PA1505UL & PA1705UL Installation Guide
Desktop and Ceiling Mount

Rev 1.4

Contents

Product Description, Lens Specs, Screen/Aspect Ratio

Product Description

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

Lens Specifications

NP51ZL:	Throw Ratio: 0.53 – 0.65:1 Screen Sizes: 60"-500"	Focal Length: 12.0 – 14.8mm F/#:1.85 - 2.2	**Weight:**	11.7lbs. / 5.3kg
NP52FL:	Throw Ratio: 0.65 – 0.87:1 Screen Sizes: 60"- 500"	Focal Length: 14.4 – 19.3mm F/#:1.84 – 2.25	**Weight:**	11.5lbs. / 5.2kg
NP53ZL:	Throw Ratio: 0.86 – 1.25:1 Screen Sizes: 60" - 500"	Focal Length: 19.0 – 27.6mm F/#:1.8 – 2.24	**Weight:**	11.2lbs. / 5.1kg
NP54ZL:	Throw Ratio: 1.24 – 2.01:1 Screen Sizes: 60" - 500"	Focal Length: 27.7 – 44.9mm F/#:1.8 – 2.24	**Weight:**	9.0lbs. / 4.1kg
NP55ZL:	Throw Ratio: 1.98 – 3.95:1 Screen Sizes: 60" - 500"	Focal Length: 43.8 – 87.4mm F/#:1.84 -2.58	**Weight:**	11.0lbs. / 5.0kg
NP57ZL:	Throw Ratio: 3.92 – 7.4:1 Screen Sizes: 60"-500"	Focal Length: 76.6 – 116.5mm F/#:2.0 - 2.5	**Weight:**	10.1lbs. / 4.6kg

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.

PA1505UL & PA1705UL Installation Guide   Rev 1.4
Desktop and Ceiling Mount

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) $= 0.559W - 2.485$ ------ C(Tele) $= 0.679W - 2.244$
NP52ZL:	C(Wide) $= 0.671W - 2.198$ ------ C(Tele) $= 0.889W - 1.949$
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) $= 3.813W + 12.226$ ------ C(Tele) $= 7.383W + 12.074$

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) = 0.5H (NP51ZL)
Vertical Lens Shift Max (Down) = 0.5H (NP51ZL)
Vertical Lens Shift Max (Up) = 0.55H (NP52ZL)
Vertical Lens Shift Max (Down) = 0.55H (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.
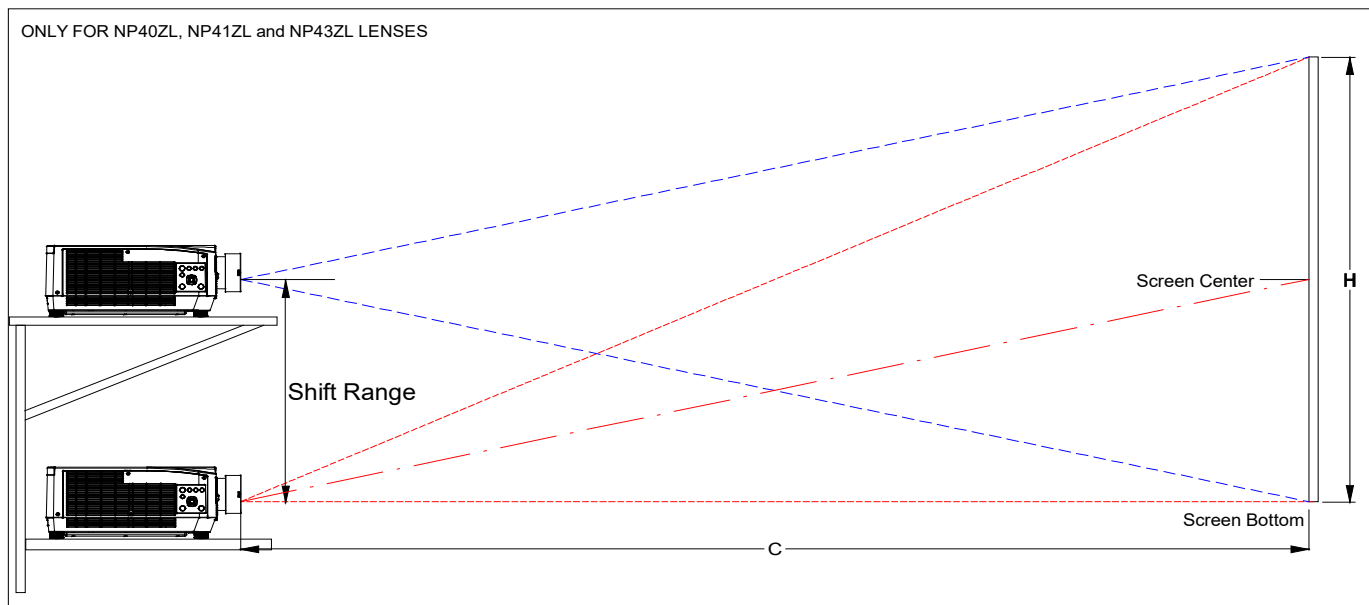- Distances may vary ±5%.

