



ART LIGHTING

CONTOUR  
PROJECTORS



LED

# New Construction LED Projector

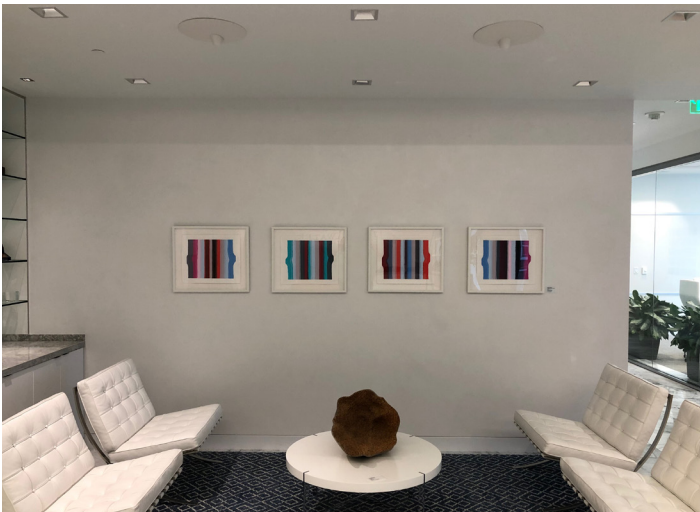
**Phantom™ New Construction Contour Projector** is an optical framing projector with remodeler IC-Rated housing, designed for fine art illumination in new buildings.

When it comes to professional lighting art, nothing is more impressive or visually effective than an optical framing projector. A hidden light source with a controlled beam of light precisely illuminates the canvas. Phantom Contour Projectors are designed by a professional installer and have been engineered so that anyone can complete the install. The options we offer make this LED projector one of the most versatile and best art lighting fixtures on the market today.



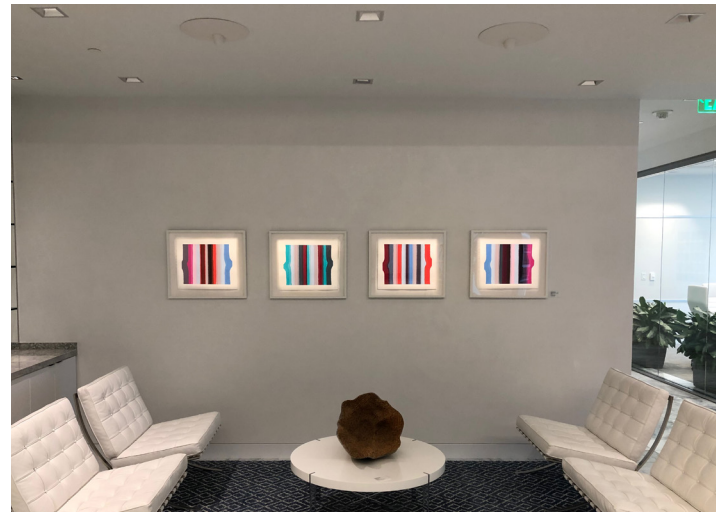
**ETL LISTED**

Conforms to UL STD 1598 Requirements  
Certified to CSA STD C22.2 NO.250.0



## LIGHTS OFF

Two Phantom™ New Construction LED projectors were installed in the reception area of this office building to light these four works. A hand-cut template was used so that each projector would precisely illuminate two of the four objects. The lights were placed in such a way as to avoid glare from the glass frames for patrons sitting in the lobby.

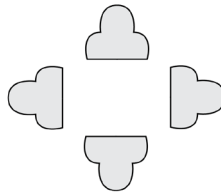


## LIGHTS ON

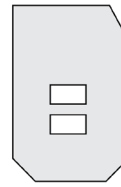
With the lights on, you can now see how the colors in each painting come alive. The light is shaped to the exact contour of the objects on the wall. Since the artwork was mounted on white paper, within a white frame, and was placed on a white wall, a soft focus was used to blend the outer edge of the light to further enhance the colors within.

## Masking Method

There are three masking methods available for the LED Contour Projector: standard aluminum shutters for square or rectangular artworks, custom-cut brass templates for multiple or irregularly shaped artworks, and stainless steel gobos (Rosco® Type M) for patterned lighting effects.



