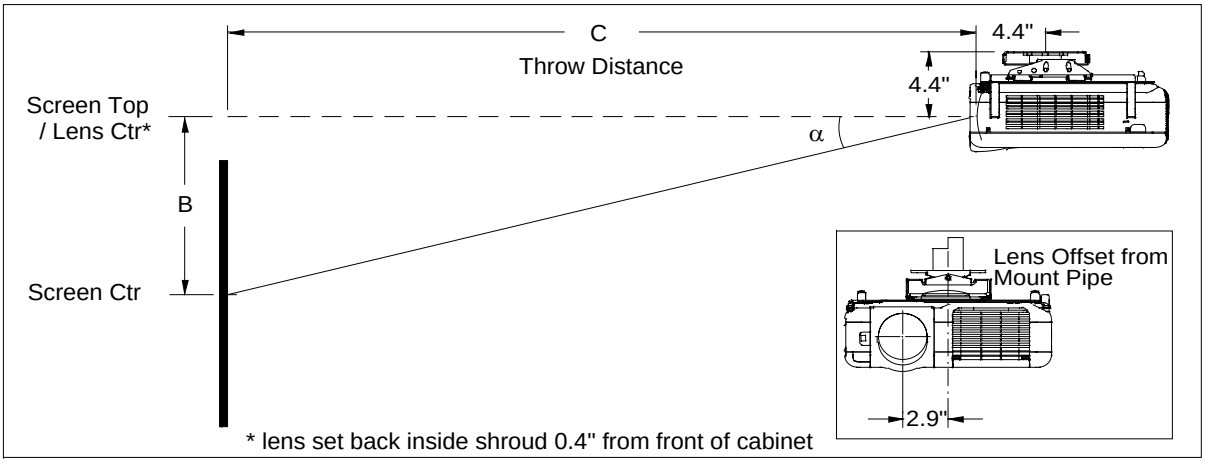
Note: *For screen sizes not indicated on the chart, use the formulas on page 1.*

Note: *"NA" means it is outside the lens range for that part of the zoom. Refer to "Screen Sizes" in Lens Specifications on Page 1.*

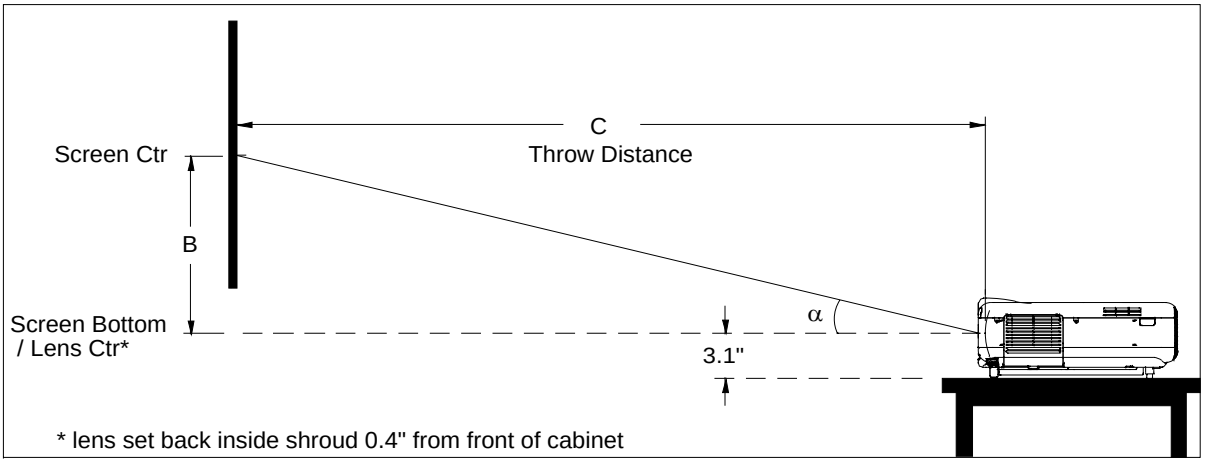
16:9 Screens

The following diagram shows the relationship between projector position and the screen. Refer to the chart below for data. Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mounted



Desktop



Note: *To avoid premature lamp failure, do not tilt the front of the projector up or down by more than 75° from level. Tilting the front of the projector up or down from 15° to 75° might reduce lamp life by up to 25%.*

Distance chart for popular 16:9 screens

Vertical Position for a 16:9 screen
The Vertical Position adjustment moves the 16:9 image up and down in the unused portion of the 4:3 panel. This adjustment is only available when the projector is set for '16:9' in the 'Screen' menu. The range of Vertical Position is dependent on aspect ratio and 3D Reform used. If 3D Reform is not used, the approximate range of Vertical Position is +/-0.167H (H=Screen Height) when using a 16:9 screen.

