



GLC Fire

HFC-227ea
Hydrofluorocarbon

www.GLCFireSystems.com

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GLC Fire



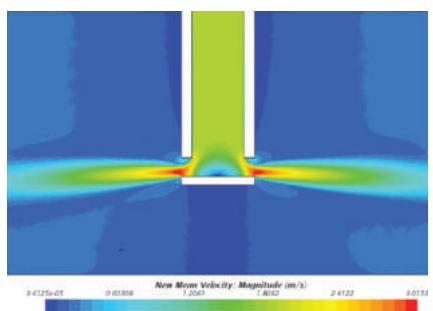
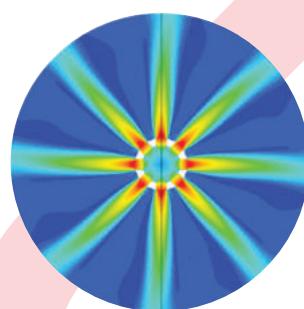
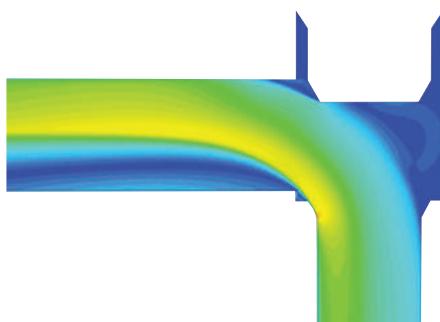
Introduction

GLC Fire Systems is a Gaseous Fire Suppression Systems manufacturer for total flooding, clean agent fire suppression systems. GLC Fire builds protection solutions to mission critical and high asset hazards. The company was founded in 2018 by Global Liaison Consulting, a company that specializes in the supply of Firefighting equipment to protect people and properties around the world since 1992.

GLC Fire Systems with the support of its distribution network can design, install, and maintain fire suppression systems that are superior in performance, yet reliable and cost effective. GLC Fire Systems' engineers bring more than 25 years' worth of experience in the fire protection business.

Component Engineering

GLC Fire Systems designed the two most critical components in its Fire Suppression System, the Cylinder Valve and the Nozzles. The two components internal geometry are aerodynamically optimized to yield the lowest pressure drop as the agent flows through them. This enables a greater agent mass flow through the valve in a shorter discharge timespan. The Nozzles are optimized to reduce pressure drop so greater liquid agent to vapor agent is discharged through the Nozzle. Other systems components such as piping and fittings are industry standard and are utilized for agent delivery to the intended hazard.



What is a Clean Agent

The National Fire Protection Association defines, a "Clean Agent" as, "an electrically non-conducting, volatile, or gaseous fire extinguishant that does not leave a residue upon evaporation."



