

Victaulic Vortex™ Hybrid Fire Extinguishing System

Series 953 and Series 954 Hybrid Emitters



Standard Emitter



Escutcheon Emitter



PVDF Emitter

1.0 PRODUCT DESCRIPTION

- The Victaulic Vortex™ Hybrid Fire Extinguishing System provides a homogeneous suspension of inert gas mixed with ultra-fine droplets of water to protect various hazards with two extinguishment mechanisms that are occurring simultaneously: flame temperature cooling and diluting of the ambient oxygen level.
- The Series 953 and 954 Hybrid Emitters are Victaulic patented devices designed to deliver the hybrid media.
- The Series 953 Hybrid Emitters feature a dome foil and are typically used in Class B applications.
- The Series 954 Hybrid Emitters typically feature a cavity foil and are typically used in Class A applications.
- The water and nitrogen are mixed at the hybrid emitter and distributed as hybrid media.
- The hybrid emitter atomizes the water to $<10\mu\text{m}$.

Water Flow: Set by flow cartridge

Orientation: Pendent or sidewall

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

2.0 CERTIFICATION/LISTINGS

Product designed and manufactured under the Victaulic Quality Management System, as certified by LPCB in accordance with ISO-9001:2015.

The following emitters are used within FM Approved Victaulic Vortex systems, designed in accordance with the applicable Victaulic Vortex design manual and installed in accordance with the Victaulic Vortex Installation, Operation, and Maintenance Manual and the applicable FM Global Property Loss Prevention Data Sheets:

- Series 953 standard emitter, ½" size
- Series 954 escutcheon emitter, 1", ⅝", and ¾" sizes
- Series 953 PVDF, ¼" size.

3.0 SPECIFICATIONS – MATERIAL

Body (Foil, Water Jacket): (specify choice)

Stainless steel (Standard and Escutcheon emitters)

Polyvinylidene Fluoride Plastic (PVDF emitter)

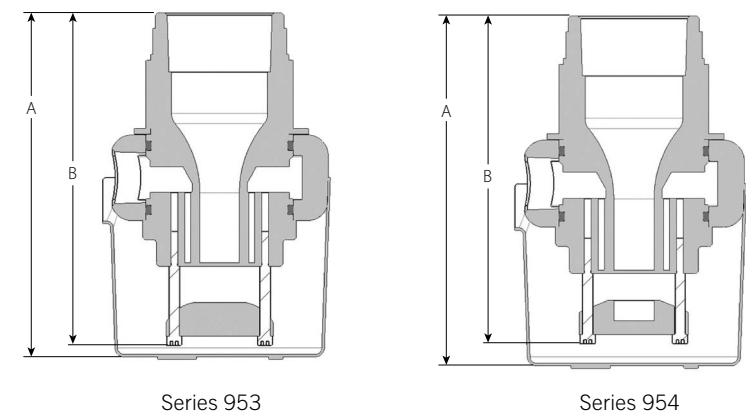
Plain Brass (only for FM Approved Series 953 ½" emitter)

