

## U321H Installation Guide

### Desktop and Ceiling Mount

v1.0

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### Product Description

Type:	0.65 inch DLP	Dimensions:	15.0"(W) x 4.3"(H) x 12.3"(D)
Native Resolution:	1920 x 1080	Weight:	10.4 lbs
Brightness:	3200 lumens	Screen Range:	85.0" – 100.0" Diagonal (16:9)
Power Consumption:	323W (max)	Fan Noise:	34 dB / 29dB @ 1 meter
		BTU's:	1102.2 BTU/hour

### Screen/Aspect Ratio

**Both 16:9 and 4:3 screens are fully supported** with proper aspect ratio control for both type sources using NEC developed scaling technology. By selecting the screen type in the menus, Aspect Ratio control is reconfigured for that screen type.

### Notes

- For screen sizes not indicated on the projection charts, 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 16:9 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 the screen width in for "W" in the Projection Formulas. Refer to the diagrams and charts for popular screen sizes on page 2 and 3.

#### Definitions:

**W** = Screen width  
**H** = Screen height  
**A** = Distance between projector cabinet and screen

**B** = Vertical distance between projector foot and screen center  
**C** = Throw distance  
**D** = Vertical distance between projector foot and screen bottom  
 (screen top for ceiling mounted application)

#### 16:9 Screen Formulas:

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

#### 4:3 Screen Formulas:

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

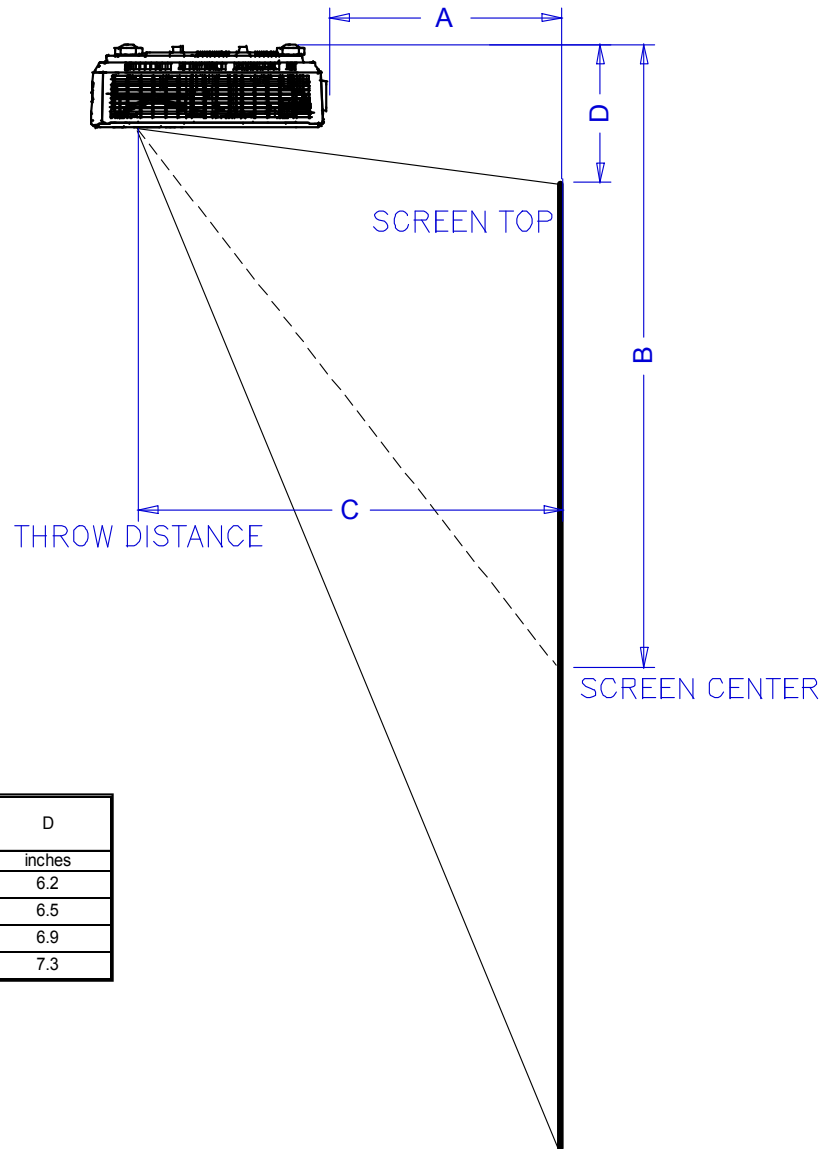
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#### Ceiling Mounted Installation

The following diagram shows the relationship between projector position and the screen. Refer to the charts below for data. Distances are in inches. For millimeters multiply by 25.4.



