

NP1200/NP2200 Installation Guide

Desktop and Ceiling Mount

v 1.0

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Product Description

Type:	3 panel LCD projector, 0.80 p-Si TFT w/MLA	Dimensions:	15.7"(W) x 5.9"(H) x 14.1"(D)
Resolution:	1024 x 768 (4:3) / 1024 x 576 (16:9)	Weight:	16.3 lbs
Fan Noise:	NP1200 33 dB / 30dB @ 1 meter NP2200 34 dB / 30dB @ 1 meter	Brightness:	NP1200 – 3700 Lumens NP2200 – 4200 Lumens
Power Consumption:	NP1200/NP2200 396W (max)	BTU's:	1351 BTU/hour
Network Ready, integrated wired and wireless adapter		Manual:	Lens Shift, Horizontal & Vertical /Zoom/ Focus

Lens Specifications

NP01FL:	Throw Ratio: ~ 0.8:1 Screen Sizes: 40"-150"	Focal Length: 13.2mm F/#:2.3	NP03FL:	Throw Ratio: 1.94 - 3.07:1 Screen Sizes: 40" - 500"	Focal Length: 31.6 – 50.2mm F/#:2.2
NP02FL:	Throw Ratio: 1.18 - 1.54:1 Screen Sizes: 30" - 500"	Focal Length: 19.42 - 25.26mm F/#:2.2	NP04FL:	Throw Ratio: 2.98 - 4.77:1 Screen Sizes: 60" - 500"	Focal Length: 48.8 - 77.6mm F/#:2.2
Standard:	Throw Ratio: 1.5 - 2.0:1 Screen Sizes: 30" – 500"	Focal Length: 24.4 - 32.5mm F/#:1.7	NP05FL:	Throw Ratio: 4.62 - 7.02:1 Screen Sizes: 80" - 500"	Focal Length: 76.6 - 116.5mm F/#:2.2

Screen/Aspect Ratio

Both 4:3 and 16:9 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.
- All calculations are based on 4:3 aspect ratio.
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary $\pm 5\%$.

Formulas

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:

NP01FL:	C = 0.8325W – 1.33
NP02ZL:	C(Wide) = 1.2220W – 1.798 ----- C(Tele) = 1.5894W – 1.795
Standard:	C(Wide) = 1.5455W – 2.022 ----- C(Tele) = 2.0555W – 2.015
NP03ZL:	C(Wide) = 2.0069W – 2.830 ----- C(Tele) = 3.1710W – 2.840
NP04ZL:	C(Wide) = 3.0537W – 4.830 ----- C(Tele) = 4.8860W – 4.850
NP05ZL:	C(Wide) = 4.8275W – 7.625 ----- C(Tele) = 7.3379W – 7.645

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
Diagonal = W x 5/4

16:9 Screen Formulas:

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

Note: Tilting the front of the projector up or down by more than 45° from level could reduce lamp life by up to 20%.

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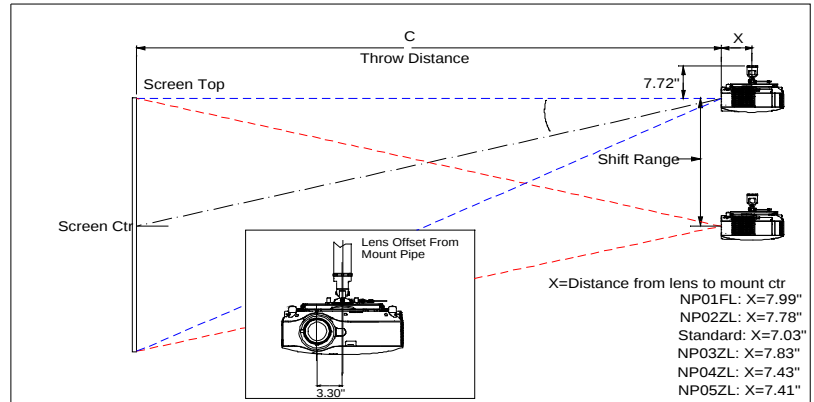
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Projection Distance and Screen Size for Ceiling Mount

