

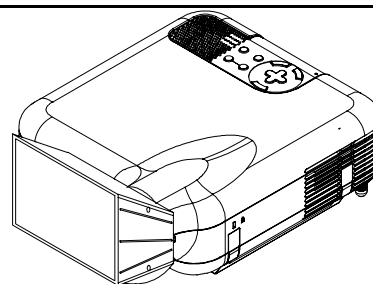
HT1000/1100 Installation Guide

Used with optional NEC Anamorphic Lens (HT169-Lens)

v1.4

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Product Description

Type:	1 chip DMD™ projector	Color Wheel:	6 Segments (improved in HT1100)
Resolution:	1024 x 768 (Anamorphic mode)	Dimensions:	10.24"(W) x 4.74"(H) x 12.56"(D)
Aspect Ratio:	16:9	Weight:	7.1 lbs
Contrast Ratio:	HT1000: 3000:1 (2000:1 Iris open) HT1100: 3500:1 (2000:1 Iris open)	Brightness:	HT1000: 1000 ANSI Lumens HT1100: 1100 ANSI Lumens

Std Lens Specifications

Data Lens Specifications			
Throw Ratio:	1.5-1.9:1 (for 100" diagonal)	Manual Focus/Manual Zoom/Manual Iris	
Offset Angle:	15.8° -18.8° (for 100" diagonal)	Focal Length:	22.4mm – 27.0mm
Screen Sizes:	40"-200" diagonal (16:9)	F/#:	HT1000: 2.5 – 3.7
	30"-200" diagonal (4:3)		HT1100: 2.5 – 4.5 (due to new Iris)

NEC Anamorphic Lens (HT169-Lens)

The optional NEC Anamorphic Lens attaches to the existing standard lens without changing throw distance or image size. The lens performs a vertical squeeze allowing the full 4:3 panel resolution (1024x768) to be used and have the image fit a 16:9 screen appropriately. The lens causes a minor shift vertically to the image position, the values in the formulas below takes this into account. The lens is not attached until after the projector is installed and focus/zoom are adjusted with the standard lens first.

Screen/Aspect Ratio

- A 16:9 screen is recommended for best use of the anamorphic lens and the projectors aspect ratio controls.
- The "Anamorphic" setting should be selected in the "Setup/Screen" menu when the projector is used with the optional NEC Anamorphic Lens. This setting configures the aspect ratio controls so they work appropriately when an anamorphic lens is used. Aspect ratio control is available for both 16:9 and 4:3 sources using NEC developed scaling technology.

*Firmware is available for the HT1000 allowing 'Anamorphic' mode to be selected in the 'Screen' menu.

Notes

- For screen sizes not indicated in the projection charts, use the formulas below.
- 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.

Note: Distances are measured at the standard lens. The Anamorphic Lens is attached after installation.

Projection Formulas: (using a 16:9 screen)

$$B = 0.54405W - 0.021$$

$$C(\text{wide}) = 1.5607W - 1.751$$

$$C(\text{tele}) = 1.8789W - 1.694$$

$$D = 0.2628W - 0.021$$

$$\alpha(\text{wide}) = \tan^{-1} (B/C(\text{wide}))$$

$$\alpha(\text{tele}) = \tan^{-1} (B/C(\text{tele}))$$

Definitions:

W = Image Width
H = Image Height (Size)
B = Vertical distance between lens center and screen center
C = Throw distance from screen to standard lens.
D = Vertical distance between lens center and screen bottom (screen top for ceiling mounted application)

16:9 Screen Formulas:

$$W = H \times 16/9$$

$$H = W \times 9/16$$

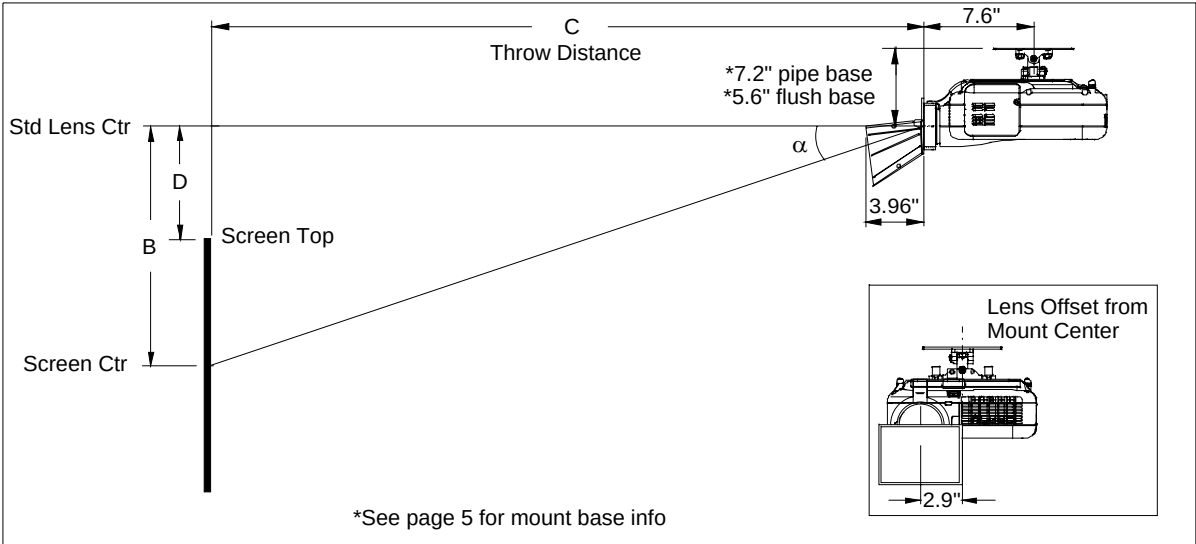
$$\text{Screen Diagonal} = W \times 18.358/16$$

Note: Vertical Position is not available in Anamorphic mode.

16:9 Screens

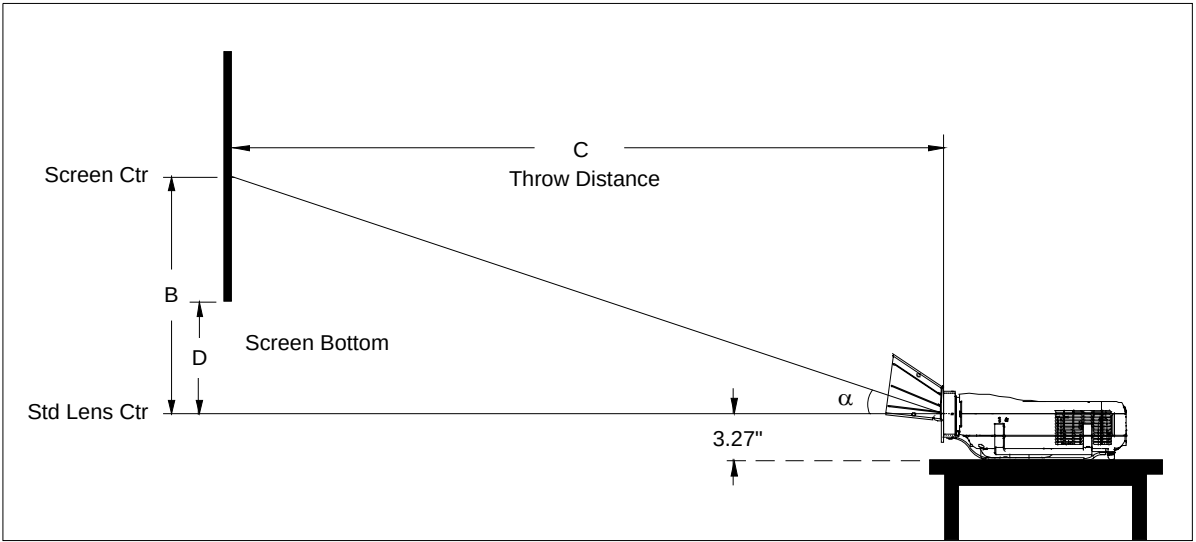
The following diagrams show the relationship between projector position and the screen. Refer to the chart below for data. Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mounted Installation



Note: The Anamorphic lens is not attached until after the projector is installed and focus/zoom is adjusted with the standard lens first.

