

## PA1505UL & PA1705UL Installation Guide

Rev 1.3

### Desktop and Ceiling Mount

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#### Product Description

<b>Type:</b>	3 panel LCD projector, 1.0" p-Si TFT w/MLA	<b>Dimensions:</b> 23.6"(W) x 19.3"(D) x 8.5"(H)
		<b>Weight:</b> PA1505UL: 63.7 lbs PA1705UL: 63.7 lbs
<b>Resolution:</b>	1920 x 1200 (16:10)	<b>Brightness:</b> PA1505UL: 15,000 Lumens PA1705UL: 17,000 Lumens
<b>Fan Noise:</b>	PA1505UL: 30 dB / 28dB @ 1 meter PA1705UL: 35 dB / 32dB @ 1 meter	<b>Power Requirements:</b> 100-240V AC 50/60Hz
<b>Power Consumption:</b>	PA1505UL: 960W (max) PA1705UL: 1035W (max)	<b>BTU's:</b> PA1505UL: 3264 BTU/hour PA1705UL: 3519 BTU/hour

#### Lens Specifications

<b>NP51ZL:</b>	Throw Ratio: 0.53 – 0.65:1 Screen Sizes: 60"-500"	Focal Length: 12.0 – 14.8mm F#:1.85 - 2.2	<b>Weight:</b> 12.3lbs. / 5.6kg
<b>NP52FL:</b>	Throw Ratio: 0.65 – 0.87:1 Screen Sizes: 60" - 500"	Focal Length: 14.4 – 19.3mm F#:1.84 – 2.25	<b>Weight:</b> 12.1lbs. / 5.5kg
<b>NP53ZL:</b>	Throw Ratio: 0.86 – 1.25:1 Screen Sizes: 60" - 500"	Focal Length: 19.0 – 27.6mm F#:1.8 – 2.24	<b>Weight:</b> 11.7lbs. / 5.3kg
<b>NP54ZL:</b>	Throw Ratio: 1.24 – 2.01:1 Screen Sizes: 60" - 500"	Focal Length: 27.7 – 44.9mm F#:1.8 – 2.24	<b>Weight:</b> 9.9lbs. / 4.5kg
<b>NP55ZL:</b>	Throw Ratio: 1.98 – 3.95:1 Screen Sizes: 60" - 500"	Focal Length: 43.8 – 87.4mm F#:1.84 -2.58	<b>Weight:</b> 11.9lbs. / 5.4kg
<b>NP56ZL:</b>	Throw Ratio: 3.92 – 7.4:1 Screen Sizes: 80"-500"	Focal Length: 76.6 –116.5mm F#:2.0 -2.5	<b>Weight:</b> 2.2lbs. / 1.0kg
<b>NP57ZL:</b>	Throw Ratio: 0.35:1 Screen Sizes: 50"-500"	Focal Length: 13.3 – 18.6mm F#:2.0 - 2.5	<b>Weight:</b> 3.5lbs. / 1.6kg

#### Screen/Aspect Ratio

**4:3, 16:9 and 16:10 screens are fully supported** with proper aspect ratio control for both type sources using NEC developed scaling technology. Menu selections have settings for each screen type and aspect ratio control for each source type.

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#### Formulas: 16:10 Aspect Ratio (WUXGA)

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 and 3:

#### Projection Formulas:

- NP57FL:** C = 0.807W – 1.354
  - NP51ZL:** C(Wide) = 0.559W – 2.930 ----- C(Tele) = 0.679W – 2.646
  - NP52ZL:** C(Wide) = 0.671W – 2.592 ----- C(Tele) = 0.889W – 2.299
  - NP53ZL:** C(Wide) = 0.877W – 1.808 ----- C(Tele) = 1.279W – 1.970
  - NP54ZL:** C(Wide) = 1.279W – 3.242 ----- C(Tele) = 2.045W – 2.920
  - NP55ZL:** C(Wide) = 2.031W – 5.659 ----- C(Tele) = 4.000W – 5.592
  - NP56ZL:** C(Wide) = 3.813W + 14.418 ----- C(Tele) = 7.383W + 14.238
- Horizontal Lens Shift Max (Right) = 0.25W (NP53ZL, NP54ZL, NP55ZL, NP56ZL)  
 Horizontal Lens Shift Max (Left) = 0.25W (NP53ZL, NP54ZL, NP55ZL, NP56ZL)  
 Horizontal Lens Shift Max (Right) = 0.20W (NP51ZL, NP52ZL)  
 Horizontal Lens Shift Max (Left) = 0.20W (NP51ZL, NP52ZL)  
 Vertical Lens Shift Max (Up) = 0.65H (NP53ZL, NP54ZL, NP55ZL, NP56ZL)  
 Vertical Lens Shift Max (Down) = 0.65H (NP53ZL, NP54ZL, NP55ZL, NP56ZL)  
 Vertical Lens Shift Max (Up) = 0.55H (NP51ZL, NP52ZL)  
 Vertical Lens Shift Max (Down) = 0.55H (NP51ZL, NP52ZL)