O-Ring: Buna, Viton

Pins: Stainless Steel

4.0 DIMENSIONS

Series 953 & Series 954 Standard Emitters



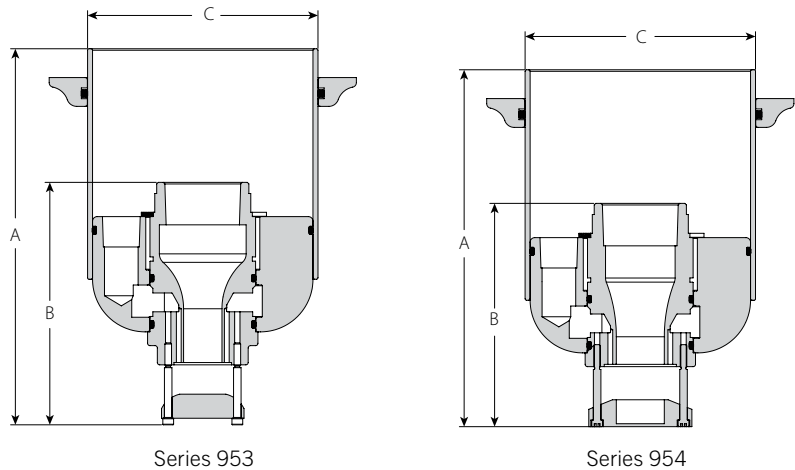
Emitters							Dimensions			
Size inches	Series	Foil Type	Nitrogen Orifice inches	Water Orifice (x16) inches	Nitrogen Inlet NPT	Water Inlet NPT	A inches	B inches	Minimum distance foil to ceiling inches	Maximum Ceiling Height feet
5/8	Series 954	Cavity	0.63 16.0	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.2 81.0	2.9 74.0	4.3 109.0	24.5 7.5
1/2 ¹	Series 953	Dome	0.50 12.7	0.06 1.5	3/4" NPT ²	1/4" NPT Female	3.2 81.0	3.1 79.0	4.3 109.0	24.5 7.5
3/8	Series 953	Dome	0.38 9.7	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.2 81.0	3.1 79.0	4.5 114.0	16.0 4.9
	Series 954	Cavity	0.38 9.7	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.2 81.0	3.0 76.0	4.5 114.0	16.0 4.9
1/4	Series 953	Dome	0.25 6.4	0.06 1.5	3/4" NPT Male	1/4" NPT Female	3.2 81.0	2.7 69.0	4.5 114.0	12.0 3.7
1/8	Series 953	Dome	0.13 3.3	0.03 0.8	3/8" NPT Female	1/8" NPT Female	2.0 51.0	1.9 48.0	4.5 114.0	12.0 3.7

¹ All standard emitters are stainless steel with the exception of the 1/2" Series 953 emitter, which is also available in brass.

² The 1/2" Brass emitter is 3/4" male threaded. The 1/2" Stainless steel emitter is 3/4" female threaded.

4.1 DIMENSIONS

Series 953 & Series 954 Escutcheon Emitters



Emitters							Dimensions				
Size inches	Series	Foil Type	Nitrogen Orifice inches mm	"Water Orifice (x16)" inches mm	Nitrogen Inlet NPT	Water Inlet NPT	A inches mm	B inches mm	C inches mm	Minimum distance foil to ceiling inches mm	Maximum Ceiling Height feet meters
1	Series 953/954	Dome ³	0.96 24.4	0.06 1.5	1" NPT Female	1/8" NPT Female	6.4 163.0	3.9 99.0	3.0 76.0	6.0 152.0	24.5 7.5
5/8	Series 954	Cavity	0.63 16.0	0.06 1.5	3/4" NPT Female	1/4" NPT Female	5.6 142.0	2.9 74.0	3.0 76.0	4.5 114.0	24.5 7.5
1/2	Series 953	Dome	0.50 12.7	0.06 1.5	3/4" NPT Female	1/4" NPT Female	5.9 150.0	3.1 79.0	3.0 76.0	4.5 114.0	24.5 7.5
3/8	Series 953	Dome	0.38 9.7	0.06 1.5	3/4" NPT Female	1/4" NPT Female	5.8 147.0	3.1 79.0	3.0 76.0	4.5 114.0	16.0 4.9
	Series 954	Cavity	0.38 9.7	0.06 1.5	3/4" NPT Female	1/4" NPT Female	5.8 147.0	3.0 76.0	3.0 76.0	4.5 114.0	16.0 4.9

