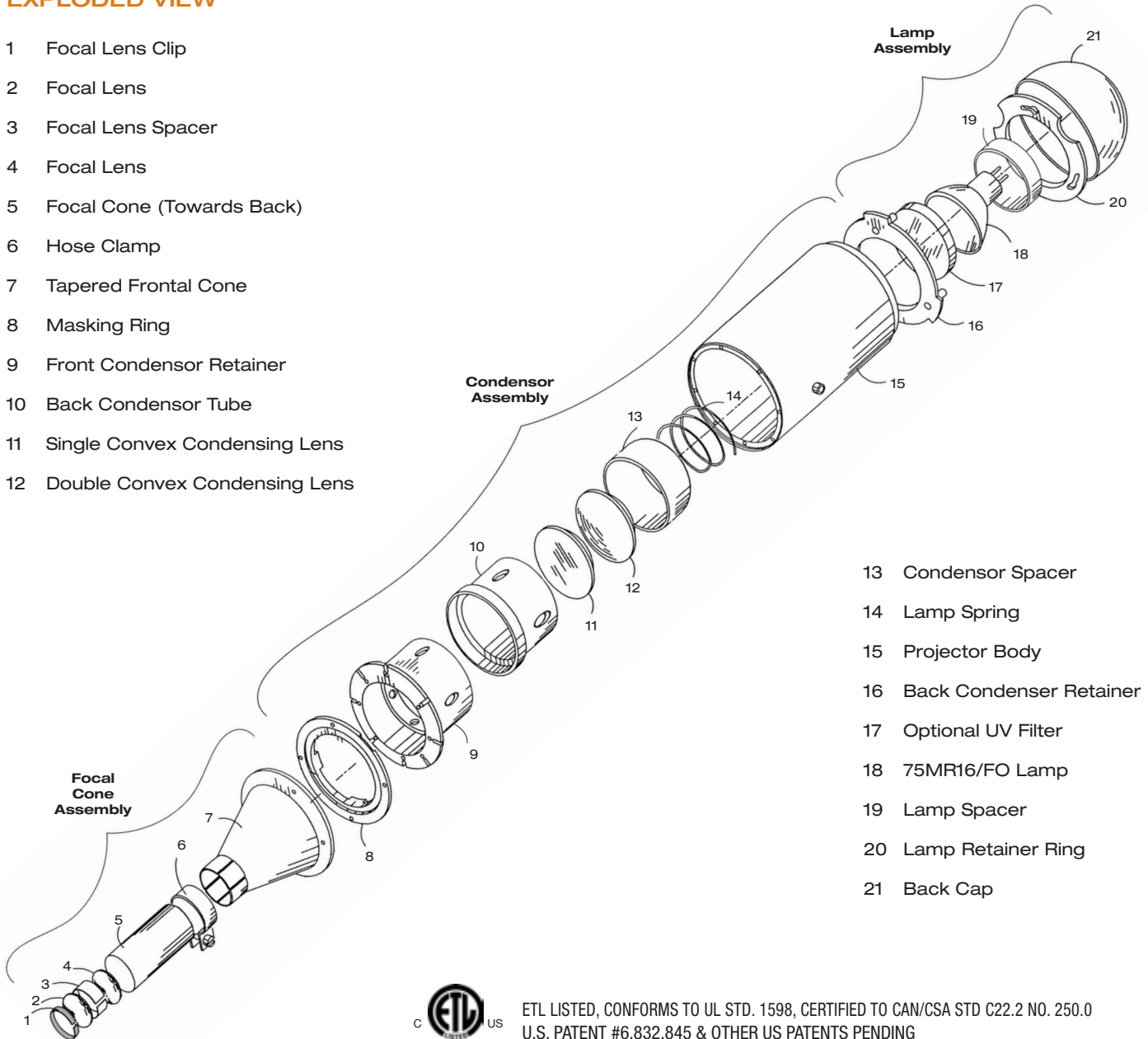


### PROJECTOR SUPPLEMENT FOR PHANTOM™ CONTOUR PROJECTORS

Please read all the instructions in this supplement before proceeding with the installation. This fixture is intended for installation in accordance with the National Electric Codes regulations. To prevent electric shock, turn off electricity at the fuse box before proceeding. These instructions are designed as a general overview and guide for a typical installation. Retain these instructions for future needs and maintenance reference. FOR QUESTIONS REGARDING YOUR APPLICATION CONTACT CUSTOMER SERVICE (MONDAY THRU FRIDAY 8:00 A.M. - 4:00 P.M. CST) TOLL FREE 1-800-863-1184.