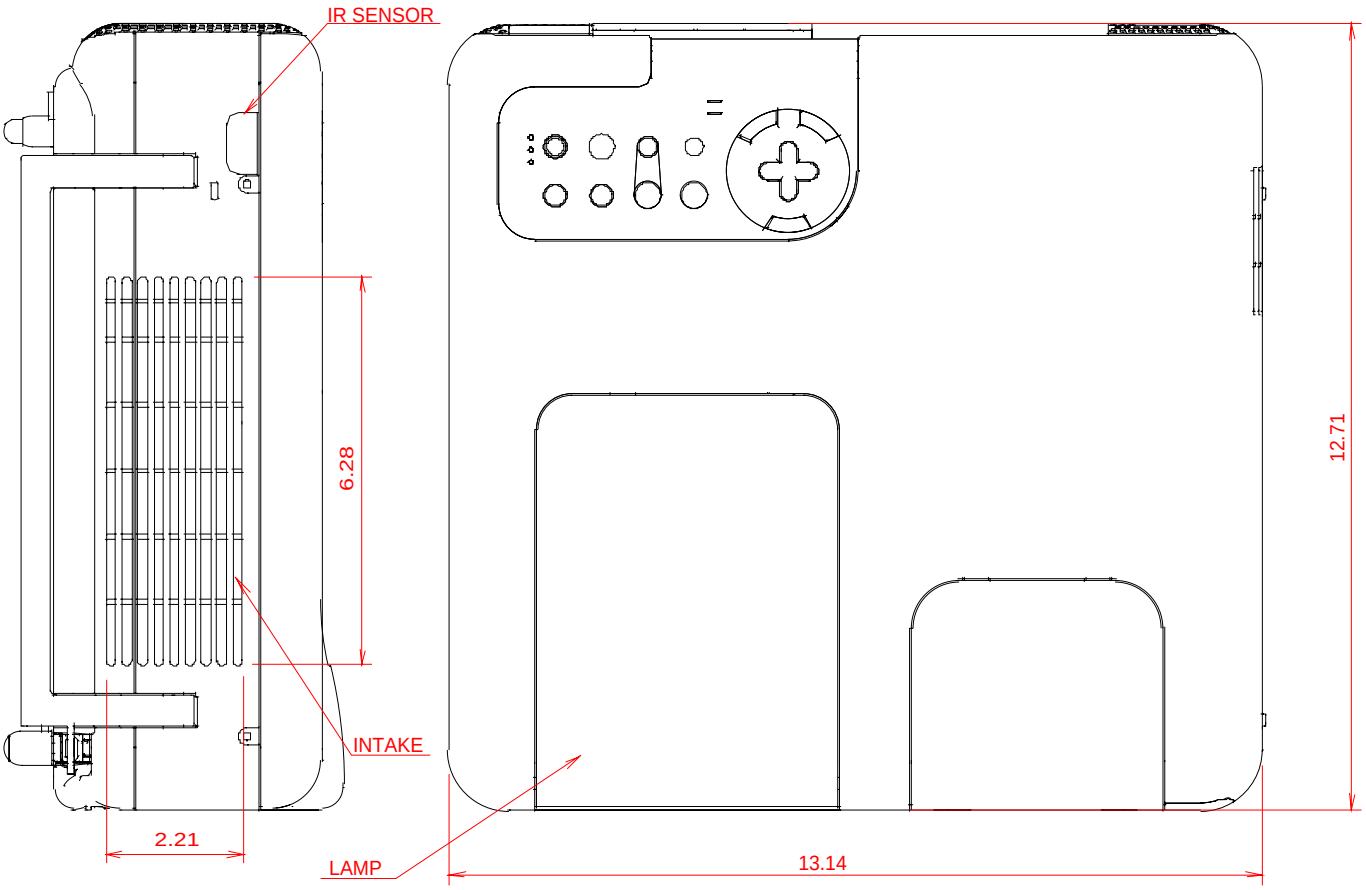
Note: *For screen sizes not indicated on the chart, use the formulas on page 1.*

