

PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

Rev 1.4

Contents

Product Description, Lens Specs, Screen/Aspect Ratio	
Notes	Pg 1
Distance Charts and Formulas	Pg 2-5
Ceiling Mount/Desktop Installation	Pg 6
Lens Shift Adjustable Range	Pg 7
Cabinet Dimensions	Pg 8
Cabinet Dimensions	Pg 9
Optional Lens Dimensions	Pg 10
Ventilation Requirements	Pg 11
Input Panel and Button Panel	Pg 12
Control Codes	Pg 13



Product Description

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

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

Lens Specifications

NP06FL:	Throw Ratio: ~ 0.77:1 Screen Sizes: 50"-200"	Focal Length: 11.4mm F/#: 2.0	NP09ZL:	Throw Ratio: ~2.22 - 4.43:1 Screen Sizes: 40" - 500"	Focal Length: 32.0 - 63.0mm F/#: 2.1 - 2.9
NP07ZL:	Throw Ratio: ~1.33 - 1.79:1 Screen Sizes: 40" - 500"	Focal Length: 19.3 - 25.8mm F/#: 1.8 - 2.3	NP10ZL:	Throw Ratio: 4.43 - 8.3:1 Screen Sizes: 40" - 500"	Focal Length: 63.5 - 117.4mm F/#: 2.2 - 3.1
NP08ZL:	Throw Ratio: ~1.78 - 2.35:1 Screen Sizes: 40" - 500"	Focal Length: 26.0 - 34.0mm F/#: 1.7 - 1.9			
NP16FL:	Throw Ratio: ~ 0.76:1 Screen Sizes: 50"-300"	Focal Length: 11.6mm F/#: 1.85	NP19ZL:	Throw Ratio: 2.22 - 3.67:1 Screen Sizes: 50-300"	Focal Length: 32.9 - 54.2mm F/#: 1.86 - 2.48
NP17ZL:	Throw Ratio: 1.29 - 1.79:1 Screen Sizes: 50-300"	Focal Length: 18.7 - 26.5mm F/#: 1.85-2.5	NP20ZL:	Throw Ratio: 3.60 - 5.40:1 Screen Sizes: 50-300"	Focal Length: 52.8 - 79.1mm F/#: 1.85-2.41
NP18ZL:	Throw Ratio: 1.73 - 2.27:1 Screen Sizes: 50-300"	Focal Length: 25.7 - 33.7mm F/#: 1.64-1.86	NP21ZL:	Throw Ratio: 5.30 - 8.30:1 Screen Sizes: 50-300"	Focal Length: 78.5 - 121.9mm F/#: 1.85-2.48
NP31ZL:	Throw Ratio: 0.75 - 0.93:1 Screen Sizes: 50-300"	Focal Length: 11.3 - 14.1mm F/#: 1.96-2.3			

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: 16:10 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:

NP06FL:	$C = 0.817W - 1.54$	
NP07ZL:	$C(\text{Wide}) = 1.379W - 1.952$	$C(\text{Tele}) = 1.854W - 1.809$
NP08ZL:	$C(\text{Wide}) = 1.844W - 2.362$	$C(\text{Tele}) = 2.435W - 2.461$
NP09ZL:	$C(\text{Wide}) = 2.338W - 4.147$	$C(\text{Tele}) = 4.639W - 4.175$
NP10ZL:	$C(\text{Wide}) = 4.580W - 5.415$	$C(\text{Tele}) = 8.603W - 5.352$
NP31ZL:	$C(\text{Wide}) = 0.812W - 2.099$	$C(\text{Tele}) = 1.017W - 1.992$

Definitions:

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

16:10 Screen Formulas

$W = H \times 16/10$
$H = W \times 10/16$
Screen Diagonal = $W \times 18.868/16$

16:9 Screen Formulas

$W = H \times 16/9$
$H = W \times 9/16$
Screen Diagonal = $W \times 18.358/16$

Distance Chart for popular 16:10 Screens (WXGA)

Screen Size (16:10)			Rear Lens	Zoom Lenses					
			NP16FL	NP31ZL	NP07ZL	NP08ZL	NP09ZL	NP10ZL	
Diagonal	Width(W)	Height (H)	0.76:1	0.75-0.93:1	1.33-1.79:1	1.78-2.35-1	2.22-4.43:1	4.43-8.30:1	
inches	inches	inches	inches	inches	inches	inches	inches	inches	
40	34	21	24.83	25.2 - 32.2	44.4 - 60.5	59.6 - 79.4	74.1 - 151.7	148.5 - 208.2	
60	51	32	38.80	39.5 - 50.1	68.7 - 93.1	92.1 - 122.2	115.3 - 233.3	229.1 - 328.5	
68	58	36	43.88	44.7 - 56.6	77.5 - 105.0	103.9 - 137.8	130.3 - 263.0	258.4 - 372.2	
72	61	38	46.43	47.3 - 59.8	81.9 - 110.9	109.8 - 145.6	137.7 - 277.9	273.0 - 394.0	
85	72	45	55.32	56.4 - 71.2	97.3 - 131.7	130.4 - 172.9	163.9 - 329.8	324.3 - 470.5	
108	92	57.5	71.20	72.6 - 91.6	124.9 - 168.8	167.3 - 221.6	210.7 - 422.6	415.9 - 607.2	
113	96	60	74.37	75.9 - 95.6	130.4 - 176.2	174.7 - 231.3	220.0 - 441.2	434.3 - 634.5	
130	110	69	85.81	87.5 - 110.3	150.3 - 202.9	201.2 - 266.4	253.7 - 508.0	500.2 - 732.9	
137	116	72.5	90.25	92.1 - 116.0	158.0 - 213.3	211.5 - 280.0	266.8 - 533.9	525.9 - 771.1	
164	139	87	108.67	110.9 - 139.6	190.0 - 256.3	254.3 - 336.5	321.0 - 641.6	632.1 - 929.6	
189	160	100	125.19	127.8 - 160.7	218.7 - 294.8	292.7 - 387.1	369.7 - 738.1	727.4 - 1071.7	
208	176	110	137.89	140.8 - 177.0	240.8 - 324.5	322.2 - 426.1	407.1 - 812.3	800.7 - 1181.0	
226	192	120	150.60	153.8 - 193.3	262.8 - 354.2	351.7 - 465.1	444.5 - 886.5	873.9 - 1290.2	
270	229	143	179.82	183.7 - 230.7	313.6 - 422.4	419.5 - 554.7	530.5 - 1057.2	1042.5 - 1541.6	

Distance Chart using 16:10 native projector with 16:9 Image (720p)

