

## PX700W/PX750U/PX800X Installation Guide

### Desktop and Ceiling Mount

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#### Product Description

<b>Type:</b>	1 chip DMD Reflection Type 0.65 in. 2x LVDS DMD (PX700W) 0.67 in. 2x LVDS DMD (PX750U) 0.7 in. 2x LVDS DMD (PX800X)	<b>Dimensions:</b> 19.84"(W) x 8.67"(H) x 20.55"(D)
<b>Resolution:</b>	1920 x 1200 (16:10) 1280 x 800 (16:10) 1024 x 768 (4:3)	<b>Weight:</b> PX Series: 19.7kg / 43.3 lbs
<b>Fan Noise:</b>	PX Series: 43 dB / 39dB @ 1 meter	<b>Brightness:</b> PX700W: 7000 Lumens PX750U: 7500 Lumens PX800X: 8000 Lumens
<b>Power Consumption:</b>	PX Series: 1008W (max)	<b>BTU's:</b> PX Series: 3439.44 BTU/hour

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

#### Lens Specifications

<b>NP06FL:</b> Throw Ratio: ~ 0.77:1 Screen Sizes: 50"-200"	Focal Length: 11.4mm F/#:2.0	<b>NP09ZL:</b> Throw Ratio: ~2.22 - 4.43:1 Screen Sizes: 40" - 500"	Focal Length: 32.0 – 63.0mm F/#:2.1 – 2.9
<b>NP07ZL:</b> Throw Ratio: ~1.33 - 1.79:1 Screen Sizes: 40" - 500"	Focal Length: 19.3 - 25.8mm F/#:1.8 – 2.3	<b>NP10ZL:</b> Throw Ratio: 4.43 - 8.3:1 Screen Sizes: 40" - 500"	Focal Length: 63.5 – 117.4mm F/#:2.2 – 3.1
<b>NP08ZL:</b> Throw Ratio: ~1.78 - 2.35:1 Screen Sizes: 40" – 500"	Focal Length: 26.0 - 34.0mm F/#:1.7 – 1.9		
<b>NP16FL:</b> Throw Ratio: ~ 0.76:1 Screen Sizes: 50"-300"	Focal Length: 11.6mm F/#: 1.85	<b>NP19ZL:</b> Throw Ratio: 2.22 - 3.67:1 Screen Sizes: 50-300"	Focal Length: 32.9 – 54.2mm F/#: 1.86 – 2.48
<b>NP17ZL:</b> Throw Ratio: 1.29 - 1.79:1 Screen Sizes: 50-300"	Focal Length: 18.7 – 26.5mm F/#: 1.85-2.5	<b>NP20ZL:</b> Throw Ratio: 3.60 – 5.40:1 Screen Sizes: 50-300"	Focal Length: 52.8 – 79.1mm F/#: 1.85-2.41
<b>NP18ZL:</b> Throw Ratio: 1.73. – 2.27:1 Screen Sizes: 50-300"	Focal Length: 25.7 – 33.7mm F/#: 1.64 – 1.86	<b>NP21ZL:</b> Throw Ratio: 5.30 – 8.30:1 Screen Sizes: 50-300"	Focal Length:78.5 -121.9mm F/#: 1.85 – 2.48

#### 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%.

## PX700W/PX750U/PX800X Installation Guide

### Desktop and Ceiling Mount

#### Formulas: 16:10 Aspect Ratio (PX700W—WXGA)

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:

- NP16FL: C = 0.812W - 1.961
- NP17ZL: C(Wide) = 1.346W - 2.201 ----- C(Tele) = 1.917W - 2.008
- NP18ZL: C(Wide) = 1.852W - 2.811 ----- C(Tele) = 2.428W - 2.772
- NP19ZL: C(Wide) = 2.372W - 3.307 ----- C(Tele) = 3.937W - 3.272
- NP20ZL: C(Wide) = 3.840W - 5.587 ----- C(Tele) = 5.771W - 5.567
- NP21ZL: C(Wide) = 5.743W - 12.213 ----- C(Tele) = 8.896W - 12.110

#### 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
- Screen Diagonal = W x 18.868/16

#### 16:9 Screen Formulas

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

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

Screen Size (16:10)			Rear Lens	Zoom Lenses									
Diagonal	Width(W)	Height (H)	NP16FL	NP17ZL	NP18ZL	NP19ZL	NP20ZL	NP21ZL					
inches	inches	inches	0.76:1	1.29-1.79:1	1.73-2.27:1	2.22-3.67:1	3.60-5.40:1	5.30-8.30:1					
			inches	inches	inches	inches	inches	inches					
40	34	21	25.32	40.8 - 62.4	59.4 - 78.8	76.4 - 129.0	123.4 - 188.3	222.3 - 286.8					
60	51	32	39.61	63.4 - 96.1	92.0 - 121.5	118.1 - 198.3	191.0 - 289.9	351.8 - 443.4					
67	58	36	44.81	71.6 - 108.4	103.9 - 137.1	133.3 - 223.5	215.6 - 326.8	398.9 - 500.3					
72	61	38	47.41	75.7 - 114.5	109.8 - 144.9	140.9 - 236.1	227.9 - 345.3	422.4 - 528.8					
84	72	45	56.50	90.0 - 136.0	130.5 - 172.0	167.5 - 280.2	270.9 - 409.9	504.8 - 628.4					
90	77	48	60.40	96.2 - 145.2	139.4 - 183.7	178.9 - 299.1	289.3 - 437.6	540.1 - 671.1					
100	85	53	66.90	106.4 - 160.6	154.2 - 203.1	197.8 - 330.6	320.0 - 483.8	599.0 - 742.3					
120	102	64	81.19	129.0 - 194.3	186.8 - 245.9	239.6 - 399.9	387.6 - 585.4	728.5 - 898.8					
150	126	79	100.68	159.7 - 240.3	231.3 - 304.1	296.5 - 494.4	479.8 - 723.9	905.0 - 1112.3					
180	152	95	121.46	192.5 - 289.4	278.7 - 366.3	357.2 - 595.2	578.1 - 871.6	1093.4 - 1340.1					
210	178	111	142.25	225.3 - 338.5	326.1 - 428.4	418.0 - 695.9	676.4 - 1019.4	1281.7 - 1567.8					
240	203	127	163.04	258.1 - 387.5	373.5 - 490.6	478.7 - 796.7	774.7 - 1167.1	1470.0 - 1795.6					
270	229	143	183.82	290.9 - 436.6	420.9 - 552.8	539.4 - 897.5	873.0 - 1314.8	1658.4 - 2023.3					
300	254	159	204.61	323.7 - 485.7	468.3 - 614.9	600.1 - 998.3	971.3 - 1462.6	1846.7 - 2251.0					

