

Ultra Fog Highpressure Waterfog Sprinkler system

Ultra Fog is a genuine waterfog system, with all the advantages this technology gives the user. Ultra Fog Systems are designed to provide fire protection for passenger and guest accommodation areas, machinery spaces and local protection of high risk areas. Ultra Fog Systems for special applications are also used in areas outside the fire protection range.

Ultra Fog has a range of working pressure from 60 bars up to 150 bars, depending on what type of application the system is designed for. This flexibility is possible because of the unique technology and design of the Ultra Fog nozzle.

Ultra Fog systems are of single fluid type which means that only one set of pipe work is necessary, which simplifies installation and maintenance. The water is easily supplied by pressurised cylinder arrangements, pumps or a combination.

Ultra Fog Classification

Ultra Fog Waterfog system is rated as Class I according to the National Fire Protection Association Code (NFPA, USA). Basically it means that Ultra Fog contains the smallest average droplet size, which ensures effective fire fighting performance.

- Ultra Fog Waterfog system is fire tested by the Swedish Test Laboratory (SP), which is fully authorised by IMO.
- Ultra Fog is tested and approved according to the IMO Res.A.800 (19), for accommodation spaces, stores and service spaces.
- IMO and MSC circ. 847 activation by detectors as alternative to the glass bulb.
- IMO, MSC circ. 668 and MSC circ. 728, machinery spaces and pump-rooms.
- By DNV, Norway, a Performance Effectiveness Analysis.
- Component test by the laboratory of UL, USA.

Our test procedures started 1992 and are continuously renewed to be able to locate new areas to be protected by our exceptional waterfog systems.

Ultra Fog's Nozzle Range

Ultra Fog offers a unique range of fog nozzles, designed for a wide variety of applications. The nozzle causes no loss in power, all energy is used to create the waterfog. No moving parts are used in the nozzles and this contributes to high reliability of the system.

All Ultra Fog nozzle types have been extensively tested by UL (Underwriters Laboratories) in the USA. The patented Ultra Fog nozzle technology and design is unique on the market.



Ultra Fog Design of Systems

Triggering can be arranged via a modern fire alarm system with a typical trigger time far below 60 seconds during normal fires. This is the **ULTRA FOG INTELLIGENT SYSTEM**, corresponding to the IMO MSC circ. 847.

Alternatively, the Ultra Fog system can be triggered by the quick response glass bulb, the **ULTRA FOG CONVENTIONAL SYSTEM**.

The third alternative, when both these triggering methods are combined in a common system concept, is the **ULTRA FOG COMBINED SYSTEM**.

Ultra Fog Quality

All components such as nozzles, valves, pumps, cylinders, electrical switchboards, panels etc. are manufactured by our own work shops or associated companies. Ultra Fog's suppliers manufacture according to ISO 9002. The Ultra Fog System are your guarantee for high quality and reliable status.

Ultra Fog for Accommodation Areas

Ultra Fog systems for accommodation spaces can be activated in different ways, according to the Ultra Fog design of systems. When a nozzle is activated, the pressure automatically increases to 100 bar and water fog is spread from the nozzle head(s). Simultaneously a signal is sent to the control panel on the bridge. The water fog continues to be released until the pump(s) is/are turned off manually.

Ultra Fog for Machinery Spaces and Local Protection

For the protection of machinery spaces and local risks, Ultra Fog systems comprising either pump(s) and/or cylinders are being used depending on the risk and the relevant regulations. Activation of the systems is manual or automatic. Systems can be designed to operate either a single nozzle or a group of nozzles. Open type of nozzles are normally used.

