

VE281/VE281X/VE282B/VE282XB Installation Guide

Ceiling and Desktop Mounted

Rev 1.0

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Product Description

Type:	1-chip DLP projector,				
	VE281/VE281X:	0.55" DLP			
	VE282B/VE282XB:	0.55" DLP			
Brightness:	VE281/VE281X	2800 lumens			
	VE282B/VE282XB:	2800 lumens			
Resolution:	VE281/VE282	800 x 600	Fan Noise:	VE281/VE281X:	35dB / 33dB @ 1meter
	VE281X/VE282XB:	1024 x 768		VE282B/VE282XB:	35dB / 33dB @ 1meter
Dimensions:	12.2" (W) x 3.7" (H) x 9.7" (D)		Weight:	5.1 lbs	
Power Consumption:	VE281/VE281X:	261W (max)	BTU's:	VE281/VE281X:	890.57 BTU/hour
	VE282B/VE282XB:	261W (max)	BTU's:	VE282B/VE282XB:	890.57 BTU/hour

Lens Specifications

Throw Ratio:	1.9 – 2.1:1 (for 100" diagonal)	Focal Length:	21.8mm – 24.0mm
Offset Angle:	12.8° - 14.0° (for 100" diagonal)	F/#:	2.41 - 2.55
Screen Sizes:	30" - 300" diagonal (4:3)		Manual Focus/Manual Zoom

Notes

- For screen sizes not indicated on the projection tables, use the formulas on the following page. 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%.

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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 below for popular screen sizes:

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:

- $W = H \times 4/3$
- $H = W \times 3/4$
- Screen Diagonal = $W \times 5/4$

Projection Formulas:

- $B = 0.487W$
- $C \text{ (wide)} = 1.94W$
- $C \text{ (tele)} = 2.165W$
- $D = 0.112W$
- $\alpha \text{ (wide)} = \tan^{-1} (B/C(\text{wide}))$
- $\alpha \text{ (tele)} = \tan^{-1} (B/C(\text{tele}))$

Distance Chart for popular 4:3 screens

Screen Size (4:3)			B	C			D	α		
Diagonal	Width(W)	Height (H)		w ide - tele				w ide - tele		
inches	inches	inches	inches	inches			inches	degrees		
30	24	18	12	46	-	52	3	14.1	-	12.7
60	48	36	23	93	-	104	5	14.1	-	12.7
67	53.6	40.2	26	104	-	116	6	14.1	-	12.7
72	57.6	43.2	28	111	-	125	6	14.1	-	12.7
84	67.2	50.4	33	130	-	146	8	14.1	-	12.7
90	72	54	35	139	-	156	8	14.1	-	12.7
100	80	60	39	155	-	173	9	14.1	-	12.7
120	96	72	47	186	-	208	11	14.1	-	12.7
150	120	90	58	232	-	260	13	14.1	-	12.7
180	144	108	70	279	-	312	16	14.1	-	12.7
210	168	126	82	325	-	364	19	14.1	-	12.7
240	192	144	94	372	-	416	22	14.1	-	12.7
270	216	162	105	418	-	468	24	14.1	-	12.7
300	240	180	117	465	-	520	27	14.1	-	12.7

Note: For screen sizes not indicated on the projection tables, use the formulas on above

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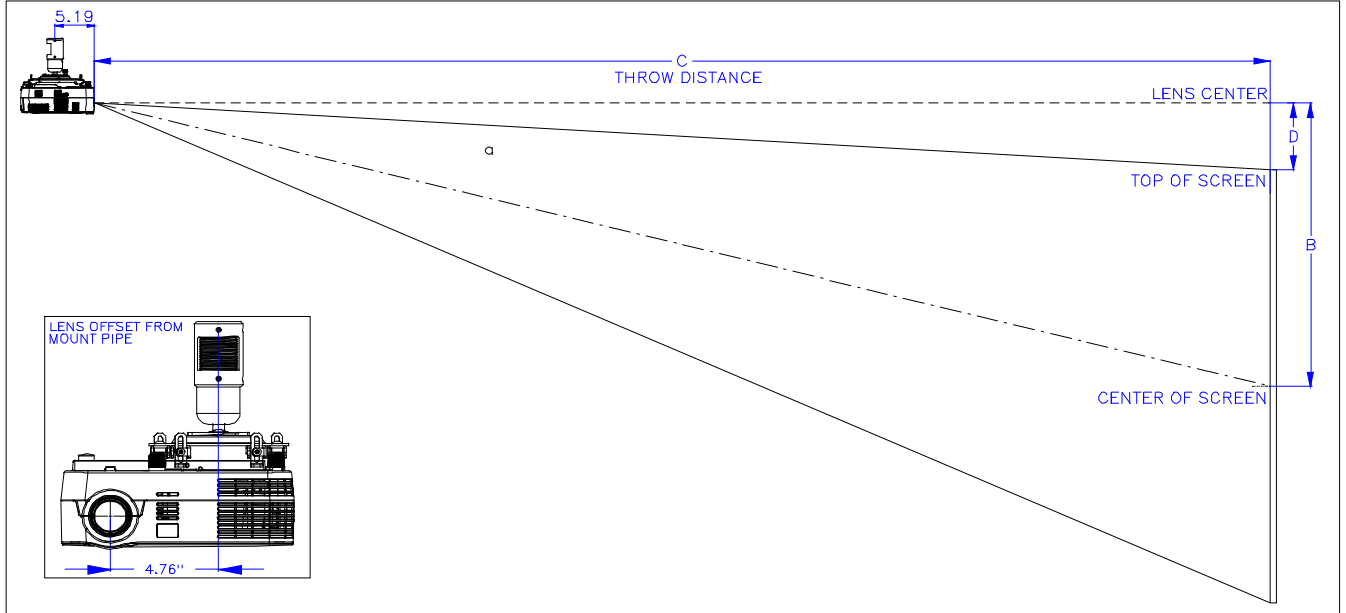
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Diagrams and Distance Charts

