

MC453X/ME453X Installation Guide

Ceiling Mounted and Desktop

Rev 1.2

Contents

Product Description, Lens Specs, Notes and Formulas	Pg 1
Diagrams & Distance Charts	Pg 2-3
Cabinet Dimensions	Pg 4-5
Ceiling Mount Dimensions	Pg 6
Input Panel and Control Codes	Pg 7



Product Description

Type:	3 panel LCD Projector 0.63" p-Si TFT w/MLA	Dimensions:	13.6" (W) x 4.1" (H) x 10.3" (D)
Resolution:	1024 x 768	Weight:	7.1 lbs
Fan Noise:	37dB / 29dB @ 1 meter	Brightness:	MC453X: 4500 Lumens ME453X: 4500 Lumens
Power Consumption:	MC453X: 305W (320W Boost) ME453X: 305W (320W Boost)	BTU's:	MC453X: 1040 BTU/hour ME453X: 1040 BTU/hour

Lens Specifications

Throw Ratio:	MC453X: 1.5 – 1.8:1 (for 100" diagonal) ME453X: 1.3 – 2.2:1 (for 100" diagonal)	Focal Length:	MC453X: 19.2mm – 23.0mm ME453X: 17.4mm – 29.0mm
Offset Angle:	MC453X: 8.5° - 10.2° (for 100" diagonal) ME453X: 6.6° - 10.9° (for 100" diagonal)	F/#:	MC453X: 1.6 - 1.76 ME453X: 1.7 - 2.2
Screen Sizes:	30" - 300" diagonal (4:3)	Manual Focus/Manual Zoom	

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 a 4:3 aspect ratio.
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary ±5%.

Formulas

The Projection Formulas use the image width for calculation. For proper projection placement, determine the image width for the desired screen size. Use the Screen Formulas below to calculate all screen dimensions. Plug in the width for "W" in the Projection Formulas.

Refer to the diagrams and charts for popular screen sizes on page 2:

Definitions:

- W = Image Width
- H = Image Height (size)
- B = Vertical distance between lens center and screen center
- C = Throw distance
- D = Vertical distance between lens center and screen top
(screen bottom for desktop application)

MC453X/ME453X Installation Guide

Ceiling Mounted and Desktop

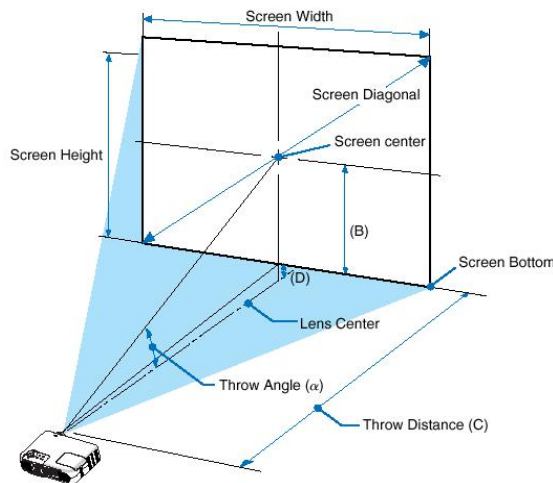
Rev 1.2

Diagrams and Distance Charts for MC453X

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.

Distance Chart



B = Vertical distance between lens center and screen center

C = Throw distance

D = Vertical distance between lens center and bottom of screen (top of screen for ceiling application)

α = Throw angle

NOTE: Distances may vary +/-5%.

Distance Chart for popular 4:3 screens

4:3 Screen Formulas:

$$W = \text{Image Width} = H \times 4/3$$

$$H = \text{Image Height} = W \times 3/4$$

$$\text{Screen Diagonal} = W \times 5/4$$

Projection Formulas:

$$B = 0.268W$$

$$C (\text{wide}) = 1.4967W - 0.0758$$

$$C (\text{tele}) = 1.7982W - 0.1034$$

$$D = -0.107W$$

$$\alpha (\text{wide}) = \tan^{-1} (B/C(\text{wide}))$$

$$\alpha (\text{tele}) = \tan^{-1} (B/C(\text{tele}))$$

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

Screen Size (4:3)			B	C		D	α	
Diagonal	Width(W)	Height (H)		wide - tele			degrees	
inches	inches	inches	inches	inches	inches	inches	degrees	degrees
30	24	18	6	36	- 43	-3	10.2	- 8.5
40	32	24	9	48	- 57	-3	10.2	- 8.5
60	48	36	13	72	- 86	-5	10.2	- 8.5
76	61	46	16	91	- 109	-7	10.2	- 8.5
77	62	46	17	92	- 111	-7	10.2	- 8.5
78	62	47	17	93	- 112	-7	10.2	- 8.5
80	64	48	17	96	- 115	-7	10.2	- 8.5
86	69	52	18	103	- 124	-7	10.2	- 8.5
88	70	53	19	105	- 126	-8	10.2	- 8.5
90	72	54	19	108	- 129	-8	10.2	- 8.5
100	80	60	21	120	- 144	-9	10.2	- 8.5
110	88	66	24	132	- 158	-9	10.2	- 8.5
120	96	72	26	144	- 173	-10	10.2	- 8.5
130	104	78	28	156	- 187	-11	10.2	- 8.5
150	120	90	32	180	- 216	-13	10.2	- 8.5
200	160	120	43	239	- 288	-17	10.2	- 8.5
300	240	180	64	359	- 431	-26	10.2	- 8.5

MC453X/ME453X Installation Guide

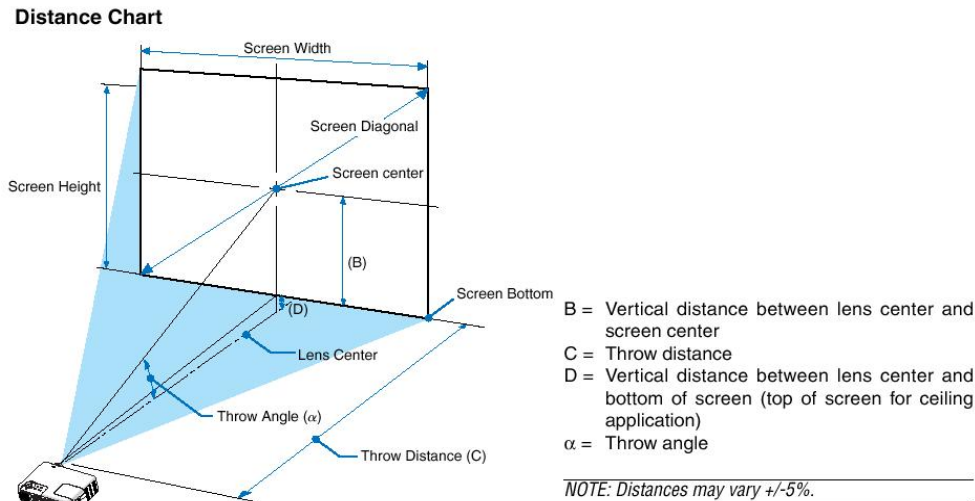
Ceiling Mounted and Desktop

Rev 1.2

Diagrams and Distance Charts for ME453X

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.



Distance Chart for popular 4:3 screens

4:3 Screen Formulas:

$W = \text{Image Width} = H \times 4/3$

$H = \text{Image Height} = W \times 3/4$

Screen Diagonal = $W \times 5/4$

Projection Formulas:

$B = 0.2578W$

$C \text{ (wide)} = 1.3681W - 1.8197$

$C \text{ (tele)} = 2.2687W - 1.8197$

$D = -0.1172W$

$\alpha \text{ (wide)} = \tan^{-1} (B/C(\text{wide}))$

$\alpha \text{ (tele)} = \tan^{-1} (B/C(\text{tele}))$

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

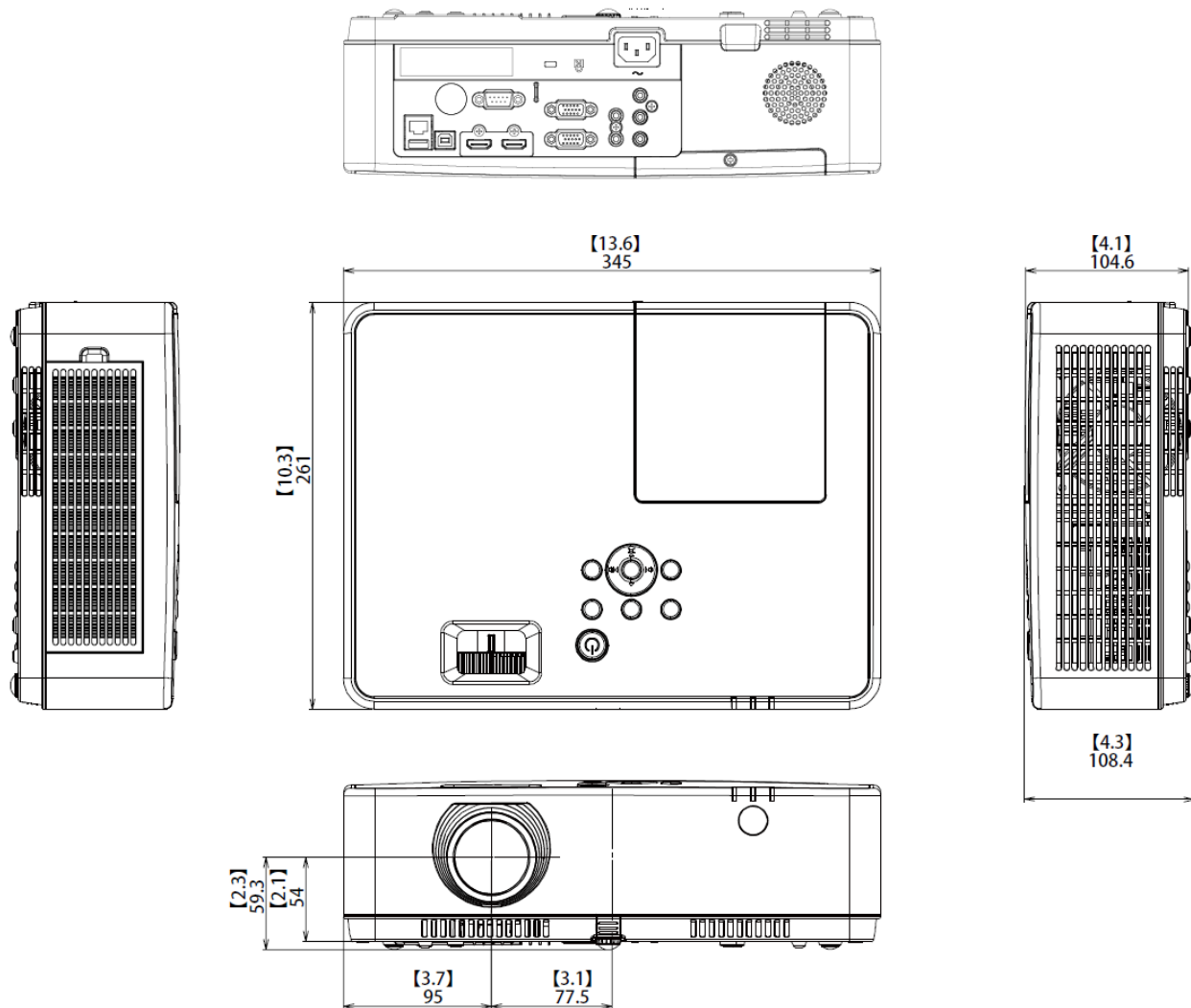
Screen Size (4:3)			B	C		D	α	
Diagonal	Width(W)	Height(H)		wide - tele			wide - tele	
inches	inches	inches	inches	inches		inches	degrees	
30	24	18	6	31	- 53	-3	11.3	- 6.7
40	32	24	8	42	- 71	-4	11.1	- 6.6
60	48	36	12	64	- 107	-6	11.0	- 6.6
76	61	46	16	81	- 136	-7	10.9	- 6.6
77	62	46	16	82	- 138	-7	10.9	- 6.6
78	62	47	16	84	- 140	-7	10.9	- 6.6
80	64	48	16	86	- 143	-8	10.9	- 6.6
86	69	52	18	92	- 154	-8	10.9	- 6.6
88	70	53	18	94	- 158	-8	10.9	- 6.6
90	72	54	19	97	- 162	-8	10.9	- 6.6
100	80	60	21	108	- 180	-9	10.8	- 6.5
110	88	66	23	119	- 198	-10	10.8	- 6.5
120	96	72	25	130	- 216	-11	10.8	- 6.5
130	104	78	27	140	- 234	-12	10.8	- 6.5
150	120	90	31	162	- 270	-14	10.8	- 6.5
200	160	120	41	217	- 361	-19	10.8	- 6.5
300	240	180	62	327	- 543	-28	10.7	- 6.5

MC453X/ME453X Installation Guide

Ceiling Mounted and Desktop

Cabinet Dimensions

The following drawings show the cabinet dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.