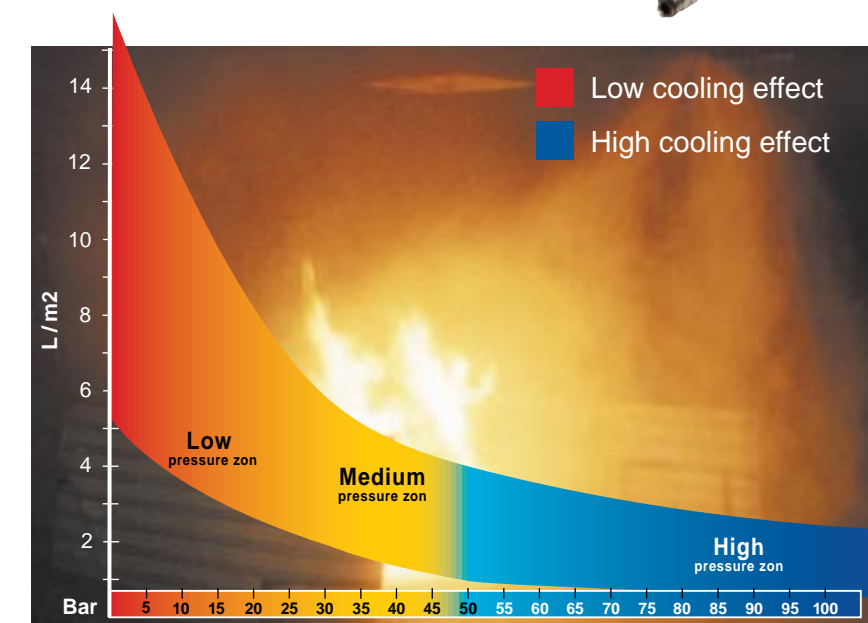
Ultra Fog Special Local Protection

Ultra Fog have developed many kinds of special local protection systems. For example: fat fryers, grill equipment, special high risk stores, computer rooms etc.

IMO-build pumpstation, including 7 pcs vertical mounted pump inclusive 1 pump as spare which gives the unit a reliable redundancy. Pilot pump which keeps the stand-by pressure of the system. FW supply pump as standard. Accumulator unit protects required area in case of "black-out". Recirculation tank, section valve and nozzles.

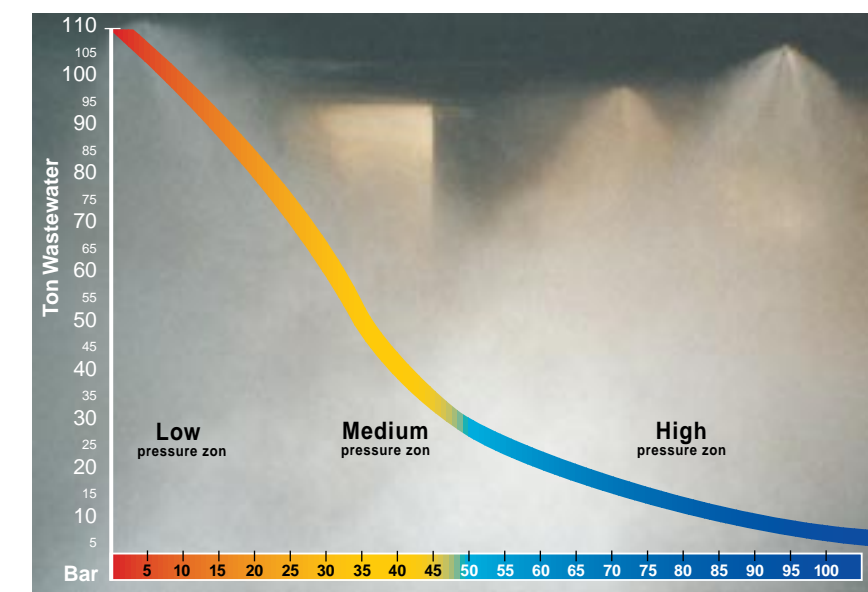


Different components by own construction and manufacture (section valve, filter, nozzle types, flow guards etc.)



Low water consumption and a tremendous cooling effect.

Because of the small and effective waterdrops a high pressure system uses only 10-15 % water of a conventional watersprinkler system



Less carried weight.

