

NP1150/NP2150/NP3150 Installation Guide

Desktop and Ceiling Mount

v 1.6

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Product Description

Type:	3 panel LCD projector, 0.80 p-Si TFT w/MLA	Dimensions:	399mm(W) x 150mm(H) x 358mm(D)
Resolution:	1024 x 768 (4:3) / 1024 x 576 (16:9)	Weight:	7,3 kg
Fan Noise:	NP1150 33 dB / 30dB @ 1 meter NP2150 34 dB / 30dB @ 1 meter NP3150 38 dB / 31dB @ 1 meter	Brightness:	NP1150 – 3700 Lumens NP2150 – 4200 Lumens NP3150 – 5000 Lumens
Power Consumption:	NP1150/NP2150 460W (max) NP3150 490W (max)	BTU's:	1672 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 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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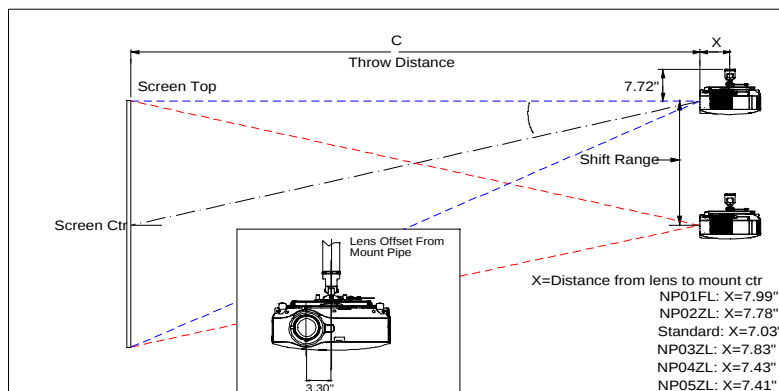
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Projection Distance and Screen Size for Ceiling Mount

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

Ceiling Mount Installation

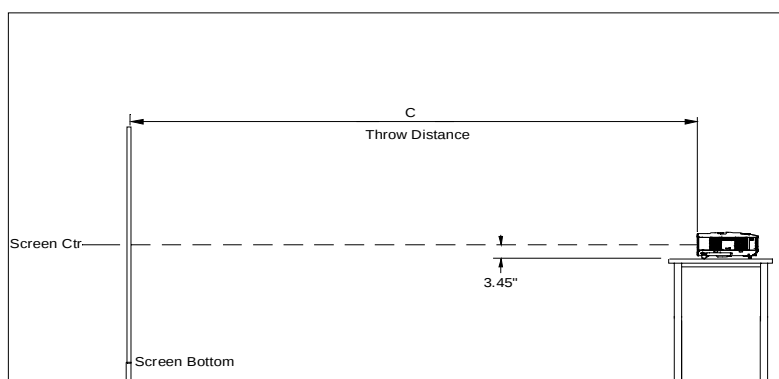
Figures are in inches.
For millimeters multiply by 25.4



Desktop Installation

Figures are in inches.
For millimeters multiply by 25.4

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

Distances are in mm.