#### Distance Chart for popular 16:9 Screens (720p)

Screen Size (16:9)			Rear Lens	Zoom Lenses									
Diagonal	Width(W)	Height (H)	NP16FL	NP17ZL	NP18ZL	NP19ZL	NP20ZL	NP21ZL					
inches	inches	inches	0.76:1	1.29-1.79:1	1.73-2.27:1	2.22-3.67:1	3.60-5.40:1	5.30-8.30:1					
			inches	inches	inches	inches	inches	inches					
43	37	21	28.35	48.0 -	66.3 - 87.9	85.2 - 143.7	137.8 - 209.9	263.6 - 320.0					
65	57	32	44.23	70.8 - 107.0	97.7 - 128.9	125.5 - 210.0	202.6 - 307.1	394.3 - 494.0					
73	64	36	50.01	79.9 - 114.9	110.2 - 145.4	141.6 - 236.7	228.5 - 346.2	446.6 - 557.2					
78	68	38	52.89	84.4 - 121.4	116.5 - 153.6	149.6 - 250.0	241.5 - 365.7	472.8 - 588.9					
92	80	45	63.00	100.4 - 144.1	138.4 - 182.4	177.7 - 296.6	287.0 - 434.1	564.3 - 699.6					
98	85	48	67.33	107.2 - 153.8	147.9 - 194.7	189.8 - 316.6	306.5 - 463.4	603.5 - 747.0					
108	94	53	74.55	118.6 - 170.0	163.5 - 215.3	209.9 - 349.9	339.0 - 512.2	668.9 - 826.1					
131	114	64	90.43	143.7 - 205.7	198.0 - 260.5	254.1 - 423.2	410.4 - 619.6	812.8 - 1000.1					
161	140	79	112.08	177.8 - 254.4	245.1 - 322.2	314.4 - 523.1	507.9 - 766.0	1009.0 - 1237.3					
194	169	95	135.18	214.3 - 306.3	295.2 - 388.0	378.7 - 629.7	611.8 - 922.2	1218.2 - 1490.3					
226	197	111	158.27	250.7 - 358.2	345.4 - 453.8	443.0 - 736.3	715.7 - 1078.5	1427.5 - 1743.4					
259	226	127	181.37	287.1 - 410.1	395.6 - 519.6	507.3 - 842.9	819.7 - 1234.7	1636.8 - 1996.4					

## PX700W/PX750U/PX800X Installation Guide

### Desktop and Ceiling Mount

#### Formulas: 16:10 Aspect Ratio (PX750U—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:

- NP16FL: C = 0.794W - 1.85
- NP17ZL: C(Wide) = 1.281W - 2.094 ----- C(Tele) = 1.825W - 1.913
- NP18ZL: C(Wide) = 1.764W - 2.677 ----- C(Tele) = 2.313W - 2.638
- NP19ZL: C(Wide) = 2.261W - 3.150 ----- C(Tele) = 3.747W - 3.114
- NP20ZL: C(Wide) = 3.654W - 5.319 ----- C(Tele) = 5.492W - 5.299
- NP21ZL: C(Wide) = 5.469W - 11.626 ----- C(Tele) = 8.527W - 11.531

#### 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
- Screen Diagonal = W x 18.868/16

#### 16:9 Screen Formulas

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

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

Screen Size (16:10)			Rear Lens	Zoom Lenses									
			NP16FL	NP17ZL		NP18ZL		NP19ZL		NP20ZL		NP21ZL	
Diagonal	Width(W)	Height (H)	0.76:1	1.29-1.79:1		1.73-2.27-1		2.22-3.67:1		3.60-5.40:1		5.30-8.30:1	
inches	inches	inches	inches	inches		inches		inches		inches		inches	
40	34	21	24.83	40.9	59.4	56.6	75.1	72.8	122.8	117.5	179.2	212.3	275.0
60	51	32	38.80	63.5	91.5	87.6	115.8	112.6	188.7	181.8	275.9	335.6	425.1
67	58	36	43.88	71.7	103.2	98.9	130.6	127.1	212.7	205.2	311.0	380.5	479.6
72	61	38	46.43	75.8	109.0	104.6	138.0	134.3	224.7	216.8	328.6	402.9	506.9
84	72	45	55.32	90.1	129.5	124.3	163.9	159.6	266.7	257.8	390.1	481.3	602.4
90	77	48	59.13	96.3	138.2	132.8	175.0	170.5	284.7	275.3	416.5	515.0	643.3
100	85	53	65.48	106.5	152.8	146.9	193.5	188.6	314.6	304.5	460.4	571.0	711.6
120	102	64	79.46	129.1	185.0	178.0	234.2	228.4	380.6	368.9	557.1	694.3	861.6
150	126	79	98.51	159.8	228.8	220.3	289.7	282.6	470.5	456.5	688.9	862.5	1066.3
180	152	95	118.84	192.6	275.5	265.5	348.9	340.5	566.4	550.1	829.5	1041.8	1284.6
210	178	111	139.16	225.4	322.2	310.6	408.2	398.4	662.4	643.6	970.1	1221.2	1502.9
240	203	127	159.49	258.2	368.9	355.8	467.4	456.3	758.3	737.2	1110.7	1400.5	1721.2
270	229	143	179.82	291.0	415.6	400.9	526.6	514.2	854.2	830.7	1251.3	1579.8	1939.4
300	254	159	200.14	323.8	462.4	446.1	585.8	572.0	950.1	924.3	1391.9	1759.2	2157.7

