

**HI-FOG®**  
water mist fire protection

In case of fire, you don't need this

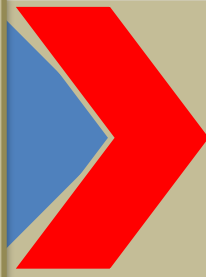
You need this to protect

- Properties
- Culture
- History
- Investments





# About Us



G.M: M.SOROUR

## Staff Growth



As a benchmark, Deutschland Technology Company dedicated its 325 personnel to be professional in the field of high pressure water mist firefighting system.

- Cairo
- Jeddah
- Makkah
- Riyadh
- Madinah
- Al-khobar
- Qatar
- Istanbul
- Bahrain

● Branches



# What is HI-FOG®

*The natural enemy of fire*

## COOLS

HI-FOG® attacks the fire, cooling the fire itself and the space it is in. Water absorbs more heat (>2 MJ/kg) than any other extinguishing agent when it turns into vapour.

## INERTS

HI-FOG® locally starves the fire of oxygen. It inertes the atmosphere around the fire by displacing oxygen: water expands >1,760 times in volume when it turns into vapour.

## BLOCKS RADIANT HEAT

HI-FOG® micro-droplets efficiently absorb and scatter the heat radiated by the fire, protecting the immediate surroundings.

HI-FOG® is the world's leading water mist fire protection system, originally developed by Marioff for use on passenger cruise ships and now also protecting a growing range of applications on land. HI-FOG® water mist is the natural enemy of fire as proven by thousands of full-scale fire tests, a fast-growing installed base and many successfully suppressed real-world fires.

Traditional low-pressure sprinkler and deluge systems use large volumes of water to fight fire by wetting and cooling combustible surfaces. HI-FOG® uses up to 90% less water to produce a fine mist representing water in its most effective fire-fighting form.

HI-FOG® water mist penetrates fire like a gas and cools the surrounding air very effectively, suppressing the fire before it can spread.



Conventional  
sprinkler /  
water spray

Low-pressure  
water mist

**HI-FOG®**

Typical drop size range (mm)	Number of droplets per litre of water	Surface area (m <sup>2</sup> )
1...5	15 thousand to 2 million	1...6
0.2...1	2 million to 250 million	6...30
0.025...0.2	250 million to 150 billion <i>Superior cooling and local inerting</i>	30...250 <i>Superior blocking of radiant heat</i>



**Protects people**



**Protects property**



**Protects the environment**



In suppressing a fire, traditional low-pressure sprinkler and deluge systems often cause significant water damage that can be greater than the damage caused by the fire itself. Such systems can also be difficult to install, especially in retrofit projects.

Traditional gas-based systems are unsuitable for many high-risk areas because of the difficulty involved in guaranteeing enclosure integrity, high recharge costs and personnel and environmental safety issues. Traditional foam-based systems cause collateral damage and present the problem of toxic run-off to municipal sewage systems.

HI-FOG® offers equivalent or better fire suppression than traditional systems with minimal water discharge, minimizing damage to property and reducing the time and cost of clean-up.

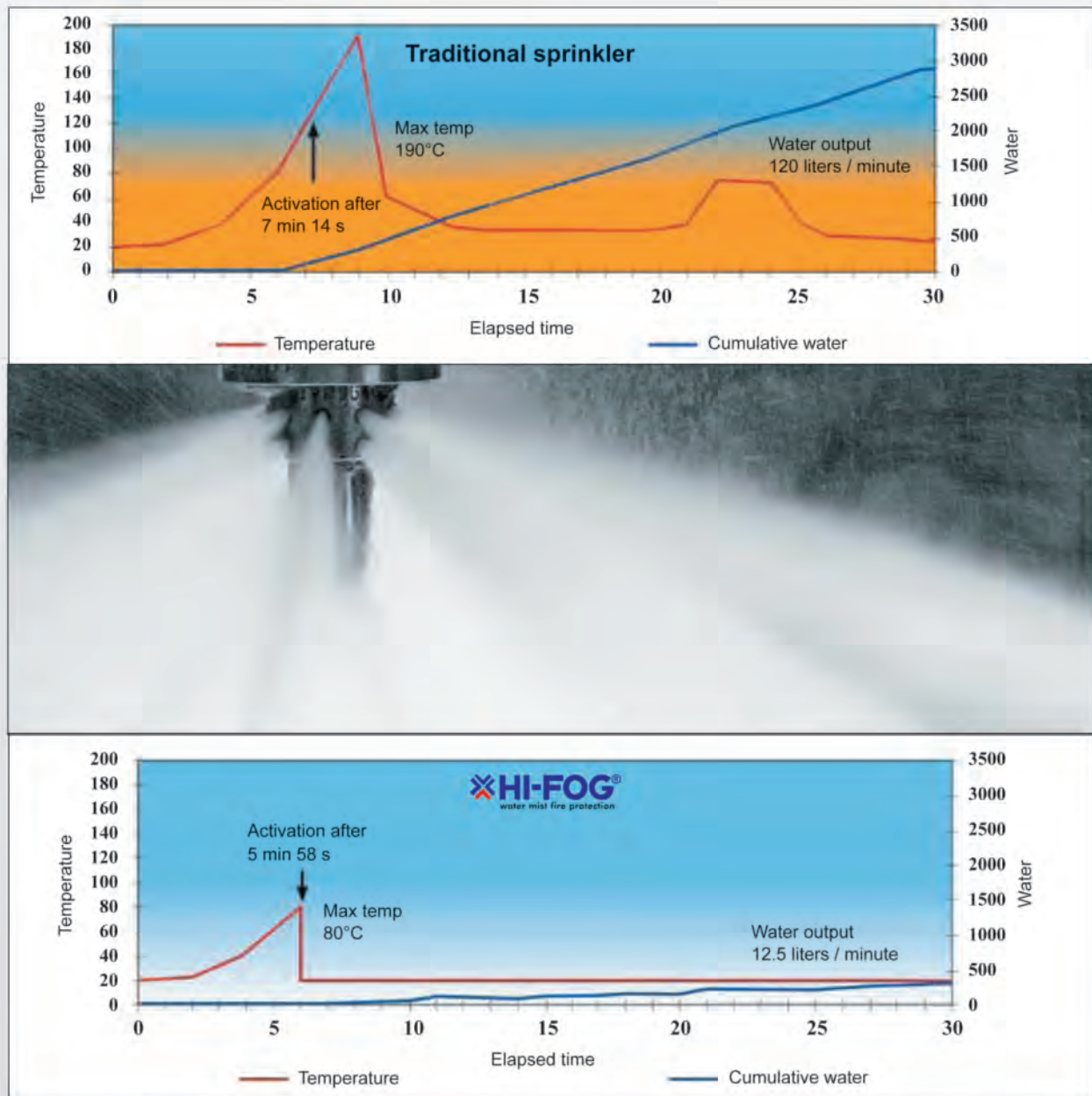
HI-FOG® tubes are small in diameter, making installation fast and easy especially in retrofits. Finally, HI-FOG® uses pure and potable water: it is totally safe for people, property and the environment.

- Suppresses fire efficiently
- Uses very little water
- Easy to install
- Safe for people, property and the environment



# Protecting national treasure for future generations

## HI-FOG<sup>®</sup> is the best



Results of two identical fire tests conducted in accordance with the VdS fire test protocol for Ordinary Hazard Group 1 occupancies. The fire suppression performance of the HI-FOG<sup>®</sup> GPU system was superior to that of the traditional sprinkler system, while using up to 90% less water. The HI-FOG<sup>®</sup> system had a faster activation time and only one sprinkler discharged. In the traditional system, two sprinklers activated.

# What makes up a HI-FOG®

A basic HI-FOG® system as designed, delivered and often installed by Marioff will typically comprise a high-pressure pump unit, valves, stainless steel tubing and HI-FOG® sprinklers and/or spray heads.



