

UL Ti MATE 75 SA- 150W/ 250W

- *The **UL Ti MATE 75 SA 150w/250w** is a "Weld-in Thru-Hull" underwater light with flush plus, 30 degree and 50 degree inserts for angled hull adjustment.
- *Never feel trapped by this weld-in fixture, the projector can easily be removed for servicing and upgrades without the hassle of hauling your boat.
- *We recommend that the installation of the light be a minimum 250mm below the waterline when the yacht is loaded with 50% fuel and 50% water and that the light be angled 15 degrees downwards.
- *The internal (Super Adjustable) unit allows the beam angle to be varied from a narrow to a wide beam, and to universally move the beam direction by 20 degrees from inside the housing.
- *Distance between lights can vary from 1.5 (transom) to 5 meters (port & starboard) apart for the best illumination.
- *With complete Lloyd's Register Approval, GL and ABS Design Appraisal on all components, the **UL Ti MATE 75** has been installed on some of the largest and most prestigious Superyachts in the world.

 <p>Maintenance Inside the Hull</p>		<p>Hull Material  Aluminium / Steel</p>
 <p>Control Options On/Off switch</p>		<p>Boat Size  25 meter +</p>
 <p>Ballast Remote</p>		<p>Lumens  12,000</p>
 <p>Growth Resistant Lens Borosilicate Glass</p>		<p>Kelvin  7,000</p>
 <p>Power 110-240 VAC</p>	<p>Beam Angle  65/77/100 degrees</p>	
 <p>Installation Weld-in</p>	<p>   AVAILABLE YES AVAILABLE WITH FILTERS </p>	<p>   </p>



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THE UL Ti MATE RANGE IS DESIGNED AND MANUFACTURED BY UNDERWATER LIGHTS LTD IN THE U.K.



UL Ti MATE

75 SA 150/250w

Mounting

Hull Material	Aluminium & Steel
Boat size	30M +/- 90+ Feet
Spacing	1.5M up to 5M(Port/Starboard
Beam Angle	65° / 77° / 100° degree
Installation Angles	Flush+ / 30° / 50°

Technical

Lumens	150w: 12,000 250w: 19,000
Kelvin	7,000
Typical Bulb Life Expectancy	3,000 hrs
Min-Max Operating Voltage	150w: 110 - 240V AC 250w: 240V AC
Current / Amp draw	150w: 1.4 - 0.7 amps 250w: 1.2 amps
Ballast Type	External
Ballast Output	N/A
Control Options	On / Off switch

Physical

Length of fixture	250mm - 306mm 9.84" - 12"
Diameter of fixture	120mm - 140mm 4.72" - 5.51"
Profile (height) of fixture	N/A
Removal Space Required	170mm/6.7"
Total weight	SS 6.3- 9.5 kgs/14 - 21 lbs ALU: 5- 6.3 kgs/ 11 - 14 lbs
Cable Length	Custom
Hole Cut-out	Weld In
Material	5083 Aluminium / 316L Stainless Steel
Lens	Borosilicate Glass
Max Hull plate thickness	12mm for Flush+ and 20mm for 30 & 50 degree

Color

- Flush+: White
- Flush+: White
- Flush+: White
- Flush+: White

Part Number/Flush +

- S00300+SA150-316L
- S00300+SA250-316L
- S00600+SA150-5083ALU
- S00600+SA250-5083ALU



Color

- 30°: White
- 30°: White
- 30°: White
- 30°: White

Part Number/30 Degree

- S00330-SA150-316L
- S00330-SA250-316L
- S00630-SA150-5083ALU
- S00630-SA250-5083ALU



Color

- 50°: White
- 50°: White
- 50°: White
- 50°: White

Part Number/50 Degree

- S00350-SA150-316L
- S00350-SA250-316L
- S00650-SA150-5083ALU
- S00650-SA250-5083ALU

Your Local Dealer



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Registered in England No: 2348038

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316 S.S. UL Ti MATE 75 SA-ICE

'submersible through hull light'



ORDERING NUMBERS

FLUSH - S00300-75-SA-ICE. 30 DEG - S00330-75-SA-ICE. 50 DEG -S00350-75-SA-ICE
WITH 120 (V3) / 230 (V2) VOLT BALLAST AND 150W (W2) OR 250W (V2,W1) WATT LAMP.