Screen Size (16:9)			Rear Lens	Zoom Lenses					
			NP06FL	NP31ZL	NP07ZL	NP08ZL	NP09ZL	NP10ZL	
Diagonal	Width(W)	Height (H)	0.76:1	0.75-0.93:1	1.33-1.79:1	1.78-2.35-1	2.22-3.67:1	4.43-8.30:1	
inches	inches	inches	inches	inches	inches	inches	inches	inches	
39	34	19	26.24	25.5 - 32.6	44.9 - 61.2	60.3 - 80.3	75.3 - 153.6	150.3 - 287.2	
59	51	29	40.13	39.3 - 49.9	68.4 - 92.7	91.7 - 121.7	115.1 - 232.4	228.2 - 433.4	
67	58	33	45.85	45.0 - 57.0	78.0 - 105.7	104.6 - 138.8	131.5 - 264.9	260.2 - 493.6	
70	61	34	48.30	47.4 - 60.0	82.2 - 111.3	110.1 - 146.1	138.5 - 278.8	274.0 - 519.4	
83	72	41	57.28	56.4 - 71.2	97.3 - 131.7	130.4 - 172.9	164.2 - 329.8	324.3 - 614.1	
106	92	52	73.62	72.6 - 91.6	124.9 - 168.8	167.3 - 221.6	210.9 - 422.6	415.9 - 786.1	
110	96	54	76.89	75.9 - 95.6	130.4 - 176.2	174.7 - 231.3	220.3 - 441.2	434.3 - 820.5	
126	110	62	88.33	87.2 - 109.9	149.7 - 202.1	200.5 - 265.4	253.0 - 506.1	498.4 - 941.0	
133	116	65	93.23	92.1 - 116.0	158.0 - 213.3	211.5 - 280.0	267.1 - 533.9	525.9 - 992.6	
159	139	78	112.02	110.8 - 139.4	189.7 - 255.9	254.0 - 336.0	320.8 - 640.6	631.2 - 1190.5	
184	160	90	129.18	127.8 - 160.7	218.7 - 294.8	292.7 - 387.1	369.9 - 738.1	727.4 - 1371.1	
202	176	99	142.25	140.8 - 177.0	240.8 - 324.5	322.2 - 426.1	407.3 - 812.3	800.7 - 1508.8	
220	192	108	155.32	153.8 - 193.3	262.8 - 354.2	351.7 - 465.1	444.7 - 886.5	873.9 - 1646.4	
263	229	129	185.55	183.8 - 230.9	313.8 - 422.8	419.9 - 555.2	531.3 - 1058.2	1043.4 - 1964.7	

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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) = 8.956W - 12.110
NP31ZL:	C(Wide) = 0.812W - 2.099	C(Tele) = 1.017W - 1.992

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	NP31ZL	NP17ZL	NP18ZL	NP19ZL	NP20ZL	NP21ZL		
inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches
40	34	21	25.32	25.2 - 32.2	40.8 - 62.4	59.4 - 78.8	76.4 - 129.0	123.4 - 188.3	180.8 - 288.8		
60	51	32	39.61	39.5 - 50.1	63.4 - 96.1	92.0 - 121.5	118.1 - 198.3	191.0 - 289.9	281.8 - 446.4		
68	58	36	44.81	44.7 - 56.6	71.6 - 108.4	103.9 - 137.1	133.3 - 223.5	215.6 - 326.8	318.6 - 503.8		
72	61	38	47.41	47.3 - 59.8	75.7 - 114.5	109.8 - 144.9	140.9 - 236.1	227.9 - 345.3	337.0 - 532.4		
85	72	45	56.50	56.4 - 71.2	90.0 - 136.0	130.5 - 172.0	167.5 - 280.2	270.9 - 409.9	401.3 - 632.7		
108	92	57.5	72.74	72.6 - 91.6	115.7 - 174.4	167.6 - 220.6	214.9 - 358.9	347.7 - 525.4	516.1 - 811.8		
113	96	60	75.99	75.9 - 95.6	120.8 - 182.0	175.0 - 230.3	224.4 - 374.7	363.1 - 548.4	539.1 - 847.7		
130	110	69	87.68	87.5 - 110.3	139.2 - 209.6	201.6 - 265.3	258.6 - 431.4	418.3 - 631.6	621.8 - 976.6		
137	116	72.5	92.23	92.1 - 116.0	146.4 - 220.4	212.0 - 278.9	271.8 - 453.4	439.9 - 663.9	654.0 - 1026.8		
164	139	87	111.07	110.9 - 139.6	176.1 - 264.8	255.0 - 335.2	326.9 - 544.8	528.9 - 797.8	787.2 - 1234.6		
189	160	100	127.96	127.8 - 160.7	202.8 - 304.7	293.5 - 385.7	376.2 - 626.6	608.8 - 917.8	906.7 - 1420.9		
208	176	110	140.95	140.8 - 177.0	223.3 - 335.4	323.1 - 424.6	414.2 - 689.6	670.3 - 1010.1	998.6 - 1564.1		
226	192	120	153.94	153.8 - 193.3	243.8 - 366.1	352.8 - 463.4	452.1 - 752.6	731.7 - 1102.5	1090.4 - 1707.4		
270	229	143	183.82	183.7 - 230.7	290.9 - 436.6	420.9 - 552.8	539.4 - 897.5	873.0 - 1314.8	1301.8 - 2037.0		

Distance Chart using 16:10 native projector with 16:9 Image (720p)

Screen Size (16:9)			Rear Lens	Zoom Lenses							
Diagonal	Width(W)	Height (H)	NP16FL	NP31ZL	NP17ZL	NP18ZL	NP19ZL	NP20ZL	NP21ZL		
inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches
39	34	19	25.65	25.5 - 32.6	43.5 - 66.4	60.2 - 79.8	77.3 - 130.6	125.0 - 190.6	183.0 - 290.4		
59	51	29	39.45	39.3 - 49.9	66.4 - 73.4	91.6 - 121.1	117.7 - 197.5	190.3 - 288.8	280.7 - 441.6		
67	58	33	45.14	45.0 - 57.0	75.8 - 84.3	104.6 - 138.1	134.3 - 225.1	217.1 - 329.2	320.9 - 503.9		
70	61	34	47.57	47.4 - 60.0	79.9 - 88.9	110.2 - 145.3	141.4 - 236.9	228.7 - 346.5	338.1 - 530.5		
83	72	41	56.50	56.4 - 71.2	94.7 - 106.0	130.5 - 172.0	167.5 - 280.2	270.9 - 409.9	401.3 - 628.4		
106	92	52	72.74	72.6 - 91.6	121.6 - 137.2	167.6 - 220.6	214.9 - 358.9	347.7 - 525.4	516.1 - 806.3		
110	96	54	75.99	75.9 - 95.6	127.0 - 143.4	175.0 - 230.3	224.4 - 374.7	363.1 - 548.4	539.1 - 841.9		
126	110	62	87.36	87.2 - 109.9	145.8 - 165.2	200.9 - 264.3	257.6 - 429.8	416.8 - 629.2	619.5 - 966.5		
133	116	65	92.23	92.1 - 116.0	153.9 - 174.5	212.0 - 278.9	271.8 - 453.4	439.9 - 663.9	654.0 - 1019.8		
159	139	78	110.91	110.8 - 139.4	184.9 - 210.3	254.6 - 334.7	326.4 - 544.0	528.2 - 796.6	786.1 - 1224.4		
184	160	90	127.96	127.8 - 160.7	213.1 - 243.0	293.5 - 385.7	376.2 - 626.6	608.8 - 917.8	906.7 - 1411.3		
202	176	99	140.95	140.8 - 177.0	234.7 - 267.9	323.1 - 424.6	414.2 - 689.6	670.3 - 1010.1	998.6 - 1553.6		
220	192	108	153.94	153.8 - 193.3	256.2 - 292.8	352.8 - 463.4	452.1 - 752.6	731.7 - 1102.5	1090.4 - 1695.9		
263	229	129	183.99	183.8 - 230.9	306.0 - 350.4	421.3 - 553.2	539.9 - 898.3	873.8 - 1316.0	1302.9 - 2025.1		