## HI-FOG® sprinkler heads

HI-FOG® sprinkler heads are “closed”, meaning they are equipped with heat-sensitive glass bulbs. They are selected for the application and the temperature at which activation is to occur and provide maximum fire suppression performance with minimum water usage. HI-FOG® sprinkler heads are available in a variety of finishes with different mounting options.



## HI-FOG® spray heads

HI-FOG® spray heads are “open”, meaning they do not have heat-sensitive glass bulbs. Made of high-quality stainless steel, they are designed for specific applications and fire hazards, and provide maximum fire suppression performance with minimum water usage.



## HI-FOG® valves

HI-FOG® valves are made of either brass or stainless steel. They can be activated either manually or automatically by electrical, hydraulic or pneumatic signals.



## HI-FOG® tubes

HI-FOG® tubes are made of high-quality stainless steel. Ranging in diameter from 12 – 60 mm, they are very small compared to traditional sprinkler system pipes. They are bent into shape on-site and easy to install discretely in tight spaces.

# system?



## **HI-FOG® SPU (Sprinkler Pump Unit)**

Suitable for almost any application, available in a range of sizes and configurations depending on the application, e.g. sprinkler applications and the total volume fire protection of large machinery spaces. A diesel version (SPUD) is also available.

- Modular motor/pump assembly
- Continuous operation: extended protection time



## **HI-FOG® GPU (Gas-driven Pump Unit)**

Used when a normal electrical power supply is unavailable or when water discharge must be kept to an absolute minimum.

- Nitrogen-driven or air-driven
- No external power needed
- Manual, pneumatic or electrical release
- Connected to the water mains or a water tank



## **HI-FOG® MAU (Machinery Space Accumulator Unit)**

For the total volume protection of small enclosed spaces against flammable liquid fires and special hazards.

- Nitrogen or air-powered
- Unpressurized water cylinders
- Easy installation & maintenance
- Easy integration with fire detection systems
- Manual, pneumatic or electrical release

# HI-FOG® in Heritage

## Challenge: Duchess Anna Amalia Library

The Duchess Anna Amalia Library in Weimar, Germany, is a UNESCO World Heritage Site and a jewel in Germany's cultural crown. Johann Wolfgang Goethe worked here for over thirty years. The library houses a priceless collection of manuscripts, medieval autographs and works of art.

On the night of September 2<sup>nd</sup>, 2004, Anna Amalia experienced the worst library fire in Germany since World War II, caused by a mere electrical fault. As part of the building restoration work, a HI-FOG® system was installed to protect the library's four floors, Rococo Room and tower. The system is a pre-action system: activation requires both a sprinkler bulb to break and an alarm from an independent fire detection system.

Three factors can be singled out as to why the HI-FOG® system was chosen. First, the HI-FOG® system will cause an absolute minimum of collateral damage to the library's delicate collection upon activation. Second, the system tubing is small in diameter – skilled installers can put it in unobtrusively. Third, the HI-FOG® system is a stand-alone system that will protect the library even during a power outage.

The Duchess Anna Amalia Library was skillfully restored after a catastrophic fire.





The Rococo Room. The Marioff installers hid the HI-FOG® sprinkler heads artfully in cornices, making the system as invisible as possible.

# HI-FOG® in Data Centres

## Meeting the needs of da

### Minimized business disruption

Interruption of normal operations caused by a fire comes at a premium cost. Minimizing downtime is crucial.

The effective fire fighting of HI-FOG® minimizes potential damage from both fire and water. It has no additives or corrosion related contamination.

Furthermore, HI-FOG® system discharge is always localized, i.e. the system discharges only at the point of fire.

### Operational reliability

Marioff continues to make significant investments into research and development to improve the components and system performance.

The risk of leakages and false discharges is minimized by the use of high quality materials and various system configuration options.

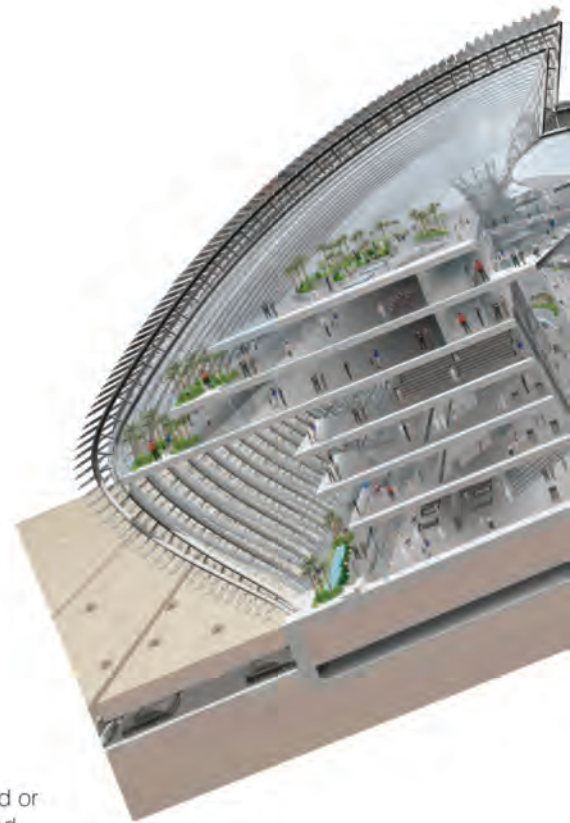
### Safety

Spaces do not need to be evacuated or closed off for HI-FOG® to be activated. Premises can be entered while the system is discharging as it does not affect the system's fire fighting efficiency or pose any risks to human life.

### Total facility fire protection

Through extensive R&D HI-FOG® has become a high performance solution well suited to protect all spaces of a modern data centre.

With all spaces protected by the same system, maintenance is simplified and total cost savings are achieved.

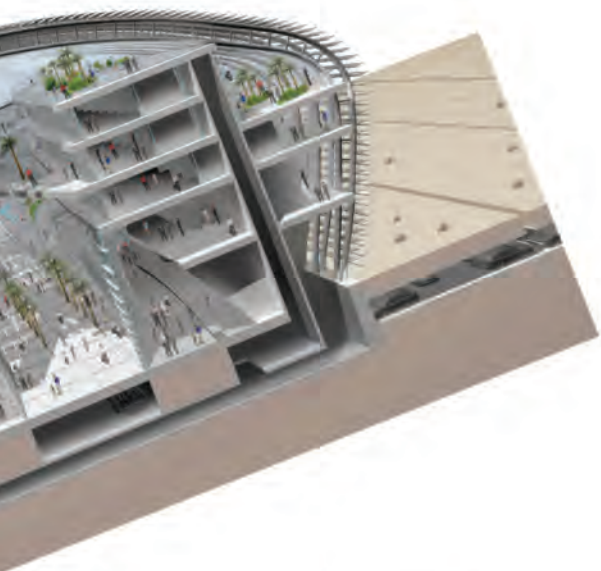


# Data centre fire protection

## Scalable

HI-FOG® supports the modular building concept of a data centre. HI-FOG® is easily expanded to cover the new phases of the facility.

Installations can be combined with same main components serving the entire, integrated system.



## Flexible installation

Thanks to its compact design, HI-FOG® fits well with other equipment. It requires little space due to small-diameter tubing, compact pump units and small water tanks.

HI-FOG® has no enclosure integrity requirements, gas-tight spaces are not required in order to ensure proper system functionality.

## Green system

HI-FOG® supports environmentally sustainable design: modular building, small amounts of water used, no special demand on building fabric, long lasting materials.

HI-FOG® features may even be beneficial in helping data centres fulfill the requirements of green building certificates.

