

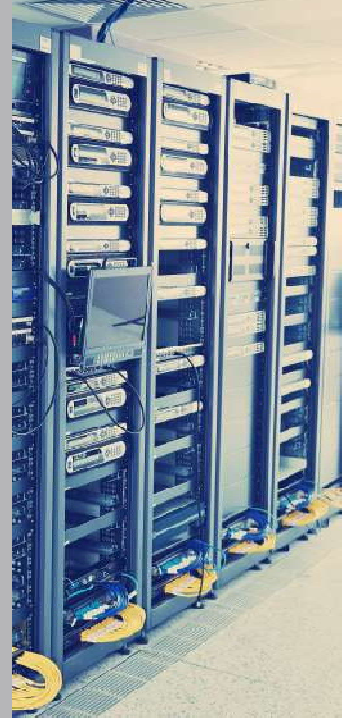


FIXED EXTINGUISHING SYSTEM

with FireCease FK-5-1-12

UL Listed Extinguishing Agent

PROTECTION THAT MAKES THE DIFFERENCE



The fire protection systems industry is fast-paced and driven by technology, delivering high added value in line with the benefits it provides: occupational safety and operational continuity for industries, businesses and services.

With a growing need to improve the performance of traditional systems, the latest generation of extinguishing gases introduces new technologies, reducing fire damage and improving sustainable use. The FireCease FK-5-1-12 agent is a cleangas, especially suitable for protecting sensitive and/or valuable goods.

It acts swiftly in target areas – while the outbreak is in its initial phase – to suppress fire without damaging equipment. Its early detection capability reduces fire, smoke or particulate damage, as well as the collateral damage caused by alternative suppression agents, such as water, chemical powders or aerosols.

FireCease FK-5-1-12 is doubly clean: as the least polluting chemical gas on the market, it leaves no residue and is environmentally friendly, leading to zero deterioration of the ozone layer and minimal greenhouse effects.

Safety and efficiency for people, goods and the environment

Electrical, electronic, IT, industrial, and other key systems are vulnerable to fire and the collateral damage from an outbreak (smoke, soot, water damage from sprinklers or fire hoses). Moreover, the use of a system that is safe for sensitive equipment helps to properly protect valuable items in storage.

The FireCease FK-5-1-12 systems are safe, clean and flexible and can adapt to every need.

Industry increasingly relies on the continuous operation of sensitive electronic devices, which means they must be protected from failure.

In the event of an outbreak, the business losses from an interruption in the services provided by these components must be added to the direct cost of repair or replacement of the affected equipment. Such interruptions can lead to a complete shutdown of company operations.

**INNOVATION + VERIFICATION
= GUARANTEED PROTECTION**

Do not settle for less protection against specific threats:

UL , FM , VdS , LPCB



* In process





The FireCease FK-5-1-12 agent

- Clean
- Leaves no residue
- Colorless
- Odorless
- Electrically non-conductive

System that fulfils maximum expectations

The FireCease FK-5-1-12 extinguishing gas is a CLEAN agent: it does not leave ANY residue after discharge, nor does it produce significant overpressure in enclosures.

It is a colorless, odorless, non-conductive composite with a water-like appearance, suitable for solid fuel fires, flammable liquids or energized electric fires.

It acts by totally flooding the enclosure, which means it is necessary to guarantee the rated concentration over the required length of time. It does not significantly reduce ambient oxygen, emit noisy discharges or create conditions of low-visibility, favoring safe evacuation.

It is designed to protect sensitive installations, such as: data or telecommunications processing centers, banks, museums, libraries, clean rooms, electrical equipment, and similar, where water would cause severe damage.

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ECOLOGICAL

The gas does not lead to depletion of the ozone layer (ODP), possesses a low greenhouse potential (GWP) and a short atmospheric half-life. It is the most environmentally-friendly chemical extinguishing agent.

SAFE

It has a low design concentration compared to the levels of adverse effects observed (NOAEL).