OPERATIONAL CONDITIONS AND CONSIDERATIONS

- The UL Ti MATE 75 SA is serviced from inside the hull. Allow access for maintenance and space for ventilation.
- Do not use the UL Ti MATE™ in dry-dock or out of water
- Allow a minimum of 170mm behind the cable gland for lamp replacements on 150w and 150mm behind the ignitor on 250w.
- UL Ti MATE™ to be fitted a minimum of 250mm below the yacht's water line when loaded with 50% fuel and 50% freshwater onboard
- **ELECTRICAL INFORMATION**
- **150 WATT** Maximum distance between ballast and projector - 10 meters
- **250 WATT** Maximum distance between ballast and projector - 10 meters.
- Ballast power 150 watt ballast 120/230 volt, running current 1.4/0.7.A
- Ballast power 250 watt ballast 230 volt, running current 1.2.A
- Ballast will not ignite a hot lamp. The ballast has a cycle of three attempts to ignite the lamp then will wait for six minutes before repeating the cycle.
- Ballast must be installed in dry space. Maximum ambient temperature 40C **DO NOT switch ballast on and off.**

CABLE SPECIFICATION TO PROJECTOR

- High temperature (180C) silicone screened three core. Cable diameter 9mm

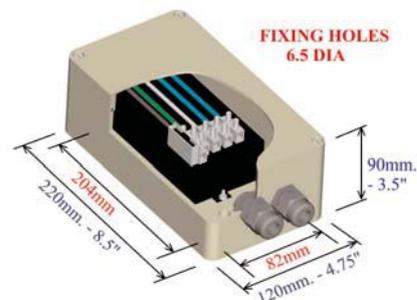
PART NUMBER

S00111-180 EWKF 3G0,0.75

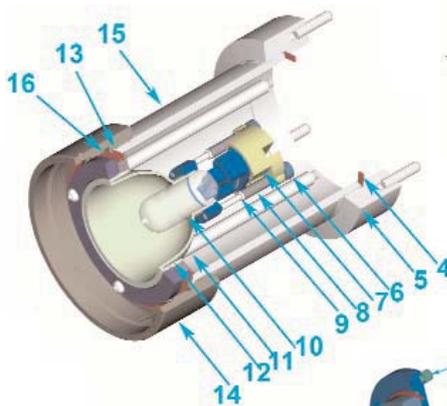
Part Description 75-SA	Part No
1: Projector lid securing plate	00283-B
2: M6 Nut	93381
3: 'O' Ring	00108
4: Gasket NAF	00285-A
5: Connecting ring	00274-C
6: Lamp holder screw	00290
7: Lamp holder (250W)	91195
7: Lamp holder (150W)	91191
8: Reflector collar bush	00288-A
9: M4 Lock nut	93374
10: Lamp (250W)	91209
10: Lamp (150W)	91210
11: Reflector adjustment rod	00284
12: Reflector complete	S91791
13: Gasket NAF	00285-A
14: AB2 Connecting ring	00503-75-A
15: Projector barrel	00101-C
16: Gasket NAF	000C07-B
30: Glass gaskets NAF	00286-A
31: Glass lens	00281
39: Body Flush (s.s.)	S00300-75 ICE
40: Body 50 deg (s.s.)	S00350-75-B ICE
41: Body 30 deg (s.s.)	S00330-75 ICE
42: Glass retaining ring	00304-ICE 75B
43: Cap head screws	93334

Part Description 75-SA	Part No
22: Gland	92011
23: Projector cover	00102-E
24: Ballast 250 watt 230v	S00820-V2 W1
24: Ballast 150 watt 230v	S00800-V2W2
24: Ballast 150 watt 120v	S00800-V3W2

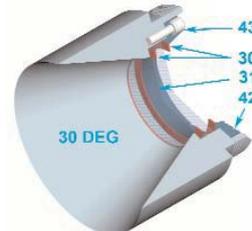
Recommended Spares	Part No
Lamp (250w = W1)	91209
Lamp (150w = W2)	91210
Glass with gaskets	S00281-A
Ballast	



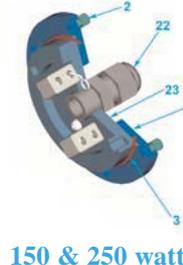
120 & 230 VOLTAGE SUPPLY FOR 150 & 250 WATT ELECTRONIC BALLAST COMPLETE WITH ENCLOSURE .



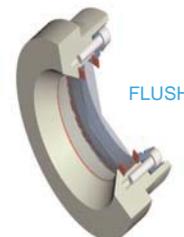
S00350-75 ICE (40)



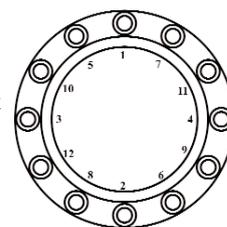
S00330-75 ICE (41)



150 & 250 watt



S00300-75 ICE (39)



LENS FITTING INSTRUCTIONS

- Check the glass landing surface is clean and apply a suitable silicone grease to the gaskets. Fit the glass, gaskets and retaining ring as shown above. Hand tighten the screws with a 5mm "Allen key" making sure the glass retaining ring is square. Torque settings for all retaining screws - 7 Nm (5.1 ft/lbs). Torque the screws in the sequence shown. Check the ring again and re-torque the screws again to the same torque setting.