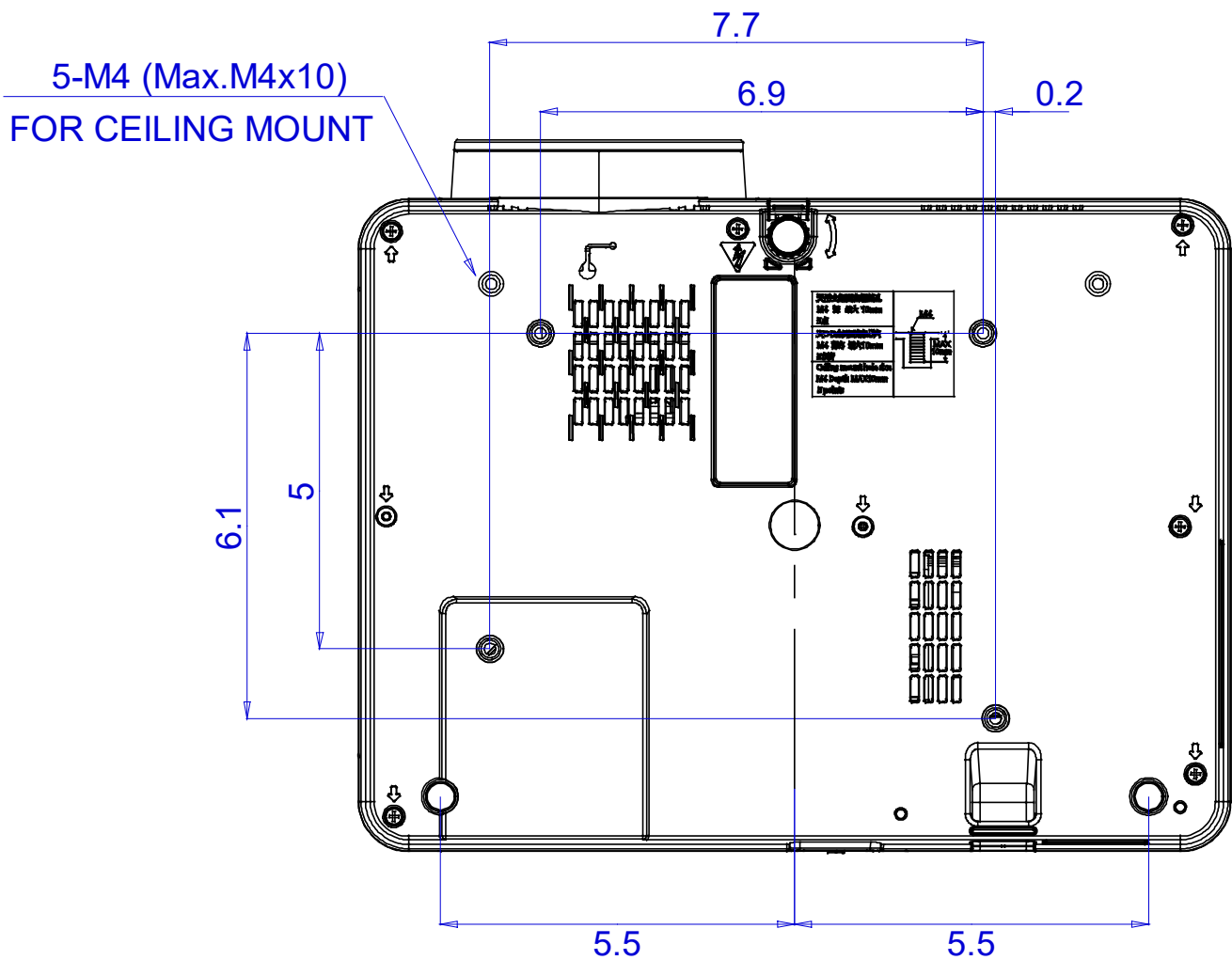
MC453X/ME453X Installation Guide

Ceiling Mounted and Desktop

Rev 1.2

Cabinet Dimensions (continued)

The following drawings show the cabinet dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.



