DNV·GL

Certificate No:
TAF00000X2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Water and Foam Monitor

with type designation(s)
UFM Monitors

Issued to
Survitec Fire Solutions Poland Sp. z o.o.
Doluje, Poland

is found to comply with
DNV GL offshore standards
DNV GL rules for classification – Ships
DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations
DNV GL class programme DNVGL-CP-0213 – Type approval – Fire safety equipment

Application :

The water and foam monitors are approved for installation on ships and offshore vessels.

Issued at **Høvik** on **2018-05-30**
This Certificate is valid until **2023-05-29**.
DNV GL local station: **Gdansk CMC**

Approval Engineer: **Marius Mørner**

for **DNV GL**

Mårten Schei-Nilsson
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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Job Id: **262.1-009337-5**
Certificate No: **TAF00000X2**

Product description

UFM Monitors
Water and foam monitors consisting of branchpipe (non-aspirating) and turret, made of stainless steel (AISI 316). The fog/jet nozzles are of constant flow type, i.e. flow is the same at both fog and jet settings.

Monitor movement:
- Vertically: -60° to +90°
- Horizontally: 360°

For further details, see the drawings listed under Type Approval documentation below.

Manufactured by: Tianjin Lucky Ocean Marine Equipment Co., Ltd.

Application/Limitation

The water and foam monitors are approved for installation on ships and offshore vessels.

Size	Flow rate [l/min]	Range (30° monitor elevation) [m]	Inlet pressure [bar]	K-factor [(l/min)/√bar]
UFM-80M – water	500-3850[i)]	Length: 30-76[i)] Height: 8-18[i)]	4-10	261-1305[i)]
UFM-80M – foam[iii)]	560-3900[i)]	Length: 27-72[i)] Height: 8-16[i)]	4-10	292-1321[i)]
UFM-100M - water	750-6950i[ii)]	Length: 40-86[ii)] Height: 9-24[ii)]	4-10	391-2355[ii)]
UFM-100M – foam[iii)]	780-6980[ii)]	Length: 37-80[ii)] Height: 9-23[ii)]	4-10	407-2365[ii)]
UFM-150M - water	1550-12900[ii)]	Length: 42-94[ii)] Height 10-27[ii)]	4-10	808-4371[ii)]
UFM-150M - foam [iii)]	1670-13100 [ii)]	Length: 40-89[ii)] Height: 10-25[ii)]	4-10	870-4439[ii)]

i) Depending on number of disc turns (2 to 11)
ii) Depending on number of disc turns (2 to 13)
iii) With 3% Unirol foam

Other models which provides the same capacities as in the above table are models UFM-80H and UFM-100H (these have same waterways, curvature, diameters, etc. as the models UFM-80M and UFM-100M). Note that steering mechanism with hydraulic power pack and remote operation is not part of this type approval, and is subject to approval in each case.

Max stable capacity at 10 bar. Max working pressure at 16 bar.
Approved for use with approved foam concentrates with mixing ratio 1-3%.

Hydraulic test to 1.5 times working pressure to be documented before delivery.

Works certificate indicating mechanical properties of materials in the monitor and pressure test report is to accompany each product.

Materials are to be in accordance with the DNV GL Rules Part 4, Ch.6, Sec.1 (Pipe of class III).

The specific arrangement of water monitors, piping and control equipment is subject to approval in each case.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

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Certification in accordance with Class Programme DNVGL-CP-0338, October 2017.

Test Report no. Unitor-20091117 dated 9th December 2009 from Wilhelmsen Ships Equipment.

Test Report no Unitor-20150730 dated 23rd October 2015 from Wihelmsen Technical Solutions.

Size:	**Drawing no:**
UFM-80M	P5302100-00, rev. 02, dated 01.12.2011 (main assy.) P5302100-10, rev. 01, dated 25.12.2011 (main dim.)
UFM-100M	P5302110-00, rev. 03, dated 25.12.2011 (main assy.) P5302110-10, rev. 01, dated 25.12.2011 (main dim.)
UFM-150M	P5302120-00, rev. 02, dated 25.12.2011 (main assy.) P5302120-10, rev. 01, dated 25.12.2011 (main dim.)
UFM-80H	UFM-80H-01, rev. 01, dated 25.06.2013 (main assy.) UFM-80H-00, rev. 00, dated 25.06.2013 (main dim.)
UFM-100H	UFM-100H-01, rev. 01, dated 25.06.2013 (main assy.) UFM-100H-00, rev. 00, dated 25.06.2013 (main dim.)

Tests carried out

According to DNV GL Type Approval Programme 474.51 (discharge coefficient/characteristics (flow) test, range test, leak test and mechanical test).

Marking of product

The product or packing is to be marked with name of manufacturer and type designation.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in DNVGL-CP-0338 Section 4.