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5083 ALU UL Ti MATE 75 SA 'submersible through hull light'



ORDERING NUMBERS

FLUSH - S00600-75-SA. 30 DEG - S00630-75-SA. 50 DEG - S00650-75-SA
WITH 120 (V3) / 230 (V2) VOLT BALLAST AND 150W (W2) OR 250W (V2,W1) WATT LAMP.

OPERATIONAL CONDITIONS AND CONSIDERATIONS

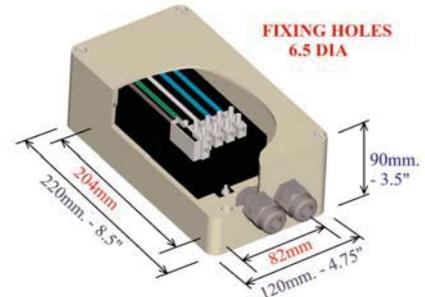
- The UL Ti MATE 75 SA is serviced from inside the hull. Allow access for maintenance and space for ventilation.
- Do not use the UL Ti MATE™ in dry-dock or out of water
- Allow a minimum of 170mm behind the cable gland for lamp replacements on 150w and 150mm behind the ignitor on 250w
- UL Ti MATE™ to be fitted 250mm below the yacht's water line when loaded with 50% fuel and 50% freshwater onboard.
- Do not attempt to remove the glass lens while afloat.
- The projector must be correctly assembled with lid secured to the UL Ti MATE™ whilst afloat.

ELECTRICAL INFORMATION

- **150 WATT** Maximum distance between ballast and projector -10meters
- **250 WATT** Maximum distance between ballast and projector - 25 meters.
- Ballast power 150 watt ballast 120/230 volt, running current 1.4/0.7.A
- Ballast power 250 watt ballast 230 volt, running current 1.2.A
- Ballast will not ignite a hot lamp. The ballast has a cycle of three attempts to ignite the lamp then will wait for six minutes before repeating the cycle.
- Ballast must be installed in dry space. Maximum ambient temperature 40C DO NOT switch ballast on and off.

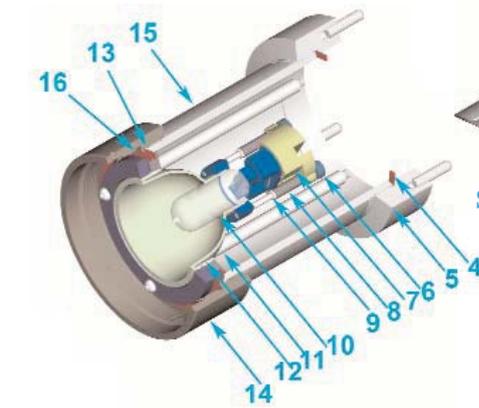
CABLE SPECIFICATION TO PROJECT

- High temp silicone three core part number. S00111



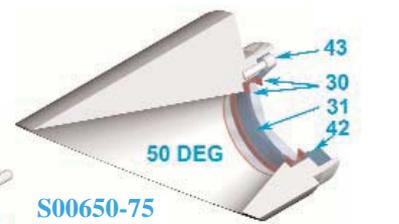
150 WATT ELECTRONIC BALLAST COMPLETE WITH ENCLOSURE. SEE BALLAST SHEET FOR FURTHER INFORMATION

Part Description 75-SA	Part No
1: Projector lid securing plate	00283-B
2: M6 Nut	93381
3: O' Ring	00108
4: Gasket NAF	00285-A
5: Connecting ring	00274-C
6: Lamp holder screw	00290
7: Lamp holder (250W)	91195
7: Lamp holder (150W)	91191
8: Reflector collar bush	00288-A
9: M4 Lock nut	93374
10: Lamp (250W)	91209
10: Lamp (150W)	91210
11: Reflector adjustment rod	002842-
12: Reflector complete	S91791
13: Gasket NAF	00285-A
14: AB2 Connecting ring	00503-75A
15: Projector barrel	00101-D
16: Gasket NAF	000C07-B
30: Glass gaskets NAF	00286-A
31: Glass lens	00281
39: Body Flush (alu)	S00600-75
40: Body 50 deg (alu)	S00650-75-B
41: Body 30 deg (alu)	S00630-75
42: Glass retaining ring	00604-75-B
43: Cap head screws	93460-SC

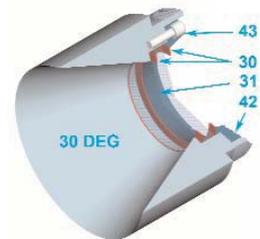


Part Description 75-SA	Part No
22: Gland	92010
23: Projector cover	00102-E
24: Ballast 250 watt	S00820-V2W1
24: Ballast 150 watt 230v	S00800-V2W2
24: Ballast 150 watt 120v	S00800-V3W2

