

TECHNICAL DOCUMENTATION FILE

for EPREL registration — Annex VI compliance part

Variant: 24 V / 3000 K (warm white, SELV)

SKU: SIM-GA-HTL24-W

Date: 5 May 2026 (05.05.2026)

Regulation (EU) 2019/2015 (Energy labelling of light sources)

Regulation (EU) 2019/2020 (Ecodesign requirements for light sources)

Trade name	Hug Tree Lamp / Lampa LED do podświetlania drzew
Brand	SIM
EPREL Model identifier	SIM-GA-HTL24-W
Factory model	HG-BSD-12W-24V
Variant	24 V / 3000 K (warm white, SELV)
Supplier (EU)	SIM Sp. z o.o., 46-300 Olesno, Poland — NIP: PL5761596581
Manufacturer	Zhongshan Huiguo Lighting Technology Co., Ltd. — Henglan, Zhongshan, Guangdong, China
Power supply	24 V DC, DC (no frequency)
Class of protection	Class III (SELV — Safety Extra-Low Voltage)
Ingress protection	IP65
EPREL category	Standard light source (DLS-NMLS — non-mains)
Document version / Date	Rev. 1.0 — 5 May 2026 (05.05.2026)

1. General description

Product type and intended use

The product is a fixed general-purpose outdoor decorative LED luminaire, specifically designed for the illumination of trees and garden vegetation. The luminaire integrates a non-replaceable LED light source into a sealed weatherproof aluminium enclosure (IP65) with polycarbonate lenses. The curved housing shape is designed to wrap around tree trunks.

Construction overview

Parameter	Value
Housing	Die-cast aluminium with powder-coating, curved profile (255 × 75 × 42 mm)
Front cover	Tempered glass with PC mask, 10 LED apertures
LED light source	10× LED chips, integrated on aluminium PCB
Power supply	24 V DC, DC (no frequency)
Power consumption	12 W (rated)
Class of protection	Class III (SELV — Safety Extra-Low Voltage)
Ingress protection	IP65
Connector	M12 weatherproof, IP65
Earthing	Protective earth bonded to enclosure ($R = 0.032 \Omega$)

Light source classification (Regulation (EU) 2019/2015)

Lighting technology: LED. Directional (DLS) with 20° beam angle. Non-mains operated (NMLS, 24 V DC SELV). Non-tuneable colour. No envelope. Not high-luminance. No anti-glare shield. Non-dimmable. Non-replaceable light source (sealed module).

2. Reference to harmonised standards

The following harmonised standards have been applied for the purposes of compliance assessment:

Standard reference	Title / Scope of compliance
EN IEC 60598-1:2021 + A11:2022	Luminaires — General requirements and tests
EN IEC 60598-2-1:2021	Luminaires — Fixed general purpose luminaires
EN IEC 62031:2020 + A11:2021	LED modules for general lighting — Safety
EN 62471:2008	Photobiological safety — Result: Exempt Group
IEC/TR 62778:2014	Blue light hazard assessment — Result: RG1
EN IEC 62493:2015 + A1:2022	Assessment of EMF exposure
EN 50525-2-21	Electric cables (supply cord)
IEC 62717	LED modules — Performance
EN 62612	Self-ballasted LED lamps — Performance

Test reports applicable to this variant:

Scope	Report No.	Laboratory
LVD (Safety)	FTS25ER-02805S — GB 7000.1-2015 / GB 7000.201-2008 (Chinese standards). EN IEC 60598-1 EQUIVALENT VERSION REQUIRED FOR EU CE MARKING.	Guangdong Future Test Services Co., Ltd.
Ecodesign / Energy labelling	MISSING — variant-specific ERP test required (FTM = 1.089 for NMLS)	Guangdong Future Test Services Co., Ltd.
RoHS 2011/65/EU	AZT251031076C-E0 (same materials) ✓	Shenzhen AZT Technology Co., Ltd.
IP65 ingress protection	Covered in main LVD report (FTS25ER-02805S §9) ✓	Guangdong Future Test Services Co., Ltd.