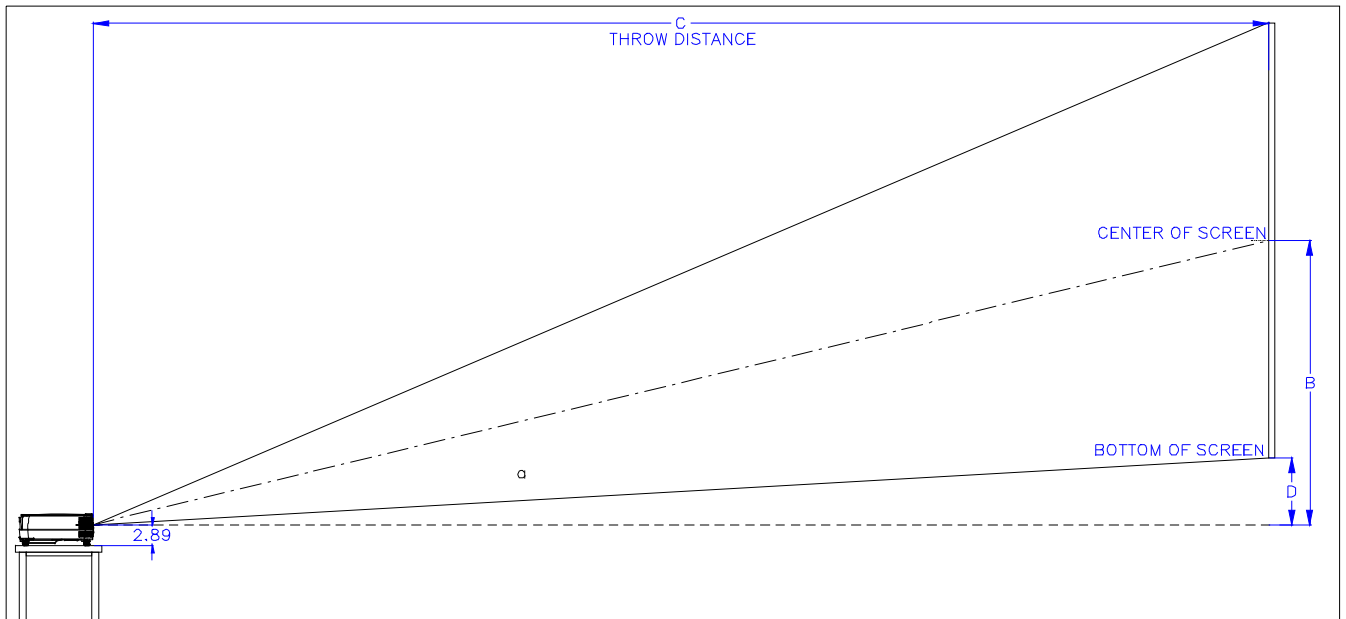
The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mounted



