

# LIGHTING

## TEF 2460 SIGNAL LIGHT

### ZONE 1, ZONE 2 & SAFE AREA

## USER MANUAL

Subject to change without prior notice TUM5917 REV. G 04.03.2025



### IMPORTANT

Read this instruction carefully before installing the product

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## SAFETY INSTRUCTIONS

The TEF 2460 signal light may be installed in Zone 1, 2 or safe area. The Equipment shall not be installed in Zone 0!

Note that changes made to the product and/or installation of components which do not conform to the manufacturer's specification, may be a safety violation. The manufacturer will in no circumstance be held responsible for such activity.

For your health and safety, always use safety gear suited for the task. Be certain to follow codes, regulations and/or specific procedures that are related to the installation.

## SPECIFIC CONDITIONS OF USE

To be connected to power supply with maximum allowable short-circuit current 1500A for 100-254V versions and maximum 50A for 24V versions.

## PRODUCT DESCRIPTION

This manual covers the TEF2460 signal light series as specified in certificates listed under "technical data".

The signal light emits steady light, main beam in horizontal direction and 360° coverage azimuth. Variants include single, dual and bi-colour signal light. Delivered in two different housings; standard version and low profile version. For connection to 24VDC or 100-254VAC power supply.

## TYPE IDENTIFICATION

Format:

TEF 2460 [1] [2] [3] [4] [5] where:

[1] =	A: Standard version, narrow beam B: Standard version, wide beam C: Low profile version, narrow beam
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[2] =	A: Single colour B: Dual colour C: Bi-colour
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[3] =	0: Not fitted
[4] =	1: White 2: Red 3: Yellow 4: Green 5: Blue 6: IR (Infrared)

[5] =	A: 24VDC max. 5W B: 100-254VAC max. 5W C: 24VDC max. 10W
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Note 1: [3] = Light colour #1, [4] = Light colour #2

Note 2: Dual colour: Two LED colours, both lit at same time. Bi-colour: Two LED colours, one colour lit at a time.

Note 3: [2] = Single colour : [5] = A or B only.

[2] = B (Dual colour):[5] = C only.

[2] = C (Bi- colour):[5] = A only.

Alternative type identification:

2460150	Low profile, narrow beam, single colour, green, 100-254VAC max. 5W
2460152	Low profile, narrow beam, single colour, green, 24VDC max. 5W
2460153	Low profile, narrow beam, bi-colour, green/red, 24VDC max. 5W
2460160	Standard version, narrow beam, single colour, red, 100-254VAC max. 5W
2460162	Standard version, narrow beam, single colour, red, 24VDC max. 5W
2460167	Standard version, narrow beam, dual colour, red+IR, 24VDC max. 10W
2460165	Standard version, wide beam, single colour, red, 100-254VAC max. 5W
2460166	Standard version, wide beam, single colour, red, 24VDC max. 5W
2460168	Standard version, wide beam, dual colour, red+IR, 24VDC max. 10W

## Helideck perimeter light:

Low profile versions, narrow beam, green LED colour complies with the following standards for perimeter light: ICAO Annex 14 Vol. II, CAA UK CAP437 and NORSOK C-004. I.e. type designation TEF2460C\*4\*\* and TEF2460C\*\*4\* and 246115\*

## Aviation obstruction light:

Narrow beam, red LED colour complies with the following standards for low intensity obstruction light: ICAO Annex 14 Vol. I (low intensity type B). I.e. type designation TEF2460A\*2\*\* and TEF2460A\*\*2\* and TEF2460C\*2\*\* and TEF2460C\*\*2\* and 2460160 and 2460162 and 2460167.

Wide beam, red LED colour complies with the following standards for low intensity obstruction light: ICAO Annex 14 Vol. I (low intensity type A) and CAA UK CAP437/CAP168 (low intensity group A). I.e. type designation TEF2460B\*2\*\* and TEF2460B\*\*2\* and 2460165 and 2460166 and 2460168.