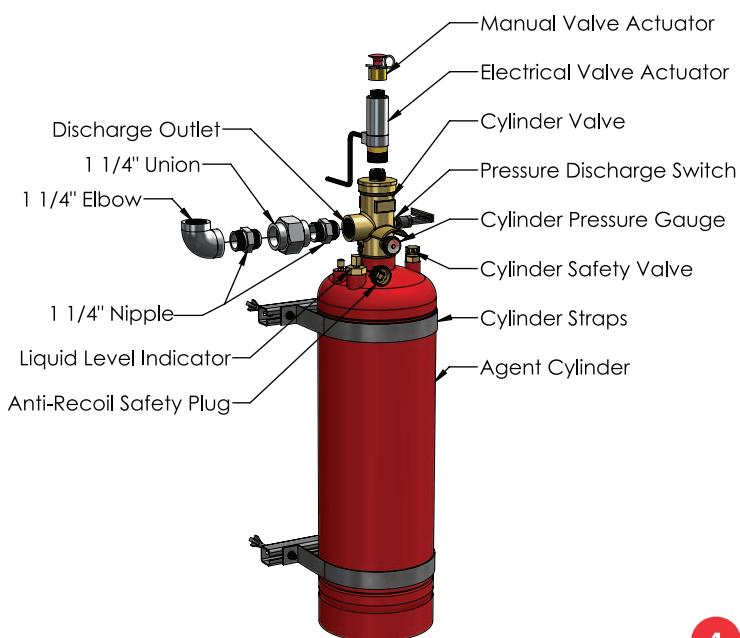
Components Advantages

GLC Fire Systems optimized its system components to outperform rival systems. The system's Cylinder Valve has the lowest pressure drop in the industry, thus empowering the designer to have a longer pipe run for their system and the ability to have more components in the flow path. The system's optimized Nozzles have a uniform extended throw with greater liquid agent discharged than vapor agent. The more liquid to vapor agent is discharged, the greater the heat absorption is within the hazard, resulting in quicker and effective extinguishing of the fire.

GLC Fire Systems provides engineered and pre-engineered systems that utilize, HFC-227ea clean agent, commercially known as FM200, to design systems as per NFPA-2001 standard and build systems with equipment that are UL-2166 compliant. The HFC-227ea clean agent is a UL & FM approved component.

System Components

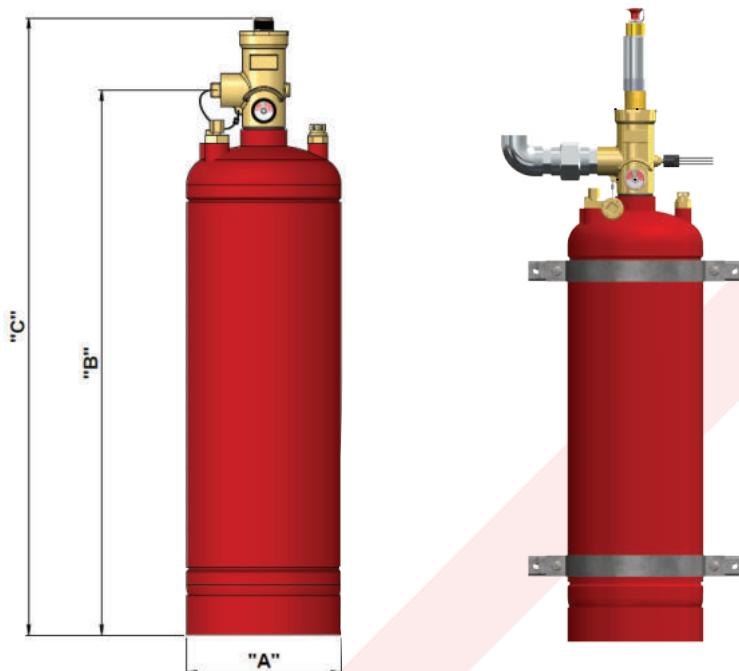
GLC Fire Systems' system components consist of cylinders equipped with a Safety Valve, Cylinder Valve, Pressure Gauge, Cylinder Strap, Nozzles, Pressure Discharge Switch, Flexible Discharge Hose, Check Valve, Electrical and Manual Actuator, and an optional Liquid Level Indicator. Cylinders' maximum fill capacities are available in 33, 64, 108, 230, 500, and 810 lbs.



Agent Filled Cylinders

HFC-227ea

FILL RANGE	VALVE SIZE	CYLINDER DIA, A	VALVE OUTLET, B	TOTAL HEIGHT, C
KG, (LBS)	(INCH)	MM, (INCH)	MM, (INCH)	MM, (INCH)
7-15, (16-33)	1.25"	254, (10)	467, (18 25/64)	586, (23 5/64)
13-29, (29-64)	1.25"	254, (10)	759, (29 7/8)	878, (34 9/16)
22-49, (49-108)	1.25"	324, (12 3/4)	805, (31 11/16)	924, (36 3/8)
47-104, (104-230)	2.5"	508, (20)	772, (30 25/64)	977, (38 15/32)
102-227, (225-500)	2.5"	508, (20)	1407, (55 25/64)	1612, (63 15/32)
166-369, (366-810)	3.0"	610, (23 21/32)	1573, (61 57/64)	1777 (69 61/64)



Cylinder Valve

GLC Fire Systems offers three sizes of Cylinder Valves: 1 1/4", 2 1/2" and 3". All valves are made out of brass and come equipped with a permanently tethered Anti-Recoil Plug/Cap to the valve discharge outlet. The Valve Discharge Outlet is available in FNPT for the size 1 1/4" and ANSI groove for sizes 2 1/2" and 3".



