

HungaroFLASH

HungaroFLASH USER MANUAL TLIGHT V5

THE FLASH PRODUCER



USER MANUAL

HungaroFLASH TLIGHT 85000W

DMX / RDM / CRMX Fixtures

and LEGACY fixtures

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1. IMPORTANT INFORMATION

SAFETY INFORMATION

The **HungaroFLASH TLIGHT 85000W Pro** is a professional xenon-strobe luminaire intended for use by qualified personnel only.

Improper handling can result in electric shock, fire, ultraviolet exposure, or mechanical injury.

Stroboscopic effects may also trigger epileptic seizures in photosensitive individuals.

Read this manual completely before installation or operation. Observe all warnings printed on the fixture and follow the safety instructions below.

Prevent Electrical Shock

- Disconnect the fixture from the AC supply and allow internal capacitors to discharge for at least 5 minutes before any servicing.
 - The **Front GRID with GLASS** (secured by six latches) must remain fully closed during operation. Never power the fixture with this assembly open, removed, or damaged.
 - The **Electronic Box coverplate** at the rear (secured by eight screws) should be loosened only when replacing the main fuse or performing authorized service. There are no user-serviceable parts inside.
 - Ensure the fixture is properly earthed (grounded) before applying power.
 - Use only an AC power source compliant with local electrical codes and equipped with overload and ground-fault protection.
 - Protection rating: **IP 34** (dust-protected and resistant to water spray).
 - Replace the xenon lamp strictly as described in this manual; lamp work must be performed by qualified service personnel.
 - The TLIGHT incorporates an internal circuit breaker. If tripped, lift the **Circuit-Breaker Access Window** on the rear panel to reset it before operation.
 - If liquid or foreign material enters the housing, disconnect power immediately and contact HungaroFLASH service.
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Avoid Radiation, Burns, and Fire

- Never operate the fixture with the **Front GRID with GLASS** open, unlatched, missing, or damaged.
 - Do not look directly into the light output or exposed xenon lamp while energized.
 - Allow a minimum 20 minutes of cooling before releasing latches or handling any optical component.
 - Never bypass protective fuses; always replace with the specified type and rating.
 - Verify that all power cables and extensions are rated for the total load current.
 - Keep combustible materials at least 2 meters ($\approx$ 80 inches) from the fixture and maintain unobstructed ventilation space.
 - Keep all fan inlets and outlets free from obstruction to ensure proper airflow and internal cooling.
 - Do not place filters, gels, or any materials directly against the front glass.
 - External surfaces may reach 120 °C (248 °F) during operation; allow complete cooling before handling.
 - Inspect and tighten all power connections periodically. Loose or undersized conductors may overheat and cause fire.
-

Prevent Mechanical Shock and Structural Failure

- When mounting overhead, ensure the supporting structure can safely carry at least ten times the combined weight of all attached devices.
 - Confirm that all rigging hardware, covers, and latches are secure, and always install an approved secondary safety cable.
 - Restrict access beneath the work area during installation or removal.
-

Prevent Seizures and Discomfort

- Avoid positioning fixtures near stairways or areas where sudden flashing may endanger personnel.
- Provide clear advance notice wherever strobe lighting is in use.
- Limit extended operation between 10 and 20 Hz, frequencies most likely to trigger photosensitive reactions.

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2. PREFACE

The **HungaroFLASH TLIGHT** is a high-energy xenon strobe system developed for professional film, television, and live-event applications where extreme light output, reliability, and precise control are required.

Designed for the most demanding production environments, it delivers an instantaneous, full-spectrum flash capable of simulating lightning, explosions, or daylight-intensity effects with perfect repeatability.



This fixture delivers a peak electrical load of approximately **85 000 W** during full-power operation — a level of energy that demands proper infrastructure, safety awareness, and professional handling. Clients and technicians must understand that operating a single TLIGHT unit is not comparable to ordinary lighting equipment.

For reference, a typical household room heater draws about **2.5 kW**, whereas one TLIGHT can momentarily draw more than thirty times that amount.

Incorrect installation, insufficient cabling, or inadequate power distribution may result in serious electrical hazards.

Each TLIGHT unit is assembled, tested, and calibrated under controlled factory conditions to ensure consistent performance and operational safety.

Before use, read this manual thoroughly and verify that all installation, grounding, and cabling requirements are met. Always ensure unrestricted airflow around the cooling fans and keep all ventilation openings free from obstruction.

The TLIGHT uses a **long-arc xenon discharge lamp**, precision reflector system, and active air-cooling for continuous high-power duty cycles.

All major assemblies — including the **Front GRID with GLASS, Electronic Box coverplate**, and fan systems — are engineered for professional outdoor operation (**IP 34**).

For service information, spare parts, and technical updates, visit

 www.hungaroflash.com or contact **HungaroFLASH Bt Technical Support**.



3. OVERVIEW

The **HungaroFLASH TLIGHT** is a professional, high-intensity xenon strobe luminaire engineered for maximum visual impact in film, television, and live-performance environments.

Its optical and electrical design delivers instant, full-spectrum light output unmatched by conventional LED or flash systems.

At the core of the TLIGHT is an **85 kW long-arc xenon tube** coupled to a precision **parabolic reflector**.

This combination produces an extremely bright, uniform beam suitable for both atmospheric strobe effects and continuous-light scenes requiring short-duration, high-energy bursts.

The fixture operates from a **190–250 V AC** mains supply and incorporates its own **power-line storage system** and **internal circuit-breaker** for protection.

Every discharge cycle draws several hundred amperes momentarily; therefore, all electrical connections and cables must be correctly dimensioned.

The unit's **Front GRID with GLASS** protects the lamp and optics while providing efficient airflow for thermal management.

A forced-air cooling system maintains a safe operating temperature through multiple fan inlets and outlets — these must remain completely free of obstruction during use.

Constructed from stainless steel and high-temperature components, the TLIGHT is designed for outdoor or studio operation with an **IP 34** protection rating.

All mechanical parts are reinforced to withstand transport vibration and continuous professional use.

Integrated control options include:

- **DMX-512 protocol** for standard entertainment-industry control systems.
- **HF protocol** for compatibility with legacy Dataflash-type controllers.
- **Local menu interface** for quick access to operating modes, test sequences, and service settings.

The TLIGHT delivers reliable, repeatable performance under extreme electrical and environmental conditions, making it one of the most powerful and durable strobe fixtures in the industry.

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Figure 3.1 – Front view of the TLIGHT showing main control and service components.

The main control and service components are illustrated in **Figure 3.1** below.

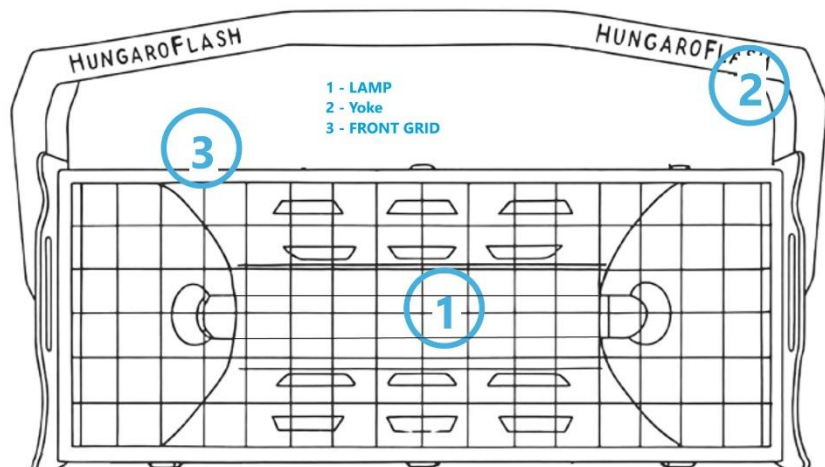
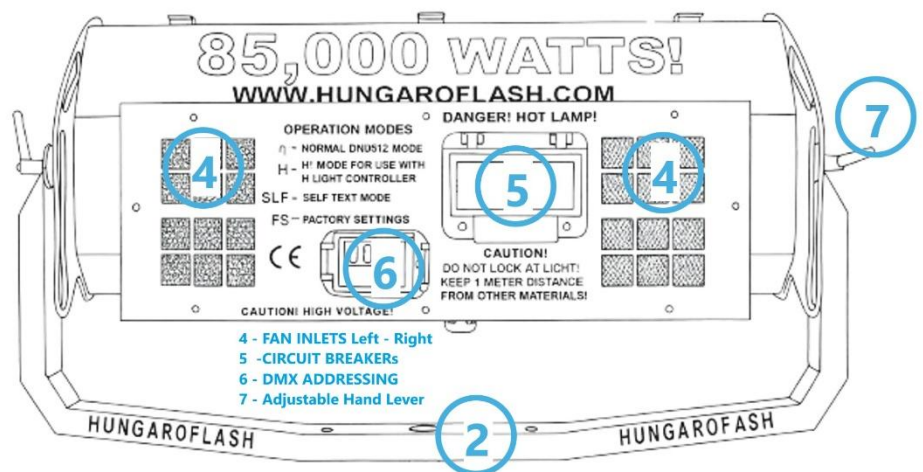


Figure 3.2 – Rear view of the TLIGHT showing main control and service components.

The main control and service components are illustrated in **Figure 3.1** below.



4. INSTALLATION AND SETUP

4.1 Unpacking

Every **HungaroFLASH TLIGHT** fixture is factory-tested and packed with care to ensure safe transport.

Before installation, inspect the shipment for visible damage and confirm that all items are present according to the delivery note.

The TLIGHT can be supplied in two packaging versions, depending on the order configuration:

1. Standard Carton Package

- Heavy-duty, multi-layer carton with precision-cut foam inserts.
- Recommended for direct shipments or single installations.
- Provides effective shock protection for one complete fixture set.