Red+IR versions (dual colour) complies with CAA Norway BSL E 2-1:2014, Low Intensity Type A & B. Type A: Type designation TEF2460BB26C and 2460168. Type B: Type designation TEF2460AB26C and TEF2460CB26C and 2460167.

## APPLICATIONS

- Low intensity signal light, including but not limited to; helideck perimeter light, obstruction light, warning light, windsock light.
- For installation in EX Zone 1, Zone 2 and safe areas.

## APPROVALS

IECEX / ATEX Approved

IECEX / ATEX

Ex eb mb op is IIC T5 Gb

Ex eb mb op is IIC T4 Gb

According to:

EN 60079-0:2018, EN 60079-7:2015, EN 60079-18:2015,

EN 60079-28:2015,

IEC 60079-0:2017 Ed. 7.0, IEC 60079-7 Ed. 5.0, IEC 60079-18:2014

Ed. 4.0, IEC 60079-28:2015 Ed. 2.0

## INSTALLATION INSTRUCTIONS

Only qualified personnel are allowed to perform installation and maintenance tasks on this product.

The equipment is ready for installation when leaving the production facilities of R. Stahl Tranberg AS. Check the condition of the equipment and the contents when unpacking. Any damage done to the equipment during transportation is not the responsibility of R. Stahl Tranberg AS. If the content is not complete, file a claim to the supplier immediately.

### CONTENT IN BOX:

The product is fully assembled and ready for installation.

As standard the signal light is delivered equipped with two M25 stopping plugs and M25 drain plug. M25 cable gland (Ø 11-20.1mm) is included. 1 pcs for standard versions, 2 pcs for low profile versions.

Screws/ bolts for fixing of signal light to desired location not included.

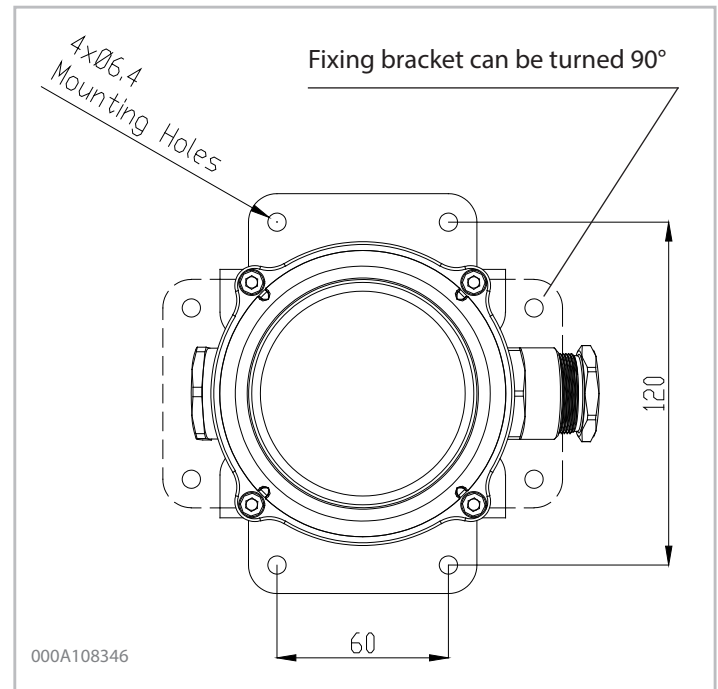
### TOOLS REQUIRED:

- Tool for fixing light unit to desired location. Screws/ bolts not included.
- 4 mm and 3mm hexagon key (Unbraco/Allen key). A long key, >80mm is recommended for ease of installation.
- Large flat screw driver, 6mm.
- 32mm wrench to disassemble the stopping plug and assemble the cable gland.
- Wrench for tightening the pressure nut on the cable gland(s).
- Tool(s) for stripping of power cable.

Do not use power tools!