Pressure Gauges

GLC Fire Systems' Pressure Gauge provides a reading of system pressure at all times. The gauge dial clearly defines normal pressure status, under pressure status, and over pressure status. The Pressure Gauge is built with a two-in-one supervisory switch to monitor system pressure status.

The pressure gauge is a UL-recognized component.



Cylinder Straps

Cylinders with fill capacity of 33, 64, 108, and 230 lbs. comes with one 304 Stainless Steel Strap. A Cylinders' fill capacity of 500 & 810 lbs. comes with two 304 Stainless Steel Straps.

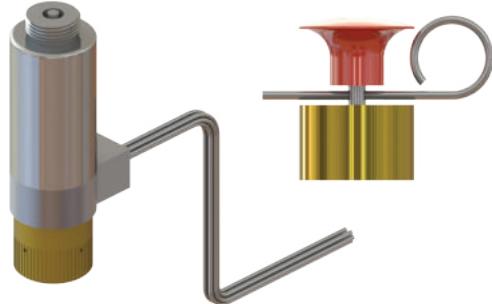


Nozzles

GLC Fire Systems' Nozzles are made of high grade Aluminum with two discharge orientations: 360° and 180°. The Nozzles discharge ports are pre-drilled to establish a uniform agent distribution inside the hazardous area. Nozzles are available in sizes 1/2", 3/4", 1", 1 1/4", 1 1/2", and 2" and are suited for Upright and Pendent installation. The Nozzles are supplied with NPT threading.

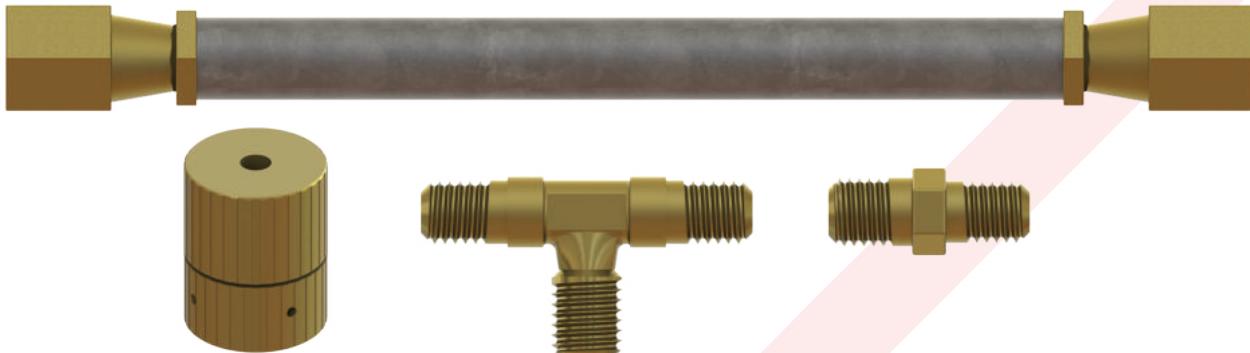
Electrical Actuator

GLC Fire Systems' Supervised Electrical Actuator is a Full-Latching actuator that latches upon receipt of a signal from the releasing control panel. The actuator is approved by most UL listed releasing control panels. It requires a supply of 24VDS, 0.5 Amps, and 30 mA for monitoring. The Electrical Actuator is a UL-recognized component. The actuator comes with a stackable mechanical override for manual operation.



Pneumatic Actuator

GLC Fire Systems offers pneumatic actuators for slave cylinders' actuation. The Pneumatic Actuator comes with a nipple, a pilot hose, and tee or an elbow for additional cylinder activation. The Tee, Elbow and Hose are $\frac{1}{4}$ " (6mm) BSPP X NPT.