PA1505UL & PA1705UL Installation Guide   Rev 1.4
Desktop and Ceiling Mount
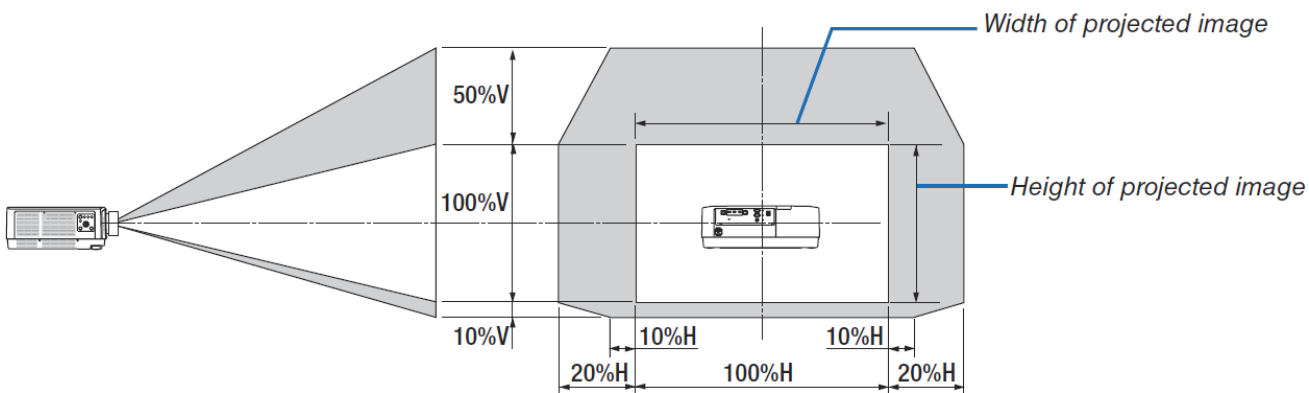
Ceiling Mount Installation
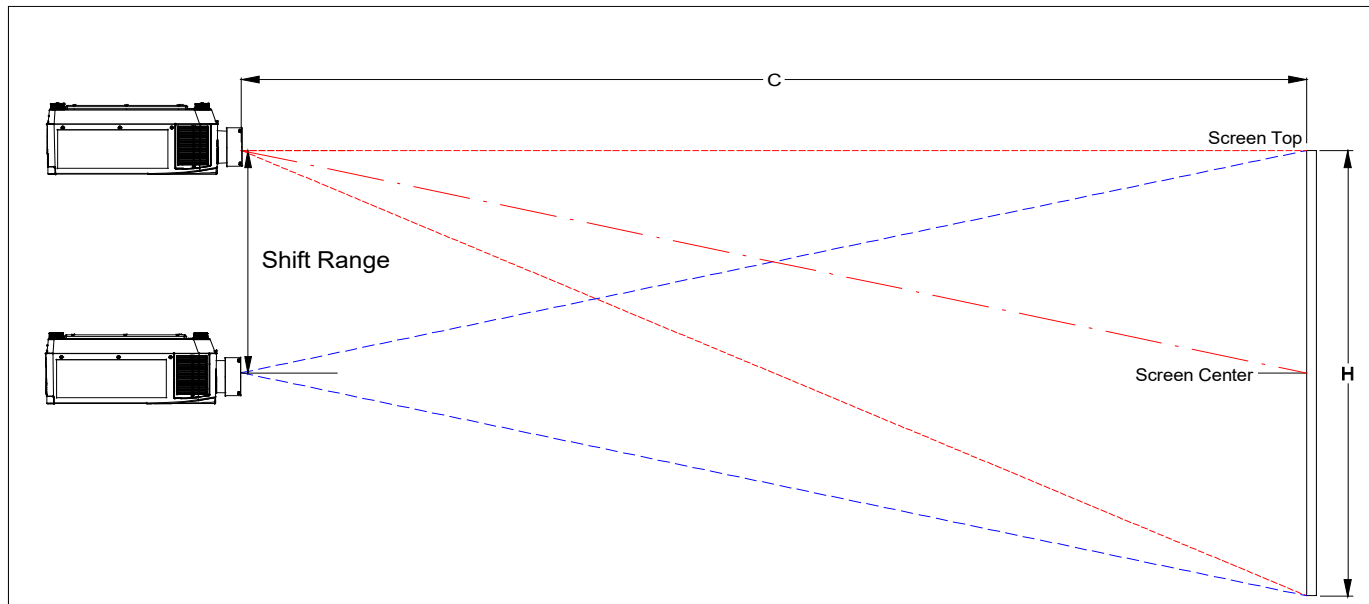
Desktop Installation

