



# NFF WATER MIST SOLUTIONS

WITH XFLOW<sup>®</sup> TECHNOLOGY ↓

The Novenco Fire Fighting (NFF) Water Mist Solutions can be applied for total flooding, local application fire fighting (LAFF), accommodation areas, galley and duct. The versatility of the solutions presents you with the option to integrate all systems into one. The system has a unique XFlow<sup>®</sup> water mist nozzle, which spreads fine water mist that extinguishes the fire quickly, without any risk to the people or equipment. The mist droplets vary in size and circulate in the air, suppressing the supply of oxygen and absorbing the heat. This is effective at breaking the chain of combustion.

## FEATURES

- QUICK RELEASE
- COMPACT DESIGN
- LOW WATER CONSUMPTION
- HIGHER SAFETY LEVEL
- STANDARDISED COMPONENTS



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## Quick release

The system can be released immediately without evacuation as it is harmless to crew and machinery. This reduces the risk of damaging surrounding equipment.

## Compact design

The NFF Water Mist system uses water from the vessel's fresh water tank, with a backup connection for seawater. No dedicated storage space is required, increasing the overall productive space available on your vessel.

One pump and control system can be used for total flooding, local application and accommodation fire fighting in one single application.

## Low water consumption

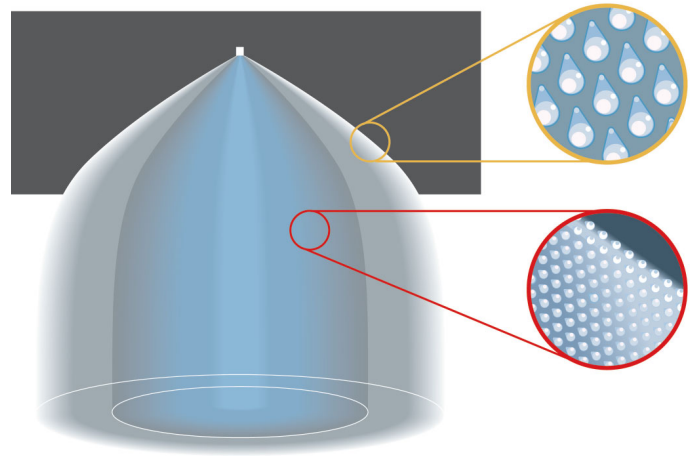
The combination of very fine water droplets and water mist uses a small volume of water. The combination ensures fast suppression requiring less water, whilst remaining effective at removing heat and oxygen from the fire.

## Higher safety level

Water is an effective agent for fire fighting as it is readily available and environmentally friendly. When water is added as mist it is highly efficient at reducing and dissipating heat and thereby controlling, suppressing and extinguishing a fire.

## Standard components

The NFF Water Mist system uses a water mist nozzle with low working pressure and low water flow. The pipe system components such as fittings and valves are standard components, keeping installation and maintenance costs low.



XFlow® technology

## What makes XFlow® technology different?

The secret of the NFF XFlow® technology is a combination of fine water droplets and water mist, providing optimal system performance.

The water droplets cool the surface preventing reignition, while the mist encapsulates the fire and suffocates it by restricting the oxygen flow. The droplets stabilize the mist extinguishing the fire with minimum damage to machinery and other vital installations. This makes the system more efficient for certain types of fires compared to high pressure water mist systems, even though both systems have to pass the same tests.

The NFF Water Mist system can be released immediately when a fire is detected. There is no need to evacuate the protected room before release, as water represents no risk to humans or the environment. As the fire fighting system can start immediately, the risk of the fire spreading is significantly reduced.

## Application

### LOCAL APPLICATION FIRE FIGHTING

The NFF XFlow® Local Application system is a localised fire extinguishing system for internal combustion machinery in Category A spaces.

### TOTAL FLOODING FIRE FIGHTING

The NFF XFlow® Total Flooding system is designed for protection of machinery spaces of Category A. It is suitable for use in engine rooms, turbines, enclosures, paint booths, cable ducts, switchboard installations and other enclosed spaces.

### ACCOMMODATION FIRE FIGHTING

The NFF XFlow® Accommodation system is a highly sophisticated fire fighting solution.

### GALLEY AND DUCT FIRE FIGHTING

The NFF XFlow® Galley and Duct systems are fixed fire extinguishing systems for galleys deep-fat fryers and ducts onboard ships.