### EXPLODED VIEW

- 1 Focal Lens Clip
- 2 Focal Lens
- 3 Focal Lens Spacer
- 4 Focal Lens
- 5 Focal Cone (Towards Back)
- 6 Hose Clamp
- 7 Tapered Frontal Cone
- 8 Masking Ring
- 9 Front Condensor Retainer
- 10 Back Condensor Tube
- 11 Single Convex Condensing Lens
- 12 Double Convex Condensing Lens

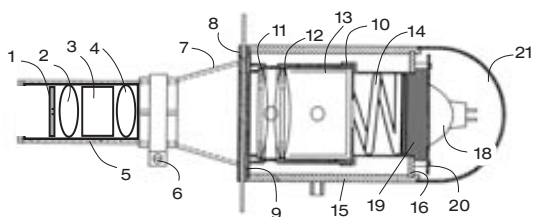


- 13 Condensor Spacer
- 14 Lamp Spring
- 15 Projector Body
- 16 Back Condensor Retainer
- 17 Optional UV Filter
- 18 75MR16/FO Lamp
- 19 Lamp Spacer
- 20 Lamp Retainer Ring
- 21 Back Cap



ETL LISTED, CONFORMS TO UL STD. 1598, CERTIFIED TO CAN/CSA STD C22.2 NO. 250.0  
U.S. PATENT #6,832,845 & OTHER US PATENTS PENDING

## ASSEMBLY INSTRUCTIONS



- |                        |                                  |
|------------------------|----------------------------------|
| 1 Focal Lens Clip      | 9 Front Condensor Retainer       |
| 2 Focal Lens           | 10 Back Condenser Tube           |
| 3 Focal Lens Spacer    | 11 Single Convex Condensing Lens |
| 4 Focal Lens           | 12 Double Convex Condensing Lens |
| 5 Focal Cone           | 13 Condensor Spacer              |
| 6 Hose Clamp           | 14 Lamp Spring                   |
| 7 Tapered Frontal Cone | 20 Lamp Retainer Ring            |
| 8 Masking Ring         | 21 Back Cap                      |

**You're Phantom™ Contour Projector has been shipped pre assembled for your convenience. Should you need to disassemble the projector for any reason, please follow these simple step by step instructions?**

### Disassembly Instructions

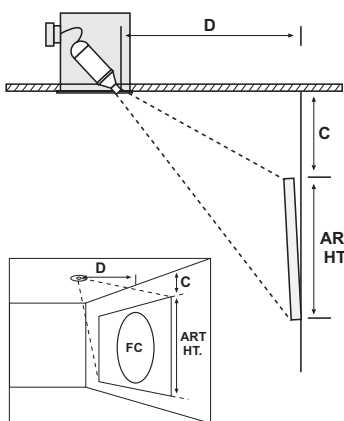
- Holding the projector in your lap or set it on a table with TAPERED FRONTAL CONE (7) facing down
- Remove BACK CAP (21)
- Disconnect SOCKET (not shown) from MR16 lamp (18)
- While pressing down on lamp gently, Remove LAMP RETAINER RING (20)
- Remove LAMP SPACER (19), LAMP (18) and LAMP SPRING (14)
- Remove BACK CONDENSER RETAINER (16)
- Remove BACK CONDENSER TUBE (10)
- Remove BACK CONDENSER SPACER (13)
- While holding lenses carefully with your fingers turn projector over and gently remove both CONDENSER LENSES (11) and (12)
- Remove Allen head stainless steel screws from TAPERED FRONTAL CONE (7) and MASKING RING (8)
- Remove (2-4) Phillips head stainless steel screws from FRONT CONDENSER RETAINER (9)