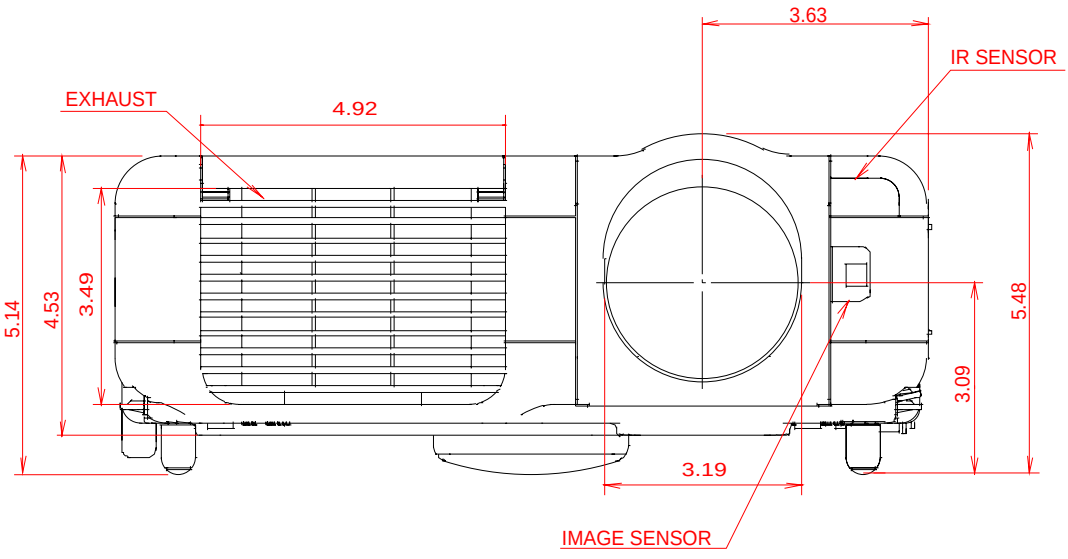
Note: *"NA" means it is outside the lens range for that part of the zoom. Refer to "Screen Sizes" in Lens Specifications on Page 1.*

Screen Size (16:9)			**B**	**C**	**α**
Diag	W	H		wide - tele	wide - tele
inches	inches	inches	inches	inches	degrees
82.6	72	40.5	27.0	109.1 - 147.4	13.9 - 10.4
92	80	45	30.0	121.4 - 164.0	13.9 - 10.4
100	87	49	32.6	132.2 178.5	13.9 10.4
106	92	52	34.5	139.9 - 188.9	13.8 - 10.4
110	96	54	36.0	146.1 - 197.2	13.8 - 10.3
119	104	58.5	39.0	158.4 - 213.8	13.8 - 10.3
123	107	60	40.1	163.1 - 220.0	13.8 - 10.3
133	116	65	43.5	176.9 - 238.6	13.8 - 10.3
135	118	66	44.3	180.0 - 242.8	13.8 - 10.3
159.5	139	78	52.1	212.4 - 286.3	13.8 - 10.3
161	140	79	52.5	213.9 - 288.4	13.8 - 10.3
229.5	200	112.5	75.0	306.5 - 412.8	13.8 - 10.3
275	240	135	90.0	368.1 - 495.8	13.7 - 10.3
321	280	157.5	105.0	429.8 - 578.7	13.7 - 10.3
367	320	180	120.0	491.5 - NA	13.7 - NA
459	400	225	150.0	614.8 - NA	13.7 - NA

