

**Thru-Hull SealLite®**

# Matrix®

Patents Pending

## Installation, Operation, and Maintenance Instructions


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# Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup>

Congratulations on the purchase of your Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup>! DeepSea Power & Light has been supplying underwater lights for industrial and research applications for over 25 years, and our line of SeaLite<sup>®</sup> products have set the standard for durability and performance in every industry where they are used. Your Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> has been rigorously tested, and the quality and performance of your light comes with the full confidence and backing of DeepSea Power & Light. As a measure of that confidence, your Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> comes with a full one-year warranty against defects in workmanship and materials. A complete copy of the warranty statement can be found on page 8.



|   |  |
|---|--|
| <b>Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup></b>   |  |
| Record the Serial Number for your Matrix <sup>®</sup> Thru-Hull SeaLite <sup>®</sup> , and retain for your records. |  |
| Serial Number   |  |

# ⚠ Read Before Installing the Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup>

1. Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> is **NOT INTENDED FOR USE ON METAL HULL BOATS**, it is only designed for installation on fiberglass and wooden hulls.
2. Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> should never be installed on a vessel while the vessel is in the water.
3. Two fitting lengths are offered, a standard length and an optional longer length. Below are the recommended hull thicknesses.

| Recommended Hull Thickness | Standard Fitting    | Optional Longer Fitting |
|----------------------------|---------------------|-------------------------|
| Minimum:                   | 1/4 in. (6.35 mm)   | 1/4 in. (6.35 mm)       |
| Maximum:                   | 3.00 in. (76.20 mm) | 7.00 in. (177.80 mm)    |

4. Only qualified technicians who have experience with the installation of thru-hull fixtures should install Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup>.
5. **To ensure no damage has occurred during shipping, energize the light using the intended power supply BEFORE drilling any holes in the boat.**
6. Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> should be electrically joined to the vessel's grounding and cathodic protection system. Failure to properly ground this fixture may result in catastrophic failure due to CORROSION, which in turn may lead to injury, damage or loss of property and loss of life.



**WARNING!** It should be noted that all metal parts will corrode in salt water. Corrosion of any metal will be especially aggressive if installation is improper, if bonding is improper, or if stray currents are active in the vicinity of the boat. Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> are warranted to be free from defects in material and workmanship, but this does not extend to being completely free from corrosion since the primary factors affecting corrosion are outside of the scope of material and workmanship of the light itself.

7. Once the fixtures have been installed on the vessel they should be inspected every 6 months for:
  - a. Corrosion and damage. Any fixture showing signs of corrosion or damage should be removed from service immediately.
  - b. Signs of leakage and water entry. Any fixture showing signs of leakage or water entry should be removed from service immediately.
  - c. Marine growth on the port. Any marine growth should be removed from the port in order to allow heat and light to exit the fixture. Use of a soft brush or non-metallic household dishwashing scrubber is recommended to prevent damage to the fixture and port. If the growth cannot be removed using a soft brush, a professional hull cleaner should be consulted.
  - d. Fastener integrity. Verify the jacking ring has not loosened due to compression of the hull or sealing materials.

# Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> Specifications

## Light Specifications

| MECHANICAL                     | SHORTER FITTING     | OPTIONAL LONGER FITTING |
|--------------------------------|---------------------|-------------------------|
| Housing Material:              | Copper Alloy        | Copper Alloy            |
| Pressure Tested To:            | 100 PSI             | 100 PSI                 |
| Size:                          |                     |                         |
| Length:                        | 4.23 in. (10.74cm)  | 8.23 in. (20.90cm)      |
| Diameter:                      |                     |                         |
| Thru-Hull Fitting:             | 1.00 in. (2.54 cm)  | 1.00 in. (2.54 cm)      |
| Outer Flange (0.56 in. thick): | 2.99 in. (7.59 cm)  | 2.99 in. (7.59 cm)      |
| Weight:                        | 1.39 lbs (630 g)    | 1.71 lbs (775 g)        |
| Lens:                          | Sapphire            | Sapphire                |
| Cable Length:                  | 6' (1.83 m)         | 6' (1.83 m)             |
| Recommended Hull Thickness:    |                     |                         |
| Minimum:                       | 0.25 in. (6.35 mm)  | 0.25 in. (6.35 mm)      |
| Maximum:                       | 3.00 in. (76.20 mm) | 7.00 in. (177.80 mm)    |

