

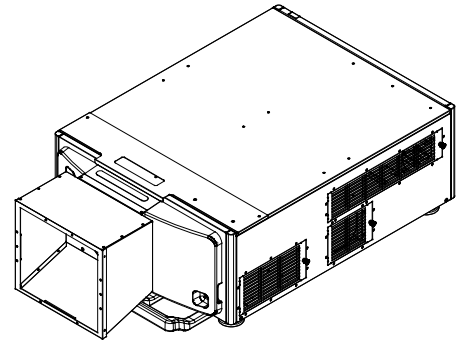
## PH1202HL1 Installation Guide

### Desktop and Ceiling Mount

Rev 1.4

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#### Product Description

<b>Type:</b>	3 chip DMD Reflection Type 0.69 in. 2x LVDS DMD	<b>Dimensions:</b> 26.8"(W) x 13.1"(H) x 33.9"(D)
<b>Resolution:</b>	1920 x 1080 (16:9)	<b>Weight:</b> 160.9 lbs. / 73kg
<b>Fan Noise:</b>	47 dB / 39dB @ 1 meter	<b>Brightness:</b> 12,000 Lumens
<b>Power Consumption:</b>	1392W (max)	<b>BTU's:</b> 3754 BTU/hour

Network Ready, integrated wired and wireless adapter  
Powered: Horizontal & Vertical Lens Shift, Zoom, Focus

#### Lens Specifications

<b>NP-9LS08ZM1:</b>	Throw Ratio: ~ 0.9 – 1.34:1 Screen Sizes: 100"-500"	Focal Length: 13.3 – 19.9mm F/#: 2.5 – 3.0	<b>Weight:</b> 4.4lbs. / 2.2kg
<b>NP-9LS12ZM1:</b>	Throw Ratio: 1.28 - 1.83:1 Screen Sizes: 100-500"	Focal Length: 18.6 – 26.7mm F/#: 2.5	<b>Weight:</b> 3.8lbs. / 1.7kg
<b>NP-9LS13ZM1:</b>	Throw Ratio: 1.42 – 2.24:1 Screen Sizes: 100-500"	Focal Length: 20.7 – 32.7mm F/#: 2.5	<b>Weight:</b> 3.8lbs. / 1.7kg
<b>NP-9LS16ZM1:</b>	Throw Ratio: 1.73 – 2.88:1 Screen Sizes: 100-500"	Focal Length: 25.2 – 42.0mm F/#: 2.5	<b>Weight:</b> 3.8lbs. / 1.7kg

#### 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.

#### 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..
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary ±5%.

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### Formulas: 16:9 Aspect Ratio (PH1202HL—1080)

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:**

- NP-9LS08ZM1: C(Wide) = 0.912W – 2.094 ----- C(Tele) = 1.369W – 2.094
- NP-9LS12ZM1: C(Wide) = 1.283W – 2.118 ----- C(Tele) = 1.833W – 2.118
- NP-9LS13ZM1: C(Wide) = 1.423W – 2.189 ----- C(Tele) = 2.250W – 2.189
- NP-9LS16ZM1: C(Wide) = 1.726W + 2.205 ----- C(Tele) = 2.891W + 2.205
- NP-9LS20ZM1: C(Wide) = 2.222W + 3.024 ----- C(Tele) = 4.156W + 3.024
- NP-9LS40ZM1: C(Wide) = 4.278W - 4.110 ----- C(Tele) = 6.739W – 4.118