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	
mm	mm	mm	mm	mm	mm	mm	mm	mm	
1016	812,8	609,6	673,83	1254,49 - 1668,7	991,4 - 1290,07	1628,4 - 2574,5	NA	NA	
1524	1219,2	914,4	1011,3	1882,78 - 2504,1	1488,1 - 1936,0	2444,0 - 3863,2	3718,2 - 5952,2	NA - NA	
1701,8	1361,4	1021,08	1129,5	2102,7 - 2796,4	1661,9 - 2162,1	2729,4 - 4314,3	4152,6 - 6647,1	NA - NA	
1828,8	1463	1097,28	1213,9	2259,8 - 3005,3	1786,0 - 2323,6	2933,3 - 4636,5	4462,9 - 7143,6	NA - NA	
2133,6	1706,9	1280,16	1416,4	2636,7 - 3506,5	2084,0 - 2711,1	3422,7 - 5409,7	5207,5 - 8335,0	8232,3 - 12517,3	
2286	1828,8	1371,6	1517,6	2825,2 - 3757,1	2233,0 - 2904,9	3667,4 - 5796,3	5579,8 - 8930,7	8820,9 - 13411,9	
2540	2032	1524	1686,4	3139,4 - 4174,8	2481,31 - 3227,9	4075,2 - 6440,6	6200,3 - 9923,5	9801,9 - 14903,0	
3048	2438,4	1828,8	2023,9	3767,7 - 5010,1	2977,9 - 3873,8	4890,8 - 7729,3	7441,3 - 11909,2	11763,8 - 17885,1	
3810	3048	2286	2530,17	4710,1 - 6263,1	3722,9 - 4842,7	6114,2 - 9662,4	9302,8 - 14887,7	14706,6 - 22358,3	
4572	3657,6	2743,2	NA	5652,5 - 7516,2	4467,8 - 5811,6	7337,6 - 11595,4	11164,4 - 17866,2	17649,4 - 26831,5	
5334	4267,2	3200,4	NA	6595,0 - 8769,2	5212,7 - 6780,5	8561,0 - 13528,5	13025,9 - 20844,7	20592,3 - 31304,6	
6096	4876,8	3657,6	NA	7537,4 - 10022,2	5957,7 - 7749,4	9784,4 - 15461,5	14887,5 - 23823,2	23535,1 - 35777,8	
6858	5486,4	16225,4	NA	8479,9 - 11275,3	6702,6 - 8718,3	11007,8 - 17394,5	16749,0 - 26801,7	26478,0 - 40251,0	
7620	6096	4572	NA	9422,3 - 12528,3	7447,5 - 9687,2	12231,2 - 19327,6	18610,5 - 29780,2	29420,8 - 44724,2	
10160	8128	6096	NA	12563,8 - 16705,1	9930,6 - 12916,8	16309,3 - 25771,0	24815,6 - 39708,6	39230,3 - 59634,8	
12700	10160	7620	NA	15705,26 - 20881,9	12413,7 - 16146,5	20387,3 - 32214,5	31020,8 - 49636,9	49039,8 - 74545,4	

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

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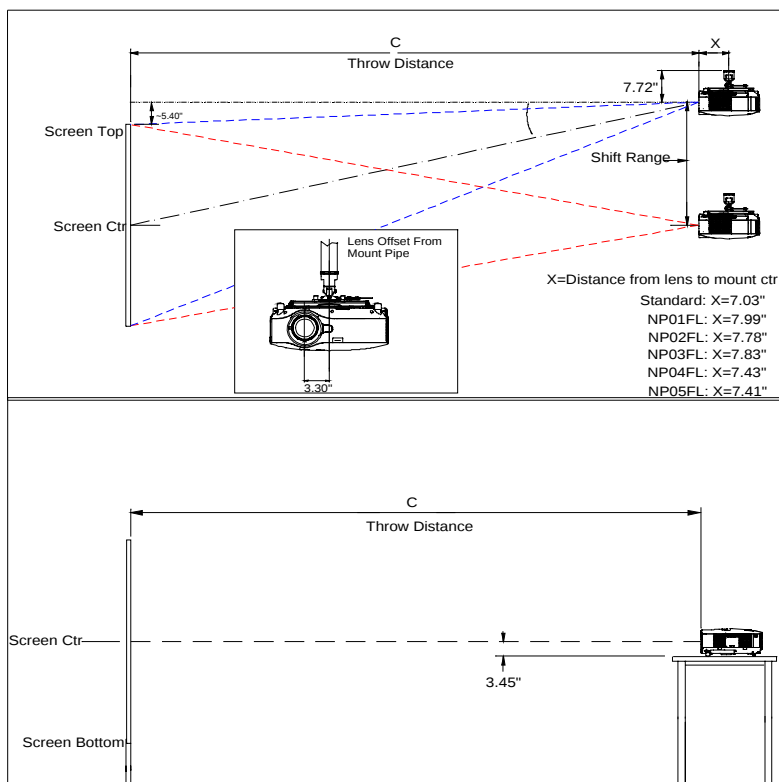
Projection Distance and Screen Size for Ceiling Mount

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

Ceiling Mount Installation

Figures are in inches.