#### Definitions:

- W = Image Width
- H = Image Height (size)
- C = Throw distance

#### 16:10 Screen Formulas

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

#### Distance Chart for popular 16:10 Screens (WUXGA)

Screen Size (16:10)			Zoom Lenses					
			NP51ZL	NP52ZL	NP53ZL	NP54ZL	NP55ZL	NP56ZL
Diagonal	Width(W)	Height (H)	0.53 - 0.65:1	0.65 - 0.87:1	0.86 - 1.25:1	1.24 - 2.01:1	1.98 - 3.95:1	3.92 - 7.4:1
inches	inches	inches	inches	inches	inches	inches	inches	inches
60	51	32	25.5 - 31.9	31.5 - 42.9	42.8 - 63.1	61.8 - 101.1	97.7 - 197.9	208.4 - 389.9
67	57	36	28.8 - 35.9	35.5 - 48.2	48.0 - 70.7	69.4 - 113.3	109.7 - 221.7	231.1 - 433.7
72	61	38	31.2 - 38.8	38.4 - 52.0	51.7 - 76.1	74.8 - 121.9	118.3 - 238.6	247.2 - 465.0
84	71	45	36.9 - 45.7	45.2 - 61.0	60.7 - 89.1	87.9 - 142.7	139.0 - 279.3	286.0 - 540.1
94	80	50	41.6 - 51.5	50.9 - 68.6	68.1 - 100.0	98.7 - 160.1	156.2 - 313.3	318.4 - 602.7
100	85	53	44.5 - 54.9	54.3 - 73.1	72.6 - 106.5	105.2 - 170.5	166.6 - 333.6	337.8 - 640.3
120	102	64	54.0 - 66.4	65.7 - 88.2	87.4 - 128.2	126.9 - 205.2	201.0 - 401.4	402.4 - 765.5
150	127	79	68.2 - 83.7	82.8 - 110.8	109.7 - 160.7	159.4 - 257.2	252.7 - 503.2	499.4 - 953.4
180	153	95	82.4 - 101.0	99.8 - 133.4	132.1 - 193.3	192.0 - 309.2	304.4 - 605.0	596.4 - 1141.2
210	178	111	96.6 - 118.3	116.9 - 156.0	154.4 - 225.8	224.5 - 361.3	356.0 - 706.7	693.4 - 1329.0
240	204	127	110.8 - 135.5	134.0 - 178.6	176.7 - 258.3	257.1 - 413.3	407.7 - 808.5	790.4 - 1516.8
270	229	143	125.1 - 152.8	151.0 - 201.2	199.0 - 290.9	289.6 - 465.3	459.4 - 910.2	887.4 - 1704.6
300	254	159	139.3 - 170.1	168.1 - 223.9	221.3 - 323.4	322.1 - 517.3	511.0 - 1012.0	984.4 - 1892.5
400	339	212	186.7 - 227.7	225.0 - 299.2	295.7 - 431.9	430.6 - 690.7	683.3 - 1351.2	1307.8 - 2518.5
500	424	265	234.1 - 285.2	281.9 - 374.6	370.0 - 540.3	539.1 - 864.2	855.5 - 1690.4	1631.1 - 3144.6

#### Notes

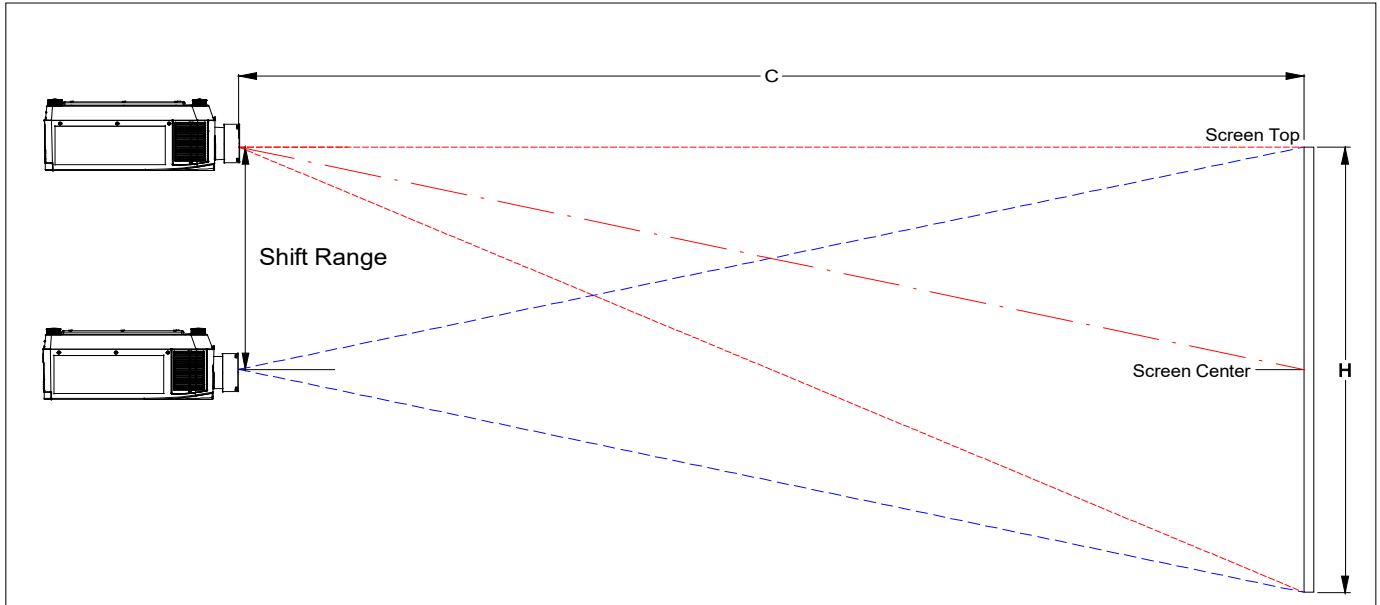
- For screen sizes not indicated on the projection tables, use the formulas above respective charts. If the figures on the tables do not match the results of formulas, use the figures in the table.
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary ±5%.