## LAMP

|                     |  |
|---------------------|--|
| Type:               | LED<br>(Sapphire Blue, Emerald Green, Ruby Red or Diamond White) |
| Rated Average Life: | >30,000 hours  |
| Color Temperature:  | 6,000° K Typical   |
| Beam Angle:         | 60 ° (Flood)   |

## OPERATING

|                                |                |
|--------------------------------|----------------|
| Warm Up / Re-strike Time:      | Instantaneous  |
| Minimum Operating Temperature: | 14° F (-10° C) |

## Driver Specifications

### MECHANICAL

|                   |  |
|-------------------|--|
| Housing Material: | Painted Aluminum   |
| Size:             |  |
| Length:           | 8.75 in. (22.23 cm)  |
| Width:            | 2.68 in. (6.81 cm)   |
| Depth:            | 1.54 in. (3.91 cm)   |
| Weight:           | 2.18 lbs (988 g)   |
| Cable Length:     | 12" (0.30 m) power input and<br>12" (0.30 m) driver output |

### ELECTRICAL

|                |  |
|----------------|--|
| Input Voltage: | 90VAC-295VAC 50/60Hz or 127VDC-417VDC          |
| Input Current: | 0.69A at 120V Typical<br>0.35A at 240V Typical |
| Input Power:   | 83 Watts Typical                               |

# Installation Instructions

## Installing the Thru-Hull Fitting



Your Matrix® Thru-Hull SeaLite® is designed for installation in fiberglass and wooden hulled boats only.



**Caution!** For hulls constructed with Divinycell® or similar foam cores, please consult the boat manufacturer, a professional boat builder, or your boat dealer for specific procedures to use when installing hull-penetrating fixtures. In general, the exposed surfaces of the internal core must be protected using a fiberglass resin or an epoxy compatible with the hull material to form a solid, sealed surface from the outside to the inside of the hull. This material must be rated to no less than 176°F (80°C).

Matrix® Thru-Hull SeaLite® are typically mounted horizontally in the transom, however, they can also be installed horizontally through the side of the hull and vertically down through the hull. In some cases, vertical installations may cause the Matrix® Thru-Hull SeaLite's® thermal circuit to shut off the LEDs to protect them from over temperature.

1. The Matrix® Thru-Hull SeaLite® should be mounted on a flat part of the hull with the center of the fitting at least 10" (254 mm) below the waterline. The fitting's flange should not extend beyond the flat surface on which it will be mounted. The Matrix® Thru-Hull SeaLite® can operate while the boat underway.
2. Before drilling the power cable hole, ensure that there is adequate clearance on the inside of the hull, inboard of the hole.
3. On the outside of the hull, mark the center of the hole to be made in the hull. Draw a 3" (76.20 mm) circle around the center mark. Verify that the area of the hull within is flat and completely below the water line.
4. Cut or drill a 1.00" (25.40 mm) diameter hole in the hull.
5. Test fit the thru-hull fitting in the hole by sliding the fitting in from the outside of the hull.
6. Using the circle drawn on the hull in step 3 as a guide, coat the area around the hole with 3M® 5200 sealant, or equivalent. Also, coat the flange and the portion of the body of the fixture that will extend thru the hull with 3M® 5200 sealant and slide the fixture into the hole.
7. On the inside of the hull, slide the jacking plate over the thru-hull fitting to the inside of the hull. Thread the nut onto the fitting and tighten the jacking screws with a wrench. Do not exceed 30lbs of torque.
8. Allow the sealant to dry (according to its instructions) and remove any excess.
9. Use one or both of the screw terminals on the jacking ring to connect the fixture to the ship's bonding system.
10. Route the cable from the light to the driver box. Care should be taken to avoid routing the cable over sharp edges or around tight bends as these could damage the cable over time. The cable may be shortened if desired or excess cable can be secured in a loop at either end or along the cable's run.

