



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX ITS 20.0036X** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2020-06-02

Applicant: **Galvanic Applied Sciences Inc.**
7000 Fisher Rd SE
Calgary
AB
T2H 0W3
Canada

Equipment: **Laser Absorption Spectroscopy Analyzer**

Optional accessory:

Type of Protection: **Flameproof 'db', Intrinsically Safe 'ia'**

Marking: Ex db ia mb IIB+H₂ T4 Gb;
Tamb: -20°C to +45°C
IECEX ITS 20.0036X

Approved for issue on behalf of the IECEx
Certification Body:

Mark Newman

Position:

Certificate Officer

Signature:
(for printed version)

2020.06.02
10:31:50
+01'00'

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.
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Certificate issued by:

Intertek Testing & Certification Limited
ITS House, Cleeve Road
Leatherhead
Surrey, KT22 7SA
United Kingdom





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Manufacturer: **Galvanic Applied Sciences Inc.**
7000 Fisher Rd SE
Calgary
AB
T2H 0W3
Canada

Additional
manufacturing
locations:

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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

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

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with 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/ITS/EXTR20.0041/00](#)

Quality Assessment Report:

[GB/ITS/QAR14.0026/03](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Galvanic Applied Sciences AccuLase CE analyzer is a Laser Absorption Spectroscopy Analyzer that uses tuneable diode laser absorption spectroscopy to determine the concentration of a target gas species in a variety of gaseous process streams.

The analyzer is comprised of an electronics enclosure, tubular laser detector enclosure, an intrinsically safe keypad and a set of Parker solenoid valves (certificate number IECEx LCI 06.0004X) all mounted onto a back-board that measures 914mm (35 3/4") wide by 1016mm (39 3/4") tall.

The electronics enclosure housing is an approved XCE Series enclosure (certificate number IECEx UL 16.0081U) with dimensions of approximately 254mm (10") wide by 356mm (14") tall by 152mm (6") deep. A single 101mm (4") glass window provides a view of an internal LCD screen. The enclosure houses a power filter module, the 24V power supply, an intrinsic barrier SA2925 and the universal controller (PT3048), laser IO (PT3042) and LCD display (PT3050) boards. The enclosure cabling is sealed with Hawke (certificate number IECEx BAS 06.0015X or IECEx CML 18.0131X) and Hummel (certificate number IECEx SIR 12.0044X) cable glands.

The laser detector enclosure housing is a tubular enclosure (report number US/ETL/ExTR18.0037) with dimensions of 915mm (36") wide by 216mm (8 1/2") diameter which has 6 equally spaced entry ports welded onto the top side. There are two entry ports for control and power wiring harnesses and three for the gas sampling and breathing ports. All gas ports are fitted with a M.A.M. flame arrester (certificate number IECEx INE 12.0002U). The enclosure cabling is sealed with Hawke (certificate number IECEx BAS 06.0015X or IECEx CML 18.0131X) and Hummel (certificate number IECEx SIR 12.0044X) cable glands and require Hazardous Location Solutions adaptors (certificate number IECEx SIR 07.0047X).

The enclosure houses a heater, pressure transducer, the laser detector and the WMS board (laser controller) along with the mounting hardware.

The Keypad SA2992-ZZ (certificate number IECEx ITS 16.0051X) is powered by the IS barrier SA2925 (certificate number IECEx ITS 16.0040U). The keypad is connected to a socket located at the right side of the enclosure. The socket for the keypad is marked "Connect Intrinsically Safe Keypad SA2992-ACL only". The IS circuit from the associated apparatus to the connector and keypad is insulated from the chassis.

All un-utilized conduit entries are sealed with a Hazardous Location Solutions blanking elements (certificate number IECEx SIR 07.0048X).