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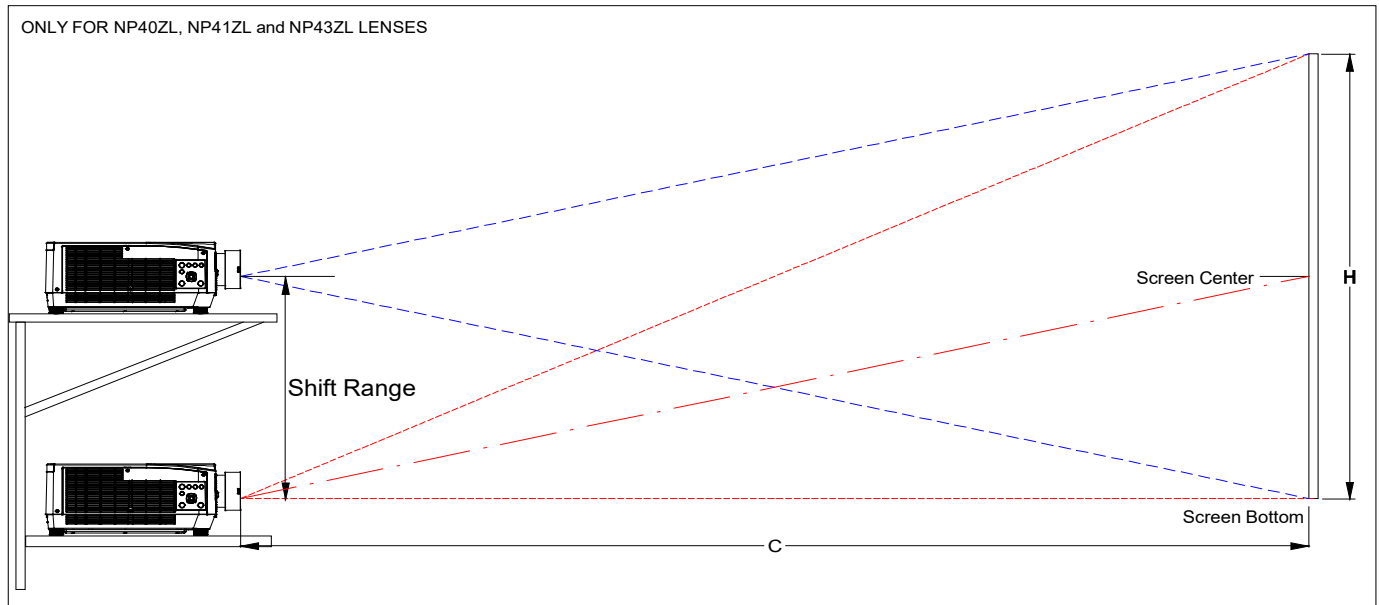
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### Ceiling Mount Installation