It is an extinguishing agent with outstanding fire performance.

EN-15004	CLASE A	NOAEL	LOAEL	LC50
HFC-23	16.3 %	30.0 %	30.0 %	>65.0 %
HFC-125	11.2 %	7.5 %	10.0 %	>70.0 %
HFC-227ea	7.9 %	9.0 %	10.5 %	>80.0 %
FK-5-1-12	5.3 %	10.0 %	10.0 %	>10.0 %

NFPA 2001	CLASE A	NOAEL	LOAEL	LC50
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HFC-125	8.7 %	7.5 %	10.0 %	>70.0 %
HFC-227ea	6.7 %	9.0 %	10.5 %	>80.0 %
FK-5-1-12	4.5 %	10.0 %	10.0 %	>10.0 %

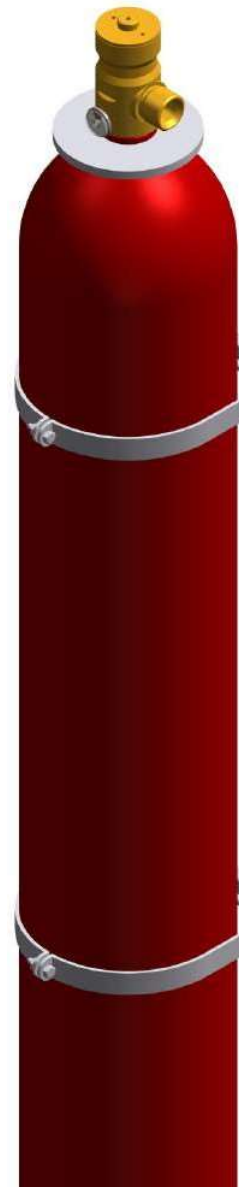
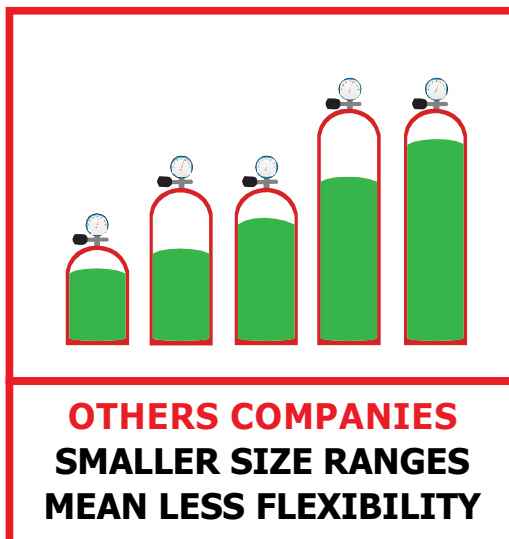
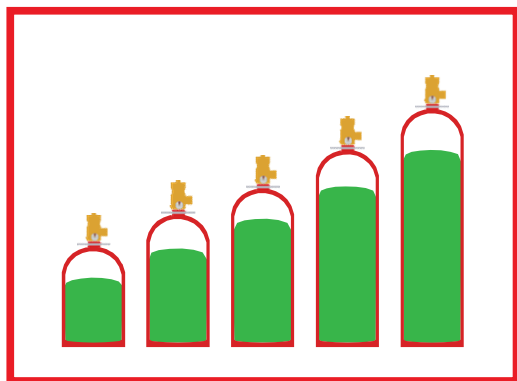
FireCease FK-5-1-12 Systems

The FireCease FK-5-1-12 fire suppression systems are pressurized with dry nitrogen to 25 or 42 bar.