For millimeters multiply by 25.4



Desktop Installation

Figures are in inches. For millimeters multiply by 25.4

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

Distances are in mm.

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	
mm	mm	mm	mm	mm		mm		mm		mm		mm	
2336,8	2032	1143	1686,38	3139,4	4174,8	2481,3	3227,9	4075,2	6440,6	6200,3	9923,5	9581,9	14903,0
2540	2209,8	1244,6	1834,0	3414,3	4540,2	2698,6	3510,5	4432,0	7004,4	6743,2	10792,2	10421,3	16207,6
2692,4	2336,8	1320,8	1939,5	3610,6	4801,3	2853,8	3712,3	4686,9	7407,2	7131,1	11412,8	11020,8	17139,6
2794	2438,4	1371,6	2023,9	3767,7	5010,1	2977,9	3873,8	4890,8	7729,3	7441,3	11909,2	11500,5	17885,1
3022,6	2641,6	1493,52	2192,7	4081,8	5427,8	3226,2	4196,8	5298,6	8373,7	8061,8	12902,0	12744,7	19376,2
3124,2	2717,8	1524	2255,9	4199,6	5584,4	3319,4	4317,9	5451,5	8615,3	8294,5	13274,3	13112,6	19935,3
3378,2	2946,4	1651	2445,8	4553,0	6054,3	3598,7	4681,2	5910,3	9340,2	8992,6	14391,3	14216,1	21612,7
3429	2997,2	1676,4	2488,0	4631,6	6158,7	3660,8	4762,0	6012,3	9501,3	9147,7	14639,5	14461,4	21985,5
4038,6	3530,6	1981,2	NA	5456,2	7255,1	4312,6	5609,7	7082,7	11192,7	10776,6	17245,7	17036,3	25899,5
4089,4	3556	2006,6	NA	5495,5	7307,3	4343,6	5650,1	7133,7	11273,2	10854,1	17369,8	17159,0	26085,9
5816,6	5080	2870,2	NA	7851,6	10439,9	6206,0	8072,4	10192,2	16105,8	15508,0	24816,0	24516,1	37268,9
6985	6096	3429	NA	9422,3	12528,3	7447,5	9687,2	12231,2	19327,6	18610,5	29780,2	29420,8	44724,2
9321,8	8128	4572	NA	12563,8	16705,1	9930,6	12916,8	16309,3	25771,0	24815,6	39708,6	39230,3	59634,8
11658,6	10160	5715	NA	15705,3	20881,9	12413,7	16146,5	20387,3	32214,5	31020,8	49636,9	49039,8	74545,4