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2. Professional Flight Case Package (optional accessory)

- Rugged, touring-grade case with reinforced edges and internal foam compartments.
 - Designed for repeated transport and long-term professional use.
 - Holds the fixture, lamp tube, power and data cables, and accessory set in individually protected sections.
-

Standard contents (typical shipment):

- TLIGHT Main Unit × 1
- Xenon Lamp – packed separately in a protective tube × 1
- Mounting Yoke with handle bolts × 1
- User Manual × 1 electronic version

Retain all packing materials and inserts for future transport or service return.

When preparing the unit for shipping, always remove the xenon lamp and place it in its original protective tube before packing.

Operating or transporting the fixture with the lamp installed may cause damage to the lamp, reflector, or electronic assemblies.

If the packaging or fixture shows any sign of damage, **do not connect to power**. Notify your carrier and HungaroFLASH representative immediately.

Possible Included Accessories (if ordered)

Depending on client specification, one or more of the following optional accessories may be included in the shipment:

(Insert product photos in this section – one image per accessory group.)

- TLIGHT Flight Case – touring version
- Power Cable – 1 m length, 63A plug (region-specific)
- Replacement Xenon Lamp in Protective Tube
- DMX Cable – 10 m, 5-pin XLR male/female

Note:

Accessory configurations may vary by region and order type.

Optional items are also listed in **Section 10 – Accessories and Service Parts** for reference and re-ordering.

4.2 Unpacking the Lamp

The xenon lamp is shipped separately from the TLIGHT fixture to prevent mechanical stress and glass damage during transport.

Depending on the delivery configuration, the lamp is packed in one of two ways:

1. Standard Carton Shipment

- Each xenon lamp is individually packed in a protective bubble-wrapped tube inside a small separate carton box.
- The tube and carton provide full protection against vibration discharge.
- This configuration is used for single-fixture deliveries or long-distance freight.

2. Flight Case Shipment (option)

- When shipped inside a professional TLIGHT Flight Case, the lamp is held securely in a dedicated foam-molded compartment designed to accept up to two lamps.
- The foam cavity isolates the lamp from shock and temperature changes during transport.
- Always return the lamp to this compartment when the unit is moved or stored.

Safety Warning:

The xenon lamp operates under high internal pressure. Handle only when cold and always use clean cotton or nitrile gloves.

Never touch the quartz envelope directly; fingerprints or grease cause hot spots and can lead to explosion on ignition.

To unpack the lamp safely:

1. Place the TLIGHT fixture on a stable, flat surface.
2. Remove the lamp transport tube from the carton box or flight-case compartment.
3. Take off the tube's end cap carefully.
4. Slide the lamp out together with its bubble wrap; do not pull by the glass body.
5. Unroll the bubble wrap slowly, handling the lamp only by its metal coil terminals.
6. Inspect visually for any cracks, chips, or broken leads.
If damage is observed, do not install or power the fixture — contact HungaroFLASH Service for replacement.

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Handling Notes:

- Always keep the original protective tube and packaging for re-transport.
- Avoid bending or twisting the terminals.
- Rest the lamp only on soft foam or the supplied support; never on metal surfaces.
- Protect from moisture and sudden temperature change.
- Install or remove the lamp only after disconnecting AC power and allowing internal capacitors to discharge for ≥ 5 minutes.

Support Video – Lamp Unpacking

A detailed demonstration of the lamp-unpacking procedure is available on the HungaroFLASH official website.

Watch online: www.hungaroflash.com/support/tlight-unpacking

4.3 Lamp Installation (Exchange Procedure)

The **HungaroFLASH TLIGHT** uses a long-arc xenon lamp. Correct installation is critical for safety and performance.

Perform this procedure **only when the fixture is fully disconnected from power** and the lamp has cooled. **No tools are required** — use clean gloves only.

Safety prerequisites

- Switch **OFF** the main power and the rear circuit breaker; **unplug** the AC cable.
 - Wait **≥ 5 minutes** for internal capacitors to discharge.
 - Wear **clean cotton or nitrile gloves**; never touch the quartz envelope.
-

Required setup

- Stable, dust-free work surface
 - Clean gloves (cotton or nitrile)
 - Lint-free alcohol wipe (for fingerprints, if needed)
-

Step-by-step procedure

1. Prepare the fixture

Place the TLIGHT on a stable surface with the **front facing upward** to access the optical assembly.



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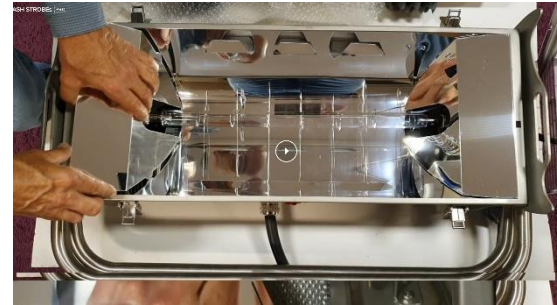
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2. Open the optical assembly

Release the **six latches** and remove the **Front GRID with GLASS**. Set it aside on a clean, soft surface.

3. Remove reflector side panels ("side mirrors")

Gently lift out the **two reflector side panels** using their metal positioning ears to expose the lamp holders.



4. Identify lamp orientation

- One lamp end has **two leads**: the main high-current lead + the thin transparent **trigger** lead.
- The opposite end has **one return lead**.
Decide orientation before insertion.



5. Seat the spring-loaded holder

Insert the **single-lead (return) end** into the **spring-loaded socket** until it is fully seated and stable.



6. Connect the main lead

Insert the main high-current lead into its socket. Tighten the **finger screw** firmly **by hand** (no tools).

7. Connect the trigger wire

Press the top of the opposite socket to open the **trigger-wire hole**. Insert the thin transparent trigger wire **fully** to ensure solid contact. Tighten the finger screw.

8. Route wiring correctly

Guide all leads so that **no wire touches metal edges** or sharp hardware. Keep the **trigger wire** well away from any metal parts to prevent unintended discharge. When guiding the leads, trigger wire please count with the „side mirrors“ cutout.

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9. Verify connections

Check visually that both ends are aligned, finger screws are tight, and the **spring action** at both ends moves freely. Remove any fingerprints from the quartz using a lint-free alcohol wipe.

10. Re-install reflector side panels

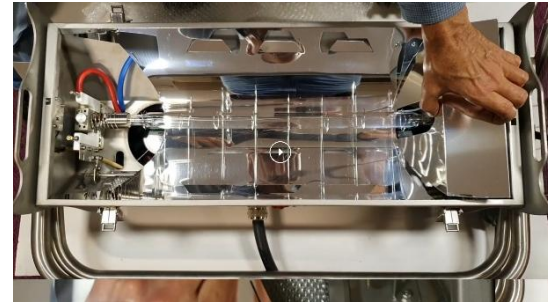
Position each panel using the metal alignment ears. Confirm panels sit evenly and **do not pinch** any wires.

11. Close the front assembly

Refit the **Front GRID with GLASS** and secure **all six latches** evenly. Inspect the gasket and seating.

12. Power-up readiness

Reconnect AC power only after full reassembly. The lamp will ignite when triggered via **DMX, HF Controller**, or **TEST Mode**.



Notes & good practice

- Do **not** overtighten finger screws; hand-tight is correct.
- Never force or twist the lamp into clamps.
- If the quartz envelope was touched, **clean before closing**.
- Keep all **fan inlets/outlets** unobstructed during and after service.

Support video – Lamp Installation: www.hungaroflash.com/support/tlight-installation

4.4 Repacking the Lamp

Whenever the TLIGHT fixture is shipped, transported, or stored for an extended period, the xenon lamp must be removed and repacked in its protective tube.

Failure to do so may result in serious damage to the lamp, reflector, or internal electronics caused by vibration or impact.

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 **Important:** Always disconnect power and allow the lamp to cool for at least 20 minutes before handling. Never attempt to remove a hot or recently ignited xenon lamp.

To repack the lamp safely:

1. Switch off power and disconnect the AC mains cable. Wait ≥ 5 minutes for capacitors to discharge.
2. Release the six front latches and open the Front GRID with GLASS.
3. Remove the two reflector side panels to access the lamp ends.
4. Loosen both terminal clamps and detach the main leads, trigger wire, and drain wire carefully.
5. Hold the lamp only by the metal coil terminals and pull both ends evenly from their sockets.
6. Wrap the lamp gently in its original bubble wrap, slide it back into the protective transport tube, and secure the end cap.
7. Place the tube in the small lamp carton or dedicated flight-case foam compartment.
8. Close and latch the Front GRID with GLASS; ensure no loose accessories remain inside the fixture.
9. Repack the fixture in its carton box or flight case, confirming all foam inserts are correctly positioned.

Additional Recommendations:

- Keep protective tube and foam inserts clean and dry.
- Label each lamp tube with serial number or usage hours for service tracking.
- Do not stack heavy objects on packed lamps or flight cases.

Support Video – Lamp Unpacking & Repacking

Watch online: www.hungaroflash.com/support/tlight-unpacking

4.5 AC POWER CONNECTION

The **HungaroFLASH TLIGHT** operates from a universal single-phase AC power supply with automatic internal voltage adjustment.

Due to its extremely high instantaneous current demand, the fixture requires

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industrial-grade electrical infrastructure similar to that used for welding or arc-discharge equipment.

Warning:

The TLIGHT draws very high inrush and operating currents (up to ≈ 400 A for 3–4 seconds).

Always ensure that the power distribution system, cables, and protection devices are rated accordingly.

Undersized wiring or unstable supply may cause nuisance tripping or serious equipment damage.