Desktop Setup



Distance chart for popular 16:9 screens

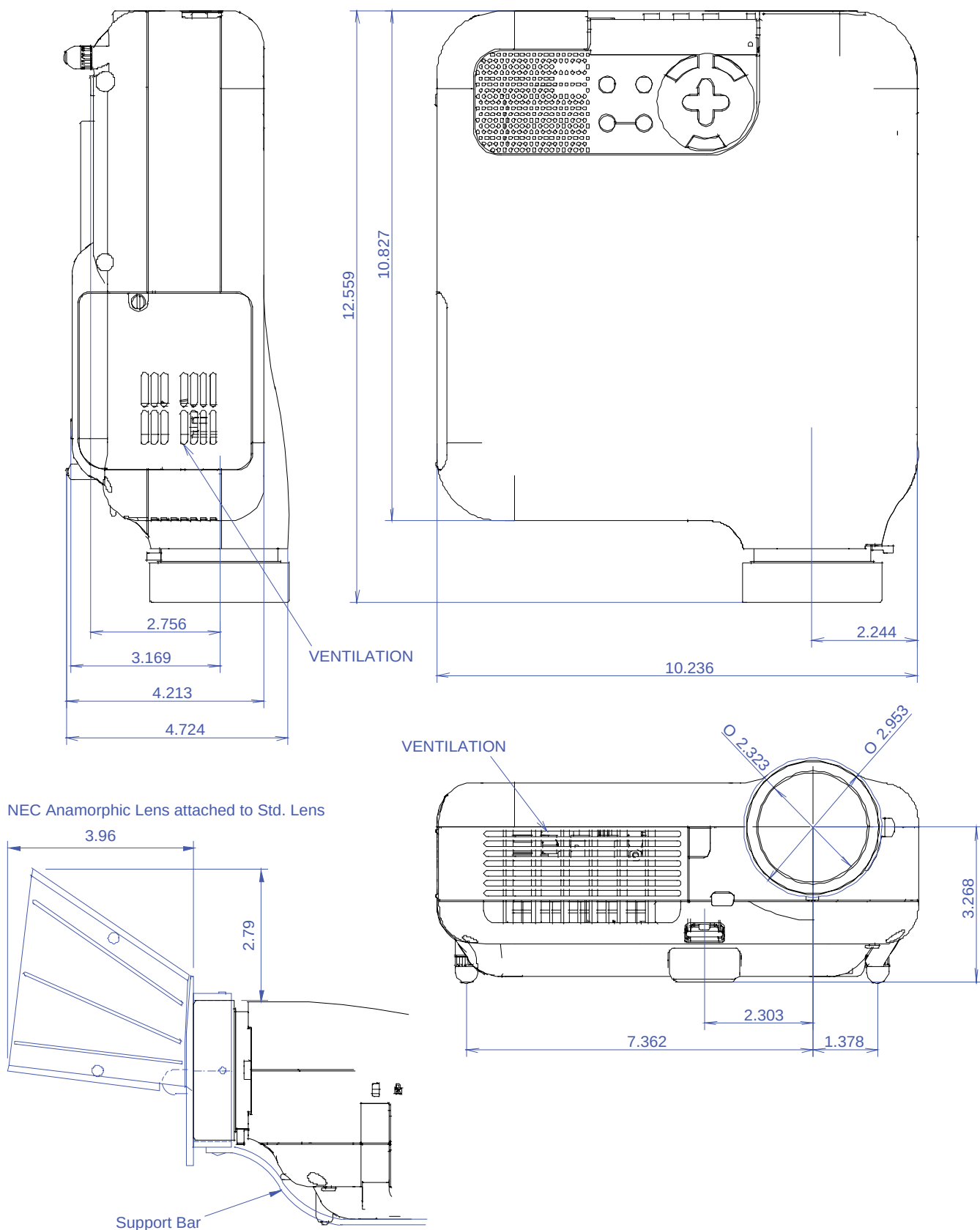
Screen Size (16:9)			B	C	D	α
Diag	W	H		wide - tele	(16:9)	wide - tele
inches	inches	inches	inches	inches	inches	degrees
82.6	72	40.5	39.2	110.6 - 133.6	18.9	19.5 - 16.3
92	80	45	43.5	123.1 - 148.6	21.0	19.5 - 16.3
100	87	49	47.3	134.0 - 161.8	22.8	19.4 - 16.3
106	92	52	50.0	141.8 - 171.2	24.2	19.4 - 16.3
110	96	54	52.2	148.1 - 178.7	25.2	19.4 - 16.3
119	104	58.5	56.6	160.6 - 193.7	27.3	19.4 - 16.3
123	107	60	58.2	165.2 - 199.3	28.1	19.4 - 16.3
133	116	65	63.1	179.3 - 216.3	30.5	19.4 - 16.3
135	118	66	64.2	182.4 - 220.0	31.0	19.4 - 16.3
159	139	78	75.6	215.2 - 259.5	36.5	19.4 - 16.2
161	140	79	76.1	216.7 - 261.4	36.8	19.4 - 16.2

Note: Vertical Position is not available in Anamorphic mode.

