1 # EU - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

3 EU - Type Examination Certificate Number: **Baseefa15ATEX0029 – Issue 3**

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **D-Guard² Intrinsically Safe Smart Gas Detector**

5 Manufacturer: **Gastech Australia**

6 Address: **24 Baretta Road, Wangara, WA, 6065, Australia**

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa15ATEX0029 to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 SGS Baseefa, Notified Body number 1180, 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 product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report No. **See Certificate History**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012+A11:2013 **EN 60079-11:2012**

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following :

Ⓔx I M1 Ex ia I Ma (-20°C ≤ Ta ≤ +55°C)	All product versions
Ⓔx II 1G Ex ia IIB T4 Ga (-20°C ≤ Ta ≤ +55°C)	Only –LEL ; -CH4 ; -CO2
Ⓔx II 1G Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +70°C)	All except –LEL ; -CH4 ; -CO2

SGS Baseefa Customer Reference No. **7355** Project File No. **16/0830**

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R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa15ATEX0029 – Issue 3**

15 Description of Product

The D-Guard[2] Intrinsically Safe Smart Gas Detector provides gas monitoring for Oxygen, flammable and toxic gasses.

The equipment comprises; a main circuit board mounted in the lid of the enclosure; an optional terminal board in the base of the enclosure; and a LCD mounted on the main circuit board, visible from the outside of the enclosure. Also mounted on the main circuit board is the gas sensor, which protrudes into the lid of the enclosure with a hydrophobic barrier to prevent water ingress, but allow gas air flow.

Electrical connections are either made directly to the main circuit board via P1, or to the terminal PCB in the base of the enclosure.

Group I terminal parameters

Power	HART Connector
Ui = 22V	Ui = 28V
Ci = 0	Ci = 0
Li = 0	Li = 0
	Uo = 22V
	Io = #
	Po = #

Group II terminal parameters

Power	HART Connector
Ui = 28V	Ui = 28V
Ii = 93mA	Ii = 93mA
Pi = 0.7W	Pi = 0.7W
Ci = 0	Ci = 0
Li = 0	Li = 0
	Uo = 28V
	Io = 93mA
	Po = 0.7W

- Parameter limited only by the external supply

Model Type references:

Model Type	Sensor Type	Model Number	Gas Group
Acetic Acid	Electro-Chemical	65-1080-ACID	I, IIB, IIC
Arsine	Electro-Chemical	65-1080-ASH3	I, IIB, IIC
Diborane	Electro-Chemical	65-1080-B2H6	I, IIB, IIC
Ethylene	Electro-Chemical	65-1080-C2H4	I, IIB, IIC
Tetrahydrothiophene	Electro-Chemical	65-1080-C4H8S	I, IIB, IIC
Formaldehyde	Electro-Chemical	65-1080-CH2O	I, IIB, IIC
Mercaptan	Electro-Chemical	65-1080-CH4S	I, IIB, IIC
Chlorine	Electro-Chemical	65-1080-CL2	I, IIB, IIC
Carbon Dioxide	Electro-Chemical	65-1080-CLO2	I, IIB, IIC
Carbon Monoxide	Electro-Chemical	65-1080-CO	I, IIB, IIC
Phosgene	Electro-Chemical	65-1080-COCL2	I, IIB, IIC
Ethylene Oxide	Electro-Chemical	65-1080-ETO	I, IIB, IIC
Fluorine	Electro-Chemical	65-1080-F2	I, IIB, IIC
Hydrogen	Electro-Chemical	65-1080-H	I, IIB, IIC
Hydrogen Peroxide	Electro-Chemical	65-1080-H2O2	I, IIB, IIC
Hydrogen Sulphide	Electro-Chemical	65-1080-H2S	I, IIB, IIC
Hydrogen Chloride	Electro-Chemical	65-1080-HCL	I, IIB, IIC
Hydrogen Cyanide	Electro-Chemical	65-1080-HCN	I, IIB, IIC
Hydrogen Fluoride	Electro-Chemical	65-1080-HF	I, IIB, IIC
Hydrazine	Electro-Chemical	65-1080-N2H4	I, IIB, IIC
Ammonia	Electro-Chemical	65-1080-NH3	I, IIB, IIC
Nitric Oxide	Electro-Chemical	65-1080-NO	I, IIB, IIC
Nitrogen Oxide	Electro-Chemical	65-1080-NO	I, IIB, IIC
Nitrogen Dioxide	Electro-Chemical	65-1080-NO2	I, IIB, IIC
Oxygen	Galvanic Cell or Electro-Chemical	65-1080-O2	I, IIB, IIC
Ozone	Electro-Chemical	65-1080-O3	I, IIB, IIC
Phosphine	Electro-Chemical	65-1080-PH3	I, IIB, IIC
Hydrogen Selenide	Electro-Chemical	65-1080-SEH2	I, IIB, IIC
Silane	Electro-Chemical	65-1080-SIH4	I, IIB, IIC