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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
NP31ZL:	C(Wide) = 0.775W - 1.161	C(Tele) = 0.966W - 2.000

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	NP31ZL	NP17ZL	NP18ZL	NP19ZL	NP20ZL	NP21ZL				
Diagonal	Width(W)	Height (H)	0.76:1	0.75-0.93:1	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	inches				
40	34	21	24.83	24.9 - 30.5	40.9 - 59.4	56.6 - 75.1	72.8 - 122.8	117.5 - 179.2	172.1 - 275.0				
60	51	32	38.80	38.5 - 47.5	63.5 - 91.5	87.6 - 115.8	112.6 - 188.7	181.8 - 275.9	268.4 - 425.1				
68	58	36	43.88	43.5 - 53.6	71.7 - 103.2	98.9 - 130.6	127.1 - 212.7	205.2 - 311.0	303.4 - 479.6				
72	61	38	46.43	46.0 - 56.7	75.8 - 109.0	104.6 - 138.0	134.3 - 224.7	216.8 - 328.6	320.9 - 506.9				
85	72	45	55.32	54.6 - 67.6	90.1 - 129.5	124.3 - 163.9	159.6 - 266.7	257.8 - 390.1	382.1 - 602.4				
108	92	57.5	71.20	70.1 - 86.9	115.8 - 166.0	159.6 - 210.2	204.9 - 341.6	330.8 - 500.0	491.5 - 773.0				
113	96	60	74.37	73.2 - 90.7	120.9 - 173.3	166.7 - 219.4	213.9 - 356.6	345.5 - 521.9	513.4 - 807.1				
130	110	69	85.81	84.4 - 104.6	139.3 - 199.6	192.1 - 252.7	246.5 - 410.6	398.1 - 601.0	592.2 - 929.8				
137	116	72.5	90.25	88.7 - 110.1	146.5 - 209.8	201.9 - 265.7	259.1 - 431.5	418.5 - 631.8	622.8 - 977.6				
164	139	87	108.67	106.7 - 132.5	176.2 - 252.1	242.9 - 319.3	311.6 - 518.5	503.3 - 759.2	749.7 - 1175.4				
189	160	100	125.19	122.8 - 152.6	202.9 - 290.1	279.6 - 367.4	358.6 - 596.4	579.3 - 873.4	863.4 - 1352.8				
208	176	110	137.89	135.2 - 168.0	223.4 - 319.3	307.8 - 404.5	394.8 - 656.4	637.8 - 961.3	950.9 - 1489.2				
226	192	120	150.60	147.6 - 183.5	243.9 - 348.5	336.0 - 441.5	431.0 - 716.3	696.2 - 1049.2	1038.4 - 1625.7				
270	229	143	179.82	176.2 - 219.0	291.0 - 415.6	400.9 - 526.6	514.2 - 854.2	830.7 - 1251.3	1239.7 - 1939.4				

Distance Chart using 16:10 native projector with 16:9 Image (1080p)

Screen Size (16:9)			Rear Lens	Zoom Lenses									
			NP16FL	NP31ZL	NP17ZL	NP18ZL	NP19ZL	NP20ZL	NP21ZL				
Diagonal	Width(W)	Height (H)	0.76:1	0.75-0.93:1	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	inches				
39	34	19	25.15	25.2 - 30.8	41.5 - 60.1	57.3 - 76.0	73.7 - 124.3	118.9 - 181.4	174.3 - 278.4				
59	51	29	38.64	38.4 - 47.3	63.2 - 91.2	87.3 - 115.3	112.2 - 188.0	181.0 - 274.8	267.3 - 423.3				
67	58	33	44.20	43.8 - 54.0	72.2 - 103.9	99.6 - 131.5	128.0 - 214.2	206.6 - 313.2	305.6 - 483.0				
70	61	34	46.58	46.1 - 56.9	76.0 - 109.4	104.9 - 138.5	134.8 - 225.5	217.6 - 329.7	322.0 - 508.6				
83	72	41	55.32	54.6 - 67.6	90.1 - 129.5	124.3 - 163.9	159.6 - 266.7	257.8 - 390.1	382.1 - 602.4				
106	92	52	71.20	70.1 - 86.9	115.8 - 166.0	159.6 - 210.2	204.9 - 341.6	330.8 - 500.0	491.5 - 773.0				
110	96	54	74.37	73.2 - 90.7	120.9 - 173.3	166.7 - 219.4	213.9 - 356.6	345.5 - 521.9	513.4 - 807.1				
126	110	62	85.49	84.1 - 104.3	138.8 - 198.8	191.4 - 251.8	245.6 - 409.1	396.6 - 598.8	590.0 - 926.4				
133	116	65	90.25	88.7 - 110.1	146.5 - 209.8	201.9 - 265.7	259.1 - 431.5	418.5 - 631.8	622.8 - 977.6				
159	139	78	108.52	106.6 - 132.3	176.0 - 251.8	242.5 - 318.9	311.1 - 517.7	502.6 - 758.1	748.6 - 1173.7				
184	160	90	125.19	122.8 - 152.6	202.9 - 290.1	279.6 - 367.4	358.6 - 596.4	579.3 - 873.4	863.4 - 1352.8				
202	176	99	137.89	135.2 - 168.0	223.4 - 319.3	307.8 - 404.5	394.8 - 656.4	637.8 - 961.3	950.9 - 1489.2				
220	192	108	150.60	147.6 - 183.5	243.9 - 348.5	336.0 - 441.5	431.0 - 716.3	696.2 - 1049.2	1038.4 - 1625.7				
263	229	129	179.98	176.3 - 219.2	291.3 - 416.0	401.3 - 527.0	514.6 - 854.9	831.4 - 1252.4	1240.8 - 1941.2				

PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

Rev 1.4

Formulas: 4:3 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:

NP06FL:	$C = 0.808W - 1.644$	
NP07ZL:	$C(\text{Wide}) = 1.361W - 1.833$ ----- $C(\text{Tele}) = 1.831W - 1.800$	
NP08ZL:	$C(\text{Wide}) = 1.823W - 2.524$ ----- $C(\text{Tele}) = 2.403W - 2.447$	
NP09ZL:	$C(\text{Wide}) = 2.298W - 4.133$ ----- $C(\text{Tele}) = 4.579W - 4.226$	
NP10ZL:	$C(\text{Wide}) = 4.516W - 5.296$ ----- $C(\text{Tele}) = 8.514W - 5.512$	
NP31ZL:	$C(\text{Wide}) = 0.802W - 1.811$ ----- $C(\text{Tele}) = 1.004W - 1.713$	

Definitions:

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

4:3 Screen Formulas

$W = H \times 4/3$
$H = W \times 3/4$
Screen Diagonal = $W \times 5/4$

Distance Chart for popular 4:3 Screens (XGA)