### Desktop Installation



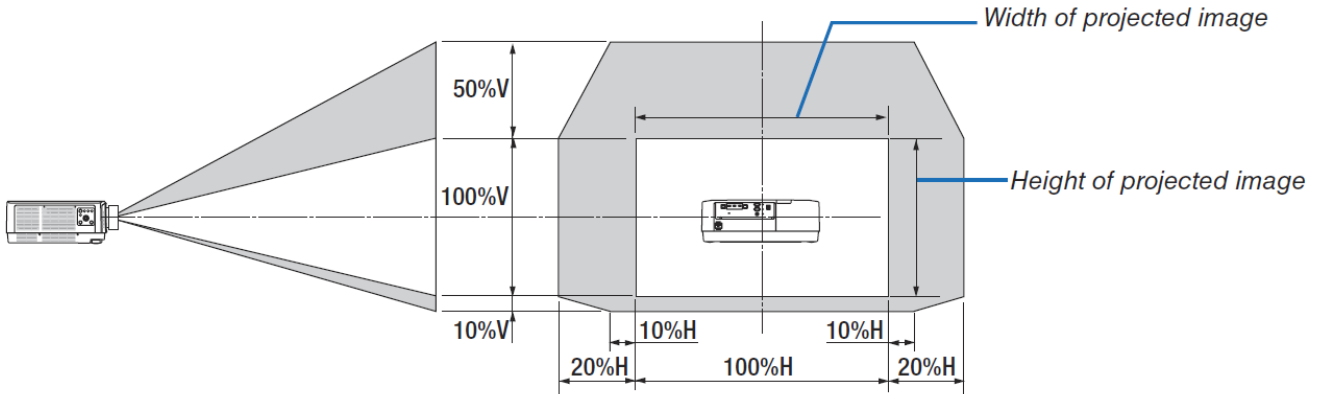
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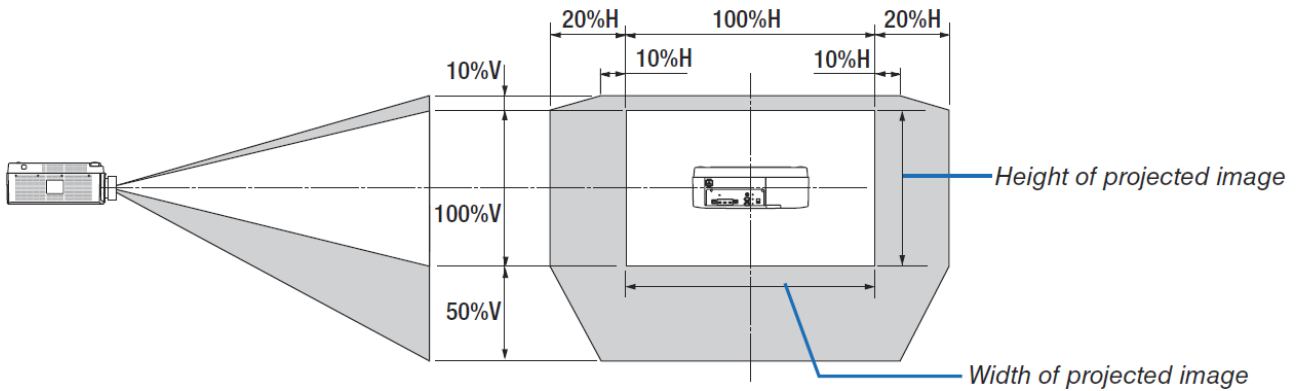
Desktop and Ceiling Mount

### Lens Shift Adjustable Range

#### Desk/front projection



#### Ceiling/front projector



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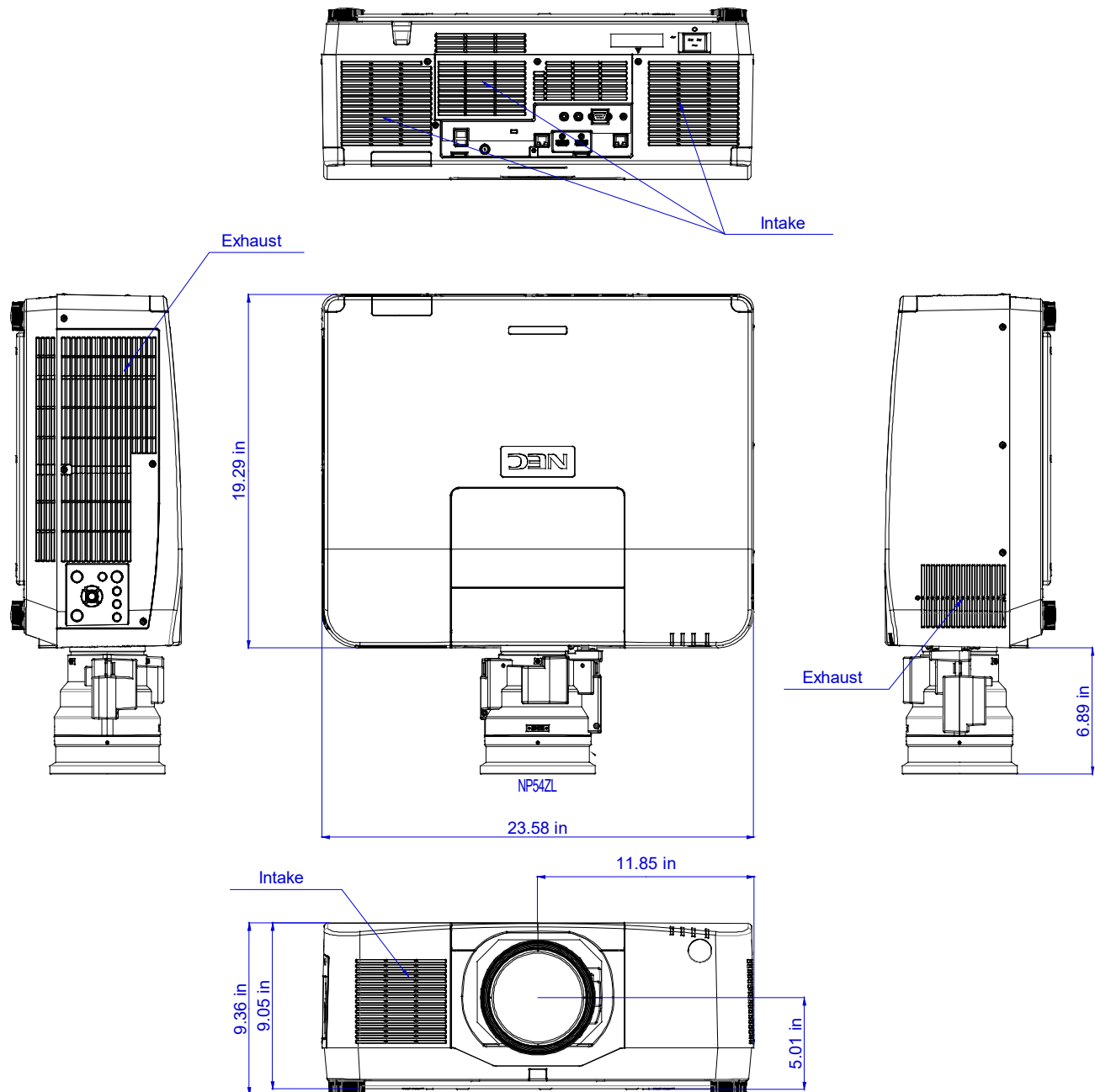
### Desktop and Ceiling Mount