The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

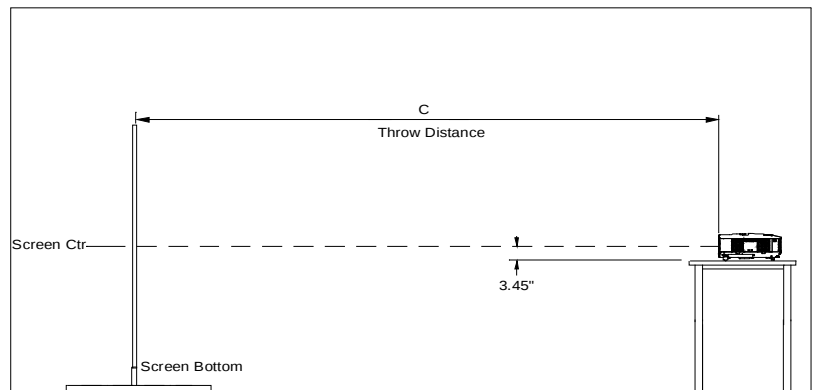
Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mount Installation



Desktop Installation

Note: Lens shift feature is not available with NP01FL (rear lens) NP01FL should be used only for "zero degree" / "no-offset" applications.



Distance Chart for popular 4:3 screens

Screen Size (4:3)			Rear Lens	Zoom Lenses							
			NP01FL	Standard	NP02ZL	NP03ZL	NP04ZL	NP05ZL			
Diagonal	Width(W)	Height (H)	0.8:1	1.5 - 2.0:1	1.18 - 1.54:1	1.94 - 3.07:1	2.98 - 4.77:1	4.62 - 7.02:1			
inches	inches	inches	inches	inches	inches	inches	inches	inches			
40	32	24	25.38	47.37 - 63.8	37.3 - 49.07	61.4 - 98.6	NA	NA			
60	48	36	38.7	72.11 - 96.6	56.9 - 74.5	93.5 - 149.4	141.7 - 229.7	NA - NA			
67	53.6	40.2	43.3	80.8 - 108.2	63.7 - 83.4	104.7 - 167.1	158.8 - 257.0	NA - NA			
72	57.6	43.2	46.6	86.9 - 116.4	68.6 - 89.8	112.8 - 179.8	171.1 - 276.6	NA - NA			
84	67.2	50.4	54.6	101.8 - 136.1	80.3 - 105.0	132.0 - 210.3	200.4 - 323.5	316.8 - 485.5			
90	72	54	58.6	109.2 - 146.0	86.2 - 112.6	141.7 - 225.5	215.0 - 346.9	340.0 - 520.7			
100	80	60	65.2	121.6 - 162.4	95.96 - 125.4	157.7 - 250.8	239.5 - 386.0	378.6 - 579.4			
120	96	72	78.5	146.3 - 195.3	115.5 - 150.8	189.8 - 301.6	288.3 - 464.2	455.8 - 696.8			
150	120	90	98.46	183.4 - 244.6	144.8 - 188.9	238.0 - 377.7	361.6 - 581.5	571.7 - 872.9			
180	144	108	NA	220.5 - 294.0	174.2 - 227.1	286.2 - 453.8	434.9 - 698.7	687.5 - 1049.0			
210	168	126	NA	257.6 - 343.3	203.5 - 265.2	334.3 - 529.9	508.2 - 816.0	803.4 - 1225.1			
240	192	144	NA	294.7 - 392.6	232.8 - 303.4	382.5 - 606.0	581.5 - 933.3	919.3 - 1401.2			
270	216	162	NA	331.8 - 442.0	262.2 - 341.5	430.7 - 682.1	654.8 - 1050.5	1035.1 - 1577.3			
300	240	180	NA	368.9 - 491.3	291.5 - 379.7	478.8 - 758.2	728.1 - 1167.8	1151.0 - 1753.5			
400	320	240	NA	492.6 - 655.7	389.2 - 506.8	639.4 - 1011.9	972.4 - 1558.7	1537.2 - 2340.5			
500	400	300	NA	616.30 - 820.2	487.0 - 634.0	799.9 - 1265.6	1216.7 - 1949.6	1923.4 - 2927.5			

Note: For screen sizes not indicated on the projection tables, use the formulas on page 1.

