IMPORTANT!
Read this instruction carefully before installing the product

TRANBERG STAHL
THE STRONGEST LINK.

TRANBERG® IMT CIRCLE & H

ILED Aquarius Circle & H 2.0
Helideck Lighting System for TD/PM Area MKII

USER MANUAL FOR OEM`S

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General Information

Manufacturer

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About these operating instructions:

- Read these operating instructions, especially the safety notes, carefully before use.
- Observe all other applicable documents (See also further documents section).
- Keep the operating instructions throughout the service life of the device.
- Make the operating instructions accessible to operating and maintenance personnell at all times.
- Pass the operating instructions on to each subsequent owner or user of the device.

Document no: TUM6676

R. Stahl Tranberg Revision: B

Further documents for this product:

- Installation Manual, TUM6677
- Datasheet, TPS6671
- ATEX Certificate, DEKRA 13 ATEX0173
- IECEx Certificate, IECEx DEK 13.0059
- HCC Certification IMT ILED Circle-H Lighting System MK2, Malaysia, TPC6667
- CAAi Statement of Compliance for the IMT ILED C&H, TDC6689
- CAA Internaltional Statement IMT ILED C&H MK1, TDC6706
- CAA Internaltional Statement IMT ILED C&H MK2, TDC6707

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ILED Aquarius Circle & H 2.0

Helideck Lighting System for TD/PM Area MKII

1. Safety

1.1 General

To ensure that the product is used safely and to optimize its life time, the following instructions must be observed and adhered to.

- Only suitably qualified personnel may install the products.
- Observe the locally applicable safety standards and safety regulations.
- During assembly, make sure the fixtures are not subjected to undue mechanical stress.
- If excessive tension occurs in the mounting plates during or after assembly, by for example assembly on an uneven surface, the fixtures and the mounting plates can be damaged.
- During assembly, make sure the helideck mounting surface and the mounting plates are clean and dry. This ensures an optimal connection between the fixtures and the Helideck.
- Ensure there is a reliable connection to the earth system.
- Never open the sealed parts of the lighting fixtures.
- Do not clean the fixtures with a high-pressure steam or water jet. This will prevent damage not covered by warranty. Only clean by washing down with cloths / soft brushes.
- Do not use any kind of solvents on the system, to avoid damage to occur.
- Beware of high temperatures in the vicinity of fixtures, temperatures over 80°C will cause a mechanical shut down - end of life - of fixtures

2. Warranty

2.1 General

The warranty for the fixtures in the ILED CIRCLE-H Helideck Lighting System is only valid when the fixtures are used within the operating limits.

The operating limits are:

- The minimum and maximum ambient temperature is -30°C to +55°C.
- The system must be installed by suitably qualified personnel according to the installation instructions.
- Damage caused by incorrect installation, accidents or external influences, such as a lightning strike or harmonic distortion not within EN 55015 or IEC 61000-4-6 (2008), are not
  covered by the warranty.

The fixture's lighting level depends on the temperature and is, therefore, not covered by the warranty.

2.2 Life span

Switching the fixture with a semiconductor photoelectric cell or semiconductor relay has no consequences for the life span of the fixture. Allowing a fixture to 'flash' that is adjusted standard as a steady burning fixture, by means of a semiconductor photoelectric cell or semiconductor relay has, however, a negative effect on the life time. Different settings can be selected through the control system (see 7.2).

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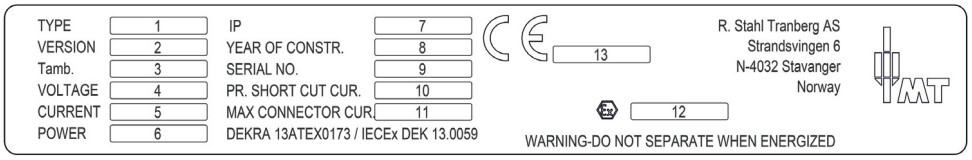
3. Type plate

The explosion-proof model has a type plate:



Pos. no.	Description
1. Type	ILED CIRCLE -H
2. Version	H-WH/GR SHORT
	H-WH/BL SHORT
	C-YELLOW
3. Ambient Temperature	-30 /+55 °C
4. Voltage	24VDC ±10%
5. Current	Max. 377mA
6. Power	Max. 8W
7. IP	66/67

Communication is based on RS485 protocol.