Screen Size (4:3)			Rear Lens	Zoom Lenses					
Diagonal inches	Width(W) inches	Height (H) inches	NP06FL	NP31ZL	NP07ZL	NP08ZL	NP09ZL	NP10ZL	
			0.77:1 inches	0.75-0.93:1 inches	1.33-1.79:1 inches	1.78-2.35:1 inches	2.22-4.43:1 inches	4.43-8.30:1 inches	
40	32	24	24.2	23.9 - 30.4	41.7 - 56.8	55.8 - 74.4	69.4 - 142.3	139.2 - 266.9	
60	48	36	37.1	36.7 - 46.5	63.5 - 86.1	85.0 - 112.9	106.2 - 215.6	211.5 - 403.2	
67	54	40.2	41.7	41.2 - 52.1	71.1 - 96.3	95.2 - 126.4	119.0 - 241.2	236.8 - 450.8	
72	58	43.2	44.9	44.4 - 56.1	76.6 - 103.7	102.5 - 136.0	128.2 - 259.5	254.8 - 484.9	
84	67	50.4	52.7	52.1 - 65.8	89.6 - 121.2	120.0 - 159.0	150.3 - 303.5	298.2 - 566.6	
90	72	54	56.5	55.9 - 70.6	96.2 - 130.0	128.7 - 170.6	161.3 - 325.5	319.9 - 607.5	
100	80	60	63.0	62.3 - 78.6	107.0 - 144.7	143.3 - 189.8	179.7 - 362.1	356.0 - 675.6	
120	96	72	75.9	75.2 - 94.7	128.8 - 174.0	172.5 - 228.2	216.5 - 435.4	428.2 - 811.8	
150	120	90	95.3	94.4 - 118.8	161.5 - 217.9	216.2 - 285.9	271.6 - 545.3	536.6 - 1016.2	
180	144	108	114.7	113.7 - 142.9	194.2 - 261.9	260.0 - 343.6	326.8 - 655.2	645.0 - 1220.5	
210	168	126	134.1	132.9 - 167.0	226.8 - 305.8	303.7 - 401.3	381.9 - 765.0	753.4 - 1424.8	
240	192	144	153.5	152.2 - 191.1	259.5 - 349.8	347.5 - 458.9	437.1 - 874.9	861.8 - 1629.2	
270	229	143	183.2	181.7 - 228.0	309.6 - 417.1	414.6 - 547.4	521.6 - 1043.4	1028.0 - 1942.5	

Projection Formulas:

NP16FL:	$C = 0.822W - 1.866$	
NP17ZL:	$C(\text{Wide}) = 1.358W - 2.094$ ----- $C(\text{Tele}) = 1.934W - 1.913$	
NP18ZL:	$C(\text{Wide}) = 1.828W - 2.681$ ----- $C(\text{Tele}) = 2.397W - 2.642$	
NP19ZL:	$C(\text{Wide}) = 2.343W - 3.154$ ----- $C(\text{Tele}) = 3.883W - 3.118$	
NP20ZL:	$C(\text{Wide}) = 3.789W - 5.323$ ----- $C(\text{Tele}) = 5.689W - 5.299$	
NP21ZL:	$C(\text{Wide}) = 5.664W - 11.638$ ----- $C(\text{Tele}) = 8.834W - 11.535$	
NP31ZL:	$C(\text{Wide}) = 0.802W - 1.811$ ----- $C(\text{Tele}) = 1.004W - 1.713$	

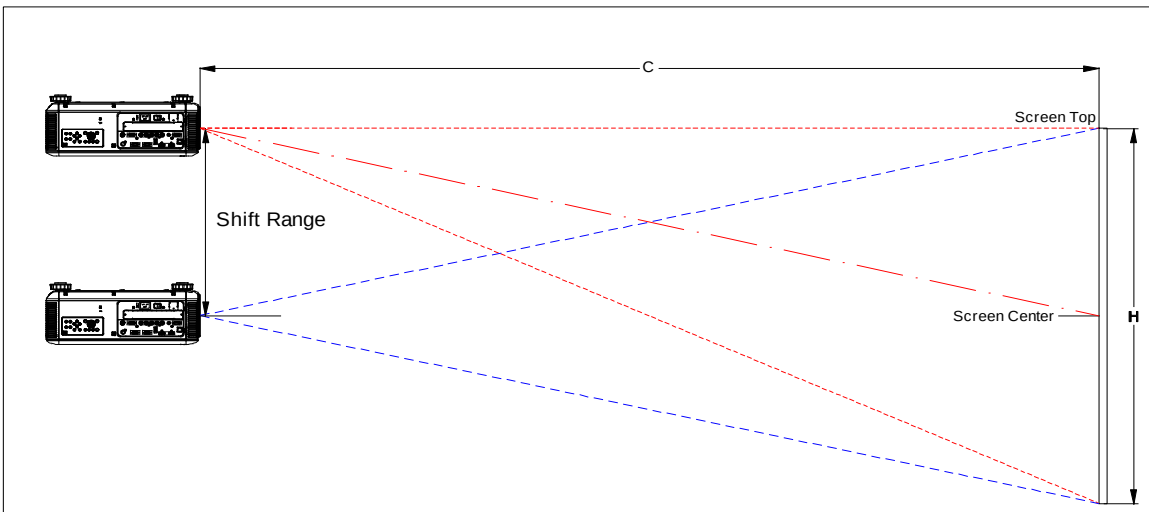
Screen Size (4:3)			Rear Lens	Zoom Lenses					
Diagonal inches	Width(W) inches	Height (H) inches	NP16FL	NP31ZL	NP17ZL	NP18ZL	NP19ZL	NP20ZL	NP21ZL
			0.76:1 inches	0.75-0.93:1 inches	1.29-1.79:1 inches	1.73-2.27:1 inches	2.22-3.67:1 inches	3.60-5.40:1 inches	5.30-8.30:1 inches
40	32	24	24.4	23.9 - 30.4	41.4 - 60.0	55.8 - 74.1	68.6 - 121.1	115.9 - 176.7	169.6 - 271.2
60	48	36	37.6	36.7 - 46.5	63.1 - 90.9	85.1 - 112.4	104.5 - 183.3	176.5 - 267.8	260.2 - 412.5
67	54	40.2	42.2	41.2 - 52.1	70.7 - 101.7	95.3 - 125.8	117.1 - 205.0	197.8 - 299.6	292.0 - 462.0
72	58	43.2	45.5	44.4 - 56.1	76.1 - 109.5	102.6 - 135.4	126.0 - 220.5	212.9 - 322.4	314.6 - 497.3
84	67	50.4	53.4	52.1 - 65.8	89.2 - 128.1	120.2 - 158.4	147.6 - 257.8	249.3 - 377.0	369.0 - 582.1
90	72	54	57.3	55.9 - 70.6	95.7 - 137.3	128.9 - 169.9	158.3 - 276.5	267.5 - 404.3	396.2 - 624.5
100	80	60	63.9	62.3 - 78.6	106.5 - 152.8	143.6 - 189.1	176.3 - 307.5	297.8 - 449.8	441.5 - 695.2
120	96	72	77.0	75.2 - 94.7	128.3 - 183.8	172.8 - 227.5	212.2 - 369.7	358.4 - 540.8	532.1 - 836.5
150	120	90	96.8	94.4 - 118.8	160.9 - 230.2	216.7 - 285.0	266.0 - 462.8	449.4 - 677.4	668.0 - 1048.5
180	144	108	116.5	113.7 - 142.9	193.5 - 276.6	260.6 - 342.5	319.8 - 556.0	540.3 - 813.9	804.0 - 1260.6
210	168	126	136.2	132.9 - 167.0	226.1 - 323.0	304.4 - 400.1	373.7 - 649.2	631.2 - 950.5	939.9 - 1472.6
240	192	144	156.0	152.2 - 191.1	258.6 - 369.4	348.3 - 457.6	427.5 - 742.4	722.2 - 1087.0	813.9 - 1684.6
270	229	143	179.82	181.7 - 228.0	308.6 - 440.6	415.6 - 545.8	510.0 - 885.3	861.6 - 1296.3	808.2 - 2009.7

