EU Type Examination Certificate CML 19ATEX1375X Issue 0

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **Fixed Gas Detector**

3 Manufacturer **RAE Systems (Shanghai) Inc.**

4 Address **No. 990 E. Huiwang Road,**
Jiading District, Shanghai,
201815 China

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 CML B.V. , Chamber of Commerce No 6738671, Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 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 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 conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

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 60079-11:2012

10 The equipment shall be marked with the following:

(FGM-6100 and FGM-6200)	*(FGM-6300)*
II 2 G	II 2 G
Ex db IIC T6 Gb	Ex db ia IIC T6 Gb
Ta= -40°C ≤Ta≤ +65°C	Ta= -20°C ≤Ta≤ +55°C

R C Marshall
Certification Officer

11 Description

Fixed Gas Detector comprises a cylindrical main housing and a gas sensing head. The main housing, which contains the electronics and an LED display, comprises a threaded window cover and a base with mounting lugs. The base has two 3/4 NPT cable entries to connect separately certified cable glands and one M25*1.5 threaded hole, which is used to mount the sensing head.

Product with different sensor type has the same structure for the sensing head. It is made of stainless steel and comprises two parts, cylindrical jointed and fastened with a threaded nut. For LEL/NDIR type, the sensing end has an 80um sinter fused into the enclosure to allow gas penetration to be detected by the internal equipment, the mounting end contains a setting compound through which the equipment wiring passes.

EC type has a sensor head contains two encapsulated boards which forms the part of the flameproof enclosure. The encapsulation contains a safety interface input board and output board. The un-encapsulated part of the sensor head contains a connect board, MCU board and Signal board which connects to gas sensor. The un-encapsulated electronics and the replaceable gas sensor are located behind a removable chromium plated cover.

Type Designation:

FGM-6a00b

“a” indicates sensor type, includes 1 (LEL), 2 (NDIR) and 3 (EC);

“b” indicates material of main housing, includes S (stainless steel) and blank (aluminium alloy).

Um = 250V

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	02 Aug 2019	R12618A_00	Issue of Prime Certificate

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

13 Conditions of Manufacture

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

i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

ii. The manufacturer declares that the equipment, when installed and maintained correctly, has been designed so as to:
- avoid physical injury which might be caused by direct or indirect contact;
- assure that surface temperatures of the accessible parts, or radiation which would cause a danger, are not produced;
- eliminate non-electrical dangers which are revealed by experience;
- assure that foreseeable conditions of overload do not give rise to dangerous situations.

14 Specific Conditions of Use (Special Conditions)

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

i. The flameproof joints differ from the values of IEC 60079-1 Table 2, therefore they shall not be repaired by anyone other than the manufacturer. Contact the manufacturer for further details.

ii. The cable entries shall be connected by means of suitable cable glands or blanking elements with type of protection of Ex db IIC Gb. The cable entry device shall be approved in accordance with EN 60079-0:2017 and EN 60079-1:2014, and which are covered by a separate conformity certificate.

iii. This product shall be connected an equipotential bonding system. Refer to the manual for further details.