ONLY FOR NP40ZL, NP41ZL and NP43ZL LENSES

PA1505UL & PA1705UL Installation Guide

Rev 1.4

Desktop and Ceiling Mount

Lens Shift Adjustable Range

Desk/front projection

Width of projected image

Height of projected image

50%V

100%V

10%V

10%H

10%H

20%H

100%H

20%H

Ceiling/front projector
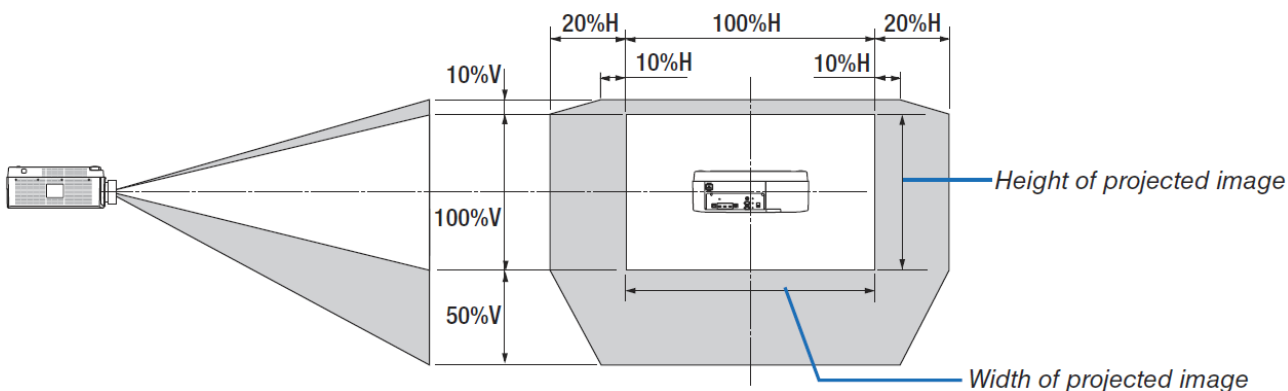
20%H

100%H

20%H

10%V

10%H

10%H

