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HungaroFLASH USER MANUAL **QUASAR** v5

THE FLASH PRODUCER



USER MANUAL

HungaroFLASH

QUASAR PRO 15000W

DMX / RDM / CRMX Fixtures

and LEGACY fixtures

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1. OVERVIEW

1.1 Product Description

The **Quasar 15K** is a high-intensity professional xenon strobe designed for film, Stage, Events and architectural, and special-effects applications. Engineered for extreme output, precision timing, and long-term durability, it supports both standalone operation and advanced DMX control modes. This manual provides operational guidance, installation instructions, and technical information to ensure safe and reliable operation.

1.2 Main Features

- 15 kW peak light output using a high-efficiency Xenon tube
 - RDM-enabled (UID, Identify, remote DMX addressing, sensor reporting)
 - CRMX2 wireless receiver integrated (LumenRadio TimoTwo platform)
 - Multiple DMX personalities: 1-ch / 2-ch / 4-ch
 - Cinematic flash profiles with ultra-stable colour temperature
 - 3-digit LED display for all menu settings and diagnostics
 - Robust steel housing for professional rental environments
 - PowerCON True1 or cable-mounted AC options
 - Replaceable tube, reflector, and front panel assembly
 - Temperature, tube-cycle, and internal voltage monitoring
 - Silent passive cooling, no fans (optional, Theatre version)
-

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1.3 Safety Warnings

CAUTION — High Voltage & High Temperature

- Do not expose the unit to moisture, liquids, or conductive dust.
 - Never operate the strobe with the cover removed.
 - Xenon flash tubes generate intense light—avoid looking directly or indirectly at the discharge tube. Proper eye protection is recommended during testing.
 - Ensure the mains supply is between **170–260 VAC**, 50/60 Hz.
 - Use only **earthed/grounded** outlets.
 - Keep vents unobstructed. Operate only with proper ventilation.
 - When unplugging, pull the connector body—never the cable.
 - Do not attempt repairs unless properly qualified.
 - Tube replacement must be performed by authorized service personnel.
 - The outer housing may exceed **120°C** during operation. Allow full cooling before handling.
-

2. Specifications

2.1 Optical and Electrical Characteristics

Parameter	Specification
Light Source	High-efficiency Xenon flash tube
Peak Flash Power	15 kW (typical)
Color Temperature	~5600 K (stable across pulse range)
Flash Energy Range	0–100% scalable (DMX-controlled)
Flash Duration	0–100% scalable (DMX-controlled)
Flash Repetition Rate	Up to 100 flashes/second (thermal limit dependent)
Beam Type	Parabolic, high-intensity forward throw
Typical Beam Angle	170–30° (standard front grid)
Maximum Instantaneous Current Draw	80A - Depends on power supply model 3s
Operating Voltage	170–240 VAC, 50/60 Hz

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Parameter	Specification
Power Input Connector	PowerCON True1 or internal cable (model dependent)
DMX Control	DMX-512A / RDM (ANSI E1.20)
Wireless Control	Integrated CRMX2 (Optional)
DMX Personalities	1-Ch / 2-Ch / 4-Ch strobe modes

2.2 Mechanical Dimensions

Parameter	Specification
Housing Material	CNC-machined steel + steel frame
Front Protection	front grid stainless steel
Mounting System	Universal bracket / yoke
Cooling	Active FAN (optional fan adjustment)
Dimensions (L × W × H)	450 x 102 x 128 mm
Weight	4.5 kg
Front Access	Easy-release front for tube replacement
Connector Placement	Side-mounted for cables / True1 & DMX

2.3 Environmental Ratings

Parameter	Specification
Operating Temperature	−20 °C to +65 °C
Storage Temperature	−30 °C to +60 °C
Humidity (non-condensing)	10–90%
Ingress Protection	IP65 (sealed connector versions) / IP54 (connector exposed versions)
Vibration Resistance	Rental-grade shock and transport protection

3. Installation

3.1 Unpacking and Inspection

1. Carefully remove the QUASAR fixture from its packaging.
2. Verify that all components are present:
 - QUASAR main unit
 - Mounting yoke or bracket
 - Lamp unit (optional shipping separated)
 - Approved power cable (if cable-mounted model)
 - Optional DMX cable (if included)
 - Safety documents / quick guide
3. Inspect the housing, glass tube, front, connectors, and mounting hardware for any signs of transport damage.
4. If damage is observed, **do not power the unit**. Contact HungaroFLASH support or your rental provider immediately.