The analyzer is designed to be installed at a measurement site on a permanent basis and is permanently connected to the main power supply. A suitably located and easily reached switch shall be included in the installation. Both internal and external earthing points are provided.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The end user shall be responsible for the supply, installation and connection of a suitably certified AC mains disconnect switch at the power input in final installation.
- The end user shall be responsible for the supply and installation of a cable and certified Ex db IIB+H₂ cable entry device suitable for use in a gas atmosphere in the final installation.
- Only suitably approved Ex db IIB+H₂ Gb (minimum) cable glands or blanking elements with an operating ambient range of -20°C to +50°C shall be used.
- No modifications to the flamepaths are permitted without consultation with the controlled documentation or notified body.
- The equipment's Flameproof joints are not intended to be repaired.
- Use only those bolts supplied with the enclosure. No cover bolts shall be omitted. Install and alternate cover bolt pattern when tightening, see recommended torque value table in the Maintenance and Safety manual in section 1.3.1.
- Certification details, instructions (including any required special conditions for use) for all certified equipment installed shall be conveyed to the user in an appropriate manner.
- Avoid ignition due to impact or friction.
- The fittings and adapters SHALL NOT be loosened for alignment purposes.
- The equipment is for indoor use only and is not meant for outdoor use.
- IS installation shall comply with IEC/EN 60079-25. IS wiring shall be kept away from all other non-IS wiring.



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- A clamping device for cable shall be provided near the cable device entry for solenoid valve.
- Potential electrostatic charging hazard – see Instructions.

Annex:

[IECEX ITS 20.0036X Annex for IECEx Certificate of Conformity.pdf](#)



Annex to IECEx Certificate of Conformity

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Annex No. 1		

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
Zone 1 Flameproof Control Enclosure ATEX / IEC Ex Drilling and Tapping EB2987 (2 sheets)	APR-000079	1	25-OCT-2019
Cylindrical Flameproof Enclosure 8in x 36in (7 sheets)	APR-000167	2	21-AUG-2018
ACCULASE CE CRITICAL COMPONENTS (Sheet 1 and 2 of 9)	RAD-DWG-E30-CGY-ACCULASE02-APR-000191-REV12	14	25-MAY-2020
ACCULASE CE ELECTRONICS ENCLOSURE CLEARANCE (Sheet 3 to 5 of 9)	RAD-DWG-E30-CGY-ACCULASE02-APR-000191-REV12	14	25-MAY-2020
ACCULASE CE INTERCONNECT DIAGRAM AC POWERED SYSTEM (Sheet 6 of 9)	RAD-DWG-E30-CGY-ACCULASE02-APR-000191-REV12	14	25-MAY-2020
ACCULASE CE ANALYZER NAME PLATE (Sheet 7 of 9)	RAD-DWG-E30-CGY-ACCULASE02-APR-000191-REV12	14	25-MAY-2020
ACCULASE CE ZONE 1 INTRINSICALLY SAFE WIRING (Sheet 8 of 9)	RAD-DWG-E30-CGY-ACCULASE02-APR-000191-REV12	14	25-MAY-2020
ACCULASE CE IS BARRIER CLEARANCES (Sheet 9 of 9)	RAD-DWG-E30-CGY-ACCULASE02-APR-000191-REV12	14	25-MAY-2020
Installation and Safety Manual	RAD-MNL-E30-CGY-ACCULASE02-APR-000192-Rev 9	11	25-MAY-2020
Laser IO Board	PU-3041/PT-3401	1.0	24-JAN-2019
Laser USB TO FOUR SERIAL PORT BOARD	PU-3043/PT-3044	1.0	21-JAN-2019
Universal Controller - 2 (SECOND GENERATION)	PT-3048/PU-3047	1.0	25-JAN-2019
Universal Controller LCD - 2 (SECOND GENERATION)	PU-3049/PT-3050	1.0	24-JAN-2019
Laser 4-20mA ANALOG_OUTPUT_BOARD	PU-3051/PT-3052	1.0	25-JAN-2019



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Annex No. 1		

Required Manufacturer Routine Testing		
Test	Title/Description of Test	Standard and Clause
1	The tubular laser detector enclosure shall be subjected to a minimum routine pressure test of 15.4Bar (224PSI) for 10 seconds. There shall be no leakage during the test.	IEC 60079-1, Clause 16.1.2
2	The tubular laser detector enclosure's containment system shall be subjected to a minimum routine pressure test of 1.551Bar (22.5PSI) for 2 minutes. There shall be no leakage during the test.	IEC 60079-1, Clause G4.1