3. Specific precautions

Installation precautions

- Class I luminaire — protective earth (PE) conductor **MUST** be connected to the building installation earth. Failure to connect PE creates an electric shock hazard.
- Suitable for direct mounting on normally flammable surfaces (verified by glow-wire test at 650 °C, IEC 60598-1 §13.3.2).
- IP65 ingress protection rating — suitable for outdoor use, including exposure to rain and dust. Not designed for permanent immersion in water.
- Mounting position: any orientation permitted; tested in normal use orientation.

Use precautions

- Light source is non-replaceable — at end of life, the entire luminaire must be disposed of as WEEE (Directive 2012/19/EU).
- Photobiological safety: Risk Group RG1 (low risk) according to IEC/TR 62778:2014. Do not stare directly into the operating LED at distances less than 200 mm.
- Operating ambient temperature $t_a = 25\text{ °C}$ (standard test condition).
- Not dimmable — do not connect to dimmer switches.
- Mercury content: 0 mg (LED technology — no mercury).
- Power supply: requires external 24 V DC SELV power supply. The external PSU must itself be CE-marked and certified to relevant LVD requirements.

Maintenance precautions

- Disconnect from mains before any maintenance or cleaning.
- Clean with a dry or slightly damp cloth only.
- In case of damage to the housing, supply cord, or front glass: immediately disconnect from supply; do not attempt repair (sealed unit). Replace the entire luminaire.
- Do not open the housing — the unit is factory-sealed and any opening will void conformity.

4. Testing conditions

All measurements were carried out under the following standardised conditions, in accordance with Annex IV of Regulation (EU) 2019/2020 and the harmonised measurement standards listed in Section 2.

Parameter	Value / Condition
Test laboratory (energy/photometry)	Guangdong Future Test Services Co., Ltd. (ISO/IEC 17025)
Test laboratory (RoHS)	Shenzhen AZT Technology Co., Ltd. (CNAS L10844)
Supply voltage (rated)	24 V DC (SELV input)
Supply voltage (overvoltage test)	26.4 V DC ($1.1 \times U_n$)
Ambient temperature (t_a)	25 °C
Relative humidity (humidity test)	93 % RH for 48 h at 25 °C
Mounting position	Normal use orientation (horizontal, lens facing observer)
Stabilisation time	≥ 30 minutes prior to photometric measurement
Number of samples tested	10 (for energy performance), 1 (for safety)
Endurance test duration	240 h at 26.4 V DC, $t_a = 35$ °C

5. Calculations

5.1 Energy efficiency class determination

Energy class assigned per Annex II of Regulation (EU) 2019/2015, on the basis of total mains efficacy η_{TM} :

$$\eta_{TM} = (\Phi_{use} / P_{on}) \times FTM \quad [lm/W]$$

Symbol	Value	Source / Notes
Φ_{use} — useful luminous flux	850 lm	Estimated — pending variant-specific test
P_{on} — on-mode power	12 W	Estimated
FTM — type factor	1.089	DLS-NMLS — Table 2, Annex II of (EU) 2019/2015

$$\eta_{TM} = (850 / 12) \times 1.089 = 70.83 \times 1.089 = 77.1 \text{ lm/W}$$

Result: $\eta_{TM} = 77.1 \text{ lm/W} < 85 \text{ lm/W}$ threshold for class F → Energy efficiency class G