### Assembly Instructions

- Place PROJECTOR BODY (15) on level surface with taped holes facing up.
- Install FRONT CONDENSER RETAINER (9) into PROJECTOR BODY (15) and attach using Phillips flat head stainless steel screws. Note: See Template section on bottom of page 3 for correct orientation of screws in relation to stainless steel mounting posts and masking method selected.
- Install MASKING RING (8) and TAPERED FRONTAL CONE (7) using Allen head stainless steel screws and finger tighten for shutters and/or tighten completely for custom template with Allen wrench.
- Holding the projector in your hand with TAPERED FRONTAL CONE (7) facing downward, gently insert PLANO CONVEX CONDENSER LENS (11) with flat side towards the front of the projector against FRONT CONDENSER RETAINER (9). Do not drop the lens or lenses as they will break or chip.
- Gently insert DOUBLE CONVEX CONDENSING LENS (12) against PLANO CONVEX CONDENSING LENS (11) curve to curve. Do not drop the lens or lenses as they will break or chip.
- Insert CONDENSER SPACER (13) with pin-hole side towards LAMP (18). Align vent holes with FRONT CONDENSER RETAINER (9) to prevent fogging of lenses.
- Insert BACK CONDENSER TUBE (10) onto FRONT CONDENSER RETAINER (9)
- Insert BACK CONDENSER RETAINER (16) and turn clockwise until engaged into PROJECTOR BODY (15)
- Insert LAMP SPRING (14), OPTIONAL UV LENS (17), MR16/FO LAMP (18), and LAMP SPACER (19) into position
- While pressing down on MR16/FO lamp gently, install LAMP RETAINER RING (20) and turn clockwise until engaged on BACK CONDENSER RETAINER (16)
- Connect to MR16 LAMP (19) to SOCKET (not shown)
- Install BACK CAP (21) to PROJECTOR BODY (15)

## DETERMINE LOCATION OF PROJECTOR IN CEILING

### VERTICAL AIMING AT 45° ANGLE



### FORMULA (Standard 75f Lenses)

#### Painting Size (60"H x 50"W @ 32" from ceiling)

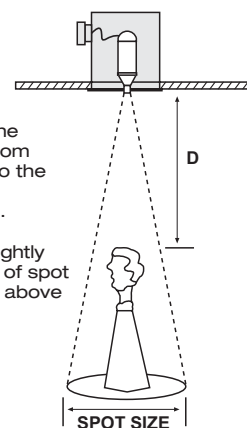
C = Distance from ceiling to top of art  
D = Distance from wall

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

(Example: 32" + 20" + 4" = 56" or 6' back from wall)  
Your circle of light on the wall will be **63"**  
Approximately **43** foot candles of light\*

\*See grey shaded area in photometrics chart

### HORIZONTAL BEAM



Estimate the distance from projector to the area being illuminated.

Select a slightly larger size of spot from chart above to ensure coverage.

## PHOTOMETRICS

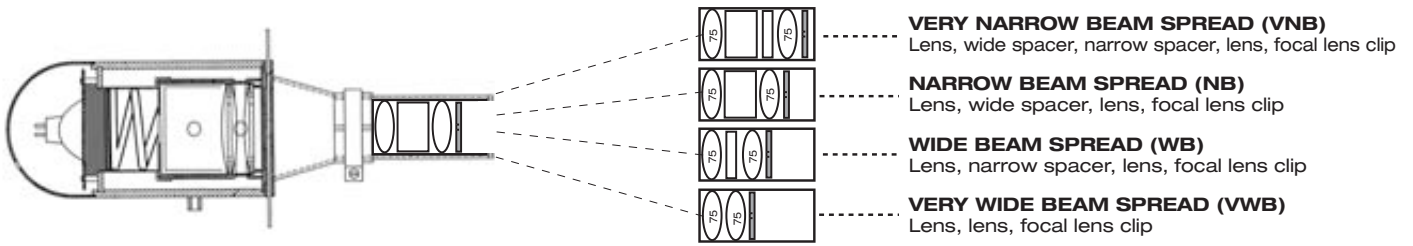
### STANDARD 75 FOCAL LENGTH LENSES DISTANCE TO OBJECT

BEAM SPREAD	BEAM DEGREE	2'		3'		4'		6'		8'		10'	
		SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC
VNB	43°	20	456	30	186	42	99	63	43	75	24	107	14
NB	58°	26	269	44	121	53	70	71	33	106	18	120	12
WB	67°	31	206	47	96	62	55	102	25	128	14	156	9
VWB	77°	47	117	70	52	91	30	120	14	154	8	190	5

### OPTIONAL 150 FOCAL LENGTH LENSES DISTANCE TO OBJECT

BEAM SPREAD	BEAM DEGREE	2'		3'		4'		6'		8'		10'	
		SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC	SPOT SIZE (IN.)	FC
VNB	31°	11	1850	18	840	27	200	38	150	53	75	67	42
NB	32°	12	1300	19	450	30	150	39	120	55	55	70	34
WB	35°	13	1100	22	420	32	135	43	100	61	50	79	31
VWB	36°	14	1000	23	384	33	129	46	91	63	49	81	30