Cabinet Dimensions

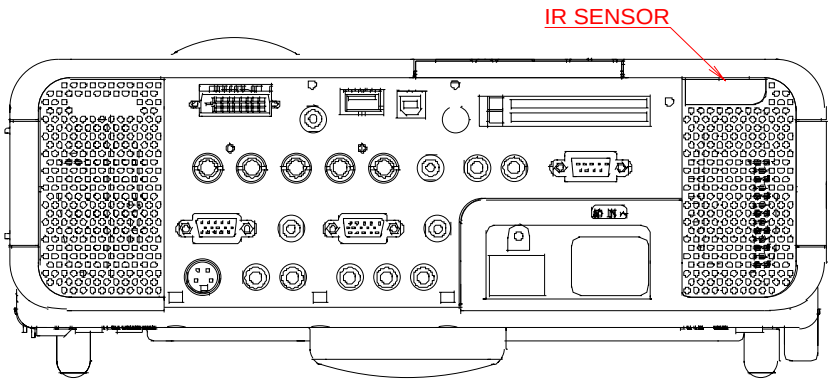
The following drawings show the cabinet dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.

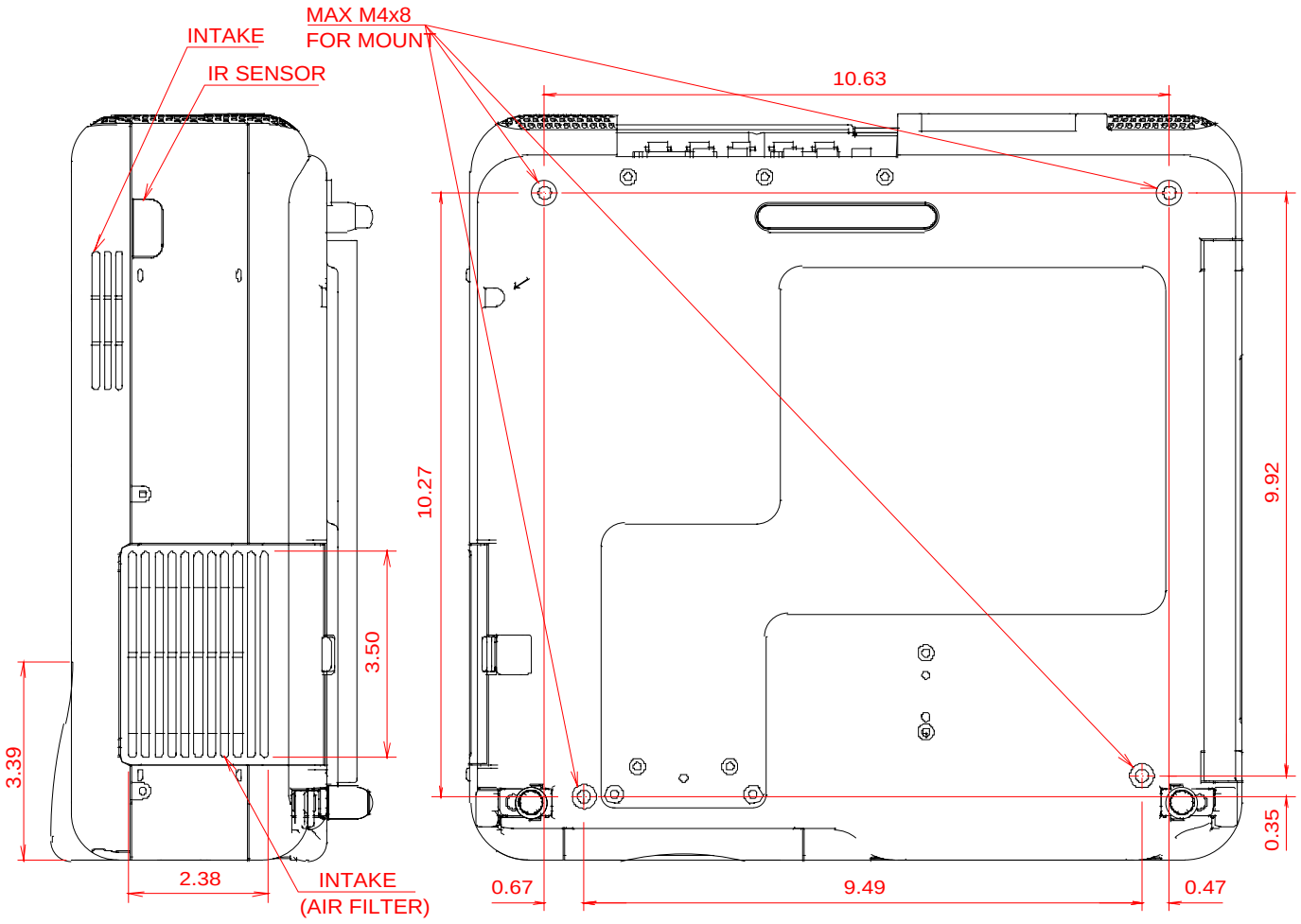




Cabinet Dimensions (continued)