#### Cabinet Dimensions

The following diagrams show the cabinet dimensions for the PA1505UL/PA1705UL.

Dimensions are in inches. For millimeters multiply by 25.4.

Note: Dimensions below shown with the NP54ZL lens

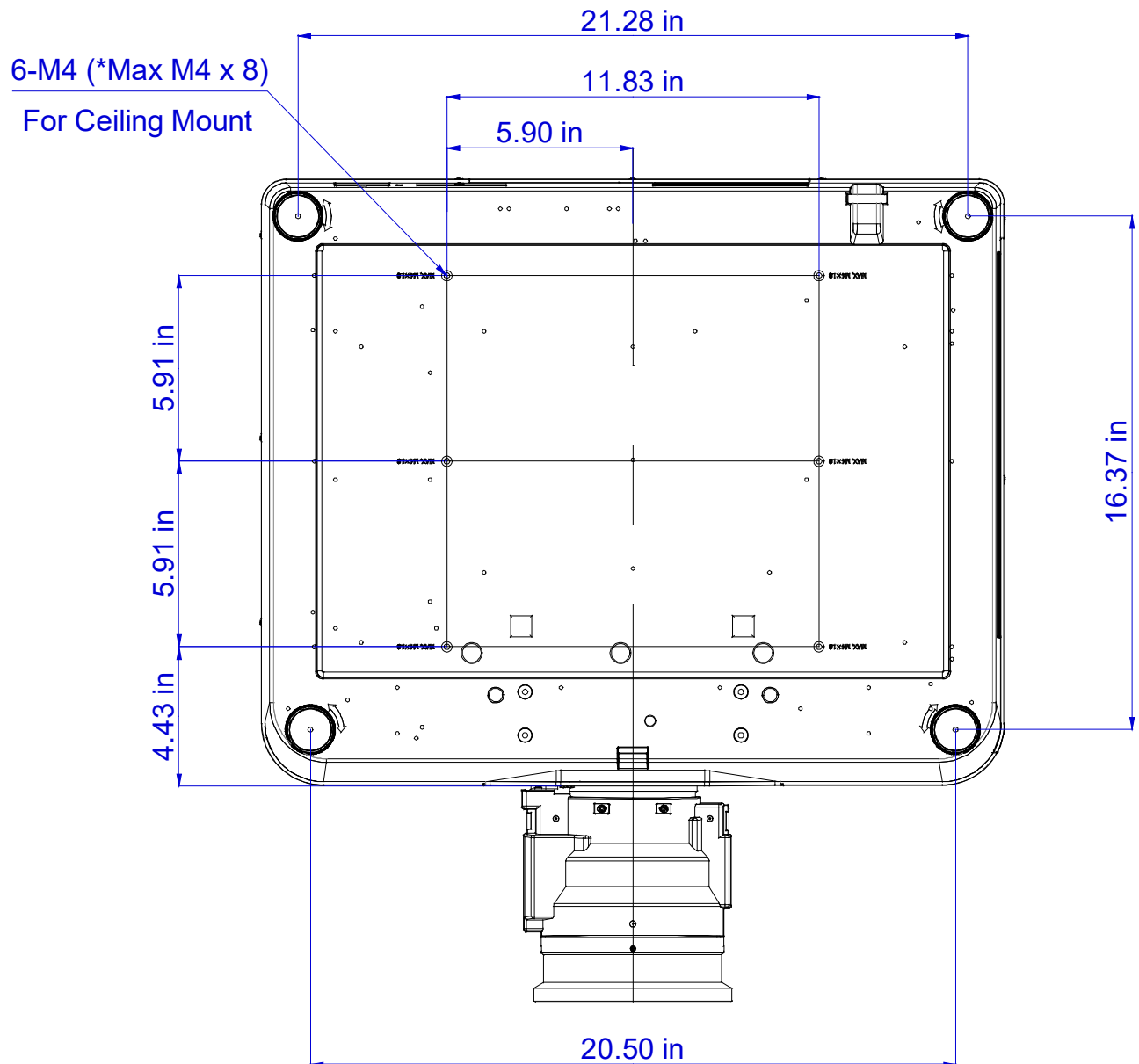


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### Cabinet Dimensions

