



Certificate of Compliance

Certificate: 70038981

Master Contract: 232180

Project: 80000060

Date Issued: May 13, 2019

Issued to: Neo Monitors AS
Prost Stabels vei 22
N2019 Skedsmokorset
NORWAY
Attention: Lars Brøndbo

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and US Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only



Issued by:

Chris Brooks

PRODUCTS

CLASS 2258-02 – PROCESS CONTROL EQUIPMENT – For Hazardous Locations

CLASS 2258-82 – PROCESS CONTROL EQUIPMENT – For Hazardous Locations – Certified to US Standards

Class I, Division 2, Groups A, B, C and D; T5

For details related to rating, size, configuration, etc. reference should be made to the CSA Certification Record or the descriptive report.

LaserGas iQ² Gas Analyser, rated 18-30V DC, max 30W with Z type purge.

Ambient temperature rating: -40°C to +55°C.

The enclosure is rated IP66.

CONDITIONS OF ACCEPTABILITY

- i. The temperature of the protective gas shall not exceed 55°C.



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- ii. Power shall not be restored after the equipment has been opened until the enclosure has been purged for at least 8 minutes at a flow rate of 20 l/min.
- iii. The end user shall ensure that any alarms provided with the purge controller (such as overpressure or under pressure alarms) are connected in accordance with the manufacturer's instructions.
- iv. The equipment shall be supplied with a suitably certified purge controller, which shall exhibit the following characteristics:
 - a. Maintain an overpressure of ≥ 0.25 mbar within the purged enclosures.
 - b. Purge with air or an inert gas for a duration of at least 8 minutes at a flow rate of at least 20 L/min before energisation, and thereafter maintain the minimum overpressure within the enclosure.
 - c. Prevent the internal overpressure exceeding 10 mbar.
 - d. In addition, the manufacturer shall take all reasonable steps to ensure that the user/installer complies with any restrictions and special conditions for certification associated with the purge controller; they shall also provide an appropriate copy of the certificate that is applicable to the device.
- v. The system comprising the LaserGas iQ² gas analyser and the purge controller shall be tested by the manufacturer after assembly to check the operation of all features necessary for safe use, particularly:
 - a. Under pressure - The low pressure switch shall operate if the enclosure overpressure falls below the minimum specified above.
- vi. There shall be no intervening valves between the overpressure safety device and the enclosure and it shall be located such that it is possible to show correct operation.
- vii. The equipment shall be powered by a certified Class 2 output power supply unit.
- viii. Equipment has only been tested for electrical safety. No evaluation of functional safety and performance characteristics has been conducted.
- ix. This assessment is only on the main enclosure and electronics contained within and does not cover the external field wiring box.

APPLICABLE REQUIREMENTS

FM 3600 (Jan 2018)	Electrical Equipment for Use in Hazardous (Classified) Locations – General Requirements
FM 3620 (Jan 2018)	Approval Standard for Purged and Pressurized Electrical Equipment for Hazardous (Classified) Locations
NFPA 496 (2017)	Standard for Purged and Pressurized Enclosures for Electrical Equipment
LTR E-010 (2005)	Purged and Pressurized Enclosure for Use in Class I, Division 1 or 2 Hazardous Locations
CAN/CSA-C22.2 No. 61010-1-12 (See report 70041526)	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements
UL Std. No. 61010-1 (3 rd Edition) (See report 70041526)	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements



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MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The equipment is marked with a stainless steel nameplate fastened to the rear of the main enclosure.

Method of Marking: Laser-etched stainless steel plate mounted to the rear of the enclosure via screws or rivets.

1. Manufacturer's name or identifying symbol: Neo Monitors AS
2. Model designation: LaserGas iQ²
3. Electrical rating: 18-30V DC, max 30W
4. Hazardous location: Class I, Division 2, Groups A, B, C and D; T5
5. Temperature code: T5 (100°C)
6. Pressurization type: Type Z
7. Parameters for protective gas used for pressurization:
 - a. Purge flow rate: 20 l/min
 - b. Purging time: 8 minutes
 - c. Minimum overpressure: 0.25 mbar
 - d. Maximum overpressure: 10 mbar
 - e. Pressure relief valve setting: 10 mbar
 - f. Purging gas: Instrument air or inert gas as marked
 - g. Maximum temperature: 55°C
8. Serial number traceable to month and year: As per nameplate
9. The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US'.
10. Units provided with lasers shall comply with the marking and other requirements of IEC/EN 60825-1 and of Canadian and US federal regulations; (See below)

Class 1M

- Explanatory label with the following:

- the words:

LASER RADIATION
DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
CLASS 1M LASER PRODUCT



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- A statement of the maximum output of laser radiation, the pulse duration (if appropriate) and the emitted wavelength(s).
- The name and publication date of the standard to which the laser was classified (may be located elsewhere on the product, in close proximity to the explanatory label or be contained in the information for the user).

- Instead of the above label, at the discretion of the manufacturer, the same statements may be included in the information for the user).

11. The following English and French WARNINGS (or equivalent) are required upon all units approved for both Canada and the U.S.:

- a. “WARNING: Enclosure shall not be opened unless the area is known to be non-hazardous, or unless all devices within the enclosure have been de-energized. Power must not be restored after enclosure has been opened until enclosure has been purged for 8 minutes at a flow rate of 20 litres per minute.”
- b. “AVERTISSEMENT: NE PAS OUVRIR L’ENCEINTE OU RETIRER AUCUN COUVERCLE A MOINS QUE L’EMPLACEMENT NE SOIT CONSIDERE COMME ETANT NON DANGEREUX OU QUE L’ALIMENTATION DE TOUS LES DISPOSITIFS A L’INTERIEUR DE L’ENCEINTE N’AIT ETE COUPEE. APRES OUVERTURE DE L’ENCEINTE, EFFECTUER UNE PURGE DE 8 MINUTES A 20 LPM. AVANT DE RETABLIR LE COURANT.”
- c. “WARNING: The safety of this equipment relies on the provision of proper purging and pressurizing when used in hazardous locations. It must not be put in into use without “special permission” from the inspection authority having jurisdiction.”
- d. “AVERTISSEMENT: POUR UNE EXPLOITATION SECURITAIRE DE CET APPAREILLAGE DANS UN EMPLACEMENT DANGEREUX, IL EST ESSENTIEL QU’IL SOIT EQUIPE D’UN DISPOSITIF D’EVACUATION ET DE PRESSURIZATION. NE PAS METTRE EN SERVICE A MOINS D’AUTORISATION SPECIALE DES SERVICES D’INSPECTION COMPETENTS.”
- e. The following WARNING on the nameplate mounted next to all protective gas supply valves:
 - i. “WARNING: This valve must remain open unless area is non-hazardous.”
 - ii. “AVERTISSEMENT: CETTE VALVE DOIT RESTER OUVERTE SAUF SI LA ZONE N’EST PAS DANGEREUX.”
- f. “WARNING – Protective gas release poses potential for asphyxiation.”
- g. “AVERTISSEMENT - Dégagement de gaz de protection pose potentiel d'asphyxia.”

Note: Warnings may be modified by equivalent text.