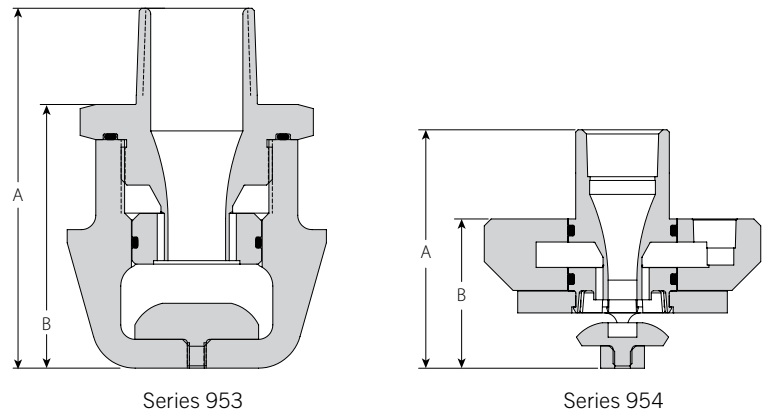
³ 1" size emitter is only available with a dome foil.

NOTE

- All escutcheon style emitters are only available in stainless steel.

4.2 DIMENSIONS

Series 953 & Series 954 PVDF Emitters








Emitters							Dimensions			
Size inches	Series	Foil Type	Nitrogen Orifice inches mm	Water Orifice (x16) inches mm	Nitrogen Inlet NPT	Water Inlet NPT	A inches mm	B inches mm	Minimum distance foil to ceiling inches mm	Maximum Ceiling Height feet meters
5/8	Series 954	Cavity	0.63 16.0	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.0 76.0	1.9 48.0	4.5 114.0	24.5 7.5
1/2	Series 953	Dome	0.50 12.7	0.06 1.5	3/4" NPT Male	1/4" NPT Female	3.1 79.0	2.3 58.0	4.5 114.0	24.5 7.5
1/4	Series 954	Cavity	0.25 6.4	0.06 1.5	3/8" NPT Female	1/8" NPT Female	2.1 53.0	1.3 33.0	4.5 114.0	12.0 3.7
1/8	Series 954	Cavity	0.13 3.3	0.03 0.8	3/8" NPT Female	1/8" NPT Female	2.1 53.0	1.3 33.0	4.5 114.0	12.0 3.7

5.0 PERFORMANCE

Emitter Size	Emitter - Flow characteristic	
Nominal Outlet Size inches	Operating Pressure PSIG bar	Nitrogen Flow Rate SCFM Sm ³ /min
1	25	534
	1.72	15.12
	50	851
	3.45	24.10
5/8	15	165
	1.03	4.67
	25	230
	1.72	6.51
	50	369
	3.45	10.45
1/2	15	108
	1.03	3.06
	25	145
	1.72	4.11
	50	235
	3.45	6.65
3/8	25	82
	1.72	2.32
	40	110
	2.76	3.11
	50	130
	3.45	3.68
1/4	25	32
	1.72	0.91
	40	40
	2.76	1.13
1/8	40	14
	2.76	0.40

6.0 NOTIFICATIONS



 **WARNING**

- Always refer to the applicable Victaulic Vortex™ Hybrid Fire Extinguishing System General Design, Installation, and Maintenance Manual before specifying or installing any Victaulic Vortex™ products.
- Wear safety glasses, hardhat, and foot protection during installation and maintenance of a Victaulic Vortex™ Hybrid Fire Extinguishing.
- It is the customer's responsibility to verify hybrid emitter material compatibility and that the proper size hybrid emitter and water flow control cartridge are specified in the system design.

Failure to follow instructions and warnings can cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

- [70.03: Victaulic Vortex™ Hybrid Fire Extinguishing System - Series 951 Panels Submittal](#)
- [70.05: Victaulic Vortex™ Hybrid Fire Extinguishing System - Series 950 Water Tanks Submittal](#)
- [70.07: Victaulic Vortex™ Hybrid Fire Extinguishing System - Series 950 Releasing Manifold System Submittal](#)
- [70.16: Victaulic Vortex™ Hybrid Fire Extinguishing System - Flow Cartridge and Strainer Kit Submittal](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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