FOAM NOZZLE - AIR ASPIRATING FOAM-WATER SPRINKLER

HD FIRE PROTECT LIMITED

TECHNICAL DATA :

MODEL	F1- Stainless Steel, Pendent H -Bronze, Pendent H1- Bronze, Upright
MOUNTING	Pendent or Upright
MAXIMUM WORKING PRESSURE	12 bar (175 psi)
RECOMMENDED OPERATING PRESSURE	2.1 bar (30 psi) minimum 4.2 bar (60 psi) maximum
END CONNECTION	1/2" BSPT (1/2" NPT Optional)
K-FACTOR	Km-42 Standard (K-2.95) Other K-factors can be provided as optional without Listing & Approvals
APPROVAL	UL Listed & FM Approved (Refer Table-I)
FINISH	Natural finish
WEIGHT	0.465 kg (Approximate)
ORDERING INFORMATION	Please specify : Model, End connection
SIN NUMBER	HD331



APPLICATION

The Foam Nozzles (Models F1, H and H1) are open type Air Aspirating Foam-Water Sprinklers. Foam-Water Sprinklers are used in the deluge foam systems to protect the high-risk areas where foam is required to be applied through overhead nozzles and is to be followed with plain water in a standard sprinkler spray pattern.

Foam-Water Sprinklers protect the loading and un-loading areas in the event of a spill fire as part of the low expansion foam systems. These are useful in many other applications like aircraft hangers, warehouses stored with flammable liquids, DG Set rooms, solvent storage areas, etc.

SPECIFICATION

These F1, H and H1 Nozzles are open and air aspirating type Foam-Water Sprinklers . The pattern of coverage is similar to the standard spray sprinkler head. These have a standard orifice with K-factor of 42 (Metric).

The Foam-Water Sprinklers are designed to operate at a minimum of 2.1 bar pressure and maximum of 4.2 bar pressure. The Foam-Water Sprinkler with Km-42 will deliver about 61 lpm at 2.1 bar pressure. The standard coverage per Foam-Water Sprinkler is 9.3 sq.m (100 sq.ft).

TABLE - I

Mounting Type	Model	Material	Foam Concentrate	Approval	
				UL	FM
Pendent	F1 & H	Stainless Steel 316 Bronze	*AFFF 3%	✓	✓
			*AR-AFFF 3x3%	✓	✓
			FP3%	✓	–
			AR-SFFF F3	✓	–
Upright	H1	Bronze	AR-SFFF F3	✓	–

*With minimum application rate of 0.16 gpm/sq.ft (6.5 lpm/sq.m)

SYSTEM DESIGN

The approval of the Foam Sprinkler is based on the requirements of NFPA-13 & NFPA-16. Discharge pattern provided is indicative only and it is not to be used for designing purpose. Spacing between the sprinklers should not exceed the parameters, which are mentioned in NFPA-13 for extra hazard occupancies.

INSTALLATION, TESTING & MAINTENANCE

The Foam-Water Sprinkler must be handled with due care. For best results, the storage as well as any further shipment be made in original packing only.

Foam-Water Sprinkler which is visibly damaged should not be installed. These must never be painted, plated, coated or altered in any way, or else, the performance may be affected.

Use Teflon tape of soft thread sealant on male thread of the sprinkler. The sprinkler must be tightened in to the fitting. Excessive tightening torque may result into serious damage to sprinkler arms and deflector, which may affect spray pattern of the sprinkler and its performance. Do not apply wrench on threading, it has to be applied on flat area of Sprinkler. Maximum of 18.0 Nm torque to be applied for tightening.

Do not drop the product, it may cause damage to the deflector.

It is recommended that foam-water spray system must be inspected regularly by authorised technical personal.

The sprinkler must be checked for atmospheric effects, external and internal obstruction, blockage if any. The sprinkler should be cleaned or replaced if required.

The system must be operated with optimum water flow at least twice in a year or as per the provisions of NFPA or as per authority having jurisdiction.

The owner is responsible for the testing, inspection and maintenance of the Foam-Water Sprinkler and its system.

NOTE:

(i) Foam-Water Sprinkler and Foam Concentrate are listed together.

(ii) FM Approval is valid when total system is having FM Approved products.