#### Projection Formulas:

$$A = C - 10.00$$

$$B = 0.365W$$

$$C = 0.252W$$

$$D = 0.0835W$$

#### Distance Chart for Popular 16:9 Screen Sizes

Screen Size (16:9)			A	B	C	D
Diagonal	Width(W)	Height (H)				
inches	inches	inches	inches	inches	inches	inches
85	74	42	9	27	19	6.2
90	78	44	10	29	20	6.5
95	83	47	11	30	21	6.9
100	87	49	12	32	22	7.3

**Note:** For screen sizes not indicated in the distance charts, use the formulas on page 1.

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#### Desktop Setup

The following diagram shows the relationship between projector position and the screen. Refer to the charts below for data. Distances are in inches. For millimeters multiply by 25.4.

#### Projection Formulas:

$$A = C - 10.00$$

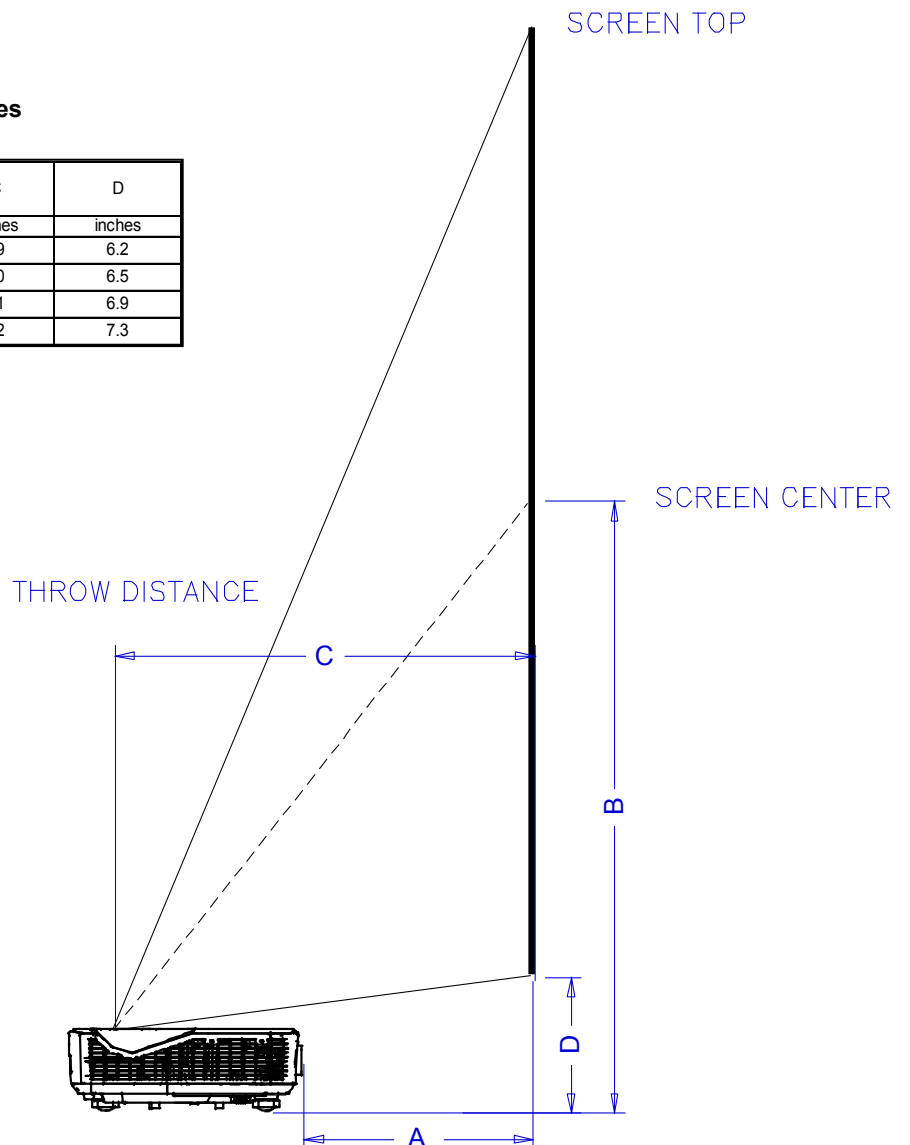
$$B = 0.365W$$

$$C = 0.252W$$

$$D = 0.0835W$$

Distance Chart for Popular 16:9 Screen Sizes

Screen Size (16:9)			A	B	C	D
Diagonal	Width(W)	Height (H)	inches	inches	inches	inches
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**Note:** For screen sizes not indicated in the distance charts, use the formulas on page 1.

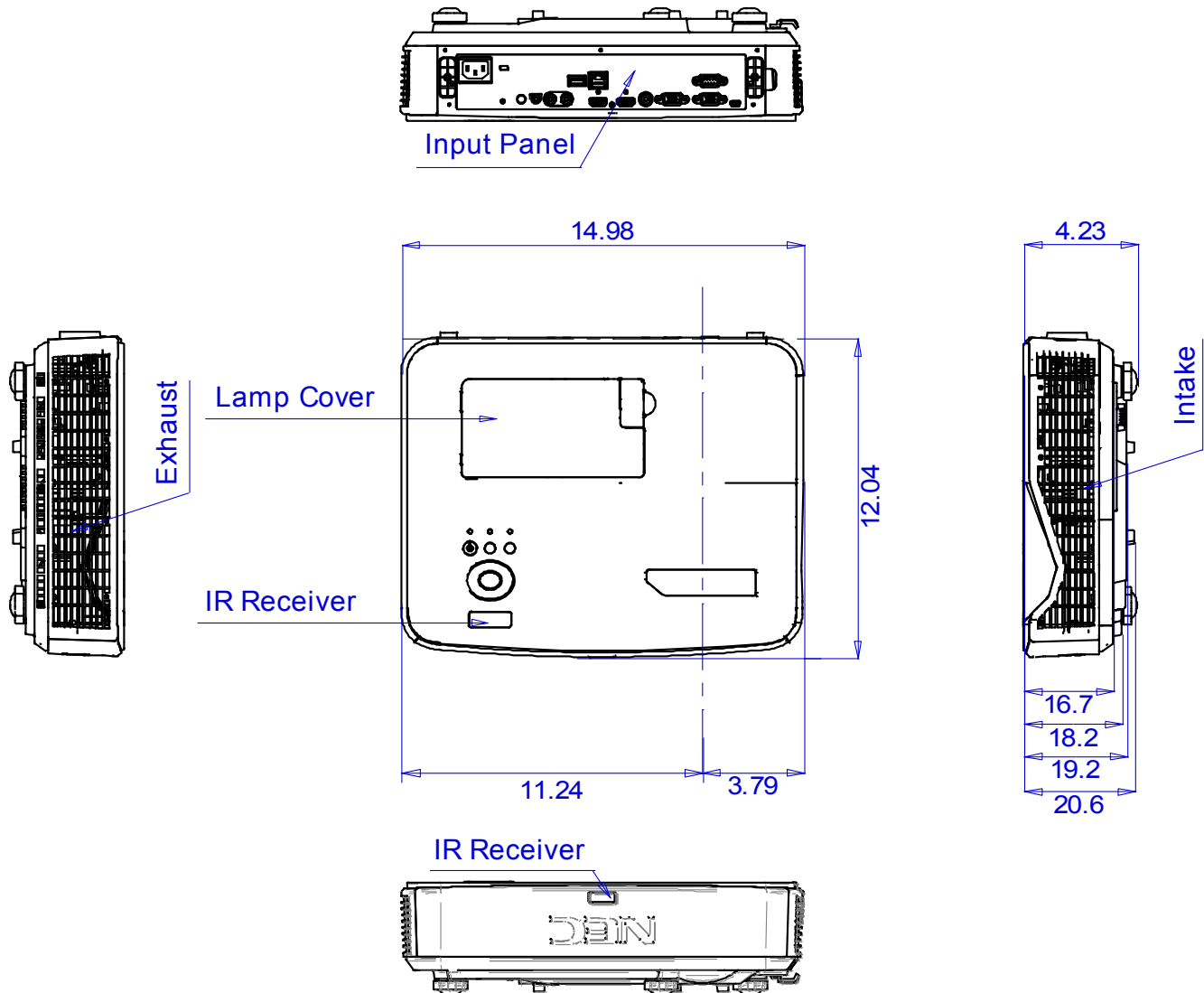
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#### Cabinet Dimensions

The following drawings show the cabinet dimensions for the U321H.  
Dimensions are in inches. For millimeters multiply by 25.4.