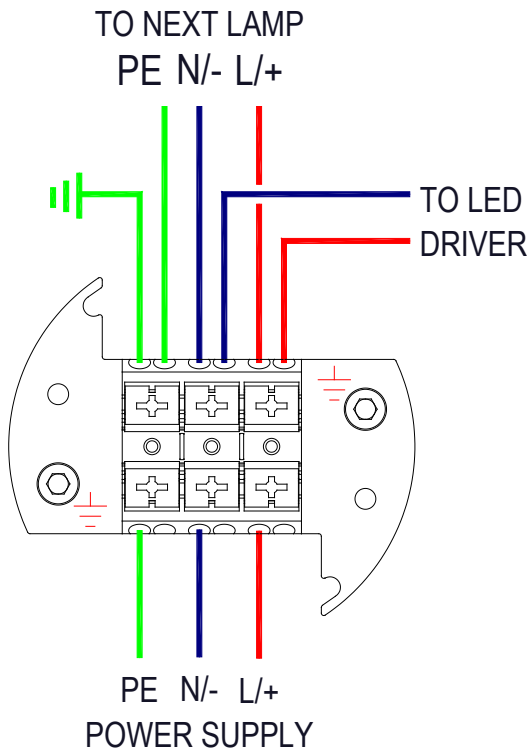
## INSTALLATION:

1. Fix signal light to desired location with four screws/ bolts, max. Ø6.4mm. For most applications light must be fixed to a horizontal surface to obtain correct light distribution. Fixing bracket can be turned 90°.



If signal light is mounted in any other direction than upright horizontal, the drain plug at the bottom of junction box must be replaced with a stopping plug.

2. Open light. 4x hex socket screws.
3. Install desired cable glands. Make sure to use IECEx / ATEX approved cable glands (IEC 60079-0:2007, IEC 60079-0:2009, IEC 60079-0:2012), approved for the specific cable diameter and type.
4. Install power cable(s).



5. Fix lamp top to junction box (bottom). 4x hex socket screws. Make sure no cables or the safety wire is jammed between the two parts. This will dramatically reduce the ingress protection, and impair the mode of protection regarding hazardous areas. When mounted, there shall be no noticeable gap between the top and the connection compartment. If a gap is present after the screws are tightened, lift the top, turn it 90° to help the cables and wires connecting the two parts to form a coil and try again.

Not following these instructions may lead to a risk of water ingress into the luminaire. The manufacturer assumes no responsibility when these guidelines are not followed. Any damage caused by the use of an incorrect combination of cable and cable gland is not the responsibility of R. Stahl Tranberg AS and is not covered by warranty.

When used in areas under NEC regulations, an earth continuity test shall be performed after installation.

Wire diameter: Solid or fine stranded conductor, with or without ferrule: 0.5-4mm<sup>2</sup> (AWG 20-12). Strip length: 10-11mm.

“Push-in” connector. The terminal block is of the “cage clamp” type, and there is no need for a tool to connect or disconnect the phase conductors. Nevertheless a large screwdriver, preferably flathead, may be of good help.

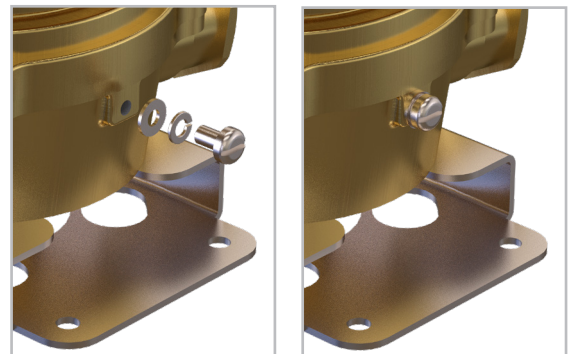
The power cables shall be clamped at a distance not more than 0.5 meters from the light.

The terminal block is marked L/N/PE for 100-254VAC versions and +/-/PE for 24VDC versions.

PE can be terminated at terminal block, internal PE screws (2x M5) and/or external PE screw (1x M5).

Bi-colour versions: Light colour is altered by alter polarity of power. Altering + and -.