Keep all original packaging for transport or service return.

3.2 Mounting Options

The QUASAR is designed for safe and flexible installation in film, TV, stage, and FX environments.

3.2.1 Mounting Points

- Integrated **yoke mount** with adjustable angle
- 8 mm spigot or 28 mm TV pin (model dependent)
- Use omega clamp, Daughty clamp
- Side safety rope anchor points

3.2.2 Mounting Guidelines

- Always secure the fixture using a **secondary safety wire**.
 - Ensure the yoke's locking knobs are fully tightened.
 - Maintain **minimum 1 meter** clearance in front of the lamp.
 - Avoid aiming the strobe directly at nearby reflective surfaces during high-power sequences.
 - Do not obstruct ventilation areas on the sides and rear.
-

3.3 Power Supply Requirements

The QUASAR operates from **170–240 VAC, 50/60 Hz**, with internal power electronics optimized for stable Xenon firing.

3.3.1 Power Connectors

Depending on the model configuration:

Option A – PowerCON HC (IN)

- IN: PowerCON True1 input

Option B – Cable-Mounted Version

- Reinforced fixed power cable
- The opposite end must be terminated with an approved plug (e.g., Schuko, CEE, or production-specific connector)

3.3.2 Electrical Notes

- Always connect to properly grounded mains only.
- Use dedicated lighting distribution, not household circuits.
- For intensive FX sequences, ensure the supply can handle peak current demand.
- Avoid cheap extension cords; use film-grade power cables only.

3.3.3 Power-On Safety

- Connect the power cable **first**, then energize the source.
- In rental workflows, powering the controller first prevents accidental flash events (rare, but possible with defective external gear).

3.4 DMX / Wireless Control Connections

The **QUASAR** supports **two** pathways:

3.4.1 Wired DMX

Connector options vary:

- 5-pin XLR In/Out (IP65 panel connectors)

DMX Guidelines:

- Use proper DMX512-A cables, not audio cables.
 - Maintain correct termination on long lines.
 - Do not run DMX in parallel with high-voltage cables.
-

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3.4.2 Wireless DMX (CRMX2)

The fixture includes a **LumenRadio TimoTwo** wireless module:

- Supports CRMX, W-DMX G3/G4S compatibility
- External SMA antenna (recommended for set usage)

Wireless Notes:

- Keep the antenna unobstructed and vertical.
 - Do not place the lamp inside a metal enclosure.
 - The display shows link quality and pairing status.
-

3.5 Cooling and Ventilation

The **QUASAR** uses **Active cooling** (fan), but optionally is suitable for silent film environments.

Cooling Guidelines

- Do not cover or block side ventilation.
- Keep fixture away from curtains, fabrics, or foam panels.
- For continuous high-frequency flashes, allow periodic cool-downs.
- The internal sensors monitor temperature and will reduce output or halt flashes if limits are reached.

Thermal Protection

The device includes:

- Tube temperature monitoring (electronic)
- Housing temperature monitoring
- Automatic thermal shutdown re-armable after cooldown
- Over-cycle protection (tube life management – Power Derating!)

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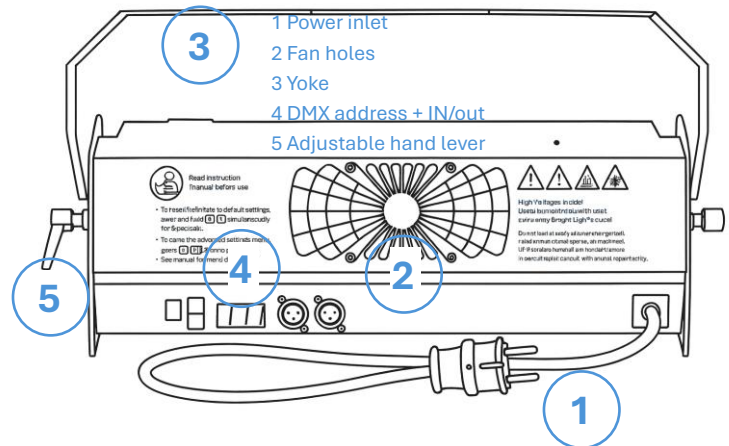
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Keep the original packaging for future transport.

