



# 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 BAS 18.0040X

Issue No: 0

Certificate history:

Issue No. 0 (2018-06-25)

Status: **Current**

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Date of Issue: **2018-06-25**

Applicant: **Protea Limited**  
Unit 2, Venture Park,  
Stirling Way,  
Bretton,  
Peterborough,  
PE3 8YD  
**United Kingdom**

Equipment: **P2000 Analyser, P300 Analyser**

Optional accessory:

Type of Protection: **Flameproof**

Marking:  
**Ex db IIB T\* Gb**  
**T6 Ta -20°C to +40°C or**  
**T4 Ta -20°C to +60°C**

Approved for issue on behalf of the IECEx  
Certification Body:

R S Sinclair

Position:

Technical Manager

Signature:  
(for printed version)

**M POWNEY**  
Certification  
Manager

Date:

*M Powney*  
*26/6/18*

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:

**SGS Baseefa Limited**  
Rockhead Business Park  
Staden Lane  
Buxton, Derbyshire, SK17 9RZ  
United Kingdom





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Manufacturer: **Protea Limited**  
Unit 2, Venture Park,  
Stirling Way,  
Bretton,  
Peterborough,  
PE3 8YD  
**United Kingdom**

Additional 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 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 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0

**IEC 60079-1 : 2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

*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*

Test Report:

[GB/BAS/ExTR18.0131/00](#)

Quality Assessment Report:

[GB/BAS/QAR18.0009/00](#)



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## Schedule

### EQUIPMENT:

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

Type P2000 Analyser rated at 24V d.c. 1A comprises a cast aluminium body and cover of a rectangular section.

The cover is secured to the body by fourteen M6 16mm long socket head cap screws grade A2-70.

The enclosure is provided with a welded assembly the reflector tube weld-assembly which is fitted into the front wall of the body and secured by four M8 20mm long socket head cap screws grade A2-70.

The welded assembly comprises a flange into which is cemented a lens. The lens is further retained by the gasket and a threaded clamp ring. Welded into the external face of the flange is a tubular pocket of up 600mm in length into which is inserted a temperature sensing device. Three tie rods are used to secure the sintered process shroud which encloses the thermopocket tube to the welded reflector tube assembly.

The flange has threaded ports in four positions around its periphery two of which may be used for the purging of a void in the welded assembly with an inert gas at a maximum pressure of up to 7 psig the third is used for the introduction of calibration gases at the remote end of the assembly. The 4th is used to monitor the internal pressure of the sample.

The welded assembly is completed by a stainless steel over-tube welded to the flange. This together with the stainless steel shroud encloses the tubular pocket for the temperature sensing device. This is an alternative high pressure weld-assembly option.

The enclosure is fitted with two threaded steel bushing flame trap assemblies. Each bushing incorporates a cylindrical spool forming a flameproof joint with the internal bore and is providing with a 1/4 inch BSP male thread for the fitment of external pipework to allow the passage of inert gas at maximum pressure of 10kPa through the enclosure.

The interior of the apparatus comprises a component board secured to the base of the enclosure onto which are mounted up to the following:-

- a) A printed circuit board having a maximum dissipation of 6W or alternatively a two printed circuit boards arrangement may be used plus a transition PCB
- b) An I.R. detector assembly having a maximum dissipation of 0.1W with the option of a second detector assembly
- c) A stepper motor driver rotaspan assembly having a maximum dissipation of 2W.
- d) A d.c. motor driven filter wheel assembly having a maximum dissipation of 1W.
- e) A near I.R. lamp assembly having a maximum dissipation of 20W.
- f) Two optical mirrors
- g) Two light beam splitting devices.

The filter wheel and rotaspan assemblies may be fitted with a maximum of eight and four sealed gas correlation cells respectively.

The equipment described above schedule and in the variants below is designed to analyse samples of gas or liquid as appropriate.

To obviate any risk from energy storage devices the enclosure must not be opened when the unit is energised or an explosive environment is present. A label stating this information is fitted externally to each and every enclosure.

Cable entry holes are provided as specified on the certified drawings for the accommodation of flameproof cable entry devices with or without the interposition of a flameproof thread adapter. Unused entries are to be fitted with suitable certified flameproof stopping plugs.

There is an alternative liquid/gas in-line process cell consisting of a stainless steel flanged tube with a cemented lens extending from the analyser optical enclosure. The tube assembly includes a purged void. This element has various sample cell lengths. The detector has a near IR or IR light source is rated at 24V d.c. 1.5A maximum. The unit so formed is designated as the type P300 Analyser



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**SPECIFIC CONDITIONS OF USE: YES as shown below:**

**Type P2000 Analyser:**

1. It is the responsibility of the user to ensure that the gas passed through the enclosure is instrument air or an inert gas, and that the inlet pressure does not exceed 0.1 bar (10kPa).
2. It is the responsibility of the user to ensure that the gas passed through the void of the on-line cell is instrument air or an inert gas, and that the inlet pressure does not exceed 0.48 bar (7 psig).

**Type P300 Analyser:**

1. It is the responsibility of the user to ensure that the gas passed through the enclosure is instrument air or an inert gas, and that the inlet pressure does not exceed 0.1 bar (10kPa).
2. It is the responsibility of the user to ensure that the gas passed through the void of the on-line cell is instrument air or an inert gas, and that the inlet pressure does not exceed 0.48 bar (7 psig).
3. It is the responsibility of the user to ensure that the pressure of the sample passed through the sample cell does not exceed 12 bar