Note: Terminal block can be detached from junction box for ease of termination. Loosen 2x hex socket screws and twist off termination insert. Must be reattached to junction box.



*Earth screw M5 with spring lock washer and washer.*

## COMMISSIONING AND TESTING

### COMMISSIONING:

Check overall condition of lamp. No damage to light transmission part. Light fixed properly at installation location. Light top secured properly, no visible gap between lamp top and junction box.

Check electrical connections and cable installation. Make sure that cable glands are properly sealed around cable.

Switch on power. Check that light is steady and no blinking or flickering.

When used in areas under NEC regulations, an earth continuity test shall be performed after installation.

Prior to putting into service an initial inspection according to IEC / EN 60079-14 2013 / 2014 Annex C shall be carried out by competent personnel as defined in Annex A.

### TESTING:

Apply power to signal light. Check that light output is steady. No blinking or flickering. See if all LED's are lighting. 6 LED's for single colour and bi-colour versions. 12 LED's for dual colour versions. Note: IR LED's are not visible to the human eye.

## STORAGE PRESERVATION

The product should be stored in the original box, in a dry location and within the operational temperature range.

## DISPOSAL

The TEF2460 shall be disposed of according to national regulations. The equipment may be returned to the manufacturer for recycling. Shipment is the customer's responsibility.

## MAINTENANCE INSTRUCTIONS

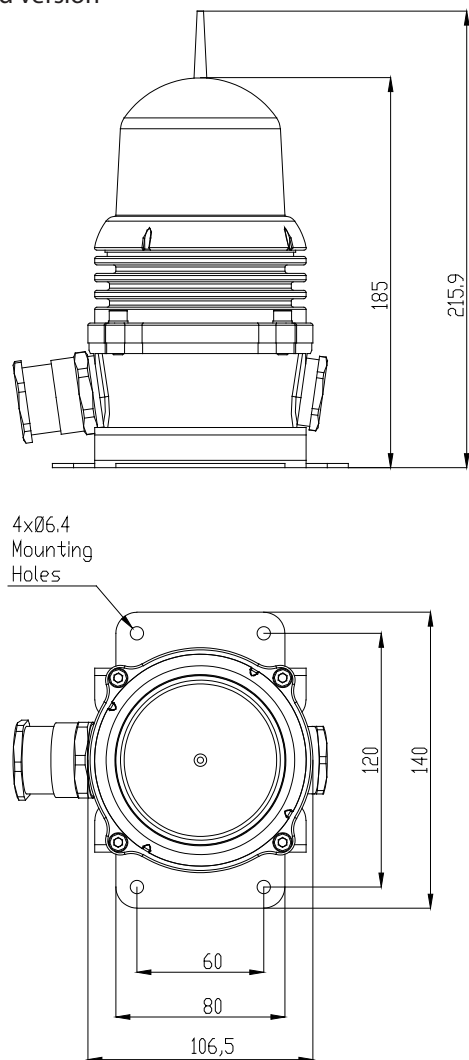
The signal light should be inspected according to Company routines. The manufacturer suggests regular check for water intrusion in the termination compartment. Due to the silicone potting compound used in this product, some silicone oil may condense on the inside of the glass. All electronics are sealed, so this will have no technical concern.

When cleaning, use only mild detergents. Alcohol or petroleum based products may damage the gaskets.