Inspect the unit immediately for damage. If any part appears damaged or damp, do not power the fixture—contact the carrier or your dealer.

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

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



4. Operation

4.1 Power-Up Sequence

When power is applied, the **QUASAR** performs an automatic boot and safety check:

1. **Display activation:**
 - The 3-digit LED display lights up.
 - The device then shows the **current DMX address** (e.g., "001").
2. **Mode confirmation:**

The second screen shows the active DMX personality (e.g., "2CH", "1CH", "4CH", depending on the user configuration).
3. **CRMX Wireless Check:**
 - If previously paired, the CRMX indicator LED lights steadily.
 - If unpaired, the LED blinks slowly until a transmitter is detected.
4. **Idle Status:**

The strobe awaits DMX values or manual test inputs.

During this stage, the fixture will not flash until DMX data or a TEST mode command is received. Unless is in Automated Mode, see later.

4.2 Status Indicator Behavior

The **QUASAR** provides status information through:

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4.2.1 LED Indicators

- **POW (Power):**
On when AC input is present.
- **DMX:**
 - Solid: Valid DMX signal present
 - Off: DMX input disabled (wireless active)
- **RDM:**
Blinks during RDM discovery or when RDM packets are exchanged.
- **Protection (Fault):**
Lights when a critical error is present (temperature, lamp protection cycle).
- **CRMX (Wireless):**
 - Solid: Linked
 - Slow blink: Searching
 - Fast blink: Pairing mode
 - Off: Wireless disabled

4.2.2 3-Digit Display Behavior

- Normal mode: shows DMX address
- Menu mode: brighter display (See later)
- Flashing values: pending confirmation
- Dots: used to indicate decimals, submenus, or live sensor displays

4.3 Basic Flash Operation

Once DMX or CRMX control is active, the strobe responds to incoming channel values:

- **Brightness / Energy:**
Controls flash intensity from 0–100%.
- **Frequency:**
Sets strobe repetition rate.

Important Notes

- The **QUASAR** will not flash without valid DMX data unless TEST mode is manually activated.
- For safety, high-energy sequences may be internally limited by temperature conditions.
- The flash tube is high-voltage; the fixture must never be opened while powered.

4.4 DMX Control Overview

The **QUASAR** supports multiple DMX personalities selected via menu or RDM:

1-Channel Mode (1CH)

- CH1 = Combined control (Energy + Frequency mapping together)
- Suitable for simple strobe consoles or FX triggers.

2-Channel Mode (2CH)

- CH1 = Frequency
- CH2 = Brightness / Energy
- Matches **QUASAR** logic, ideal for synchronized flashes in film.

4-Channel Mode (4CH)

- CH1 = Energy
- CH2 = Frequency
- CH3 = Fx Type (burst, random, ramp, etc)

Personality changes take effect immediately after confirmation.

- CH4 = FX Speed

CRMX follows the same behavior.

4.5 CRMX Wireless Operation

The integrated LumenRadio TimoTwo module provides premium wireless DMX/RDM connectivity.

4.5.1 Pairing Procedure

1. Enter the fixture's menu → **CRX**.
2. Choose **PAIR**.
3. The CRMX LED begins fast blinking.
4. Activate "Pair/Link" on the transmitter.
5. LED turns solid once locked.

4.5.2 Unpairing

Navigate to CRX → **CLR** (Clear Link).

This removes the previous receiver binding.

4.5.3 Link Status

- **Solid:** Connected
- **Slow blink:** No transmitter

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- **Fast blink:** Pairing mode
- **Off:** Wireless disabled

4.5.4 Priority Rules

- When **DMX cable is connected**, the wired signal has priority.
- When DMX is disconnected, **CRMX takes over automatically**.

