DNV·GL

Certificate No:
MEDB00005E8

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Fixed water based local application fire fighting systems components for use in category "A" machinery spaces

with type designation(s)
Minifog Watermist System

Issued to
Minimax GmbH & Co. KG
Bad Oldesloe, Germany

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773,**
item No. MED/3.48 and Annex B, Module B in Directive. SOLAS 74 as amended Regulation II-2/10 & X/3 and 2000 HSC Code 7

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-10-01**.

Issued at **Hamburg** on **2019-10-02**

DNV GL local station:
Hamburg

Approval Engineer:
Andrii Pishchanskyi

Notified Body
No.: **0098**

for **DNV GL SE**

Gerhard Aulbert
Head of Notified Body

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-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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Product description

"Minifog Watermist System",
is a water mist system, composed of spray heads, steel piping, manual or automatic section valves, test valves, control panel and water supply pump(s).

The system is to be designed according to principal requirements for the system, IMO MSC.1/Circ.1387 and SOLAS Ch.II-2, Reg.10.5.6.

Only the spray heads are type approved by this certificate. Pumps, pipes, valves, couplings and other systems components are subject to case by case approval.

The M5 spray heads are manufactured by GW-Sprinkler AS, Glamsbjerg, Denmark.

Application/Limitation

The spray heads are to be installed above the protected objects according to the following specifications:

For heights between 0.5 and 8.0 m	
Maximum horizontal spacing:	3.0 m
Approved height above protected object	0.5 m to 8.0 m
Minimum pressure at spray head:	4.0 bar (at spray heads)
Spray head type:	GW M5
Spray heads are to be installed out to a position being at the periphery of the protected object (see IMO MSC/Circ.1387, annex 3.4.2.2). The spray heads are to be installed in a pendant (downward) position. Single spray heads or single rows are accepted when half spacing is used.	

For heights between 8.0 and 14.5 m	
Maximum horizontal spacing:	3.0 m
Approved height above protected object	8.0 m to 14.5 m
Minimum pressure at spray head:	9.0 bar (at spray heads)
Spray head type:	GW M5
Spray heads are to be installed out to a position being at the periphery of the protected object (see IMO MSC/Circ.1387, annex 3.4.2.2). The spray heads are to be installed in a pendant (downward) position. Single spray heads or single rows are accepted when half spacing is used.	

Spray head information

Spray head	k-factor ($Q = k \times p^{1/2}$)	Flow	Drawings
GW M5	5.0 lpm/bar1/2	10 lpm at 4 bar 15 lpm at 9 bar	140191, rev. C, 29 June 2010 140190, rev. D, 02 February 2011 140243, rev. B, June 2003
Spray heads are to be made of naval brass or stainless steel. Maximum operating pressure is 16 bar.			

For all systems:

1. The pump(s) or the pump unit is to be delivered with a Product Certificate. Other system components are to be certified or inspected in accordance Flag Administration. The piping is to be regarded as class III.
2. Turbo machinery equipment, air intakes and preferably also essential electrical equipment shall not be directly exposed to the water discharge. Electrical equipment as per Class Rules (or equivalent standard as specified by the Flag Administration) shall be applied for new buildings.
3. Ambient room temperature for pump unit should be between +4 °C and +45 °C

The following items are to be submitted for approval for each project:

i. System arrangement plans including location of spray heads, sections valves, release stations and pump-unit (including water supply);
ii. Documentation of power supply and control system;
iii. Specification of pipes, electrical motor, valves, pumps and associated components;
iv. Pressure drop calculations and water mist capacity calculations;
v. Arrangement of interface to fire detection and alarm system (where applicable);
vi. Manual with design, installation, operation, test and maintenance instructions .

Installation testing:

- At least one section should be tested with full flow through the spray heads;
- Test of manual and remote release of all section valves and start of pumps;
- Testing of alarms (SOLAS Ch. II-2, Reg.10.5.6.4);
- Testing of automatic start of system (in case of unattended machinery spaces);
- Pressure testing of water pipe system to at least 1.5 times maximum working pressure;
- System to be cleaned as per maker's "Design and Installation guide";
- Other tests as required by Class Rules (pressure testing of piping, etc.) or a similar standard acceptable to the Flag Administration and according to maker's manual shall be carried out.

Periodical testing:

- Periodical control and inspection as per maker's "Design and Installation guide".

Type Examination documentation

Design and Installation guide ÄI01 Edition 08/04
Datasheet No. SN010 1001 D dated 2018-08-07
Drawing no. 140191, rev. C, Assembly watermist M5
Drawing no. 140190, rev. D, Deflector for M5 nozzle
Drawing no. 140243, rev. B, watermist M5 nozzle

Fire Performance Test Report, SINTEF Report NBL10 F01121, September 2001 and SINTEF Report NBL F01135, September 2001

Component testing of water mist nozzles:

- FM Project ID. 3009895 dated January 2002;
- FM Project ID. 3041062 dated 15 March 2011.

Authorization to use the GW M5 Water Mist nozzle dated 2019-06-19

Tests carried out

Fire testing as per IMO MSC/Circ. 913 (superseded by IMO MSC.1/Circ.1387) and component testing of nozzles as per IMO MSC/Circ. 668 and IMO MSC/Circ. 728.

Marking of product

The nozzles are to be marked with type designation and mark of conformity (wheel mark). It shall be followed by Notified Body No. 0098 and the year in which the mark is affixed, e.g. 0098/2019.