

M282X/M322X/M402X Installation Guide

Ceiling Mounted and Desktop

Rev 1.2

Contents

Product Description, Lens Specs, Notes and Formulas_____	Pg 1
Diagrams & Distance Charts_____	Pg 2
Cabinet Dimensions_____	Pg 3-4
Ceiling Mount Dimensions_____	Pg 5
Input Panel and Control Codes_____	Pg 6



Product Description

Type:	1 Chip DLP Projector	Dimensions:	14.5" (W) x 4.3" (H) x 11.5" (D)
	0.55" DMD	Weight:	8.0 lbs
Resolution:	1024 x 768		
Fan Noise:	M282X: 38dB / 29dB @ 1 meter	Brightness:	M282X - 2800 Lumens
	M322X: 38dB / 30dB @ 1 meter		M322X - 3200 Lumens
	M402X : 39dB / 33dB @ 1 meter		M402X - 4000 Lumens
Power Consumption:	M282X : 257W (max)	BTU's:	M271X - 915 BTU/hour
	M322X : 286W (max)		M311X - 1024 BTU/hour
	M402X : 335W (max)		M402X - 1208 BTU/hour

Lens Specifications

Throw Ratio:	1.5 – 2.5:1 (for 100" diagonal)	Focal Length:	17.09mm – 29.05mm
Offset Angle:	10.6° - 18.2° (for 100" diagonal)	F/#:	2.4 - 3.1
Screen Sizes:	30" - 300" diagonal (4:3)	Manual Focus/Manual Zoom	

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 4:3 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)

4:3 Screen Formulas:

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

Projection Formulas:

B = 0.4875W – 0.156
 C (wide) = 1.545W – 1.976
 C (tele) = 2.626W – 3.082
 D = 0.112W + 0.1726
 α (wide) = \tan^{-1} (B/C(wide))
 α (tele) = \tan^{-1} (B/C(tele))

M282X/M322X/M402X Installation Guide

Ceiling Mounted and Desktop

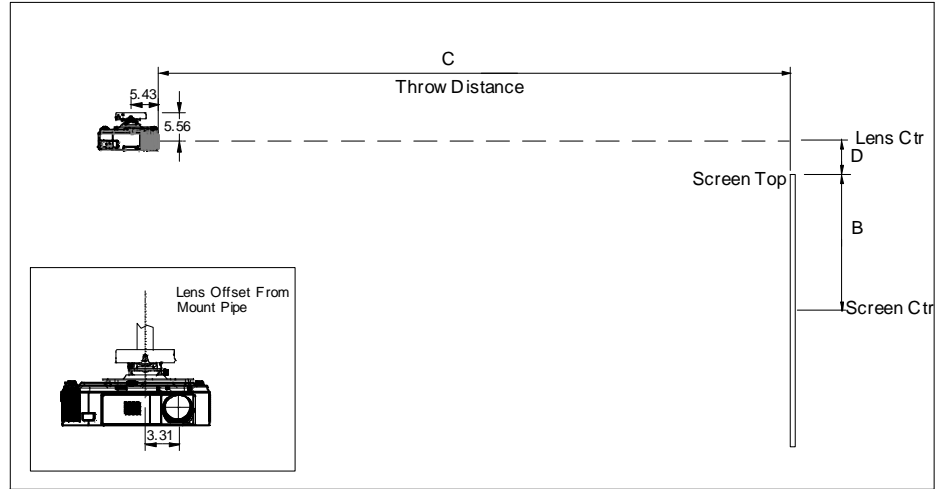
Rev 1.2

Diagrams and Distance Charts

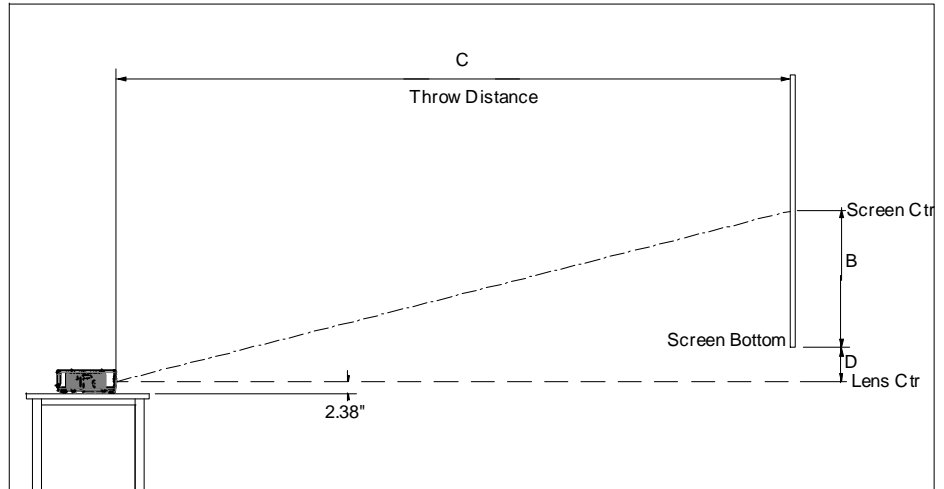
The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mounted



