

**UK Type Examination Certificate CML 23UKEX1041X Issue 0****United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres  
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **FL500 UV/IR and FL500-H2 UV/IR Flame Detectors**
- 3 Manufacturer **General Monitors, Incorporated** **General Monitors (Ireland) Limited**
- 4 Address **16782 Von Karman Avenue** **Ballybrit Business Park**  
**Unit 14 Irvine** **Galway H91 H6P2**  
**California. 92606** **Ireland**  
**USA**

- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports listed in Section 12.

- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-1:2014

EN 60079-31:2014

- 10 The equipment shall be marked with the following:



II 2 G D

Ex db IIC T5 Gb

Ex tb IIIC T100°C Db

Ta: -55°C to +85°C

IP66/IP67





**CML 23UKEX1041X**  
**Issue 0**

## 11 Description

Model FL500 is an ultraviolet/infrared (UV/IR) flame detector. It detects the ultraviolet and infrared spectral regions of flame to produce a system which is highly immune to false alarms caused by lightning, arc-welding, hot objects, and other sources of radiation.

The FL500 uses a UV radiation-sensitive phototube and an IR detector to identify fires. The FL500 is available with the following outputs: 4 to 20 mA signal, Immediate Alarm Low (relay), Time-delayed Alarm High (relay), RS-485 Modbus RTU, and HART 7 communication.

The FL500 assembly consists of a cylindrical, single-compartment, painted cast stainless steel enclosure with one threaded windowed cover. Field wiring connections for supply, communications and output contacts are accommodated through two threaded conduit entries. Each conduit entry is provided with a suitably rated blanking element. The overall physical dimensions are 11.2 x 11.0 cm (Ø x W).

The optical radiation output (LED) of the apparatus with respect to explosion protection is covered in this certificate based on exception 5) to the scope of IEC 60079-28:2015.

The M100x2.0 (6H/6g, ISO 965-1) threaded cover is provided with a minimum of 8 fully engaged threads. The cover is provided with a 4.95 mm (0.195 in) minimum thick sapphire window, secured by means of a threaded retaining ring and environmentally sealed with an EPDM O-ring (73 mm ID x 2.4 mm cross section thickness) gasket.

The cover includes an M10 x 1.5 x 12mm long set screw for tool securement and environmentally sealed with an EPDM O-ring (95.3 mm ID x 3.2 mm cross section thickness) gasket. See manufacturer's assembly drawings for further information. The ratings IPx6 and IPx7 are not part of the methods of protection and were tested independent of the IECEx requirements. The equipment has been independently tested against the requirements of IEC 60529 and it meets IP66/IP67.

The FL500-H2 is a derivative of, and similar to the FL500, which is an ultraviolet/infrared (UV/IR) flame detector that uses a UV radiation-sensitive phototube and an IR detector to sense specific wavelengths in the UV and IR spectral regions. The FL500-H2 is tuned to specifically detect Hydrogen fires. All electrical connections and ratings remain the same as the FL500.

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	12 May 2023	R16134B/00	Issue of Prime Certificate

Note: Drawings that describe the equipment are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.



**CML 23UKEX1041X**  
**Issue 0**

#### **14 Specific Conditions of Use**

The following conditions relate to safe installation and/or use of the equipment.

- i. Potential electrostatic charging hazard; use a damp cloth for cleaning.
- ii. Contact the manufacturer if dimensional information of flameproof joints is needed.
- iii. Field Connections to the FL500 shall be appropriately certified for the location and installed in accordance with wiring method requirements of the local electrical code as applicable.

## Certificate Annex

**Certificate Number** CML 23UKEX1041X  
**Equipment** FL500 UV/IR and FL500-H2 UV/IR Flame Detectors  
**Manufacturer** General Monitors, Incorporated General Monitors, Incorporated



The following documents describe the equipment defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
712900	1 to 2	1	12 May 2023	GL500 Approval Drawing
712902	1 of 1	3	12 May 2023	Final Assy. FL500
712904	1 to 2	10	12 May 2023	Nameplate, Approval FL500
712908	1 to 2	6	12 May 2023	Housing Machined, FL500
712912	1 of 1	3	12 May 2023	Base Machined, FL500
712920	1 of 1	1	12 May 2023	Sensor Board
712921	1 of 1	2	12 May 2023	Circuit Card Assembly Detector Board
712923	1 to 2	1	12 May 2023	Circuit Card Detail, Detector Board
712930	1 to 3	1	12 May 2023	Schematic Diagram, Control Board
712931	1 of 1	2	12 May 2023	Circuit card assembly Control Board
712940	1 of 1	1	12 May 2023	Schematic Diagram Relay & Connector Board
712941	1 of 1	1	12 May 2023	Circuit Card Assembly, Relay & Connector Board
712943	1 to 2	1	12 May 2023	Circuit Card Assembly, Relay & Connector Board
712983	1 of 1	1	12 May 2023	Board Stack Assy, UV/IR, FL500
712985	1 of 1	1	12 May 2023	Window, FL500
712989	1 of 1	1	12 May 2023	Label Wiring, FL500