PX700W/PX750U/PX800X Installation Guide

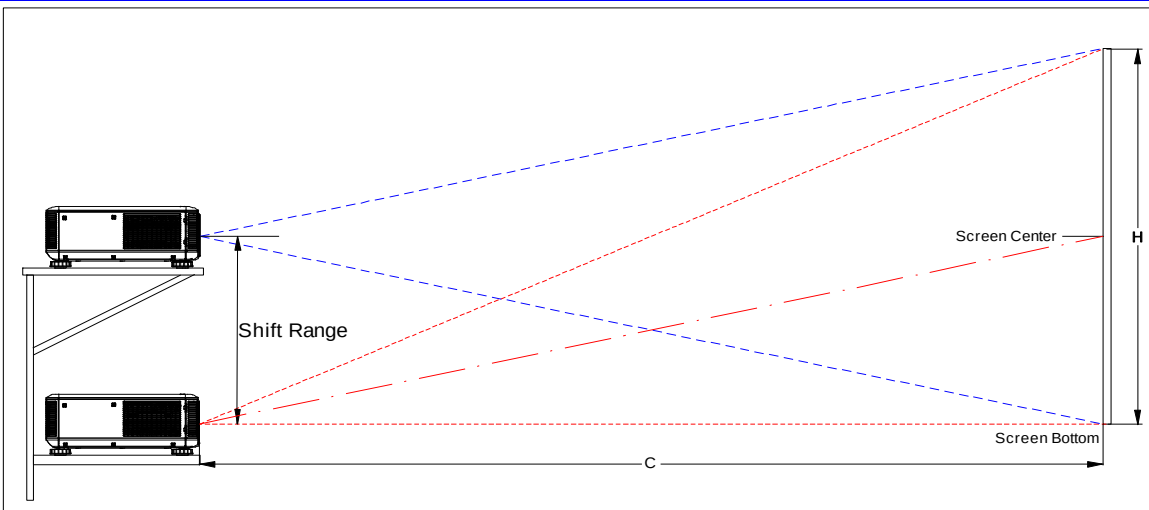
Desktop and Ceiling Mount

Rev 1.4

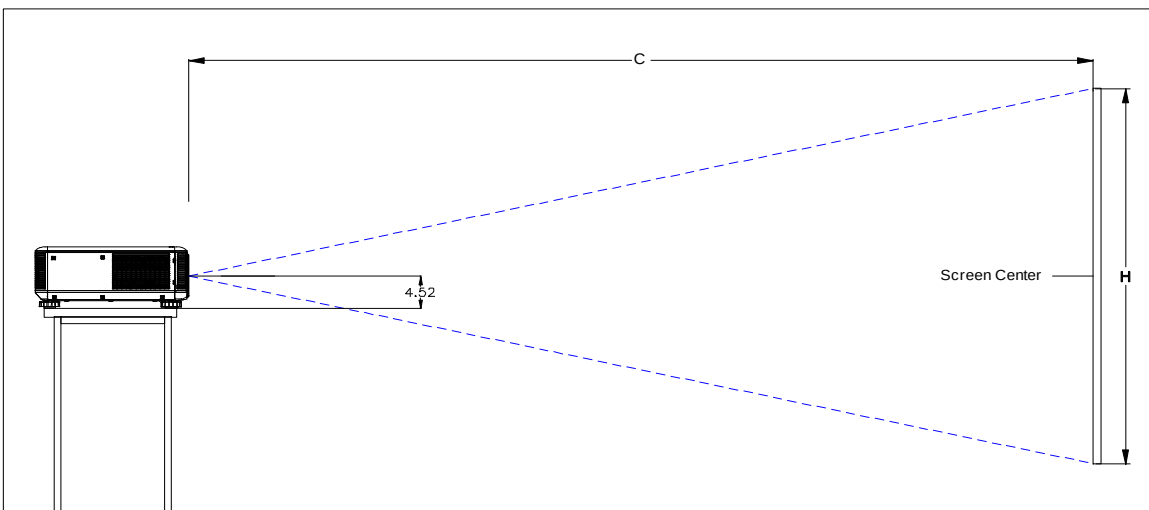
Ceiling Mount Installation



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

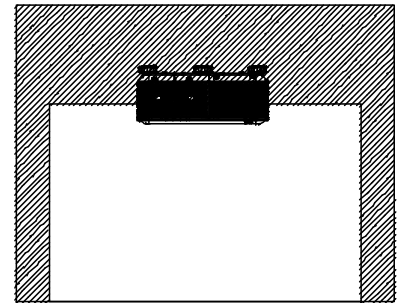
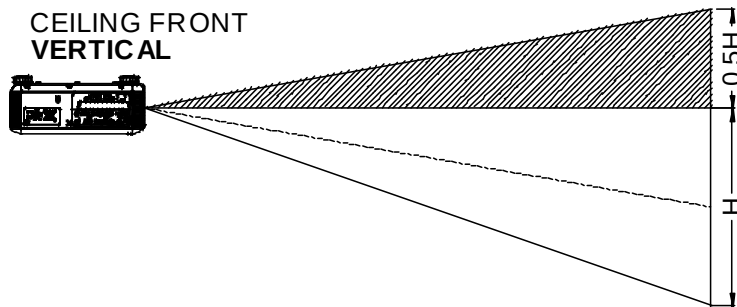
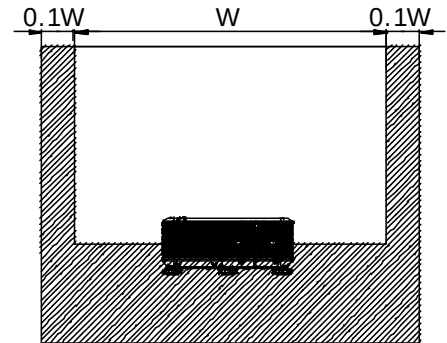
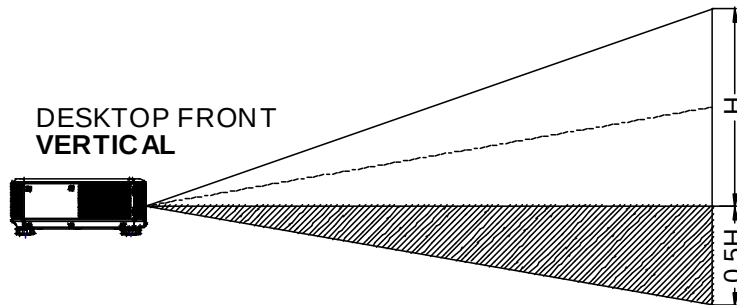


PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

Rev 1.4

Lens Shift Adjustable Range



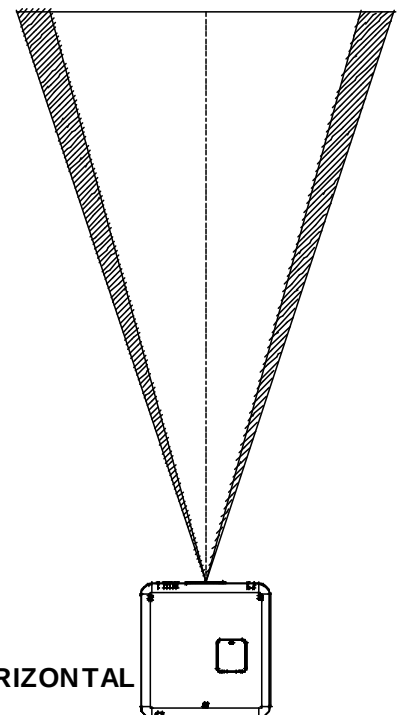
Lens Shift Range for Desktop and Ceiling Mount Application

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)

Note: Vertical Lens Shift for PX800X w/NP31ZL is 0.43H.



PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

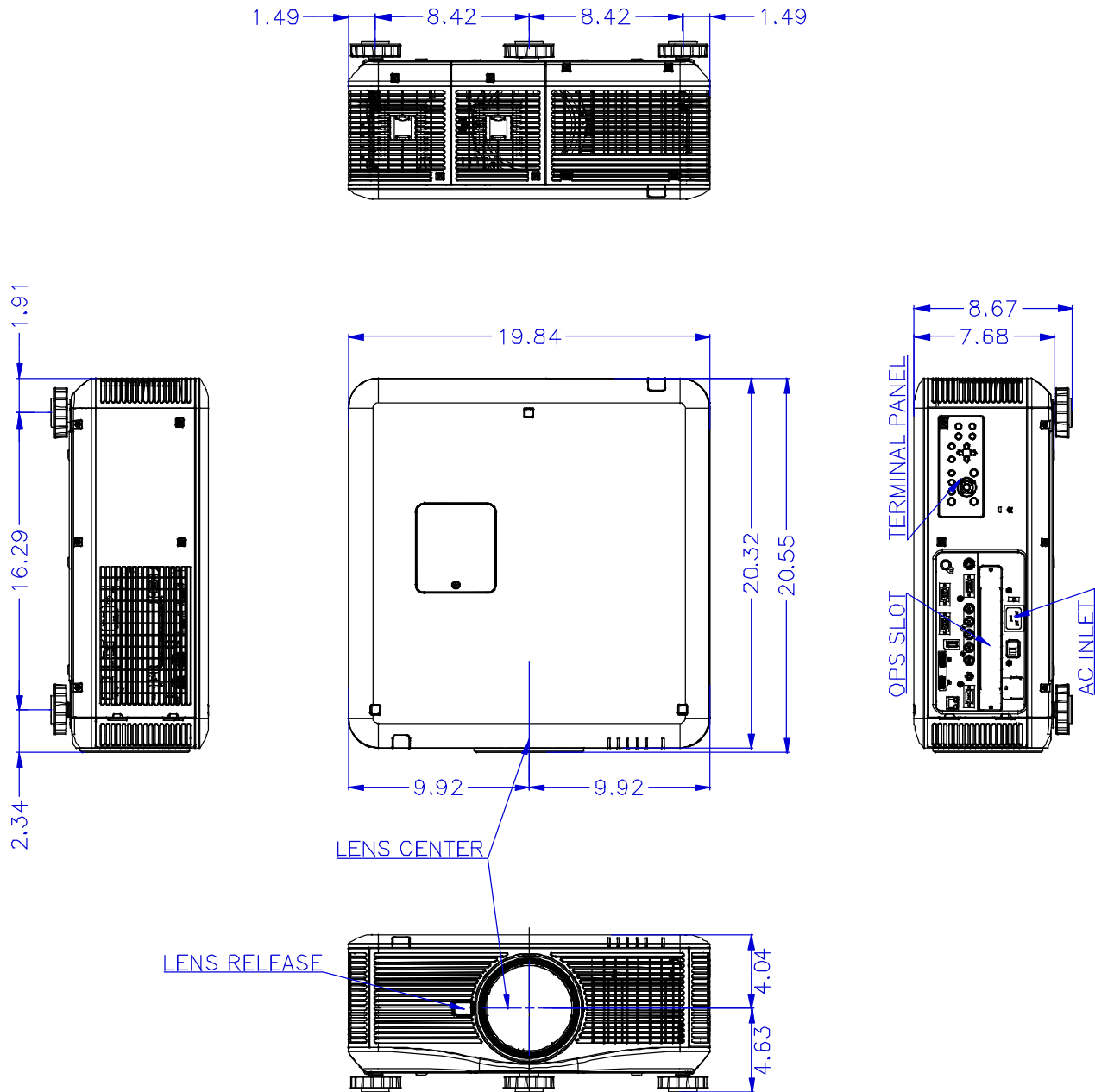
Rev 1.4

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

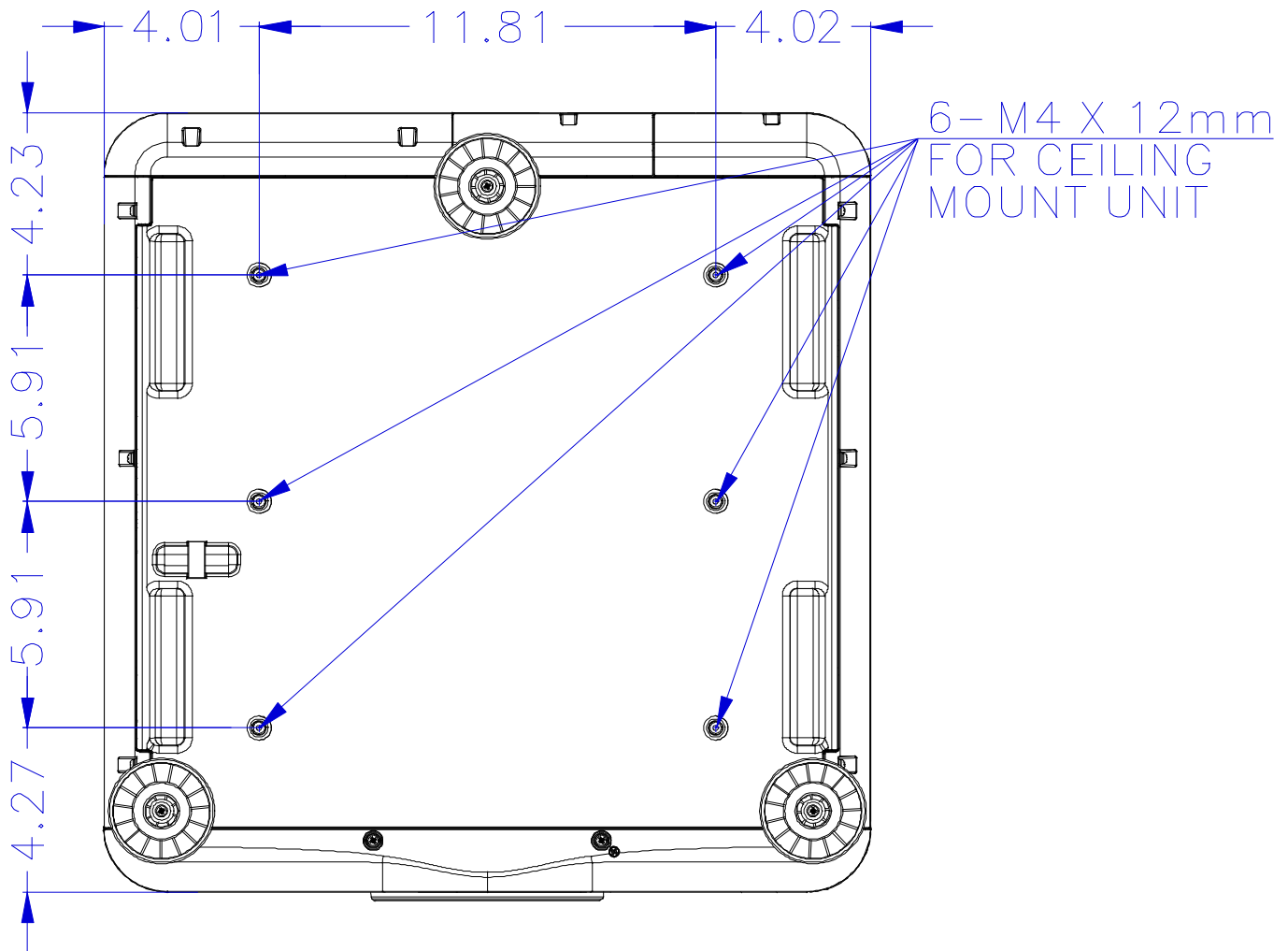


PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

Rev 1.4

Cabinet Dimensions



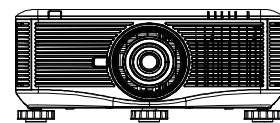
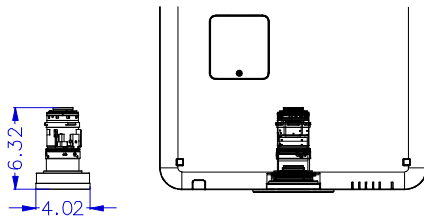
PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

Rev 1.4