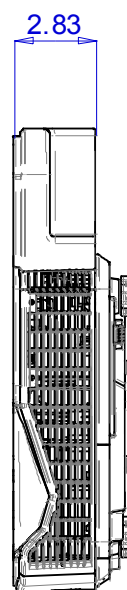
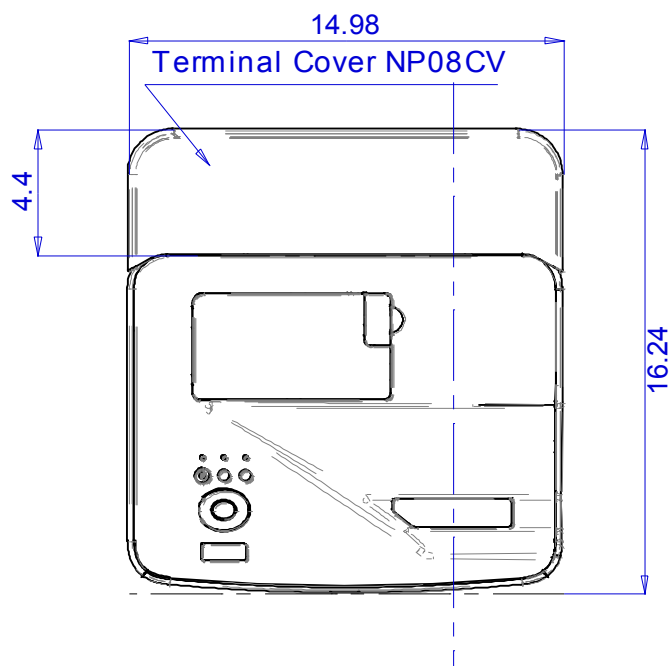
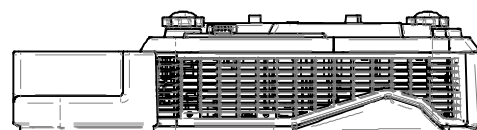
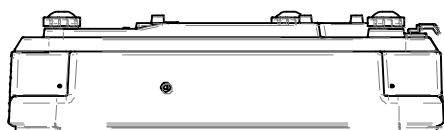
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#### Cabinet Dimensions (continued)

The following drawings show the cabinet dimensions for the U321H. Dimensions are in inches. For millimeters multiply by 25.4.



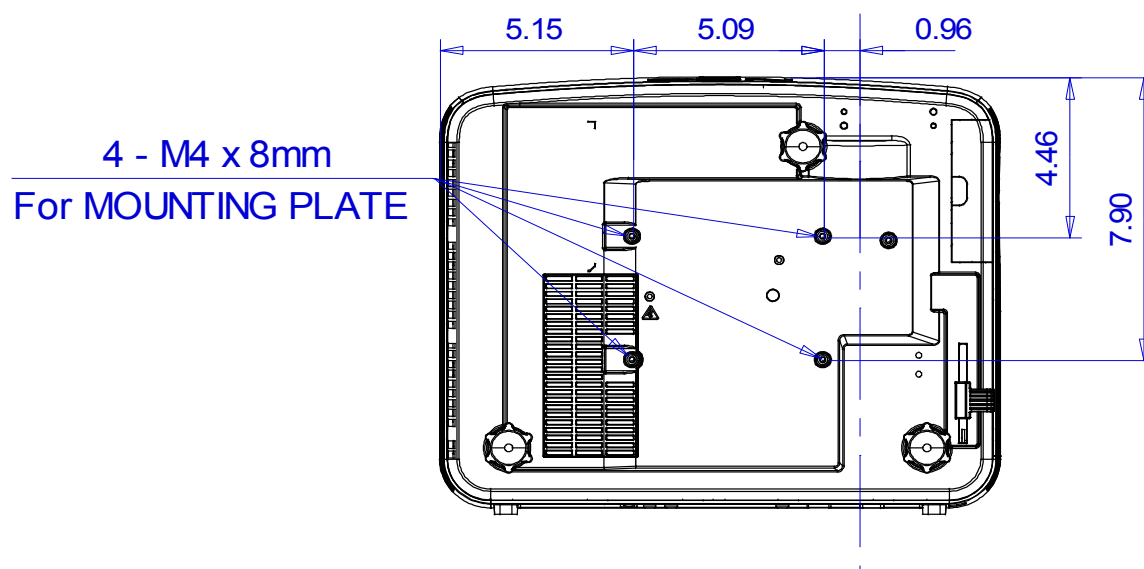
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#### Cabinet Dimensions (continued)

