

## 6433/6433W/6430HD Installation Guide

### Ceiling Mounted and Desktop

Rev 1.0

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#### Product Description

Type:	1-chip DLP projector, 6433: 0.55" DLP 6433W/6430HD: 0.65" DLP	Brightness:	6430HD: 3000 Lumens 6433/6433W: 3300 Lumens
Resolution:	1024 x 768 (4:3) 1280 x 800 (16:10) 1920 x 1080 (16:9)	Fan Noise:	35dB / 32dB @ 1meter
Dimensions:	12.8 (W) x 4.0" (H) x 9.8" (D)	Weight:	6.4 lbs
Power Consumption:	280W (max)		944 BTU/hour

#### Lens Specifications

Throw Ratio:	1.5 – 1.8:1 (for 100" diagonal)	Focal Length:	22.41mm – 26.82mm
Offset Angle:	11.7° - 14.2° (for 100" diagonal)	F/#:	2.55 - 2.85
Screen Sizes:	30" - 300" diagonal (4:3)	Manual Focus/Manual Zoom	

#### Screen/Aspect Ratio

**Both 16:9 and 4:3 screens are fully supported** with proper aspect ratio control for both type sources using Dukane 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 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  $\pm 5\%$ .

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#### 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)

#### 4:3 Screen Formulas:

$W = H \times 4/3$

$H = W \times 3/4$

Screen Diagonal =  $W \times 5/4$

#### Projection Formulas:

$B = 0.487W$

$C \text{ (wide)} = 1.949W$

$C \text{ (tele)} = 2.150W$

$D = 0.112W$

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

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

#### Distance Chart for popular 4:3 screens

Screen Size (4:3)			B inches	C wide - tele inches		D inches	$\alpha$ wide - tele degrees	
Diagonal inches	Width(W) inches	Height (H) inches						
30	24	18	12	47	52	3	14.0	12.8
40	32	24	16	62	69	4	14.0	12.8
60	48	36	23	94	103	5	14.0	12.8
68	54	40.5	26	105	116	6	14.0	12.8
73	58	43.5	28	113	125	6	14.0	12.8
84	67	50.25	33	131	144	8	14.0	12.8
90	72	54	35	140	155	8	14.0	12.8
100	80	60	39	156	172	9	14.0	12.8
120	96	72	47	187	206	11	14.0	12.8
175	140	105	68	273	301	16	14.0	12.8
180	144	108	70	281	310	16	14.0	12.8
210	168	126	82	327	361	19	14.0	12.8
240	192	144	94	374	413	22	14.0	12.8

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

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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)

#### 16:10 Screen Formulas:

W = H x 16/10

H = W x 10/16

Screen Diagonal = W x 18.868/16

#### Projection Formulas:

B = 0.392W

C (wide) = 1.550W

C (tele) = 1.700W

D = 0.079W

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

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

#### Distance Chart for popular 16:10 screens

Screen Size (16:10)			B	C		D	$\alpha$	
Diagonal	Width(W)	Height (H)		wide - tele			wide - tele	
inches	inches	inches	inches	inches	inches	inches	degrees	degrees
40	34	21	13	53	- 58	3	14.2	- 13.0
60	51	32	20	79	- 87	4	14.2	- 13.0
67	57	36	22	88	- 97	5	14.2	- 13.0
72	61	38	24	95	- 104	5	14.2	- 13.0
84	71	44	28	110	- 121	6	14.2	- 13.0
90	76	48	30	118	- 129	6	14.2	- 13.0
100	85	53	33	132	- 145	7	14.2	- 13.0
120	102	64	40	158	- 173	8	14.2	- 13.0
150	127	79	50	197	- 216	10	14.2	- 13.0
180	153	96	60	237	- 260	12	14.2	- 13.0
210	178	111	70	276	- 303	14	14.2	- 13.0
241	204	128	80	316	- 347	16	14.2	- 13.0
270	229	143	90	355	- 389	18	14.2	- 13.0
300	254	159	100	394	- 432	20	14.2	- 13.0

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

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#### 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)

#### 16:9 Screen Formulas:

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

#### Projection Formulas:

- $B = 0.374W$
- $C \text{ (wide)} = 1.499W$
- $C \text{ (tele)} = 1.800W$
- $D = 0.092W$
- $\alpha \text{ (wide)} = \tan^{-1} (B/C\text{(wide)})$
- $\alpha \text{ (tele)} = \tan^{-1} (B/C\text{(tele)})$

