

Deep Fat Fryer extinguishing system

High-pressure water mist
fire protection

www.ultrafog.com

Ultra Fog Fire protection solutions are custom designed to meet worldwide fire safety regulations

Ultra Fog is an international brand founded in Gothenburg, Sweden.

The company specializes in the development, design and application of high-pressure water mist systems.

This high-performance product line results from a continuous program of research and development, extensive certification and type approvals, and quality controlled manufacturing. Ultra Fog's global reach, aftersales service and maintenance provision ensures that customers benefit from lifelong product assurance and protection.

The protection of applications presents specific challenges for fire fighting. The fire must be rapidly brought under control to safety of passengers and crew.

The lightweight design reduces water requirements, and the high-pressure water mist provides a safe, efficient and flexible solution for the protection of applications assets and people.



Ultra Fog uses pure water instead of chemicals to put out the fire caused by the **Deep Fat Fryer**.

Thanks to this technology, intensive cleaning of the space after a fire is avoided.

To put out a fire in a deep fat fryer is always a challenge because of the large amount of combustible liquid (cooking oil) that needs to be cooled as well as the flames extinguished.

When the deep fryer oil begins to burn, flames rise up to the nozzle and heat up the liquid in the glass bulb. The glass bulb cracks at 141°C, whereby the piston is pressed down by the water pressure since the bulb no longer provides resistance. The water now has free passage down to the mist producer nozzle and extinguishes the deep-fryer fire in approximately 2-5 seconds.

The bulb cracks when temperature reaches 141°C and this releases the water pressure. Ultra Fog system for deep fat fryers is either standalone installation or integrated into the main system.



Ultra Fog system for deep fat fryers is either standalone installation or integrated into the main system.

Ultra Fog Deep Fat Fryer System Advantages

01 Protects deep fat-fryers and grills

02 Extinguishes fires in 2-5 seconds

03 Environmentally friendly

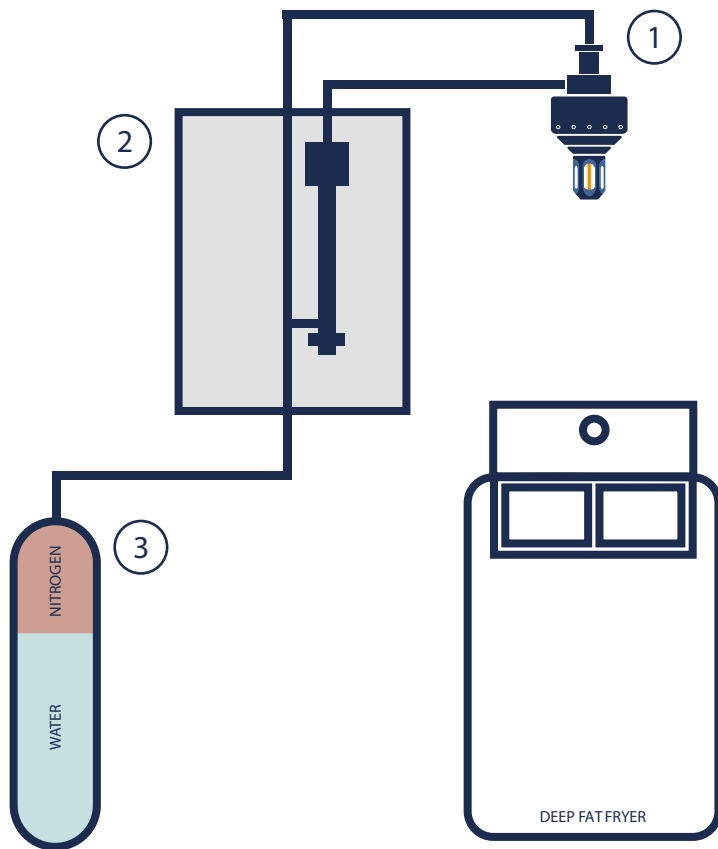
04 Low water consumption

05 Automatic and manual release

06 Easy and clean installation

07 Low total system weight

System Scheme and Description



1. Ultra Fog patented sprinkler nozzle

Positioned over fryer or grill

(Nozzle type 803-08-B, K-factor 0.8, Flow at 100 Bar 8.0 L/min)

2 - Valve cabinet with manual release valve

Pressure guard and service valve

To trigger the system before the glass bulb cracks, the manual release valve inside the cabinet is opened by pulling it down.

3 - Pressure container

With water and nitrogen

The pressure container 26 L is filled with approximately 70% water and 30% nitrogen (it can be connected to the main system).

Component Description

Ultra Fog sprinkler nozzle

The Ultra Fog sprinkler nozzle 803-061-B consists of the following parts:

An upper shell with two inlets: an upper 1/4" inlet which is always pressurized and a 1/8" side inlet that connects to a dry pipe which leads to a manual release valve. On the upper shell there is also a nut to enable fitting to the roof or deep-fryer cover.

Mist producer: Ultra Fog's patented method of producing the correct droplet size for effective extinguishing.

Glass bulb: supports a piston that seals the water pressure.



The bulb cracks when temperature reaches 141°C and this releases the water pressure.

Components Description

Accumulator valve

The valve is made of brass and consists of the following parts:

Valve housing with piston

Burst plate: allows the contents of the pressure container to evacuate if the pressure rises above 250 bar.

Pressure gauge: used for monitoring the charge pressure.