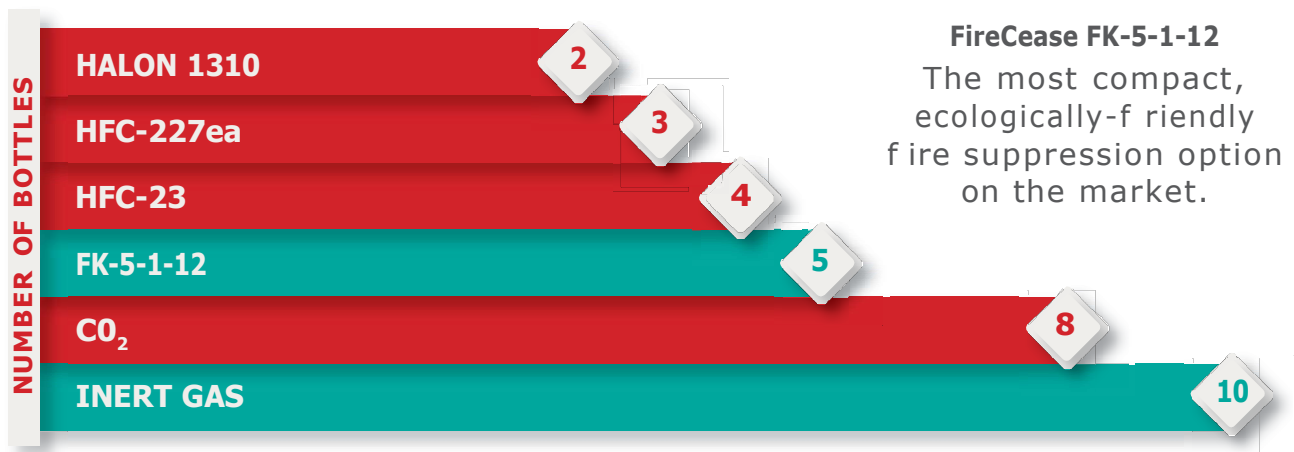
FireCease FK-5-1-12 at 42 bar

At this pressure, non-welded cylinders can be used, while pipes can cover greater distances with higher discharge levels. Extremely useful for complex networks or for protection of medium and large enclosures.

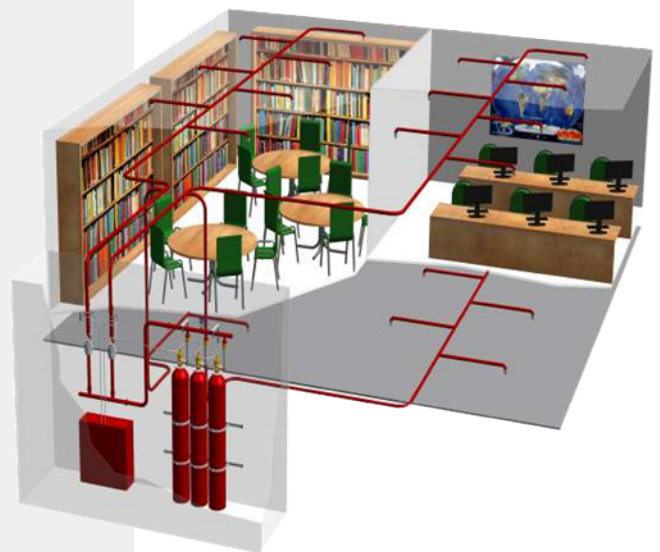
In addition, we offer the widest range of cylinder capacities on the market, meaning our clients can match their investments to their precise needs.



Our systems are compact and optimized, allowing our clients to minimize the installed system footprint thanks to the ability to tailor the load size and piping layout for the liquefied gas, pressurized with dry nitrogen, to exact design needs.



- FireCease complies with ISO 14520, EN 15004 or NFPA 2001 and local regulations.
- We include justifying hydraulic calculations, with approved download software.
- We guarantee a precise filling, without humidity or impurities, as part of our certification.



