DNV·GL

Certificate No:
TAA00001EX

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Gas Detector

with type designation(s)
Open Path Combustible Gas Detector IR5500

Issued to
General Monitors Inc
Lake Forest, CA, United States

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	**C (*)**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**C / IP 66/67**

(*) Performance test carried out at -40°C

Issued at **Høvik** on **2017-10-18**
This Certificate is valid until **2018-12-31**.
DNV GL local station: **Long Beach**

Approval Engineer: **Frode Nygård**

for **DNV GL**

Odd Magne Nesvåg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Product description

The Model IR5500 Infrared Open Path System is a hydrocarbon gas detector continuously monitoring hydrocarbon gases.
The Model IR5500 uses a single beam, dual wavelength method of infrared absorption detection.
The gas absorbs one wavelength but not the other, which is the reference wavelength.
By comparing the signals from these two wavelengths, the detector measures gas concentration.

Application/Limitation

The Type Approval covers hardware listed under Type Designation/Product Description. In each case the hardware is used in application to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system. Reference to applied hardware as listed above, as well as reference to this certificate is to be made through the instrument and equipment list covering the application system in question.
Reference is made to DNV GL Rules for Ships Pt. 4 Ch. 9 - Control and Monitoring Systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification**/** Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Type Approval documentation

Place of manufacture

General Monitors
26776 Simpatica Cir
Lake Forest, CA 92630

General Monitors Ireland Ltd.
Ballybrit Business Park
Galway, Ireland

Tests carried out

Applicable tests according to:

- Applicable tests according to Class guideline DNVGL-CG-0339, November 2016.
- IEC 60079-29-4: 2009 – Explosive atmospheres- Part 29-4: Gas detectors- Performance requirements of open path detectors for flammable gases. FM 6325: 2005.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE