NEC

NEC Display Solutions of America, Inc.

NP500W Installation Guide
Ceiling Mounted and Desktop   Rev 1.3

Contents

Product Description

Type:	3 panel LCD projector, 0.59" p-Si TFT w/MLA	Dimensions:	12.1" (W) x 4.3" (H) x 10.4" (D)
		Weight:	6.6 lbs
Resolution:	1280 x 800	Brighness:	NP500W – 3000 Lumens
Fan Noise:	35 dB / 29dB @ 1 meter		
Power Consumption: NP500W = 325W (max)		BTU's:	1007 BTU/hour

Lens Specifications

Throw Ratio:	1.4 – 1.6:1 (for 100" diagonal)	Focal Length:	17.7mm – 21.2mm
Offset Angle:	7.6° - 9.2° (for 100" diagonal)	F/#:	1. 7 - 2.0
Screen Sizes:	21" - 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)

16:10 Screen Formulas:

W = H x 16/10
H = W x 10/16
Screen Diagonal = W x 18.868/16

Projection Formulas:

B = 0.232W
C (wide) = 1.3702W – 1.173
C (tele) = 1.6526W – 1.176
D = 0.097W
α (wide) = $\tan^{-1}$ (B/C(wide))
α (tele) = $\tan^{-1}$ (B/C(tele))
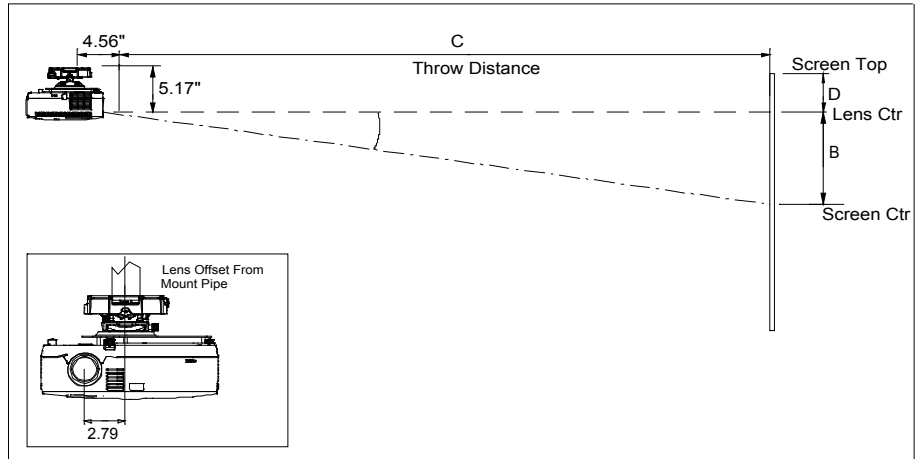
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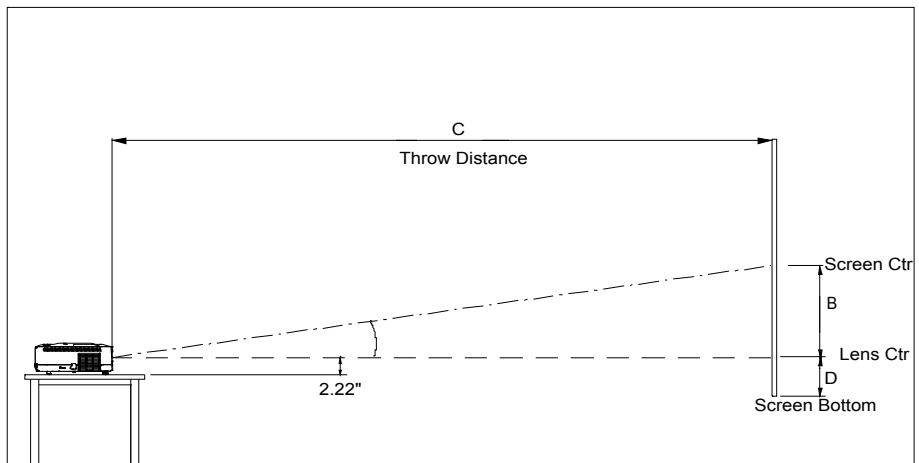
Diagrams and Distance Charts
The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.
Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mounted

Desktop

Distance Chart for popular 16:10 screens

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

| Image Size (16:10) on a (16:10) screen			B	C wide - tele			D	α wide - tele		
Diagonal	Width(W)	Height (H)								
inches	inches	inches	inches	inches			inches	inches		
85	72	45	17	97	-	118	-7	9.2	-	7.6
92	78	49	18	106	-	128	-8	9.2	-	7.6
98	83	52	19	113	-	136	-8	9.2	-	7.6
102	86	54	20	117	-	142	-8	9.2	-	7.6
111	94	59	22	128	-	154	-9	9.2	-	7.6
113	96	60	22	130	-	157	-9	9.2	-	7.6
123	104	65	24	141	-	171	-10	9.2	-	7.6
125	106	66	24	144	-	173	-10	9.2	-	7.6
147	125	78	29	170	-	205	-12	9.1	-	7.6
149	126	79	29	172	-	208	-12	9.1	-	7.6
213	181	113	42	247	-	298	-18	9.1	-	7.6
255	216	135	50	295	-	356	-21	9.1	-	7.6

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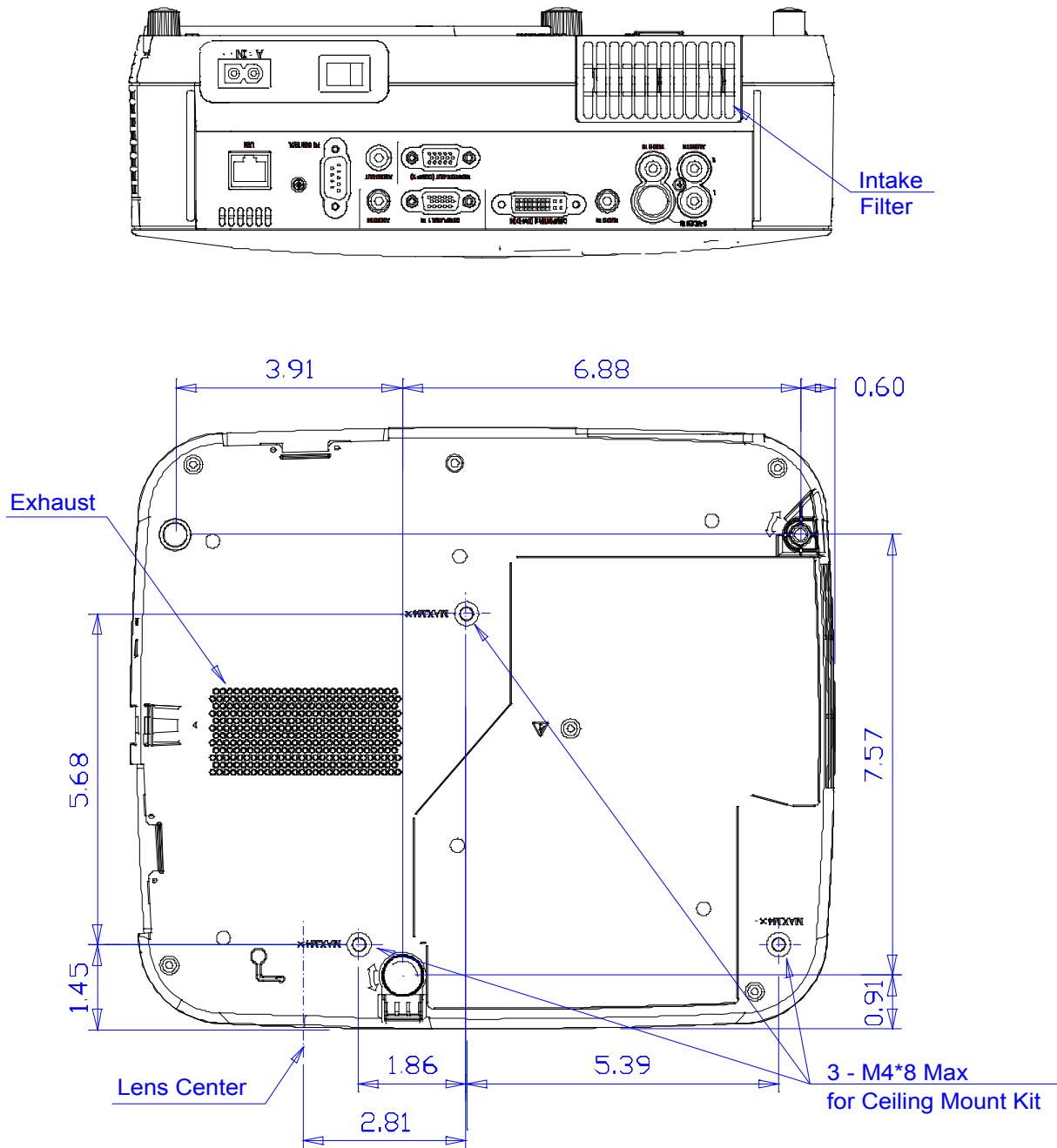Dimensions are in inches. For millimeters multiply by 25.4.
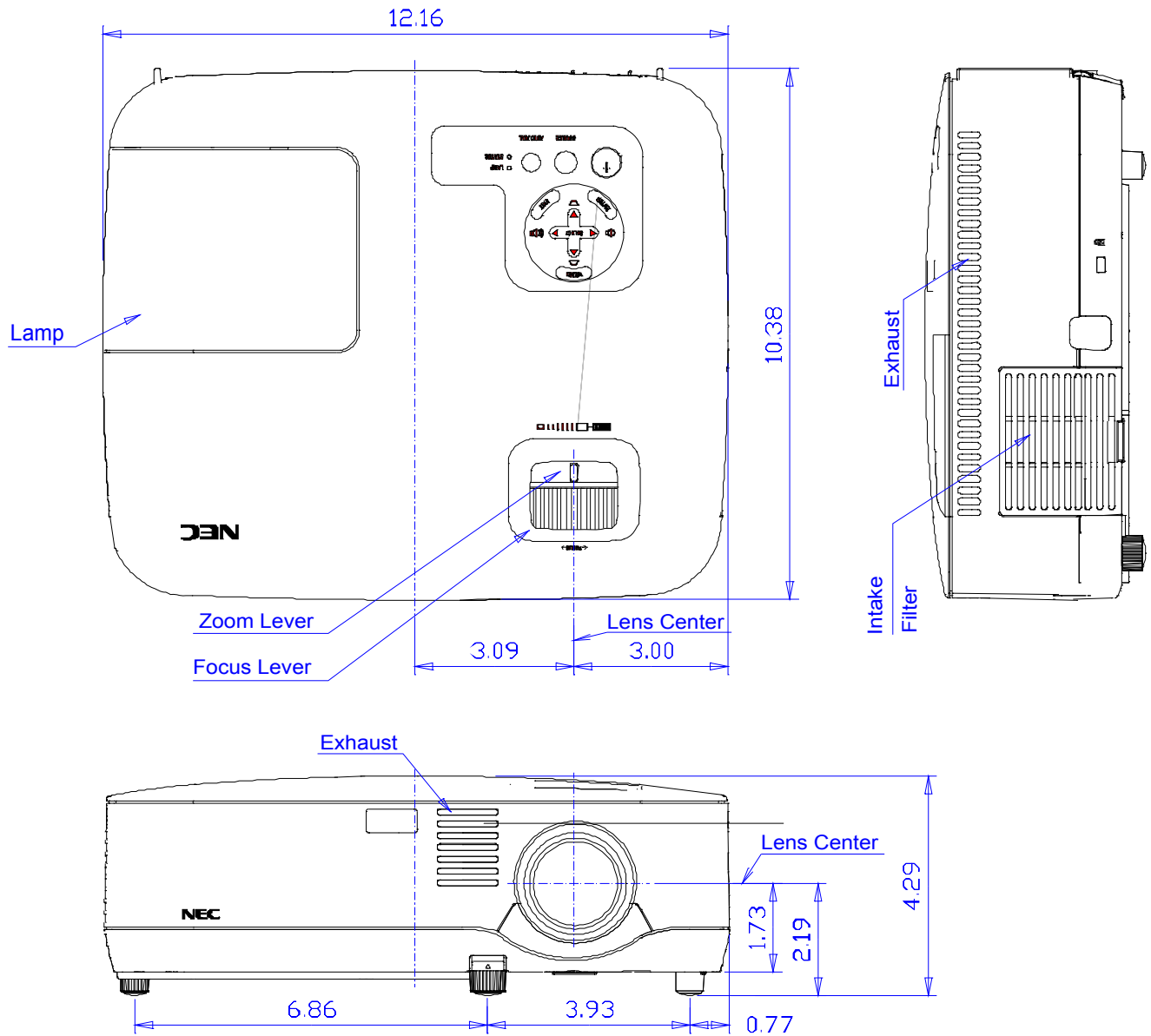
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Cabinet Dimensions (continued)