The following drawings show the cabinet dimensions for the U321H.  
Dimensions are in inches. For millimeters multiply by 25.4.



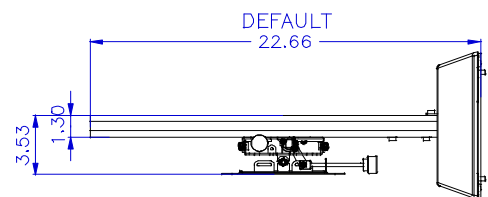
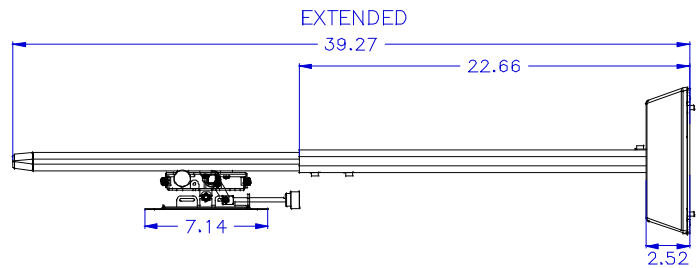
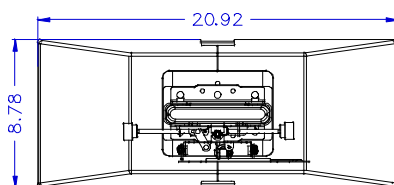
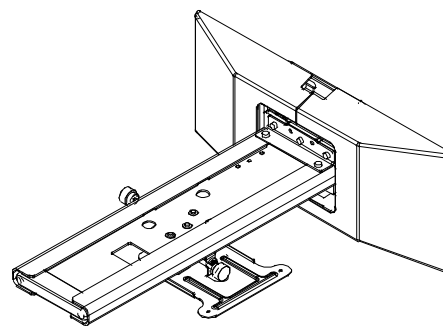
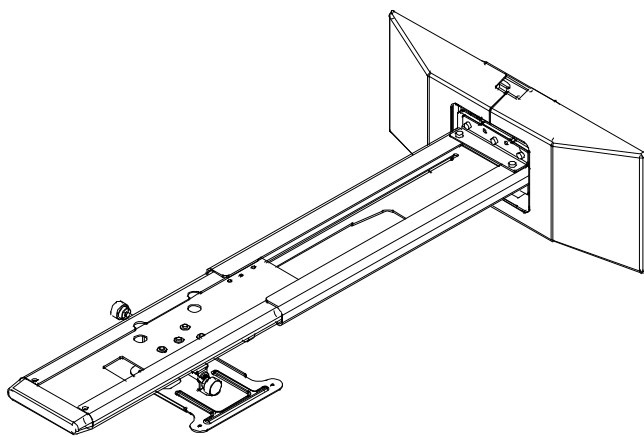
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#### Optional Wall Mount Dimensions (Model #: NP04WK)

The following drawings show the ceiling mount dimensions for the U321H. Dimensions are in inches. For millimeters multiply by 25.4.