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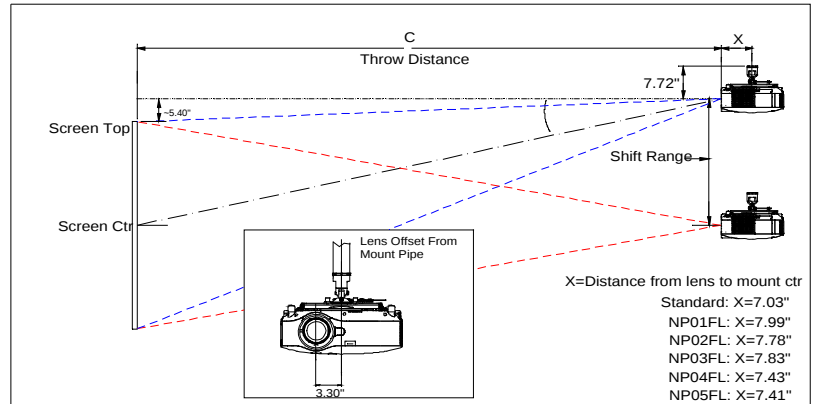
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Projection Distance and Screen Size for Ceiling Mount

The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

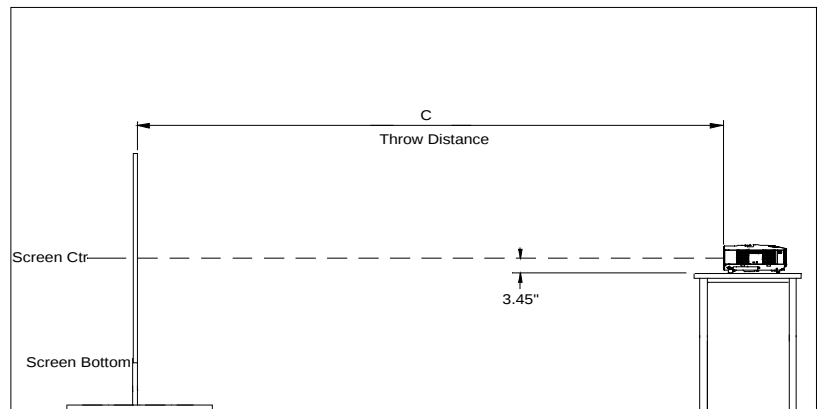
Distances are in inches. For millimeters multiply by 25.4.

Ceiling Mount Installation



Desktop Installation

Note: Lens shift feature is not available with NP01FL (rear lens) NP01FL should be used only for "zero degree" / "no-offset" applications.



Distance Chart for popular 16:9 screens

Screen Size (16:9)			Rear Lens	Zoom Lenses									
			NP01FL	Standard	NP02ZL		NP03ZL		NP04ZL		NP05ZL		
Diagonal	Width(W)	Height (H)	0.8:1	1.5 - 2.0:1	1.18 - 1.54:1		1.94 - 3.07:1		2.98 - 4.77:1		4.62 - 7.02:1		
inches	inches	inches	inches	inches	inches		inches		inches		inches		
92	80	45	65.24	121.6 - 162.4	96.0 - 125.4	157.7	250.8	239.5	386.0	366.4	579.4		
100	87	49	71.1	132.4 - 176.8	104.5 - 136.5	171.8	273.0	260.8	420.2	399.5	630.8		
106	92	52	75.2	140.1 - 187.1	110.6 - 144.4	181.8	288.9	276.1	444.7	423.1	667.4		
110	96	54	78.5	146.3 - 195.3	115.5 - 150.8	189.8	301.6	288.3	464.2	442.0	696.8		
119	104	58.8	85.2	158.7 - 211.8	125.3 - 163.5	205.9 - 326.9	312.8	503.3	494.4	755.5			
123	107	60	87.7	163.3 - 217.9	129.0 - 168.3	211.9 - 336.5	321.9	518.0	508.9	777.5			
133	116	65	95.1	177.2 - 236.4	140.0 - 182.6	230.0 - 365.0	349.4	561.9	552.4	843.6			
135	118	66	96.8	180.3 - 240.5	142.4 - 185.8	234.0 - 371.3	355.5	571.7	562.0	858.2			
159	139	78	NA	212.8 - 283.7	168.1 - 219.1	276.1 - 437.9	419.6	674.3	663.4	1012.3			
161	140	79	NA	214.3 - 285.8	169.3 - 220.7	278.1 - 441.1	422.7	679.2	668.2	1019.7			
229	200	113	NA	307.1 - 409.1	242.6 - 316.1	398.6 - 631.4	605.9	972.4	957.9	1459.9			
275	240	135	NA	368.9 - 491.3	291.5 - 379.7	478.8 - 758.2	728.1	1167.8	1151.0	1753.5			
367	320	180	NA	492.6 - 655.7	389.2 - 506.8	639.4 - 1011.9	972.4	1558.7	1537.2	2340.5			
459	400	225	NA	616.3 - 820.2	487.0 - 634.0	799.9 - 1265.6	1216.7	1949.6	1923.4	2927.5			