#### Distance Chart for popular 16:9 screens

Screen Size (16:9)			B	C		D	$\alpha$	
Diagonal	Width(W)	Height (H)		wide - tele			wide - tele	
inches	inches	inches	inches	inches		inches	degrees	
61	53	30	20	80	- 96	5	14.0	- 11.7
71	62	35	23	93	- 112	6	14.0	- 11.7
73	64	36	24	96	- 115	6	14.0	- 11.7
82	71	40	27	107	- 128	7	14.0	- 11.7
86	75	42	28	112	- 134	7	14.0	- 11.7
92	80	45	30	120	- 144	7	14.0	- 11.7
100	87	49	33	131	- 157	8	14.0	- 11.7
106	92	52	35	139	- 166	9	14.0	- 11.7
110	96	54	36	144	- 173	9	14.0	- 11.7
120	105	59	39	157	- 189	10	14.0	- 11.7
122	107	60	40	160	- 192	10	14.0	- 11.7
133	116	65	43	173	- 208	11	14.0	- 11.7
135	117	66	44	176	- 211	11	14.0	- 11.7
159	139	78	52	208	- 250	13	14.0	- 11.7
161	140	79	53	211	- 253	13	14.0	- 11.7
230	201	113	75	301	- 362	18	14.0	- 11.7
275	240	135	90	360	- 432	22	14.0	- 11.7
300	261	147	98	392	- 470	24	14.0	- 11.7

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

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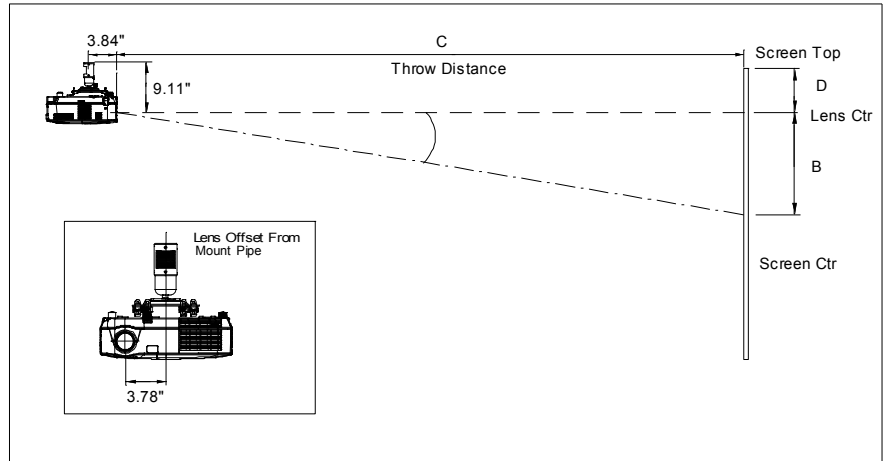
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#### Diagrams and Distance Charts

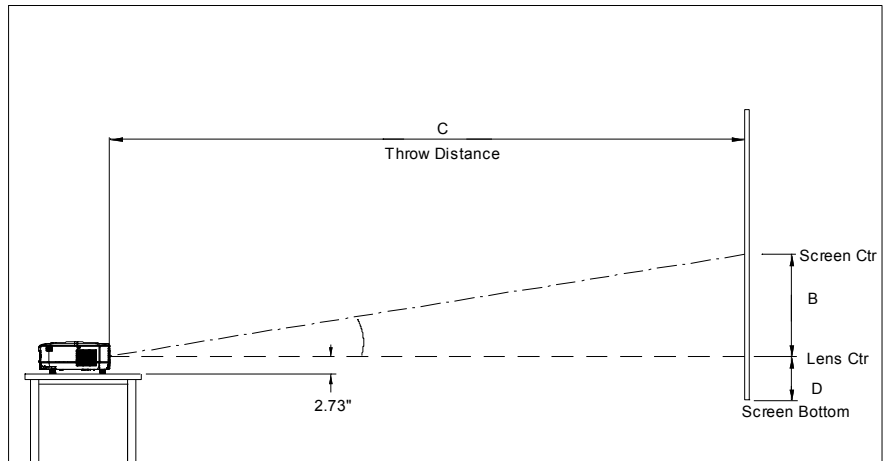
The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

Distances are in inches. For millimeters multiply by 25.4.