Desktop



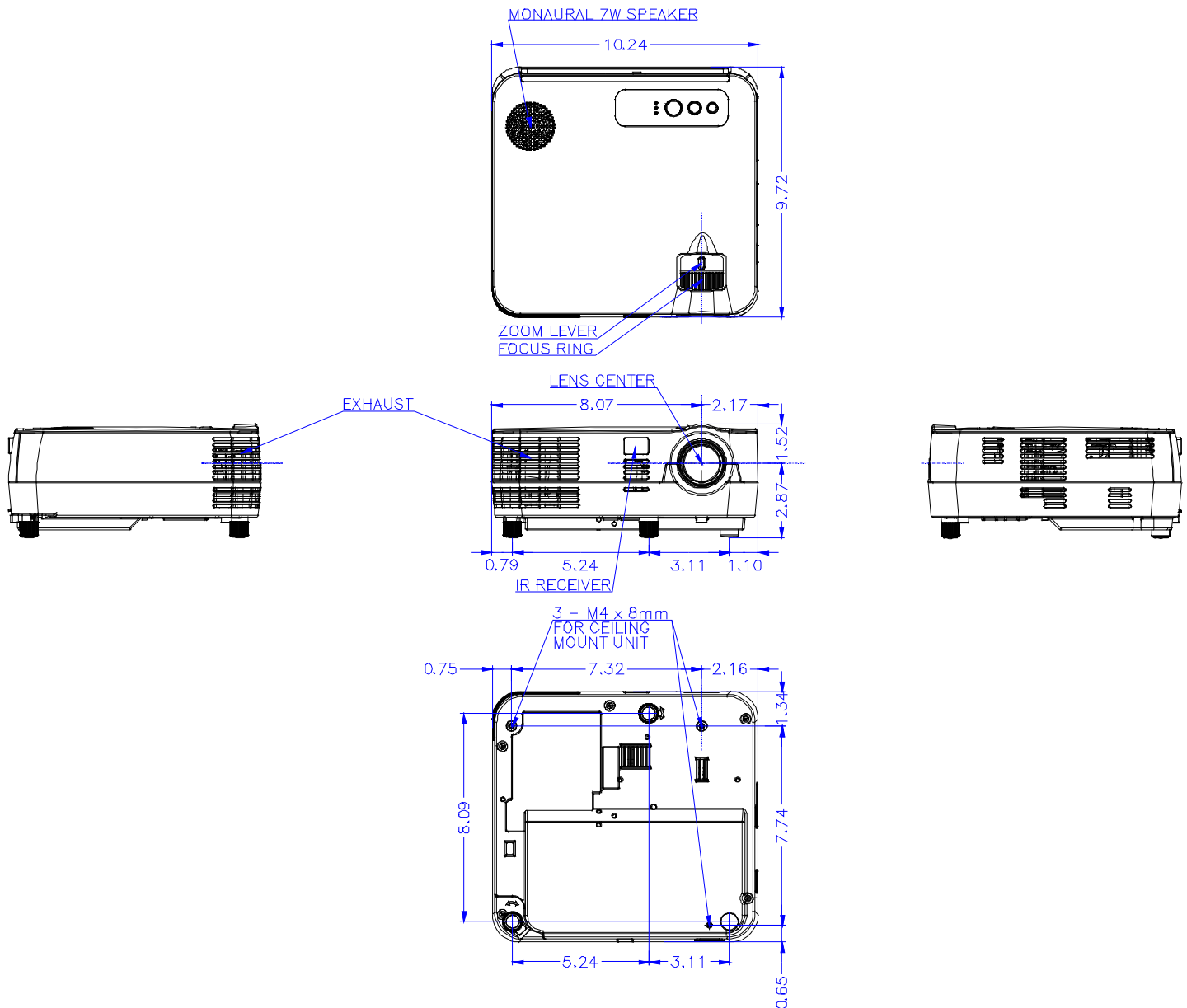
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Cabinet Dimensions

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



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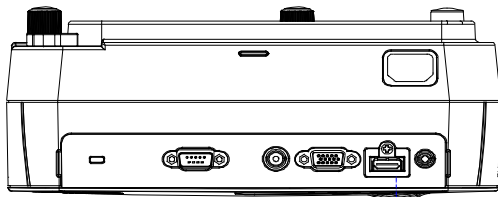
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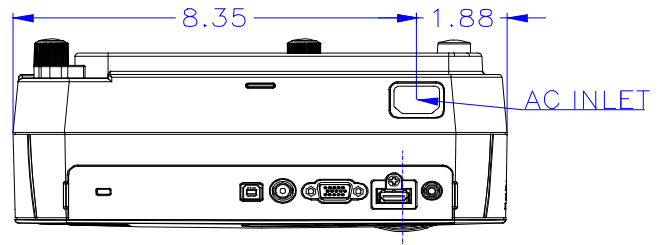
Cabinet Dimensions (continued)