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

Screen Size (16:9)			Rear Lens	Zoom Lenses									
			NP16FL	NP17ZL		NP18ZL		NP19ZL		NP20ZL		NP21ZL	
Diagonal	Width(W)	Height (H)	0.76:1	1.29-1.79:1		1.73-2.27-1		2.22-3.67:1		3.60-5.40:1		5.30-8.30:1	
inches	inches	inches	inches	inches		inches		inches		inches		inches	
43	37	21	27.79	45.7	66.2	63.2	83.7	81.3	136.8	131.1	199.7	238.5	306.8
65	57	32	43.32	70.8	101.9	97.7	128.9	125.5	210.0	202.6	307.1	375.5	473.6
73	64	36	48.97	79.9	114.9	110.2	145.4	141.6	236.7	228.5	346.2	425.3	534.2
78	68	38	51.79	84.4	121.4	116.5	153.6	149.6	250.0	241.5	365.7	450.2	564.5
92	80	45	61.67	100.4	144.1	138.4	182.4	177.7	296.6	287.0	434.1	537.4	670.6
98	85	48	65.90	107.2	153.8	147.9	194.7	189.8	316.6	306.5	463.4	574.7	716.1
108	94	53	72.96	118.6	170.0	163.5	215.3	209.9	349.9	339.0	512.2	637.0	791.9
131	114	64	88.49	143.7	205.7	198.0	260.5	254.1	423.2	410.4	619.6	774.0	958.7
161	140	79	109.66	177.8	254.4	245.1	322.2	314.4	523.1	507.9	766.0	960.8	1186.0
194	169	95	132.25	214.3	306.3	295.2	388.0	378.7	629.7	611.8	922.2	1160.1	1428.6
226	197	111	154.83	250.7	358.2	345.4	453.8	443.0	736.3	715.7	1078.5	1359.4	1671.1
259	226	127	177.42	287.1	410.1	395.6	519.6	507.3	842.9	819.7	1234.7	1558.7	1913.7
292	254	143	200.00	323.6	462.0	445.8	585.4	571.6	949.5	923.6	1390.9	1757.9	2156.2
324	283	159	222.59	360.0	514.0	495.9	651.2	636.0	1056.0	1027.5	1547.1	1957.2	2398.8

## PX700W/PX750U/PX800X Installation Guide

### Desktop and Ceiling Mount

#### Formulas: 4:10 Aspect Ratio (PX800X—XGA)

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:

- NP16FL: C = 0.822W - 1.866
- NP17ZL: C(Wide) = 1.358W - 2.094 ----- C(Tele) = 1.934W - 1.913
- NP18ZL: C(Wide) = 1.828W - 2.681 ----- C(Tele) = 2.397W - 2.642
- NP19ZL: C(Wide) = 2.343W - 3.154 ----- C(Tele) = 3.883W - 3.118
- NP20ZL: C(Wide) = 3.789W - 5.323 ----- C(Tele) = 5.689W - 5.299
- NP21ZL: C(Wide) = 5.664W - 11.638 ----- C(Tele) = 8.834W - 11.535

#### Definitions:

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

#### 4:3 Screen Formulas

- W = H x 4/3
- H = W x 3/4
- Screen Diagonal = W x 5/4

#### Distance Chart for popular 4:3 Screens (XGA)

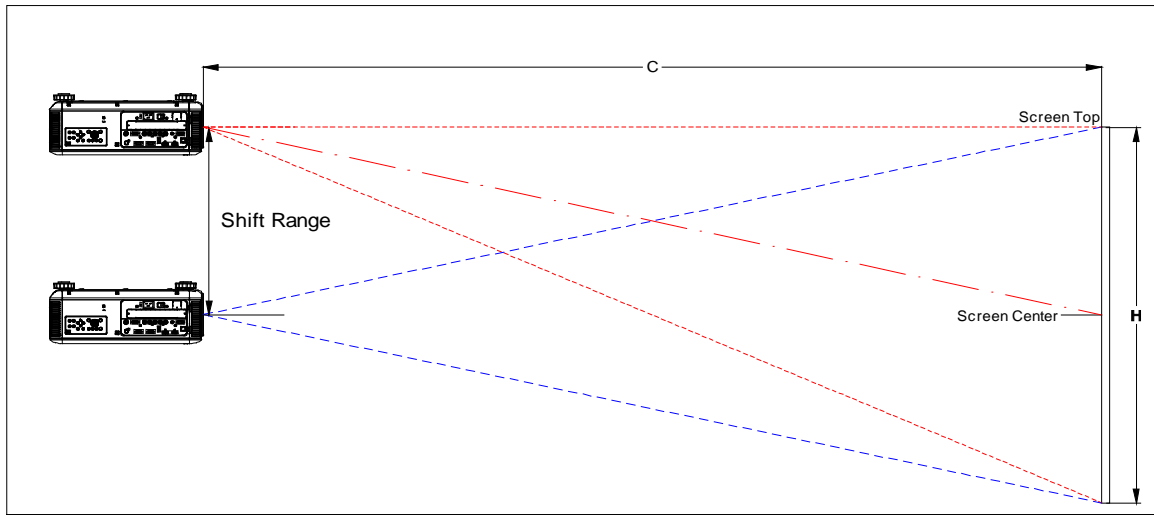
Screen Size (16:10)			Rear Lens	Zoom Lenses									
Diagonal	Width(W)	Height (H)	NP16FL	NP17ZL	NP18ZL	NP19ZL	NP20ZL	NP21ZL					
inches	inches	inches	0.76:1	1.29-1.79:1	1.73-2.27-1	2.22-3.67:1	3.60-5.40:1	5.30-8.30:1					
			inches	inches		inches		inches		inches		inches	
40	32	24	24.4	41.4 - 60.0	55.8 - 74.1	68.6	121.1	115.9	176.7	222.6	271.2		
60	48	36	37.6	63.1 - 90.9	85.1 - 112.4	104.5	183.3	176.5	267.8	345.7	412.5		
67	54	40.2	42.2	70.7 - 101.7	95.3 - 125.8	117.1	205.0	197.8	299.6	388.8	462.0		
72	58	43.2	45.5	76.1 - 109.5	102.6 - 135.4	126.0	220.5	212.9	322.4	419.5	497.3		
84	67	50.4	53.4	89.2 - 128.1	120.2 - 158.4	147.6	257.8	249.3	377.0	493.4	582.1		
90	72	54	57.3	95.7 - 137.3	128.9 - 169.9	158.3	276.5	267.5	404.3	530.3	624.5		
100	80	60	63.9	106.5 - 152.8	143.6 - 189.1	176.3	307.5	297.8	449.8	591.8	695.2		
120	96	72	77.0	128.3 - 183.8	172.8 - 227.5	212.2	369.7	358.4	540.8	714.9	836.5		
150	120	90	96.8	160.9 - 230.2	216.7 - 285.0	266.0	462.8	449.4	677.4	899.5	1048.5		
180	144	108	116.5	193.5 - 276.6	260.6 - 342.5	319.8	556.0	540.3	813.9	1084.1	1260.6		
210	168	126	136.2	226.1 - 323.0	304.4 - 400.1	373.7	649.2	631.2	950.5	1268.7	1472.6		
240	192	144	156.0	258.6 - 369.4	348.3 - 457.6	427.5	742.4	722.2	1087.0	1453.3	1684.6		