#### Ceiling Mounted



#### Desktop



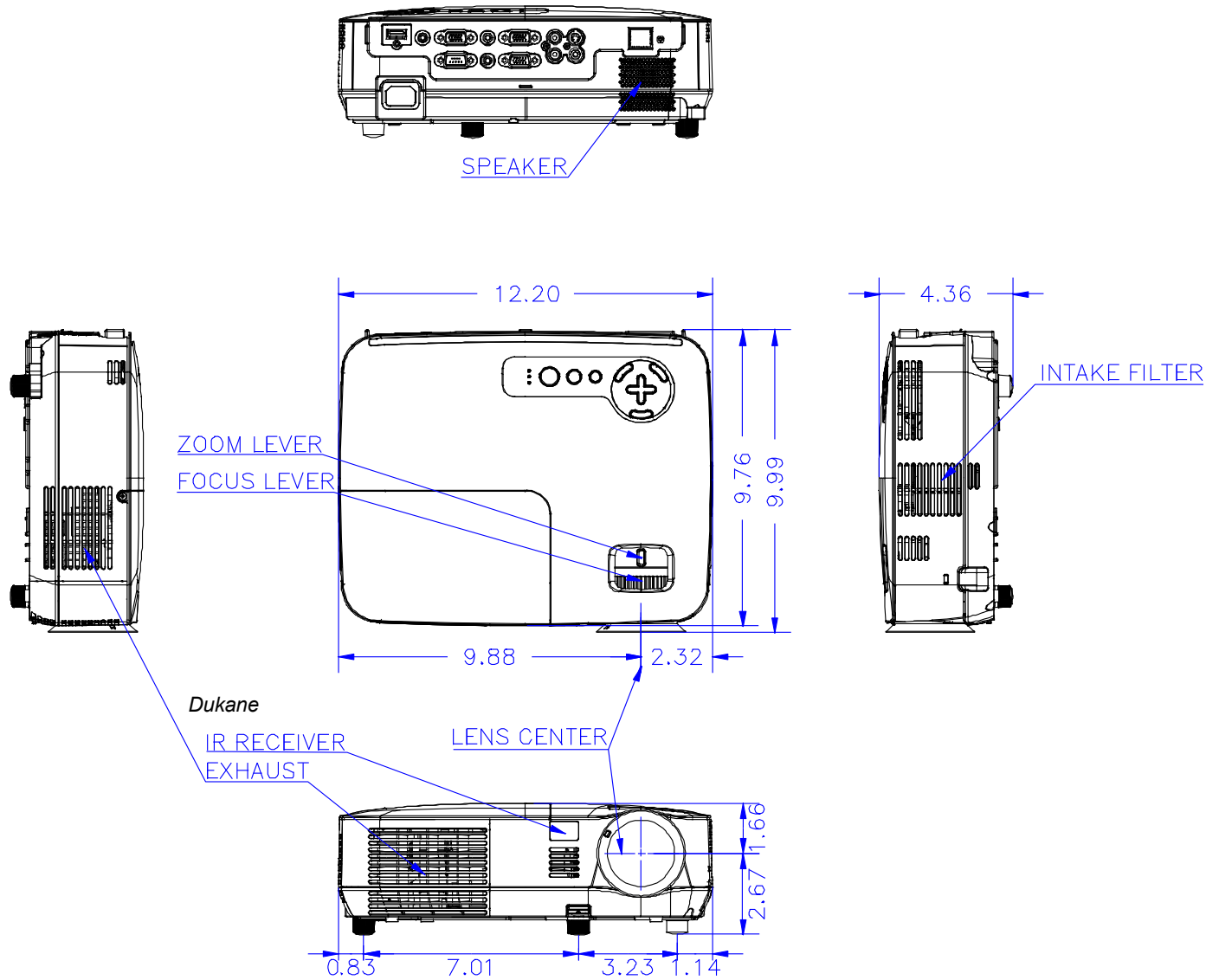
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#### Cabinet Dimensions