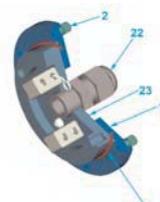
Recommended Spares	Part No
Lamp (250w = W1)	91209
Lamp (150w = W2)	91210
Glass with gaskets	S00281-A
Ballast	S00801-V2/V3



S00650-75



S00650-75



150-250 watt

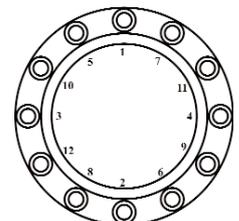


FLUSH

S00600-75

LENS FITTING INSTRUCTIONS

- Check the glass landing surface is clean and apply a suitable silicone grease to the gaskets. Fit the glass, gaskets and retaining ring as shown above. Hand tighten the screws with a 5mm "Allen key" making sure the glass retaining ring is square. Torque settings for all retaining screws - 7 Nm (5.1 ft/lbs). Torque the screws in the sequence shown. Check the ring again and re-torque the screws again to the same torque setting.



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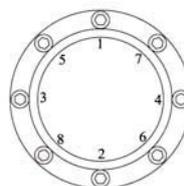
UL Ti MATE 75 SA 'submersible through hull light'



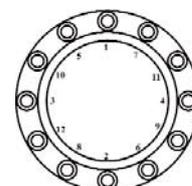
OPERATIONAL CONDITIONS AND CONSIDERATIONS

● LENS FITTING INSTRUCTIONS

- Check the glass landing surface is clean and apply a suitable silicone grease to the gaskets. Fit the glass, gaskets and retaining ring as shown above. Hand tighten the screws with a 5mm "Allen key" making sure the glass retaining ring is square. Torque settings for all retaining screws - 10 Nm (7.5 ft/lbs). Torque the screws in the sequence shown. Check the ring again and re-torque the screws again to the same torque setting.



Aluminium



Stainless Steel



● INSTALLATION OF PROJECTOR UNIT:

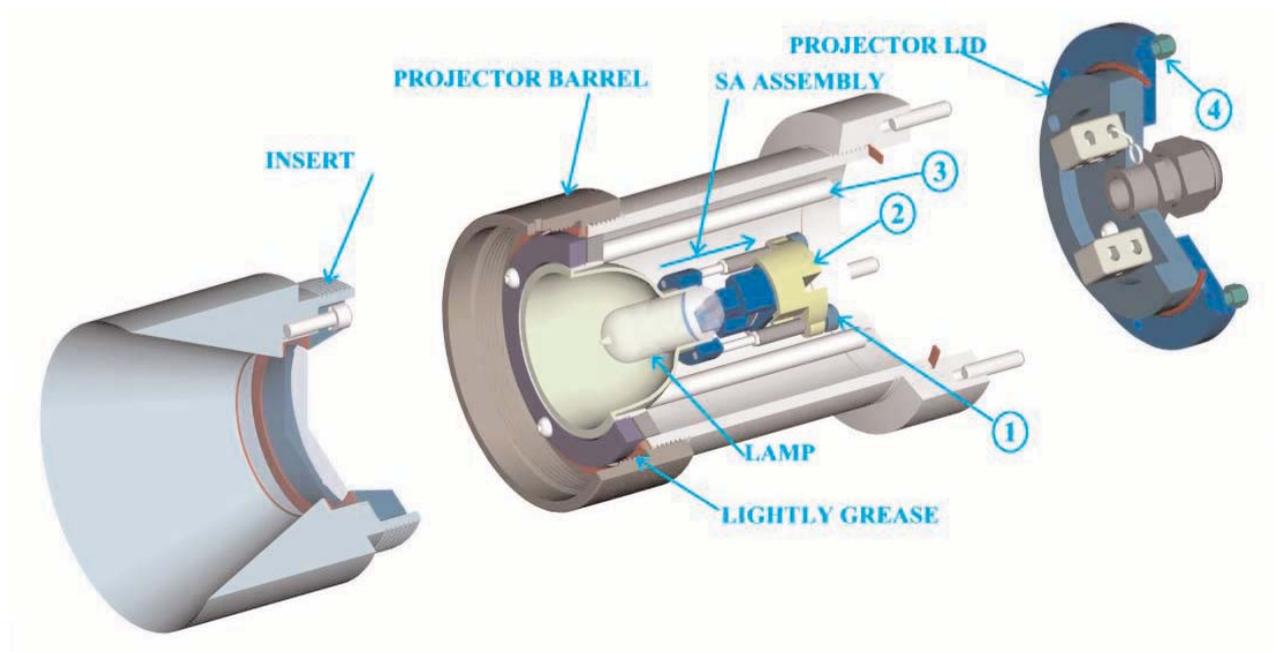
Unscrew the M6 nuts (position 4) and remove the **projector lid with the SA assembly** from the **projector barrel**. Using a suitable silicone grease coat the gasket and threads and screw the projector body tightly onto the **insert**. The projector body does not need to be removed for lamp maintenance.