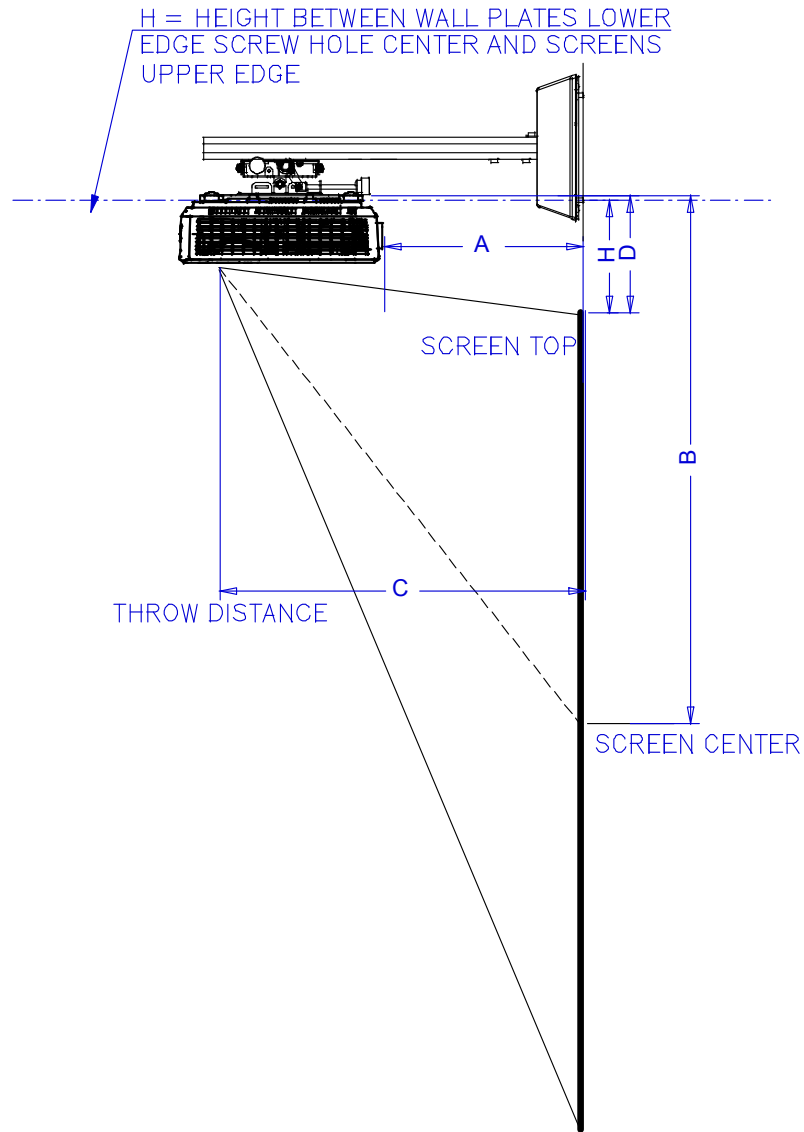


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### Optional Wall Mount Dimensions (Model #: NP04WK)



Screen Size			A	B	C	D	H
Diagonal	Width	Height					
inch	inch	inch	inch	inch	inch	inch	inch
85.0	74	42	8.7	27.0	18.7	6.2	6.4
90.0	78	44	6.2	28.6	19.8	6.5	6.8
95.0	83	47	7.3	30.2	20.9	6.9	7.2
100.0	87	49	8.4	31.8	22.0	7.3	7.5



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### Input Panel



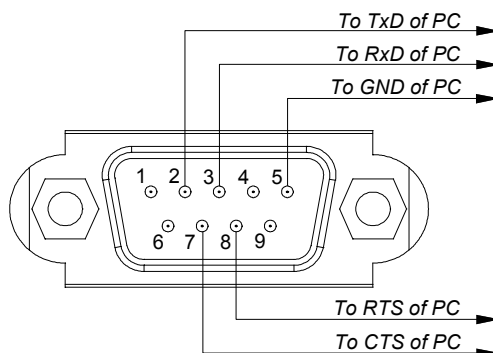
Function	Code Data
POWER ON	02H 00H 00H 00H 00H 02H
POWER OFF	02H 01H 00H 00H 00H 03H
INPUT SELECT COMPUTER	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT HDMI 1	02H 03H 00H 00H 02H 01H A1H A9H
INPUT SELECT HDMI 2	02H 03H 00H 00H 02H 01H A2H AAH
INPUT SELECT VIDEO	02H 03H 00H 00H 02H 01H 06H 0EH
PICTURE 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



**NOTE 1:** It is recommended to set the projector to "Idle Mode" in the Setup menu for best Power ON response.

**NOTE 2:** Pins 2, 3, 5, 6 and 8 are used inside the projector.

**NOTE 3:** For long cable runs it is recommended to set communication speed in the Setup menu to 9600 bps.