## PX700W/PX750U/PX800X Installation Guide

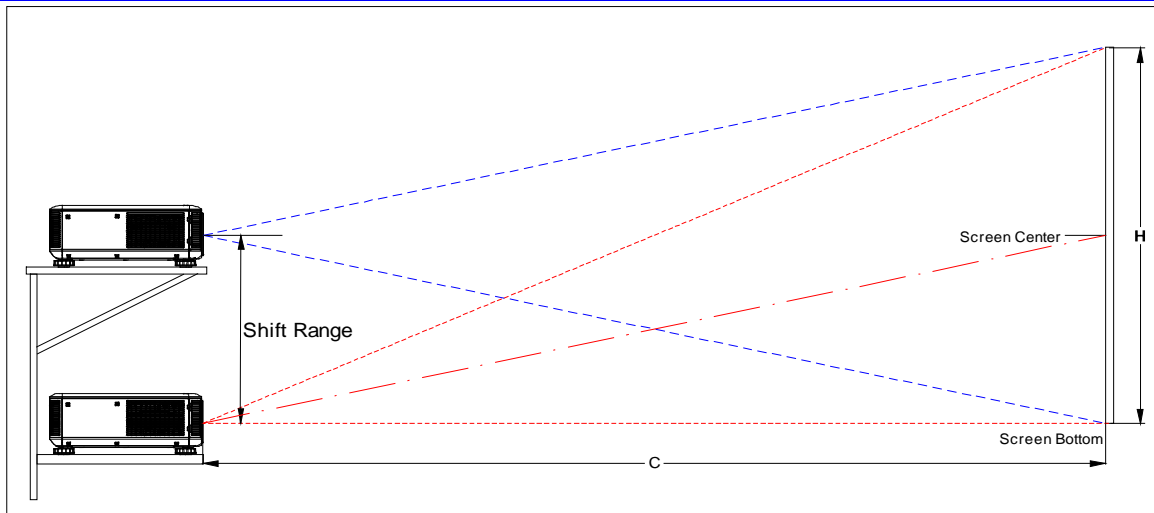
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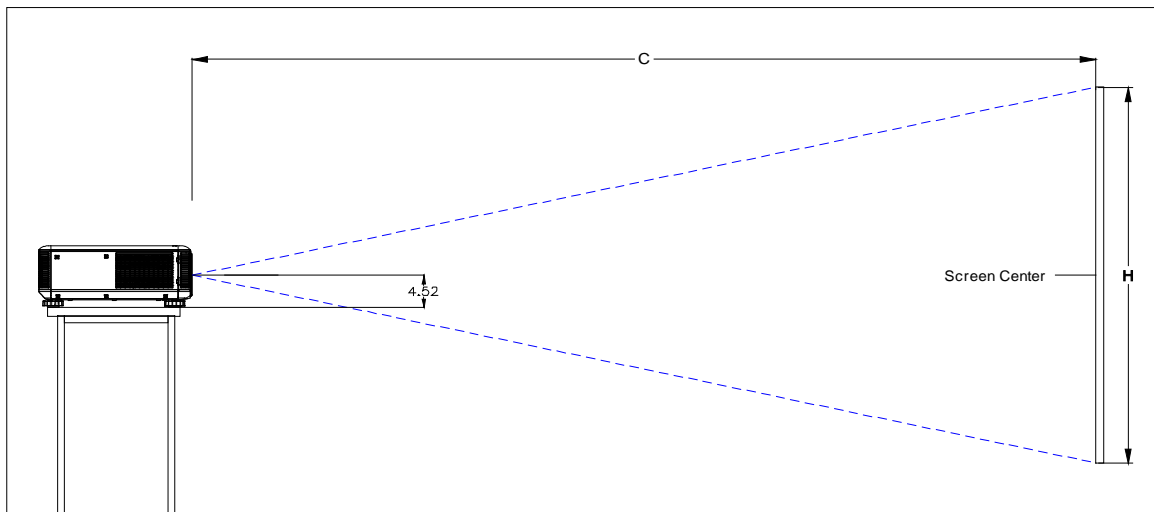
### Ceiling Mount Installation



### Desktop Installation



**Note:** Lens Shift Feature is not available to NP16FL. This lens should only be used for "zero degree"/"no-offset" applications. See below