ALUMINUM SHUTTERS



BRASS TEMPLATE



STAINLESS STEEL GOBO

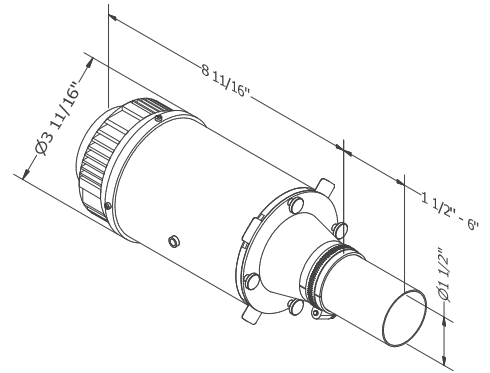
## Projector Details

High performance optical framing projector with variable optics system consisting of two (2) 39mm focal lenses and two (2) 60mm condensing lenses designed for both long and short throws as well as off center mounting. The special Achromatic focal lenses produce crisp sharp lines without any chromatic abnormalities.

### LIGHT SOURCE

PHANTOM™ Gen4 Proprietary LED light engine with a custom concentric parabolic reflector, aluminum heat sink, active DC cooling fan and the CREE® XLamp Extreme High Power XHP 3000K LED with 90+ CRI and average lamp life of 30,000 hours.

Total Load is 30W.

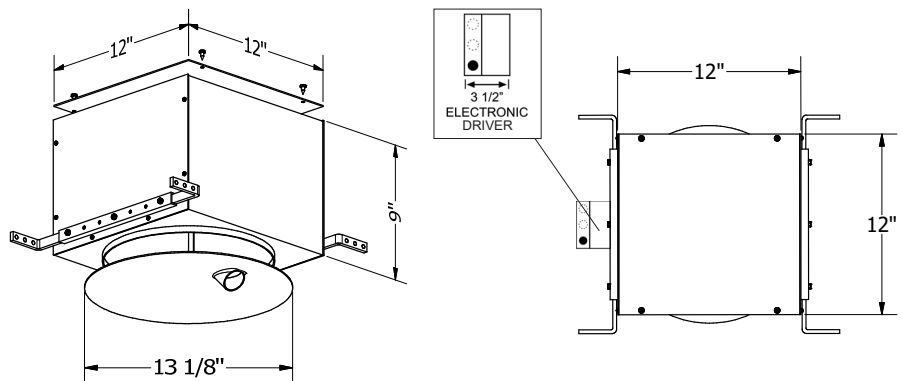


## NCL Housing Dimensions

Low profile IC-RATED housing is engineered for the most challenging of mounting conditions using supplied fixture bars designed for any rafter spacing up to 24" and will fit in 2" x 10" framing. The removable cover plate with oval slot and custom glare shield provides easy access from below and maximum concealment of the light source.

### ELECTRICAL SPECS

Includes auto-sensing 120-277V, 50/60Hz, 1750mA constant current electronic LED driver, Tri-Dimming (MLV forward phase, ELV reverse phase, 0-10V) and a non-dimming 12VDC fan power supply. Optional on-board 0-10V dimmer control available for setting output levels.



Phantom LED Contour Projectors - Ordering Matrix  
Sample Order Number: **NCL-1-1-0-1-W**

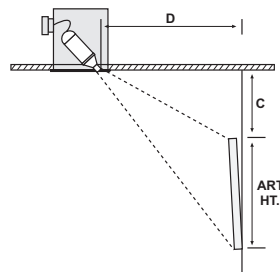
| HOUSING  | MASKING                                  | LENS COMBINATION   | ACCESSORY OPTIONS  | COVER PLATE                        | COLOR                  |
|--|--|--|--|------------------------------------|------------------------|
| <b>NCL</b>   | <b>1</b>                                 | <b>1</b>   | <b>0</b>   | <b>1</b>                           | <b>W</b>               |
| NCL  | 1 - Shutters<br>2 - Template<br>3 - Gobo | 1 - Achromatic 75fl Lenses<br><i>(Wide Flood Lenses)</i><br><br>2 - Achromatic 100fl Lenses<br><i>(Flood Light Lenses)</i><br><br>3 - Achromatic 150fl Lenses<br><i>(Narrow Spot Lenses)</i> | 0 - None<br>1 - 2700K Dichroic Filter<br>2 - 3500K Dichroic Filter<br>3 - 4000K Dichroic Filter<br>4 - On-board 0-10V Dimmer | 1 - Slotted<br>2 - Center Pin Hole | W - White<br>B - Black |
| <p><b>Standard Configuration</b> includes square new construction housing, a white slotted cover plate, white glare shield, 120-277V auto-sensing LED/Fan drivers, optical framing projector with 39mm 75fl focal lenses and adjustable shutter masking set.</p> |  |  |  |                                    |                        |

# Determining the Location of Projector in Ceiling

Example: Let's say you have a painting that is 36" High x 24" Wide and it is down from the ceiling roughly 20" to top of canvas. Doing the math, you get  $20" + 12" + 4" = 36"$  out from the wall to the front of the housing as a starting point. The projector can be moved back, left or right as needed to avoid obstructions in the ceiling or to address reflective glare and frame shadows.