4.5.5 RF Performance Notes

- Keep antenna vertical and unobstructed.
- Metal stands and flags can block RF; reposition if link drops.
- RDM over CRMX is supported (sensor and device info only).
- Wireless reset does not affect DMX settings or address.

5. OPERATION AND PROGRAMMING

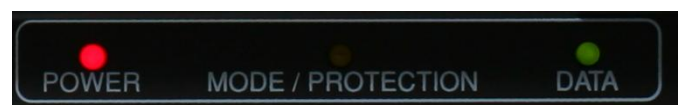
The **HungaroFLASH QUASAR** provides a straightforward control interface for both local operation and external DMX/HF communication.

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**



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

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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.

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 QUASAR 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 **3 seconds**, the unit automatically returns to Idle.

Main Menu Navigation Diagram

STANDARD MENU

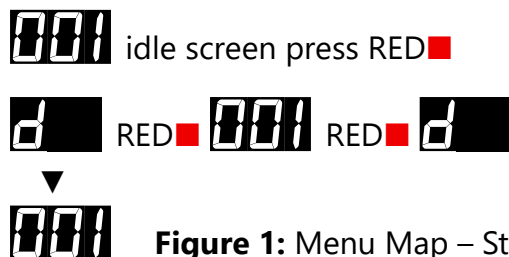


Figure 1: Menu Map – Standard Menu Structure

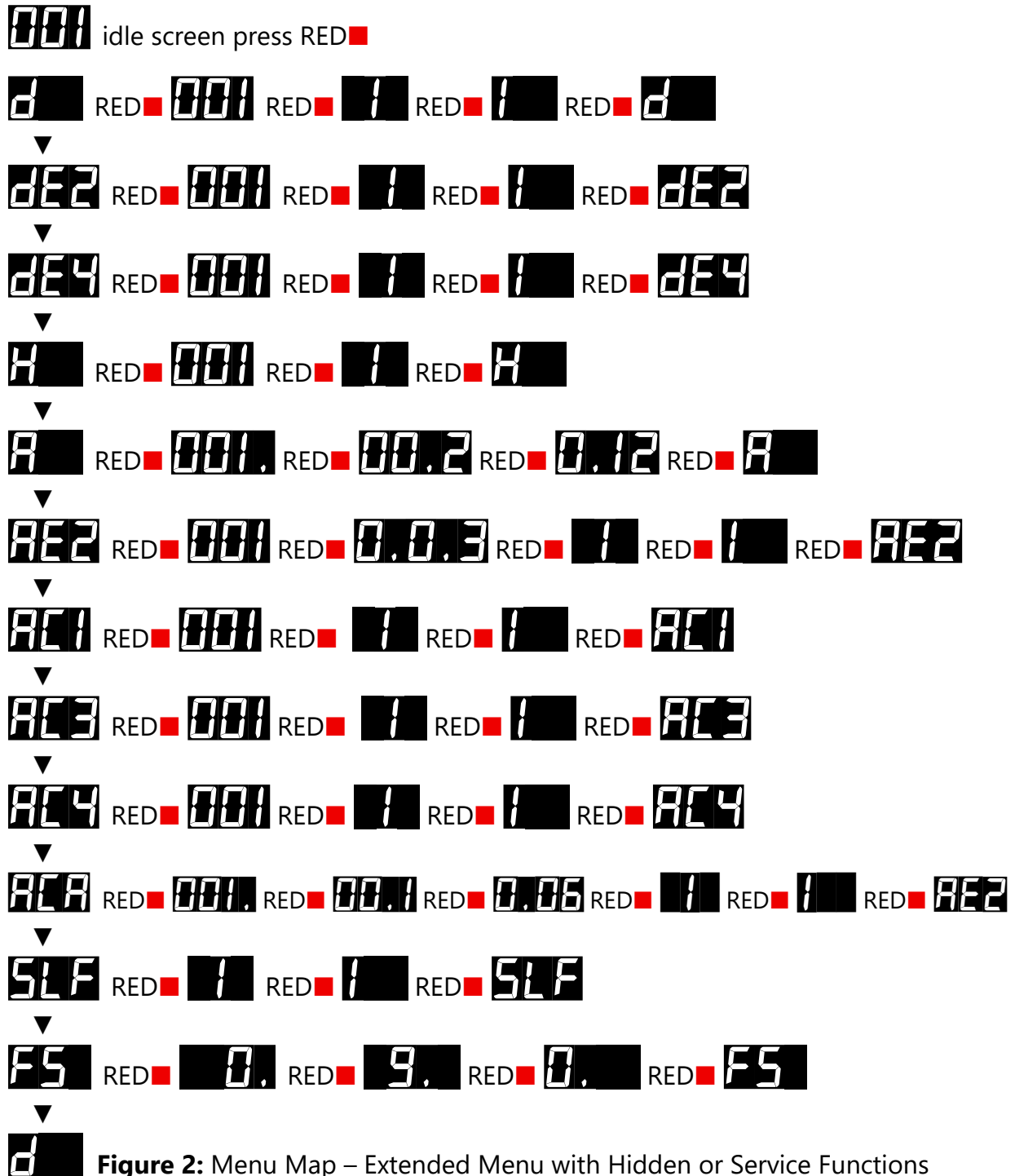
This diagram shows the primary navigation sequence starting from the idle display (001) and the transitions between key menu items (ADDR, MODE, SLF, F5, etc.) when pressing the **Red** button.