Pressure Discharge Switch

GLC Fire Systems Pressure Discharge Switch is Normally Open and will close upon system discharge. It requires a 24 VAC to operate. The switch is a UL-recognized component.

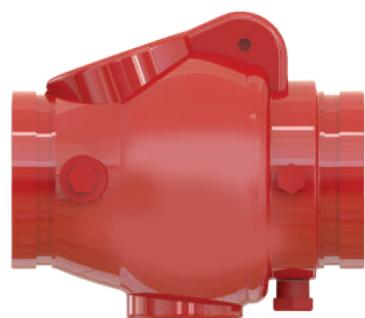


Check Valves

GLC Fire Systems offers Check Valves for manifold systems and/or main and reserve systems, as per NFPA 2001 standard requirements. The Check Valve must be installed in the vertical orientation with the arrow in the same direction as the flow. Size 1 1/4" Check Valve is made of stainless steel, female thread by female thread. Size 2.5" and 3" Check Valves are made of ductile iron and they are groove by groove.



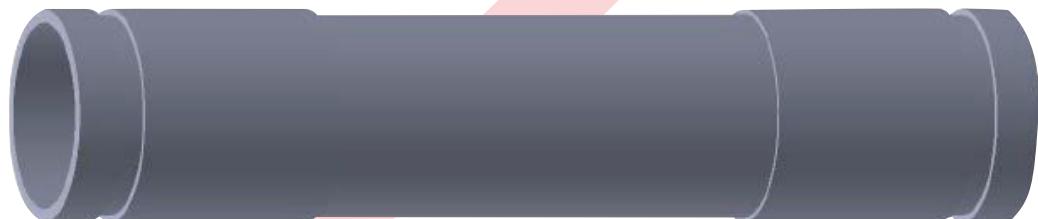
1.25"



2.5" & 3"

Flexible Discharge Hose:

GLC Fire Systems offers a Flexible Discharge Hose for ease of installation and disassembly. The Flexible Discharge Hose is provided with a swivel fitting at the inlet. The 1 1/4" X 16" Flexible Discharge Hose is a twin-steel braided wire, oil resistant, seamless synthetic rubber core hose which meets EN 853-1SN. The Hose is equipped with a female swivel nut at one end and a MNPT at the other end. The 2 1/2" and 3" Flexible Discharge Hoses are 304 stainless steel braided hoses with grooved ends which are 42" long.