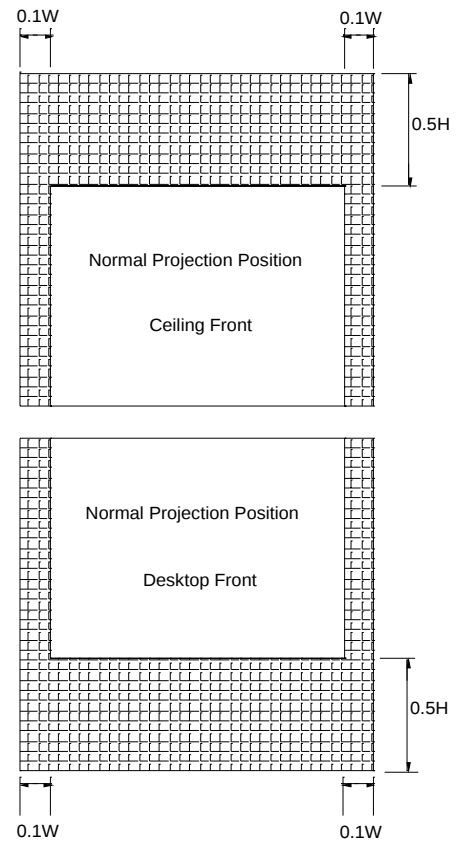
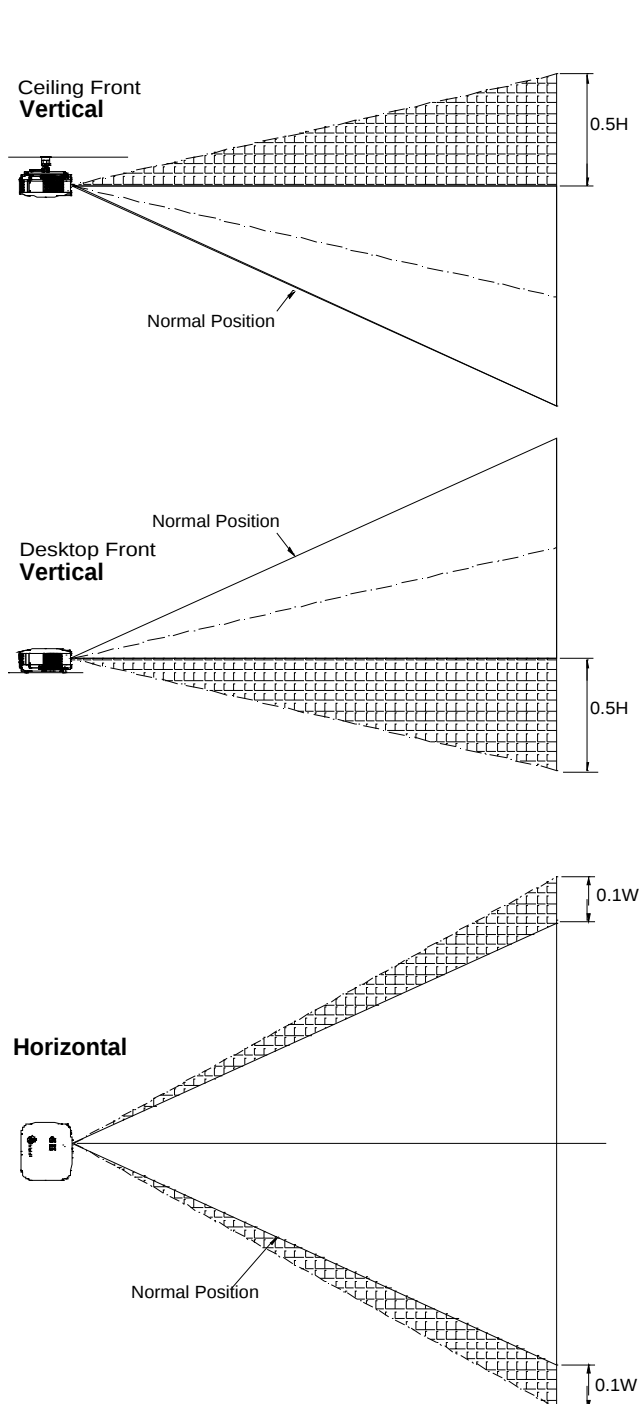
Note: For screen sizes not indicated on the projection tables, use the formulas on page 1.