## Installing the Driver



**Caution!** While the driver box provided is splash proof, it is not waterproof and should never be submerged in water or placed in a location where it is likely to be even partially submerged in water.

1. Using appropriate fasteners in the four mounting holes in the corners of the driver box, attach the driver box to a fixed wall or other secure structure. Ideally, the driver should be mounted in a cool, dry, well ventilated location on the vessel.



**Caution!** If a longer cable length is required, the power cable from driver to AC supply can be lengthened using appropriately gauged marine cable (see qualified technician). The cable length between the lighthead and driver should be keep as short as possible for best efficiency.

2. Connect the light head cable using water resistant connections. Connect the wires and ground as shown in the wiring diagrams on page 11.
3. Connect the input power cable to power. Verify that the driver's voltage rating and the voltage available on the vessel are compatible. Ensure that the AC power is disconnected and locked out. Refer again to the wiring diagrams on page 11 and connect the driver's AC cord to a properly sized circuit breaker.
4. At this point, the light can be tested by energizing the driver.



**Caution!** Ensure the fitting is properly bonded to the vessels cathodic protection system.

# Operating Instructions



The Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> should always be turned on and off by applying and removing power from the driver. No attempt should be made to disconnect the driver from the light head while the light is running.

1. To turn the Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> on, apply power to the driver.
2. To turn the Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> off, turn the power to the drive off.



The Matrix<sup>®</sup> Thru-Hull SeaLite<sup>®</sup> is equipped with a thermal safety switch that automatically protects the LEDs from over temperature.

If the light does not operate properly, please contact DeepSea Power & Light.

## How to Arrange for Repairs

Please contact DeepSea Power & Light, Inc. (DeepSea) at 1-800-ITS-DSPL (1-800-487-3775) to secure an RMA number prior to returning your light for repair. Mark the outside of the shipping container with the RMA number. This allows us to process your package as quickly as possible, and insures that the repair department is alerted of its arrival.

### Warranty Repairs

Warranty repairs must be shipped to DeepSea freight prepaid. DeepSea will perform a full evaluation upon receipt. If the problem is determined to be a warranty issue, DeepSea will repair or replace the unit at no charge. DeepSea will also pay outgoing ground transportation. See limited warranty for exceptions.

### Non-Warranty Repairs

A diagnostic charge will be assessed for all repair estimates. This fee will be applied against any repair charges that are approved by customer. If repairs are not approved then customer will be charged for 1 hour diagnostics and the shipping expense to return unit to them. The prices of component parts do not include labor charges. Labor is billed at a minimum of 1 hour, with additional labor billed in half-hour increments.

## Limited Warranty

DeepSea warrants all of its products, unless otherwise noted, to be free from defects in workmanship and materials for a period of one year from the date of original purchase.

Internal electronic components are warranted for 90 days from the date of shipment from the factory, if they have been properly used.

DeepSea is not responsible for warranty service should the product fail to be properly maintained or fail to function properly as a result of misuse, abuse, improper installation, neglect, improper shipping, corrosion, damage caused by

disasters such as fire, flood, and lightning, or unauthorized repair or modifications.

Should your DeepSea product prove defective during the warranty period, promptly notify DeepSea to obtain an RMA number, and return the product, freight prepaid (by Customer) with the RMA number noted on the outside of the box. DeepSea will, at its option, repair or replace the product or defective portion without charge for parts or labor, or, at DeepSea's option, refund the purchase price. DeepSea will pay for ground transportation to the customer on warranty repairs. Products repaired or replaced under this warranty shall be warranted for the unexpired portion of the warranty applying to the original product(s).