XFlow® nozzle for machinery space



XFlow® nozzle for accommodation areas



XFlow® nozzle for galley



XFlow® nozzle for duct

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## System description

For engine room systems, nozzles are mounted in a dry pipe system and released in sections through a total flooding system, or as individual object protection through a local fire fighting system. System activation for a section is done manually from release stations in connection with the protected area or remotely from a release panel located at a fire control station, ECR or wheelhouse. For the local application fire fighting system, the release is automatic and manual.

For accommodation areas, the nozzles are mounted in a wet pipe system and each water mist nozzle works automatically and independently. The nozzles are activated when fire temperatures exceed 57°C. The water mist is confined to the area or object affected by the fire, and the system can be activated without closing all vents and full evacuation of people.

When a water mist nozzle is activated, water starts flowing through the pipes, causing the pressure to drop and the pumps to start. This triggers an optical and acoustic alarm on the bridge.

## Options

The NFF Water Mist Solution gives you the opportunity to integrate three applications in a single system with a customised layout and compact design.

### NFF XFlow® Local Application system

- The system can be supplied either as a stand-alone system or as part of the total flooding or accommodation system
- The local protection unit is supplied as plug and play, ready to connect to water, power, pumps, and pipes
- The system can be delivered as a diesel driven unit to comply with "safe ship" notifications
- Type approved heavy duty non-corrosive section valves
- Nozzle heads are protected in stand-by position
- Dry pipe system - uses very small amounts of water for immediate release, with a maximum system pressure of 16 bars

### NFF XFlow® Total Flooding system

- Reliable fire protection based on the newest technology
- The system can be released immediately without evacuation as it is harmless to machinery and crew
- Immediate release reduces the risk of damaging surrounding equipment
- The system uses a dry pipe system, with a maximum system pressure of 16 bar, with minimal water consumption and low power requirements

### NFF XFlow® Accommodation system

- The water mist head is concealed in the ceiling and only visible when activated
- The nozzle and has an elegant Danish design and comes in a variety of different materials & colours
- Standard components are based on a maximum system pressure of 16 bars
- Minimal installation costs and maintenance

### NFF XFlow® Galley and Duct systems

- Pure water mist system, no chemicals are needed
- Easy clean nozzles, no protection cap etc. is needed
- Galley system is self-contained water driven from pressurised tanks
- Duct system can be supplied either as a stand-alone system or combined with other water mist system(s), such as with galley system and accommodation system, a typical combination way
- Low pressure systems - The duct system is with a maximum system pressure of 16 bars, and the galley system is with 25 bar
- Easy service, no expensive refilling, only pure water and air-recharge
- The complement of galley and duct protection gives a more complete offering for yachts and passenger vessels