Nominal Input Range

- **Voltage:** 190 – 250 VAC, 50/60 Hz
 - **Phase:** Single-phase
 - **Peak current draw:** ≈ 400 A for ≈ 3 seconds (strobe / explosion flashes)
 - **Continuous current draw equivalent:** ≈ 32 A in Turbo Mode
-

Power Source Compatibility

The TLIGHT can operate from either a **public power grid** or a **professional generator**, provided that the source meets the requirements below.

1. Power Grid (Mains Supply)

- Use a **dedicated 63 A D-curve breaker** for each fixture.
- Maintain voltage within 190 – 250 VAC during operation.
- Connect each TLIGHT to its **own protected circuit**; do not share with other heavy loads.
- Proper **grounding** is mandatory.
- Ensure cables are industrial-grade, flexible rubber (H07RN-F or equivalent) and correctly sized for length.

2. Protection and Grounding

- Protection rating: **IP 34 – dust-protected and water-spray resistant.**
 - Grounding (PE) connection is **mandatory** and must never be bypassed or interrupted.
 - Always verify continuity of earth before energizing.
-

Connection Procedure

Connection Procedure

1. **Ensure the Main Power Switch** on the TLIGHT rear panel is in the **OFF** position.
2. **Connect the data controller** before applying mains power:
 - For **DMX control**, connect the **DMX IN** (5-pin XLR male) from the console or controller, and if required, link **DMX OUT** (5-pin XLR female) to the next fixture.
 - For **HF Mode**, connect the **TLIGHT DIGITAL Controller** to the same DMX IN connector (pin 5 provides +12 V power for the controller).
 - Always install a **DMX terminator (120 Ω)** at the last fixture in the chain.
3. **Connect the power cable** securely to the TLIGHT input connector.
4. **Attach the other end** of the cable to an approved **mains outlet or generator distribution box** rated for the load.
5. **Verify the protective earth (ground)** connection is secure and continuous — always connect **ground first**.
6. **Route all power and data cables** to prevent crushing, sharp bends, or contact with hot surfaces.
7. **Set the rear circuit breaker to ON** before energizing the power source.
8. **Apply mains power** only after all connections have been checked and confirmed safe.

Factory Connection Note:

Each TLIGHT fixture is delivered with a **pre-assembled, tested CEE 63 A 1-phase (blue)** plug and verified protective-earth connection.

No user wiring or plug installation is required.

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Power-lead modification or replacement must only be performed by qualified HungaroFLASH Service personnel.

Important Connection Order

Always connect the **controller first**, then apply **mains power** to the TLIGHT.

In rental or field situations, a controller may occasionally exhibit minor electrical faults or internal grounding issues.

If a controller is connected **after** the TLIGHT is already powered, a transient voltage (up to +12 V DC present on DMX pin 5) can momentarily trigger a **full-power flash**.

Following the correct connection order — **controller first, then power** — completely prevents this unexpected activation and ensures safe, controlled startup behavior.

4.6 GENERATOR OPERATION

Operating the TLIGHT from a generator requires strict attention to capacity, voltage regulation, and phase balancing.

Although the fixture can work safely with professional generator systems, improper setup can cause voltage imbalance, nuisance tripping, or even damage to other connected equipment.

4.6.1 Electrical Characteristics

During a flash cycle, the TLIGHT behaves as an $\approx 0.6 \Omega$ **resistive load**, momentarily drawing **350 – 400 A for ≈ 3 seconds**.

When supplied from only one phase of a three-phase generator, that phase voltage may drop to $\approx 165 - 205$ V, while the two unused phases may rise above 260 V depending on generator design and regulator response.

Such transient over-voltages can destroy LED drivers, switch-mode supplies, or other sensitive devices.

4.6.2 Recommended Generator Configuration

1. Generator Capacity

- Minimum 100 kW per TLIGHT unit equipped with AVR (Automatic Voltage

Regulation).

- AVR must maintain phase voltages within $\pm 5\%$ during flash peaks.

2. **Phase Balancing**

- Distribute multiple TLIGHTs evenly across L1/L2/L3.
- Never connect more than one TLIGHT to the same phase unless total generator output exceeds 300 kW.
- Use auxiliary resistive loads on unused phases to maintain symmetry.

3. **Dedicated Outputs**

- Each TLIGHT requires its own single-phase outlet with dedicated breaker.
- Never share with sensitive electronics.

4. **Voltage Monitoring**

- Continuously monitor all three phase voltages.
- Stop operation if any phase exceeds 255 V or drops below 180 V.

5. **Operator Competence**

- Generator operation must be supervised by trained personnel familiar with surge loads and AVR tuning.

4.6.3 Practical Tips for Reliable Operation

1. **Use Longer Power Cables**

- A longer cable (25 – 100 m) adds series impedance, limiting peak current.

2. **Enable Power Derating**

- The TLIGHT menu includes a **Power Derating** function that limits discharge to $\approx 80\%$.
- This improves generator compatibility and prevents operator error.

3. **Low Thermal Load**

- The TLIGHT's average thermal consumption is low; the surge is brief.
Continuous current ≈ 32 A.
-

4.6.4 Field Experience Example

At exhibition powered by a 240 V three-phase generator, one TLIGHT operating on a single phase caused the loaded phase to fall to ≈ 190 V while the other two phases rose above 260 V. One solution is use 3 T-LIGHTs on each phase. Correct phase balancing and professional supervision prevent such incidents.

4.6.5 Summary

The TLIGHT can operate safely from generator power only under professional, controlled conditions with proper capacity, regulation, phase balancing, and experienced operators.

HungaroFLASH Bt assumes no responsibility for generator-related imbalance or third-party equipment damage caused by improper setup.

4.7 INSTALLING THE FIXTURE

The **HungaroFLASH TLIGHT** may be installed in a variety of orientations depending on the application — on the ground, a lighting stand, truss, or fixed structure. Safe mechanical installation is essential to guarantee stable operation and long-term reliability.

Warning:

The TLIGHT is a high-energy, heavy-duty luminaire.

Always follow approved rigging practices and ensure that only qualified personnel perform installation.

Improper mounting or inadequate support can result in serious injury or equipment damage.

4.7.1 Preparation

1. Verify that the mounting surface or structure can safely support **at least 10 × the weight** of the TLIGHT and all attached hardware.
2. Inspect the **mounting yoke, bolts, handles, and clamps** for damage or wear before each use.

3. Ensure all **fan inlets and outlets** are unobstructed to maintain proper cooling airflow.
 4. Confirm that all **power and data cables** reach the fixture without strain or sharp bends.
-

4.7.2 Mounting Procedure

1. **Placement and Orientation**
 - The TLIGHT may be mounted horizontally, vertically, or inverted, provided that airflow openings remain clear.
 - Maintain a minimum **2 m (≈ 80 in)** clearance from any surface or material that could be affected by heat or light intensity.
 2. **Yoke and Clamp Installation**
 - Secure the mounting yoke using appropriate **M12 or ½-inch bolts** with lock washers.
 - When hanging from a truss or grid, attach two approved **Omega-style clamps** (or equivalent rated clamps) to the yoke.
 - Tighten both **side handles** evenly to fix the desired tilt angle.
 3. **Safety Cable Attachment**
 - Always install a **secondary safety cable** rated for at least 10 × the fixture weight.
 - Loop the cable around a secure structural point and attach it through the TLIGHT's safety eyelet.
 - Ensure the cable has minimal slack and cannot detach if the primary clamp fails.
 4. **Cable Routing**
 - Route power and data cables neatly along the yoke or structure using **Velcro straps** or **tie-wraps**.
 - Prevent cables from hanging freely where they could be pulled, pinched, or exposed to heat.
 - Avoid routing near fan inlets, outlets, or sharp edges.
-

4.7.3 Post-Installation Check

- Verify that all clamps, bolts, and handles are fully tightened.
 - Confirm that the fixture is mechanically stable and cannot rotate or slip.
 - Ensure clear access to the **rear control panel** and **circuit-breaker window** for operation and service.
 - Perform a brief functional test at low power to confirm correct electrical connection and DMX control.
-

4.7.4 Additional Notes

- When installing multiple TLIGHT units, maintain uniform spacing and orientation for consistent beam coverage and airflow.
- Always ensure that the **Front GRID with GLASS** remains latched and intact before powering on.
- In outdoor or elevated installations, protect connectors from direct water exposure while maintaining IP 34 ventilation clearances.

5. OPERATION AND PROGRAMMING

The **HungaroFLASH TLIGHT** provides a straightforward control interface for both local operation and external DMX/HF communication.

All operating parameters can be configured directly from the rear control panel.

5.1 Control Panel Overview

The control panel includes:

- **Display** – three-digit red LED or OLED screen showing menu values.
- **Red Button (ENTER)** – opens menus and confirms selections.
- **Up / Down Arrows** – adjust numerical values or scroll through menu items.
- **Indicator LEDs:**
 - **Red = Power**
 - **Yellow = Mode / Protection**
 - **Green = Data / DMX Signal**

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The menu system allows quick access to all major parameters, including DMX address, operating mode, Turbo, Continuous, and Power Derating functions.

5.2 Accessing the Menu

1. Press the **Red Button** once to enter the main menu.
 2. Use the **Up/Down arrows** to scroll through menu options.
 3. Press **Red Button** again to confirm a selection.
 4. Hold **Red Button** for ≈ 3 seconds to exit or return to the main screen.
If no key is pressed for 3 seconds, the display automatically returns to status mode.
-

5.3 Main Menu Structure

Menu Item Description

ADDR	DMX Start Address (001 – 511)
MODE	Select operating protocol: DMX / HF / TEST
TURBO	Enables double-power strobe output
CONT	Continuous-light mode ON / OFF
P-DER	Power Derating – limits peak output to $\approx 80\%$

5.4 Menu Operation Examples

Setting the DMX Address

Press Red → select “ADDR” → use arrows to choose desired address → press Red to save.