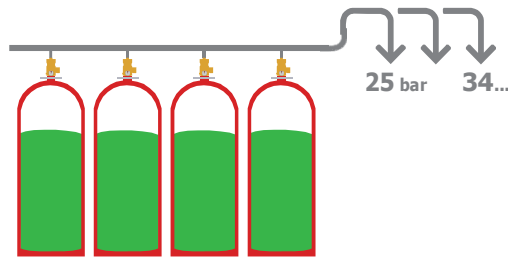
S-FLOW

SUPERIOR DISCHARGE PERFORMANCE

The FireCease 1230 system deliver optimal discharge performance, allowing maximum adjustment and optimization for any design.

FireCease FK-5-1-12 S-FLOW at 32 / 34 bar:

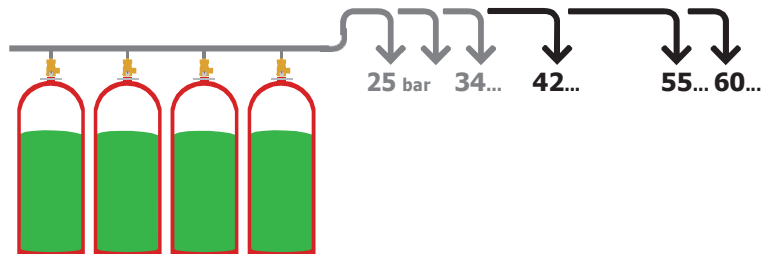
The use of low pressures of up to 34 bar allows increasing distance and discharge flow without increasing overall system costs, yielding improved performance without sacrificing budget objectives.



FireCease FK-5-1-12 S-FLOW at 50 bar:

High-pressure designs can reach maximum capacity, covering great distances of pipe within complex networks while delivering excellent discharge volume (over 1T in 10s).

Our system is the ideal choice for reducing installed piping diameters (owing to increased flow) to protect large enclosures (high discharge capacity) or for centralized systems (use of directional valves with selective activation in line with enclosure size).



Other components

Our systems are compact and optimized, allowing our clients to minimize the installed system footprint thanks to the ability to tailor the load size and piping layout for the liquefied gas, pressurized with dry nitrogen, to exact design needs.

Siex tests and approves all the required and/or optional devices deployed in a customized client installation:

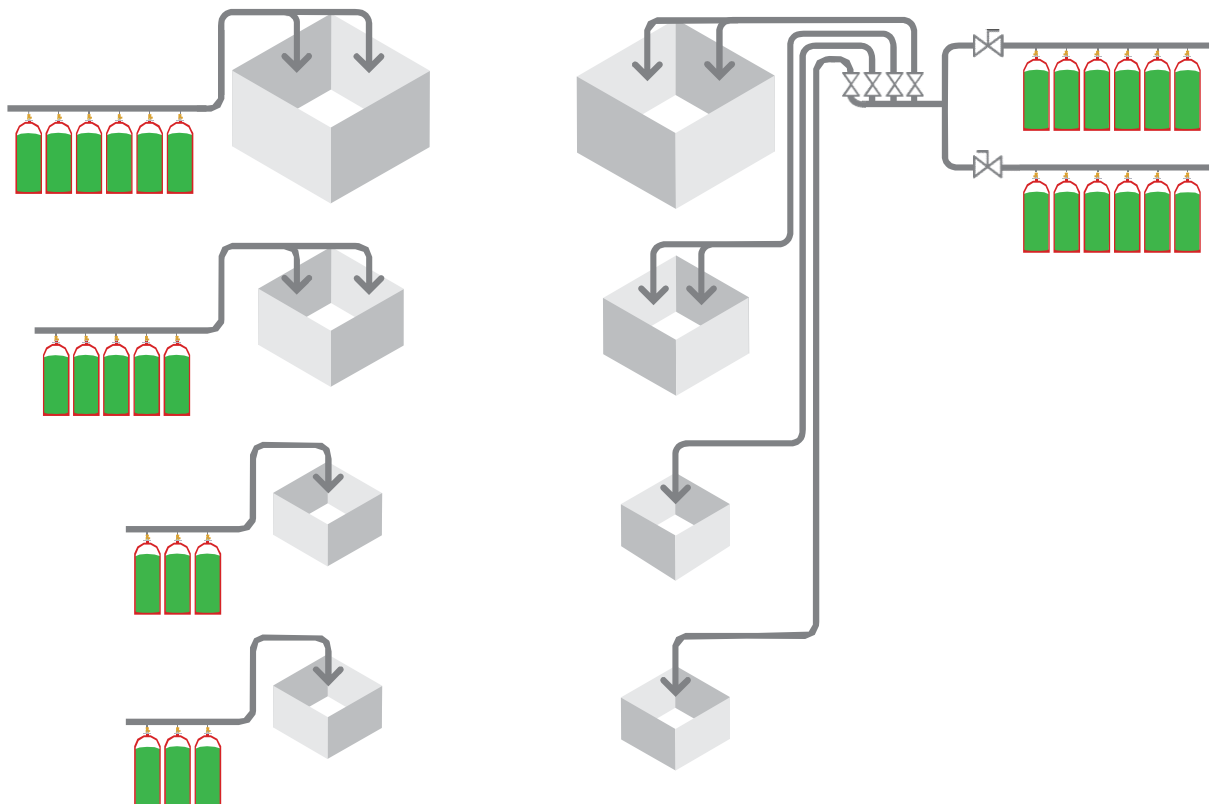
ACTUATORS: Electric, manual, remote manual, pneumatic, remote pneumatic, thermal, and so on.