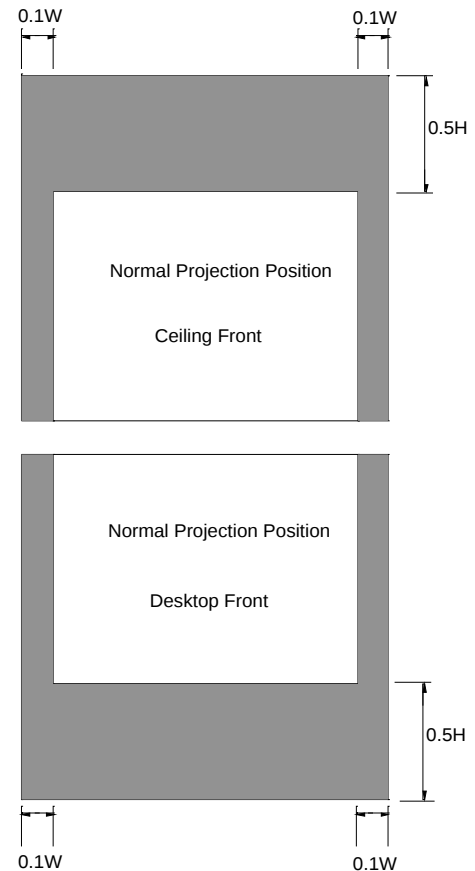
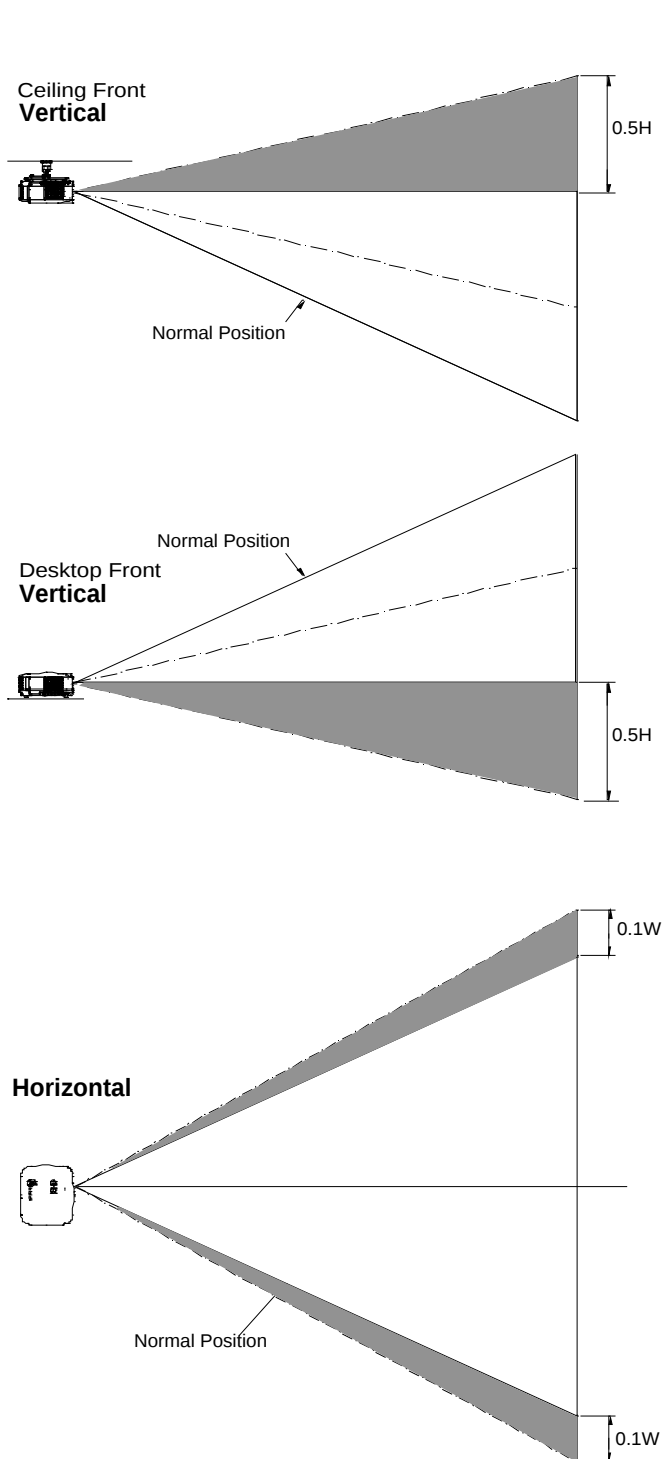
Note: For screen sizes not indicated on the projection tables, use the formulas on page 1.