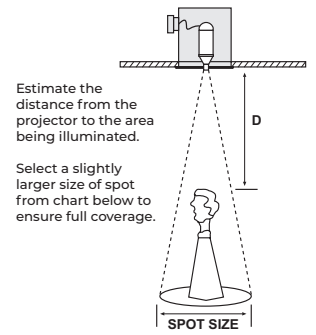
An oversized painting can be accommodated in the same way by using two (2) Contour Projectors, mounted at oblique angles. Complimentary design assistance is available from the factory.

## VERTICAL TARGET



SLOTTED COVER PLATE (STANDARD)

## HORIZONTAL TARGET

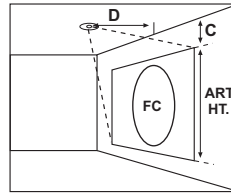


PIN HOLE COVER PLATE (OPTIONAL)

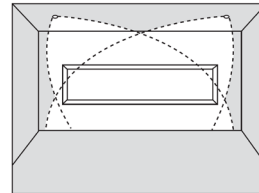
## CALCULATING THROW DISTANCE:

$$C + 1/3 \text{ of art height} + 4 = D$$

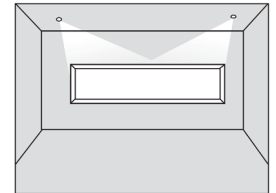
C = Distance down from ceiling to top of the art  
 D = Distance out from wall where projector mounts  
 (See first illustration to the right)



Formula Illustration



Overlapping Beam Diagram



Oversize Beam Spread Result

# Achromatic Focal Lens Performance Chart

## DATA FOR THE PHANTOM GENERATION 4 LIGHT ENGINE

| THROW DISTANCE (IN FEET) |            |            | 1'        |              | 2'        |              | 3'        |              | 4'        |              | 5'        |              |
|--------------------------|------------|------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|
| Beam Spread              | Lens Combo | Beam Angle | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles |
| Wide Flood Lens          | 75/75      | 60°        | 14"       | 1010         | 28"       | 585          | 42"       | 194          | 55"       | 94           | 69"       | 57           |
| Flood Light              | 100/100    | 48°        | 11"       | 1185         | 21"       | 1011         | 32"       | 375          | 43"       | 183          | 53"       | 107          |
| Narrow Spot              | 150/150    | 28°        | 6"        | 3285         | 12"       | 2035         | 18"       | 911          | 24"       | 431          | 30"       | 246          |
| THROW DISTANCE (IN FEET) |            |            | 6'        |              | 7'        |              | 8'        |              | 9'        |              | 10'       |              |
| Beam Spread              | Lens Combo | Beam Angle | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles |
| Wide Flood Lens          | 75/75      | 60°        | 83"       | 41           | 97"       | 29           | 111"      | 23           | 125"      | 16           | 139"      | 12           |
| Flood Light              | 100/100    | 48°        | 64"       | 71           | 75"       | 54           | 85"       | 41           | 96"       | 31           | 107"      | 26           |
| Narrow Spot              | 150/150    | 28°        | 36"       | 166          | 42"       | 127          | 48"       | 88           | 54"       | 67           | 60"       | 55           |
| THROW DISTANCE (IN FEET) |            |            | 11'       |              | 12'       |              | 13'       |              | 14'       |              | 15'       |              |
| Beam Spread              | Lens Combo | Beam Angle | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles |
| Wide Flood Lens          | 75/75      | 60°        | -         | -            | -         | -            | -         | -            | -         | -            | -         | -            |
| Flood Light              | 100/100    | 48°        | 118"      | 21           | 128"      | 17           | 139"      | 14           | 150"      | 11           | 160"      | 9            |
| Narrow Spot              | 150/150    | 28°        | 66"       | 44           | 72"       | 39           | 78"       | 33           | 84"       | 29           | 90"       | 23           |
| THROW DISTANCE (IN FEET) |            |            | 16'       |              | 17'       |              | 18'       |              | 19'       |              | 20'       |              |
| Beam Spread              | Lens Combo | Beam Angle | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles | Spot Size | Foot Candles |
| Wide Flood Lens          | 75/75      | 60°        | -         | -            | -         | -            | -         | -            | -         | -            | -         | -            |
| Flood Light              | 100/100    | 48°        | -         | -            | -         | -            | -         | -            | -         | -            | -         | -            |
| Narrow Spot              | 150/150    | 28°        | 98"       | 21           | 102"      | 19           | 108"      | 17           | 114"      | 15           | 120"      | 13           |