Pos. no.	Description
8. Year of Construction	
9. Serial Number	
10. Prospective Shortcut Current	Max. 300A
11. Max Connector Current	10A
12. Marking	Ex eb mb IIB T4 Gb
	Ex eb mb IIB T4 Gb
13. No Body Marking:	
0470 for production Norway	

WARNING

The power and current are the maximum values. The precise values can be found on the light fixture. Circle fixtures and H fixtures differ in light output.

4. Product Description

ILED CIRCLE-H Mk II Helideck Lighting System fixtures are designed for use in demanding Ex-hazardous environments.

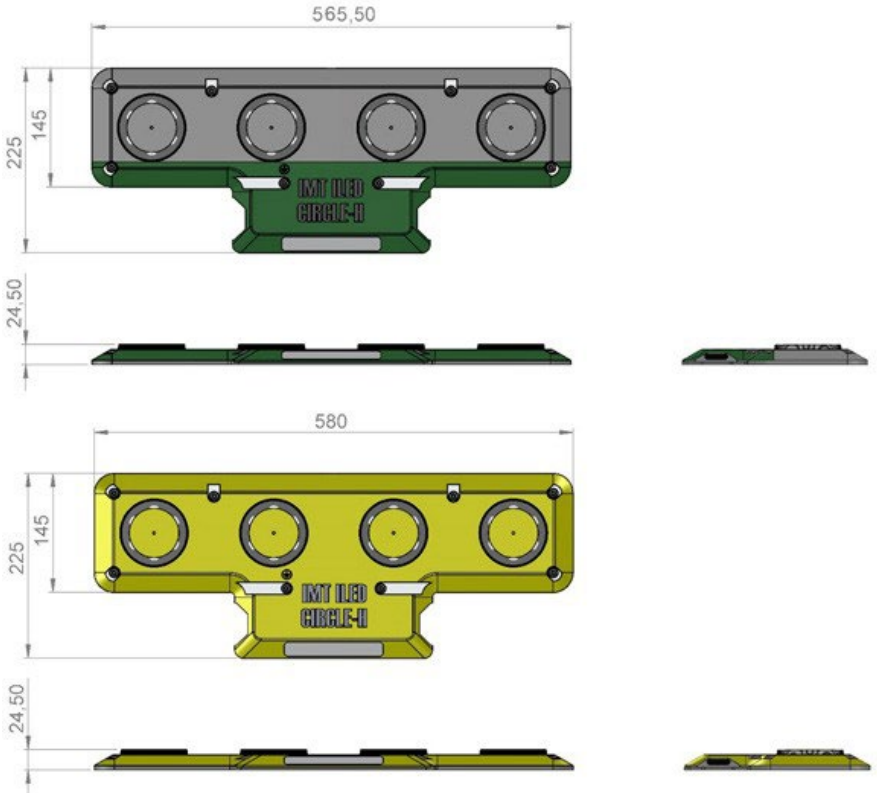
Features of the ILED Aquarius CIRCLE-H Helideck Lighting System:

- Sealed Unit Technology
- Vibration Proof
- Utilising ILED Technology
- Explosion-safe model ATEX category 2 suitable for use in Zone 1

5. Specifications

5.1 General	
Housing	Marine grade aluminium with anti-slip coating
Colour	Circle fitting - Sunflower Yellow
	H-fitting – Signal White and Holly Green
Lens	PC-UV resistant
Illumination color	Amber or Green according to ICAO Annex 14 Vol. 1 Appendix 1
Mechanical protection	IP67
Burning position	All orientations
(Re) ignition	Instant
Connection	Ex-e connectors delivered with ILED CIRCLE-H system

5.2 Dimensions



NOTE:

Only the short version of the H light fixture is used in the CIRCLE-H Mk II system. Dimensions are as shown above.

6. Installation

To ensure a correct installation of the CIRCLE-H Mk system please follow the supplied installation manual (TUM6677).

6.1 Installation notes

- Make sure you read the whole user manual before starting the installation and follow the installation manual during the installation.
- Check whether the fixture is to be installed in an environment that meets the ambient temperatures, gas group and temperature class. This data is included on the fixture type plate.

WARNING

Installation of a fixture in an environment that does not meet the specified conditions may result in a dangerous situation.

WARNING

Installation of a fixture in an environment that does not meet the specified ambient temperatures may have a negative effect on the useful life of the fixture.

- Always check the fixtures for mechanical damage before installation.
- Ensure that the surface where the fixtures are to be mounted on is flat.

