

TYPE EXAMINATION CERTIFICATE – EC MODULE B

Certificate no.:
MEDB000097E

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV 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)
CXSW-L

issued to

WUXI BRIGHTSKY ELECTRONIC CO.,LTD
Wuxi City, China

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2024/1975**,

item No. MED/3.48 SOLAS 74 as amended Regulation II-2/10 & X/3 and 2000 HSC Code 7, IMO MSC.1/Circ.1387

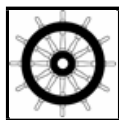
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2030-09-11**.

Issued at **Hamburg** on **2025-09-12**

DNV local unit:
Jiangyin NB & CMC

Approval Engineer:
Helge Bjørnara



Notified Body
No.: **0098**

for **DNV SE**

Mydlak-Röder, Christine
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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

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 USD 300 000.

Product description

"CXSW-L",

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 Reg. II-2/10.5.6.

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.

Application/Limitation

Approved for use as a fixed water based local application system for machinery spaces of category A.

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

Type: CXSW-T7.2 BSKY	
Maximum horizontal spacing:	3.0 m
Vertical distance from object:	0.5 m to 11.0 m
Minimum operation pressure:	7.5 bar (at spray heads)
Flow rate:	19.7 lpm
k-factor (using $Q = k \times p^{1/2}$):	7.2 lpm/bar ^{1/2}
Spray heads are to be installed out to the periphery of the protected area (see IMO MSC.1/Circ.1387, 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 all systems:

- A. Spray heads are made of SUS316L stainless steel. Maximum operating pressure is 16bar.
- B. Turbo machinery should also be covered by the system but with gentle application of water. Essential electrical equipment and air intakes should preferably not be directly exposed to the water discharge. Electrical equipment as per Class Rules shall be applied for new buildings.
- C. The pumps (or pump unit) shall be delivered with product certificate, whereas other system components are to be certified or inspected in accordance with Class Rules (or equivalent standard as specified by the Flag Administration).
- D. Pipes, couplings and other components are regarded as "Class III" piping.
- E. The pump unit and section valves shall be installed in a room having ambient temperature between 4 °C and 45 °C.

The following documents are to be approved and filed by the Flag State Administration:

- a. System arrangement plans including location of spray heads, sections valves, release stations and pump-unit (including water supply specifications)
- b. Documentation of power supply and control system
- c. Specification of pipes, electrical motor, valves, pumps and associated components
- d. Pressure drop calculations and water capacity calculations
- e. Arrangement of interface to fire detection and alarm system (where applicable)
- f. Design, installation, operation and maintenance manual.

Other documents:

- Documentation for other components (according to DIN 3.1B and DIN 2.2, or equivalent), including qualification of welders and approval of welding procedures (if applicable) is to be submitted to the Flag Administration/Recognized organization in question.

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 Reg. II-2/10.5.6.4)
- Cleaning of system according to maker's procedure
- Pressure testing of water pipe system to at least 1.5 times maximum working pressure
- Testing of automatic start of system (in case of unattended machinery spaces)
- Other tests according to maker's manual and any required by the authority having jurisdiction.

Periodical testing:

- The periodical testing shall comply with instructions from flag administration, statutory interpretations and maker's maintenance manual
- At least one section should each year be tested with full flow through the spray heads. The sections tested should be chosen so that all sections are tested within a five-year period.

Type Examination documentation

Operation and Maintenance Manual Rev. 1.1.0 dated 28 November 2024 from manufacturer.

Fire performance test:

Test report no. NX2025031702 dated 28 March 2025 from Nanjing Fire Laboratory Technology, Nanjing, China.

Component test:

Test report no. NX2025031701 dated 24 April 2025 from Nanjing Fire Laboratory Technology, Nanjing, China.

Drawing spray head:

Drawing no. BSKY-CXSW-L-04, Rev. A "Spray nozzle", dated 14 November 2024 from manufacturer.

Tests carried out

Fire performance test according to IMO MSC/Circ.1387.

Component test according to IMO MSC/Circ.1165.

Marking of product

The spray heads are to be marked with type designation and Mark of Conformity (see first page) whereas the pump unit is to be marked with name of manufacturer and type designation.