Desktop



Distance Chart for popular 4:3 screens

Screen Size (4:3)			B inches	C		D inches	α	
Diagonal inches	Width(W) inches	Height (H) inches		wide - tele inches			wide - tele degrees	
30	24	18	12	35	- 60	3	18.2	- 10.9
60	48	36	23	72	- 123	6	17.8	- 10.7
67	54	40.2	26	81	- 138	6	17.8	- 10.7
72	58	43.2	28	87	- 148	7	17.8	- 10.7
84	67	50.4	33	102	- 173	8	17.8	- 10.6
90	72	54	35	109	- 186	8	17.7	- 10.6
100	80	60	39	122	- 207	9	17.7	- 10.6
120	96	72	47	146	- 249	11	17.7	- 10.6
150	120	90	58	183	- 312	14	17.6	- 10.6
180	144	108	70	221	- 375	16	17.6	- 10.6
210	168	126	82	258	- 438	19	17.6	- 10.6
240	192	144	93	295	- 501	22	17.6	- 10.6
270	216	162	105	332	- 564	24	17.6	- 10.6
300	240	180	117	369	- 627	27	17.6	- 10.6

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

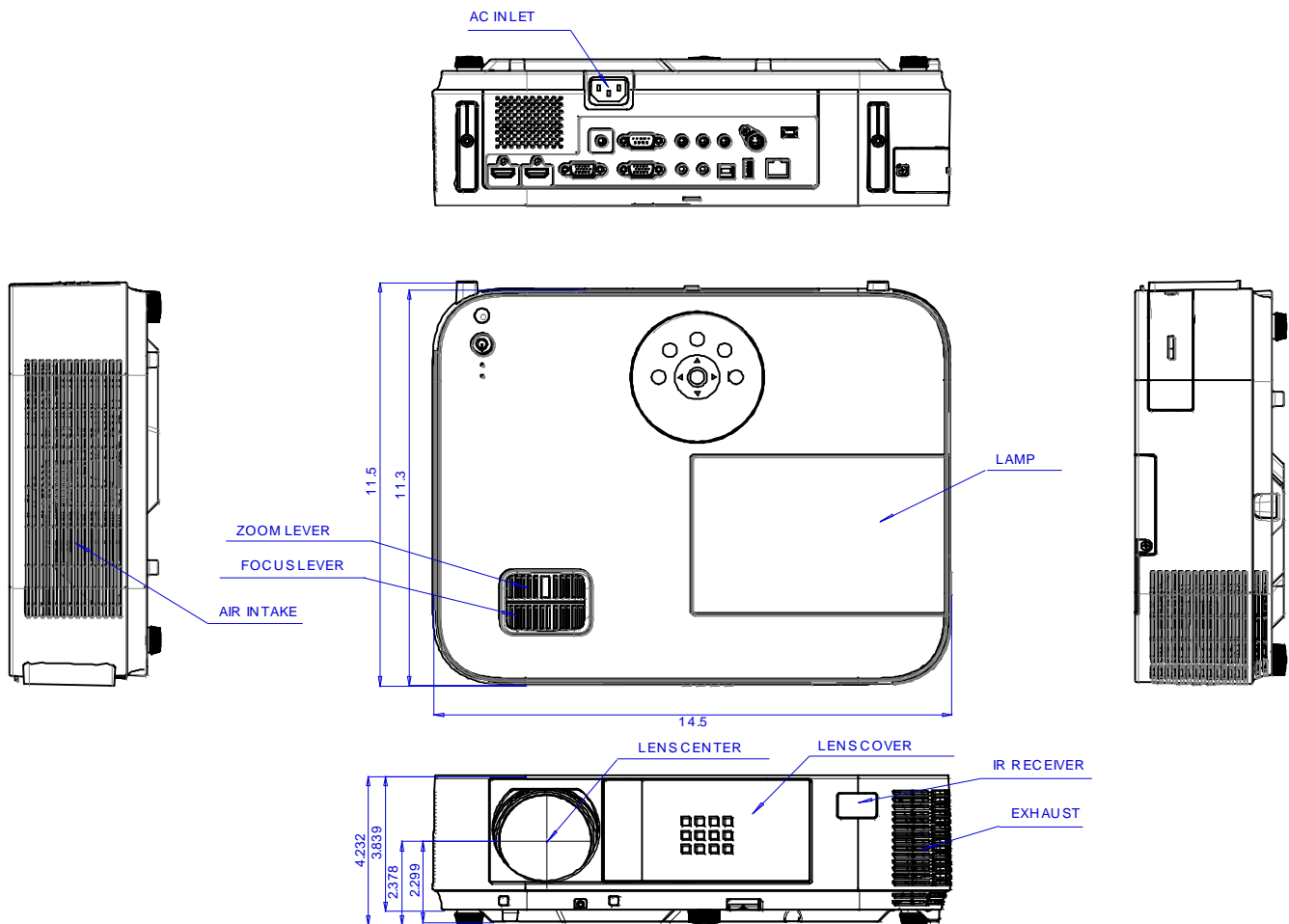
M282X/M322X/M402X Installation Guide

Ceiling Mounted and Desktop

Rev 1.2

Cabinet Dimensions

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



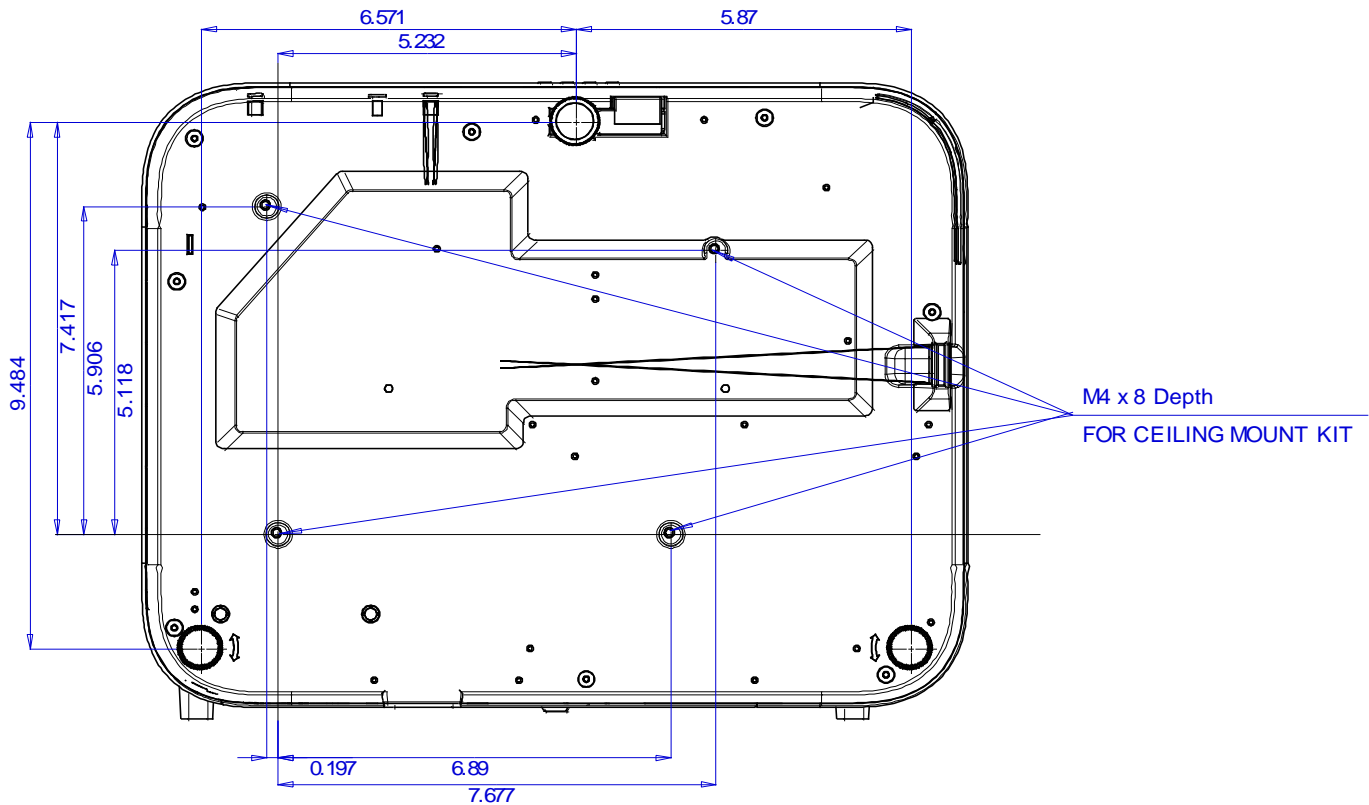
M282X/M322X/M402X Installation Guide

Ceiling Mounted and Desktop

Rev 1.2

Cabinet Dimensions (continued)