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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)

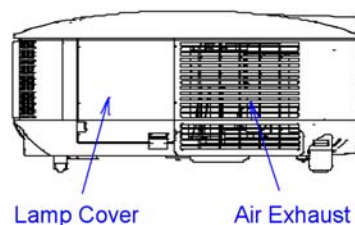
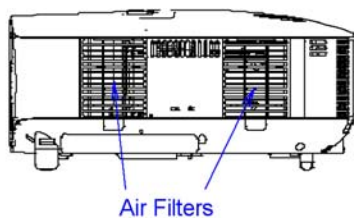
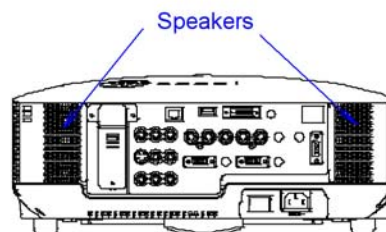
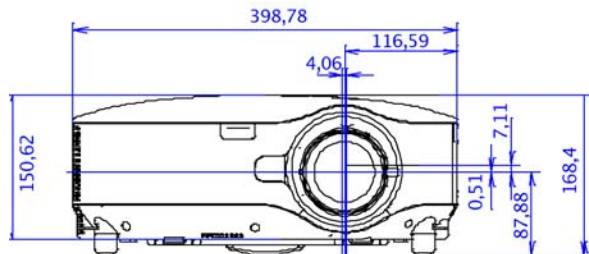
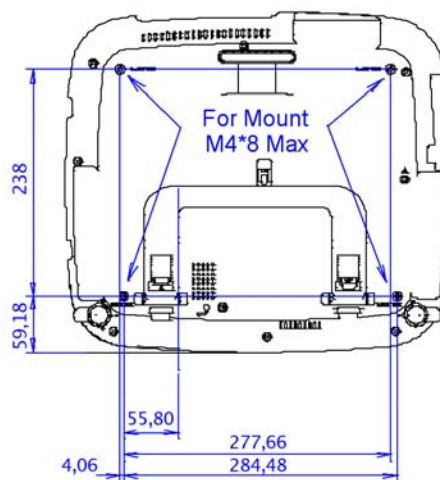
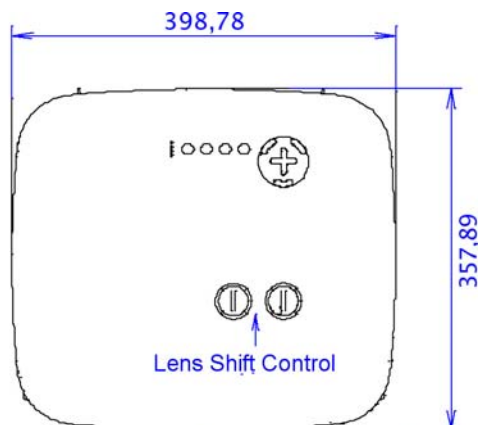
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Cabinet Dimensions

The following diagrams show the cabinet dimensions for the NP3150. Dimensions are in mm.