**Definitions:**

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

**16:9 Screen Formulas**

- W = H x 16/9
- H = W x 9/16
- Screen Diagonal = W x 18.358/16

**16:10 Screen Formulas**

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

### Distance Chart for popular 16:9 Screens (1080p)

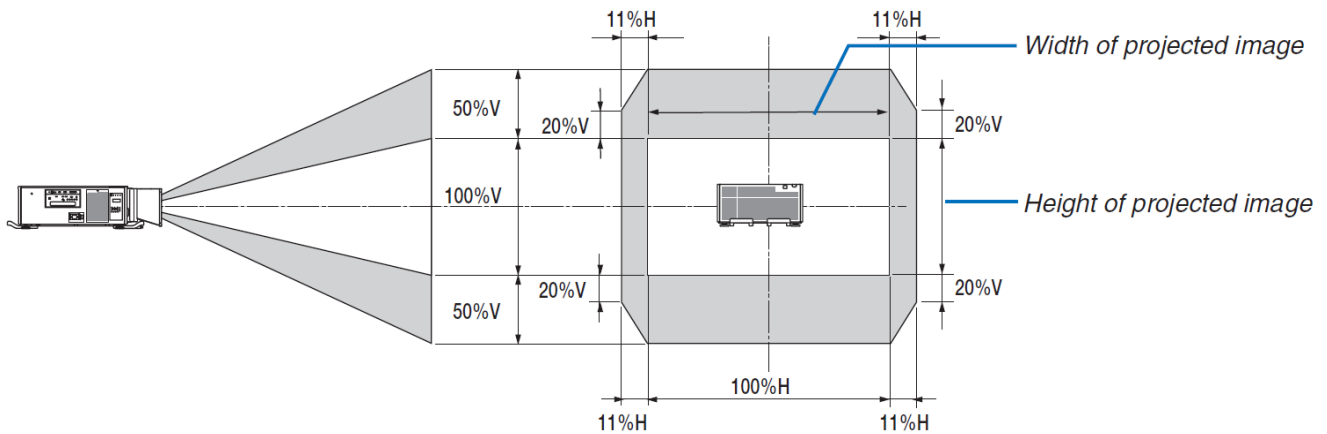
Screen Size (16:9)			Zoom Lenses					
			NP-9LS08ZM1	NP-9LS12ZM1	NP-9LS13ZM1	NP-9LS16ZM1	NP-9LS20ZM1	NP-9LS40ZM1
Diagonal	Width(W)	Height (H)	0.9-1.34:1	1.28-1.83:1	1.42-2.24:1	1.73-2.88:1	2.23-4.16:1	4.43-6.76:1
inches	inches	inches	inches	inches	inches	inches	inches	inches
50	44	25	37.6 - 57.6	N/A - N/A	N/A - N/A	N/A - N/A	N/A - N/A	N/A - N/A
65	57	32	49.6 - 75.5	N/A - N/A	N/A - N/A	N/A - N/A	N/A - N/A	246.5 - 385.89
73	64	36	55.9 - 85.0	N/A - N/A	N/A - N/A	N/A - N/A	N/A - N/A	276.3 - 432.88
78	68	38	59.9 - 91.0	N/A - N/A	N/A - N/A	N/A - N/A	N/A - N/A	294.9 - 462.24
92	80	45	71.0 - 107.7	100.8 - 144.9	111.8 - 178.2	136.2 - 229.6	181.2 - 336.26	347.1 - 544.47
98	85	48	75.8 - 114.8	107.5 - 154.5	119.3 - 190.0	145.2 - 244.7	192.8 - 358	369.5 - 579.71
108	94	53	83.8 - 126.8	118.6 - 170.5	131.7 - 209.6	160.3 - 269.9	212.2 - 394.22	406.8 - 638.45
131	114	64	102.0 - 154.2	144.4 - 207.3	160.2 - 254.7	194.9 - 327.9	256.7 - 477.53	492.5 - 773.53
161	140	79	125.9 - 190.0	177.9 - 255.2	197.3 - 313.5	240.0 - 403.5	314.8 - 586.2	604.4 - 949.74
192	167	94	150.5 - 227.0	212.6 - 304.8	235.8 - 374.3	286.6 - 481.6	374.9 - 698.48	720.0 - 1131.8
226	197	111	177.5 - 267.6	250.6 - 359.1	277.9 - 441.0	337.8 - 567.2	440.7 - 821.64	846.8 - 1331.5
259	226	127	203.8 - 306.9	287.5 - 411.9	318.8 - 505.7	387.4 - 650.4	504.6 - 941.17	969.8 - 1525.3
292	254	143	230.0 - 346.3	324.4 - 464.6	359.7 - 570.4	437.1 - 733.5	568.5 - 1060.7	1092.8 - 1719.2
324	282	159	255.4 - 384.5	360.2 - 515.8	399.4 - 633.2	485.2 - 814.2	630.5 - 1176.6	1212.1 - 1907.1
400	349	196	315.8 - 475.2	445.2 - 637.3	493.6 - 782.2	599.5 - 1005.7	777.7 - 1451.9	1495.5 - 2353.5
500	436	245	395.3 - 594.5	557.0 - 797.1	617.5 - 978.3	749.9 - 1257.6	971.3 - 1814.1	1868.4 - 2940.8

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### Lens Shift Adjustable Range



#### Lens Shift Range for Desktop and Ceiling Mount Application

The diagram below shows the location of the image position in the lens. The lens can be shifted within the shaded area as shown using the normal projection position as a starting point.