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



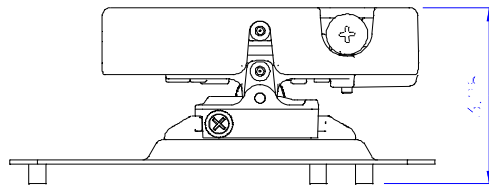
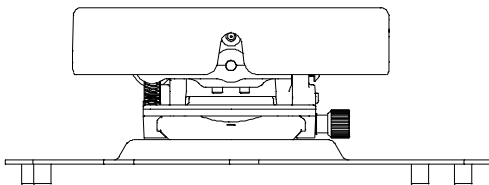
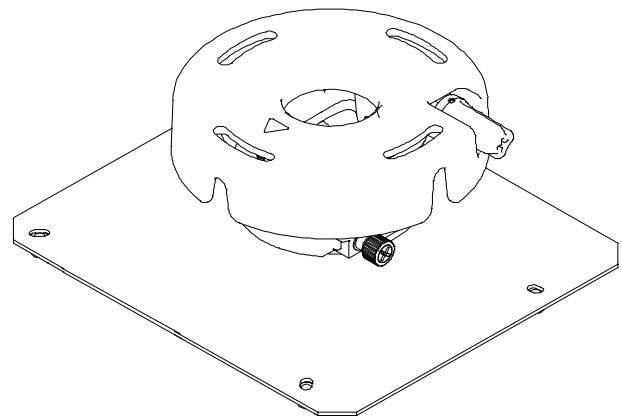
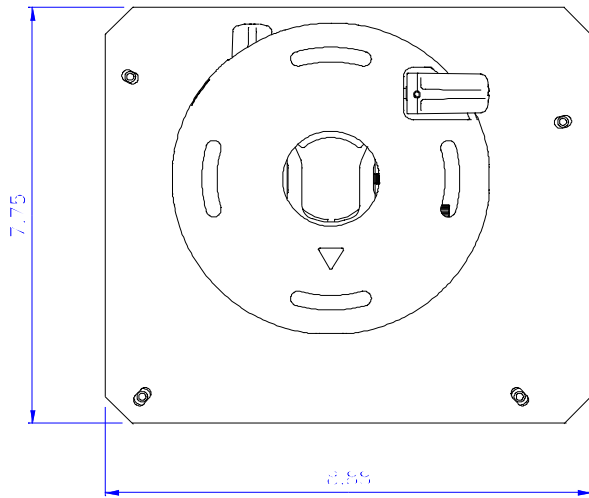
M282X/M322X/M402X Installation Guide

Ceiling Mounted and Desktop

Rev 1.2

Optional Ceiling Mount Dimensions (Model #: MP300CM)

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



M282X/M322X/M402X Installation Guide

Ceiling Mounted and Desktop

Rev 1.2

Input / Output Panel



PC Control Codes

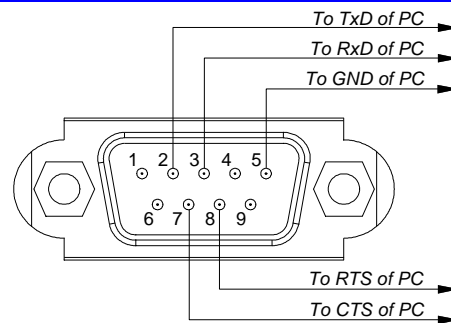
Function	Code Data
POWER ON	02H 00H 00H 00H 00H 02H
POWER OFF	02H 01H 00H 00H 00H 03H
INPUT SELECT COMPUTER1	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT HDMI 1	02H 03H 00H 00H 02H 01H 1AH 22H
INPUT SELECT HDMI 2	02H 03H 00H 00H 02H 01H 12H AAH
INPUT SELECT VIDEO	02H 03H 00H 00H 02H 01H 06H 0EH
INPUT SELECT VIEWER	02H 03H 00H 00H 02H 01H 1FH 27H
INPUT SELECT NETWORK	02H 03H 00H 00H 02H 01H 20H 28H
INPUT SELECT USB DISPLAY	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.