P350X/P420X Installation Guide
Ceiling Mounted and Desktop   Rev 1.0

Contents

Product Description

Type:	3 panel LCD projector,		Dimensions:	15.7" (W) x 4.5" (H) x 11.1" (D)
	P350X/P420X:	0.63" p-Si TFT w/MLA	Weight:	8.6 lbs
	Resolution:	1024 x 768		
Fan Noise:	P350X:	35 dB / 29dB @ 1 meter	Brightness:	P350X - 3500 Lumens
	P420X :	36 dB / 30dB @ 1 meter		P420X - 4200 Lumens
Power Consumption:	P350X:	311W (max)	BTU's:	P350X - 1061 BTU/hour
	P420X:	358W (max)		P420X - 1222 BTU/hour

Lens Specifications

Throw Ratio:	1.3 – 2.2:1 (for 100" diagonal)	Focal Length:	17.4mm – 29.0mm
Offset Angle:	6.6° - 10.9° (for 100" diagonal)	F/#:	1.7 - 2.0
Screen Sizes:	25" - 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 = 0.258W
C (wide) = 1.366W – 1.77
C (tele) = 2.268W – 1.77
D = -0.117W
α (wide) = $\tan^{-1}$ (B/C(wide))
α (tele) = $\tan^{-1}$ (B/C(tele))

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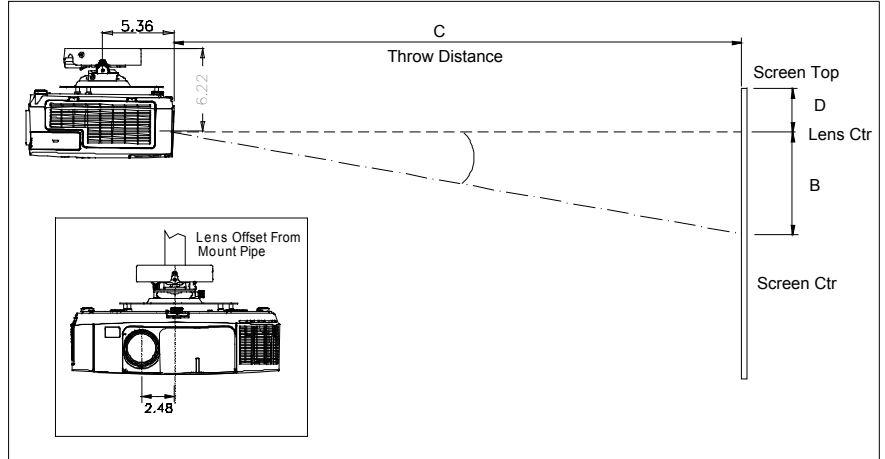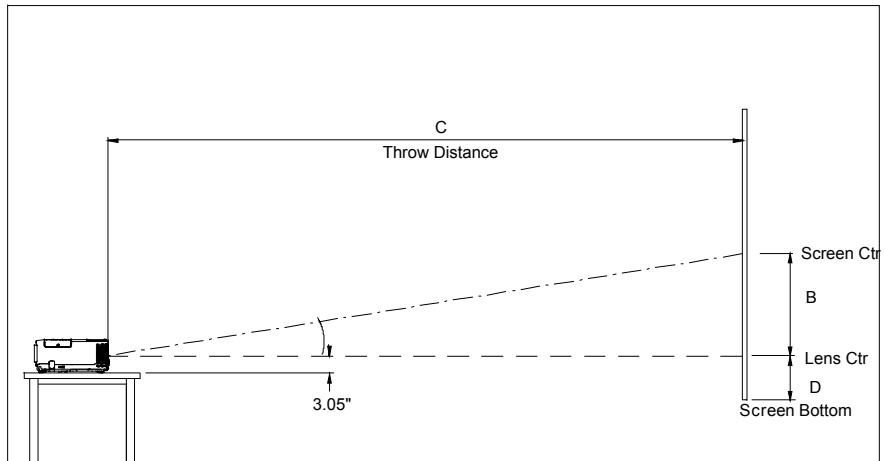
Diagrams and Distance Charts
The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.
Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mounted

