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 Condenser Tube
11 Single Convex Condensing Lens
12 Double Convex Condensing Lens
13 Condensor Spacer
14 Lamp Spring
15 Projector Body
16 Back Condenser 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

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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:
1. Holding the projector in your hand with TAPERED FRONTAL CONE (7) facing up.
2. 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.
3. 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.
4. 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.
5. Gently insert DOUBLE CONVEX CONDENSSING LENS (12) against PLANO CONVEX CONDENSER LENS (11) curve to curve. Do not drop the lens or lenses as they will break or chip.
6. Insert CONDENSER SPACER (13) with pin-hole side towards LAMP (18). Align vent holes with FRONT CONDENSER RETAINER (9) to prevent fogging of lenses.
7. Insert BACK CONDENSER TUBE (10) onto FRONT CONDENSER RETAINER (9).
8. Insert BACK CONDENSER RETAINER (16) and turn clockwise until engaged into PROJECTOR BODY (15).
9. Insert LAMP SPRING (14), OPTIONAL UV LENS (17), MR16/FO LAMP (19) and LAMP SPACER (19) into position.
10. While pressing down on MR16/FO lamp gently, install LAMP (18), and LAMP SPACER (19) into position.
11. Remove (2–4) Phillips head stainless steel screws from FRONT CONDENSER RETAINER (9).

Assembly Instructions:
1. Place PROJECTOR BODY (15) on level surface with taped holes facing up.
2. Remove BACK CAP (21) and/or tighten completely for shutters using Allen head stainless steel screws and finger tighten for custom template with Allen wrench.
3. While 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.
4. Gently insert DOUBLE CONVEX CONDENSING LENS (12) against PLANO CONVEX CONDENSER LENS (11) curve to curve. Do not drop the lens or lenses as they will break or chip.
5. Insert CONDENSER SPACER (13) with pin-hole side towards LAMP (18). Align vent holes with FRONT CONDENSER RETAINER (9) to prevent fogging of lenses.
6. Insert BACK CONDENSER TUBE (10) onto FRONT CONDENSER RETAINER (9).
7. Insert BACK CONDENSER RETAINER (16) and turn clockwise until engaged into PROJECTOR BODY (15).
8. Insert LAMP SPRING (14), OPTIONAL UV LENS (17), MR16/FO LAMP (19) and LAMP SPACER (19) into position.
9. While pressing down on MR16/FO lamp gently, install LAMP RETAINER RING (20) and turn clockwise until engaged on BACK CONDENSER RETAINER (16).
10. While pressing down on MR16/FO lamp gently, install LAMP SPRING (14), OPTIONAL UV LENS (17), MR16/FO LAMP (19), and LAMP SPACER (19) into position.
11. Connect to MR16 LAMP (19) to SOCKET (not shown).
12. Install BACK CAP (21) to PROJECTOR BODY (15).

VERTICAL AIMING AT 45° ANGLE

D = Distance from ceiling to top of art
C = Distance from ceiling to wall
C + 1/2 of art height + 6 = D
(Example: 36" + 30" + 6" = 72" or 6' back from wall)

Your circle of light on the wall will be approximately 43 foot candles of light

PHOTOMETRICS

<table>
<thead>
<tr>
<th>STANDARD 75 FOCAL LENGTH LENSES</th>
<th>DISTANCE TO OBJECT</th>
</tr>
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<tbody>
<tr>
<td><strong>2'</strong></td>
<td><strong>3'</strong></td>
</tr>
<tr>
<td><strong>BEAM SPREAD</strong></td>
<td><strong>SPOT SIZE</strong></td>
</tr>
<tr>
<td>WB</td>
<td>20</td>
</tr>
<tr>
<td>NB</td>
<td>26</td>
</tr>
<tr>
<td>WB</td>
<td>31</td>
</tr>
<tr>
<td>WB</td>
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</tbody>
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<table>
<thead>
<tr>
<th>OPTIONAL 150 FOCAL LENGTH LENSES</th>
<th>DISTANCE TO OBJECT</th>
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</thead>
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<tr>
<td><strong>2'</strong></td>
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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.

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

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.

**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
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.