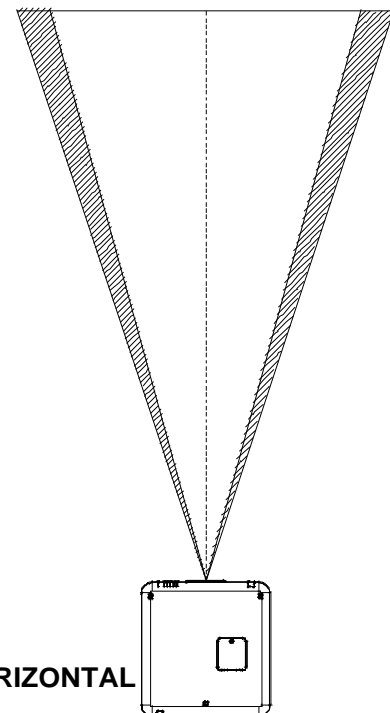
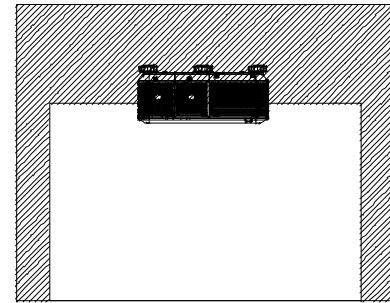
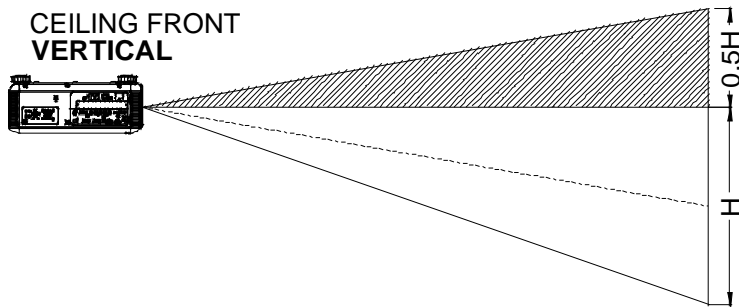
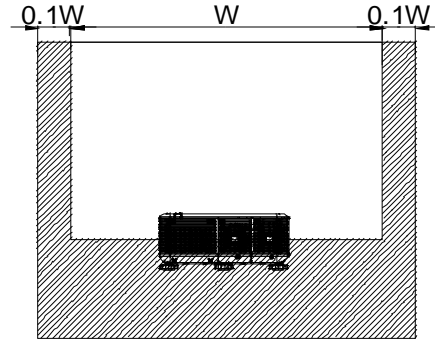
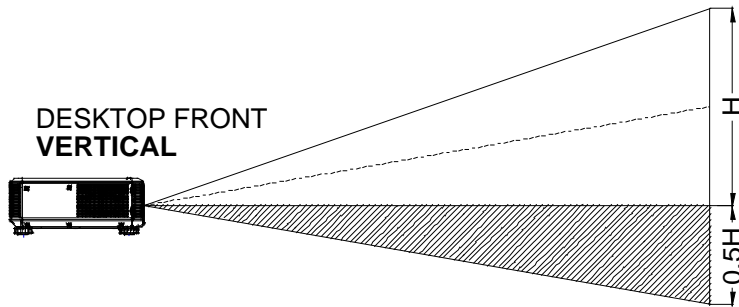


## PX700W/PX750U/PX800X Installation Guide

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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:** Lens shift feature is not available with NP16FL (rear lens). NP16FL should be used only for "zero degree" / "no-offset" applications.

**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)

## PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

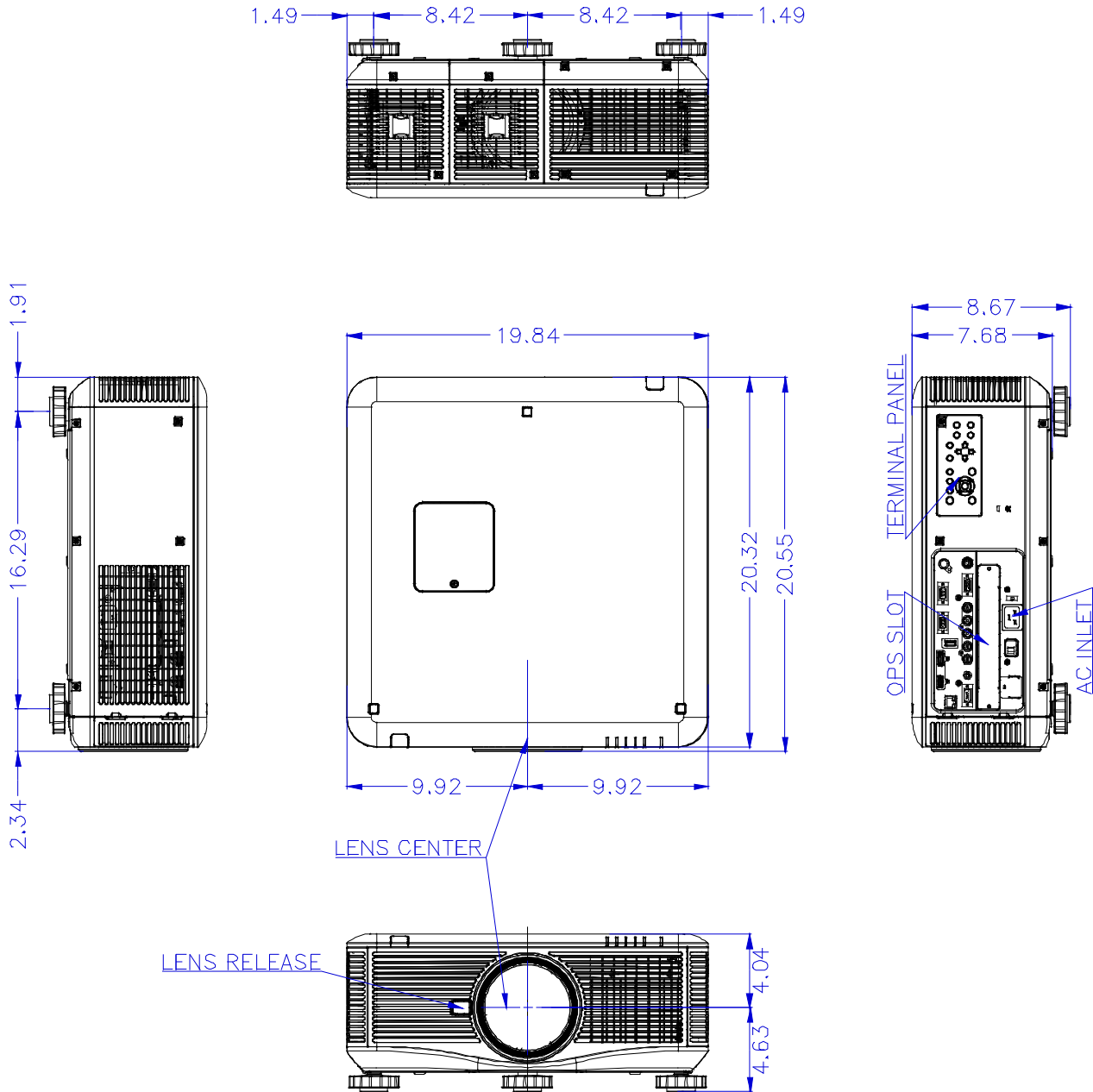
Rev 1.0

### Cabinet Dimensions

The following diagrams show the cabinet dimensions for the PX750U.

