

**Annexe to:** IECEx SIR 07.0020X  
**Applicant:** HDL105 Portable & Fixed Luminaires  
**Apparatus:** Hadar Lighting Limited



## Description of Apparatus

These Fluorescent Luminaires are suitable for portable lighting or for use in fixed installations, they are available as either a standard version (HDL105S) or an emergency version incorporating an integral battery (HDL105E). The luminaires comprise a clear, circular, polycarbonate lamp envelope with two polycarbonate end mouldings, these are all treated with a clear anti static coating to safely dissipate any static electricity. The end mouldings are secured to the tube via the internal gear tray/reflector, which is fabricated from steel or aluminium, two M6 screws and dowty washers are used to secure each end cap. A silicone gasket is fitted within a groove on each end cap, thus maintaining the IP66/67/68 (3 m for 30 minutes) ratings; note that when sockets are fitted, only IP66 is applicable. For portable luminaires only, a replaceable polyurethane moulding is attached to the end caps via 4 off M6 screws, which gives additional protection to the luminaire if dropped.

2xCFL Variants – These are suitable for use with 2 x 18, 36 or 55 W compact fluorescent lamps with 2G11 base, the gear tray/reflector contains one encapsulated ballast assembly complete with associated terminal blocks on one side and lamp supports on the other, this distributes light through 180°.

4xCFL Variants - These are suitable for use with 4 x 18, 36 or 5 5W compact fluorescent lamps with 2G11 base, each side of the gear tray/reflector contains one encapsulated ballast assembly complete with associated terminal blocks and lamp supports, this distributes light through 360°.

2xT8 Variants – These are suitable for use with 2 x 18, 36 or 55 W T8 fluorescent lamps, either bi pin (G13 cap) or single pin (Fa6 cap), the gear tray/reflector contains one encapsulated ballast assembly complete with associated terminal blocks on one side and bi pin or single pin lampholders on the other side, this distributes light through 180°. On emergency versions, an encapsulated inverter, fuse and Ex e battery are also present alongside the ballast.

The ballast incorporates circuit design with lamp end of life detection, which complies with the requirements of IEC 60079-7 Edition 4, Annex H.

Cable entry holes for suitably ATEX or IECEx certified cable glands are provided in the end caps to facilitate through wiring of the luminaires.

The supply terminal block is either a Wago 262 series terminal block, Wago 264 series terminal block, a Weidmuller Type BK4 terminal block or a Weidmuller Type MK6 terminal block, certified under IECEx PTB 04.0004U, IECEx PTB 04.0003U, IECEx SIR 05.0035U and IECEx SIR 05.0037U respectively. All terminal blocks are coded Ex e II.

Luminaires can be supplied with sockets fitted to the end caps with bolts, nuts and sealing washers and/or various lengths of cable with plugs fitted. The following optional certified plugs and sockets may be fitted:

Manufacturer	Type Ref.	Coded	Certificate Number
Cooper Crouse-Hinds GmbH	Type GHG 51. ....R....	Ex ed [ia] IIC T6 or T5	IECEX BKI 04.0002
Cooper Crouse-Hinds GmbH	Type GHG 57. ....R....	Ex de IIC T6 Ex tD A21 IP66 T52°C	IECEX BKI 06.0005X
R. Stahl	Type 8591/...-.-....	Ex de IIC T6 Ex ia/ib IIC T6 Ex tD A21 IP66 T52°C	IECEX BKI 07.0001X
ATX	Type PCX	Ex ed IIC T6 or T5 Ex tD A21 IP66 T68°C	IECEc LCI 04.0014

The standard and emergency luminaires are designed for use with an electrical supply of either 110 V to 254 V a.c. 50/60 Hz, 110 V to 130 V a.c. 50/60 Hz or 220 to 254 V 50/60 Hz a.c. 50/60 Hz. The standard luminaire is also suitable for used with d.c. voltages.

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## Options

- i. The Portable versions of the luminaires may be transported whilst energised. They are fitted with polyurethane mouldings to the end caps with lamp ratings:
  - 4 or 2 x 18 W Compact Fluorescent Lamps
  - 4 or 2 x 36 W Compact Fluorescent Lamps
  - 4 or 2 x 55 W Compact Fluorescent Lamps
- ii. Fixed installation luminaires, lamps ratings:
  - 4 or 2 x 18 W Compact Fluorescent Lamps
  - 4 or 2 x 36 W Compact Fluorescent Lamps
  - 4 or 2 x 55 W Compact Fluorescent Lamps
  - 2 x 18 W T8 Lamps Standard & Emergency Units
  - 2 x 36 W T8 Lamps Standard & Emergency Units
  - 2 x 55 W T8 Lamps Standard & Emergency Units
- iii. The HDL105 T8 lamp variants may be used as an emergency luminaires when fitted with a battery pack.
- iv. The HDL105 luminaires may be mounted in any attitude and are suitable for use with Unistrut or equivalent accessories. Alternatively, when used as a portable luminaire, a carrying strap can be fitted.
- v. The HDL105 luminaires are suitable for use with either T8 bi-pin or single pin lamps or compact fluorescent lamps.
- vi. The HDL105 luminaire may be fitted with certified plugs and sockets to the end caps.

## Markings applicable to particular models

<b>4 or 2 x 55 W, 36 W &amp; 18 W CFL Standard Units:</b>	Ex emb II T3 (Ta = -20°C to +35°C) Ex embd IIC T3 (Ta = -20°C to +35°C), with plugs & sockets Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C
<b>2 x 55 W, 2 x 36 W &amp; 2 x 18 W T8 Standard Units:</b>	Ex emb II T3 (Ta = -20°C to +53°C) Ex embd IIC T3 (Ta = -20°C to +53°C), with plugs & sockets Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C
<b>2 x 55 W, 2 x 36 W &amp; 2 x 18 W T8 Emergency Units:</b>	Ex emb II T4 (Ta = -15°C to +53°C) Ex embd IIC T4 (Ta = -20°C to +53°C) – with plugs & sockets Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

The manufacture shall note the following conditions of manufacture:

- 1 The following routine tests shall be performed on each product manufactured:
  - i The encapsulated parts of the apparatus shall be subjected to a visual inspection. No visible damage of the compound shall be evident, such as cracks, exposure of the encapsulated parts, flaking, impermissible shrinkage, discoloration, swelling decomposition or softening, as required by EN 60079-18:2004 Clause 7.1.
  - ii An electric strength test of  $2U + 1000$  V (where U is the supply voltage) with a minimum of 1500 V ac, shall be applied between circuit and casing for at least 1 minute as required by EN 60079-7:2003 Clause 6.1. No breakdown shall occur.
- 2 The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.

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