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Extended Menu Navigation Diagram

EXTENDED MENU



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 **QUASAR** 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.

d – Normal DMX Mode

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

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

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 .
 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.

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

During testing, the **QUASAR** 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 **SLF** → 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 **SLF**; 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 **!** limits discharge power to ≈ 80 %. Confirm. RED ■

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3.  DISPLAY INTENSITY → set 0–9 to adjust front display brightness (does not affect light output). Confirm. RED 
4.  Extended → 1 = ON / 0 = Standard. When ON , buttons are Extended. Confirm. RED 

Exit / Return

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

Unlock Procedure

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

dE2 – 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  → 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.

dE4 – 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 **dE4** → 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 **dE4**; DMX control resumes with new parameters.

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.

Effect Types

Used when multiple **QUASAR** 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. **DE**, **AE**).

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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 **QUASAR** continuously monitors its internal temperature, current, and operating state.

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

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.

5.9 Quick Start Procedure

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

⚠ Caution:

Verify that the **Front GRID** 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 25 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.

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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.
-

6. DMX CONTROL

The **HungaroFLASH QUASAR** 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 **CRM2 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 / Continuous Control	0 – 255	1–90 % = 1–24 Hz flash rate; > 90 % = Continuous Light
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 **QUASAR** 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 (optional – 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 **QUASAR** 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 **QUASAR** 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).

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Change switch position only when power is OFF.

2. Digital Display Models (Current Generation)

New **QUASAR** 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:
 - **"d"** = 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 → d / H
CRMX2 Wireless	Automatic signal detection

6.4 HF Mode (Legacy / High-Frequency Control)

In **HF Mode**, the **QUASAR** 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 QUASAR in HF Mode

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

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

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 **QUASAR** 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 **QUASAR** 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 **QUASAR 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 **QUASAR** will **remain illuminated** until the **duration time expires**.

6.5 CRMX2 Wireless DMX Integration (Optional)

Future **QUASAR** 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.

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- 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

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/ QUASAR -dmx](http://www.hungaroflash.com/support/QUASAR-dmx)

7. RDM PARAMETERS

The **HungaroFLASH QUASAR** 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 **QUASAR** 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
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 **QUASAR** 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:

- **CRMX2 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.

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

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8. CLEANING AND CARE

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

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Note:

The **Front GRID** 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 **QUASAR** 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 grid, reflectors, and optical cavity** only with approved optical-grade cloths.
 - 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 **QUASAR** in a **dry, dust-free** environment between **-10 °C and +50 °C**.

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- Use the **original carton or QUASAR Flight Case** for shipping.
- Avoid shock, vibration during storage.
- Do not stack multiple fixtures unless packed in approved flight cases.