Height of projected image

100%V

50%V

Width of projected image

SHARP

PA1505UL & PA1705UL Installation Guide   Rev 1.4
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.
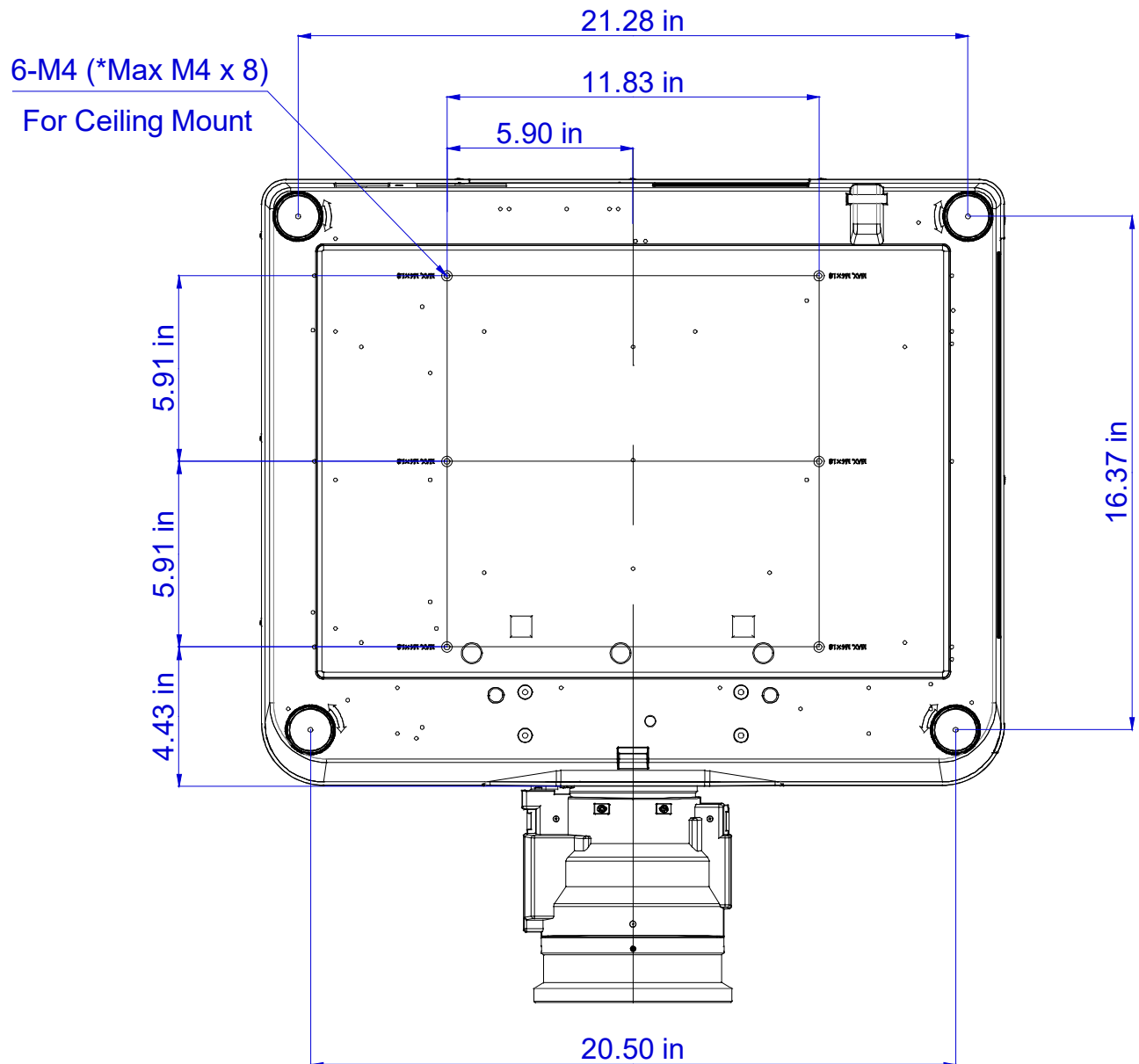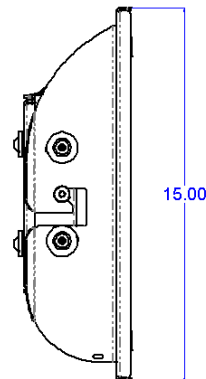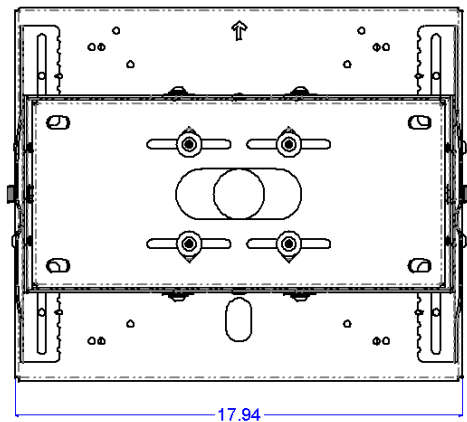Note: Dimensions below shown with the NP54ZL lens
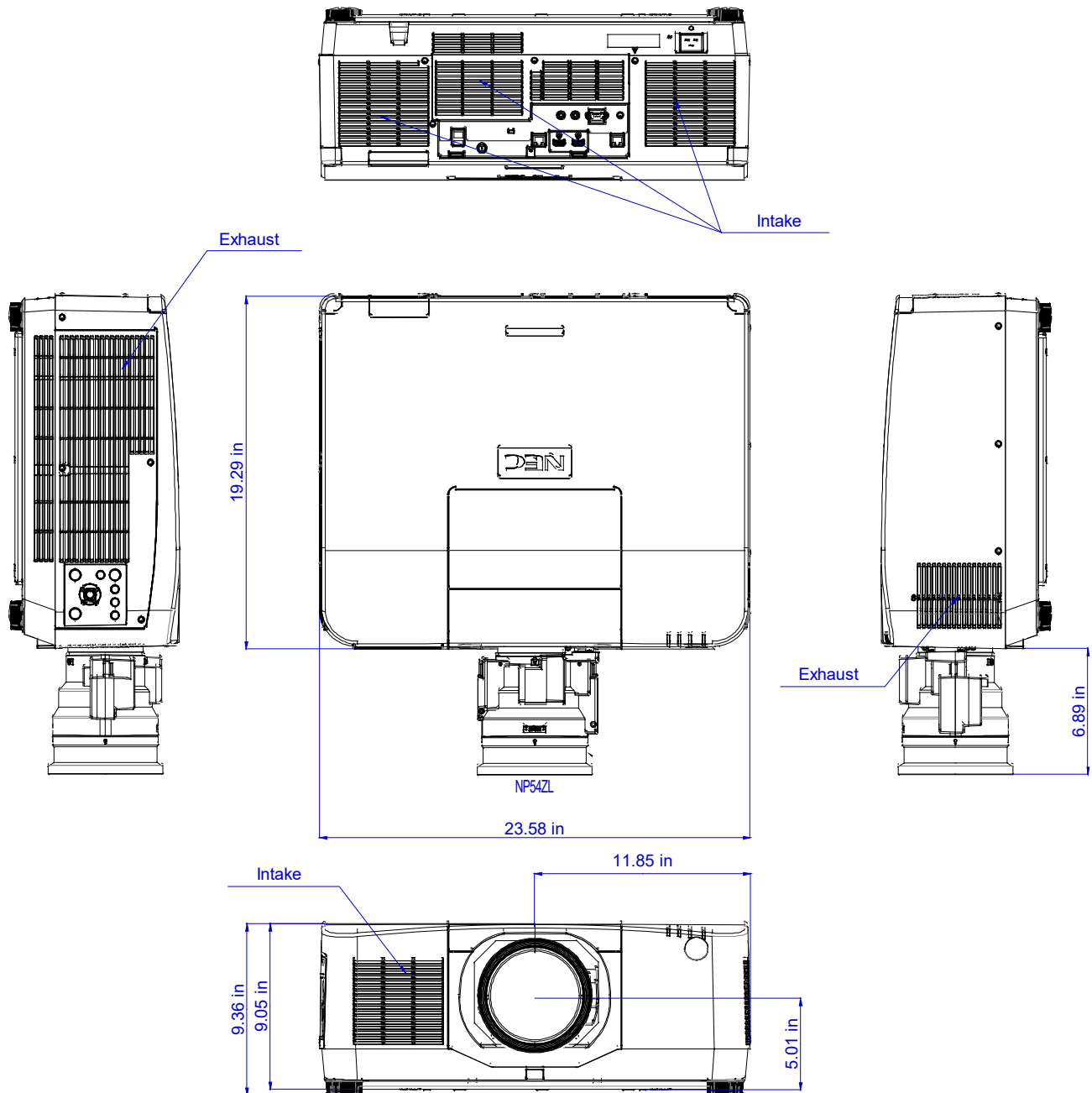
Intake