SECURITY AND CONTROL: : Load control (pressure switches, pressure gauges, weighing device), pneumatic retarder, odorizer, disable device or bleed valves, and so on.

HAZARDOUS AREAS: electrical components for explosive atmospheres.

SELECTOR VALVES: For centralized distribution of the agent to a variety of enclosures. Pneumatic apertures available up to 4".

Optimal design while ensuring complete safety.
Optional inclusion of passive or online reserves.



The most demanding needs require the most innovative solutions: **FireCease DETECTION + EXTINCTION Autonomous**

The autonomous detection and extinction systems provided by FireCease are the ideal choice for the protection of average or small-size enclosures. They offer proven reliability under certified real fire testing. Employing both linear and point sensors, the effectiveness of the FireCease 1230 agent allows for detection + extinction in just 60 seconds using the smallest possible equipment installation.

FireCease FK-5-1-12 + PUNCTUAL DETECTION:

It consists of two detection systems:

Simplex Systems: Central deposit equipped with mechanical control triggered by thermal detection using a line of calibrated bulbs. Simple, efficient and functional, needing no external power.

Complex System: Enables cross-detection using two lines of thermofusible bulbs, which prevent accidental discharges from the central mechanical deposit. Reliable, safe and autonomous. The systems possess the most internationally-recognized certifications, including for land and FM-Marina, for use on ships, yachts or offshore platforms.

The line of copper pneumatic detection points is flexible, easy to install, and very resistant to physical or mechanical wear. It operates without any need of external power.

