



DET NORSKE VERITAS

TYPE EXAMINATION CERTIFICATE

- [2] EQUIPMENT INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC
- [3] Type Examination Certificate Number: **DNV-2007-OSL-ATEX-11474** Rev. 6
- [4] Equipment: **Lasergas II SP, OP and MP Monitors**
- [5] Applicant – Manufacturer or Authorized representative: **Norsk Elektro Optikk AS**
- [6] Address: **Solheimveien 62a, 1471 Lørenskog, Norway**
- [5] Manufacturer: **NEO Monitors AS**
- [6] Address: **Solheimveien 62a, 1471 Lørenskog, Norway**
- [7] This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] DNV certifies that this equipment has been found to comply with the Essential Health and Safety requirements that relate to the design of Category 3 equipment, which is intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential reports listed in section 14.
- [9] Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:
EN 60079-0: 2006, EN 60079-15: 2005, EN 61241-0: 2006, EN 61241-1: 2004 and EN 60079-28: 2007
- [10] If the sign “X” is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- [11] This TYPE EXAMINATION CERTIFICATE relates only to the design, examinations and tests of the specified equipment. If applicable, further requirements of this Directive may apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- [12] The marking of the equipment shall include the following:

 II 3 G Ex nA nC op is Gc IIC T4 - 20°C ≤ Tamb ≤ +55°C

 II 3 D Ex tD A22 IP65 T100°C

Høvik, 2011-08-09
for Det Norske Veritas AS

Marianne Spæren

Certification Manager

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

The digitally signed and electronically distributed document is the original and valid certificate. Ref.: www.dnv.com/digitalsignatures



If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300.000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



[13]

Schedule

[14] **TYPE EXAMINATION CERTIFICATE No.:** DNV-2007-OSL-ATEX-11474

Rev. 6

Certificate History

Revision	Description	Report no.	Issue date
1	Original certificate	2007-3441	2008-01-22
2	Printing error corrected: moved reference standards from item 10 to 9.	2008-3451	2008-04-07
3	Updated according to most recent standards, added "op is" and addition of component.	2009-3376	2009-07-16
4	Updated list of descriptive documents.	2009-3376	2009-07-21
5	Corrected typing error	2009-3376	2009-11-30
6	Updated with an option with power supply, alternate size of LaserGas II MP cabinet Monitors, temperature and pressure sensors is included, change of main PCB and PCB 13390	2009-3376	2011-08-09

[15] Description of Equipment:

The LaserGas-II Monitor is an optical instrument based on transmitting infrared laser light from a transmitter to a solid-state detector inside the receiver. The measurement principle is called infrared single-line absorption spectroscopy.

The LaserGas II Monitor is available in different versions configured for different applications namely: Single Path (SP), Single Path compact, Multipass (MP), Multipass cabinet and Open Path (OP). The different versions are all based on the same electronics. Construction is as described by the manufacturer's descriptive documents and as described below.

Line-connected components are Certified and suitably rated.

All connectors are of the locking type, have a separation force of 15 Newtons or are in non-incendive circuits. A warning is provided regarding engaging/disengaging the field connectors while the circuit live or area is known to be hazardous.

Type Identification

LaserGas II SP Monitors (Single Path)
LaserGas II SP compact Monitors
LaserGas II OP Monitors (Open Path)
LaserGas II MP cabinet Monitors

Electrical Data

18-36VDC, 20W without power supply or
100 – 240VAC, 20W with power supply

Degrees of protection (IP Code)

IP 65: LaserGas II MP cabinet Monitors.
IP 66: LaserGas II SP, SP compact and OP Monitors

[16] **Project No:** PRJC-29692-2007-PRC-NOR

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Descriptive documents

Number	Title	Rev.	Date
EX 14372	List of descriptive documents LaserGas II Ex-n	J	2011-08-02

Routine tests

Dielectric strength test according to 60079-15: 2005 clause 6.8.1: Test for insulation from earth or frame:
Apply 500V rms or 700V dc in 60 seconds.

[17] **Special conditions for safe use**
None

[18] **Essential Health and Safety Requirements**
See part 9 of this certificate

END OF CERTIFICATE

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300.000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.