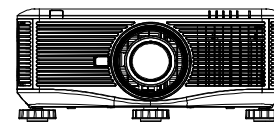
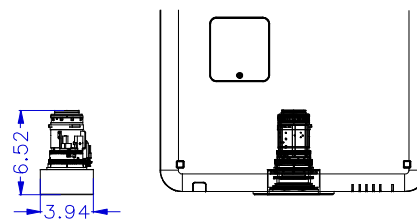
Optional Lens Dimensions

NP16FL



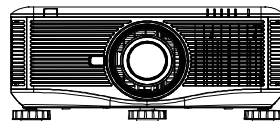
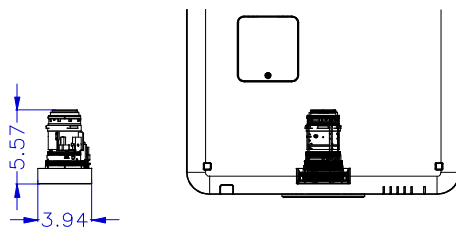
Max Depth: 20.55

NP17ZL



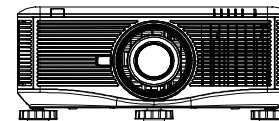
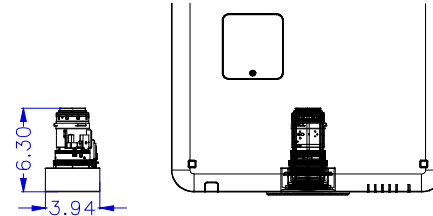
Max Depth: 20.79

NP18ZL



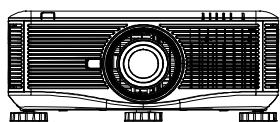
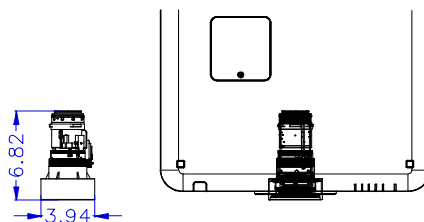
Max Depth: 20.55

NP19ZL



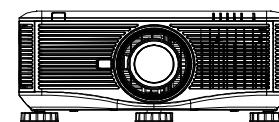
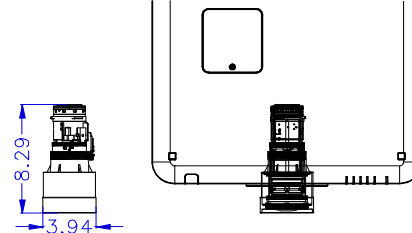
Max Depth: 20.55

NP20ZL



Max Depth: 21.33

NP21ZL



Max Depth: 23.02

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

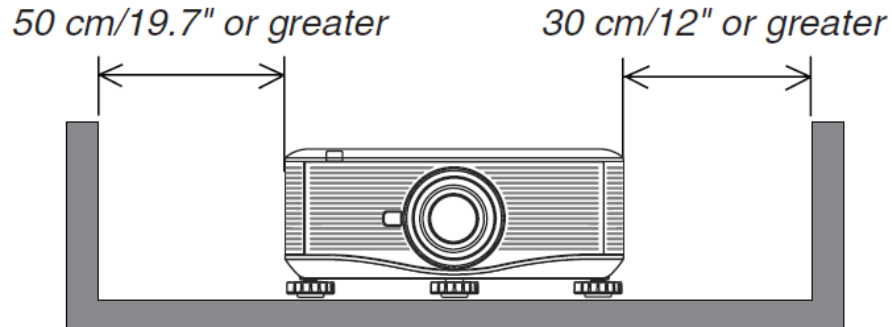
PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

