1 # EU-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** **FM10ATEX0031X**

4 **Equipment or protective system: (Type Reference and Name)** **IR5500 Open Path Gas Detector**

5 **Name of Applicant:** **General Monitors Inc**

6 **Address of Applicant:** **26776 Simpatica Circle**
Lake Forest CA 92630
United States of America

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, 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 Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3036609EC dated 21st September 2010

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012+A11:2013, EN 60079-1:2014, EN 60079-29-4:2010,
EN 60079-31:2014 and EN 60529:1992+A1:2000+A2:2013

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

II 2 G Ex db IIB+H_2 T4 Gb Ta = -55°C to +65°C

II 2 D Ex tb IIIC T135°C Db Ta = -55°C to +65°C

EN 60079-29-4

Digitally signed by Richard Zammitt
DN: cn=Richard Zammitt, o, ou=FM Approvals Europe Limited, email=richard.zammitt@fmapprovals.com, c=IE

Richard Zammitt
Certification Manager, FM Approvals Europe Ltd.

Issue date: 08th April 2019

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13 **Description of Equipment or Protective System:**

The IR5500; part numbers, 329000-a, 329001-a are fixed open path gas detectors, comprising of a Source and Receiver operating over a distance of 5-150 meters. The operating temperature range is -55°C to +65°C and the power consumptions (Um) are: for the Source = 12W and for the Receiver = 10W. The enclosures are manufactured from 316L stainless steel. Field accessories comprise of Attenuation plate P/N 329113-1, Pan-Tilt Base assembly P/N 329071-1, Pan-Tilt Arm assembly P/N 329073-1, Pan-Tilt Basic Arm assembly P/N 329123-1, Long Range Alignment Kit P/N 329082 and gas filter kits P/N 329083 & 329084. Depending on the model selected, the system communications are Dual Modbus or Single Modbus with HART. Each variation comes complete with (2) 4 - 20mA outputs for detection of Propane with measurement ranges of 0-1 LEL•m and 0-2000ppm•m and Methane with measurement ranges of 0-5 LEL•m and 0-5000ppm•m, with minimum alarm set point of 10% FSD and repeatability of ±6% FSD. The apparatus complies with EN 60079-29-4.

The enclosures have an ingress protection rating of IP66/67.

IR5500 Receiver:
329000-a
a: Output & Terminals - 1, 2, 3, 4, 9, 10, 11, 12, 25, 26, 27, 28, 29, 30, 31, 32 and 33

IR5500 Source:
329001-a
a: Range & Terminals – 1, 2 , 5, 6, 9, 10, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 31, 32, 33, 34 and 37

Specifications - The manufacturer's specifications are as follow:

Operating Temperature:	-55°C to +65°C
Relative Humidity:	10 to 95% (Non- condensing)
Supply Parameters:	+24 V nominal, 20-36 VDC
Measurement Signal:	4-20mA
Calibration:	Units are supplied factory calibrated for the specified target gas or gases. Units should not require recalibration in service.

14 **Specific Conditions of Use:**

1. Consult the manufacturer for dimensional information on the flameproof joints for repair.
2. Parts of the equipment and the painted surface of the IR5500 Source or IR5500 Receiver may store electrostatic charge and become a source of ignition in applications with a low relative humidity <~30% relative humidity where the parts and the painted surface is relatively free of surface contamination such as dirt, dust, or oil. Guidance on protection against the risk of ignition due to electrostatic discharge can be found in EN TR50404 and IEC TR60079-32-1 (in preparation). Cleaning of the parts and painted surface should only be done with a damp cloth.

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

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16 **Test and Assessment Procedure and Conditions:**

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
23rd September 2010	Original Issue.
28th February 2011	Supplement 1: Report Reference: – 3041466 dated 16th February 2011. Description of the Change: Alternative product firmware added to accommodate use of a pan-tilt arm. No modifications have been made to the product hardware.
20th February 2012	Supplement 2: Report Reference: – 3036609rev111122 dated 23rd December 2011. Description of the Change: Drawing and manual updates.
18th October 2012	Supplement 3: Report Reference: – 3046962 dated 12th October 2012. Description of the Change: Drawing updates, addition of pan tilt arm, visible light filter and minor firmware update to address over range display issue.
12th May 2014	Supplement 4: Report Reference: – 3051421 dated 08th May 2014. Description of the Change: Drawing updates, adding of 'X' marking and updates to standards list.
20th August 2014	Supplement 5: Report Reference: – 3036609rev140503 dated 29th July 2014. Description of the Change: Add alternative enclosure paint version, modify the lamp trigger circuit on the Tx (Source) version to extend lamp life, update EMC filter on 24VDC input to pass EMC requirements, update drawings to reflect these changes.
12th November 2014	Supplement 6: Report Reference: – 3036609rev141021 dated 30th October 2014. Description of the Change: Update Model Code in Section 13 to reflect added enclosure versions Certified in Supplement 5. Add part number for new spacer.

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Date	Description
	Update drawings to reflect these changes.
16th February 2015	Supplement 7: Report Reference: – 3052867 dated 29th January 2015 Description of the Change: Updated firmware and updated listing to include short range model codes
12th January 2017	Supplement 8: Report Reference: – 3058657 dated 27th December 2016 Description of the Change: Modify hardware and firmware, update drawings to reflect these changes. Updated editions of Standards: from EN 60079-0:2009 to 2012+A11:2013, from EN 60079-1:2007 to 2014, from EN 60079-31:2009 to 2014.
30th April 2018	Supplement 9: Report Reference: – RR213340 dated 30th March 2018 Description of the Change: Documentation Update
30th January 2019	Supplement 10: Report Reference: – RR216941 dated 28th January 2019 Description of the Change: Documentation Update
08th April 2019	Supplement 11: Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.

FM Approvals Europe Ltd. One Georges Quay Plaza, Dublin. Ireland. D02 E440
T: +353 (0) 1761 4200 E-mail: atex@fmapprovals.com www.fmapprovals.com