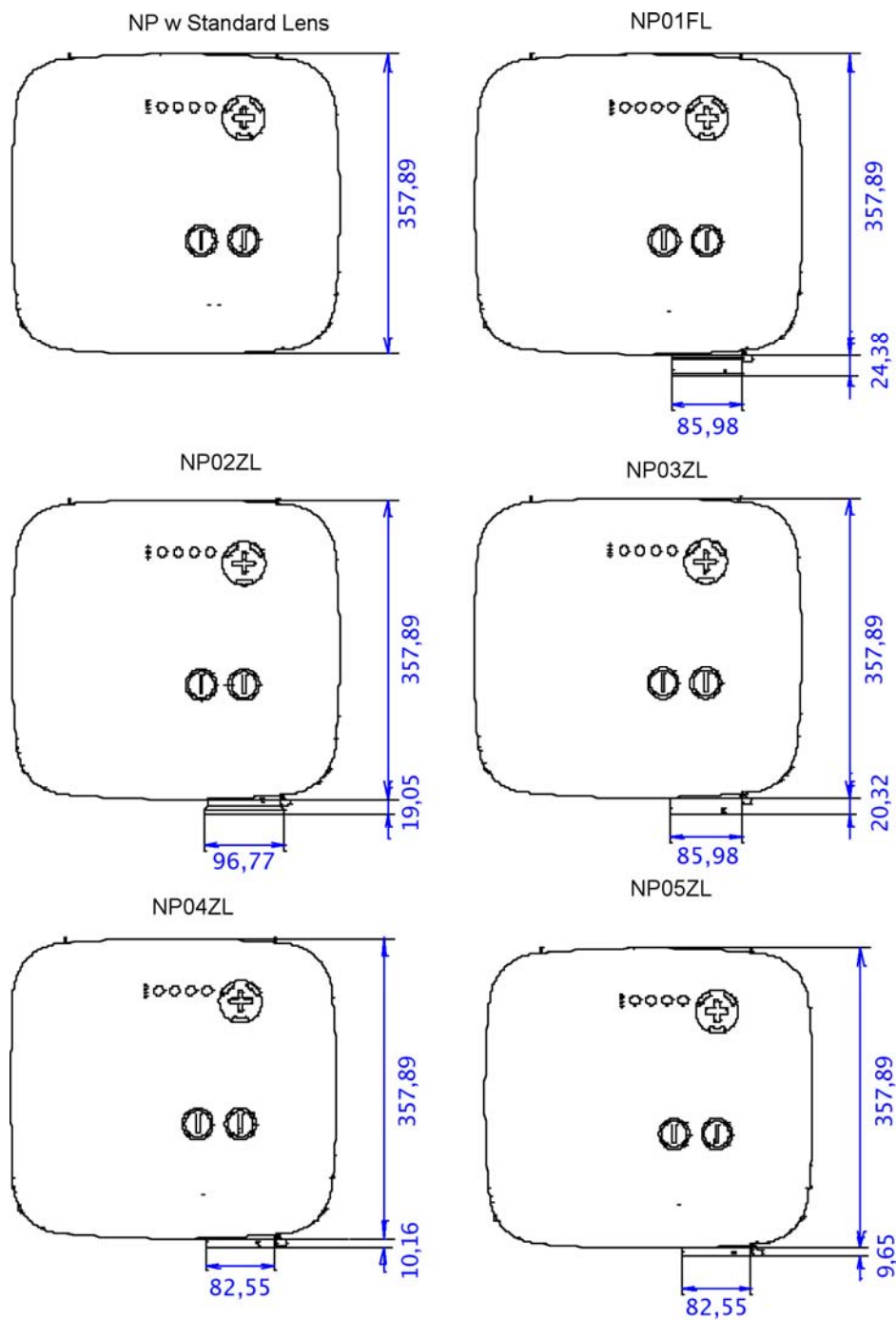
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Lens Dimensions

The following drawings show the added dimensions for the optional lenses
Dimensions are in mm.