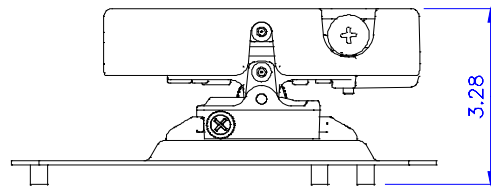
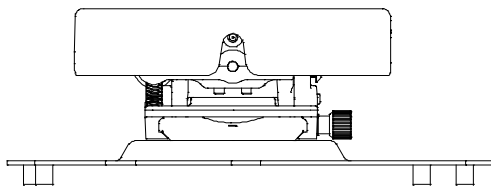
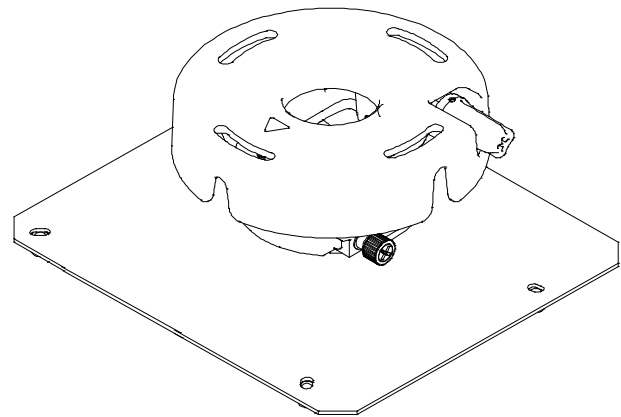
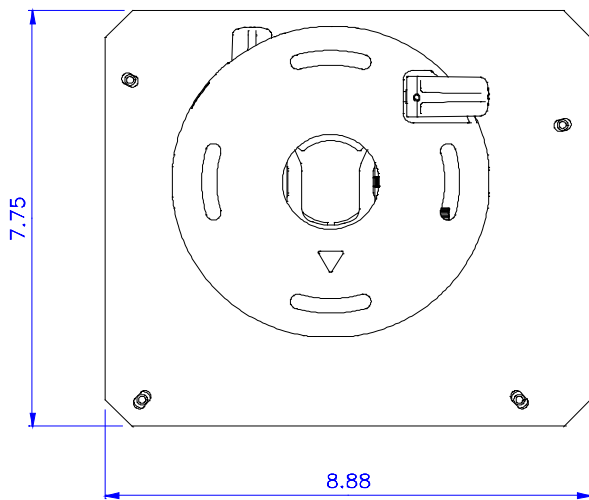
MC453X/ME453X Installation Guide

Ceiling Mounted and Desktop

Rev 1.2

Optional Ceiling Mount Dimensions (Model #: MP300CM)

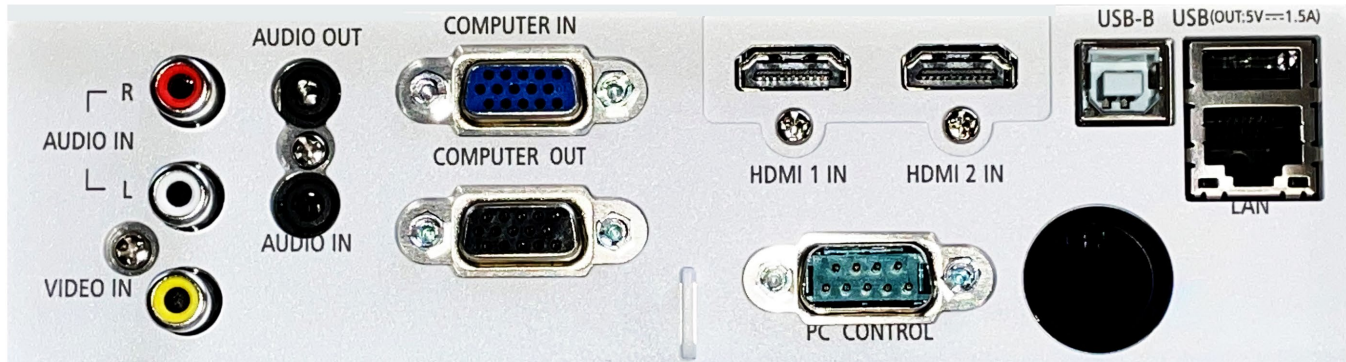
The following drawings show the ceiling mount dimensions.
Dimensions are in inches. For millimeters multiply by 25.4.



MC453X/ME453X Installation Guide

Ceiling Mounted and Desktop

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 COMPUTER1	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT HDMI 1	02H 03H 00H 00H 02H 01H 1AH 22H
INPUT SELECT HDMI 2	02H 03H 00H 00H 02H 01H 1BH 23H
INPUT SELECT VIDEO	02H 03H 00H 00H 02H 01H 06H 0EH
INPUT SELECT VIEWER (USB-A)	02H 03H 00H 00H 02H 01H 1FH 27H
INPUT SELECT NETWORK	02H 03H 00H 00H 02H 01H 20H 28H
INPUT SELECT USB DISPLAY (USB-B)	02H 03H 00H 00H 02H 01H 22H 2AH
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
PROJECTOR INFORMATION REQUEST	00H BFH 00H 00H 01H 02H C2H
ERROR STATUS REQUEST	00H 88H 00H 00H 00H 88H
INFORMATION REQUEST	03H 8AH 00H 00H 00H 8DH

Note: Contact your NEC rep for codes not listed.

Cable Connection

Communication Protocol:

- Baud Rate: 38400 bps
- 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.