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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 NP01FL (rear lens). NP01FL should be used only for "zero degree" / "no-offset" applications.

Maximum Possible Range for Standard Lens/NP02ZL/NP03ZL/NP04ZL/NP05ZL:

Up: $0.5V$

Right: $0.10H$

Left: $0.10H$

(H: width of projected image, V: height of projected image)

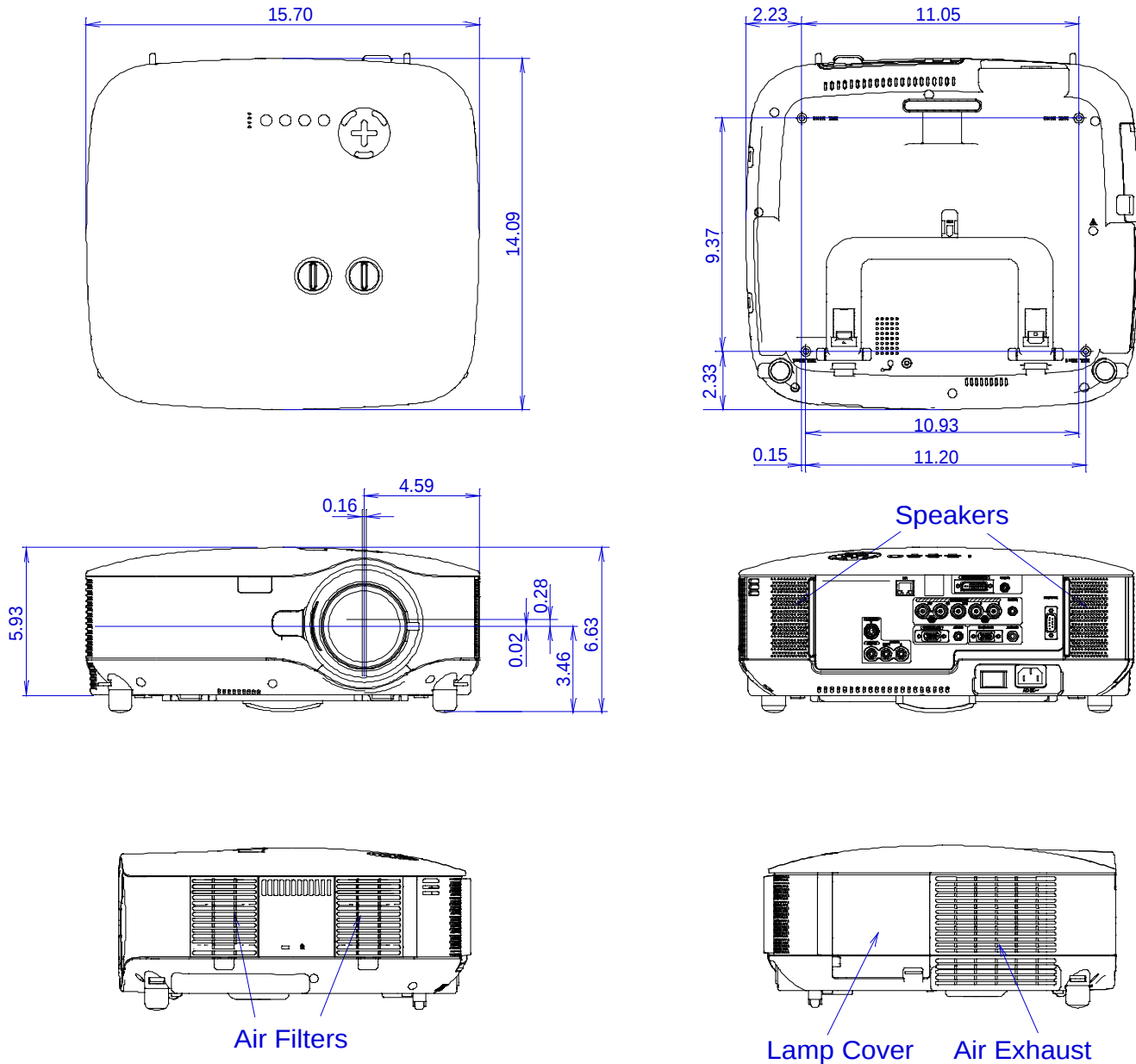
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Cabinet Dimensions