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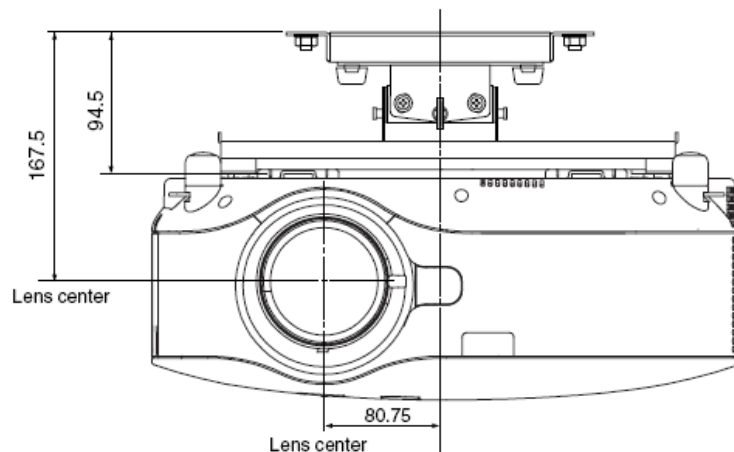
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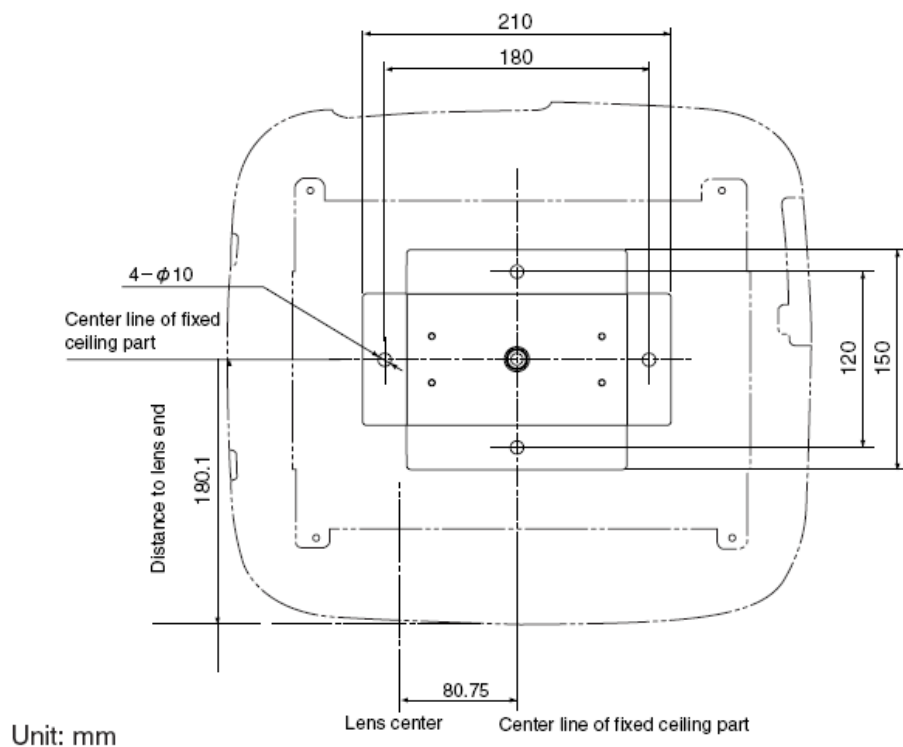
Optional Ceiling Mount Dimensions (Model #: NP05CM)

The following diagrams show ceiling mount dimensions for the NP3150.