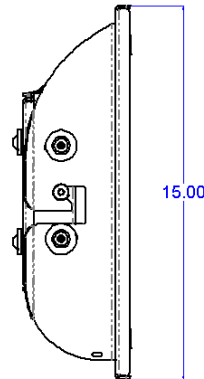
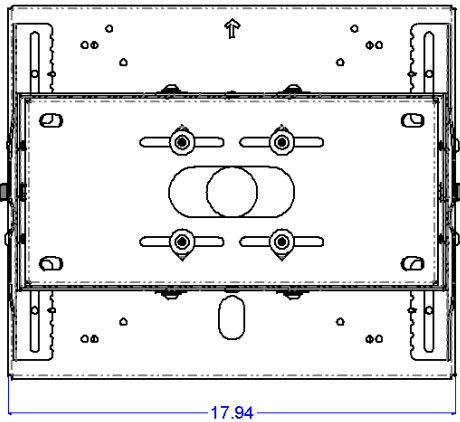
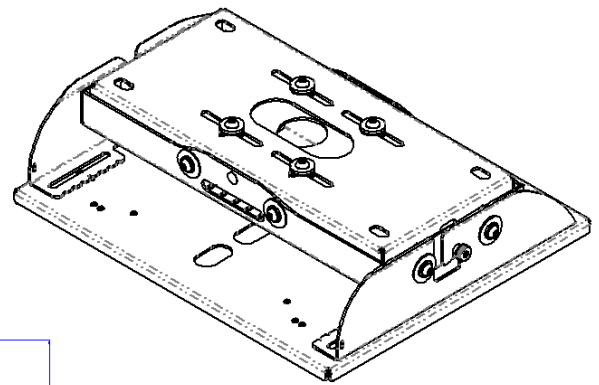
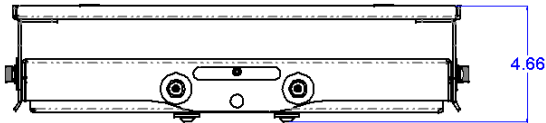


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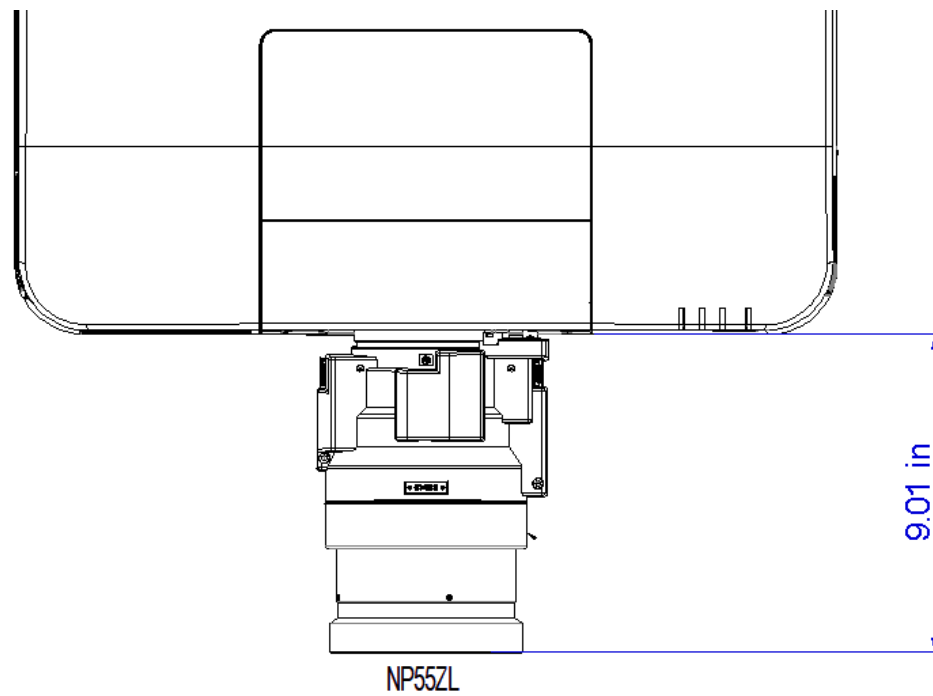
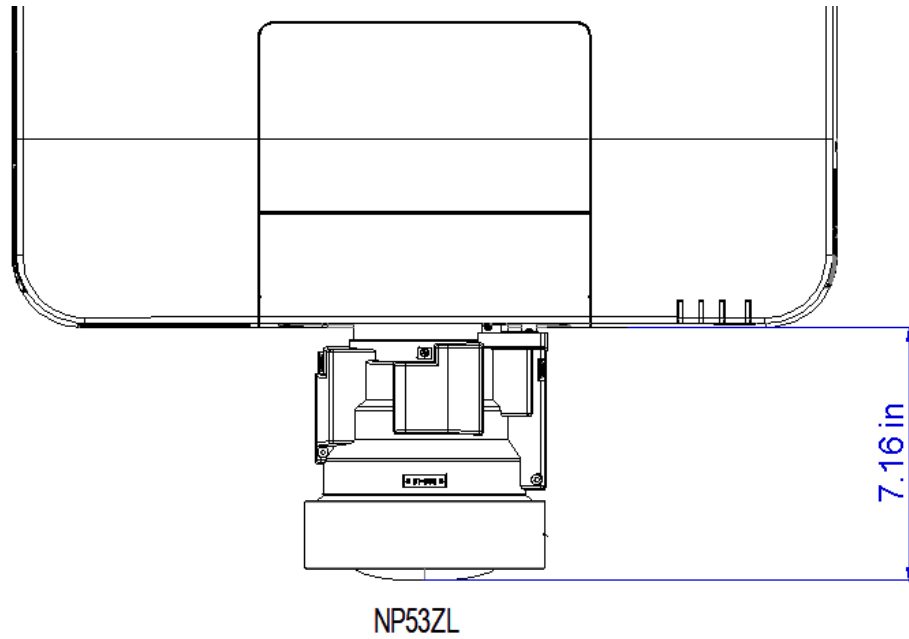