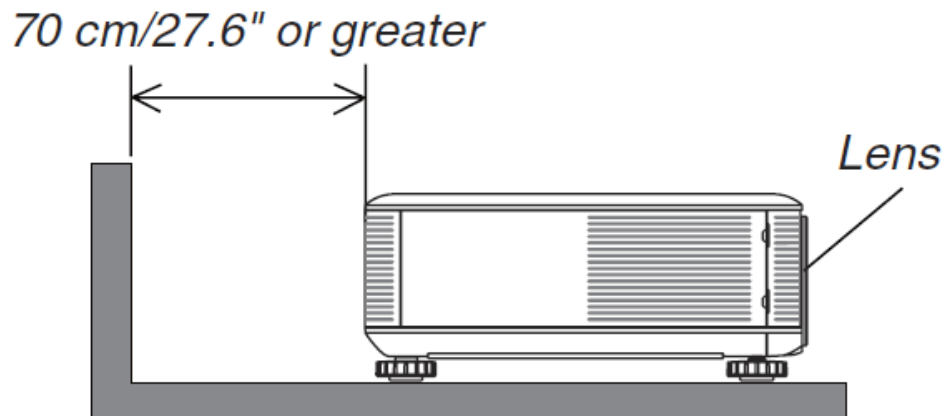
Rev 1.4

Ventilation Requirements

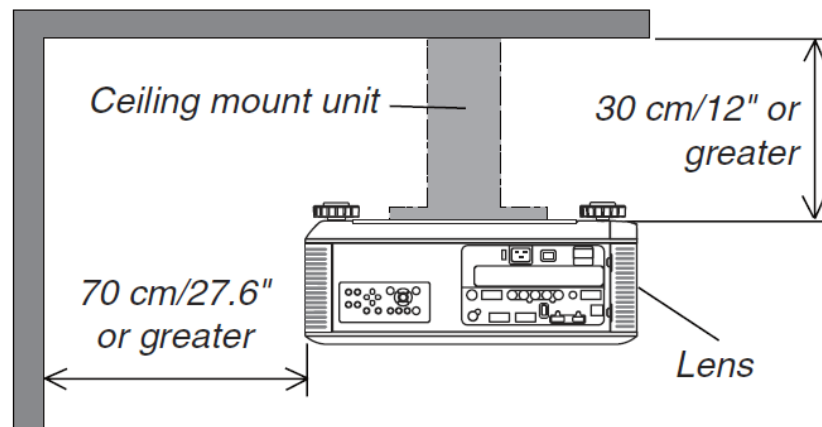
- If there are walls on both sides of the projector :



- If there's a wall behind the projector :



- For ceiling mounting :

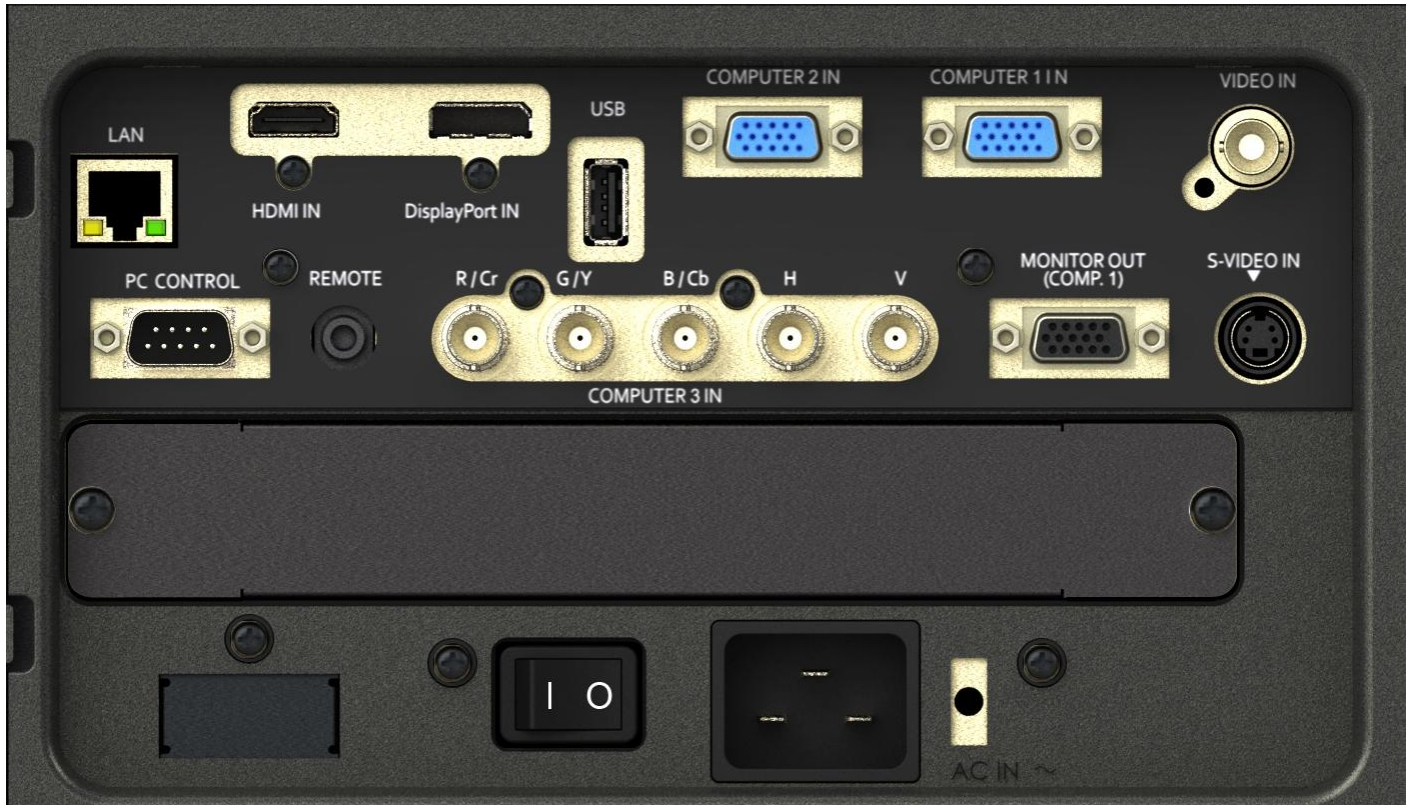


PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

Rev 1.4

Input Panel



Control Panel



PX700W/PX750U/PX800X Installation Guide

Desktop and Ceiling Mount

Rev 1.4

PC Control Codes

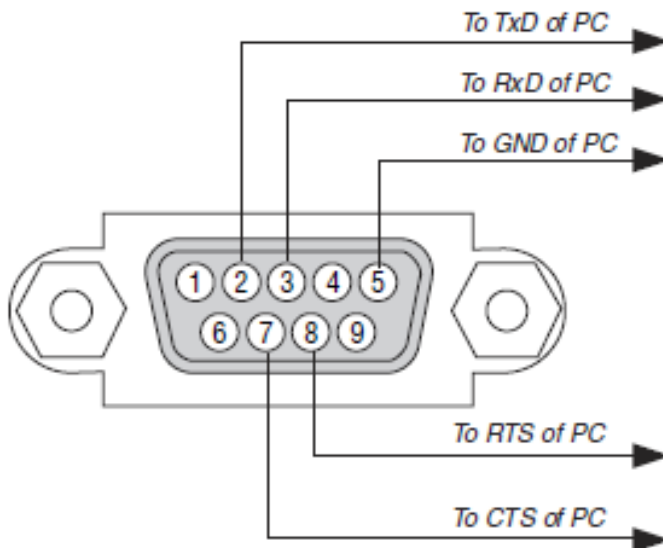
Function	Code Data							
POWER ON	02H	00H	00H	00H	00H	02H		
POWER OFF	02H	01H	00H	00H	00H	03H		
INPUT SELECT COMPUTER 1	02H	03H	00H	00H	02H	01H	01H	09H
INPUT SELECT COMPUTER 2	02H	03H	00H	00H	02H	01H	02H	0AH
INPUT SELECT COMPUTER 3	02H	03H	00H	00H	02H	01H	03H	0BH
INPUT SELECT HDMI	02H	03H	00H	00H	02H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