Fixed Ceiling Part and Lens Center Dimensions Diagram



Fixed Ceiling Part Bolt Hole Position Dimensions



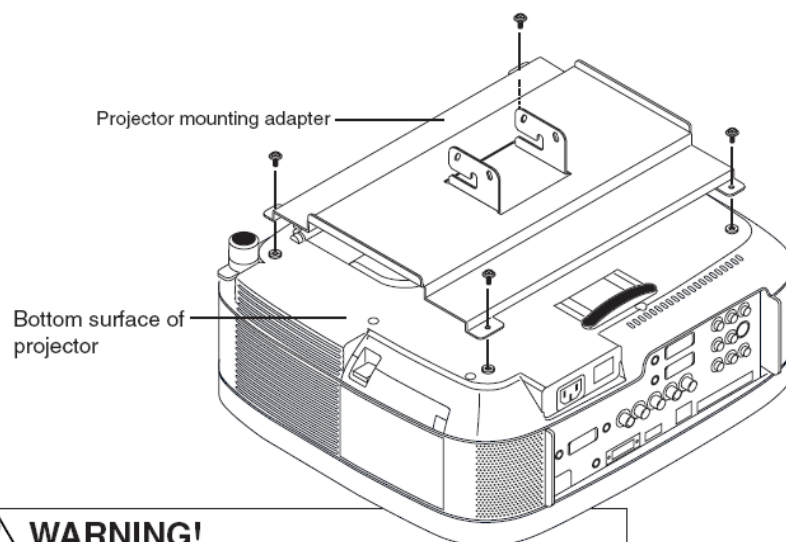
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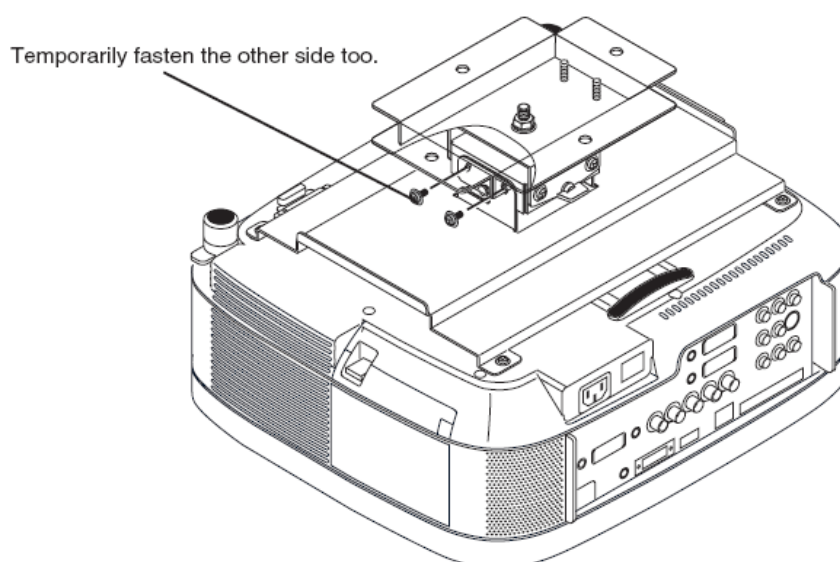
Optional Ceiling Mount Dimensions (Model #: NP05CM) (continued)

The following diagrams show ceiling mount dimensions for the NP3150.



⚠ WARNING!

The use of screws other than those supplied for mounting purposes may cause the projector to be damaged or fall and cause injury. Please be sure to use the supplied screws.



For further information, please read the "Installation and Adjustment Manual" of NP05CM

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Input / Output Panel



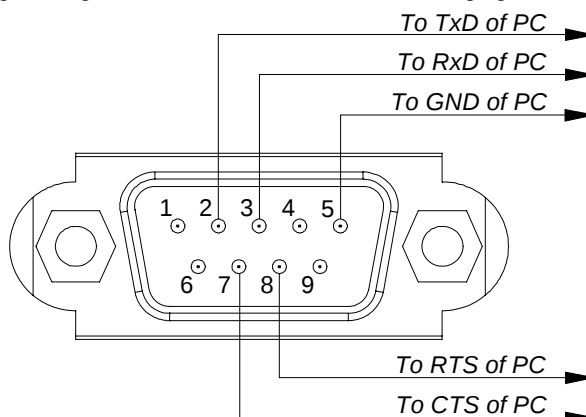
PC Control Codes

Function	Code Data
POWER ON	02H 00H 00H 00H 00H 02H
POWER OFF	02H 01H 00H 00H 00H 03H
INPUT SELECT RGB 1	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT RGB 2	02H 03H 00H 00H 02H 01H 02H 0AH
INPUT SELECT VIDEO 1	02H 03H 00H 00H 02H 01H 06H 0EH
INPUT SELECT VIDEO 2	02H 03H 00H 00H 02H 01H 07H 0FH
INPUT SELECT S-VIDEO	02H 03H 00H 00H 02H 01H 0BH 13H
INPUT SELECT DVI (DIGITAL)	02H 03H 00H 00H 02H 01H 1AH 22H
INPUT SELECT DVI (ANALOG)	02H 03H 00H 00H 02H 01H 03H 0BH
INPUT SELECT NETWORK	02H 03H 00H 00H 02H 01H 1FH 27H
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

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.