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

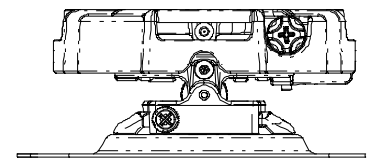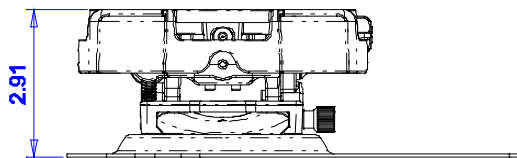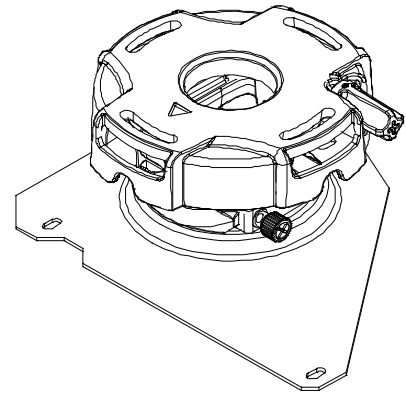Intake Filter

Exhaust

Lens Center

3 - M4*8 Max for Ceiling Mount Kit

3.91 6.88 0.60

5.68

7.57

1.45

0.91

1.86 5.39

2.81

Optional Ceiling Mount Dimensions (Model #: NP600CM)
The following drawings show the ceiling mount dimensions.
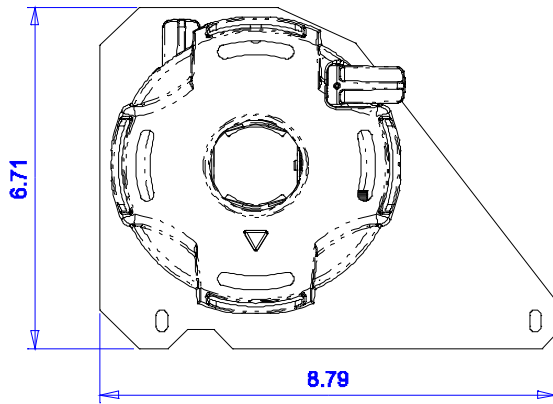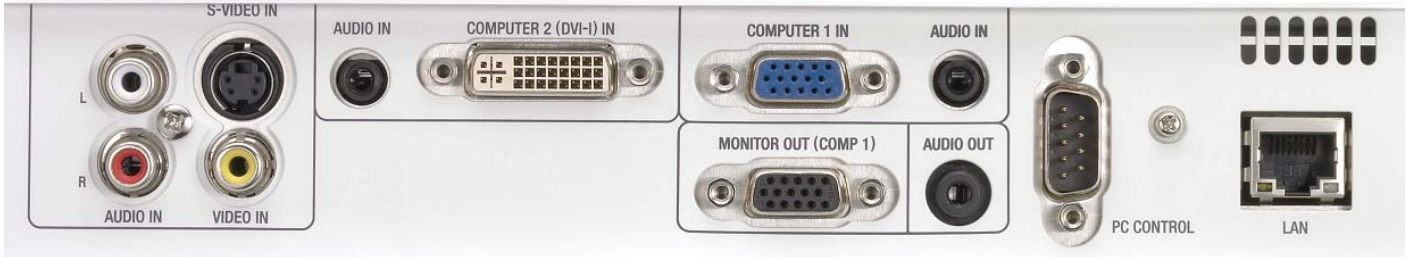Dimensions are in inches. For millimeters multiply by 25.4.

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 COMPUTER	02H	03H	00H	00H	02H	01H	01H	09H
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 DVI (ANALOG)	02H	03H	00H	00H	02H	01H	02H	0AH
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:	19200 bps
Data Length:	8 bits
Parity:	No Parity
Stop Bit:	One Bit
X on/off:	None
Communications:	Full duplex

To TxD of PC
To RxD of PC
To GND of PC
To RTS of PC
To CTS of PC
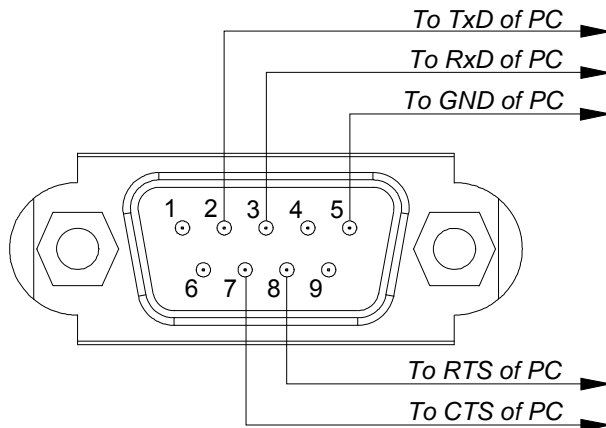
PC Control Connector (D-Sub 9P

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.