Exhaust

19.29 in

Exhaust

6.89 in

NP54ZL

23.58 in

11.85 in

Intake

9.36 in

9.05 in

5.01 in

PA1505UL & PA1705UL Installation Guide Rev 1.4
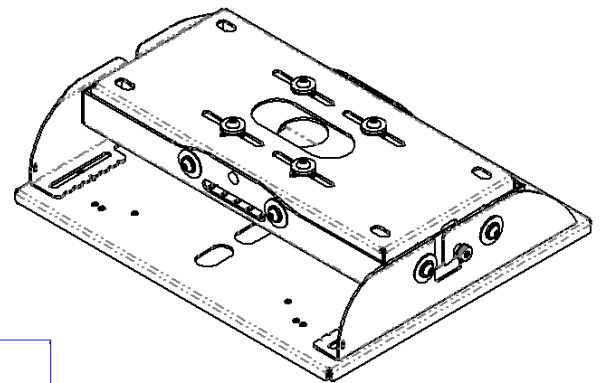Desktop and Ceiling Mount
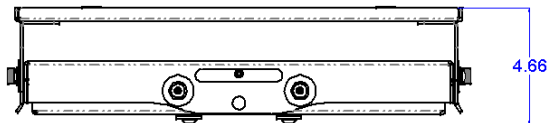
Cabinet Dimensions