**Note:** Projector is set out of the box at maximum lens shift, which is how it is depicted above.  
(W: width of projected image, H: height of projected image)

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### Desktop and Ceiling Mount

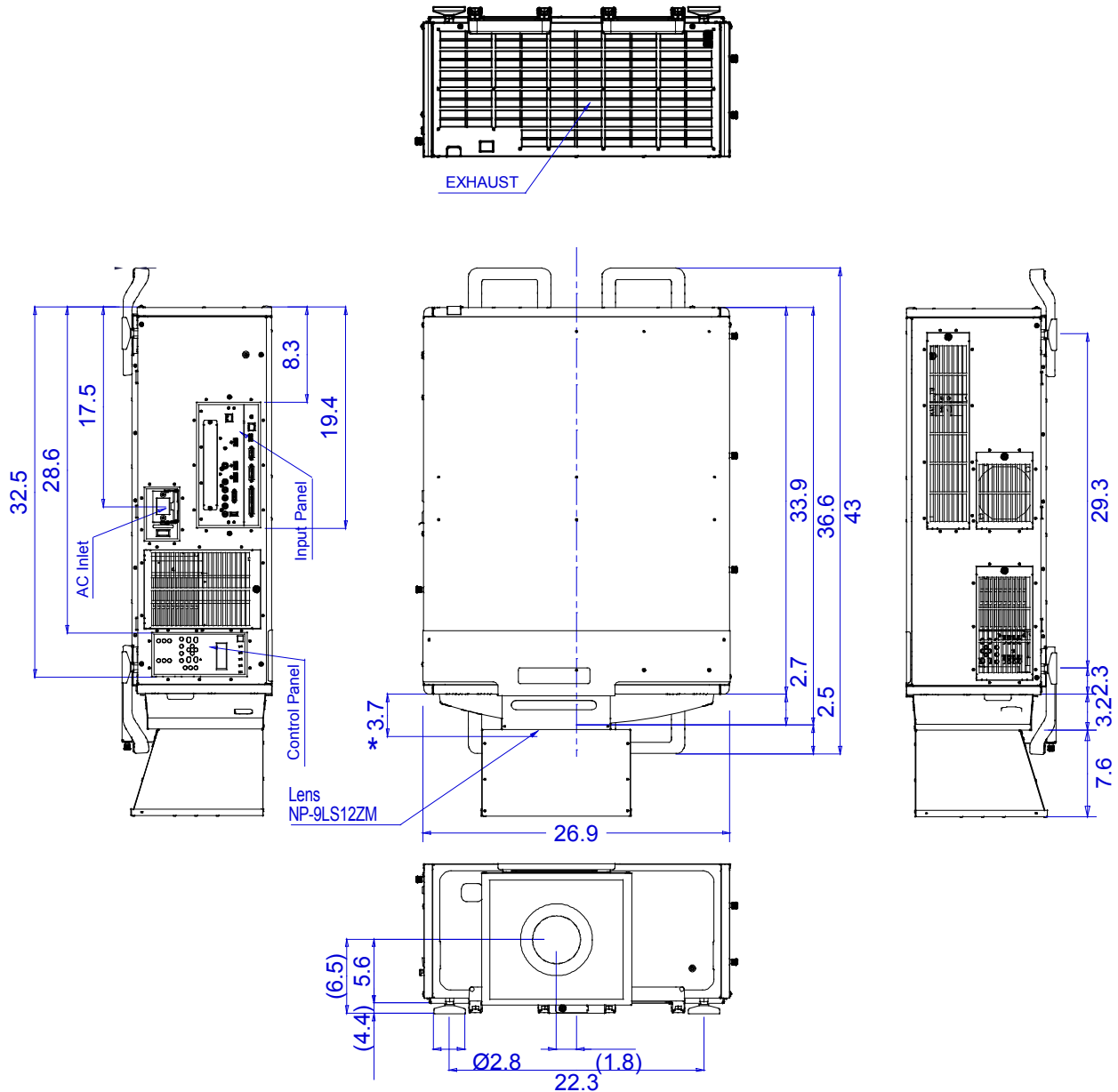
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### Cabinet Dimensions

The following diagrams show the cabinet dimensions for the PH1202HL1.

Dimensions are in inches. For millimeters multiply by 25.4.