● LAMP CHANGE:

Unscrew the M6 nuts (position 4) and remove the **projector lid with the SA assembly** from the **projector barrel**. Undo the two lamp holder screws (position 1), remove the lamp and lamp holder (position 2) from the SA assembly. Remove the lamp from the holder and fit new lamp. **DO not touch the new lamp with bare fingers**. Return the lamp holder to the SA assembly and slide it back into the Projector barrel. Replace the projector lid ensuring that the rods (position 3) are tight and fitted into projector lid. Make sure that the M6 nuts are tight.

● REFLECTOR AND LAMP ADJUSTMENT:

See Beam Adjustment and Lux specification sheet and for more information visit our web site.



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DESIGN, INSTALLATION AND OPERATION OF THE UL Ti MATE 75 SA

BASIC CRITERIA

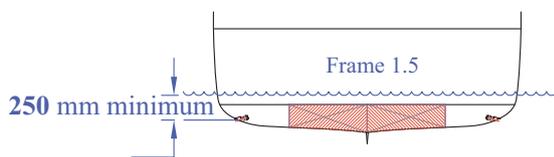
All weld-ins must have a minimum depth of 250-300mm below a waterline based on a loading of 50% fuel and 50% freshwater. They can be used to a maximum depth of 150 metres.

Spacing of the weld-ins: stern - 1.5 to 2.5 metres: port or starboard - 2.0 to 6.0 metres.

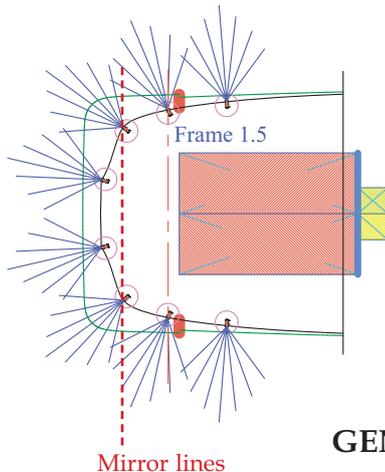
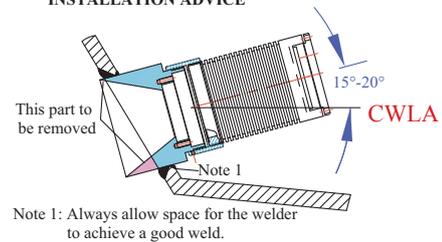
Angle of the weld-in light beam to the waterline: 15-20 degree. There are three different angled weld-ins available to maintain a constant waterline angle (CWLA). A sudden change in the CWLA will look like an installation error. Keep the CWLA as constant as possible.

UL Ti MATE POSITION

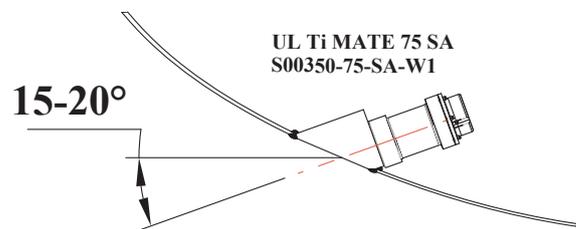
From the yacht's general arrangement drawing first mark the positions where it is not possible to fit the weld-in and then work about those areas.



INSTALLATION ADVICE



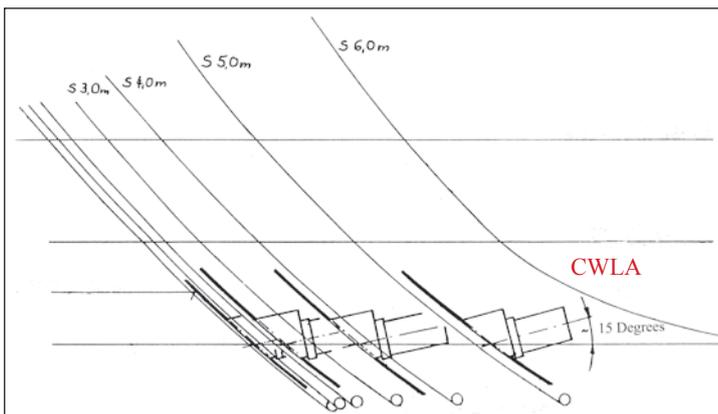
TRANSVERSE SECTIONS



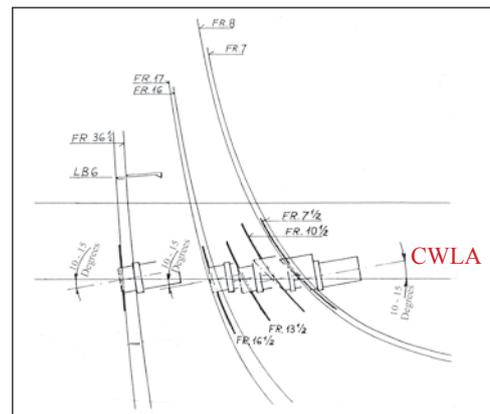
GENERAL ARRANGEMENT DRAWING

A line of weld-ins should be mirrored around its centre line (see above).

