



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 03ATEX1406X** Issue: **3**

4 Equipment: **SafEye Series 700 Open Path Gas Detectors & Flash Source Units**

5 Applicant: **Spectrex Inc.**

6 Address: **218 Little Falls Road
Cedar Grove
NJ 07009
USA**

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, 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 14.2.

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

EN 60079-0: 2007 EN 6007-1: 2007 EN 60079-26: 2007
EN 60079-7: 2004 EN 60079-11: 2006

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

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2(1) G
Ex d e ia [ia Ga] IIC T5 Gb Ta = -40°C to +55°C

Project Number 24660

C Ellaby
Deputy Certification Manager

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Sira Certification Service

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SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

The Series 700 Open Path Gas Detectors & Flash Source Units include the following models: Gas Detector Model XDS-C-XXXXX, Gas Detector SIL-2 Model XDSS-C-XXXXX and Flash Source Model XSS-C-XXX. They comprise two enclosures, a Detector Unit and a Flash Source Unit, which are manufactured from 316 stainless steel and provide an ingress protection rating of IP66/X7. The enclosures have a two-part construction and a basic cylindrical shape. They consist of a flameproof main housing on top of an increased safety terminal enclosure; these are secured together by four ¼" 20-UNC-2Ax1 socket head cap screws. The interface between the main housing and the terminal enclosure is provided by a certified Type 07-9102-E152 flameproof line bushing manufactured by Bartec GmbH.

The main housing incorporates:

- the sensors and the various associated electronics that differentiate between the model variants
- a sapphire window cemented into place and protected by a permanently fixed guard
- a window heater, supplied via a certified Type 07-9102-E010 flameproof line bushing manufactured by Bartec GmbH
- intrinsically safe circuitry for providing power to the heater and data to a hand-held P.C. The increased safety terminal compartment has up to two M25 x 1.5 or ¾" - 14 NPT cable entry ports on the side wall and its cover is secured by four, captive, M4, socket head screws. The terminal compartment contains:
 - component certified Type 07-9702-0320/1 increased safety terminals manufactured by Bartec GmbH for connection to external circuits
 - a plug, with the following output parameters, to enable the Series 700 Open Path Gas Detectors & Flash Source Units to link up to a hand-held P.C.

Entity Parameter	Value
Uo	6.51 V
Io	258 mA, transient
Io	170 mA, continuous
Po	0.42 W
Ci	0
Li	0
Co	22 µF
Lo	534 µH

Yield strength of stainless steel cap head screws used during testing specified as 240 N/mm².



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Variation 1 - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments 1 and 2), EN 50018:2000, EN 50019:2000, EN 50020:2002, EN 50284:1998 and EN 50281-1-1:1998, were replaced by those currently listed and the markings in section 12 were updated accordingly. It should be noted that the products do not comply with the new EN 61241-0 and EN 61241-1 standards.
- ii. The introduction of alternative assembly model XDSS-C-XXXXX SIL-2 Version of Gas Detector, drawing no. 799803 which include an alternative CPU board, I/O board, barrier module and heater.
- iii. A reduction of current limiting resistor on I/O Barrier module 799049 from 25.5 Ω to 25 Ω .
- iv. Minor changes to existing documentation were recognised.
- v. Inclusion of the changes described in reports R51A11384A and R51A13891A.

Variation 2 - This variation introduced the following changes:

- i. The introduction of changes to the product marking to detail the EPL.

Variation 3 - This variation introduced the following changes:

- i. Insertion of a surface mount capacitor into the I/O PCB.
- ii. Insertion of a surface mount capacitor into the CPU PCB.
- iii. Insertion of an additional surface mount resistor R146 into the CPU PCB.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	3 November 2003	R51A10736A	The release of prime certificate.
1	12 February 2009	R51A11384A R51A13891A R52A18227A	This Issue covers the following changes: <ul style="list-style-type: none">• All previously issued certification was rationalised into a single certificate, Issue 1, Issue 0 referenced above is only intended to reflect the history of the previous certification and has not been issued as a document in this format.• The introduction of Variation 1.
2	6 September 2010	R22517B/00	The introduction of Variation 2.
3	16 November 2011	R24660B/00	This Issue covers the following changes: <ul style="list-style-type: none">• The marking in Section 12 was amended to correct a typographical error and correct the temperature range.• Drawing No 799531 was updated to correct a typographical error and reflect the manufacturing requirement against the certificate issue level.• The introduction of Variation 3.

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15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

- 15.1 The SafEye Series 700 Open Path Gas Detectors & Flash Source Units shall not be used as Safety Related Devices in accordance with Directive 94/9/EC.
- 15.2 Non-standard flamepath is used between the main housing and the terminal compartment. Thus, the following flamepath dimensions shall apply.

Flamepath	Minimum Width (mm)	Maximum Gap (mm)
Cylindrical Joint Main Housing/ Terminal Compartment	15.5	0.14

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)**

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF CERTIFICATION**

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 The SafEye Series 700 Open Path Gas Detectors & Flash Source Unit covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of the SafEye Series 700 Open Path Gas Detectors & Flash Source Unit.
- 17.4 All products shall be marked with name SafEye 700.

Certificate Annexe

Certificate Number: Sira 03ATEX1406X
Equipment: SafEye Series 700 Open Path Gas Detectors
& Flash Source Units
Applicant: Spectrex Inc.



Issue 0

Drawing	Rev.	Sheets	Date	Title
799531	F	1 of 1	03 Nov 03	Label
799500	-	1 of 1	03 Nov 03	Gas Detector Cross Reference List

Issue 1

Drawing	Rev	Sheets.	Date (Sira stamp)	Title
799531	J	1 of 1	12 Jan 09	Label
799500	A	1 of 1	10 Feb 09	Gas Detector Cross Reference List

Issue 2

Drawing	Rev	Sheets.	Date (Sira stamp)	Title
799531	L	1 of 1	06 Sep 10	Label

Issue 3

Drawing	Rev	Sheets.	Date (Sira stamp)	Title
799531	M	1 of 1	7 Sep 11	Label

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