(iii) **UL Listed:**

- AFFF 3%*
- AR-AFFF 3X3%*
- FP 3%*
- AR-SFFF F3

*With minimum application rate of 0.16 gpm/sq.ft (6.5 lpm/sq.m)

FM Approved:

- AFFF 3% with 10' x 10' spacing, minimum height of 8' 9", with application density of 0.3 gpm/sq.ft (12.2 lpm/sq.m)
- AR-AFFF 3x3% with 10' x 10' spacing, minimum height of 4'6", with application density of 0.3 gpm/sq.ft (12.2 lpm/sq.m)

(iv) Refer to individual UL Listing and FM Approval for operating limitation with each foam concentrate and Foam-Water Sprinkler.

To meet intent of NFPA-16, Foam-Water Sprinklers must be able to sufficiently distribute water after depletion of foam. (As on June 2020, NFPA-16 is incorporated into NFPA-11)

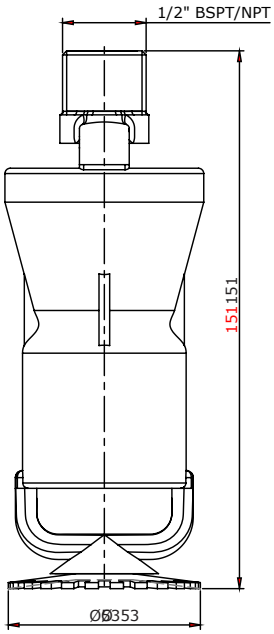
Not less than two Foam-Water Sprinklers are to be installed in any area of hazard.

Marking on Foam-Water Sprinkler:

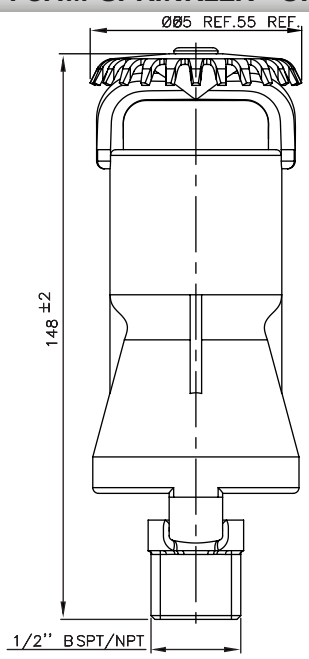
(i) K-Factor
(ii) Model
(iii) Year of Manufacturing
(iv) (HD) Trademark
(v) UL & FM mark
(vi) Pendent

The certification of the system is contingent upon piping designed and installed in accordance with NFPA 11 and/ or FM Global Property Loss Prevention Data Sheet 4-12, Foam-Water Sprinkler Systems.