Standpipe: goes down to the bottom of the container and ensures that the right mixture of water and gas is released upon activation.

Activation/deactivation bolt: used to seal the pressure container during installation and maintenance.



Component Description

Pressure container

The pressure container is filled with approximately 70% water and 30% nitrogen.



Components Description

Valve cabinet with manual release valve

The valve is made of brass and consists of the following parts:

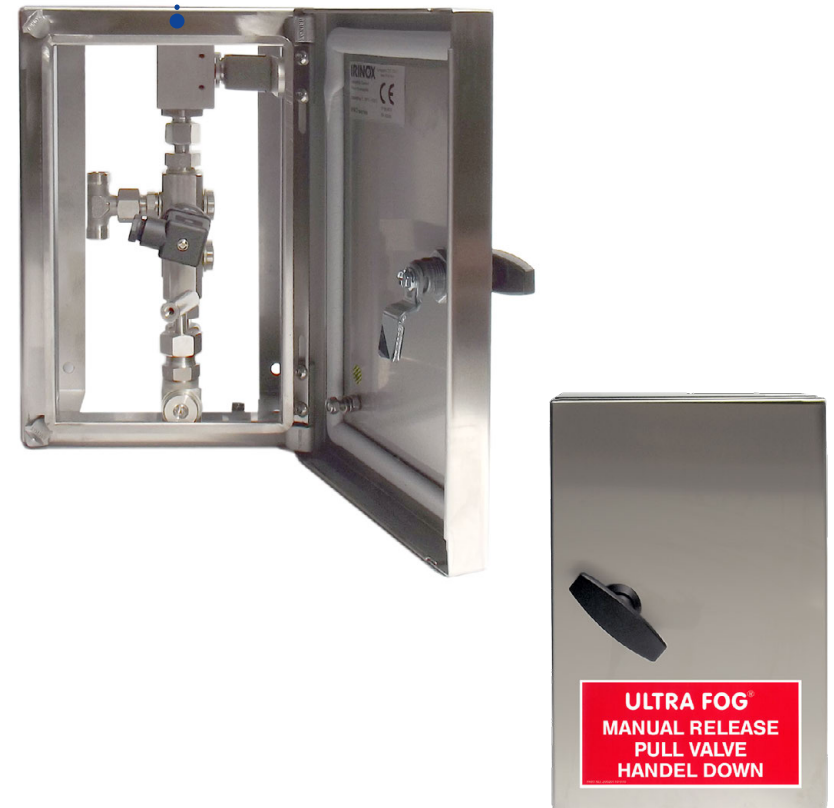
Valve housing with piston

Burst plate: allows the contents of the pressure container to evacuate if the pressure rises above 250 bar.

Pressure gauge: used for monitoring the charge pressure.

Standpipe: goes down to the bottom of the container and ensures that the right mixture of water and gas is released upon activation.

Activation/deactivation bolt: used to seal the pressure container during installation and maintenance.



System certified according to ISO 15371:2015

The Ultra Fog Water Mist System is rated as Class 1 according to the National Fire Protection Association Code (NFPA, USA), attesting that Ultra Fog has the smallest average droplet size, which ensures an effecting cooling of the fire and surrounding area.

Ultra Fog's Water Mist System has been fire tested by the Swedish Test Laboratory (SP), SINTEF - Norway and Danish Fire Laboratory (DFL) which are fully authorised by IMO, and the Southwest Research Institute (SwRI), United States.

- ISO 15371, for protection of galley ducts and **cooking equipment - including deep fat fryers.**
- IMO Res. A.800(19) and IMO Res MSC 265(84) for accommodation areas, stores and service areas.
- IMO MSC/Circ.1165 and MSC/Circ.913, machinery areas, total flooding in pump rooms and local applications.
- IMO MSC.1/Circ.1272 and IMO MSC.1/Circ.1430, protection of RoRo and special category spaces.
- IMO MSC.1/Circ.1268, protection of balconies.
- IMO MSC/Circ.1387, local applications.
- A performance Effectiveness Analysis was carried out by DNV, Norway.
- Component testing by the laboratory of FM (Factory Mutual), UL, USA.
- USCG (United States Coast Guard) approved.

Our test procedures began in 1991 and are constantly being renewed in order to include new fire protection applications, new standards and regulations, and improved nozzle performance.

DNV-GL
Certificate No: MEDB00066KU

**EC-CIRC EXAMINATION
CERTIFICATE (MODULE B)**

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:
That the Nozzles for deep fat cooking equipment fire extinguishing systems (automatic or manual type)

with type designation(s)
Ultra Fog Fat Fryer System

Issued to
ULTRA FOG S.R.L.
VIAREGGIO, LU, Italy

is found to comply with the requirements in the following Regulations/Standards:
Regulation (EU) 2020/1170,
Item No. MED/3.43. SOLAS 74 as amended, Regulation 11-2/1, 11-2/10 & X/3, 2000 HSC Code 7, MSC.1/Circ.1433 and ISO 15371:2015

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

This Certificate is valid until **2025-09-02**.
Issued at Høvik on **2020-09-03**

DNV GL local station:
Italy/Malta CMC

Approval Engineer:
Helge Bjernarå

Notified Body
No.: 0575

for DNV GL AS
Digitally Signed By: **Hoff, Øyvind**
Location: **DNV GL Høvik, Norway**
on behalf of
Røald Vårheim
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 lies 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 AS 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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of this document or related thereto, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstances be limited to 300,000 USD.

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