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

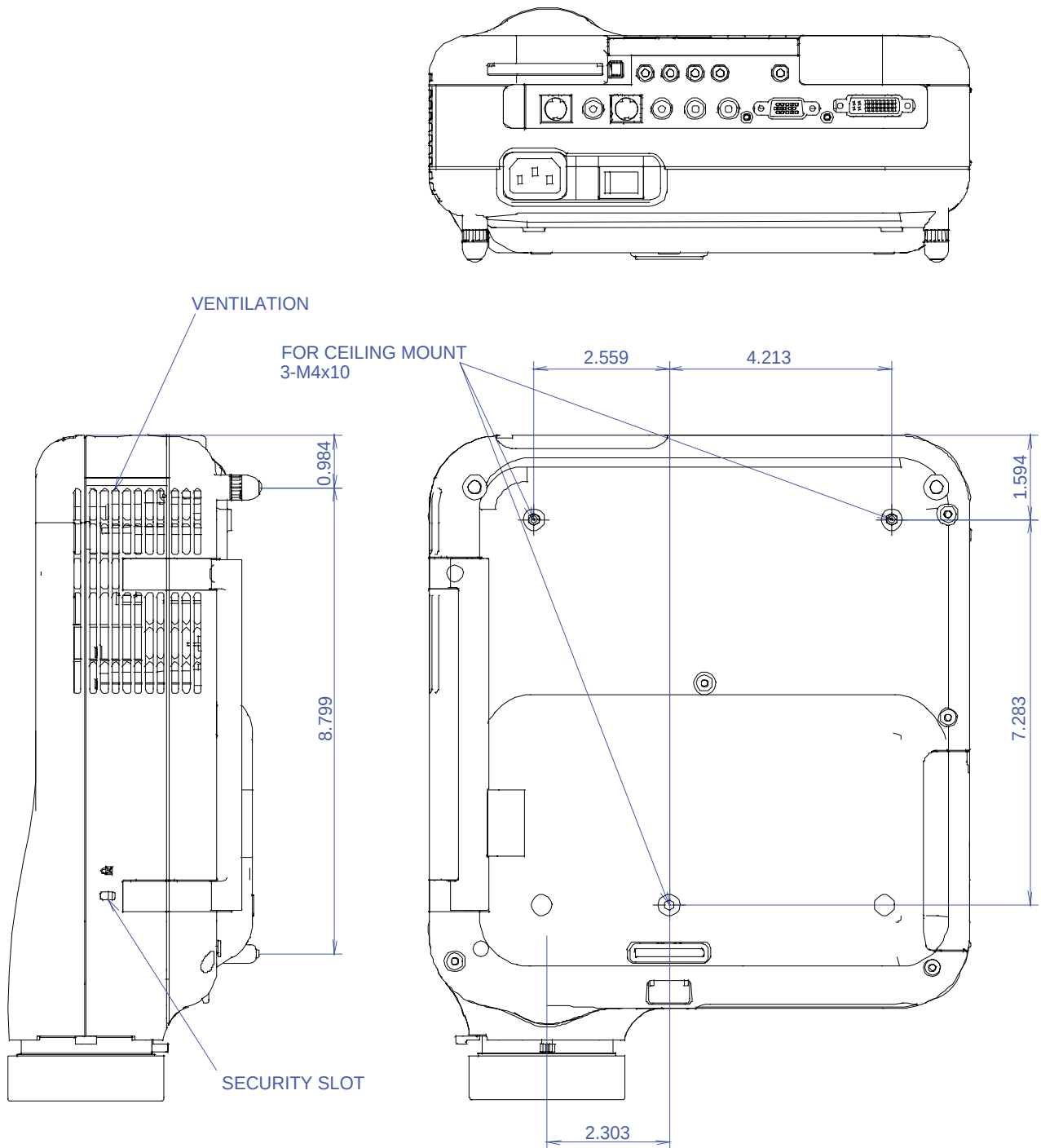
Cabinet Dimensions

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



Cabinet Dimensions (continued)