Note: Dimensions below shown without lens

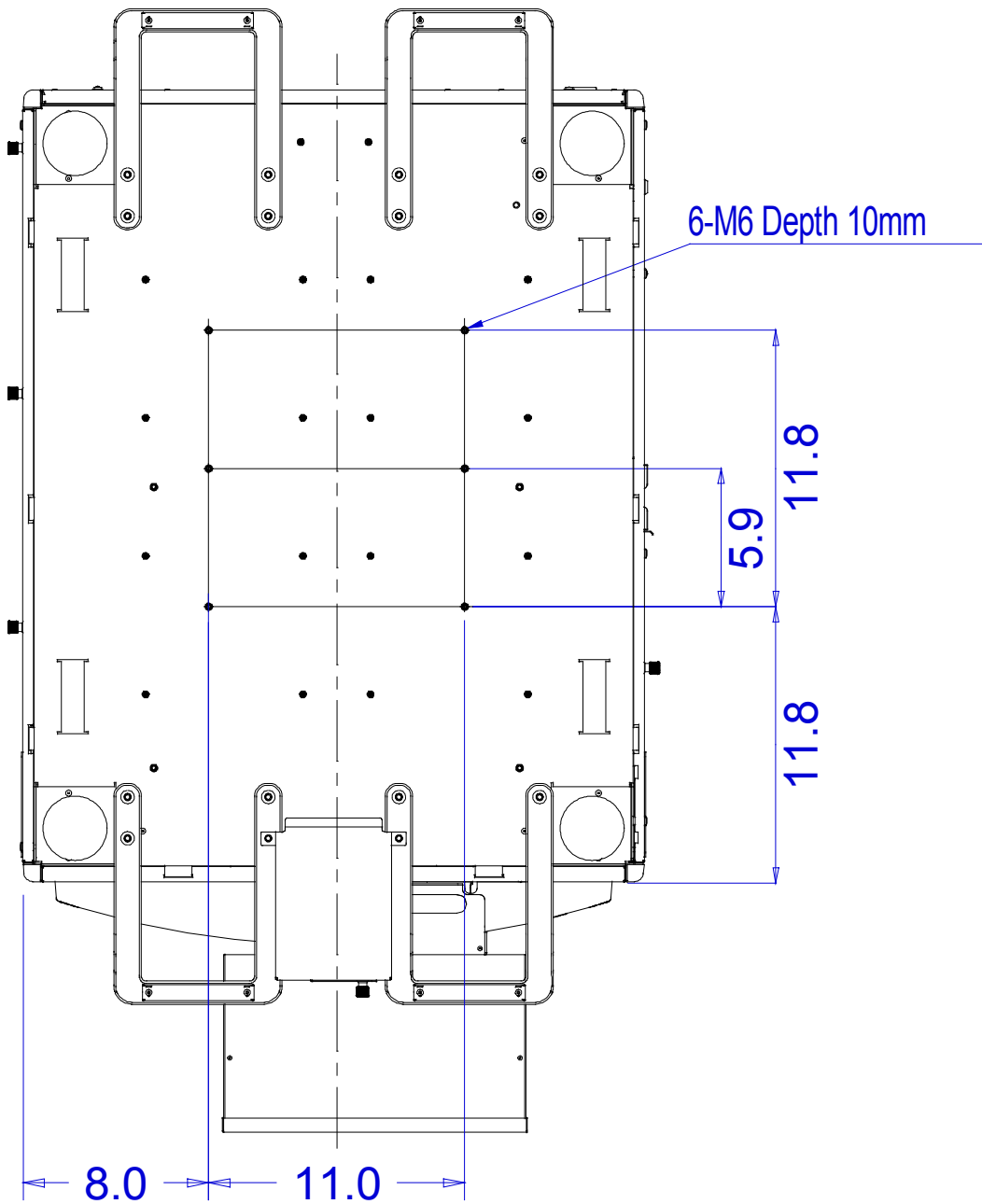


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### Cabinet Dimensions

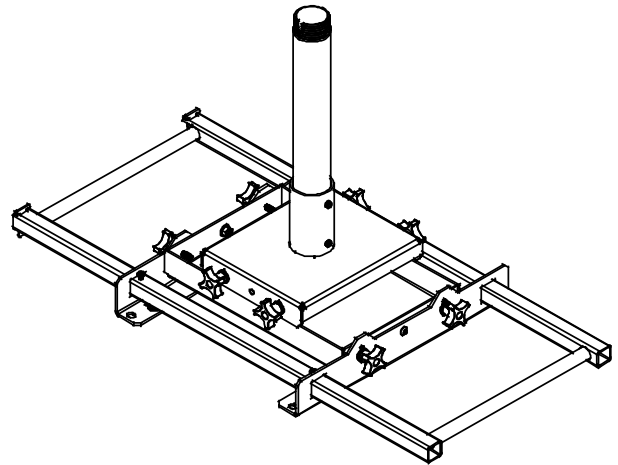
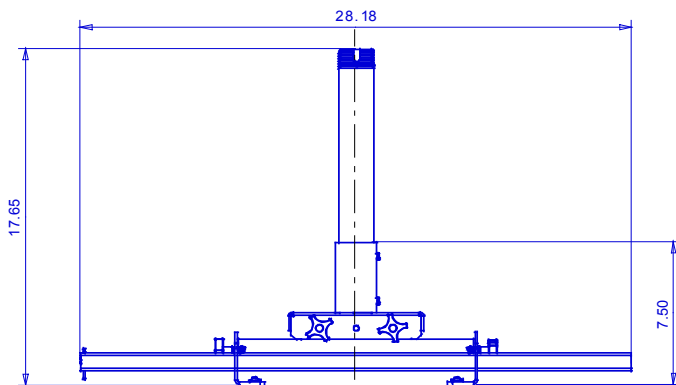
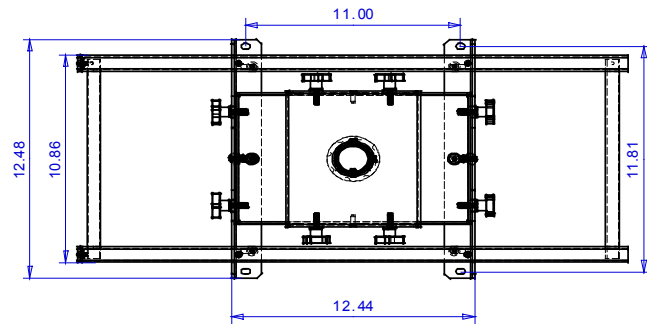