The following diagrams show the cabinet dimensions for the NP1200/NP2200. Dimensions are in inches. For millimeters multiply by 25.4.



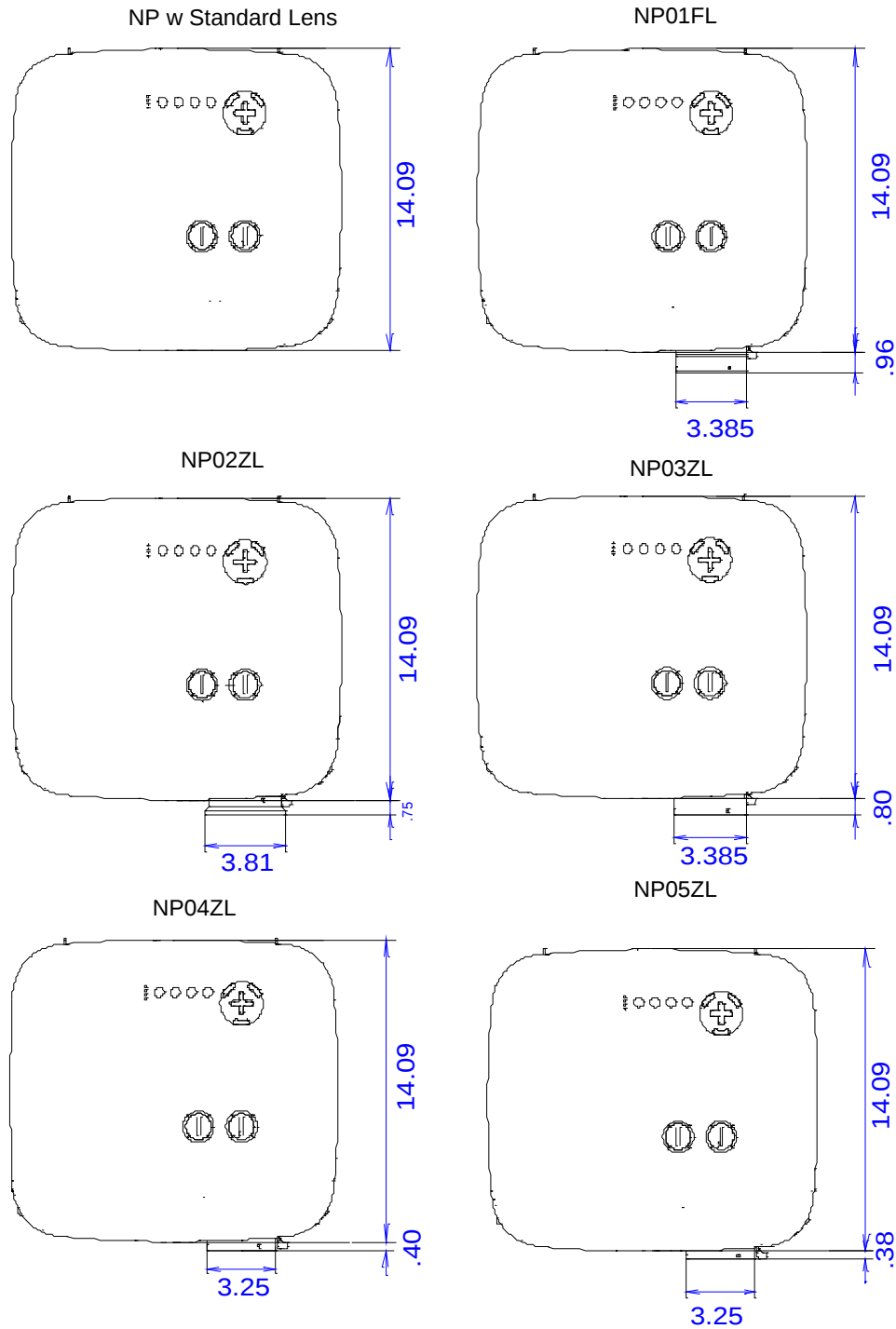
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Lens Dimensions