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### Optional Lens Dimensions (NP53ZL and NP55ZL)



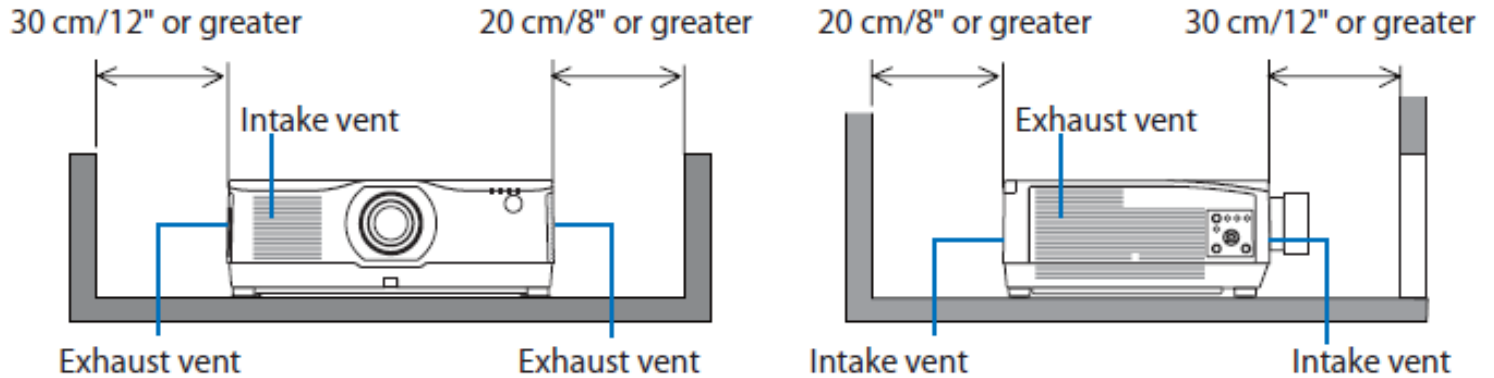


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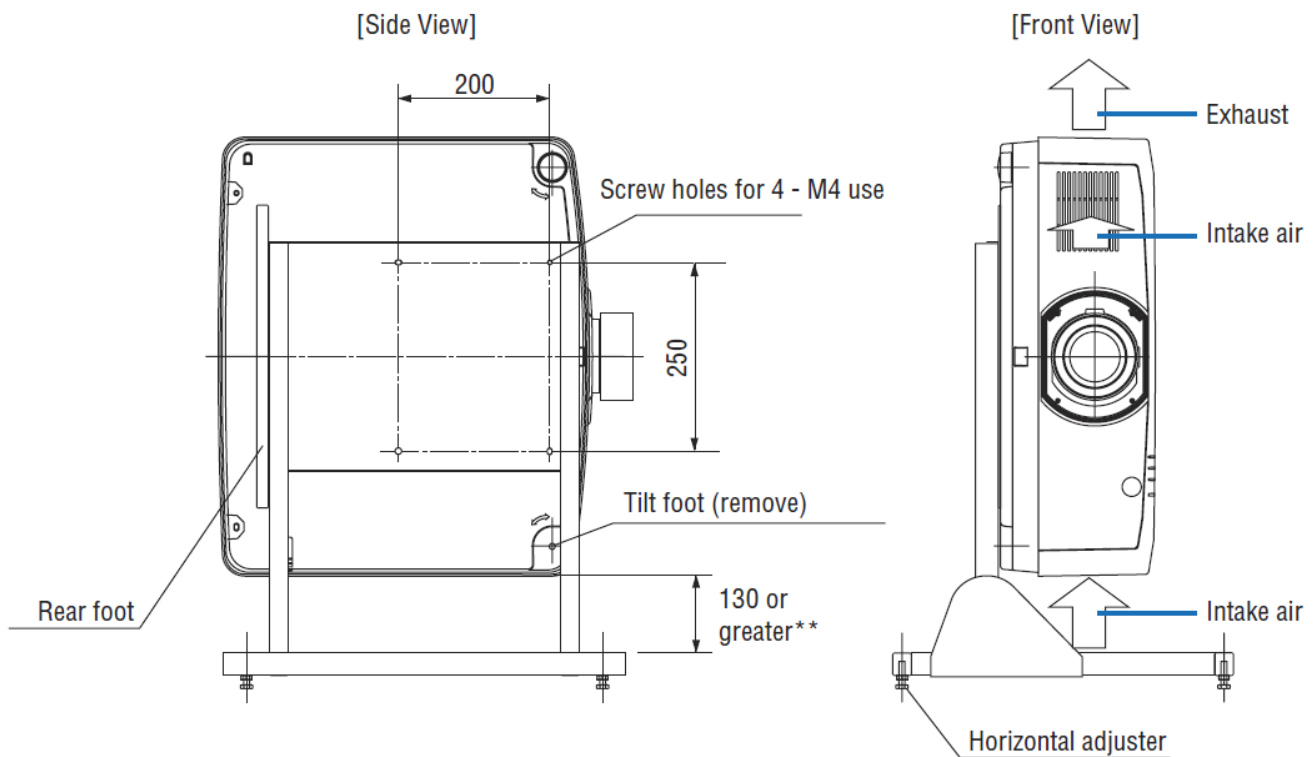
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### Ventilation Requirements



### Portrait Requirements



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### Regulatory Labels

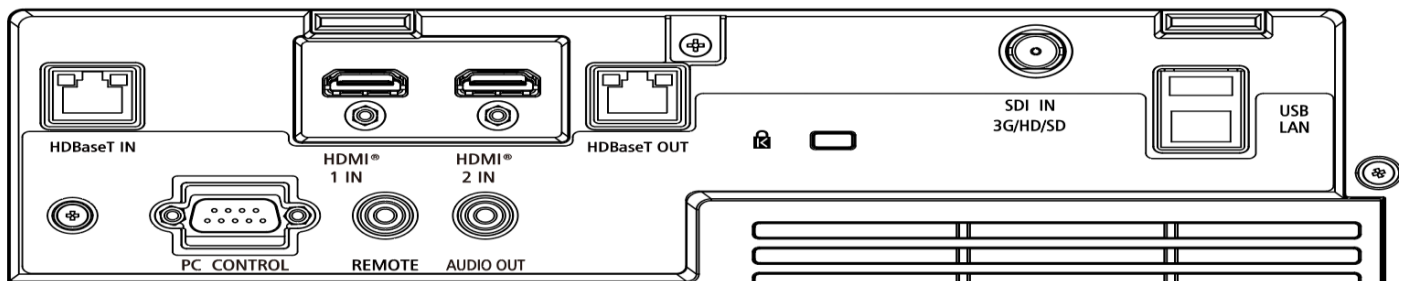
#### Label 1



#### Label 2



### Input Panel



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### PC Control Codes

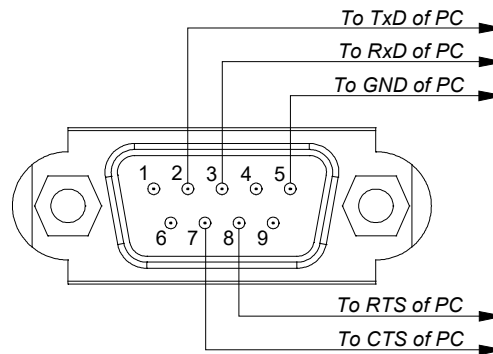
Function	Code Data								
POWER ON	02H	00H	00H	00H	00H	02H			
POWER OFF	02H	01H	00H	00H	00H	03H			
INPUT SELECT HDMI1	02H	03H	00H	00H	02H	01H	A1H	A9H	
INPUT SELECT HDMI2	02H	03H	00H	00H	02H	01H	A2H	AAH	
INPUT SELECT HDBaseT	02H	03H	00H	00H	02H	01H	BFH	C7H	
PICTURE MUTE ON	02H	10H	00H	00H	00H	12H			
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			
AUTO ADJUST	02H	0FH	00H	00H	02H	05H	00H	18H	

### Cable Connection

#### Communication Protocol:

- Baud Rate: 38400 bps (for cable lengths longer than 20', it is recommended changing to 9600 bps in setup menu)
- Data Length: 8 bits
- Parity: No Parity
- Stop Bit: 1 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.