# HI-FOG® in Hotels

## Challenge: protect an ocean-going hotel that accommodates 4,375 guests

In April of 2008, the M/S Independence of the Seas sailed from the Aker Yard in Turku, Finland. Measuring 339 metres in length and 38 metres in width, the Independence of the Seas is a major investment in the future for Royal Caribbean International, the world's second-largest

cruise company. The company is a pace-setter in the surging cruise business, consistently pushing the boundaries of the cruise experience and emphasizing customer service and safety in every detail. This is why the M/S Independence of the Seas is protected from fire by the HI-FOG® Water

Mist Fire Protection System: when your 4,375 guests are at sea, being looked after by your 1,365 staff, far away from any fire brigade, you want the best fire protection that technology can provide.

### M/S Independence of the Seas, facts & figures

- 339 metres long, 38 metres wide
- Accommodates 4,375 passengers and 1,365 crew
- 36 different accommodation options
- Amenities: theatres, skating rink, roller skating rink, golf simulator, water park, surfing simulator with wave machine, rock climbing wall, boxing ring
- Main restaurant serves 2,200 people across three levels
- 4,700 works of art
- Swimming pool
- 35 tons of ice cubes used per day

### The HI-FOG® protection

- Accommodation spaces
- Public spaces: restaurants, lounges, shopping areas etc.
- Galleys and other service areas
- Engine rooms
- 14,000 HI-FOG® sprinkler heads and spray heads
- Two electric pump units
- High-quality stainless steel tubing throughout

Royal Caribbean's M/S Freedom of the Seas is sister ship to the M/S Independence of the Seas. Photo courtesy of Royal Caribbean.

### HI-FOG® protecting passenger cruise ships (short selection)

- Oasis of the Seas, delivery in 2009, will be the flagship of Royal Caribbean International and the world's largest passenger cruise vessel
- Seabourn Odyssey, delivery in 2009, will be the Seabourn Cruise Line's flagship and the world's most luxurious passenger cruise ship with gourmet restaurants, spas, and suites accommodating groups of up to 100 people
- Freedom of the Seas, went into service for Royal Caribbean in 2006; currently the world's largest cruise vessel; extremely well-appointed

- M/S Voyager of the Seas
- M/S Norwegian Jewel
- M/S Adventure of the Seas
- M/S Mariner of the Seas
- M/S Norwegian Gem
- M/S Freedom of the Seas
- M/S MSC Lyrica
- M/S MSC Poesia
- M/S AIDAvita
- M/S Star Princess
- M/S Queen Mary II, world's second-largest cruise ship
- M/S Birka Princess
- M/S Paradise
- M/S Queen Victoria
- M/S Carnival Glory





Fire on a passenger cruise ship at sea is an inherently more dangerous proposition than fire in a hotel on land. HI-FOG® is protecting almost every large cruise ship in the world as operated by the world's most prestigious and safety-conscious cruise lines. HI-FOG® is central to cruise ship safety: hundreds of thousands of passengers cruise on HI-FOG®-protected ships every day. The system's performance record at sea is exemplary and the HI-FOG® brand is widely known and respected.

Lobby of the M/S Queen Victoria, photo courtesy of the Cunard Line.

# HI-FOG® in High Seas

## Meeting the needs of



HI-FOG® is fitted on nearly every modern cruise liner. And the story doesn't end there. Through intensive research and full-scale testing, HI-FOG® has become a high performance solution well suited for all kinds of marine and offshore applications.

From control and suppression in accommodation and service spaces to completely extinguishing fire in machinery rooms, HI-FOG® does the job. Installations can be combined with single central pump unit serving the entire, integrated system.

### HI-FOG® protects all types of vessels:

- Cruise ships and ferries
- Ro-Ro/Ro-Pax vessels
- Cargo ships
- Workboats
- Luxury yachts
- Naval vessels
- Offshore exploration and production units
- Service vessels

### HI-FOG® protects all spaces:

- Accommodation and service spaces
- Machinery spaces and pump rooms
- Ro-Ro decks and special category spaces
- Deep-fat fryers and ducts
- Balconies

# all maritime operations



## Reliable

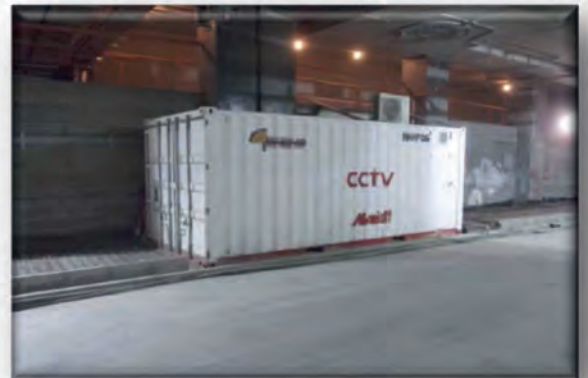
Countless tests and numerous real case fires have proven HI-FOG's value time and again.

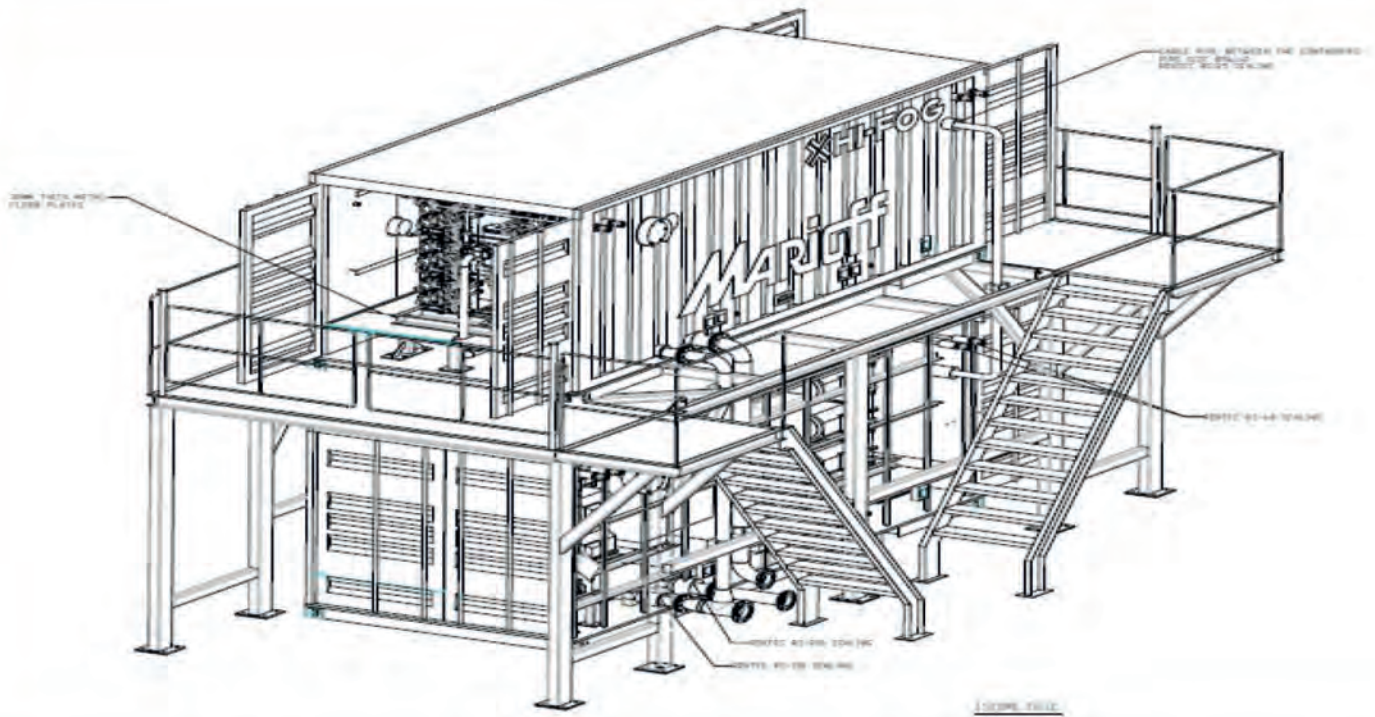
Fully approved by the International Maritime Organization, HI-FOG® delivers the performance and reliability needed to protect your business from fire. HI-FOG® is compliant with the latest SOLAS regulations and the relevant marine type approvals.

A short selection of HI-FOG® approvals

# HI-FOG® Customization

## ▶ Pump Unit Container





**The pump container will be custom manufacture with the following features:**

- Inside walls cladding with steel sheets
- Wooden floor
- Steel type raised floor
- Lighting and electrical sockets
- Air condition
- Outer flasher to indicate the pump status
- Protecting by HI-FOG® sprinkler
  
- The following equipment are factory installed inside the container:
  - ✓ HI-FOG® pump unit
  - ✓ Pump unit accessories
  - ✓ Release and control panel

# HI-FOG® in Machinery Spaces

## Top performance

Machinery spaces, such as turbine and generator enclosures, require special fire protection. These spaces are very susceptible to fires due to the presence of heat generated by the equipment and highly flammable liquids. A minor malfunction or leak in machinery spaces can quickly turn into a serious fire.

These spaces are also becoming larger in order to accommodate the size and output of bigger machines. The larger machinery spaces are particularly difficult to protect because they may be hard to seal off, take more time to evacuate, and can result in more intense fires - but HI-FOG® rises to this challenge!



### HI-FOG® total flooding systems protect many types of hazards:

- Gas turbines
- Diesel generators
- Steam turbines
- Transformers
- Switch gear
- Compressors

### How HI-FOG® fights fire?

High pressure water mist technology delivers some of the best fire fighting performance available today, making it ideal for challenging applications such as machinery spaces.

HI-FOG® water mist fights fire using three main mechanisms: cooling the fire itself and the air surrounding it, blocking the radiant heat, and starving the fire of oxygen.

### Don't wait, activate!

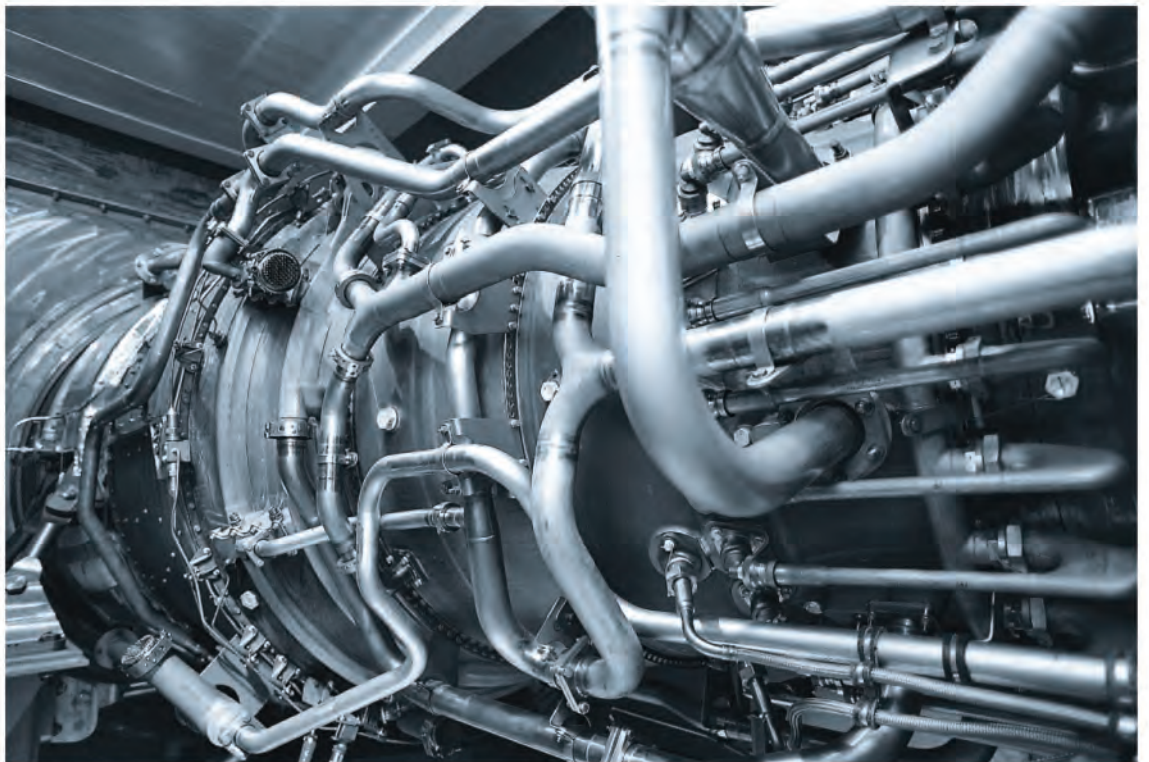
One of the major benefits of HI-FOG® system is that it can be activated immediately the moment a fire is detected, when fire is still in its infancy. This reduces the potential damage fire can cause.

The pure water mist of HI-FOG® is equally valuable in terms of personnel safety. It poses no danger to people; a false alarm and discharge is merely a nuisance, not a health hazard.

The third significant benefit of HI-FOG® in machinery spaces is its cooling effect. HI-FOG® discharges a very fine water mist as a high-pressure fog, which as such blocks radiant heat and absorbs heat efficiently through evaporation.



# against tough fires



## Standards and regulations compliant

HI-FOG® is compliant with the relevant land based requirements and the latest International Maritime Organization (IMO) regulations.

The Factory Mutual (FM) standards give special consideration to gas turbines, machinery spaces and special hazard machinery spaces. In Europe, a recognized approval body is VdS Schadenverhütung GmbH (VdS).

Machinery space total flooding systems for marine applications are regulated by IMO and approved by various classification societies.

	FM	VdS	IMO
<b>MAU</b>	≤ 260 m <sup>3</sup>	≤ 260 m <sup>3</sup>	
<b>GPU</b>	≤ 1500 m <sup>3</sup>	≤ 500 m <sup>3</sup>	≤ 1500 m <sup>3</sup>
<b>MT4</b>			≤ 3300 m <sup>3</sup>

Different HI-FOG® systems are certified for different space sizes.

The HI-FOG® machinery space accumulator unit (MAU) and gas-driven pump unit (GPU) are approved by FM and VdS.

HI-FOG® MT4 system is approved by a number of marine classification societies in accordance with IMO regulations.

## HI-FOG® key benefits:

- **Fast:** immediate activation
- **Safe:** harmless to people and environment
- **Cooling:** prevents fire from reigniting
- **Proven:** success in countless type approval tests and real fires



**Projects  
Ref. List**



Mahmoud Khalil Museum  
(متحف محمود خليل)



المركز الثقافي الفرنسي (بالقاهرة)  
(IFAO)



Aisha Fahmy Palace  
(قصر عائشة فهمي بالقاهرة)



Al-Jazeera Museum – Opera  
(متحف الجزيرة بالابوا المصرية)



Egyptian Parliament  
(مجلس الشعب)



متحف الفنون الجميلة  
(بالاسكندرية)



Offshore Platform –  
(Morocco)



Crystal Asfor Factory  
(مصنع كريستال عصفور القاهرة)



Casino Du Lebanon (Lebanon)



دار الوثائق القومية المصرية



البريد المصري



البنك الاهلي المصري  
فرع (المنصورة)



المصرية للاتصالات (فرع ابو  
تلات) مبني الاتصالات الدولية



NDIA Tunnel –  
(Doha, Qatar)



6 th October Airport Egypt  
(مطار 6 اكتوبر)



Egyptian's National  
Civilization Museum



Egyptian Leader's  
Revolution Museum



دار الكتب المصرية



Hikma Pharma  
6 th October City (Egypt)



مبنى سلطة الطيران المدني  
وإدارة الازمات (بالقاهرة)



مصنع كوكاكولا  
(بنيجيريا)