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



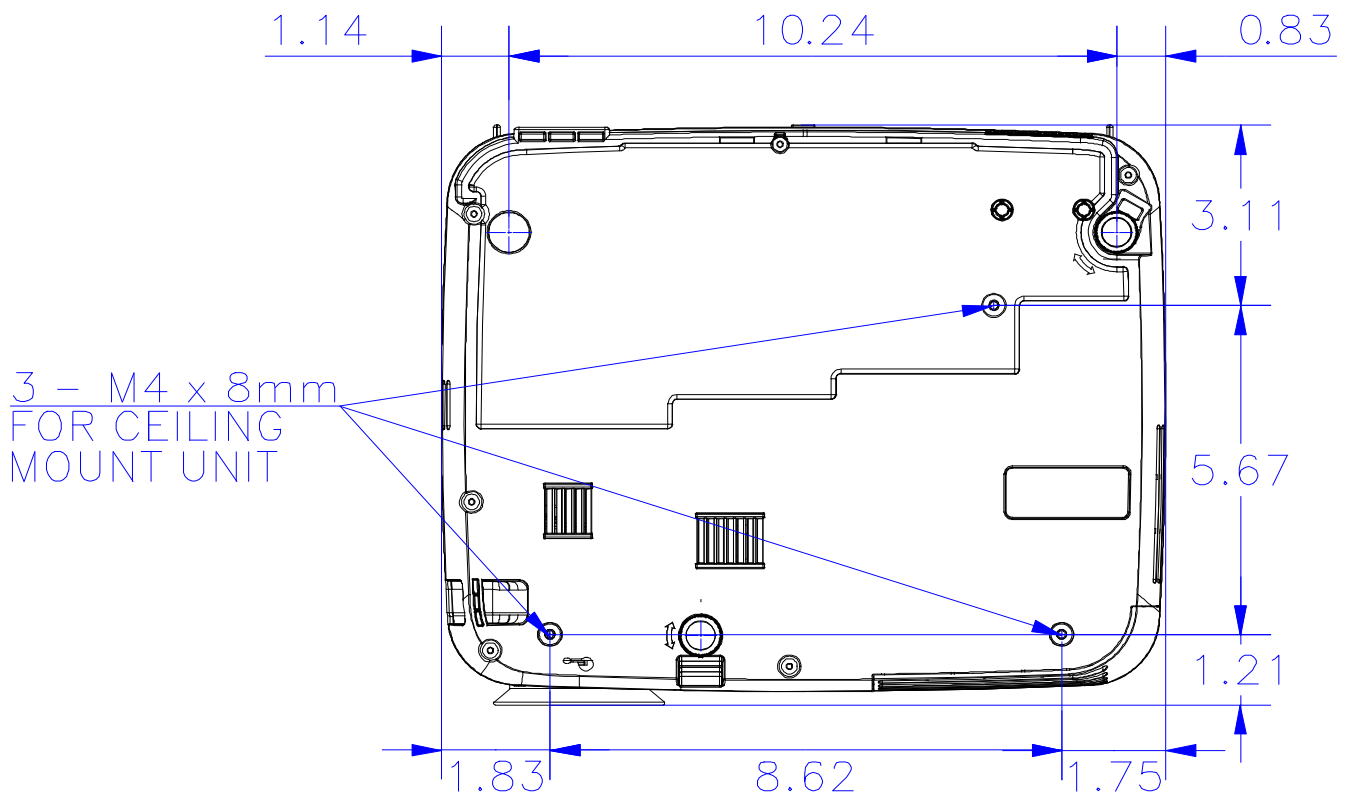
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#### Cabinet Dimensions (continued)