Using transverse frame drawings predict the largest waterline angle that will occur on the yacht with a 50° Insert.



TRANSOM-LONGITUDINAL SECTIONS



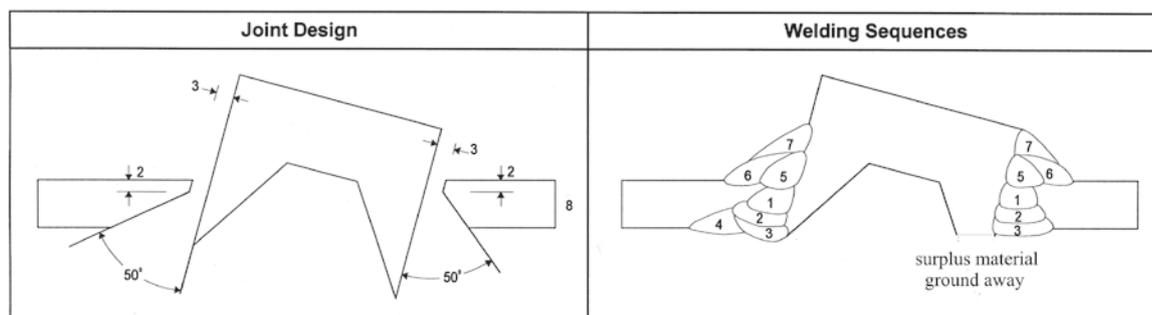
TRANSVERSE SECTIONS

WELDING INSTRUCTION FOR THE UL Ti MATE 75 SA

THE UL Ti MATE 75 SA INSTALLATION (Steel and aluminium hulls)

The UL Ti MATE 75 SA welding procedures shown are typical for most installations and are for guidance purposes only. Always use a certified welder and a fire watch when welding. Protect all threads against welding, grinding and painting.

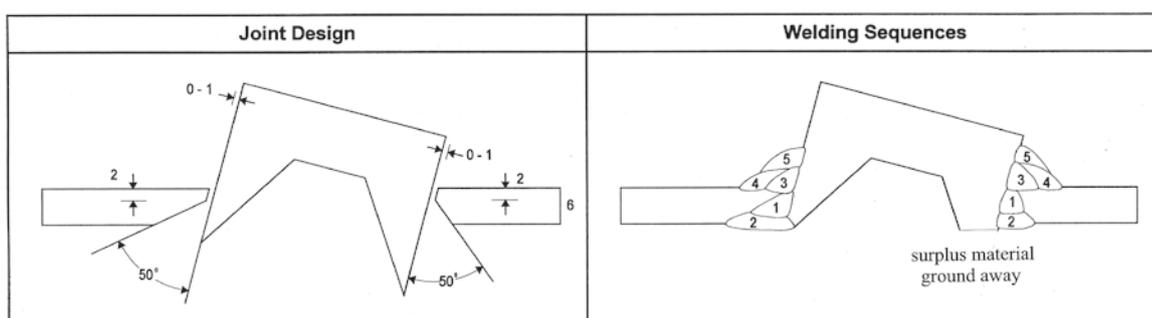
316L SS WELDING PROCEDURE



RUN	PROCESS	SIZE OF FILLER METAL	CURRENT A	VOLTAGE V	TYPE OF CURRENT/POLARITY	WIRE FEED m/min	TRAVEL SPEED* mm/s	HEAT INPUT* kJ/mm
1-7	MMA	3.2	100-115	≥ 55 OCV	AC	-	-	

<p>Welding procedure Ref.No: UL-CSSS-TB-01</p> <p>Joint type: Full penetration butt with fillet</p> <p>Preparation & cleaning: Thermal cut and grind</p> <p>Parent material spec: ASTM A276:316L stainless to BS 4360:43A carbon steel</p> <p>Material thickness (mm): 4-20 (Bulleyt) to 8mm plate</p> <p>Outside diameter (mm): 100mm</p> <p>Filler metal classification: AWS A5.4:E309MOL-17</p> <p>Filler metal tradename: ESAB OK 67.70</p>	<p>Welding position: Butt: Horizontal (PC) and vertical up (PF) Fillet: Overhead (PD), vertical up (PF) and horizontal vertical (PB)</p> <p>Gas flux shielding: Acid rutile flux</p> <p>Details of back gouging: Back grind root of butt</p> <p>Preheat temperature: 10°C min.</p> <p>Interpass temperature: 240°C max.</p> <p>Temperature control: Thermal indicating crayon</p>
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5083 WELDING PROCEDURE



