Certificate No: LR25216131MB
Issue Date: 26/08/2025
Expiry Date: 30/03/2028

Notified Body authorised by
BSH 0800-S23/4822:013

EC Type Examination (Module B) Certificate

This is to certify that:
LLOYD'S REGISTER Marine Deutschland GmbH (LRMD), designated as a "notified body" based on the notification of the Federal Maritime and Hydrographic Agency of Germany, did undertake the relevant type approval procedures for the type of equipment identified below which was found to be in compliance with the requirements of Marine Equipment Directive (MED) 2014/90/EU and the valid Commission Implementing Regulation (EU) in force indicating design, construction and performance requirements and testing standards for marine equipment, subject to the conditions below and the attached Schedule which also forms part of this Certificate.

Manufacturer	**Macron Safety Systems (UK) Ltd., part of Johnson Controls Int.**
Address	Burlingham House, Hewett Road, Gapton Hall Industrial Estate, Great Yarmouth, NR31 0NN, United Kingdom
Reference	Marine Equipment Directive (MED) 2014/90/EU, Regulation (EU) 2024/1975
Regulation Item (No. & Item Designation)	MED/3.45 Equivalent Fixed Gas Fire Extinguishing Systems Components (Extinguishing Medium, Head Valves Nozzles) For Machinery Spaces & Cargo Pump Rooms
Product Type	**FIXED GAS FIRE EXTINGUISHING SYSTEM**
Product Description	Fixed Gas Fire Extinguishing System – Type: "GEM SAPPHIRE (NOVEC 1230 or equivalent FK-5-1-12 extinguishant) Total Flood Fire Suppression 25 bar, 42 bar and 70 bar Systems" using 180° Nozzles (25mm to 50mm) and 360° Nozzles (25mm only), for Machinery Spaces of Category A and Cargo Pump Rooms, equivalent to fire-extinguishing systems required by SOLAS 1974 as amended, Chapter II-2/10.5 and 10.9.
Specified Standard	IMO MSC/Circular 848 as amended by MSC.1/Circ.1267 and IMO MSC.1/Circ.1316. Type approval requirements: SOLAS 74 Reg. II-2/10, SOLAS 74 Reg. X/3, IMO Res. MSC.98(73)-(FSS Code) 5 Carriage and performance requirements: SOLAS 74 Reg. II-2/10, IMO Res. MSC.36(63)-(1994 HSC Code) 7, IMO Res. MSC.97(73)-(2000 HSC Code) 7, IMO Res. MSC.98(73)-(FSS Code) 5, MO Res. MSC.391(95)-(IGF Code) 11, IMO MSC/Circ.848, IMO MSC.1/Circ.1313.

Downloaded Copy

Lloyd's Register Marine Deutschland GmbH, Willy-Brandt-Straße 59-65, 20457 Hamburg, Germany.
A member of the Lloyd's Register group

Marta Walk

Fire & Safety - Senior Specialist
For and on behalf of Lloyd's Register Marine Deutschland GmbH (2923)

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Certificate No: LR25216131MB
Issue Date: 26/08/2025
Expiry Date: 30/03/2028

Notified Body authorised by
BSH 0800-S23/4822:013

EC Type Examination (Module B) Certificate

Row of the Regulation Item Row 2 of

Trade Name GEM SAPPHIRE Total Flood Fire Suppression 25 bar, 42 bar and 70 bar Systems.

The attached Design Appraisal Document (schedule) forms part of this certificate. This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to and agreed with the notified body named on this certificate. The manufacturer should notify LRMD of any modification or changes to the equipment in order to obtain a valid Certificate.

Should the specified regulations or standards be amended during the period of validity of this certificate, the product is to be re-approved prior being placed on the market and on board vessels to which the amended regulations or standards apply.

The Mark of Conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D,E, or F) of ANNEX II of the Directive is fully complied with and controlled by a written inspection agreement with a notified body.

Downloaded Copy

Lloyd's Register Marine Deutschland GmbH, Willy-Brandt-Straße 59-65, 20457 Hamburg, Germany.
A member of the Lloyd's Register group

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.