PA1505UL & PA1705UL Installation Guide   Rev 1.4
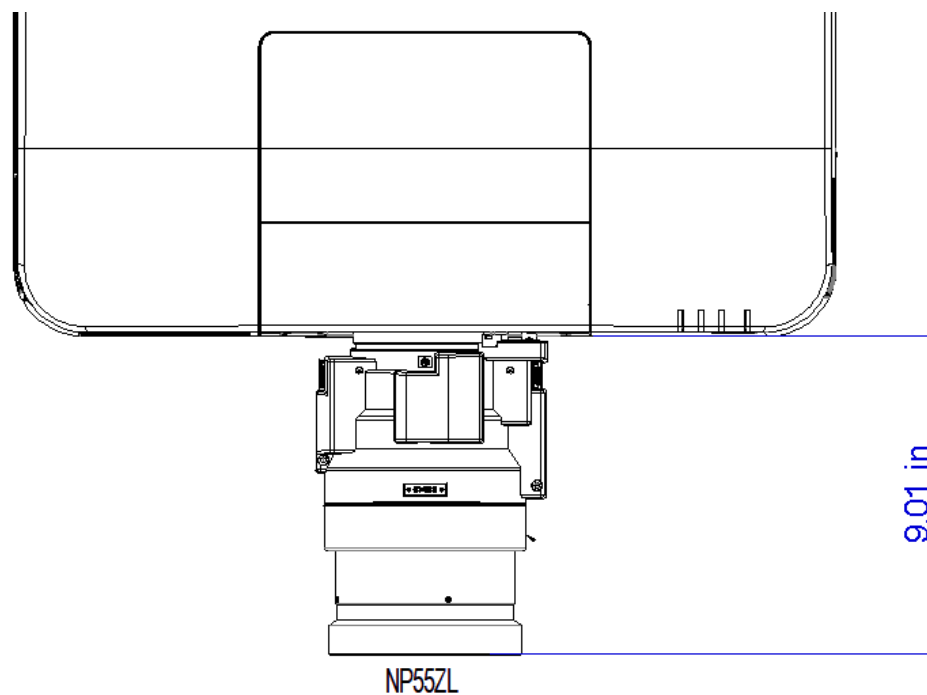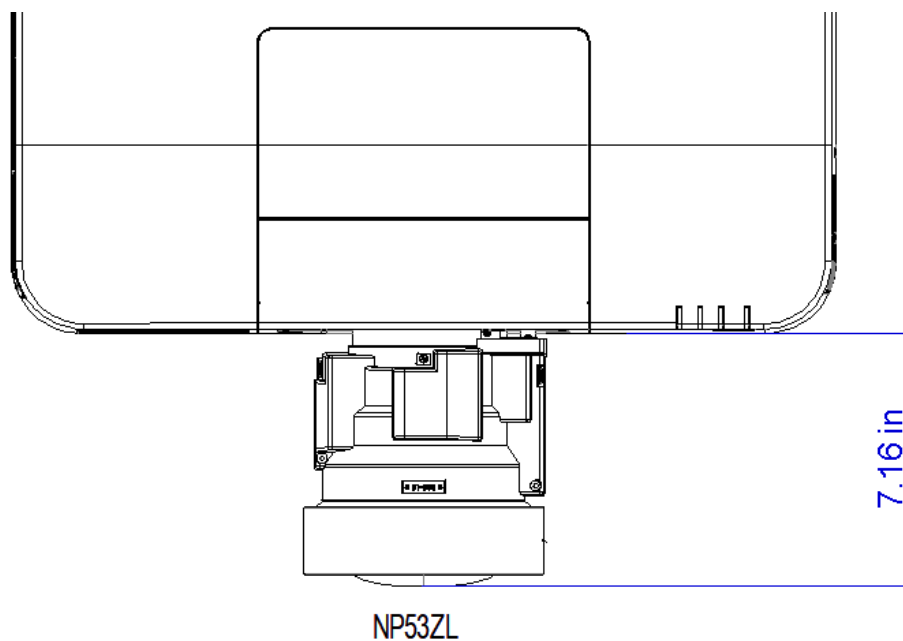Desktop and Ceiling Mount