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### Optional Mount Dimensions (NC1100CM)



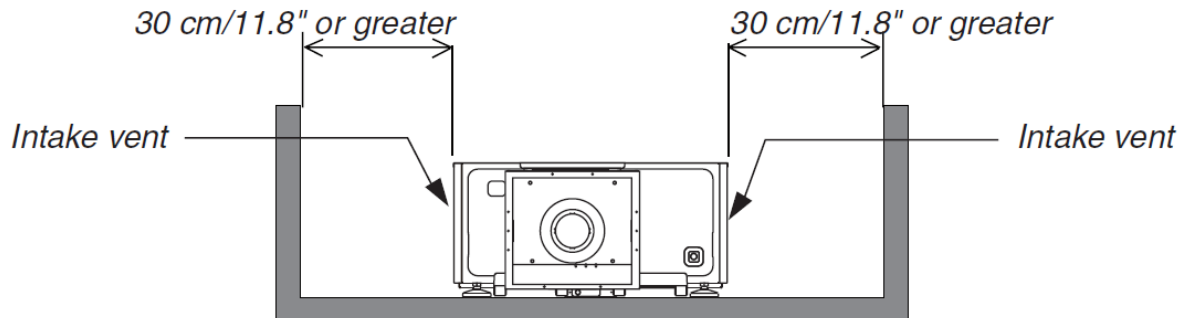
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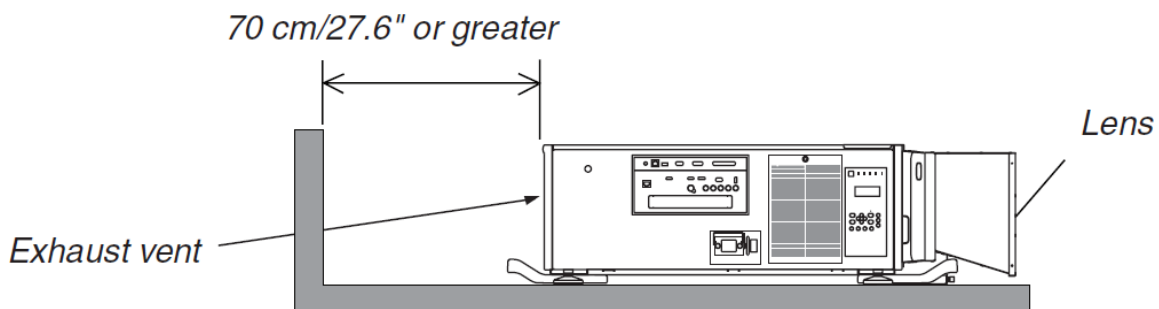
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### Ventilation Requirements