RUN	PROCESS	SIZE OF FILLER METAL	CURRENT A	VOLTAGE V	TYPE OF CURRENT/POLARITY	WIRE FEED m/min	TRAVEL SPEED* mm/s	HEAT INPUT* kJ/mm
1-5	MIG	1.2	160 - 180	20 - 21	DC positive	± 10.0	10 - 15	-

<p>Welding procedure Ref.No: UL-AL-TB-01</p> <p>Joint type: Full penetration butt with fillet</p> <p>Preparation & cleaning: Cut, grind, wirebrush & degrease</p> <p>Parent material spec: BS 1474:5083:0 (Bulleyt) to BS 1470:5083:0 (plate)</p> <p>Material thickness (mm): 4-20 (Bulleyt) to 6mm plate</p> <p>Outside diameter (mm): 100mm</p> <p>Filler metal classification: BS 2901:pt 4:5356</p> <p>Filler metal tradename: INCO ALLOYS 5356</p>	<p>Welding position: Butt: Horizontal (PC) and vertical up (PF) Fillet: Overhead (PD), vertical up (PF) and horizontal vertical (PB)</p> <p>Gas flux shielding: Argon gas</p> <p>Gas flow rate - shielding: 20 LPM</p> <p>Details of back gouging: Back grind root of butt</p> <p>Preheat temperature: 10°C min.</p>
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UL Ti MATE

SA Beam Angle & Lux Infos

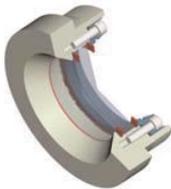
DESCRIPTION

The cone angle in the body restricts the width of the light beam angle. The 50 degree is 65 degrees, the flush and UL Ti MATE 130 have an angle of 100 degrees. The center of the light beam should be kept to 15 degrees down from the horizontal. Taking into account the reflector adjustment a flush body can be installed at an angle of 35 degrees to the vertical. The spherical is then adjusted to 20 degrees and then locked. This gives the required 15 degree beam angle. The flush can installed from 0-35 degrees.

UL Ti MATE 130 SA
S00475 - For composite hulls



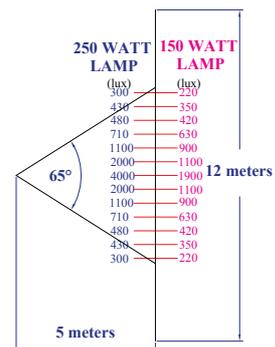
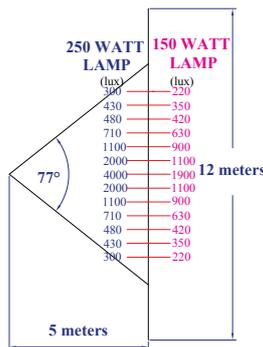
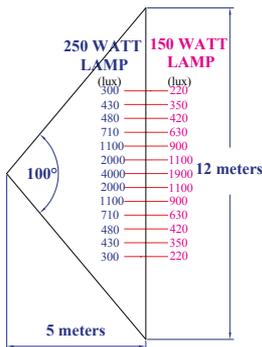
UL Ti MATE 75 SA



UL Ti MATE 75 SA
30 DEGREE



UL Ti MATE 75 SA
50 DEGREE



BEAM AND ANGLE ADJUSTMENT INFORMATION

MAXIMUM DIRECTIONAL
ADJUSTMENT 20 DEGREES



TIGHT BEAM ANGLE
LAMP IS ADJUSTED BACK



WIDE BEAM ANGLE
LAMP IS ADJUSTED FORWARD



DESCRIPTION

The above pictures on the left show the directional adjustment. The center pictures show how the lamp is moved back to create a tight beam and the right hand pictures shows the lamp moved forward to create a wide beam.

Note - When the lamp is adjusted for a wide beam. The lux level at the center will decrease but will increase on the outer part of the beam giving a more uniform light pattern.