Selecting the Mode

Press Red → “MODE” → choose DMX / HF / TEST → press Red to confirm.

Activating Turbo Mode

Press Red → scroll to “TURBO” → set value to ON → press Red to save.

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Enabling Continuous Mode

Press Red → scroll to "CONT" → set ON or OFF → press Red to save.

Applying Power Derating

Press Red → scroll to "P-DER" → set ON to limit output to $\approx 80\%$ — recommended for generator use.

5.5 Operating Modes

Mode Description

DMX Fixture responds to standard DMX-512 signals.

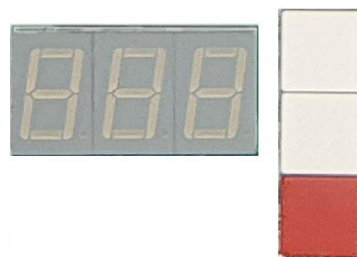
HF Legacy High-Frequency protocol (Dataflash-compatible).

TEST Runs a preset demonstration loop showing all functions.

5.6 Full Menu Map

The TLIGHT user interface consists of the following elements:

- **3-digit LED display** (with three dots)
- **Up Button** (White) ▲
- **Down Button** (White) ▼
- **Enter Button** (Red) ■



In **Idle Mode**, the display shows the current **DMX address**, or the letter "**A**" if Auto Mode is active.

Press the **Red Button** once to enter **Menu Mode** — the display becomes slightly brighter to indicate active navigation.

Use the **Up/Down** buttons to move through items and **Red** to confirm.

If no key is pressed for about **30 seconds**, the unit automatically returns to Idle.

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Main Menu Navigation Diagram

STANDARD MENU

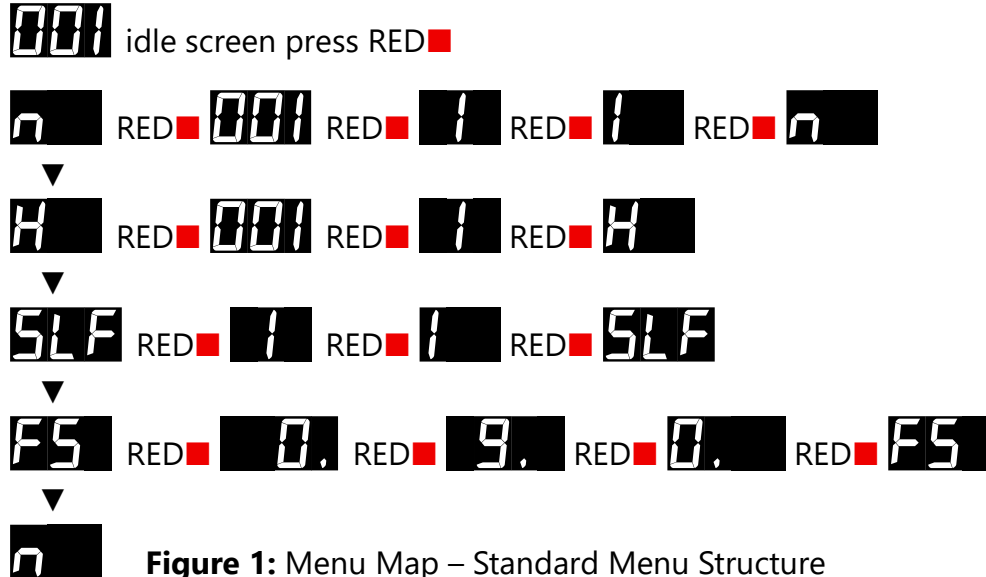
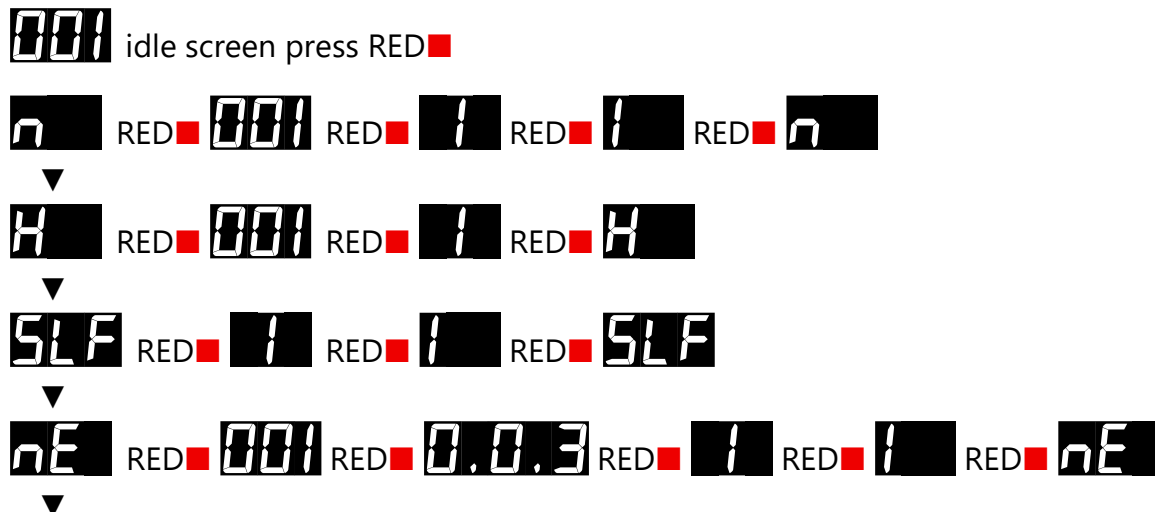


Figure 1: Menu Map – Standard Menu Structure

This diagram shows the primary navigation sequence starting from the idle display (001) and the transitions between key menu items (ADDR, MODE, SLF, F5, etc.) when pressing the **Red** button.

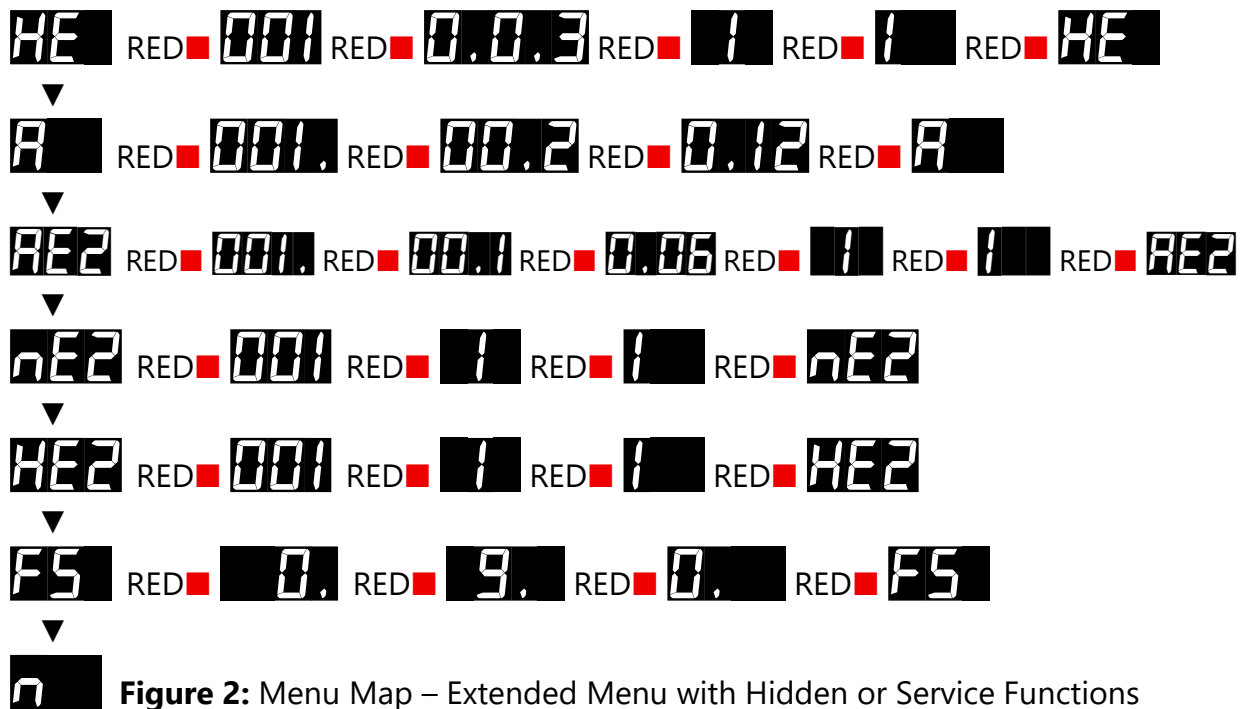
Extended Menu Navigation Diagram

EXTENDED MENU



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The **Extended Menu** is accessible via specific sequences or long-press actions on the Red button. It includes additional diagnostic, service, and configuration items (e.g., nE, HE, A, nE2, HE2), as shown in the diagram above.

Values displayed (e.g., 0.03, 0.12, 0.06) represent adjustable parameters within those menus.

Note:

For the full list of **submenu functions**, **parameter ranges**, and **detailed descriptions**, refer to **Section 5.7 – Detailed Menu and Submenu Functions**.

5.7 – Detailed Menu and Submenu Functions

The TLIGHT fixture offers multiple operation modes accessible from the front-panel display.

Use the ▲ / ▼ buttons to navigate through available menu items, **change values**.

Press RED ■ to open or confirm selections.

After approximately 3 seconds of inactivity, the menu closes automatically and returns to the previous screen.

n – Normal DMX Mode

This is the standard operating mode for DMX-controlled environments.