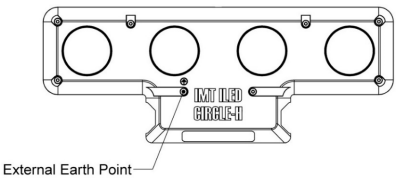
6.2 Earthing

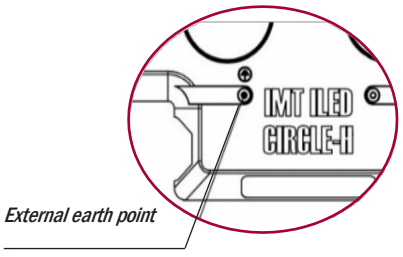
Functional earth specifications:

- The ILED CIRCLE-H Mk II Helideck Lighting System has a functional earth built within the connection system.
- The power and earth wire are related to the connector pins and have a size of 1.5mm2.
- The 6 pole socket-connector cable system which comes with the ILED CIRCLE-H Mk II Helideck Lighting System is rated for a maximum current of 10A DC at 55°C.
- The ILED CIRCLE-H Mk II Helideck Lighting System is split in to 2 groups, 1 group for the CIRCLE (combined to one ring) and 1 for the H (combined to one ring). The CIRCLE can have a maximum of 46 fixtures until the maximum for the CIRCLE groups is reached. When more are needed the CIRCLE will be split from 1 into 2 groups. This will result in 3 sections, 2 for the CIRCLE and 1 for the H. The split up in this case is only necessary for the power lines. The communication lines must remain 1 loop for the CIRCLE and 1 loop for the H.

Protective earth assembly specifications:

- In case the deck is made of a conductive metal (Steel – Aluminium), the protective earth can be directly applied through the mounting plate to the fixture by including a spring and lock or tooth washer made of stainless steel (A4 quality) or a nickel plated brass material.
- In this situation one of the mounting bolts in each mounting plate will be specially used as a protective earth connection as where the mounting plate will become the earth reference rail for the fixture.
- The protective earth connection of the fixture to the deck construction or to the protective earth ring can also be be installed on each fixture with a suitable wire and connection of at least 4mm2. The earth wire may be a bare copper wire, a litze or an insulated copper wire. This wire or litze must be placed at the indicated earth spot on the fixture. (See picture below)
- - The connection to the fixture shall have a spring and lock or tooth washer made from stainless steel (A4 quality) or nickel plated brass.
- - The wire of at least 4mm2 shall be connected to the earth bolt by using a cable lug.
- - Lock the lug of the wire at the earth position on the fixture with a locking washer to prevent it from turning or loosening.
- - This lug shall be made of tin or nickel plated copper and applied with a proper crimp tool.
- - The earth connection should be additionally protected against corrosion with a protective compound, (copper grease) as supplied.
- - The final connection to the central earth ring or environment earth shall be done with a proper bolt or crimp connection regarding the local earthing instructions.





6.3 Fixture instructions

- Ensure all the fixtures are correctly installed according to the installation manual.
- Make the proper connections to the junction box.
- Test if all the fixtures and the system is working.

WARNING

Do not energise cables or fixtures until all connectors are connected.

NOTE: Take care that the sealings on the plugs are not damaged during installation, this will result in a negative effect on the life time.

REPLACE damaged sealings with spares, always use the supplied lubricant (Loctite 8104)

WARNING

During assembly, make sure the fixture is not subjected to mechanical stress.

WARNING

The installation must be carried out in conformance with (NEN-EN) IEC 60079-14.

6.4 Connecting the Junction Box

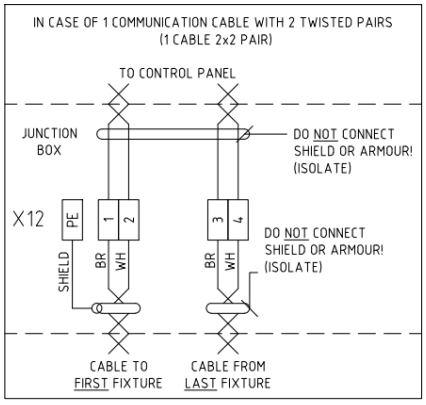
The connection cable from the fixture can be directly connected in the control panel. The cables have a standard length of 12,5m from the CIRCLE and 25m from the H. If the distance is larger than the length of the standard cable we recommend to use an extra junction box at the perimeter of the helideck.

Recommendation for the conductor size power cable from the junction box to the control panel, please see the table on this page.