Ballast and Projector Lid Cable Connection and Operational Information

BALLAST INSTALLATION AND OPERATIONAL INFORMATION

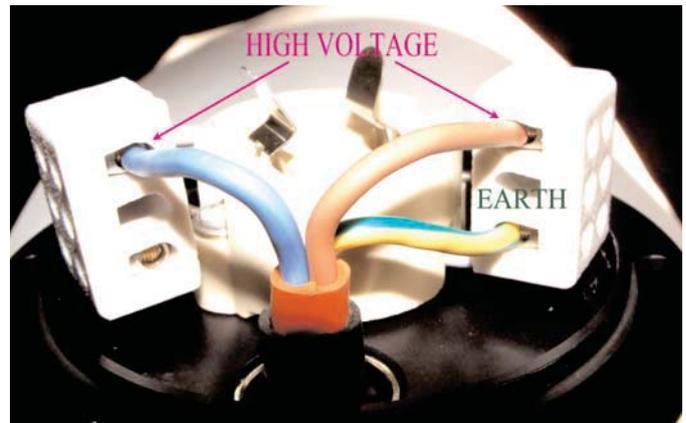
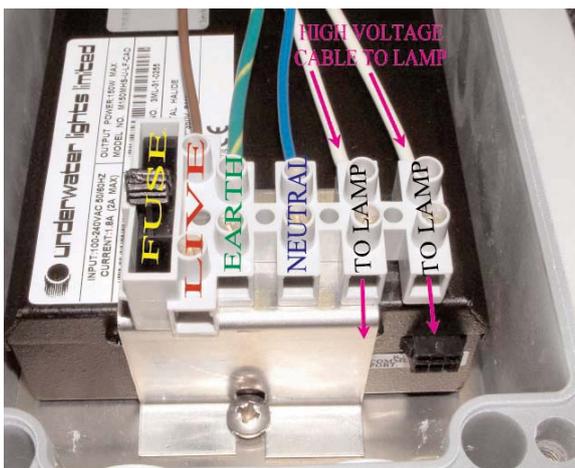
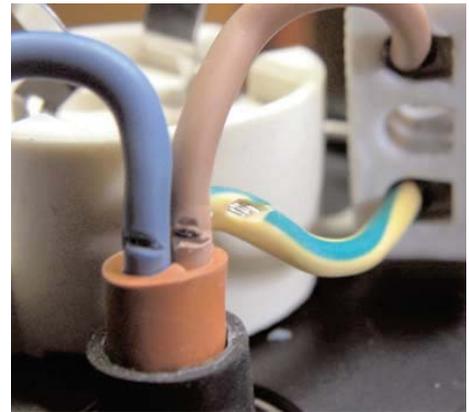
Ballast voltage 120/230 volts, wattage 150 watts.

Cable length between ballast and projector should be kept to a minimum. The ballast has the capability to operate the lamp with a cable length of 10 meters .

Cable specification -3 core braided silicone rubber 210 degrees C Spark Test 10kV

Lamp cable preparation - It is extremely important that the cable insulation is not damaged or broken as shown in the picture (right). **The ballast could fail should the ignition voltage of 5000 volts short across from the lamp cable to the earth..** Shorting across the high voltage cable will stop the lamp from working

The picture (below) shows the ballast inside the plastic enclosure. The terminal block should be wired as indicated.



To assist the electrician in the cable connection process we have provided an additional ceramic terminal block. (right hand picture)

The ballast cannot strike/ignite a hot lamp. There has to be a cool down period of say ten minutes. The ballast has three attempts to strike the lamp which takes about one minute and then it will wait for four minutes before trying again.

Switching the ballasts on and off is not recommended. Wait for say ten minutes before switching the lamps.

Should the lamp not strike then check ballast and lamp.

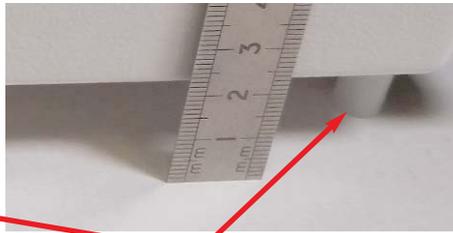
⚠ Note

**The most common cause of ballast failure is due to defective wiring.
Please take care.**

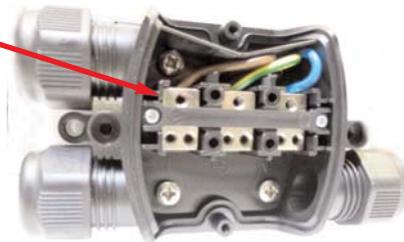
250 WATT BALLAST INSTALLATION FOR UL Ti MATE 75 SA & 130 SA



POWER CONNECTION AT
TOP OF BALLAST



2 CM SPACERS AT BACK
OF BALLAST



THE BALLAST MUST HAVE A MINIMUM DISTANCE OF 50 CM FROM THE PROJECTOR
THE BALLAST MUST HAVE AIR FLOW ON ALL SURFACES. USE THE 2 CM SPACERS
FOR THE BACK SURFACE WHEN SECURING.
THE BALLAST MUST BE INSTALLED VERTICALLY (AS SHOWN IN RIGHT HAND PICTURE)
THE MAXIMUM AMBIENT TEMPERATURE OF 45C MUST NOT BE EXCEEDED

DO NOT DO THE FOLLOWING

- INSULATE THE PROJECTOR.
- RESTRICT AIR FLOW AROUND THE BALLAST OR PLACE IT CLOSE TO PROJECTOR
- LOCATE BALLAST IN AREAS THAT CAN EXCEED THE MAXIMUM AMBIENT TEMPERATURE
- ANY OF THE ABOVE WILL RESULT IN FAILURE OF BALLAST AND LIGHT