The TLIGHT receives DMX-512 data and responds on two channels:

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Channel Function

CH1 Flash Rate / Continuous (at low levels)

CH2 Intensity

Operation Sequence

1. When  appears on the display, press RED .
2. The screen shows:  DMX ADDRESS
Use ▲ / ▼ to set the DMX start address (001–511).
Press RED  to confirm.
3. Next screen:  TURBO
Use ▲ / ▼ to set 1 = ON or 0 = OFF.
TURBO doubles flash power for up to 3.5 s. RED .
4. Next screen:  CONTINUOUS
Use ▲ / ▼ to select 1 = ON or 0 = OFF.
When ON, the fixture emits a constant beam. RED .

Exit / Return

After ≈ 3 s of inactivity, the display returns to  and DMX operation resumes.

H – HF Mode (HungaroFLASH Controller Mode)

Used with the HungaroFLASH TLIGHT DIGITAL Controller through the legacy analog trigger system on DMX pin 5 (+12 V).

Allows playback of lightning curves and synchronized strobe control.

Channel Function

CH1 Intensity

CH2 Duration

Operation Sequence

1. Select  on the display and press RED .

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2.  DMX ADDRESS → set 001–511 using ▲ / ▼; press RED .

3.  TURBO → 1 = ON / 0 = OFF; press RED .

When ON, flash output doubles for ≈ 3.5 s.

Exit / Return

After ≈ 3 s of inactivity the unit returns to . Fixture is ready for HF Controller input. See more on 6.3 chapter.

SLF – Self-Test Mode

The Self-Test Mode performs an internal demonstration sequence without external control signals.

It is primarily used for service verification or exhibition display.

This mode is also the **best diagnostic function** to determine whether the lamp and power circuitry are operating correctly.

During testing, the TLIGHT cycles through **Low-Power** and **High-Power** flash sections. At **High-Power**, the current draw is significant, and the circuit breaker may trip if the installation is underrated.

For safety and reliable operation, **perform self-tests only in environments protected by a 80 A (type C or D) breaker or higher.**

Operation Sequence

1. Display  → press RED .

2.  TURBO → set 1 = ON / 0 = OFF. Turbo doubles flash power. Confirm with RED .

3.  CONTINUOUS → set 1 = ON / 0 = OFF. If ON, lamp stays lit steadily. Confirm. RED .

Exit / Return

After ≈ 3 s the display returns to ; fixture runs its demo pattern.

FS – Factory Settings and System Options

Provides access to power derating, display brightness, and screen-lock protection. Intended for advanced users or special environments (e.g. generator operation, dark film sets).

Operation Sequence

1. Display **FS** → press RED ■.
2. **0.** POWER DERATING → 1 = ON / 0 = OFF. ON **1.** limits discharge power to ≈ 80 %. Confirm. RED ■
3. **9.** DISPLAY INTENSITY → set 0–9 to adjust front display brightness (does not affect light output). Confirm. RED ■
4. **0.** Extended → 1 = ON / 0 = Standard. When ON **1.**, buttons are Extended. Confirm. RED ■

Exit / Return

After ≈ 3 s returns to **FS**. If locked, screen shows **0.01**.

Power off the fixture. Hold ▲ + ▼ + RED while powering on; release when **FS** appears.

Unlock Procedure

The **Lock** function prevents accidental operation or parameter changes during show use, transport, or rental deployment.

When the lock is active, all front-panel keys (▲, ▼, and ■ RED) are disabled to avoid unintended menu navigation or mode switching.

This safeguard ensures that fixture settings remain unchanged even if buttons are pressed accidentally during handling or power-up.

To unlock the fixture:

1. **Power off** the unit completely.
2. **Press and hold** ▲ + ▼ + ■ RED simultaneously.
3. **While holding**, switch the power **ON**.

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Once unlocked, normal menu access and control operation are restored.

Power off the fixture. Hold ▲ + ▼ + ■ RED while powering on; release when **FS** appears.

nE – Extended DMX Mode

Provides 4-channel advanced DMX control and custom addressing.

Channel Function

- CH1** Frequency
- CH2** Intensity
- CH3** Effect Type
- CH4** Effect Speed

Operation Sequence

1. Display **nE** → press RED ■.
2. **001** DMX START ADDRESS → set 001–509; confirm. RED ■
3. **001** DMX ADDRESS (CH3) → set 003–511 for second channel; confirm. RED ■
4. **1** TURBO → 1 = ON / 0 = OFF; confirm. RED ■
5. **1** CONTINUOUS → 1 = ON / 0 = OFF; confirm. RED ■

Exit / Return

After ≈ 3 s returns to **nE**; DMX control resumes with new parameters.

HE – Extended HF Mode

For synchronized control using the HungaroFLASH DIGITAL Controller or other HF sources.

Provides precise timing between external control curves and fixture discharge.

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Channel Function

- CH1 Intensity
- CH2 Duration
- CH3 Effect Type
- CH4 Effect Speed

Operation Sequence

1. Display **HE** → press RED ■.
2. **001** DMX START ADDRESS → set 001–511; confirm. RED ■
3. **001** DMX ADDRESS (CH2) → set 003–511 for second channel; confirm. RED ■
4. **1** TURBO → 1 = ON / 0 = OFF; confirm. RED ■
5. **1** CONTINUOUS → 1 = ON / 0 = OFF; confirm. RED ■

Exit / Return

After ≈ 3 s returns to **HE**; fixture ready for HF controller input.

A – Auto Mode (Self-Flasher Sequence)

Generates its own flash pattern without DMX control.
Useful for standalone tests or exhibitions.

Operation Sequence

1. Display **A** → press RED ■.
2. **000.** INTENSITY → set 000–100 (%); confirm. RED ■
3. **00.2** DURATION → adjust 002–250 (×10 ms); confirm. RED ■
4. **0.12** REPEAT RATE → set 002–250 (×10 ms intervals); confirm. RED ■

Exit / Return

After ≈ 3 s returns to **A**; fixture runs auto-flash cycle until stopped.
Press RED ■ or navigate to exit.

AE2 – Advanced Effect Mode

Creates automatic lightning simulations using internal processor; ideal for film FX and demo use.

Operation Sequence

1. Display **AE2** → press RED ■.
2. **000.** INTENSITY → set 000–100 (%); confirm. RED ■
3. **00.1** EFFECT SPEED → set 000–009; confirm. RED ■
4. **0.06** EFFECT TYPE → select 1–6:
1 = Single Flash 2 = Double Flash 3 = Burst Sequence 4 = Smooth
Fade 5 = Storm Mix 6 = Cinematic FX
Confirm selection. RED ■
5. **1** TURBO → 1 = ON / 0 = OFF; confirm. RED ■
6. **1** CONTINUOUS → 1 = ON / 0 = OFF; confirm. RED ■

Exit / Return

After ≈ 3 s returns to **AE2**; effect continues with stored values.
Press RED ■ to exit manually.

nE2 – Extended DMX Mode 2

Dual-channel DMX operation allowing refined frequency and effect mapping.

Channel Function

CH1 Frequency (0–127) / Effect Type + Speed (128–255)

CH2 Intensity

Operation Sequence

1. Display **nE2** → press RED ■.

2.  DMX ADDRESS → set 001–511; confirm. RED ■
3.  TURBO → 1 = ON / 0 = OFF; confirm. RED ■
4.  CONTINUOUS → 1 = ON / 0 = OFF; confirm. RED ■

Exit / Return

After ≈ 3 s returns to ; DMX operation resumes with last settings.

HE2 – Extended HF Mode 2

Extended HF operation for synchronized multi-fixture control with the TLIGHT DIGITAL Controller.

Channel Function

CH1 Intensity

CH2 Duration (0–127) / Effect Type + Duration (128–255)

Operation Sequence

1. Display  → press RED ■.
2.  DMX ADDRESS → set 001–511; confirm. RED ■
3.  TURBO → 1 = ON / 0 = OFF; confirm. RED ■
4.  CONTINUOUS → 1 = ON / 0 = OFF; confirm. RED ■

Exit / Return

After ≈ 3 s returns to ; stored values remain active until changed or power-off.
Press RED ■ to exit manually.

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Effect Types

Used when multiple TLIGHT fixtures operate in the same system (4, 8, 16 units etc.).

Effect Type defines synchronization and randomization of flash patterns.

Applicable in modes that include an Effect Type parameter (e.g. **NE**, **HE**).

DMX Value Range	Effect Type	Description
0–25	No Effect / Normal	Standard flash or continuous light without modulation.
26–50	Sawtooth	Gradual ramp-up then instant drop.
51–75	Reverse Sawtooth	Instant rise then linear decay.
76–100	Triangular	Symmetrical increase and decrease in intensity.
101–125	Reverse Triangular	Phase-inverted triangle pattern.
126–150	Random 1	synchron timing; equal brightness.
151–175	Random 2	Asynchronous timing; equal brightness.
176–200	Random 3	synchron timing and brightness variation.
201–225	Random 4	asynchron with offset cycles.
226–250	Random 5	Fully randomized timing, intensity and duration Chaotic pattern.
251–255	Effect Trigger	Instant trigger (255 = Full DMX).

 **Tip:** Combining fixtures with different DMX start addresses in Random 4–5 modes produces a highly natural, film-like lightning effect.

5.8 Protection and Indicators

The TLIGHT continuously monitors its internal temperature, current, and operating state.

Three indicator LEDs on the rear panel provide immediate visual status feedback.

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LED	Color	Function
POWER	Red	Illuminates when the main power and internal circuit-breaker are ON.
MODE / PROTECTION	Yellow	Indicates protection events, and menu status (see below).
DATA	Green	Confirms valid DMX-512 data reception (steady ON = signal OK; OFF = no DMX signal).