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

VE281X/VE281

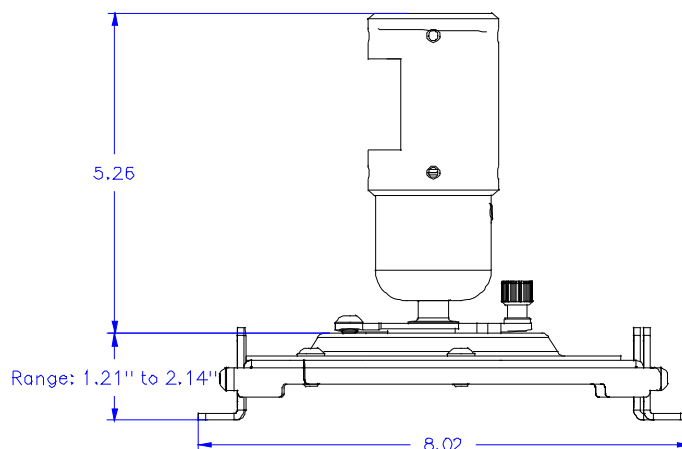
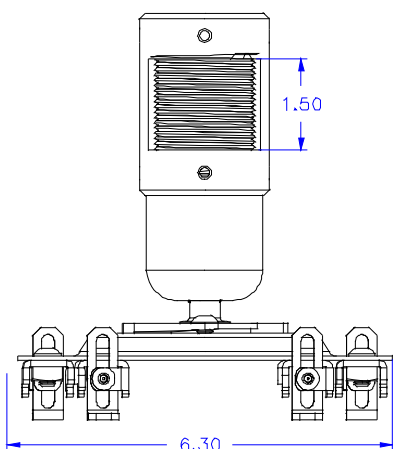
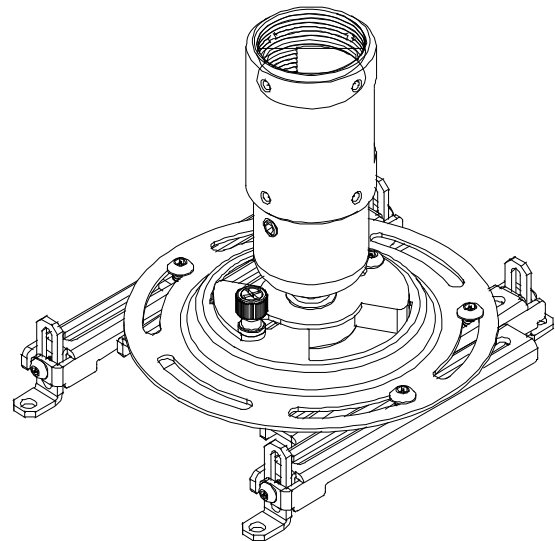
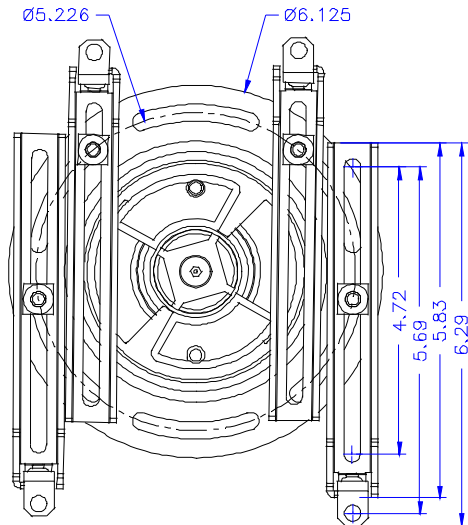


VE282XB/VE282B



Optional Ceiling Mount Dimensions (Model #: NP01UCM)

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



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Input Panels

VE281/VE281X



VE282B/VE282XB



PC Control Codes

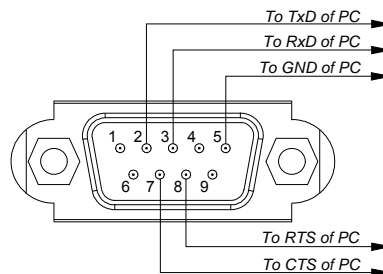
Function	Code Data
POWER ON	02H 00H 00H 00H 00H 02H
POWER OFF	02H 01H 00H 00H 00H 03H
INPUT SELECT COMPUTER1	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT VIDEO	02H 03H 00H 00H 02H 01H 06H 0EH
INPUT SELECT HDMI	02H 03H 00H 00H 02H 01H 1AH 22H
PICTURE MUTE ON	02H 10H 00H 00H 00H 12H
PICTURE MUTE OFF	02H 11H 00H 00H 00H 13H
SOUND MUTE ON	02H 12H 00H 00H 00H 14H
SOUND MUTE OFF	02H 13H 00H 00H 00H 15H

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.