Model Type	Sensor Type	Model Number	Gas Group
Sulphur Dioxide	Electro-Chemical	65-1080-SO2	I, IIB, IIC
Methane	Mipex Infra-Red	65-1080-LEL	I, IIB
Methane	Mipex Infra-Red	65-1080-CH4	I, IIB
Carbon Dioxide	Mipex Infra-Red	65-1080-CO2	I, IIB
Client Specified Type	As Required	65-1080-xxx	I, IIB, IIC

xxx = gas type required

16 Report Number

See Certificate History

17 Specific Conditions of Use

None

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
1.2.7	LVD type requirements
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Sheet	Date	Description
65-1080_SCH_01-07-08	1 of 1	25/10/2017	2-Wire Gas Monitor Platform PSU / Signals / Processing / Display
65-1080_PCB_01-07-08	1 of 6	09/08/2017	D-Guard V2 Gas Detector (Top Overlay) Type: Main Detector Board
65-1080_PCB_01-07-08	2 of 6	09/08/2017	D-Guard V2 Gas Detector (Top Layer) Type: Main Detector Board
65-1080_PCB_01-07-08	3 of 6	09/08/2017	D-Guard V2 Gas Detector (Mid Layer 1) Type: Main Detector Board
65-1080_PCB_01-07-08	4 of 6	09/08/2017	D-Guard V2 Gas Detector (Mid Layer 2) Type: Main Detector Board
65-1080_PCB_01-07-08	5 of 6	09/08/2017	D-Guard V2 Gas Detector (Bottom Layer) Type: Main Detector Board
65-1080_PCB_01-07-08	6 of 6	09/08/2017	D-Guard V2 Gas Detector (Bottom Overlay) Type: Main Detector Board
65-1080_GA_03-01-04	1 to 3	17/07/2019	D-Guard V2 Detector Construction and Variants
65-1080_MD_03-07-10	1 of 1	05/08/2019	D-Guard Ex Label Group I Model
65-1080_MD_04-07-11	1 of 1	05/08/2019	D-Guard Ex Label Group IIC Model
65-1080_MD_05-06-10	1 of 1	05/08/2019	D-Guard Ex Label Group IIB Model
65-1080-MD-107-03-03	1 to 3	17/07/2017	Glass Window – D-Guard^2
57-1080 PCBA V1.12	1 to 4	11/09/2019	PCB Re-work

Current drawings which remain unaffected by this issue:

Number	Sheet	Date	Description
65-1080_GA_02-02-02	1 of 4	31/10/2014	D-Guard V2 Parts and Assembly – Enclosure Lid
65-1080_GA_02-01-01	2 of 4	31/10/2014	D-Guard V2 Parts and Assembly – Lid Fixtures
65-1080_GA_02-01-01	3 of 4	31/10/2014	D-Guard V2 Parts and Assembly – PCB Fixing
65-1080_GA_02-02-02	4 of 4	14/07/2015	D-Guard V2 Parts and Assembly – Field Connections
65-1080_GA_01-01-02	1 to 3	31/10/2014	D-Guard V2 PCB Arrangement
65-1080_MD_02-01-01	1 of 1	03/11/2014	D-Guard V2 Display Carrier
65-1080_SCH_02-01-02	1 of 1	13/02/2015	2-Wire Gas Monitor Platform IR Sensor Power Filter
65-1080_PCB_02-03-04	1 of 3	14/01/2015	D-Guard V2 Gas Detector (Top Overlay) Type: IR PSU Filter Board
65-1080_PCB_02-03-04	2 of 3	14/01/2015	D-Guard V2 Gas Detector (Top Layer) Type: IR PSU Filter Board
65-1080_PCB_02-03-04	3 of 3	14/01/2015	D-Guard V2 Gas Detector (Bottom Layer) Type: IR PSU Filter Board
65-1080_MD_01-01-01	1 of 1	31/10/2014	D-Guard V2 – Filter PCB Potting Dam
65-1080_AD_01-01-02	1 of 1	10/07/2015	D-Guard V2 – Filter Module Assembly
65-1080_GA_03-01-03	1 of 3	03/11/2015	D-Guard V2 Detector Construction and Variants Enclosure Base
65-1080_GA_03-01-03	2 of 3	03/11/2015	D-Guard V2 Detector Construction and Variants Splash Guard
65-1080_SCH_03-00-00	1 of 1	19/11/2014	2-Wire Gas Monitor Platform Terminal PCB
65-1080_PCB_03-04-05	1 of 6	19/10/2015	D-Guard V2 Gas Detector (Top Overlay) Type: Display Illumination PCB
65-1080_PCB_03-04-05	2 of 6	19/10/2015	D-Guard V2 Gas Detector (Top Layer) Type: Display Illumination PCB
65-1080_PCB_03-04-05	3 of 6	19/10/2015	D-Guard V2 Gas Detector (Mid Layer 1) Type: Display Illumination PCB
65-1080_PCB_03-04-05	4 of 6	19/10/2015	D-Guard V2 Gas Detector (Mid Layer 2) Type: Display Illumination PCB
65-1080_PCB_03-04-05	5 of 6	19/10/2015	D-Guard V2 Gas Detector (Bottom Layer) Type: Display Illumination PCB
65-1080_PCB_03-04-05	6 of 6	19/10/2015	D-Guard V2 Gas Detector (Bottom Overlay) Type: Display Illumination PCB
65-1080_PCB_04-01-02	1 of 3	14/01/2015	D-Guard V2 Gas Detector (Top Overlay) Type: Terminal Board
65-1080_PCB_04-01-02	2 of 3	14/01/2015	D-Guard V2 Gas Detector (Top Layer) Type: Terminal Board
65-1080_PCB_04-01-02	3 of 3	14/01/2015	D-Guard V2 Gas Detector (Bottom Layer) Type: Terminal Board
65-1080_SCH_04-00-01	1 of 1	14/07/2015	2-Wire Gas Monitor Platform Terminal PCB - HART
65-1080_PCB_05-01-02	1 of 3	05/06/2015	D-Guard V2 Gas Detector (Top Overlay) Type: Terminal Board
65-1080_PCB_05-01-02	2 of 3	05/06/2015	D-Guard V2 Gas Detector (Top Layer) Type: Terminal Board
65-1080_PCB_05-01-02	3 of 3	05/06/2015	D-Guard V2 Gas Detector (Bottom Layer) Type: Terminal Board
65-1080_MD_06-04-05	1 of 3	11/06/2015	D-Guard 2 Front Facia Plate
65-1080_MD_06-04-05	2 of 3	11/06/2015	D-Guard 2 Front Facia Plate

Number	Sheet	Date	Description
65-1080_MD_06-04-05	3 of 3	11/06/2015	D-Guard 2 Front Facia Plate
65-1080_SCP_01-03-05	1 of 1	08/06/2015	D-Guard V2 Safety Critical Parts List (Main Detector Board)
65-1080_SCP_02-01-02	1 of 1	16/02/2015	D-Guard V2 Safety Critical Parts List (IR PSU Filter Board)

Note: These drawings are associated and held with IECEx BAS 15.0013

20 Certificate History

Certificate No.	Date	Comments
Baseefa15ATEX0029	22 July 2015	The release of the prime certificate. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR15.0033/00. Job Number 14/0765
Baseefa15ATEX0029 Issue 1	22 September 2015	To permit the correction of the upper operating ambient temperature for the Gas Group IIC version. The existing test report and drawings remain unchanged. Job Number 15/0667
Baseefa15ATEX0029 Issue 2	10 November 2015	To permit minor electrical changes that do not affect the original intrinsic safety assessment. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR15.0315/00. Job Number 15/0756
Baseefa15ATEX0029 Issue 3	30 September 2019	To permit the use of a toughened glass window in place of the existing polycarbonate window; a minor modification to existing Main Detector Boards and subsequent permanent change to the Main Detector Board Artwork; and to extend the list of model type references. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR16.0393/00. Job Number 16/0830
For drawings applicable to each issue, see original of that issue.		