Desktop

Distance Chart for popular 4:3 screens

Screen Size (4:3)			B	C			D	α		
Diagonal	Width(W)	Height (H)		wide - tele				wide - tele		
inches	inches	inches	inches	inches			inches	degrees		
30	24	18	6	31	-	53	-3	11.3	-	6.7
60	48	36	12	64	-	107	-6	11.0	-	6.6
67	53.6	40.2	14	72	-	120	-6	10.9	-	6.6
72	57.6	43.2	15	77	-	129	-7	10.9	-	6.6
84	67.2	50.4	17	90	-	151	-8	10.9	-	6.6
90	72	54	19	97	-	162	-8	10.9	-	6.6
100	80	60	21	108	-	180	-9	10.9	-	6.6
120	96	72	25	130	-	216	-11	10.8	-	6.5
150	120	90	31	162	-	270	-14	10.8	-	6.5
180	144	108	37	195	-	325	-17	10.8	-	6.5
210	168	126	43	228	-	379	-20	10.8	-	6.5
240	192	144	50	261	-	434	-22	10.8	-	6.5
270	216	162	56	294	-	488	-25	10.7	-	6.5
300	240	180	62	327	-	543	-28	10.7	-	6.5

Note: *For screen sizes not indicated on the projection tables, 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.

15.68

Lamp

11.09

Lens Shift

Zoom Lever
Focus Lever

5.28

Intake Filter

Exhaust   Lens Cover

5.03

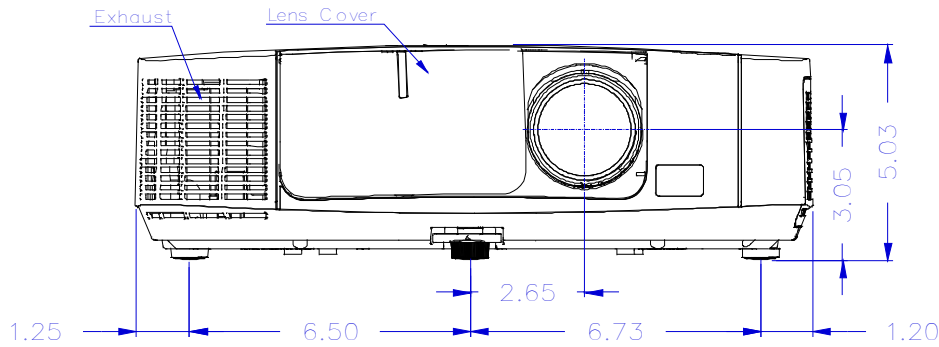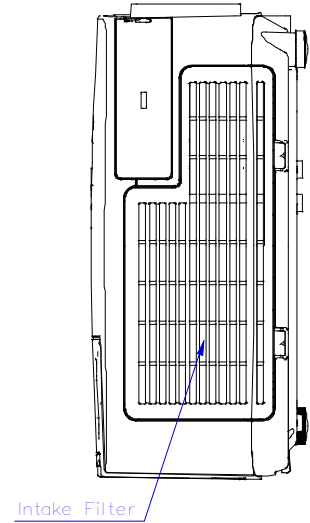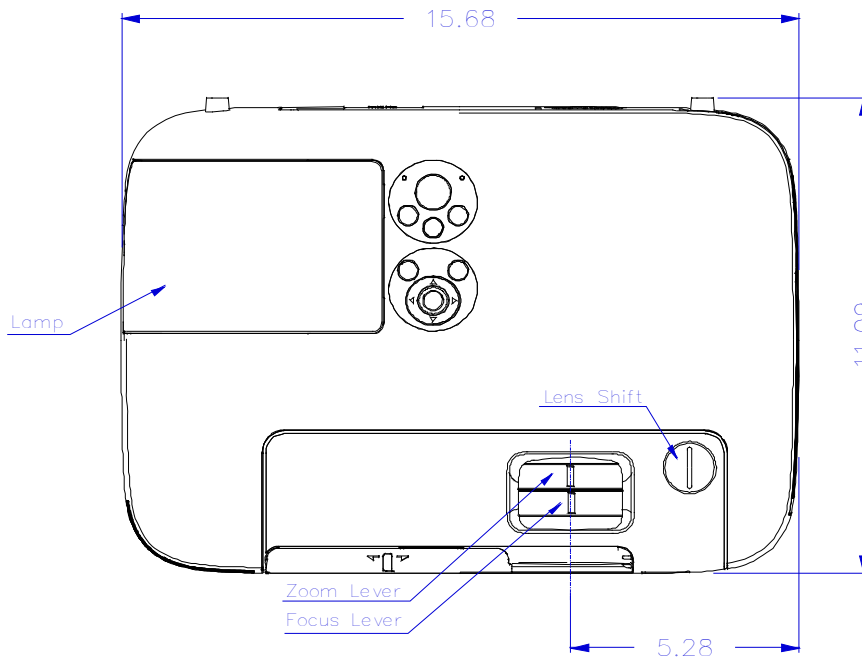3.05