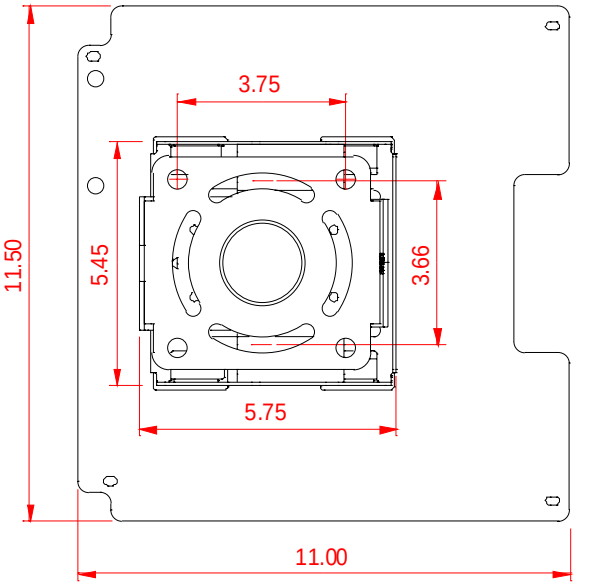
The following drawings show the cabinet dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.

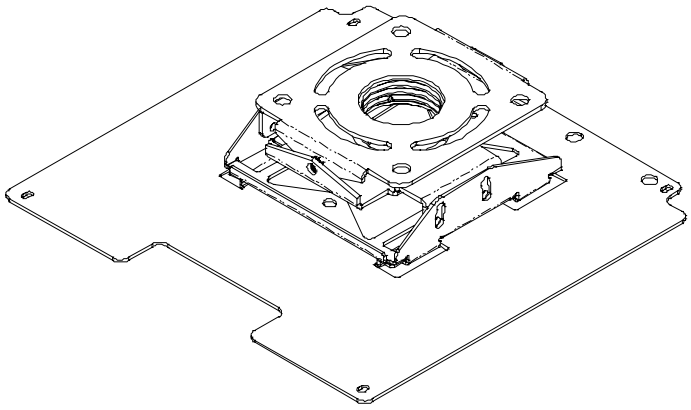


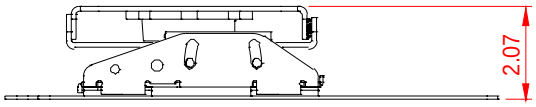


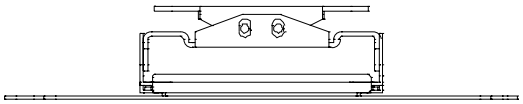
Optional Ceiling Mount Dimensions (Model #: MT60CM)

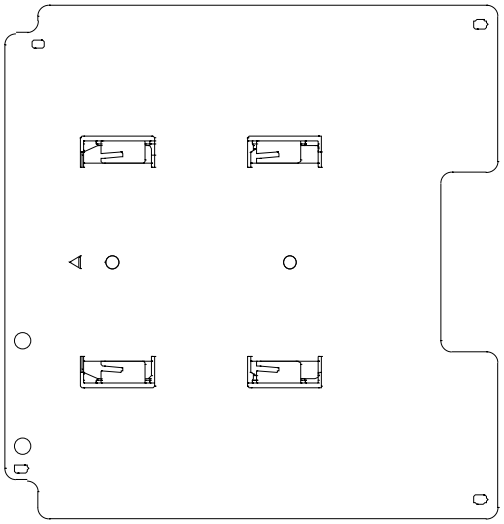
The following drawings show ceiling mount dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.