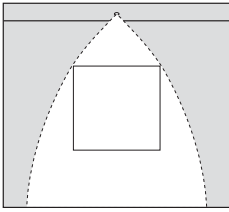
## CHOOSING BEAM SPREAD



**NOTE:** If you do not get a good focus by chart, simply reverse the cone and adjust focus.

**Each kit contains one 39mm focal cone, two 75fl, 39mm focal lenses, two pvc lens spacers and one lens retainer clip. Optional 150fl, 39mm lenses are available for long throws that require a very tight field of light and sharp focus. Note: Consult factory should you need assistance selecting a beam pattern or to solve issues related to poor focus.**

## OPTIMIZE BEAM SPREAD

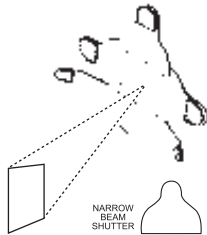


When selecting a lens combination or beam spread, the objective of the installation is to cover the art with the smallest circle of light. Of course, the top corners of the art are your main concern and will dictate the field size as shown in the illustration. It is always best to test before mounting the housing if the art is available. If the art is gone or undetermined, use paper or cardboard taped to the wall to verify your selection. The optimum aiming angle is 45 degrees to the center of the art, and may be adjusted for jobsite conditions, frame shadow, or glare. See page 4 for details.

## SHUTTER SPECIFICATIONS

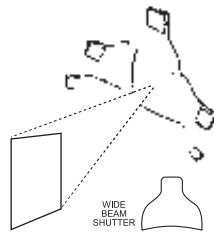
The Contour Projector Package comes with 3 different shutter assemblies. Each shutter assembly is specially designed to compliment a particular beam configuration by adjusting the light to follow the curvature of the lens. This allows for clean, straight lines, regardless of the aiming angle. Combination of different shutters can be used to handle unique situations. **Note:** Longhorn shutter should be used only when projector body interferes with mounting cradle on long throws, prohibiting installation or proper adjustment.

### NARROW BEAM



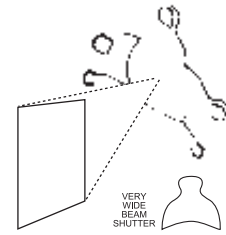
This set of (4) shutters is used for narrow beam applications and can be identified by rounded finger tabs.

### WIDE BEAM



This set of (4) shutters is used for wide beam applications and can be identified by square finger tabs.

### VERY WIDE BEAM

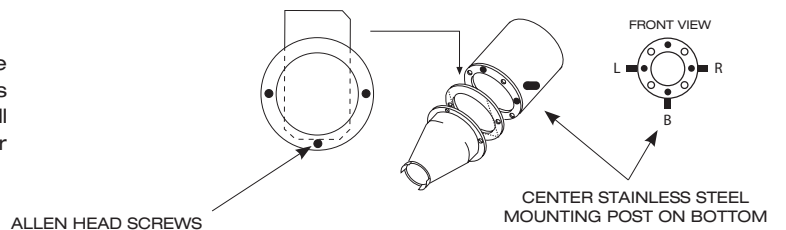


This set of (4) shutters is used for very wide beam applications and can be identified by indented and rounded finger tabs.