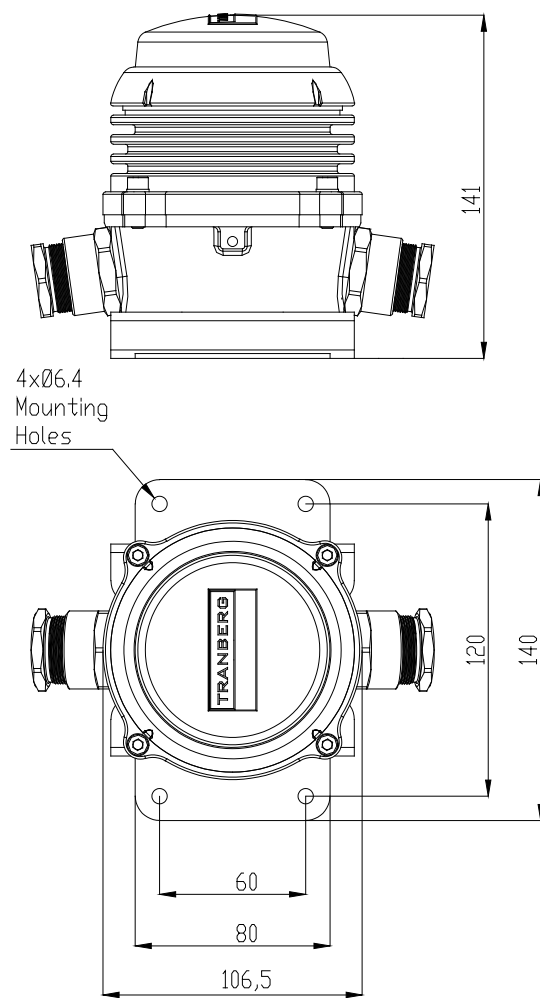
Inspection shall be carried out according to IEC / EN 60079-17 by competent personnel.

## DIMENSIONS

Standard version



Low profile version



## TECHNICAL DATA

Material:	Standard versions: Hot forged and machined brass, polycarbonate dome, stainless steel AISI 316L/EN 1.4404 fixing bracket. Low profile versions: Hot forged and machined brass, glass dome, stainless steel AISI 316L/EN 1.4404 fixing bracket.
Power:	Dual colour versions: <10W All other versions: <5W
Input voltage:	100-254V $\pm 10\%$ 45-65Hz or 24V DC $\pm 30\%$ (Depending on version)
Inrush current (typ.):	Cold start 12A (Twidth=15 $\mu$ s, measured at 50% Ipeak) at 230VAC
Permitted supply short-circuit current:	1500A @ 100-254V 50A @ 24VDC
Expected life time:	To be within specified light output for 50,000 working hours.
Weight:	Standard versions: 4.5kg. Low profile versions: 4.0kg
Overall dimensions:	Standard versions: 140 x 106 x 216 mm Low profile versions: 140 x 106 x 141 mm
Ingress protection:	Standard configuration: IP 66 according to IEC 60079-0:2012. Without drain plug: IP 66/67 according to IEC 60529:2001.
Cable entries:	2 pcs. M25x1.5 entries for IECEx/ATEX approved cable glands according to IEC 60079-0:2007, IEC 60079-0:2009 or IEC 60079-0:2012. Delivered with Tranberg cable gland and stopping plug.
Ex classification, ATEX/IECEx:	Single colour (TEF2460*A***) and bi-colour (TEF2460*C***) variants: Ex eb mb op is IIC T5 Gb, -55°C < Ta < +55°C Dual colour (TEF2460*B***) variants: Ex eb mb op is IIC T5 Gb, -55°C < Ta < +45°C Ex eb mb op is IIC T4 Gb, -55°C < Ta < +55°C Except dual colour red+IR variants (TEF2460*B26*) Ex eb mb op is IIC T5 Gb, -55°C < Ta < +55°C
Ex certificate No.:	IECEx Pre 14.0009, Presafe 14ATEX4571.
CE marking	CE 0470
Manufacturer:	R. Stahl Tranberg AS, Strandsvingen 6, 4032 Stavanger, Norway.

## SPARE PARTS

Description	Part no
Cable gland M25 Ø11-15mm / Ø15-21.1mm Ex Brass	622 25 02
Stopping plug M25 Ex Brass	650 25 00
Drain plug M25 IP66 Ex Brass	730 21 01
Glass dome for low profile versions	5048 0032
Polycarbonate dome for standard version	5044 0019
Terminal block	5028 0159
Junction box with drain plug, stopping plugs, terminal block and fixing bracket	5184
Adaptor bracket for TEF2430 fixing hole measurements	5633