Dimensions are in inches. For millimeters multiply by 25.4.

Note: Dimensions below shown with the NP18ZL lens

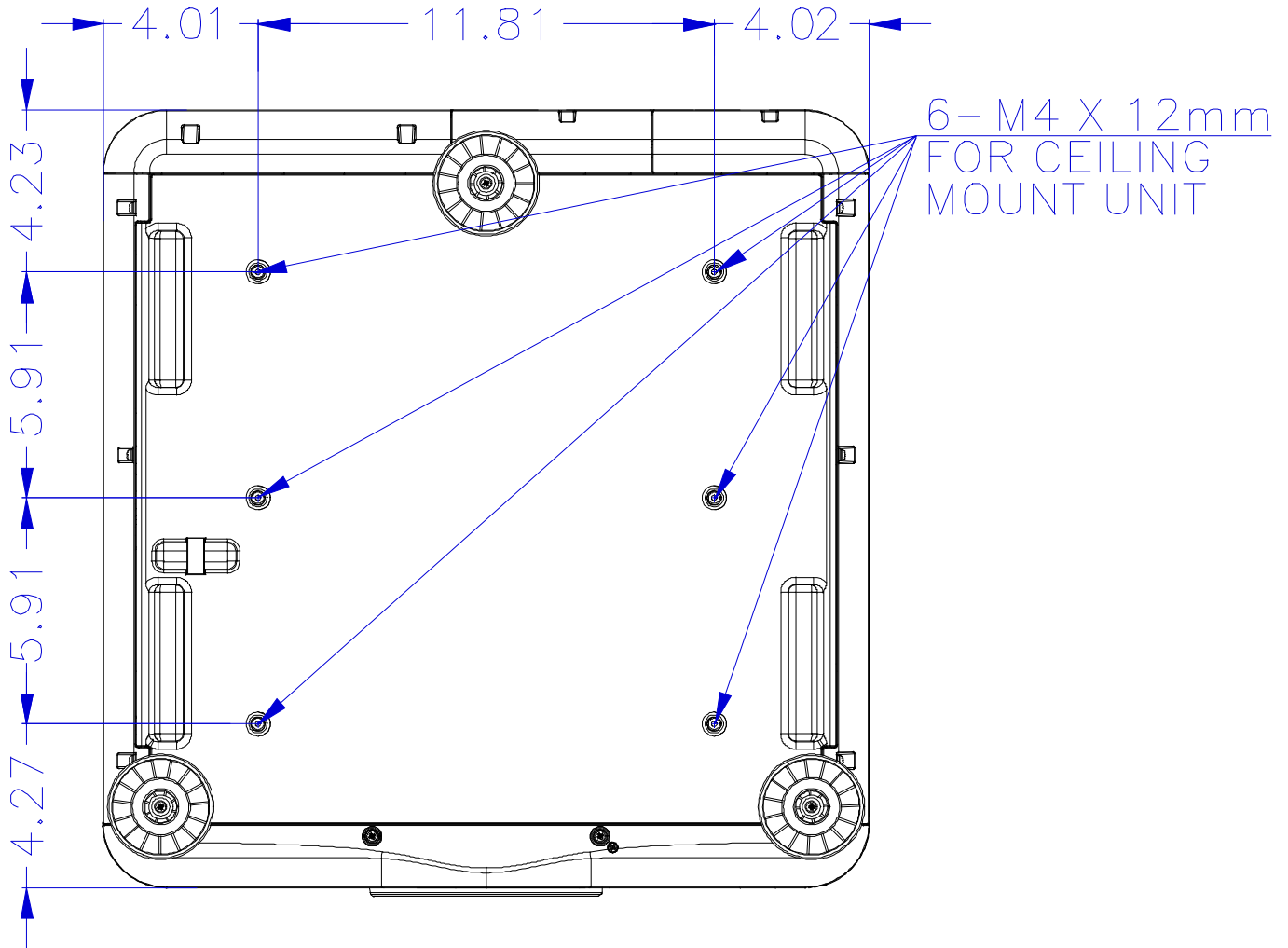


## PX700W/PX750U/PX800X Installation Guide

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### Cabinet Dimensions



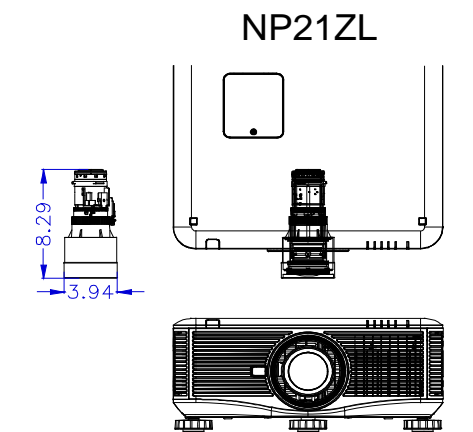
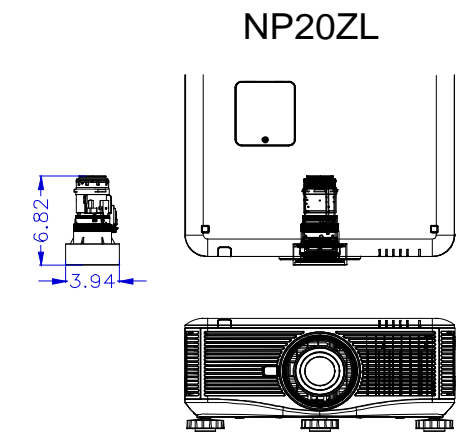
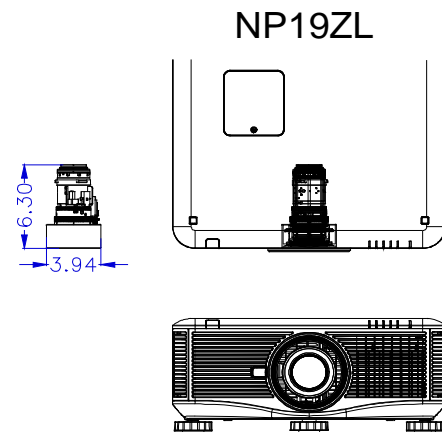
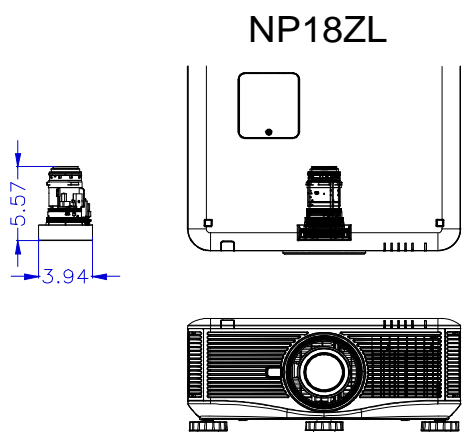
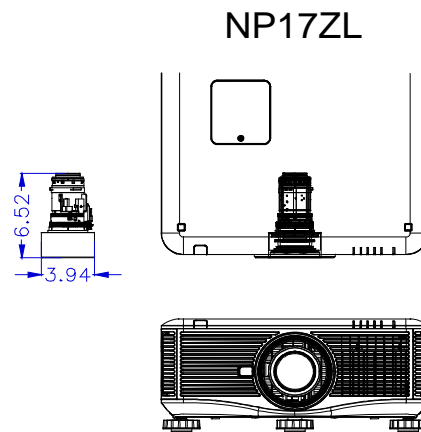
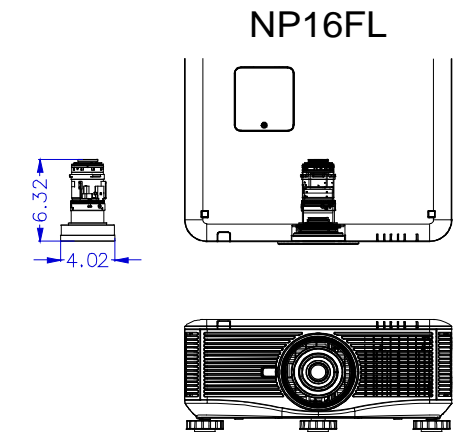


## PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

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### Optional Lens Dimensions



**Note:** Depth for the PX750U will remain at 20.55" if the NP16FL, NP18ZL or NP19ZL are utilized.

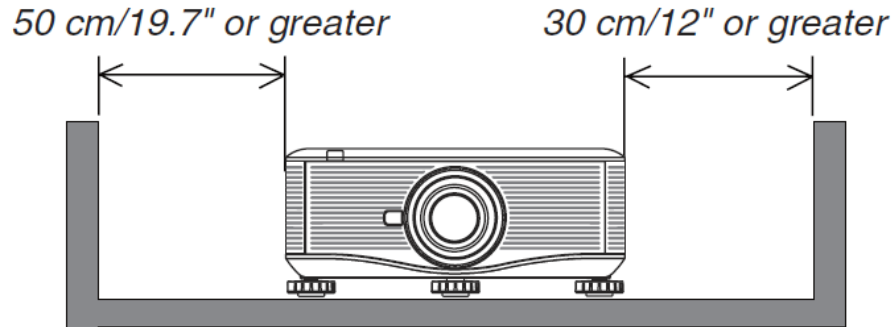
## PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

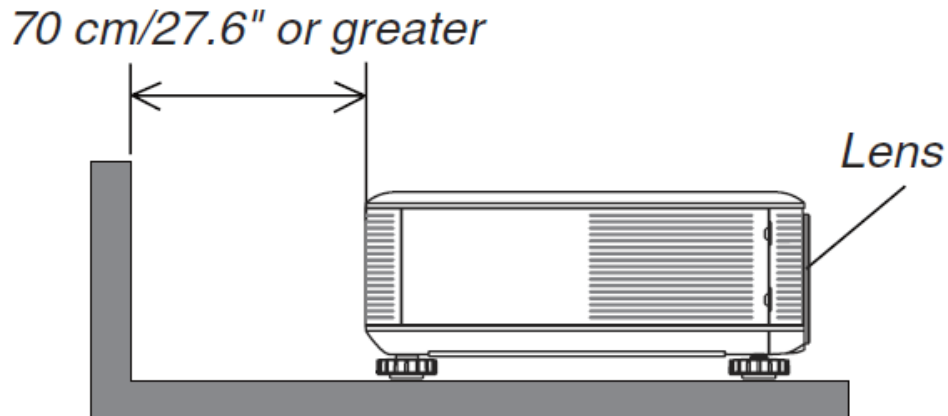
Rev 1.0

### Ventilation Requirements

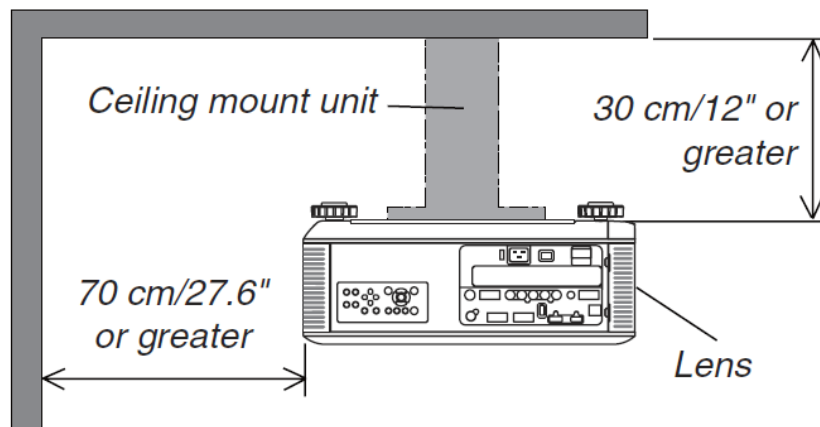
- If there are walls on both sides of the projector :