## TEMPLATES

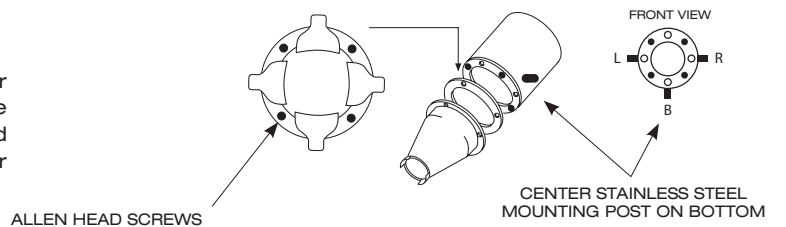
### CUSTOM TEMPLATES

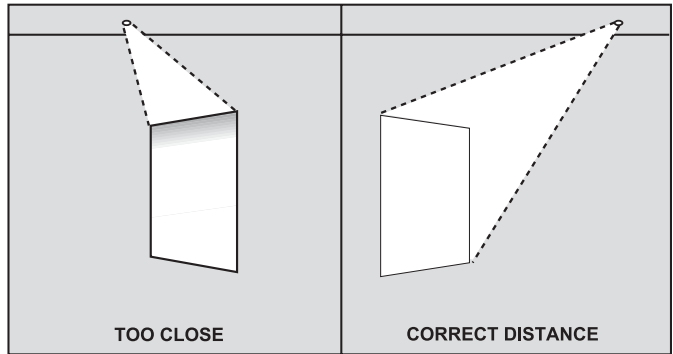
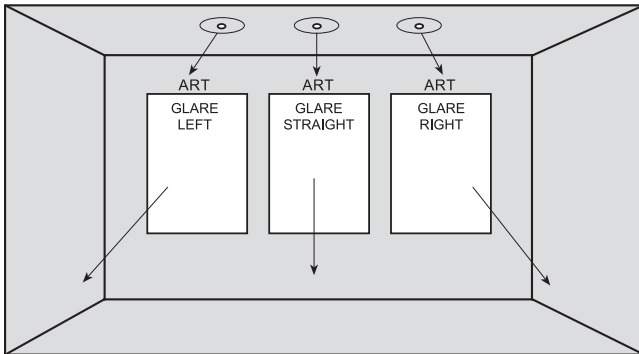
A Custom Template is used when multiple paintings are involved or a sculpture is being illuminated. If multiple paintings are being illuminated, the paintings must be on the same wall such as in a collage format. (See template instructions for cutting tips and recommendations)



### SHUTTERS

Metal shutters are used for simple square and rectangular shaped art. Shutters should be installed between the Tapered Frontal Cone and the Template Ring and secured with Allen head screws to lock into position. (See shutter instructions for masking tips and recommendations)





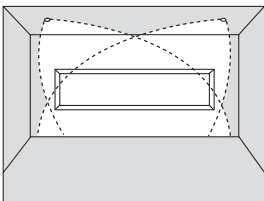
### CHECKING FOR GLARE

To check varnish glare, use your projector or a bright flashlight and a second person to determine where the best location is. Sometimes the projector will be off center of art for best results from viewing angle. Depending on the position of art you may not succeed in eliminating objectional glare.

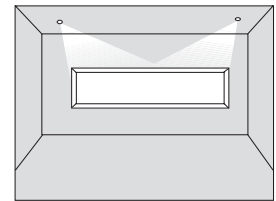
### CHECKING FOR FRAME SHADOW

After checking for varnish glare, check to see how deep the frame is. The deeper the frame, the further the distance is between art and light to minimize the shadow. Optimum viewing angle is 45 degrees. Sometimes you may not succeed in eliminating all of the shadow.

### OVERSIZED BEAM SPREAD

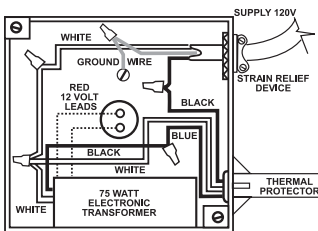


An oversized painting can be accommodated by using 2 Contour Projectors, mounted at oblique angles. **Note:** For best results remove one shutter blade from each projector to allow light from both projectors to overlap and softly fade. Otherwise, a sharp image may appear on light colored objects that are undesirable.



### TRANSFORMER

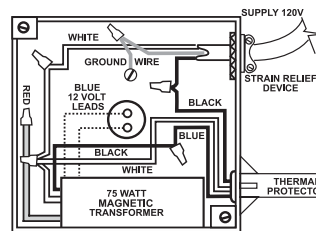
#### ELECTRONIC TRANSFORMER WIRING INSTRUCTIONS



Hatch® electronic transformers are standard on all Phantom Contour Projectors. This transformer has a built in safety device and is designed to power down or shut off in the event of a short in the system. The BLACK and WHITE wires represent the supply voltage or input voltage to the

transformer. The two RED wires represent the output voltage or 12 volt AC output going to the fixture. Other input voltages such as 220, 240 and 277 are available as an option as well as 50 Hz models available for our European customers.

#### MAGNETIC TRANSFORMER WIRING INSTRUCTIONS



The Q-Tran® magnetic transformers with built in thermal protector are optional on all Phantom Contour Projectors. This transformer has a built choke coil to reduce noise levels to about 17db which is well below audible levels of 26db. Dual input voltages of 115V and 120V for extending lamp life. The RED and WHITE wires provide 115 volts to the transformer. The BLACK and WHITE wires provide 120 volts to the transformer. The two BLUE wires represent the output voltage or 12 volt AC output going to the fixture. Other input voltages are available for 220, 240, 277 and 50 Hz models for European customers in large quantities by special order only.

### MR16 LAMP



The Contour Projector is designed to use a special Ushio JCR12V-75W/FO MR16 fiber optic lamp for optimal performance and light uniformity. Use of any other lamp, without the same characteristics as the Ushio, will result in unsatisfactory results. Consult the factory at 800-863-1184 for questions or to order replacement lamps.