Yellow LED – Multi-Function Logic

The Yellow LED may activate from three independent events:

1. **Thermal Protection (hardware)** – Illuminates when the internal thermal switch reaches limit temperature. Output is automatically reduced or disabled until temperature returns safe.
2. **Software Protection (firmware)** – Lights when current limiter or surge timer engages to protect electronics (e.g., during generator use).
3. **Menu / Mode Indicator** – Flashing patterns show active control mode:

Note:

Continuous illumination indicates protection; flashing patterns indicate communication or mode status.

During menu navigation, brief flashes acknowledge stored parameters.

5.8.1 Thermal and Power Protection Workflow

The TLIGHT incorporates an intelligent power-limiting system that automatically adjusts the **maximum continuous-on duration** according to the selected brightness level (DMX or percentage).

This ensures that the xenon lamp, reflectors, and power electronics operate within safe thermal limits even during long flashes or continuous operation.

At full brightness ($\approx 100\%$, DMX 230 – 255), the fixture can sustain **up to 3 seconds** of continuous discharge before protective cooldown activates.

At lower brightness levels, the permissible “on” time increases proportionally:

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Brightness (%) DMX Range Max Continuous Time

100 %	230 – 255	≈ 3 s
85 %	200 – 229	≈ 4 s
70 %	170 – 199	≈ 5 s
55 %	140 – 169	≈ 7 s
40 %	110 – 139	≈ 10 s
30 %	80 – 109	≈ 20 s

(Insert your "Protection Workflow" chart here as Figure 5.8.1.)

User Advantages of Operating Below Full Power

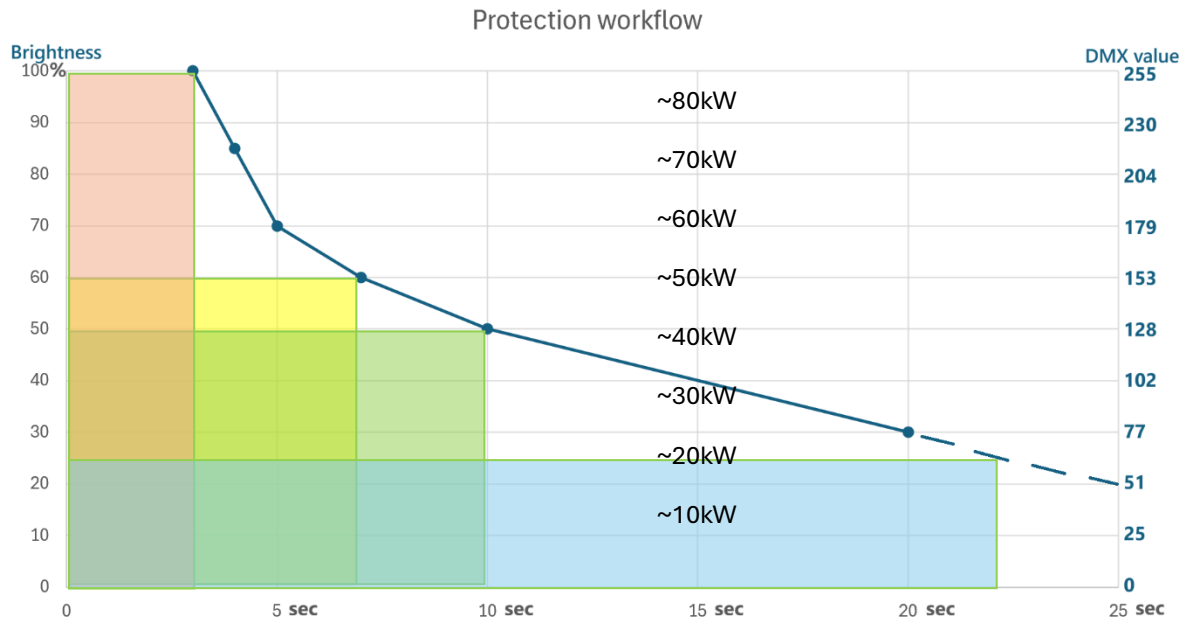
Running the TLIGHT below maximum brightness provides several operational and creative benefits:

-  **Longer sustained effects** – enables extended lightning bursts and ambient strobes without triggering protection.
-  **Camera-safe brightness** – 85 % output is visually identical to 100 % on camera, but offers 30 % longer duration.
-  **Lower electrical stress** – reduces peak current draw, extending component and lamp life.
-  **Cooler, quieter operation** – fans run slower, ideal for studio work.
-  **Faster workflow** – shorter cooldown intervals between takes.

In practice, most operators achieve optimal performance between **70 – 90 %** brightness, gaining double to triple usable on-time with minimal reduction in visible intensity.

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Practical Applications of the Protection Workflow

This protection feature is not only for safety — it can also be **used creatively**.

By operating multiple TLIGHT units at **reduced brightness levels ($\approx 50\%$)**, the system allows **extended light output up to 10 seconds**, which is sufficient for short **“ACTION” sequences**, even under daylight conditions.

Such a configuration enables high-quality results for **24 / 25 frames-per-second filming**, where the TLIGHT provides consistent, full-spectrum illumination across each frame without visible flicker or intensity fluctuation.

This stable long-pulse operation helps achieve precise **motion-freezing and continuous-scene lighting** using synchronized camera rigs.

In multi-fixture setups, several TLIGHTs working at partial power can produce **uniform, broad-area lighting** while remaining within safe thermal limits — ideal for controlled film and broadcast applications requiring short but extremely bright exposures.

5.9 Quick Start Procedure

This checklist provides a fast and safe method to prepare the TLIGHT for operation.

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Caution:

Verify that the **Front GRID with GLASS** is fully latched before power-on.
Never energize the unit with open covers or without grounding.

Step-by-Step Startup

1. **Inspect the Fixture** – Check lamp installation, latches, and all cable integrity.
2. **Connect Power and DMX** – Use the pre-installed **CEE 63 A (blue)** connector; connect DMX input (5-pin male). Terminate the last fixture (120 Ω between pins 2 & 3).
3. **Turn On the Fixture** – Set rear Circuit Breaker and Main Switch to ON. Red POWER LED illuminates; display and fans start.
4. **Set Operating Mode** – Enter menu → MODE → select DMX, HF, or TEST.
5. **Assign DMX Address** – ADDR → choose 001 – 511 → confirm.
6. **Enable Optional Features** – For generator use activate Power Derating; use Turbo Mode only on stable mains.
7. **Verify DMX Communication** – Green DATA LED ON = valid signal;
8. **Functional Test** – Run short flash or TEST Mode; check beam uniformity, sound, and airflow.

Beam Adjustment:

Rotate gently the **SPOT – WIDE** knob near the optical assembly to vary beam angle from $\approx 10^\circ$ (SPOT) to $\approx 60^\circ$ (WIDE).

Adjust only when the fixture is cool and powered off.

Shutdown Procedure

1. Turn off the Main Power Switch.
 2. Wait ≥ 5 minutes for capacitor discharge and lamp cooling.
 3. Disconnect power and DMX cables.
 4. For transport, follow Section 4.4 – Repacking the Lamp.
-

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Tip for On-Set Operation

When powering multiple TLIGHT fixtures, switch them on sequentially (5–10 s intervals) to reduce total inrush current.



Support Video – Menu Operation and Power Derating

Visual guide available at www.hungaroflash.com/support/tlight-menu

6. DMX CONTROL

The **HungaroFLASH TLIGHT** can be fully controlled via the **DMX-512 (USITT standard)** protocol or through the optional **HF Mode** using the **HungaroFLASH TLIGHT DIGITAL Controller**.

Future models and upgrade kits may include integrated **CRMX2 wireless DMX/RDM** capability for cable-free operation.

This chapter describes all control options, signal connections, and safety precautions.

6.1 DMX Operation

In **DMX Mode**, the fixture receives digital control data through the **5-pin XLR Input** on the rear panel.

Two DMX channels are used for standard operation:

Channel Function		DMX Value Range	Description
CH 1	Flash Rate /	0 – 255	1–90 % = 1–24 Hz flash rate; > 90 % = Continuous Light
	Continuous Control		
CH 2	Intensity	0 – 255	0 % = Off → 100 % = Maximum brightness

DMX Addressing

Set the start address (001 – 511) in menu item ADDR (see Section 5.4).

Each TLIGHT occupies **two consecutive channels**.

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6.2 Connection Layout

Connector Type	Function
DMX IN 5-Pin XLR (Male)	Receives DMX-512 signal
DMX OUT 5-Pin XLR (Female)	Pass-through to next fixture
Pin 1 Signal Ground (Shield)	
Pin 2 Data – (DMX Negative)	
Pin 3 Data + (DMX Positive)	
Pin 4 Reserved (No connection)	
Pin 5 +12 V DC Output (IMPORTANT – for TLIGHT Controller only)	

Electrical Warning:

Pin 5 carries +12 V DC for powering the **HungaroFLASH TLIGHT DIGITAL Controller**. Do not connect Pin 5 to third-party DMX devices or interfaces. Incorrect use can damage controller electronics or DMX transceivers.

6.3 Selecting DMX or HF Mode (Legacy and Digital Versions)

The TLIGHT supports two primary control modes — **DMX-512 (Normal)** and **HF Mode (HungaroFLASH Legacy Protocol)**.

The selection method depends on fixture generation:

1. Legacy Models (DIP Switch Addressing)

Older TLIGHT units use **physical DIP switches** for DMX address setup.

Next to the address bank is a small **two-position toggle switch** labeled “**DMX / HF**”:

- **DMX position** → Standard DMX-512 Mode.
- **HF position** → Analog HungaroFLASH trigger/data Mode (legacy controller).

Change switch position only when power is OFF.

