



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX SIR 03.0003U** issue No.:5

Status: **Current**

Date of Issue: **2012-11-14** Page 1 of 5

Applicant: **SGX Sensortech (IS) Ltd**  
2 Hanbury Road  
Widford Industrial Estate  
Chelmsford  
Essex CM1 3AE  
United Kingdom

Certificate history:  
Issue No. 5 (2012-11-14)  
Issue No. 4 (2012-4-24)  
Issue No. 3 (2011-2-14)  
Issue No. 2 (2009-3-2)  
Issue No. 1 (2008-6-24)  
Issue No. 0 (2004-11-1)

Electrical Apparatus: **IR2xxxxxx Series Gas Sensing Head**  
Optional accessory:

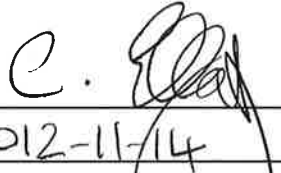
Type of Protection: **Intrinsic Safety**

Marking: **Ex ia I Ma**  
**Ta = -20°C to +60°C**

Approved for issue on behalf of the IECEx Certification Body: **C Ellaby**

Position: **Deputy Certification Manager**

Signature:  
(for printed version)

  
\_\_\_\_\_  
**2012-11-14**

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**SIRA Certification Service**  
Rake Lane  
Eccleston  
Chester  
CH4 9JN  
United Kingdom





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Manufacturer: **SGX Sensortech (IS) Ltd**  
 2 Hanbury Road  
 Widford Industrial Estate  
 Chelmsford  
 Essex CM1 3AE  
 United Kingdom

**Manufacturing location(s):**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

- IEC 60079-0 : 2004** Edition: 4.0 Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
- IEC 60079-0 : 2007-10** Edition: 5 Explosive atmospheres - Part 0: Equipment - General requirements
- IEC 60079-11 : 2006** Edition: 5 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

IECEX ATR:	File Reference:
UK/SIR/04/10462 GB/SIR/ExTR12.0093/00	R52L10462A/ GB/SIR/ExTR12.0250/00
GB/SIR/ExTR08.0079/00. GB/SIR/QAR07.0026/02	55L11068
GB/SIR/ExTR09.0026/00. GB/SIR/ExTR11.0020/00	GB/SIR/QAR07.0026/03



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The IR2xxxxxxx-series Gas Sensing Head comprises a stainless steel body, which houses an infra-red emitter and detector(s). Electrical connections are made via pins that pass through a potting compound at the rear of the device. Gas enters the device via two wire meshes, one of which is brazed into the inside of the front face of the enclosure, the assembly offering protection against dust ingress of IP5X.

There may be two or three detector circuits and the pyroelectric detector itself may be varied to detect a number of different gases. There are six, seven and eight pin versions; a thermistor or a temperature sensor may also be fitted.

The IR2xxxxxxx is a galvanically isolating device with infallible separations between the lamp and detector circuits up to 10 V. When used as an intrinsically safe galvanically-isolating device, the various versions of the IR2xxxxxxx have the safety descriptions shown on the additional page:

### CONDITIONS OF CERTIFICATION: NO



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**EQUIPMENT(continued):**

**Special Conditions For Safe Use (Component)**

1. The ambient temperature range of the IR2xxxxxx-Series Gas Sensing Head is -20°C to +60°C
2. For the purpose of determining the maximum surface temperature of the IR2xxxxxx, the thermal resistance does not exceed 25 K/W, i.e. equivalent to a 68 K temperature rise at an input power of 2.71 W
3. The IR2xxxxxx is dust-proof (IP5X) but offers no protection against the ingress of water. Where protection in excess of IP50 is required (for example, where intrinsic safety depends on the segregation between the lamp and detector circuits), then the apparatus into which the IR Head is installed shall provide the necessary ingress protection (for example by fitting an external semi-permeable membrane).

**The IR2xxx has the following safety description:**

7-pin and 8-pin versions (IR2xEx, IR2xFx, IR2xGx, IR2xHx & IR2xTx)			All other versions		
Lamp circuit	Detector circuit	Lamp+detector circuits	Lamp circuit	Detector circuit	Lamp+detector circuits
Ui = 7.2 V	Ui = 10 V	Pi = 2.71W	Ui = 7.2 V	Ui = 10 V	Pi = 2.71 W
	Pi = 1.2 W				



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

<b>Issue 1</b> – this Issue introduced the following changes:	
1	Introduction of a 7-pin versions with a temperature IC or thermistor fitted
2	Addition of a thermistor to the existing 8-pin version
3	Amendment to the product description and the safety description to include the above 7-pin version
4	Minor track layout changes to the 6-pin and 8-pin boards
5	Up-dating the assessment to the latest IEC standards IEC 60079-0:2004 & IEC 60079-11:2006
<b>Issue 2</b> – this Issue introduced the following changes:	
1	The artwork drawings were changed to omit the reference to the supplier of the FR4 board material and specify another (non-certification) drawing.
2	An alternative lamp with a filament support was introduced to improve mechanical robustness.
3	The inclusion of mesh support and glass perform items to the main assembly.
4	The certification code was corrected.
<b>Issue 3</b> – this Issue introduced the following changes:	
1	The label, drawing number N30070A was withdrawn and replaced by drawing number N30090A, version 3 which includes a new product identity for the end user and an optional bar code.
2	The change of product number from IR2xxx to IR2xxxxxxx, the previous references in the description being modified accordingly.
<b>Issue 4</b> – this Issue introduced the following changes:	
1	The introduction of a solder resist (mask) layer was approved
2	The introduction of alternative sourced Pyroelectric detectors was endorsed
3	correction of minor typographical errors on drawings was accepted
4	The introduction of an alternative PCB, reflector material and polycarbonate housing was acknowledged.
<b>Issue 5</b> – this Issue introduced the following change:	
1	The Applicant's and Manufacturer's name and address was changed from e2v Technologies (UK) Limited, 106 Waterhouse Lane, Chelmsford, Essex CM1 2QU, UK to SGX Sensortech (IS) Ltd 2 Hanbury Road, Widford Industrial Estate, Chelmsford, Essex CM1 3AE