2.65

1.25   6.50   6.73   1.20
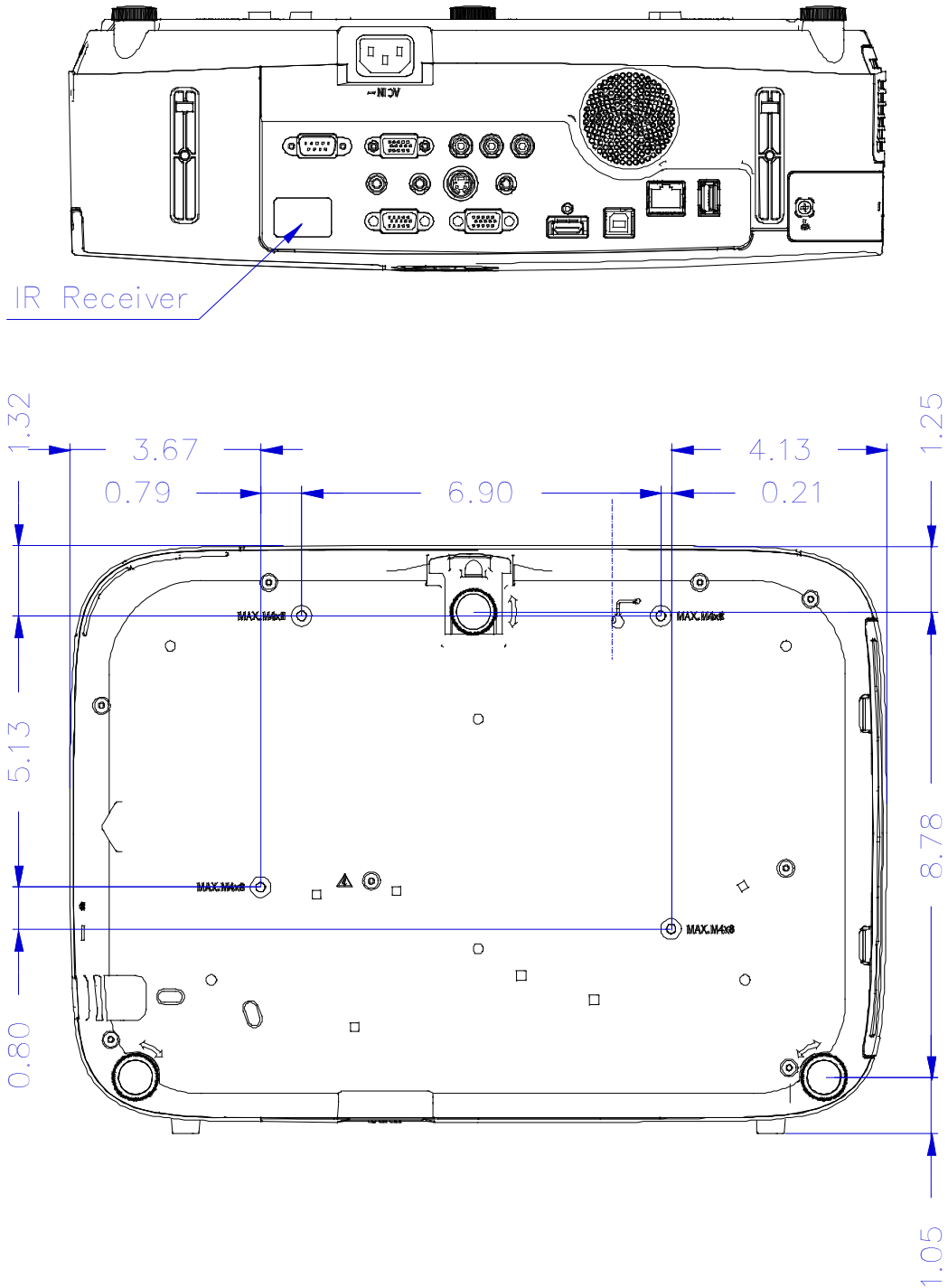
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Cabinet Dimensions (continued)