- If there's a wall behind the projector :



- For ceiling mounting :

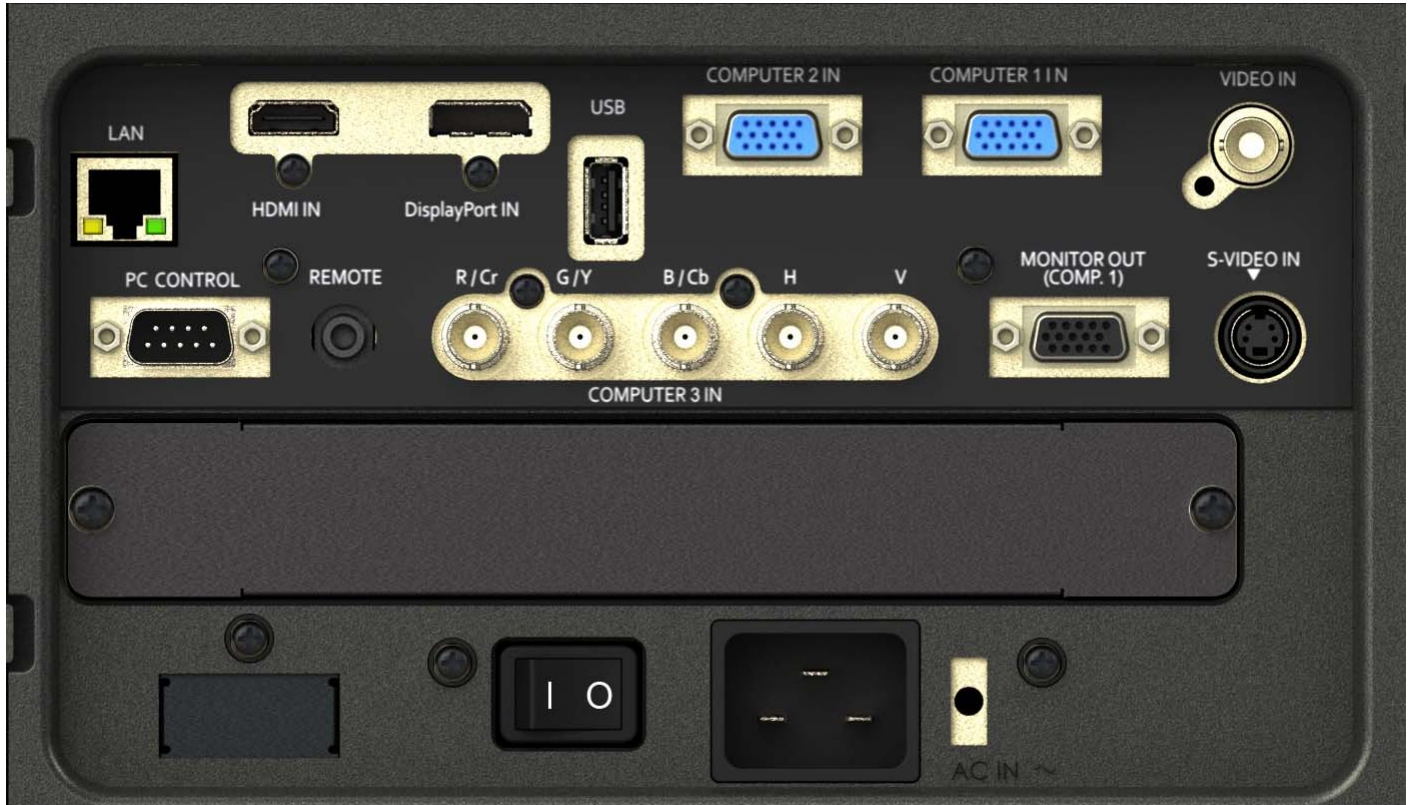


## PX700W/PX750U/PX800X Installation Guide

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### Input Panel



### Control Panel



## PX700W/PX750U/PX800X Installation Guide

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### PC Control Codes

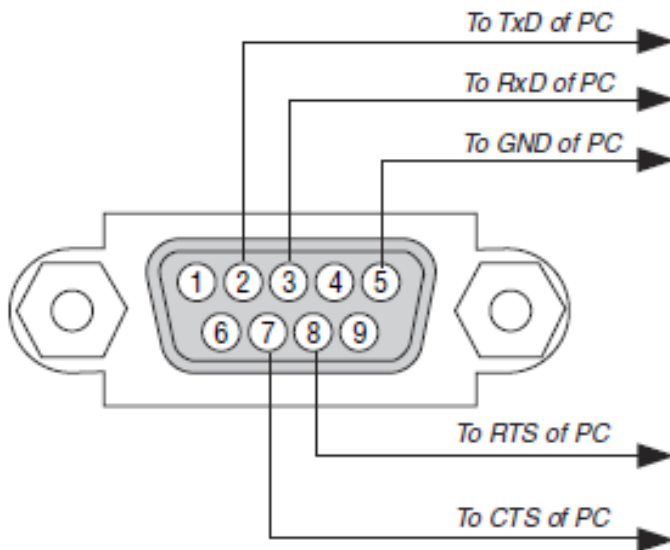
Function	Code Data
POWER ON	02H 00H 00H 00H 00H 02H
POWER OFF	02H 01H 00H 00H 00H 03H
INPUT SELECT COMPUTER 1	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT COMPUTER 2	02H 03H 00H 00H 02H 01H 02H 0AH
INPUT SELECT COMPUTER 3	02H 03H 00H 00H 02H 01H 03H 0BH
INPUT SELECT HDMI	02H 03H 00H 00H 02H 01H 1AH 22H
INPUT SELECT DisplayPort	02H 03H 00H 00H 02H 01H 1BH 23H
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
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.