The following drawings show the added dimensions for the optional lenses
Dimensions are in inches. For millimeters multiply by 25.4.



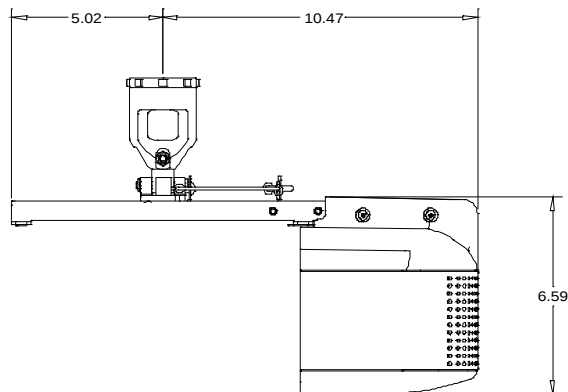
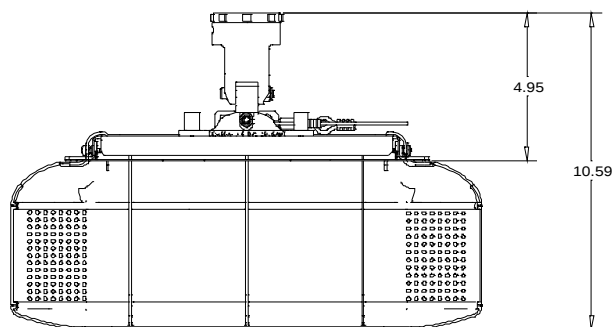
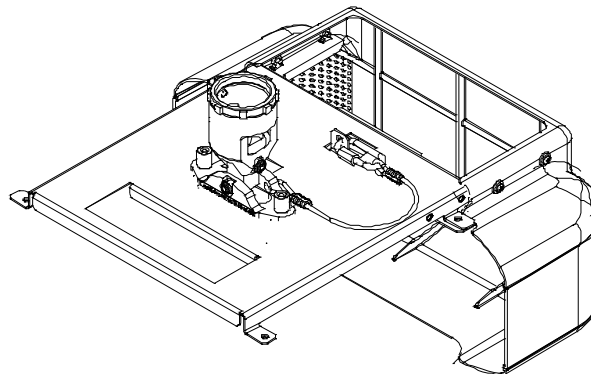
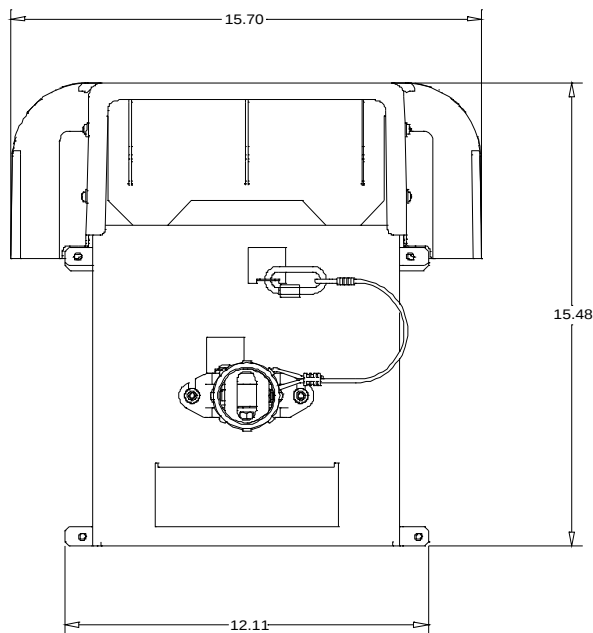
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Optional Ceiling Mount Dimensions (Model #: NP3150CM)

The following diagrams show ceiling mount dimensions for the NP3150CM. Dimensions are in inches. For millimeters multiply by 25.4.