## Approvals

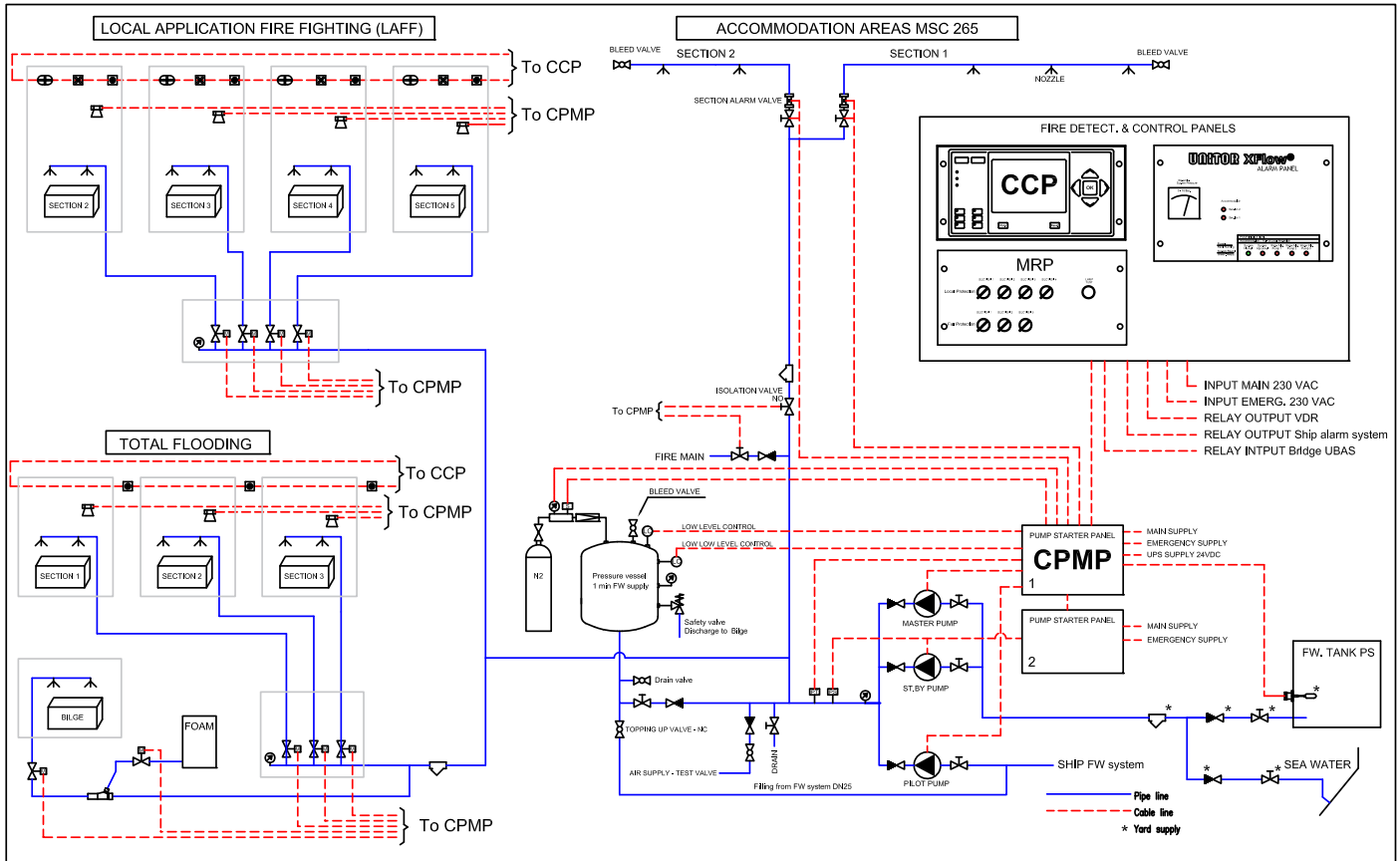
NFF's fire fighting systems are approved by MED, international marine authorities and classification societies. NFF is MED module D approved. Survitec is certified according to ISO 9001.

- NFF XFlow® Local Application system is type approved and certified to be in compliance with MSC/circ. 1387 type
- NFF XFlow® Total Flooding system is type approved and certified to SOLAS chapter II-2 and IMO MSC1165
- NFF XFlow® Accommodation system is type approved and certified in accordance with SOLAS chapter II-2 and Res. A.800(19) as amended by MSC265
- NFF XFlow® Galley and Duct systems are type approved to ISO 15371:2015

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## Standard configuration



Drawings of other system combination ways or single system can be found on our website.

## Nozzle

TECHNICAL DATA					
	LAFF	Total flooding	Accommodation	Duct	Galley
Types	open	open	closed	open	open
Material	brass	brass	brass	brass	SST
Water capacity	1.2 to 1.4 l/min/m <sup>2</sup> (Q 6.7 to 7.7 bar(g))	1.4 to 1.8 l/min/m <sup>2</sup> (Q 9 bar(g))	1.5 to 2.0 l/min/m <sup>2</sup>	12 l/min/m <sup>2</sup> (Q 6 bar(g))	10.6 l/min/m <sup>2</sup> (Q 7 bar(g))
Installation height	up to 16.5 m above object	up to 6.6 m above object	NA	NA	NA

## Pump

TECHNICAL DATA					
	LAFF	Total flooding	Accommodation	Duct	Galley
Type	centrifugal multistage	centrifugal multistage	centrifugal multistage	centrifugal multistage	three bladder tanks
Material	cast iron / stainless steel	cast iron / stainless steel	cast iron / stainless steel	cast iron / stainless steel	NA
Voltage/fre- quency	3x400/50 and 3x440/60 (or on request)	3x400/50 and 3x440/60 (or on request)	3x400/50 and 3x440/60 (or on request)	3x400/50 and 3x440/60 (or on request)	NA
Insulation and enclosure	Class F, IP55	Class F, IP55	Class F, IP55	Class F, IP55	NA



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