2. Digital Display Models (Current Generation)

New TLIGHT fixtures use a menu-based interface instead of DIP switches.

Mode selection is performed via the display menu:

1. Press **Red Button** to open the menu.
2. Navigate to **MODE** using the Up/Down arrows.
3. Display shows:
 - **"n"** = Normal **DMX Mode**
 - **"H"** = **HF Mode** (Legacy Controller)
4. Select desired mode and confirm with Red Button.

The selected mode is stored in non-volatile memory and recalled at power-on.

Changing mode does not affect DMX address or Power Derating settings.

3. CRMX2 Wireless Models (Automatic Mode)

Fixtures equipped with an internal **CRMX2 module** automatically detect signal type.

When a valid wireless DMX link is active, the fixture locks to DMX Mode.

If no wireless signal is present, it reverts to the last used wired mode (DMX or HF).

Summary Table

Fixture Type	Mode Selection Method
Legacy (DIP)	2-position toggle switch "DMX / HF"
Digital Display	Menu item MODE → n / H
CRMX2 Wireless	Automatic signal detection

6.4 HF Mode (Legacy / High-Frequency Control)

In **HF Mode**, the TLIGHT operates under the **HungaroFLASH proprietary high-frequency trigger protocol**, originally developed for legacy *Dataflash-type* systems.

Although the signal uses a **DMX-compatible physical connection**, it carries **timing and intensity data** rather than standard DMX channel values.

This allows ultra-fast response and fully synchronized multi-fixture lightning effects.

Using TLIGHT in HF Mode

The following controllers can be used to operate the TLIGHT in HF Mode:

- **DATAFLASH (High End Systems)** – legacy compatible
- **HungaroFLASH TLIGHT Controller** – full lightning-curve programming and playback
- **Standard DMX Console** – limited operation via Channel 1 (trigger) and Channel 2 (intensity)



Note:

Despite the DMX connector and cabling, HF Mode is **not a standard DMX control protocol**.

It is a high-frequency modulation of the DMX signal interpreted exclusively by HungaroFLASH and compatible legacy devices.

A. Operation with TLIGHT Controller

In HF Mode, the TLIGHT operates under the control of the **HungaroFLASH TLIGHT DIGITAL Controller** via a proprietary trigger/data signal.

This mode allows the user to **create, store, and recall programmable flash-curve sequences** with high precision.

Signal assignments:

- **Channel 1:** Combined *intensity and flash trigger* (defined by the signal refresh rate)
- **Channel 2:** *Flash duration* parameter

Power and connection:

- The controller is powered via **Pin 5 (+12 V DC)** of the **DMX input connector**.
- Multiple fixtures can be linked using **standard DMX cabling** under a single master controller.

Note:

HF Mode is optimized for **cinematic and photographic applications** requiring complex and natural lightning effects.

For **live or synchronized stage use**, **DMX Mode** remains the recommended control method.

B. Operation with Standard DMX Controller

HF Mode can also be used with a **regular DMX console**, not only the TLIGHT Controller.

Such controllers can be of two main types:

1. **Variable DMX refresh rate controllers** – where the output update speed (DMX frame rate) can be controlled or programmed.
 - In this case, **any desired flash frequency** of the TLIGHT can be set, stored, or programmed freely.
2. **Fixed-rate DMX controllers** – typically operating at a constant refresh rate of about **44 Hz**.
 - In this case, it is important to know the controller's update frequency.
 - For example, at **44 Hz**, the DMX frame can trigger one or two flashes per frame.
 - The **flash duration** is still controlled from **Channel 2 (Duration)**.
 - This enables creation of **various lightning-style effects** directly from the DMX console, even without a TLIGHT Controller.

Important behaviour:

- The TLIGHT **ceases emission immediately** when **Channel 1** returns to **value 0**.
 - If the trigger signal on Channel 1 is shorter (e.g. 50 ms) than the programmed duration on Channel 2 (e.g. 200 ms), the TLIGHT will **remain illuminated** until the **duration time expires**.
-

6.5 CRMX2 Wireless DMX Integration (Optional)

Future TLIGHT versions or upgrades may include a **LumenRadio CRMX2** module providing wireless DMX-512 and RDM communication.

- Wireless range typically > 500 m (line of sight).
- Supports dual-band redundancy and RDM bridge functions.
- Functions identically to wired DMX Mode once linked.
- Setup via menu item **WIRELESS SETUP** (if equipped).

Compatibility: Wireless operation uses the same 2-channel DMX map as wired mode. In mixed installations, use only one active DMX universe to avoid address conflicts.

6.6 DMX Termination and Signal Integrity

- Terminate final fixture with a **120 Ω resistor** between pins 2 and 3.
 - Avoid "Y" splitters or parallel connections.
 - Use **shielded twisted-pair RS-485 cable**.
 - Maximum chain length: $\approx$ 300 m (1 000 ft).
 - For long runs, add DMX amplifiers or splitters.
-

6.7 Status Indications

Indicator LED	Behavior	Meaning
Green DATA	ON (steady)	Valid DMX signal received
	OFF	No DMX signal
Yellow PROTECTION		protection
Red POWER	ON	Power OK / Circuit-Breaker ON

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6.8 Safety Notes

- Use only **HungaroFLASH-approved** cables and controllers with Pin 5 (+12 V DC).
- Do not daisy-chain more than **32 fixtures** without a DMX booster.
- For CRMX2 operation, mount antennas clear of metal obstructions.
- Disconnect power before attaching or removing DMX cables.

Support Video – DMX and HF Control Setup

Demonstration available at www.hungaroflash.com/support/tlight-dmx

7. RDM PARAMETERS

The **HungaroFLASH TLIGHT** currently operates as a **DMX-512-only** device. The present hardware and firmware do not exchange **RDM (Remote Device Management)** messages; therefore, no RDM parameters are active in this software version.

This chapter defines the reserved framework for future **RDM-enabled** fixtures and firmware releases, ensuring forward compatibility with HungaroFLASH control systems and the CRMX2 wireless platform.

7.1 Future RDM Capabilities

When RDM functionality is activated through a firmware upgrade or the optional CRMX2 integration module, the TLIGHT will support the following core **RDM parameters**:

Parameter ID	Description	Access
DEVICE_LABEL	Fixture name / user identifier	Read / Write
DMX_START_ADDRESS	DMX base address	Read / Write
DMX_PERSONALITY	Mode selection (DMX / HF / TEST)	Read / Write
SENSOR_TEMPERATURE	Internal temperature feedback	Read Only

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Parameter ID	Description	Access
SENSOR_FAN_SPEED	Cooling fan RPM monitor	Read Only
LAMP_OPERATING_HOURS	Lamp runtime counter	Read Only
SOFTWARE_VERSION_LABEL	Firmware revision	Read Only
DEVICE_MODEL_DESCRIPTION	Product model name	Read Only
IDENTIFY_DEVICE	Flash indicator for fixture identification Command	

Note:

Parameter availability may vary depending on firmware version and hardware configuration.

7.2 RDM Addressing

Once RDM is enabled, the fixture will share the same physical **DMX input connector** and operate on the same **RS-485 data bus**.

Each TLIGHT will register a unique **UID (Universal Identifier)** stored in factory EEPROM memory.

This identifier allows for precise addressing, discovery, and configuration by RDM-compatible lighting consoles or software.

7.3 Software Upgrade Path

RDM functionality will be made available through future hardware or firmware updates.

Upgrade options include:

- **CRM2 Wireless Link** – bi-directional DMX / RDM communication via integrated LumenRadio chipset.
- **Wired DMX-RDM Interface** – direct connection using an RDM-compatible controller.

Firmware updates will be provided as downloadable packages with full installation instructions.

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7.4 Service and Support

HungaroFLASH will release detailed RDM parameter documentation and firmware upgrade instructions once the feature becomes active.

To receive technical notifications or update announcements, register your product at:

 www.hungaroflash.com/register

For direct assistance:

 service@hungaroflash.com

 www.hungaroflash.com/support

8. CLEANING AND CARE

Regular maintenance ensures consistent performance, safe operation, and a long service life for your **HungaroFLASH TLIGHT** fixture.

Because the unit contains **high-voltage and high-temperature components**, all cleaning and inspection must be performed **only by qualified personnel** and **after the fixture has cooled** and power has been disconnected.

8.1 General Maintenance Schedule

Interval	Task	Description
Before each use	Visual inspection	Check for damaged cables, connectors, or cracked glass. Verify that all latches and screws are tight.
Every 50 hours	Airflow check	Ensure all fan inlets and outlets are clear of dust or debris.
Every 100 hours	Optical cleaning	Clean the Front GRID with GLASS, reflectors, and lamp window using a lint-free cloth and alcohol-based cleaner.
Every 250 hours	Electrical inspection	Inspect power and DMX connectors, grounding continuity, and insulation condition.
Every 500 hours	Full service	Contact HungaroFLASH or an authorized service partner for internal cleaning and lamp alignment check.

8.2 Exterior Cleaning

1. Disconnect power and allow the fixture to cool for at least **20 minutes**.
2. Use a soft, dry cloth or anti-static brush to remove surface dust.
3. For stubborn dirt, use a slightly damp cloth with a mild **alcohol-based solution**.
4. Never use solvents such as benzene, acetone, or abrasive materials — they can damage protective coatings and seals.
5. Ensure the fixture is completely dry before reconnecting power.

Note:

The **Front GRID with GLASS** is removable for detailed optical cleaning but must always be fully latched before operation.

Do not touch the xenon lamp or reflector surfaces with bare fingers.

8.3 Fan and Airflow Maintenance

The TLIGHT uses **forced-air cooling** with multiple high-efficiency fans and internal airflow channels.

Proper cooling is critical for safe operation and component longevity.