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



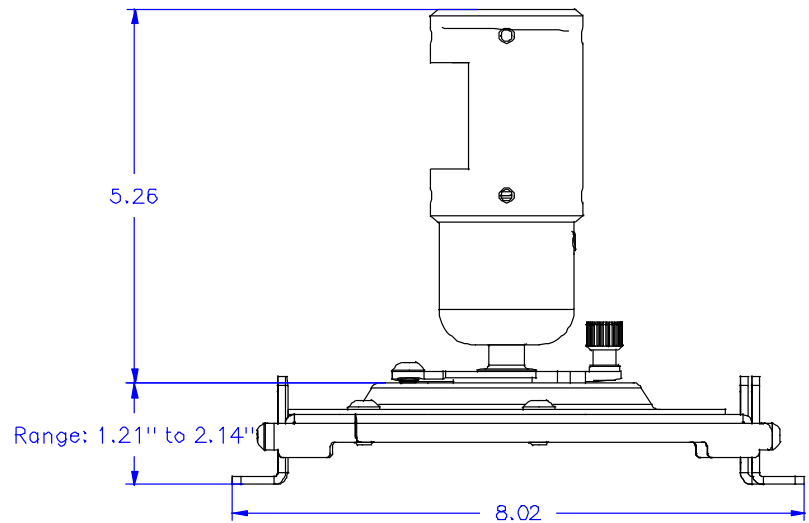
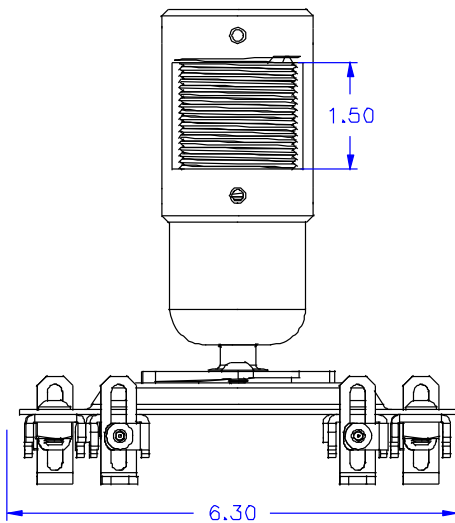
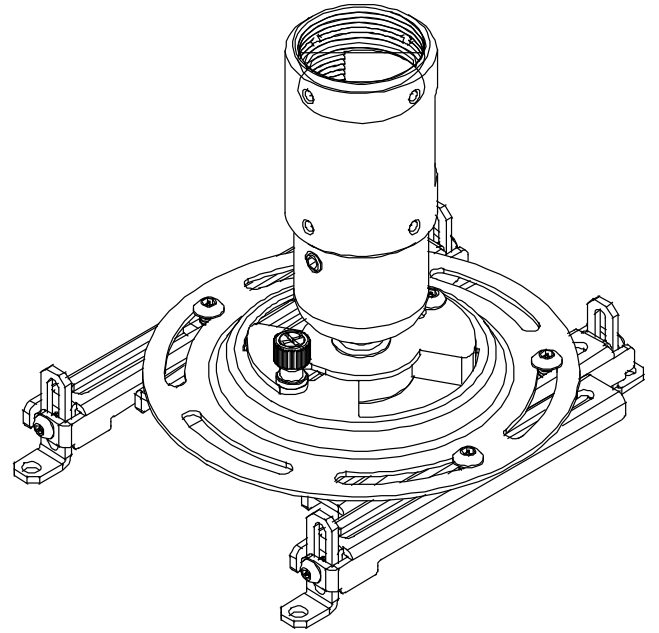
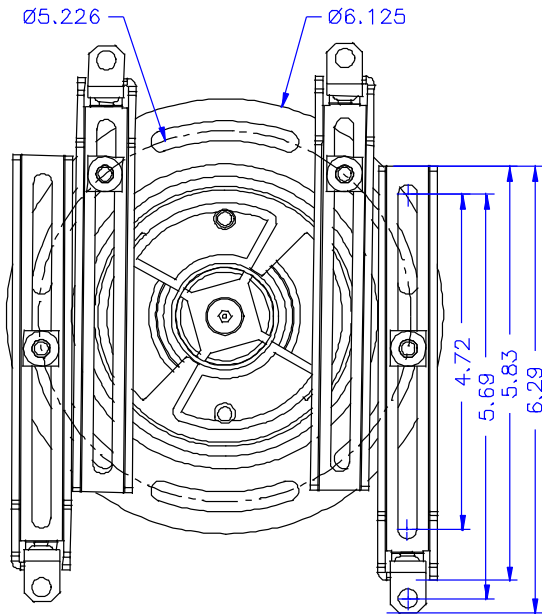
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#### Optional Ceiling Mount Dimensions (Model #: NP01UCM) or use universal mount PRG-UNV.

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





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### Input Panels



### PC Control Codes

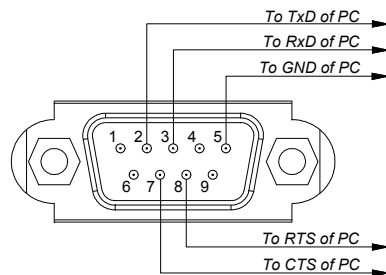
Function	Code Data
POWER ON	02H 00H 00H 00H 00H 02H
POWER OFF	02H 01H 00H 00H 00H 03H
INPUT SELECT COMPUTER	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT HDMI 1	02H 03H 00H 00H 02H 01H A1H A9H
INPUT SELECT HDMI 2	02H 03H 00H 00H 02H 01H A2H AAH
INPUT SELECT VIDEO	02H 03H 00H 00H 02H 01H 06H 0EH
PICTURE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