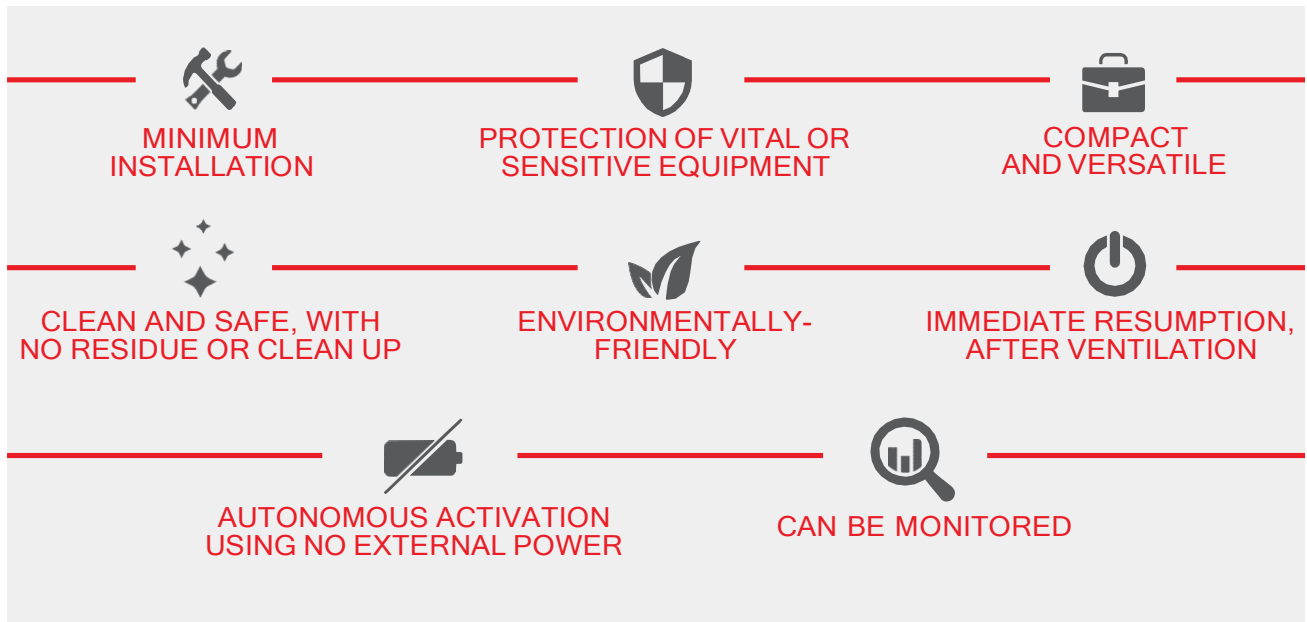
Placed in the upper part of the enclosure, the small container discharges immediately after the thermal bulb breaks owing to accumulated heat. Ideal for small spaces with fast-moving fires.

FireCease FK-5-1-12

During the incipient stage of a fire, the industry-standard thermofusible sensor tubing used as the main detection device allows for detection and extinction of the fire in just one minute, with no need for reactivation. The installation can simply run along the upper part of the enclosure thanks to its superior performance and design.



ADVANTAGES

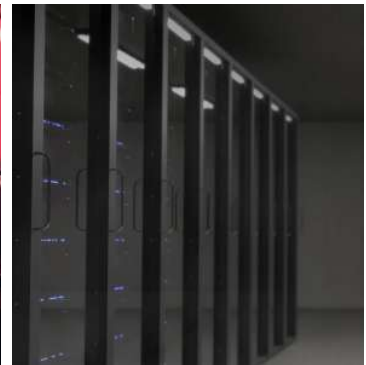
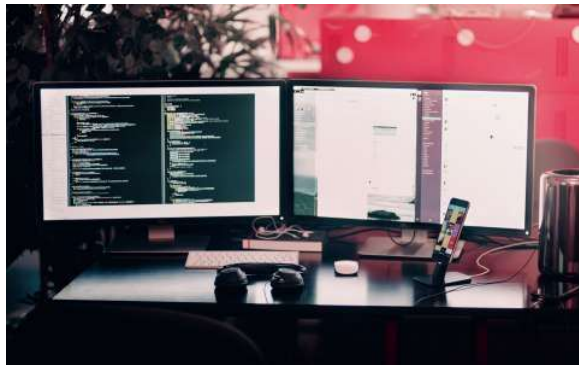


Because the science of fire suppression does not cease to evolve, we examine our every step in consultation with experts in the field: insist on independent UL, FM, VdS, LPCB approvals.



PESO

* In process





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FireCease IS A REGISTERED TRADEMARK.

The information detailed in this document is for guidance only. For the installation of all FireCease systems, technical information must be used. FireCease is not responsible for any information provided by third parties.

FireCease reserves the right to modify any data or specification with the purpose of improving its products without prior notice.

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