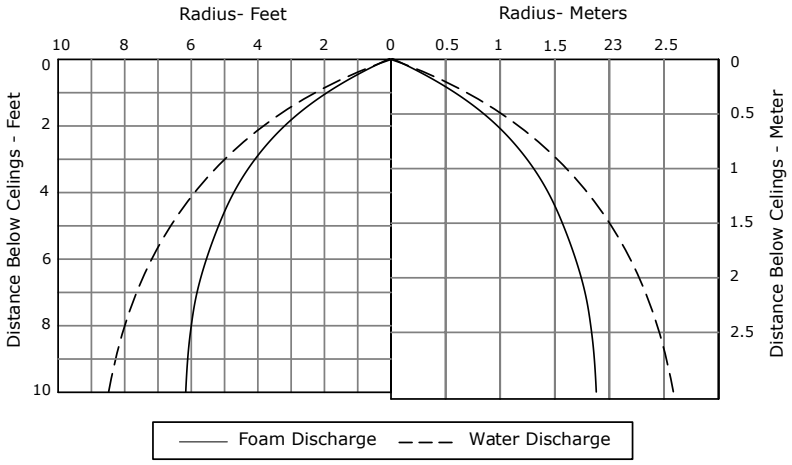
WATER FOAM SPRINKLER - PENDENT



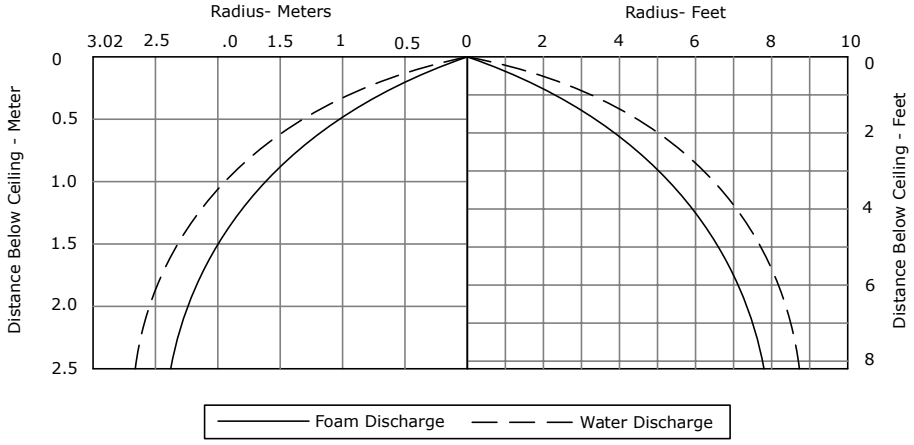
WATER FOAM SPRINKLER - UPRIGHT



DISCHARGE PATTERN - PENDENT

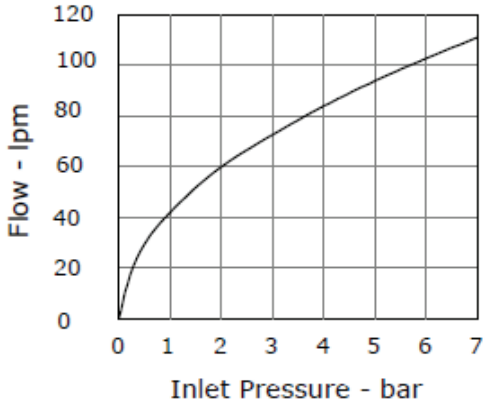


DISCHARGE PATTERN - UPRIGHT



For reference only - not suitable for system design

PRESSURE VS FLOW PERFORMANCE CHARACTERISTIC



LIMITED WARRANTY

HD FIRE PROTECT LIMITED (Formerly known as HD FIRE PROTECT PVT. LTD.) hereby referred to as HD FIRE, warrants to the original purchaser of the fire protection products manufactured by HD FIRE and to any other person to whom such equipment is transferred, that such products will be free from defect in material and workmanship under normal use and care, for two (2) years from the date of shipment by HD FIRE. Products or Components supplied or used by HD FIRE, but manufactured by others, are warranted only to the extent of the manufacturer's warranty. No warranty is given for product or components which have been subject to misuse, improper installation, corrosion, unauthorized repair, alteration or un-maintained. HD FIRE shall not be responsible for system design errors or improper installation or inaccurate or incomplete information supplied by buyer or buyer's representatives. HD FIRE will repair or replace defective material free of charge, which is returned to our factory, transportation charge prepaid, provided after our inspection the material is found to have been defective at the time of initial shipment from our works. HD FIRE shall not be liable for any incidental or consequential loss, damage or expense arising directly or indirectly from the use of the product including damages for injury to person, damages to property and penalties resulting from any products and components manufactured by HD FIRE. HD FIRE shall not be liable for any damages or labour charges or expense in making repair or adjustment to the product. HD FIRE shall not be liable for any damages or charges sustained in the adaptation or use of its engineering data & services. In no event shall HD FIRE's product liability exceed an amount equal to the sale price.
The foregoing warranty is exclusive and in lieu of all other warranties and representation whether expressed, implied, oral or written, including but not limited to, any implied warranties or merchantability or fitness for a particular purpose. All such other warranties and representations are hereby cancelled.

NOTICE :
The equipment presented in this bulletin is to be installed in accordance with the latest publication standards of NFPA or other similar organisations and also with the provision of government codes or ordinances wherever applicable.
The information provided by us is to the best of our knowledge and belief, and consist of general guidelines only. Site handling and installation control is not in our scope. Hence we give no guarantee for result and take no liability for damages, loss or penalties whatsoever, resulting from our suggestion, information, recommendation or damages due to our product.
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