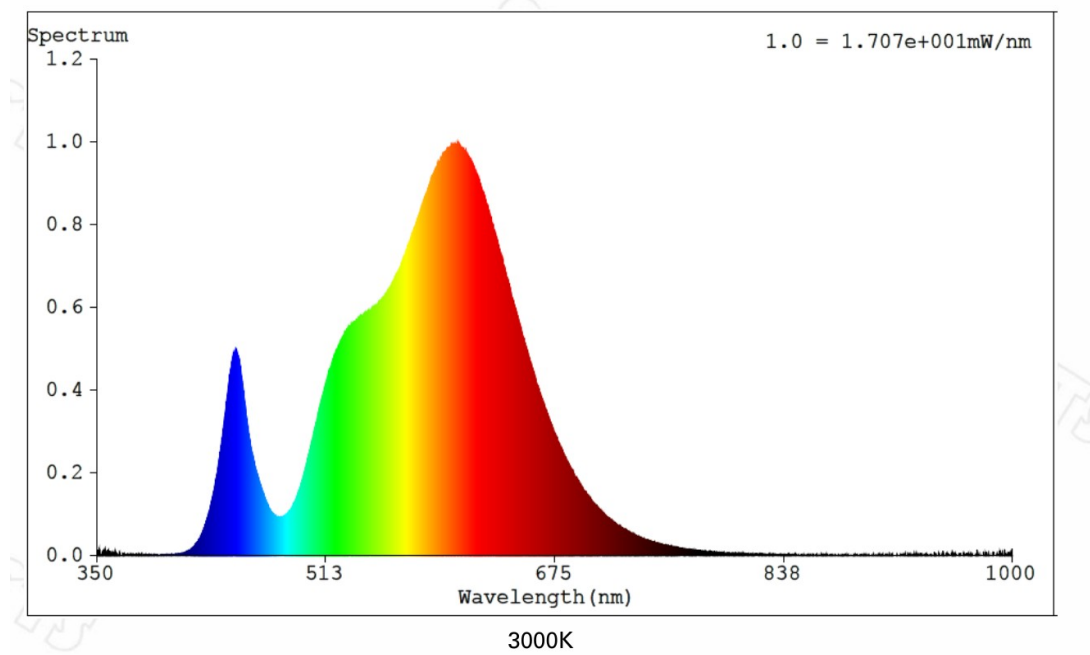
5.2 Verification of maximum allowed power $P_{on,max}$ (per (EU) 2019/2020 Annex II)

$$P_{on,max} = C \times (L + \Phi_{use} / (F \times \eta)) \times R \quad [W]$$

$P_{on,max} = 1.23 \times (1.5 + 850 / (0.85 \times 120)) \times 1.0 = 12.1 \text{ W}$ → Verification: $P_{on} (12 \text{ W}) \leq P_{on,max} (12.1 \text{ W})$ ✓ COMPLIANT

Annex A — Spectral Power Distribution

Spectral power distribution measured in the range 250–800 nm at full-load operation (CCT 3000 K). Source: Test report MISSING — variant-specific ERP test required.



Chromaticity coordinates: $x = 0.440$ (estimated, same LED), $y = 0.403$ (estimated, same LED) (CIE 1931).

Declaration

This technical documentation file is prepared on the sole responsibility of SIM Sp. z o.o. (Olesno, Poland — NIP: PL5761596581) as the authorised representative and importer placing the product on the European Union market. The information contained herein is true and complete to the best of the importer's knowledge, and is based on test reports issued by accredited laboratories and on supplementary information provided by the manufacturer. The file is made available to market surveillance authorities upon request, in accordance with Article 4 of Regulation (EU) 2017/1369 and Article 7 of Regulation (EU) 2019/2020.

Place	Olesno, Poland
Date	05.05.2026
Name	Maciej Janusz
Position	CEO, SIM Sp. z o.o.
Signature	_____



STATUS: TEMPORARY / TO BE FINALISED

This technical documentation file is issued in template form and contains placeholder/estimated values for parameters that have not yet been independently verified by accredited laboratory testing. The following actions are required before EPREL publication:

- 1. CRITICAL: Existing LVD test report FTS25ER-02805S is issued under Chinese GB standards, NOT EN IEC. For legal CE marking and EU EPREL registration, an equivalent test report under EN IEC 60598-1:2020 + EN IEC 60598-2-1:2021 is required. The same laboratory (Guangdong Future Test Services) can typically re-issue the report under EN/IEC standards based on the same test data.*
- 2. Class III construction (SELV via 24 V DC) — requires external SELV power supply that is itself separately CE-certified.*
- 3. FTM factor = 1.089 (DLS-NMLS) instead of 1.176 (DLS-MLS) — energy class calculation differs from 230V variants.*
- 4. Photometric values are estimated as identical to the 230V variant (same LED chips and optics) — variant-specific ERP test required for declaration.*

Estimated and placeholder values are clearly marked in the photometric parameters table above. Each estimate is based on either: (a) parameters of a related variant tested under accredited conditions, or (b) typical industry values for the LED technology used.