GUPCO Turbines –  
Ras Shokier, Egypt



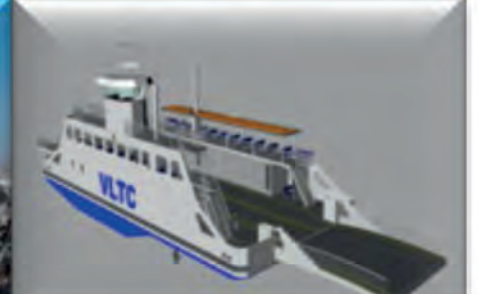
المصرية للاتصالات  
(الاسكندرية)



الشركة المصرية لنقل الكهرباء



مبنى مؤسسة الاهرام الصحفية



Ferries (Ghana)



المركز الاقليمي للأغذية والاعلاف  
وزارة الزراعة



الاهرام (محطة الكهرباء 11  
كيلوفولت - مبنى الاستديو)



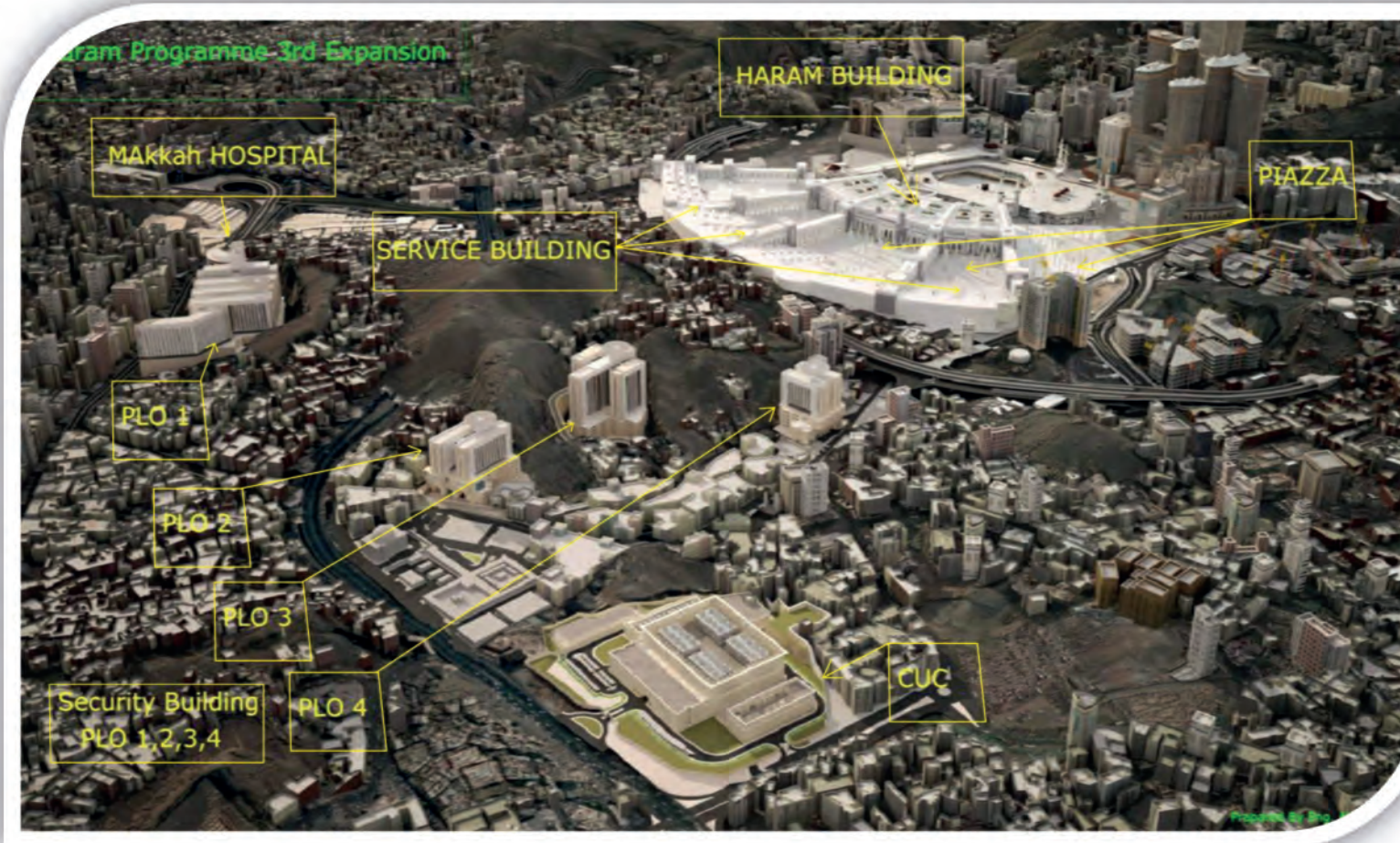
مبنى الخدمات بميناء القاهرة  
الجوي

مشروع خادم الحرمين الشريفين الملك عبد الله بن عبد العزيز  
لتوسعة المسجد الحرام والعناصر المرتبطة به

Piazza & Bridges



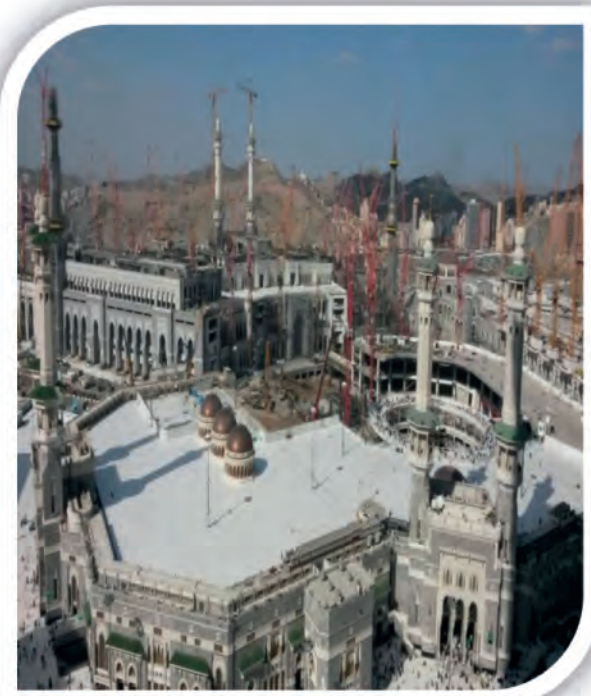
Shamiyah



CUC



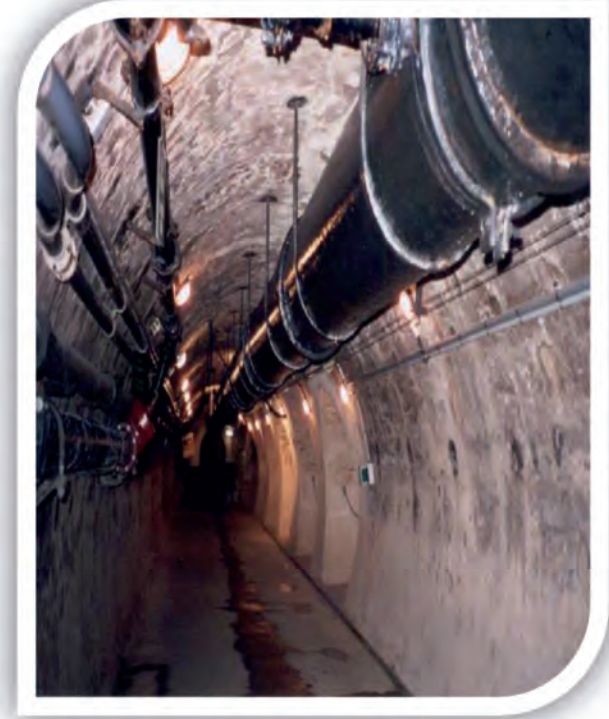
CUC Culvert



Utility Tunnel

Haram Escalator

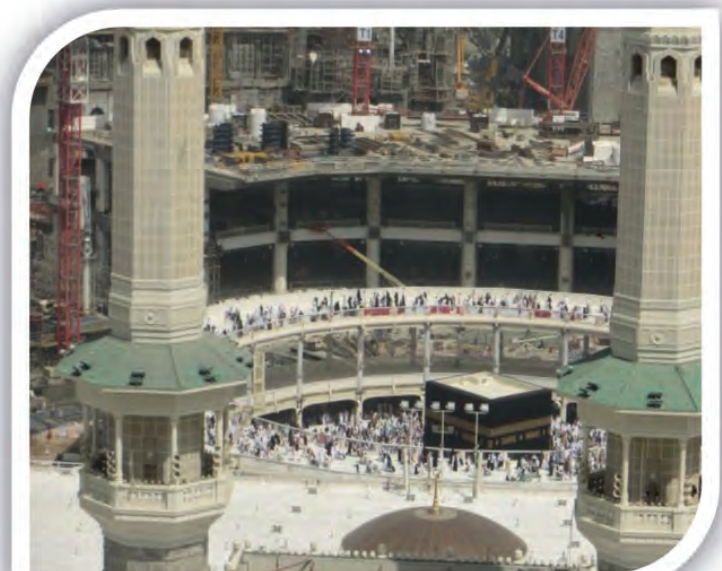
Raised Floors



## Utility Tunnel ET 1&2



## Mataf Extension Building



## CCTV (Data Center)



## Service Building



**Ajyad Toilets**



**Ajyad Chillers**



**King Abdullah Petroleum Studies and Research Center (KAPSARC)**



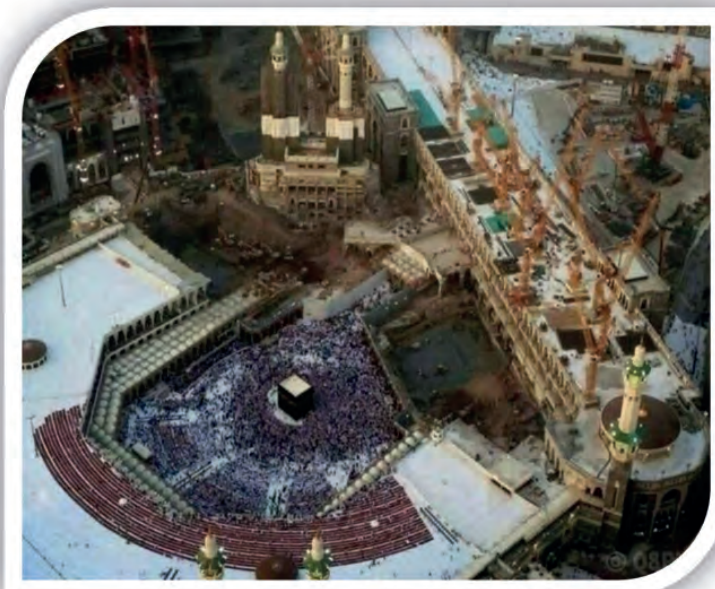
**King Fahd Gate (Electrical Rooms)**



## Magrabi Jeddah Hospital



## Mukabbiriah



## Minarets



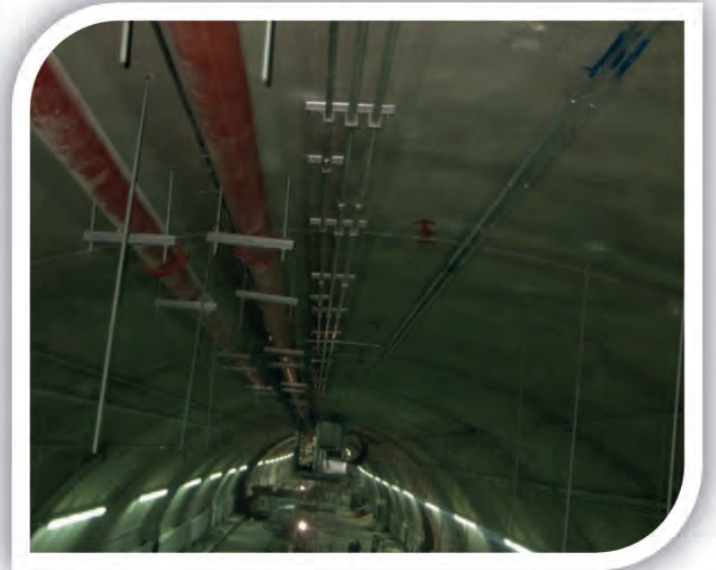
# Jabal Omar



**Conrad Hotels & Resorts**



**Pedestrian Tunnel**



**Zamzam**



**Hilton Double Tree**



*Deutschland Technology  
Reference List*

**Hamad International Airport**



**Qatar Petroleum District**



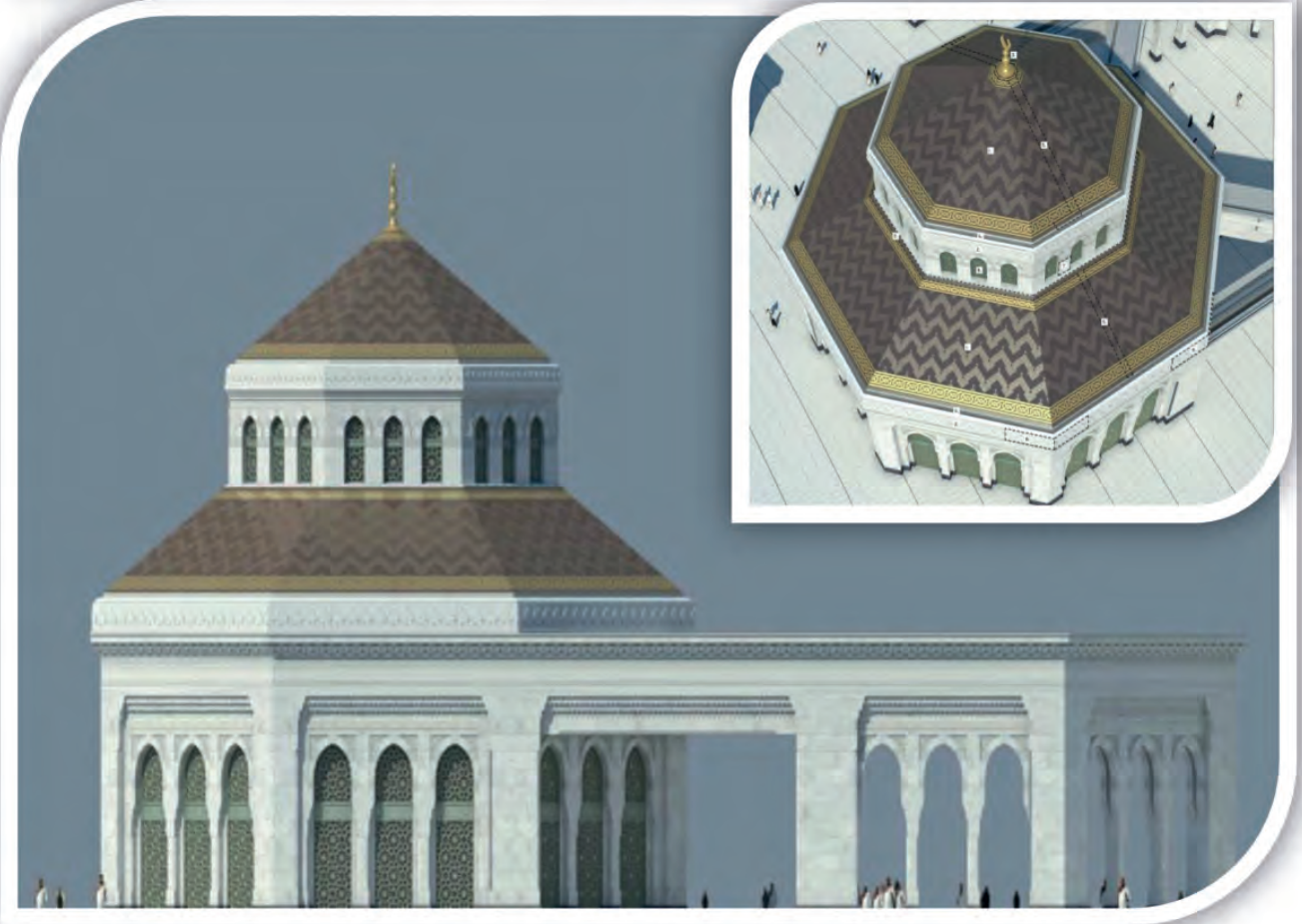
**Haramain Railways  
Medina Station**



**Riyadh Public Transport  
Control Center**



## Moveable Skylights & Ceremonial Dome

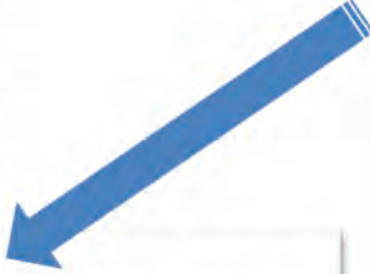




# HI-FOG® Middle



Deutschland Technology is an authorized service company of HI-FOG® fire protection systems, The authorization covers service & commissioning of land and marine based HI-FOG® systems manufactured by Marioff Corporation Oy. Marioff provides original products, technical information, and support and original spare parts as required.



**Surveys and maintenance of fire extinguishing equipment and systems**

Fixed Fire Extinguishing System Type HI-FOG (High Pressure Water Spraying System)  
 Authorized Representative to the following Manufacturer:  
 - Marioff Corporation Oy, FI-01301 Vantaa, Finland



Regular check-ups and preventive maintenance help ensure operational reliability of the HI-FOG® system. The pure water mist is entirely harmless to people, and spaces do not need to be evacuated or closed off for the system to be activated, which simplifies the maintenance and testing.

# East Service Center



Deutschland Technology's certified and competent service experts are ready to support the HI-FOG® systems onboard vessels sailing in the Mediterranean Sea, Middle East coasts, Arabian Gulf or even in the Far East.



## Securiton (Fire detection system)

### Profile of a company that's young at heart

Securiton AG belongs to the Swiss Securitas Group and has been entirely at the service of technical security since its founding in 1948. With its pioneering spirit and far-sighted approach it has, over the past half-century, developed into an acknowledged specialist for high-standard security. Many years of partnership-based co-operation with customers, consultants, official bodies and authorities are proof of the confidence in comprehensive know-how and quality.

Today Securiton plans, installs and maintains systems for high-security areas, trade, industry, administration as well as private and commercial premises - both in Switzerland and world-wide.



### **The SecuriRAS® ASD 535**

Aspirating smoke detector is the new generation of a highly sensitive, active smoke detection system. It offers application-specific sensitivity adjustment alongside pre-signaling and pollution analyses.



### **The Transafe ADW 535**

For special fire alarm signals combines a proven product concept with the latest developments in the field of sensor engineering and microprocessor technology.



### **MCD 573**

Addressable fire detector for smoke or heat or combined, Automatic sensitivity adjustment thanks “CUBUS levelling”

Patent-registered “Signature alarm” – feature for easy and fast testing.



### **LISTEC® Linear Heat Detection System**

The LISTEC® Linear Heat Detection System sensor cables contains highly sensitive addressed sensors whose response behavior can be programmed individually. The sensor spacing in the cable is variable and can be selected.

The sensor resolution is 0.1 °C, which allows for extremely precise evaluations to be made.



## The SecuriFire system family

The SecuriFire system family consists of various control panels, devices, map case variants and components which can be combined and coordinated perfectly for any configuration level and system size.

All devices are compatible with each other; work with the same software and the same commissioning tools. The user interface is also identical for all SecuriFire devices. The same external indication and control maps can be connected to all control panels.