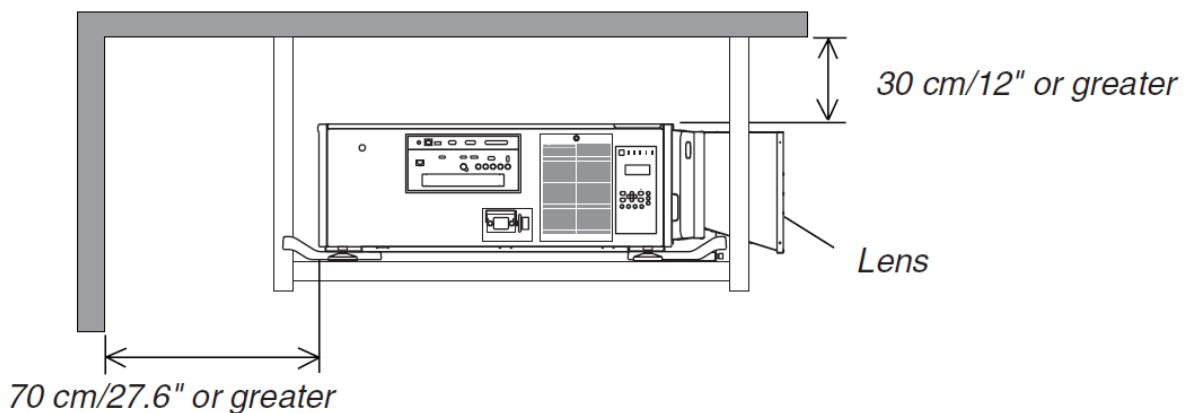
- If there are walls on both sides of the projector :



- If there's a wall behind the projector :



- For ceiling mounting :



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### Regulatory Labels

The PH1202HL1 was certified based on Class 3R of IEC60825-1 Second edition 2007-03. It complies with FDA performance standards 21 CFR 1040.10 and 1040.11 for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

The lens hood on the PH1202HL1 changes the certification to a Class 3R device and therefore has NO Hazard Distance for installation.





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### Button Panel



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### PC Control Codes

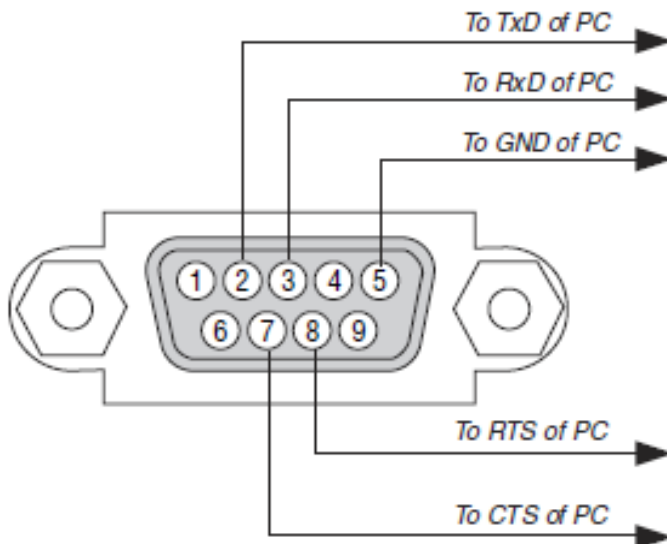
Function	Code Data
POWER ON	02H 00H 00H 00H 00H 02H
POWER OFF	02H 01H 00H 00H 00H 03H
INPUT SELECT COMPUTER	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT BNC	02H 03H 00H 00H 02H 01H 02H 0AH
INPUT SELECT BNC (CV)	02H 03H 00H 00H 02H 01H 06H 0EH
INPUT SELECT BNC (Y/C)	02H 03H 00H 00H 02H 01H 0BH 13H
INPUT SELECT HDBaseT	02H 03H 00H 00H 02H 01H 20H 28H
INPUT SELECT HDMI	02H 03H 00H 00H 02H 01H A1H A9H
INPUT SELECT DisplayPort	02H 03H 00H 00H 02H 01H A6H AEH
INPUT SELECT SLOT	02H 03H 00H 00H 02H 01H ABH B3H
PICTURE MUTE ON	02H 10H 00H 00H 00H 12H
PICTURE MUTE OFF	02H 11H 00H 00H 00H 13H

### 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: 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.