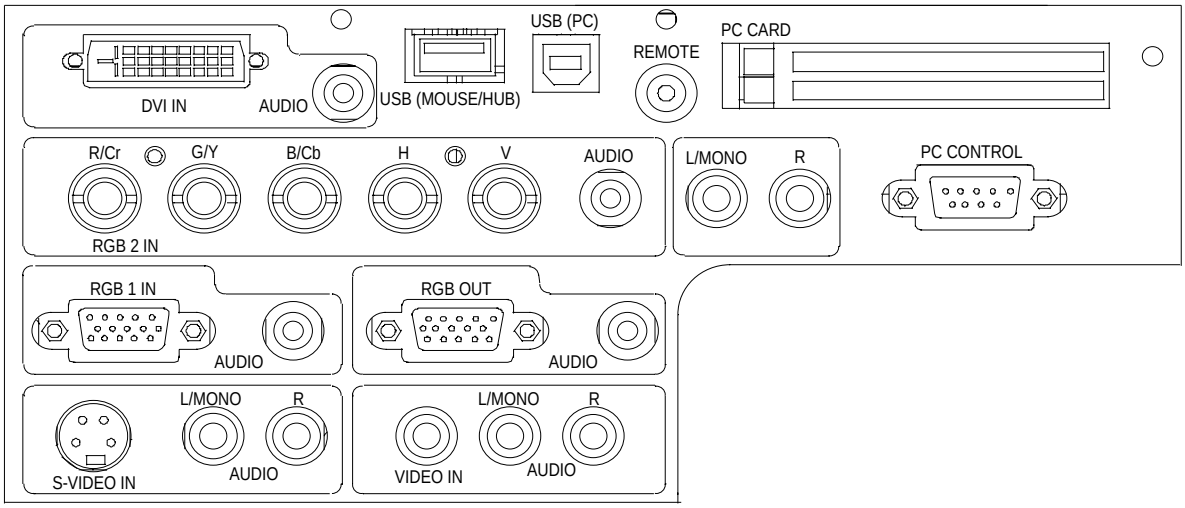








Input Panel



Control Codes

Function		Code Data										
POWER ON		02H	00H	00H	00H	00H	02H					
POWER OFF		02H	01H	00H	00H	00H	03H					
INPUT SELECT RGB 1		02H	03H	00H	00H	02H	01H	01H	09H			
INPUT SELECT RGB 2		02H	03H	00H	00H	02H	01H	02H	0AH			
INPUT SELECT VIDEO		02H	03H	00H	00H	02H	01H	06H	0EH			
INPUT SELECT S-VIDEO		02H	03H	00H	00H	02H	01H	0BH	13H			
INPUT SELECT DVI (DIGITAL)		02H	03H	00H	00H	02H	01H	1AH	22H			
INPUT SELECT VIEWER		02H	03H	00H	00H	02H	01H	1FH	27H			
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					
ON SCREEN MUTE ON		02H	14H	00H	00H	00H	16H					
ON SCREEN MUTE OFF		02H	15H	00H	00H	00H	17H					
ASPECT RATIO (4:3 Screen)	4:3	03H	10H	00H	00H	05H	18H	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
	Crop	03H	10H	00H	00H	05H	18H	00H	00H	03H	00H	33H
ASPECT RATIO (16:9 Screen)	4:3 Window	03H	10H	00H	00H	05H	18H	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
	4:3 Fill	03H	10H	00H	00H	05H	18H	00H	00H	04H	00H	34H
AUTO ADJUST		02H	0FH	00H	00H	02H	DDH	00H	F0H			

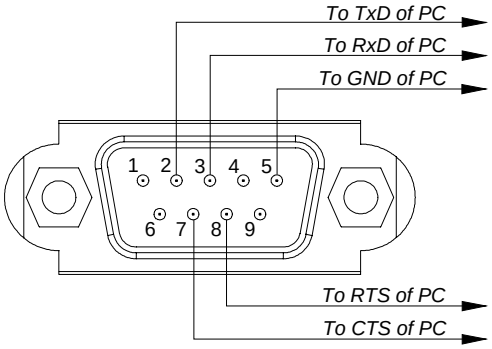
NOTE: *Contact your NEC rep for codes not listed.*

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: *It is recommended to set the projector to "Idle Mode" in the Setup/Standby Mode menu for best Power ON response.*
NOTE 2: *Pins 1, 4, 6, and 9 are used inside the projector.*
NOTE 3: *Jumper "Request to send" and "Clear to Send" together on both ends of the cable to simplify cable connection.*
NOTE 4: *For long cable runs it is recommended to set communication speed within projector menus to 9600 bps.*