Thanks to modular design and networking options, the required devices can be combined in any variation and adapted precisely to the system-specific requirements.



Fig.1 SecuriFire FCP

### SecuriFire FCP fire alarm control panel

- 100% redundant system
- Modular, decentral design
- From individual control panels to large-scale systems can be networked
- Up to 16 rings (3,500 elements) per sub-control panel



Fig.2 SecuriFire ECP / FEP

### SecuriFire ECP / FEP extinguishing control panel

- Automated electrical control and delay device for actuating multi-zone extinguishing systems
- Selectable as combined fire alarm control panel+ control panel or only as control panel
- Up to 32 extinguishing areas
- Network capable
- Tested and VdS approved in compliance with 12094-1



## Key features at a glance

- Microprocessor controlled and monitored system technology
- Fully redundant system design to ensure unrestricted functioning, even in the event of a fault or failure of a processor or System half.
- Continual, automatic check routines for all system components and programs.
- Easy connection of the units by means of flat plugs.
- Can be built into a 19" rack.
- Up to 31 remote main indication and control maps per Securitan with graphic display; up to 4 languages can be toggled during operation.
- Serial data protocol printer with emergency power, event memory and message filters; suitable for connecting to the public alarm system of the fire brigade.
- Intervention switch for checking unwanted alarms.
- 2-detector dependency and operational group dependency etc. freely programmable with software.
- Links and dependencies of fire incident controls and fire hatches freely programmable with software.
- Automatic winter time / summer time changeover.
- 16 day/night levels with automatic on/off switching, date-based controls.
- Can be connected to superordinate computer systems and fire alarm deployment management systems via serial data interfaces with the full functional scope (alarm/command directions).
- Fully redundant interconnection of up to 16 fire alarm control panels (SCPs) without superordinate central computer, whereby each individual SCP is a self-sufficient unit with its own power supply and batteries; external indication and control maps, fire brigade maps, printers etc. can be connected to the sub-detection-zones and controls.
- The control panel structure permits nearly any number of fire alarm control panels to be networked, even at a later date.
- The communication between the fire alarm control panels (SCPs) is via a redundant (doubled) ring circuit so that the connection remains in tact without restrictions even in the event of three simultaneously occurring connection faults.
- Digital communication paths connect main indication and control maps, protocol printers, parallel indicator boards and other system components can be used in any number of combinations independent of location.
- Because of its special redundancy concept, the SecuriFire fire detection system is suitable (standards compliant) for actuation of more than one extinguishing area.
- Compliant with or exceed the following relevant standards and directives: European standards EN 54, DIN, ÖNORM, ÖVE, VDE, CPO and many more.
- VdS devices and system approval, COP approval





# APPROVALS

## World's leading water mist system specialist



# GRP Tanks

**dewey waters**  
HERITAGE WORKS WINTERSTONE ROAD WESTON SUPER MARE UK BS24 9AN

**SECTIONAL COLD WATER STORAGE TANKS & VESSELS**  
**CERTIFICATE OF TRAINING**  
This is to certify that

**Ashraf Samy Elserwy**  
OF  
**DEUTSCHLAND TECHNOLOGY COMPANY**  
EGYPT

Has passed an assessment of practical skills and associated knowledge in the following:

- GRP tanks installation, servicing and commissioning
- Run leakage tests procedures for GRP tanks
- Issuing non leakage certification for GRP tanks

Certificate No. DWL50053-02

Pass Date  
06 June 2013

**WRAS**  
APPROVED PRODUCT

LPCB

**dewey waters**  
HERITAGE WORKS WINTERSTONE ROAD WESTON SUPER MARE UK BS24 9AN

**SECTIONAL COLD WATER STORAGE TANKS & VESSELS**  
**CERTIFICATE OF TRAINING**  
This is to certify that

**Mohamed Ramadan El Dahdoh**  
OF  
**DEUTSCHLAND TECHNOLOGY COMPANY**  
EGYPT

Has passed an assessment of practical skills and associated knowledge in the following:

- GRP tanks installation, servicing and commissioning
- Run leakage tests procedures for GRP tanks
- Issuing non leakage certification for GRP tanks

Certificate No. DWL50053-01

Pass Date  
06 June 2013

**WRAS**  
APPROVED PRODUCT

LPCB

**dewey waters**  
HERITAGE WORKS WINTERSTONE ROAD WESTON SUPER MARE UK BS24 9AN

**SECTIONAL COLD WATER STORAGE TANKS & VESSELS**  
**CERTIFICATE OF TRAINING**  
This is to certify that

**Mohamed Samir Elshewy**  
OF  
**DEUTSCHLAND TECHNOLOGY COMPANY**  
EGYPT

Has passed an assessment of practical skills and associated knowledge in the following:

- GRP tanks installation, servicing and commissioning
- Run leakage tests procedures for GRP tanks
- Issuing non leakage certification for GRP tanks

Certificate No. DWL50053-03

Pass Date  
06 June 2013

**WRAS**  
APPROVED PRODUCT

LPCB

# Sales & Design

**HI-FOG®**  
water mist fire protection

**CERTIFICATE**

This is to certify that

*Mr. Ahmed Mokhtar Mohamed Ahmed  
Deutschland Technology*

has participated in and successfully completed

**HI-FOG® Sales and Design Training**  
arranged by Marioff Corporation Oy  
in Vantaa, Finland

15.-18.10.2013

*Markku Vuorisalo*

Mr. Markku Vuorisalo  
Manager, Land Business  
Development  
Marioff Corporation Oy

**Marioff**

**HI-FOG®**  
water mist fire protection

**CERTIFICATE**

This is to certify that

*Mr. Ahmed Shawkiy Saber Aly  
Deutschland Technology*

has participated in and successfully completed

**HI-FOG® Sales and Design Training**  
arranged by Marioff Corporation Oy  
in Vantaa, Finland

15.-18.10.2013

*Markku Vuorisalo*

Mr. Markku Vuorisalo  
Manager, Land Business  
Development  
Marioff Corporation Oy

**Marioff**

**HI-FOG®**  
water mist fire protection

**CERTIFICATE**

This is to certify that

*Mr. Ahmed Khaled Fathy Mahmoud  
Deutschland Technology*

has participated in and successfully completed

**HI-FOG® Sales and Design Training**  
arranged by Marioff Corporation Oy  
in Vantaa, Finland

15.-18.10.2013

*Markku Vuorisalo*

Mr. Markku Vuorisalo  
Manager, Land Business  
Development  
Marioff Corporation Oy

**Marioff**

# Staff Certificates

SPU & MAU & GPU

**HI-FOG®**  
water mist fire protection

**Certificate**  
Mohamed Samir

Has participated in  
HI-FOG system commissioning and service training  
arranged by Marioff Corporation Oy in Finland and  
successfully completed the tests included in the training.

The participant is now able to perform system service and  
commissioning for HI-FOG systems with the following pump units:  
SPU  
GPU

The training was held at Marioff Headquarters in Finland, Vantaa from  
07.04.2014 to 11.04.2014.

In Vantaa, 11.04.2014




Jukka Tapala, Marioff Corporation Oy  
Marioff Corporation Oy authorized trainer

This certificate is valid until 30 of April, 2017.



**Certificate**

This is to certify that  
Eng. Emad Arafa Gad-Allah  
See Signature

Has Successfully Completed

Training for system Service, Installation  
and Testing & Commissioning  
for  
Land & Marine HI-FOG® System equipped with  
MAU, GPU and SPU/DPU pump units

And he is now certified to perform HI-FOG system  
for the above mentioned systems

Arranged by:  
Marioff Corporation Oy.

Date: 30 May 2012

Location: Finland




Hani Takala  
Technical Manager

This certificate is valid until 31 December 2014



**Certificate**

This is to certify that  
Walid Ali Sakr

Has successfully completed

System Commissioning Training for  
Land & Marine HI-FOG Systems  
equipped with  
MAU and GPU pump unit  
and he is now certified to perform HI-FOG system  
commissioning for the mentioned systems

Arranged by Marioff Corporation Oy

Date: 13-12-12 2011

Location: Finland




Lari Louhe  
Manager, After Sales

This certificate is valid until: 1<sup>st</sup> of Jan, 2014



Securiton

**SECURITON**

**Certificate**

Securiton AG herewith certifies that  
**Mohamed Osama Mohamed  
Fawzy Abd-Elwahed**  
Deutschland Technology Co., EGYPT  
successfully participated at the following training

**SecuriSons® MHD 535**  
Temperature Sensor Cable  
Engineering and Commissioning  
Basic Programming (MHDConfig SW)  
Zürich (Switzerland), May -13<sup>th</sup>-2011

Manager Customer Support Products:  Antonio Santiago  
Instructor:  M. Berner

Securiton AG, International Operations, Alpenstrasse 20, 3052 Zollikofen (Switzerland)

**SECURITON**

**Certificate**

Securiton AG herewith certifies that  
**Mahmoud Mohsen Aref**  
Deutschland Technology Co., EGYPT  
successfully participated at the following training

**SecuriLink™ UMS UMS 3.0**  
Universal Management System  
System Architecture  
Installation / Configuration  
Engineering / Commissioning  
Zürich (Switzerland), May -10<sup>th</sup>-2011

Manager Customer Support Products:  Antonio Santiago  
Instructors:  Christoph Schaller / Stefan Rueschli

Securiton AG, International Operations, Alpenstrasse 20, 3052 Zollikofen (Switzerland)

**SECURITON**

**Certificate**

Securiton AG herewith certifies that  
**Amir Mohamed Atef Taha**  
Deutschland Technology Co., EGYPT  
successfully participated at the following training

**SecuriLink™ UMS UMS 3.0**  
Universal Management System  
System Architecture  
Installation / Configuration  
Engineering / Commissioning  
Zürich (Switzerland), May -10<sup>th</sup>-2011

Manager Customer Support Products:  Antonio Santiago  
Instructors:  Christoph Schaller / Stefan Rueschli

Securiton AG, International Operations, Alpenstrasse 20, 3052 Zollikofen (Switzerland)





**DEUTSCHLAND TECHNOLOGY COMPANY**  
 has been awarded the Marioff Certificate Of Excellence  
 as The Best distributor of HI-FOG® water mist systems  
 in 2010 Worldwide



**CERTIFICATE OF EXCELLENCE**

is hereby granted to

**DEUTSCHLAND TECHNOLOGY CO**  
 Egypt

This is to certify that DEUTSCHLAND TECHNOLOGY has been awarded a certificate of excellence  
 for their performance as the best Marioff distributor in the Middle East region in 2013



Isto Hantila  
 Managing Director





## Head Office

### Egypt, Cairo, Obour

Block 4 Industrial Area A,

P.O. Box 228

Tel. +202 44814425

Fax +202 44814029

## Saudi Arabia

### Jeddah

Tel. +966 126834171

Fax. +966 126920963

### Makkah

Tel. +966 550493706

### Riyadh

P.O. 261425 Riyadh 11313

Tel. +966 531118787

Fax. +966 014760125

### El-Khobar

Tel. +966 553135341

## QATAR, Doha

Osman Bin Afan St.

P.O. Box 93431

Tel. +974 30271476

Fax. +974 44687925

## UAE

RAK, Ras Al Khima Free Zone

P.O. Box 38696

Tel. +971551534835

Email: [sorour@hi-fog-egypt.com](mailto:sorour@hi-fog-egypt.com)



Information on Deutschland Technology Co. branches and references can be found at [www.hi-fog-egypt.com](http://www.hi-fog-egypt.com)

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