NP3150CM
units: inches
scale 1:1

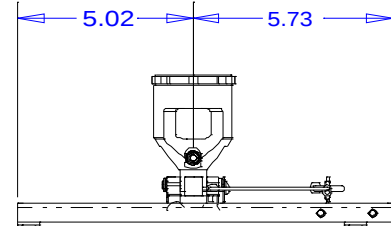
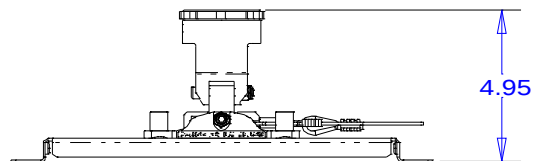
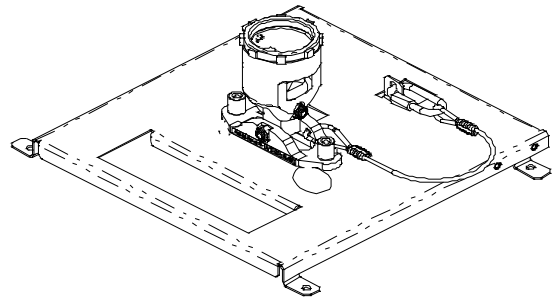
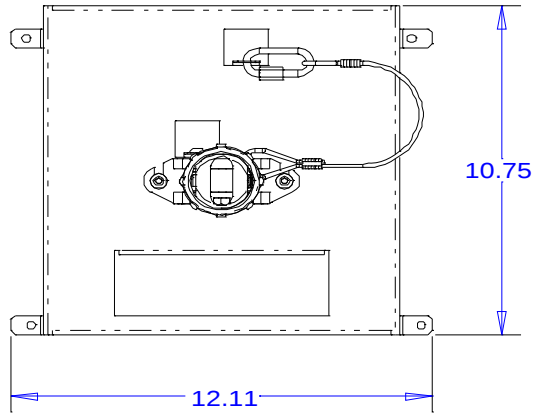
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Optional Ceiling Mount Dimensions (Model #: NP3150CM) (continued)

The following diagrams show ceiling mount dimensions for the NP3150CM.
Dimensions are in inches. For millimeters multiply by 25.4.



POLE MOUNT W/O I/O COVER

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Input Panel



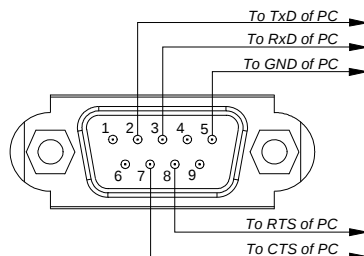
PC Control Codes

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	1AH	22H		
INPUT SELECT VIDEO 1	02H	03H	00H	00H	02H	01H	06H	0EH		
INPUT SELECT S-VIDEO	02H	03H	00H	00H	02H	01H	0BH	13H		
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				
ASPECT RATIO (4:3 Screen)										
4:3	03H	10H	00H	00H	05H	18H	00H	00H	00H	30H
LETTERBOX	03H	10H	00H	00H	05H	18H	00H	00H	01H	31H
WIDESCREEN	03H	10H	00H	00H	05H	18H	00H	00H	02H	32H
ZOOM	03H	10H	00H	00H	05H	18H	00H	00H	03H	33H
ASPECT RATIO (RGB)										
4:3 WINDOW	03H	10H	00H	00H	05H	18H	00H	00H	00H	30H
16:9	03H	10H	00H	00H	05H	18H	00H	00H	02H	32H
5:4	03H	10H	00H	00H	05H	18H	00H	00H	0BH	3BH
16:10	03H	10H	00H	00H	05H	18H	00H	00H	0CH	3CH
15:9	03H	10H	00H	00H	05H	18H	00H	00H	0DH	3DH
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: One bit
 X on/off: None
 Communications: Full duplex



PC Control Connector (D-Sub 9P)

NOTE: Pins 1, 4, 6, and 9 are used inside the projector.

Jumper "Request to send" and "Clear to Send" together on both ends of the cable to simplify cable connection.