- Keep all **air inlets and outlets** unobstructed.
 - Inspect fan grilles regularly for dust buildup.
 - Remove dust using **compressed air or a low-pressure air blower** (maximum 3 bar).
 - Replace clogged or damaged filters immediately if equipped.
 - Verify that all fans start automatically when power is applied.
 - If fans fail to start, do **not** operate the fixture — contact HungaroFLASH Service.
-

8.4 Optical Components

- Clean the **front glass, reflectors, and optical cavity** only with approved optical-grade cloths.

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- Avoid circular scrubbing; gently wipe in straight lines to prevent scratches.
 - Inspect reflectors for discoloration or pitting — replace if reflectivity decreases.
 - Keep all optical components free of fingerprints, dust, and oil residue.
-

8.5 Storage and Transport

- Store the TLIGHT in a **dry, dust-free** environment between **–10 °C and +50 °C**.
 - Always **remove and repack the xenon lamp** in its protective tube before transport (see Section 4.4).
 - Use the **original carton or TLIGHT Flight Case** for shipping.
 - Avoid shock, vibration, or direct sunlight exposure during storage.
 - Do not stack multiple fixtures unless packed in approved flight cases.
-

8.6 Service and Repairs

- The TLIGHT contains **high-voltage capacitors** that remain charged for several minutes after power-off. Only qualified personnel should access the electronic box.
- Replace the xenon lamp only with **genuine HungaroFLASH replacement parts**.
- Unauthorized modifications, non-original components, or improper repairs void the warranty.
- Always contact **HungaroFLASH Bt Service** for diagnostics, spare parts, or calibration support.

Service Contact:

 service@hungaroflash.com

 www.hungaroflash.com/support

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9. TECHNICAL SPECIFICATIONS

Parameter	Specification
LIGHT PARAMETERS	
Product Name	HungaroFLASH TLIGHT PRO 85 kW
Fixture Type	High-energy xenon strobe / continuous light source
Technology	Long-arc xenon discharge tube with integrated high-current pulse system
Optical System	Precision parabolic reflector with adjustable SPOT–WIDE beam (10° – 60°)
Beam Adjustment	Manual knob — SPOT (≈10°) to WIDE (≈60°)
Color Temperature	6000 K nominal
Light Output	≈ 2.5 million lumens (≈ 2550 k lm)
Flicker-Free Operation	Flicker-free up to 24/25 frames per second
LAMP PARAMETERS	
Lamp Type	85 kW long-arc xenon tube
Lamp Cooling	Active forced-air system with internal temperature monitoring
Lamp Connection	Dual terminal block with drain and trigger wires
Lamp Replacement	User-replaceable xenon lamp (see Section 4.3)
Lamp Lifetime	≈ 50 000 hours or more
ELECTRICAL & SAFETY	
Power Supply	190 – 250 VAC, 50/60 Hz, single-phase
Power Draw	Peak ≈ 400 A for ≈ 3.5 s (Full Flash) / Continuous ≈ 32 A (Turbo Mode)
Internal Circuit Breaker	Resettable, rear access via safety window
Generator Requirement	Minimum 100 kW AVR-stabilized generator per fixture
Load Characteristics	≈ 0.6 Ω equivalent during flash discharge
Grounding	Mandatory protective-earth (PE) connection
Connectors	1× Power Input (CEE 32 A, 1-phase blue), 1× DMX In (5-pin XLR male), 1× DMX Out (5-pin XLR female)
Power Derating Function	Menu-selectable (limits discharge to ≈ 80 %)
Protection Systems	Over-temperature (hardware switch), over-current (firmware limit), discharge-time limiter, internal breaker
Cooling	Forced-air, high-efficiency multi-fan system with automatic startup
Surface Temperature	Up to 120 °C at full output – allow ≥ 20 min cool-down before handling
Protection Rating	IP 34 – dust-protected and resistant to water spray
CONTROL SYSTEMS	
Control Interfaces	DMX-512 (5-pin XLR In/Out), HF Mode (TLIGHT DIGITAL Controller), optional CRMX2 wireless integration
DMX Channels	2 channels — CH1 = Flash Rate / Continuous, CH2 = Intensity
DMX Protocol	USITT DMX-512, 8-bit control

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Parameter	Specification
HF Protocol	HungaroFLASH proprietary analog trigger with programmable lightning curves
Turbo Function	Double-power flash (Turbo) mode – limited to ≈ 3.5 s for protection
DMX Pin 5	+12 V DC output (for TLIGHT DIGITAL Controller only)
Indicator LEDs	Red = Power, Yellow = Mode / Protection, Green = Data
Display and Menu	Three-digit LED or OLED display with Red + Up/Down navigation buttons
FIXTURE / HOUSING	
Housing Material	Stainless steel and high-temperature composite components
Mounting	Yoke with side handles; includes 2 $\times$ Omega clamps (M12 bolts)
Safety Attachment	Secondary safety cable rated $\geq 10 \times$ fixture weight (mandatory)
Mechanical Adjustment	SPOT-WIDE beam knob (manual), tilt via side handles
Unit Dimensions (H $\times$ W $\times$ D)	380 $\times$ 840 $\times$ 250 mm (15 $\times$ 33 $\times$ 10 in)
Shipping Dimensions (H $\times$ W $\times$ D)	530 $\times$ 1040 $\times$ 480 mm (21 $\times$ 41 $\times$ 19 in)
Weight (Net)	≈ 22.2 kg (49 lb)
Weight (Shipping)	≈ 29.5 kg (54 lb)
Operating Temperature Range	-10 $^{\circ}\text{C}$ to $+45$ $^{\circ}\text{C}$ ambient
Compliance	CE / EMC / RoHS conform — designed for professional use only

10. ACCESSORIES AND SERVICE PARTS

The **HungaroFLASH TLIGHT** can be supplied with a wide range of optional accessories and replacement components.

All items listed below are original HungaroFLASH parts designed for perfect mechanical and electrical compatibility with TLIGHT products.

Use of genuine components ensures full IP 34 protection, optical performance, and electrical safety.

Item / Part Number	Description
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OPTIONAL ACCESSORIES

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Item / Part Number	Description
HFL-FC-01	TLIGHT Flight Case — heavy-duty touring case with reinforced corners and internal foam compartments for one fixture + two lamps.
HFL-PWR-32	Power Cable 2 m — factory-assembled 32 A CEE blue plug (single-phase).
HFL-PWR-25M	Power / DMX Cable 25 m — extended version or custom length upon request (assembled with 5-pin XLR).
HFL-DMX-1M	DMX Cable 1 m — 5-pin XLR male/female, shielded twisted-pair cable.
HFL-YOKE-SET	Mounting Yoke / Clamp Set — includes (M12 bolts) and handle bolts.
HFL-LAMP-KIT	Replacement Xenon Lamp Kit — long-arc 85 kW lamp with protective tube.
HFL-RC-DIGI	TLIGHT DIGITAL Controller — external control unit for HF mode and programmable lightning curves.
HFL-CRMX2-SET	CRMx2 Wireless Integration Set — plug-in module kit for wireless DMX/RDM operation.
SERVICE PARTS	
HFL-REFL-01	Reflector Unit — precision parabolic mirror module for replacement.
HFL-GRID-ASSY	Front Grid with Glass Assembly — protective front glass and latch hardware.
HFL-PCB-CTRL	Control PCB (Main Board) — complete electronics board for service exchange.

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Item / Part Number	Description
HFL-CB-SET	Circuit Breaker Service Set — replacement breaker assembly with rear access window.
HFL-BRK-SET	Mounting Bracket Set — replacement hardware for yoke and clamps.

11. WARRANTY AND SUPPORT

All **HungaroFLASH** products are designed, assembled, and tested to meet the highest professional standards.

Each **TLIGHT** unit is built for decades of reliable service under the most demanding conditions.

HungaroFLASH provides a **Lifetime Service Commitment** in addition to the standard **one-year limited warranty** against manufacturing defects.

This means that even long after the warranty period expires, we continue to support every TLIGHT ever produced — including units over 25 years old — with **low-cost component-level repairs** and full technical assistance.

We respect every client who chooses HungaroFLASH. Whether you own one fixture or an entire system, your investment is protected for life.

11.1 Warranty Coverage

Item	Description
Standard Warranty Period	12 months from the original purchase date.
Extended Support	Lifetime service at component-cost level for all HungaroFLASH TLIGHT products.
Scope of Coverage	Manufacturing defects in materials or workmanship.

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Item	Description
Exclusions	• Misuse or incorrect installation. • Operation outside specified voltage, temperature, or IP-rating limits. • Modifications or repairs not authorized by HungaroFLASH. • Normal wear of consumables such as xenon lamps, fuses, and filters.

11.2 Service Policy

- After the warranty period, HungaroFLASH continues to repair fixtures at **component cost only**, regardless of production year.
 - Full documentation, schematics, and spare parts remain available for all legacy and current models.
 - Where practical, older products are upgraded to the latest compatible specifications during service.
 - No HungaroFLASH device is ever declared obsolete while service parts remain available.
-

11.3 Warranty Procedure

To request warranty or post-warranty service:

1. Record the **product serial number** and **purchase date**.
2. Contact **HungaroFLASH Technical Service** for a service authorization number.
3. Pack the unit securely (lamp removed) following the shipping guidelines in Section 4.4.
4. Include a brief description of the issue and contact details.

If the fault is covered under warranty, repairs or replacements are carried out free of charge.

If the product is outside warranty, only component and shipping costs are charged — no labor fee.

11.4 Service Contact

HungaroFLASH Bt — Technical Service

 **service@hungaroflash.com**

 **www.hungaroflash.com/support**

Business hours: Monday – Friday 09:00 – 17:00 (CET)

Service center: Budapest, Hungary