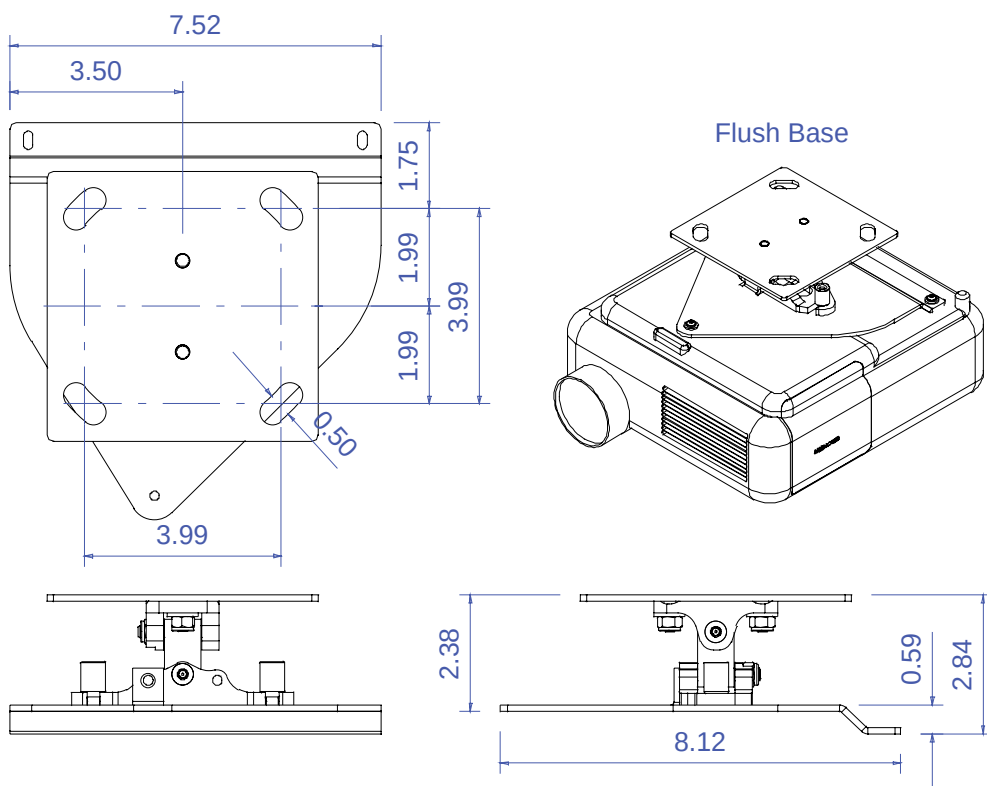
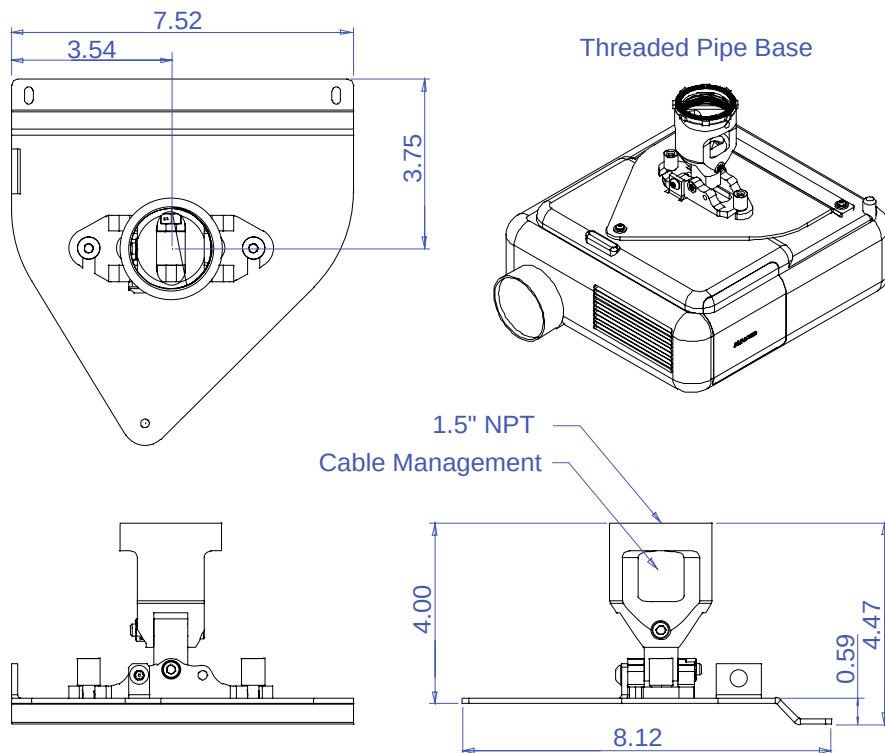
The following drawings show the cabinet dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.