The following drawings show the cabinet dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.
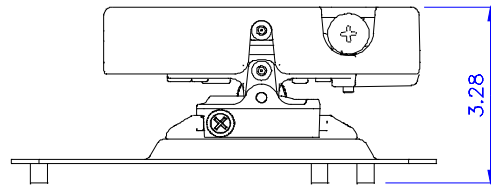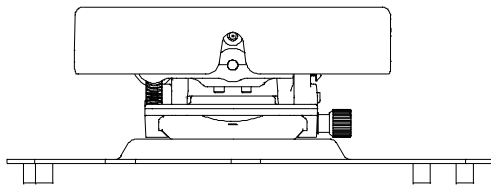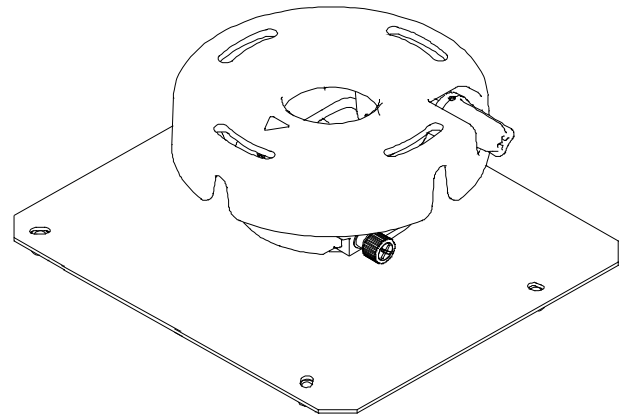Requires (4) M4x8mm screws for mount attachment.

IR Receiver

1.32

1.25

3.67

4.13

0.79

6.90

0.21

MAX.M4x8

MAX.M4x8

5.13

8.78

MAX.M4x8

MAX.M4x8

0.80

1.05

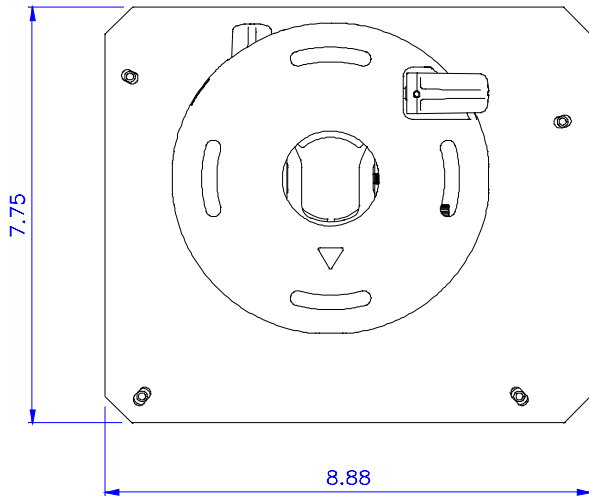# P350X/P420X Installation Guide
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Optional Ceiling Mount Dimensions (Model #: MP300CM)
The following drawings show the ceiling mount dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.

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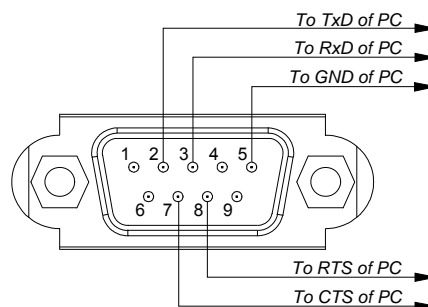
Input / Output Panel

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 COMPUTER21	02H	03H	00H	00H	02H	01H	02H	0AH
INPUT SELECT HDMI	02H	03H	00H	00H	02H	01H	1AH	22H
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 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.