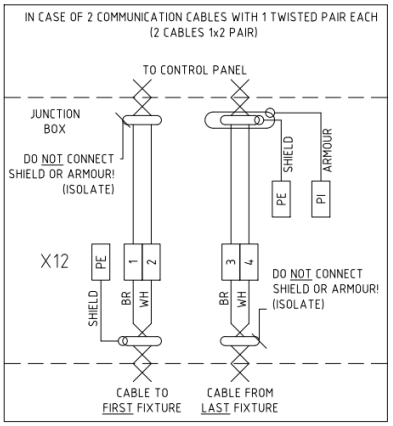
Conductor size power cable at full load	Maximum cable length
2,5mm²	20m
4mm²	35m
6mm²	50m
10mm²	100m

Recommendation for the communication cable:
YSTM 2x2x0.8mm², shielded, twisted, minimum 10 turns per meter.

Illustration of a junction box (as an example) and a label with wiring information:



LABEL ON THE INSIDE



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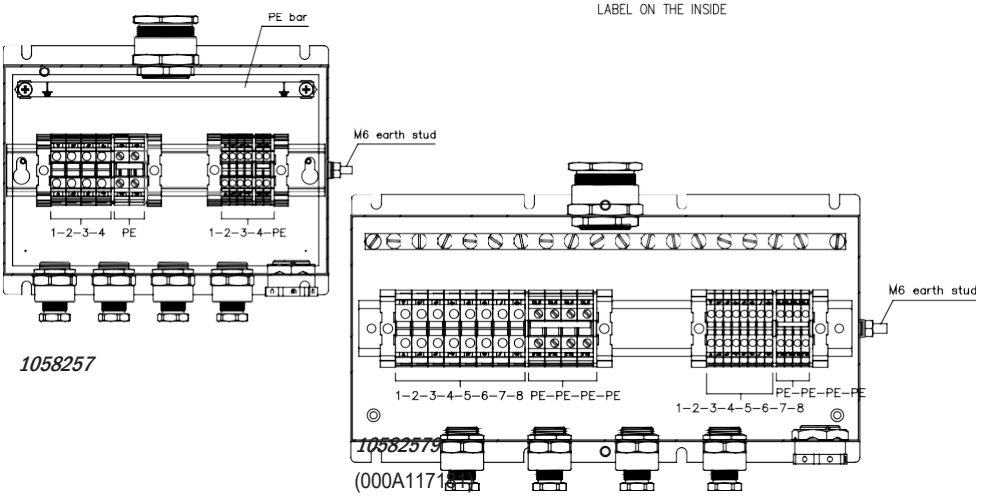

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7. Use

7.1 Commissioning

The fixtures can be switched on immediately after installation by switching on the supply voltage by a certified person. Check for communication failure after isolation and power / communication test.

7.2 Switches and controls

The fixture can be equipped with a communication connection, based on the RS485 protocol. It is possible to set several factory settings using special software, only by qualified personnel.

7.3 Insulation test

TRANBERG® IMT ILED CIRCLE-H Mk II Helideck Lighting System can be tested by means of an insulation test. For this test, apply a maximum of 500 VDC between earth and (+ and -).

WARNING

Never apply 500 VDC between the + and -.
During production, all fixtures have been subjected to a dielectric test (700 VDC for 60 seconds). The fixtures have also been subjected to a durability test.

8. Maintenance

The fixtures are manufactured using 'Sealed Unit Technology' and therefore cannot be opened. Because of this, maintenance, as defined in the IEC 60079- 17 standard, is not applicable and visual inspection only for correct functioning is sufficient.

However, it is recommended that, in order to maximize the lifetime of the systems, the connections are checked during the annual visual inspection. During this inspection particular attention should be paid to the proper fixing of the strain relief clip and the seals between the socket and plug. If a greenish salt is present this can indicate corrosion of the connector. This can occur when sealings are damaged, if the strain relief clip has come loose or was not properly fixed or if water was present during installation and got locked in.

In this case, the plug should be removed from its socket and thoroughly cleaned using Electrolube HFFR400DB or similar cleaner. Pressurized air can be used to remove debris from the connectors. If the plug after cleaning is in proper condition (similar to the picture 1 on this page), it can be re-used, otherwise the cable needs to be replaced.

In all cases, after removing the plug from its socket, seals have to be replaced, and a generous amount of Loctite 8104 has to be applied around the connector before it is reinserted in its socket. If Loctite is pushed out during insertion of the plug sufficient Loctite was applied. Additional seals and Loctite were provided with the system, in case more are needed please contact R. Stahl Tranberg.