A high pressure system has only appr. 10% of the weight of a conventional watersprinkler system. This fact also influences the daily running costs.

3 categories of sprinkler system

Low pressure system – conventional watersprinkler system.

Working-pressure below 10 bars. A certain type, called *Mist Waterspray System*, can be identified in this group. This type of systems has at least 70-80 % water consumption compared to the conventional watersprinkler system.

Medium pressure system – mist waterspray system or watermist system.

The pressure range is from 10 up to 40 bars. The water consumption is at least 50-70 % of the conventional watersprinkler system.

Highpressure system – waterfog or watermist system.

The pressure range works from 40 bars up to 100/150/200 bars. The difference between mist and fog is the size of the droplets. Fog has in average smaller droplets than mist. A high pressure waterfog system has advantages over the low- and medium pressure systems, a.o:

- Total weight and the amount of water is reduced to a minimum.
- Cooling effect is extremely high.
- The grade of heat expansion.
- Sizes of drain and scupper system is reduced to a minimum.
- Dimension of pipes is small.

Ultra Fog - Waterfog Sprinkler System

- Droplet sizes from 10 Micron up to 200 Micron.
- Pumpstation or Pressurized Accumulators or a combination.
- Working pressure range between 60 - 150 bars.
- Pipe dimensions between 8 mm to maximum 50 mm.
- Very easy and clean installation. Hot work can be avoided.
- Water consumption is 85-90 % less compared to a conventional system.
- The weight is extremely low, including water 90 % less compared to a conventional watersprinkler system.

Why Ultra Fog Waterfog Sprinkler System?

- Very high extinguishing effect - in relation of the amount of water. Less damage to the equipment and faster restoring.
- Fast extinguishing - Fast sprinklers with low RTI value or by detectors.
- Safe use - No poison. Environmentally friendly.
- Cleans the smoke through the scrubbing technique.
- Flashover will be avoided by the waterfog.
- Reduced drain and scupper dimensions. The amount of dirty extinguished water will be to a minimum.
- At sea, stability problem is reduced to a minimum.

Why is Ultra Fog Waterfog System effective?

- **Cooling of the surrounding** materials through the small droplets.
- **Cooling of the flames** through the big amount of droplets by balanced sizes.
- **Rarefied oxygen**, in the fire zone, through the waterfog.
- **Overpressure** is produced in the space, which prevents new oxygen to join the fire.
- **Small droplets** will reduce the heat to a minimum.
- **More than 85% extinguishing effect** will be reached when the small droplets become watersteam.
- **1700 liters of watersteam** will be produced by each liter of water.



The most efficient High Pressure Waterfog System in the market.

For many years Ultra Fog AB has specialised in the development of products and systems for safer fire-protection and fire-fighting systems for on board and on shore facilities.

At the start, in the 1980's, Ultra Fog AB participated in developing so-called "passive fire-protection". This resulted in the automatically operated systems for opening and closing fire-doors to optimise the fire class rate of the doors. From 1991, Ultra Fog AB focused on the active variant of fire-protection, the high pressure waterfog system, ULTRA FOG®. In the autumn of 1991, Ultra Fog received the first order for this system from Stena Line.

The installation was carried out in the spring of 1992.

The first tests for public areas on board were performed in April 1992.

It is our conviction at Ultra Fog AB, that in order to get good and safe fire-protection, both passive and active fire-protection measures should be in harmony. We also strongly believe in the importance of an early triggering of the active fire-protection system in the fire-fighting position.

This will save lives and reduce material damage.

Areas where Ultra Fog systems act as an active fire-fighting system:

Public areas, cabins, corridors, staircases, storages, kitchens, service areas, hotel rooms, offices, laboratories, historical locations, computer rooms, engine spaces, work shops, electrical rooms, pump rooms, machineries, deep fryers, ventilation ducts, and many more possibilities.



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ULTRA FOG® AB
FIRE EXTINGUISHING SYSTEM



MARINE