



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

Certificate No.: issue No.: Certificate history:

Status:

Date of Issue: **2017-03-22** Page 1 of 4

Applicant: **Cascade Technologies Limited**
Glendevon House
Castle Business Park
Stirling
Scotland
FK9 4TZ
United Kingdom

Equipment: **CT5800 Continuous Gas Analyzer**
Optional accessory:

Type of Protection: **Flameproof**

Marking: **Ex db IIB+H₂ T4 Gb**
Ta = -20°C to +55°C

Approved for issue on behalf of the IECEx Certification Body: **N Jones**

Position: **Certification Manager**

Signature:
(for printed version)



Date:

2017-03-22

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
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

sira
CERTIFICATION





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Manufacturer: **Cascade Technologies Limited**
Glendevon House
Castle Business Park
Stirling
Scotland
FK9 4TZ
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 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 : 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/SIR/ExTR17.0058/00](#)

Quality Assessment Report:

[GB/SIR/QAR16.0005/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The CT5800 Continuous Gas Analyzer is an infra-red laser based spectrometer used for the analysis and measurement of gases. The measurement results are displayed on the equipment or they can be communicated to external equipment. A containment system in the form of a gas cell is provided inside the enclosure for the measurement of the gas mixture. The gas cell has an inlet and an outlet through which the process gas flows.

Maximum operating pressure of process gas:	1 barg
Temperature of process gas	+4 °C to +60 °C
Supply Voltage:	220 V to 240 V, 50 Hz or 110 V to 120 V, 60 Hz

The enclosure is cast aluminium with an opening cover for access. The cover is fastened with 20 off M16 fasteners which are held captive in the cover when opened. A glass display window and keypad is provided in the cover.

Internal heaters are provided and limited to the following maximum temperatures.

Enclosure	+5 °C
Gas Cell	+50 °C

Refer to EQUIPMENT (continued) for additional information and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:

The user/installer shall comply with the following:

1. This equipment has flamepaths which differ from those in IEC 60079-1. Cascade Technologies Ltd shall be contacted for guidance when maintaining the flamepaths.
2. The fasteners which secure the cover are non-standard and shall therefore only be replaced by fasteners supplied by the manufacturer for this purpose. The fasteners must always be fitted with the washer supplied by the manufacturer.
3. The equipment has non-conductive surfaces which are a potential electrostatic charging hazard – see the instructions for guidance.
4. The user shall ensure that the flow of process gas is limited to a maximum flow rate of 6 litres per minute.
5. The equipment shall only be used with process gases which are classified for equipment group IIB + H₂ and must not contain oxygen or any other oxidizer in concentrations greater than that found in normal air.



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EQUIPMENT(continued):

The bottom of the enclosure is provided with 4 off M20 x 1.5 and 8 off M18 x 1.5 entries.
The process gas inlet and outlet utilises two of the M18 entries and are each fitted with a flame arrestor.
Breathing devices are fitted as required into the M18 or M20 entries.
The remainder of the entries are fitted with a suitably certified cable entry or a blanking plug.
The CT5800 Continuous Gas Analyzer provides a degree of ingress protection IP66.

Conditions of manufacture

The Manufacturer shall comply with the following:

1. Each enclosure shall be subjected to a routine pressure test as required by clause 16.1 of IEC 60079-1:2014 . A minimum pressure of 10.71 bar shall be applied and held for at least 10 seconds. The test is considered satisfactory if the following conditions are met,
 - the enclosure has suffered no permanent deformation or damage invalidating the type of protection.
 - the joints in no place have been permanently enlarged.
 - there is no leakage through the walls of the enclosure or the cemented window joint.
2. Each gas cell and pipework between the cell and the flame arrestors at the inlet and outlet shall be subjected to a routine pressure test as required by annex G.4.1 of IEC 60079-1:2014. A pressure of 1.5 bar shall be applied and held for at least 120 seconds. The increase of the test pressure should achieve the maximum pressure within 5 seconds. The test is considered satisfactory if no permanent deformation occurs and compliance with the leakage test for a containment system with a limited release as required by annex G.4.3 of IEC 60079-1:2014 is verified.