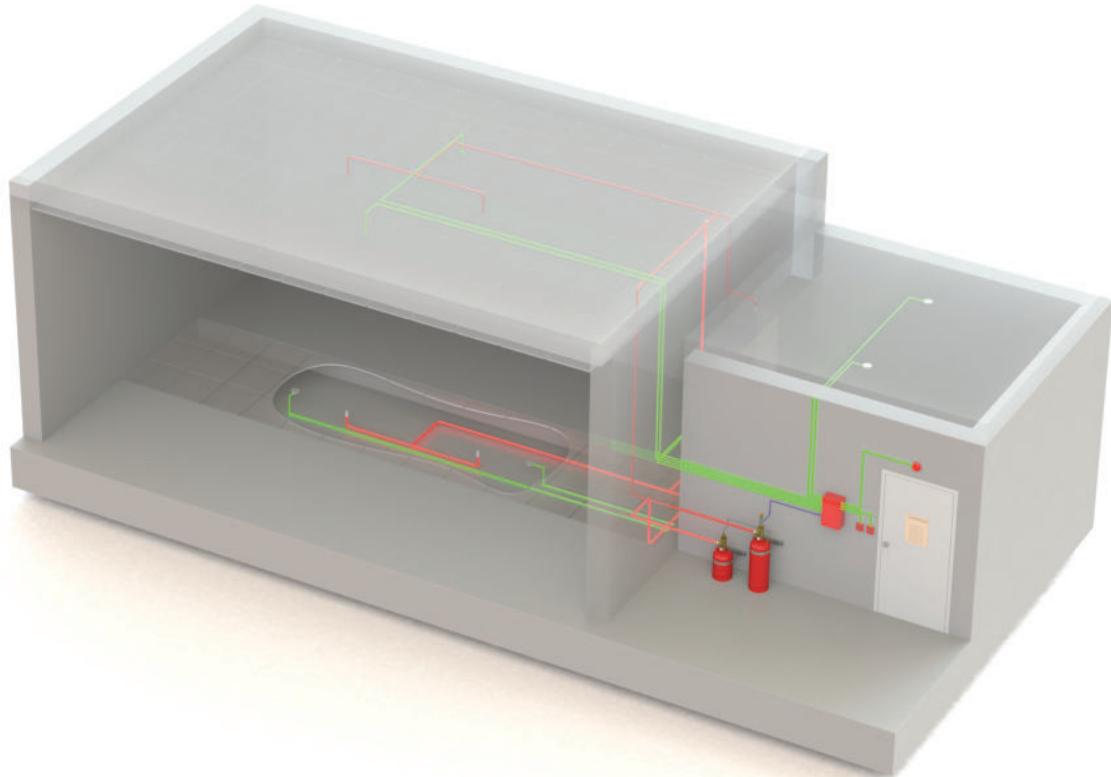
Liquid Level Indicator

GLC Fire Systems' Liquid Level Indicator indicates the level of the liquid in the cylinder, thus enabling the inspector to determine the amount of agent inside the cylinders without the need to disassemble the system for the purpose of weighing the cylinder. This option is available for 230, 500 and 810 lbs filled cylinders.



Manifold

GLC Fire Systems' Cylinder Valve Assembly can share the same Manifold and piping network provided all cylinder valve assemblies are of the same capacity and fill density. Furthermore, a different fill density or Cylinder Valve Assembly may be actuated simultaneously with another provided, that it does not share the same piping network.



Agents Environmental Properties and Safety Margin

It's paramount for a sustainable technology to build systems that are environmentally safe and to offer the highest safety margin to all mankind

Environmental Properties

ENVIRONMENTAL PROPERTIES			
AGENT	HFC-227ea	CBrF3	HFC-125
COMMERCIALY KNOWN	FM200	HALON 1301	ECARO-25
OZONE DEPLETION POTENTIAL	0	12	0
GLOBAL WARMING POTENTIAL	3220	7140	3500
ATMOSPHERIC LIFETIME (YEARS)	29	65	34.2
*SNAP (YES/NO)	YES	N/A	YES

SNAP was established by the EPA under Section 612 of the Clean Air Act to identify and evaluate substitutes for ozone-depleting substances

Safety Margin

SAFETY MARGIN			
AGENT	HFC-227ea	CBrF3	HFC-125
COMMERCIALY KNOWN	FM200	HALON 1301	ECARO-25
EXTINGUISHING CONCENTRATION	7-8.7%	5%	8-12.1%
*NOAEL	9%	5%	7.50%
*LOAEL	11.5%		
SAFETY MARGIN	3-20%	0	0

The EPA Significant New Alternative Program (SNAP) lists HFC-227EA as an acceptable agent for occupied spaces, however, GLC Fire Systems recommends following the guidelines for NFPA 2001 standard for occupied spaces.

Training and Design

GLC Fire Systems offers training programs to help engineers acquire system components knowledge, hazard analysis, use of the hydraulic flow calculations software and system installation, and scheduled maintenance

System Design and Application

GLC Fire Systems' Global distributors conduct a professional analysis of a hazardous site and combine their knowledge, experience, manpower, and tools to design and install a system that is intended for the hazard. GLC Fire Systems' Suppression Systems can protect:

Archives

Data Centers

Museums

Switch Gear rooms

Clean rooms

Oil and Gas

Control rooms

Vaults

Communications

Cellular sites

Detection and Control

GLC Fire Systems offers Potter Electric's Releasing Control Panels, Detection sensors, and devices to complement its systems in order to provide a total solution. All equipment is UL listed and FM approved.

GLC Fire Systems provides technical support to install and maintain the system.

A typical system must be equipped with a Releasing Control Panel, Detectors, Strobe & Horn, Bell, Main Reserve Switch, Agent Release/Fire Pull, and Abort station.