Picture 1

Picture 2

Correctly installed plug after 2 years offshore.

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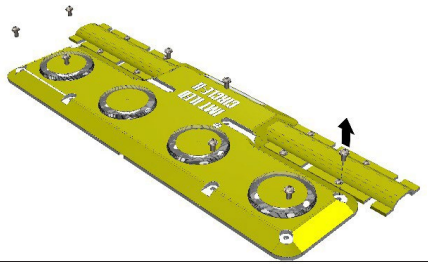
Helideck Lighting System for TD/PM Area MKII

IMPORTANT

READ BEFORE REPLACING FIXTURE

DO NOT SEPARATE WHEN ENERGIZED

1.



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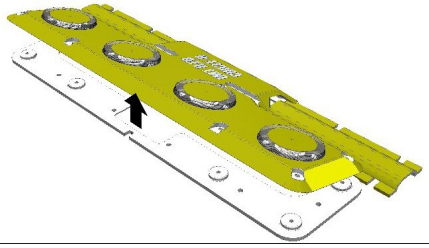

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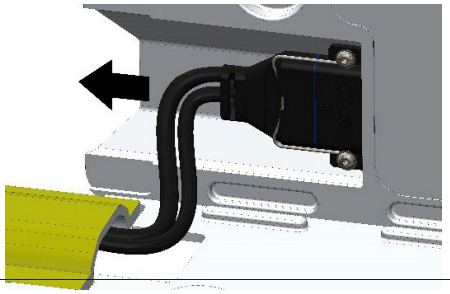

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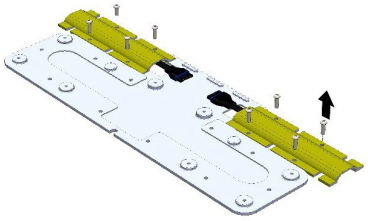

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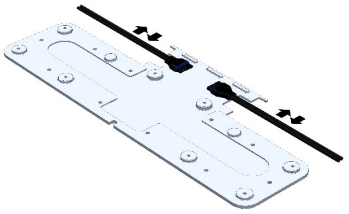

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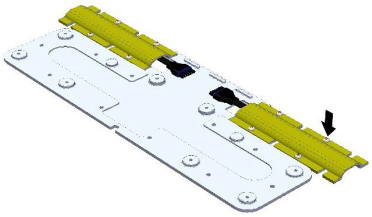

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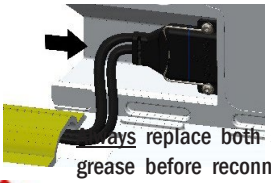
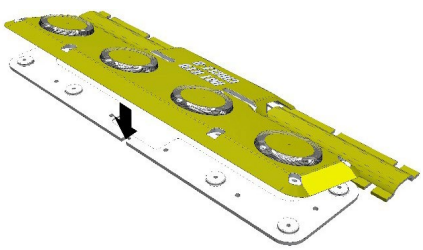


Always replace both sealing rings and apply Loctite grease before reconnecting the plug, place the red sealing in the neck and the blue on the nose of the plug.

8.



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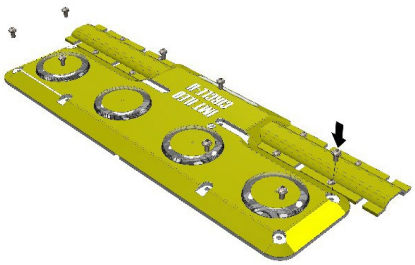

WARNING

- **Clean only with cloths or soft brushes that have been dampened with clean water.**
- **DO NOT use chemicals, solvents or caustic substances of any kind for cleaning purposes of fixtures and lenses.**
- **Prevent contact of chemicals, solvents and caustic substances of any kind on the fixtures and lenses.**
- **DO NOT use high pressure water jetting cleaning apparatus.**
- **Beware of high temperatures in the vicinity of fixtures, temperatures over 80°C cause a mechanical shut down - end of life - of fixtures.**

Remember:

IPx6 means 100l/min H2O out of a mains water hose with a nozzle of Ø 12.5 mm at a distance of 2.5 m.

9. Recycling

For recycling the fixture, agreements have been made with local agencies within the framework of the WEEE.

We refer you to your local partner (see chapter `Contact details'). The local partner will take care of the further processing.

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Subject to change without prior notice

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