The sole obligation of DeepSea shall be to repair, replace, or refund parts which have been proved defective. This does not include any other associated costs, such as the cost of removal of the defective part(s), installation costs, labor costs, travel costs, or consequential damages of any kind. Under no circumstances shall the Buyer be entitled to recover any incidental damages as that term is defined in Commercial Code §2715.

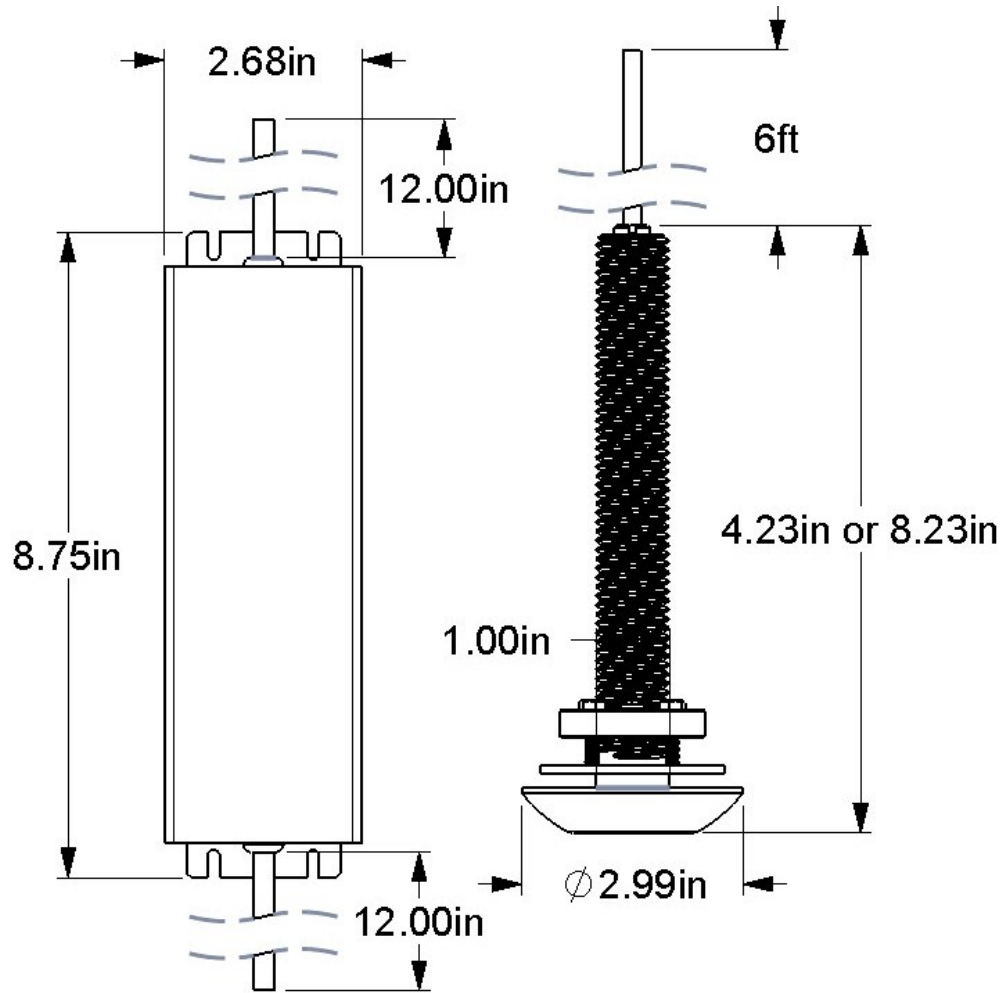
No warranty or affirmation of fact, express or implied, other than as set forth in the limited warranty statement above is made or authorized by DeepSea. DeepSea disclaims any liability for product defect claims that are due to product misuse, improper product selection, or misapplication. Any liability for consequential and incidental damages is expressly disclaimed. DeepSea's liability in all events is limited to, and shall not exceed, the purchase price paid.

## Appendix A – Drawings

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Figure 1 – O&I Drawing



**Figure 2 - Wiring Diagram**