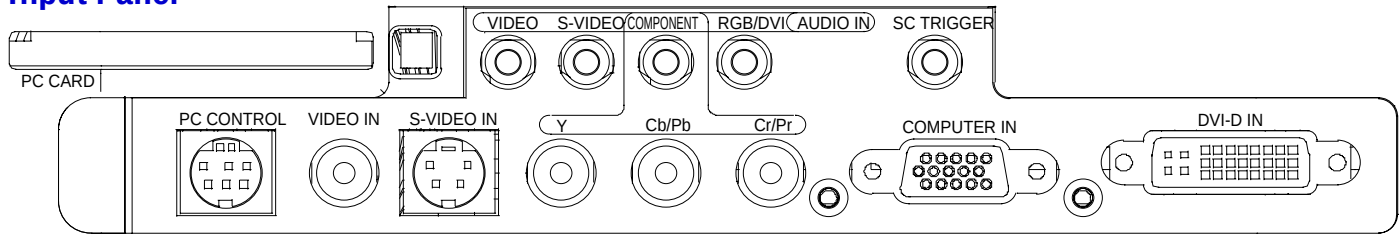
Optional Ceiling Mount Dimensions (Model #: LT60CM)

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

The LT60CM comes with a threaded pipe base and a flush base for minimal mount height.



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		02H	03H	00H	00H	02H	01H	01H	09H				
INPUT SELECT COMPONENT (HT1000)		02H	03H	00H	00H	02H	01H	10H	18H				
INPUT SELECT COMPONENT (HT1100)		02H	03H	00H	00H	02H	01H	11H	19H				
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 (16:9 Screen)	NORMAL	03H	10H	00H	00H	05H	18H	00H	00H	05H	00H	35H	
	FULL	03H	10H	00H	00H	05H	18H	00H	00H	06H	00H	36H	
	ZOOM	03H	10H	00H	00H	05H	18H	00H	00H	07H	00H	37H	
	STADIUM	03H	10H	00H	00H	05H	18H	00H	00H	0AH	00H	3AH	
ASPECT RATIO (4:3 Screen)	NORMAL	03H	10H	00H	00H	05H	18H	00H	00H	05H	00H	35H	
	ZOOM	03H	10H	00H	00H	05H	18H	00H	00H	07H	00H	37H	
	CINEMA	03H	10H	00H	00H	05H	18H	00H	00H	08H	00H	38H	
	V-ZOOM	03H	10H	00H	00H	05H	18H	00H	00H	09H	00H	39H	
AUTO ADJUST		02H	0FH	00H	00H	02H	05H	00H	18H				

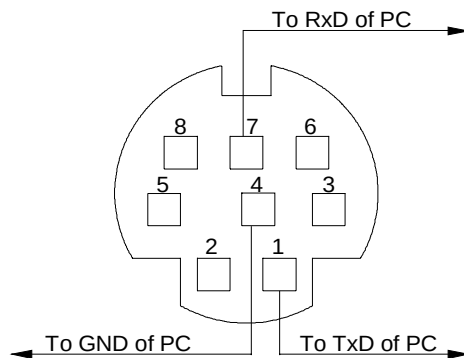
Note: Contact your NEC rep for codes not listed.

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 (DIN-8P)



NOTE 1: It is recommended to set the projector to "Idle Mode" in the Setup menu for best Power ON response.

NOTE 2: Pins 2, 3, 5, 6 and 8 are used inside the projector.

NOTE 3: For long cable runs it is recommended to set communication speed within projector menus to 9600 bps.

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