8.6 Service and Repairs

- The **QUASAR** 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

9. TECHNICAL SPECIFICATIONS

Parameter	Specification
LIGHT PARAMETERS	
Product Name	HungaroFLASH QUASAR PRO 15 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
Color Temperature	6000 K nominal
Light Output	≈ 0.45 million lumens (≈ 450 k lm)
Flicker-Free Operation	Flicker-free up to 24/25 frames per second
LAMP PARAMETERS	
Lamp Type	15 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
Lamp Lifetime	≈ 20 000 hours or more

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Parameter	Specification
ELECTRICAL & SAFETY	
Power Supply	170 – 250 VAC, 50/60 Hz, single-phase
Power Draw	Peak $\approx$ 80 A for $\approx$ 3s (Full Flash) / Continuous $\approx$ 12 A (Turbo Mode)
Internal Circuit Breaker	Resettable, rear access via safety window
Generator Requirement	Minimum 100 kW AVR-stabilized generator per fixture
Load Characteristics	$\approx$ 3.0 Ω equivalent during flash discharge
Grounding	Mandatory protective-earth (PE) connection
Connectors	1 $\times$ Power Input, 1 $\times$ DMX In (5-pin XLR male), 1 $\times$ DMX Out (5-pin XLR female)
Power Derating Function	Menu-selectable (limits discharge to $\approx$ 80 %)
Protection Systems	Over-temperature (hardware switch), over-current (firmware limit), discharge-time limiter, internal fuse
Cooling	Forced-air, high-efficiency multi-fan system with automatic startup
Surface Temperature	Up to 120 °C at full output – allow $\geq$ 20 min cool-down before handling
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
HF Protocol	HungaroFLASH proprietary analog trigger with programmable lightning curves
Turbo Function	Double-power flash (Turbo) mode – limited to $\approx$ 3.5 s for protection
DMX Pin 5	+12 V DC output (for TLIGHT DIGITAL Controller only) (optional)
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	Steel
Mounting	Yoke with side handles
Safety Attachment	Secondary safety cable rated $\geq$ 10 $\times$ fixture weight (not incl.)
Unit Dimensions (H $\times$ W $\times$ D)	450 $\times$ 100 $\times$ 130 mm (17 $\times$ 4 $\times$ 5 in)
Shipping Dimensions (H $\times$ W $\times$ D)	530 $\times$ 200 $\times$ 240 mm (21 $\times$ 8 $\times$ 10 in)
Weight (Net)	$\approx$ 4.0 kg (7.2 lb)
Weight (Shipping)	$\approx$ 5.0 kg (9 lb)
Operating Temperature Range	-10 °C to +45 °C ambient
Compliance	CE / EMC / RoHS conform — designed for professional use only

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10. ACCESSORIES AND SERVICE PARTS

The **HungaroFLASH QUASAR** 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 **QUASAR** products.

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

Item / Part Number	Description
OPTIONAL ACCESSORIES	
HFL-FC-02	QUASAR Flight Case — heavy-duty touring case with reinforced corners and internal foam compartments for one fixture + two lamps.
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-SETQ	Mounting Yoke / Clamp Set — includes (M12 bolts) and handle bolts.
HFL-LAMP-KITQ	Replacement Xenon Lamp Kit — long-arc 15 kW lamp with protective tube.
HFL-RC-DIGI	TLIGHT DIGITAL Controller — external control unit for HF mode and programmable lightning curves.
HFL-CRMX2-SETQ	CRMX2 Wireless Integration Set — plug-in module kit for wireless DMX/RDM operation.
SERVICE PARTS	
HFL-REFL-01Q	Reflector Unit — precision parabolic mirror module for replacement.
HFL-GRID-ASSQ	Front Grid — protective front glass and latch hardware.

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Item / Part Number	Description
HFL-PCB-CTRLQ	Control PCB (Main Board) — complete electronics board for service exchange.
HFL-CB-SETQ	Fuse Set — replacement breaker assembly with rear access window.
HFL-BRK-SETQ	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 **QUASAT** 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 **QUASAR** 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 QUASAR 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