



Certificate No:
TAA0000396

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fire Detector

with type designation(s)
IR3, IR3-HD, IR3-H2 and IR3-H2-HD

Issued to
Fire & Gas Detection Technologies, Inc.
Anaheim, CA, USA

is found to comply with
DNV 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.

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	D (IP 66/68)

Issued at **Høvik** on **2023-04-28**

This Certificate is valid until **2028-04-27**.

DNV local unit: **Long Beach**

Approval Engineer: **Frode Nygård**

for **DNV**

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Frederik Tore Elter
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2022-12

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Product description

FlameSpec-IR3 (FLS-IR3-ASXX)

The FlameSpec-IR3 flame detector provides detection of all types of hydrocarbon fires (visible and non-visible). The detector addresses slow growing fires as well as fast eruption of fire using improved Triple IR (IR3) technology.

- Detection within 40 milliseconds of fireballs or explosions
- Standard fire detected in only 1 second from 100 ft. (30m) and 4 seconds from 260 ft. (80m).

FlameSpec-IR3-HD (FLS-IR3-HD-ASXX)

In addition to the characteristics above, the detector provides high-definition (HD) video output of the monitored area with clear imaging of a fire event and of personnel at distances up to 100 ft (30m). The detector automatically records video of fire event (1 minute pre- and up to 3 minutes post-alarm initiation). These features, along with the built-in event logger, provide additional means to study the cause and development of fire events.

FlameSpec-IR3-H2 (FLS-IR3-H2-ASXX)

The FlameSpec-IR3-H2 flame detector provides unrivaled response, high performance and reliable detection for a number of fires found in Energy Transition applications, such as hydrogen, syngas, ammonia and methanol. The detector addresses slow growing fires as well as fast eruptions of fire using improved IR3 technology. The detector operates in all weathers and light conditions.

FlameSpec-IR3-H2-HD (FLS-IR3-H2-HD-ASXX)

In addition to the characteristics above, the detector provides high-definition (HD) video output of the monitored area with near IR filtered imaging of fire events and personnel at distances up to 100 ft. (30m). This allows the rescue team to be aware of the exact situation before entering the hazardous area.

Application/Limitation

Ex installations 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.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV.

Information on Ex-Certification received from manufacturer – Not verified by DNV		
Equipment	Certified	Certificate No.
FLS-IR3 FLS-IR3-H2	Ex db IIC T5/T4 Gb Ex db eb IIC T5/T4 Gb Ta: -55°C to +75°C/85°	ICQC 19 ATEX 0424 X Issue 1
FLS-IR3-HD FLS-IR3-H2-HD	Ex db IIC T5/T4 Gb Ex db eb IIC T5/T4 Gb Ta: -55°C to +75°C/85°	ICQC 19 ATEX 0423 X Issue 1 IECEx FMG 19.0017X Issue 4

The FlameSpec-IR3-H2 and FlameSpec-IR3-H2-HD does not show compliance with the performance requirements in the European standard for Fire detection and Fire alarm systems, EN54-10.

Type Approval documentation

Tests carried out

Applicable tests according to:

- EN 54-10:2002 including A1:2005
- DNV-CG-0339:2021

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number

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