IPJ2000CM

4.66

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PA1505UL & PA1705UL Installation Guide

Rev 1.4

Desktop and Ceiling Mount
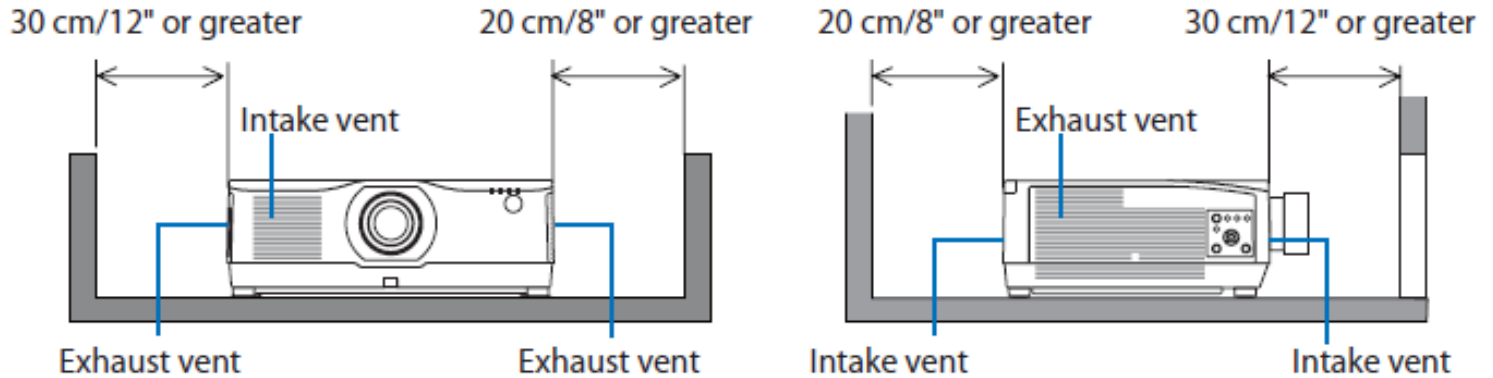
Optional Lens Dimensions (NP53ZL and NP55ZL)

NP53ZL

7.16 in

NP55ZL
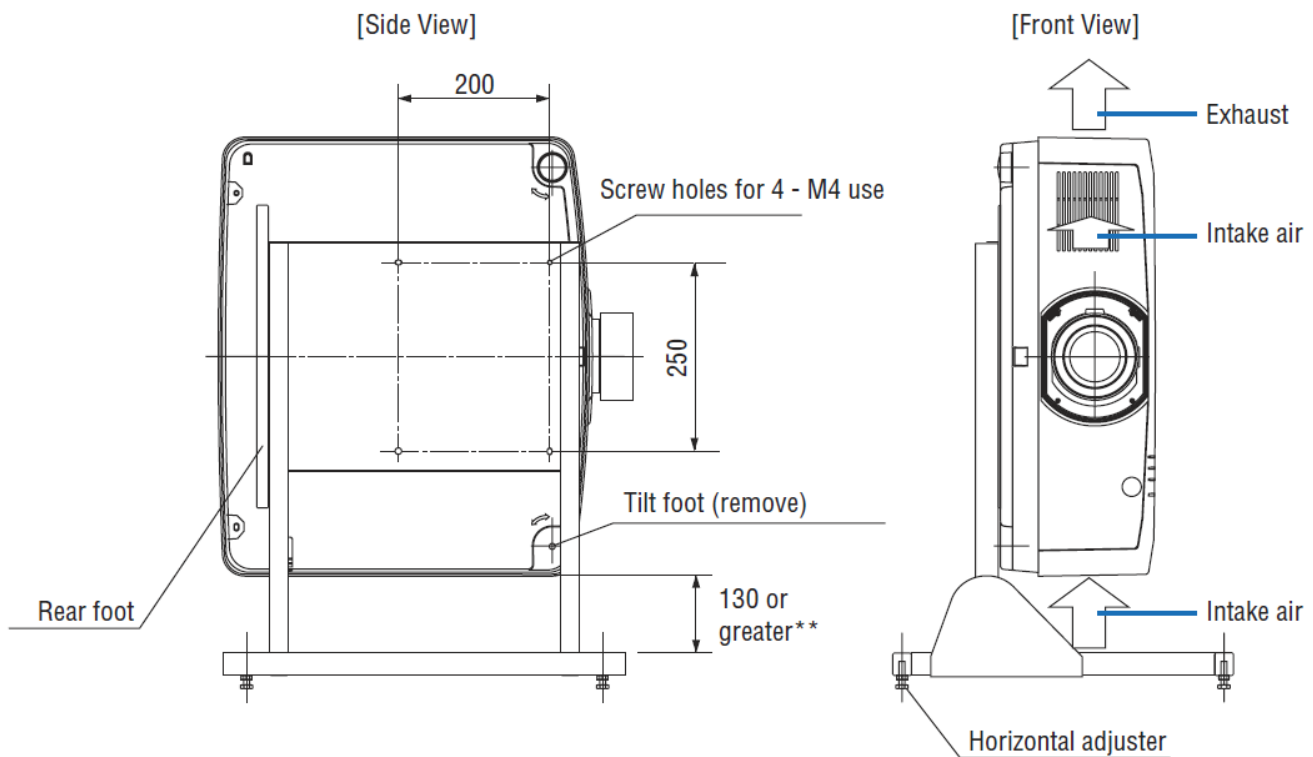
9.01 in

PA1505UL & PA1705UL Installation Guide
Desktop and Ceiling Mount

Rev 1.4

Ventilation Requirements

30 cm/12" or greater — Intake vent — 20 cm/8" or greater

Exhaust vent — Exhaust vent

20 cm/8" or greater — Exhaust vent — 30 cm/12" or greater

Intake vent — Intake vent

Portrait Requirements

[Side View]

200

Screw holes for 4 - M4 use

250

Tilt foot (remove)

Rear foot

130 or greater**

[Front View]

Exhaust

Intake air

Intake air

Horizontal adjuster

PA1505UL & PA1705UL Installation Guide

Rev 1.4

Desktop and Ceiling Mount
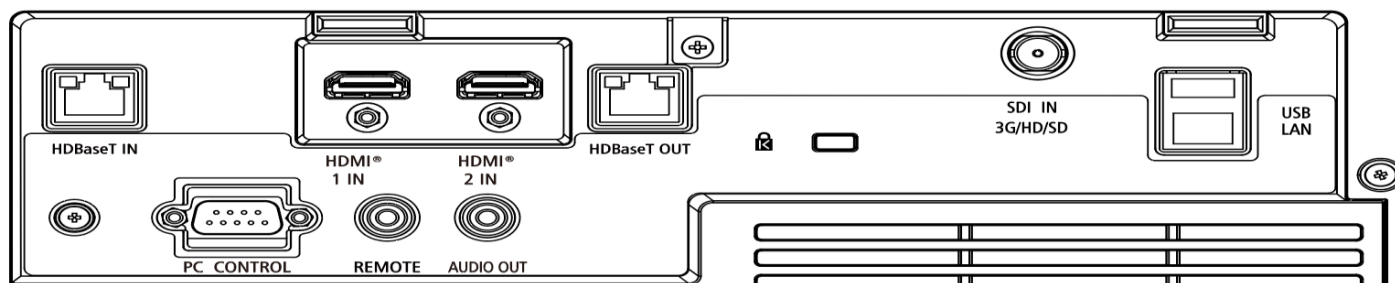
Regulatory Labels

Label 1

Label 2

Input Panel

PA1505UL & PA1705UL Installation Guide   Rev 1.4
## Desktop and Ceiling Mount

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)

To TxD of PC
To RxD of PC
To GND of PC
To RTS of PC
To CTS of PC

1 2 3 4 5
6 7 8 9
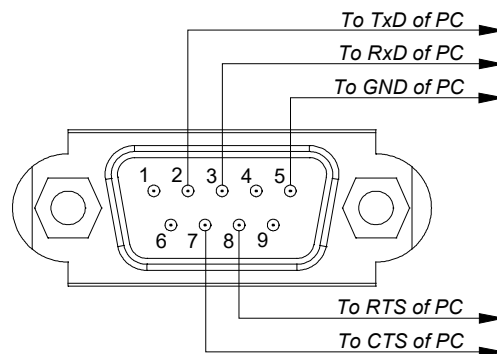
NOTE 1: *Pins 1, 4, 6, and 9 are used inside the projector.*
NOTE 2: *For long cable runs it is recommended to set communication speed within the projector to 9600 bps.*
NOTE 3: *Jumper "Request to Send" and "Clear to Send" together on both ends of the cable to simplify cable connection.*