



MEDIUM VELOCITY WATER SPRAY NOZZLE

TECHNICAL DATA

MODEL	MV-E
MAXIMUM WORKING PRESSURE	12 Bar (175 PSI)
EFFECTIVE WORKING PRESSURE	1.4 to 3.5 Kg./Sq.cm (20 - 50 PSI)
END CONNECTION	½" BSPT (½" NPT OPTIONAL)
MATERIAL	Refer Table 1
INCLUDED WATE SPRAY ANGLE FOR EACH K-FACTOR	R140°, 120°, 110°, 100°, 90°, 80°, 65°
K-FACTORMV-E	Metric (US) K-18 (1.26) K-22 (1.54) K-30 (2.10) K-35 (2.45) K-41 (2.87) K-51 (3.57) K-64 (4.48) K-79 (5.53) K-91 (6.37) K-102 (7.14)
WEIGHT (Approx)	0.115 Kg
FINISH	Natural Brass finish
ORDERING INFORMATION	Specify K-Factor, Spray Angle, Finish, Model and end Connection

DESCRIPTION

The Medium Velocity Water Spray Nozzles are open type (non-automatic) nozzles, designed for directional spray application in fixed fire protection system.

Medium velocity water spray nozzle has an external deflector, which discharges water in a directional cone shaped pattern of small droplet size. The water is uniformly distributed over the surface to be protected.

The Nozzles are effectively designed to apply water to exposed vertical, horizontal, curved and irregular shaped surfaces to allow cooling to prevent excessive absorption of heat from an external fire and provide structural damage or spread of fire. In some application nozzles may be applied to control or extinguish the fire depending on water design density as per applicable codes.



The nozzle is used in deluge water spray system for special hazard fire protection application.

As the design and intent of specific water spray system may vary considerably, MV-E nozzle is made available in several combination of orifice sizes and spray angles.

The minimum desirable pressure to achieve a reasonable spray pattern is 1.4 kg./Sq.cm. The water distribution pattern as shown in the graph in following pages is at an average pressure of 2.0 Kg/Sq.cm. The change in pressure between 1.4 to 3.5 Kg./sq.cm. does not affect considerable change in spray angle. The spray pattern shown is with indoor application System designer must consider wind velocity while designing the system for outdoor application.

Field obstruction if any affecting the spray pattern of the nozzle must also be considered.

The nozzle may be oriented to any position as deemed necessary to cover the hazard.

The Blow-off plugs can be used to prevent the depositing of foreign materials in the water way of the nozzles, which could interfere with the discharge of spray nozzle. Blow -off plugs is optional and are not UL listed

The main pipeline strainer as per NFPA-15 are required for system utilizing nozzle orifice diameter less than 9.5mm (3/8 inch), i.e. FG Nozzle having K-factor 51 and less, and also for the system water which is likely to contain obstructive materials.

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MAINTENANCE

The spray nozzle must be handled with due care.

For best results, the storage as well as any further shipment be made in original packing only.

Nozzle which is visibly damaged should not be installed. Use Teflon tape or soft thread sealant on male thread of the nozzle. The nozzles must be hand tightened into the fitting. Excessive tightening torque may result into serious damage to nozzle arms and the deflector which may affect spray pattern of the nozzle and it's performance.

It is recommended that water spray system be inspected regularly by authorised technical personnel. The nozzle must be checked for atmospheric effects, external and internal obstruction, blockage if any. The nozzle 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/TAC or local authority having jurisdiction.

The owner is solely responsible for maintaining the water spray system and the components therein so that it performs properly when required.

MODEL MV-E

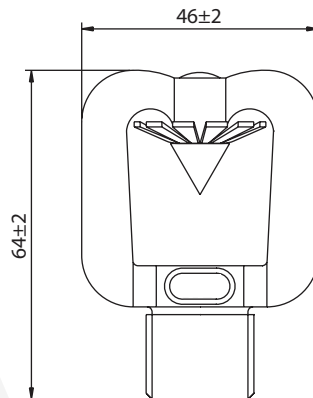
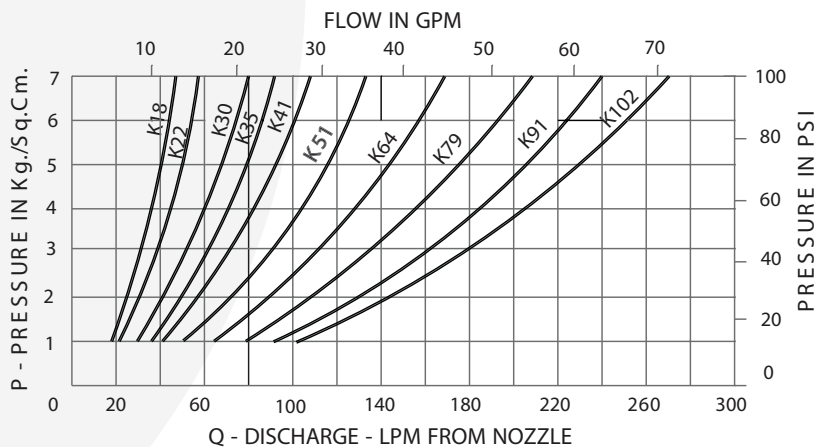


TABLE - 1: MATERIAL OF CONSTRUCTION

BODY	Aluminium Bronze IS:305-AB1(Equivalent to ASTM-A148)
PIN	Ph.Bronze IS:7811(Equivalent to ASTM B139/BS2874-PB102)
DEFLECTOR	Ph Bronze IS 7814-GR-II (Equivalent to BS2870-PB102)

DISCHARGE CHARACTERISTICS



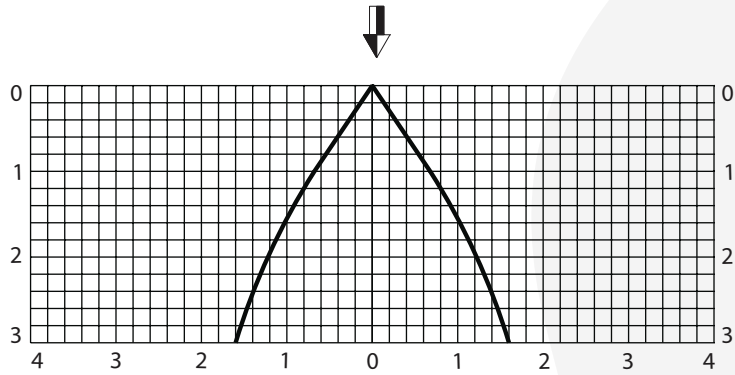
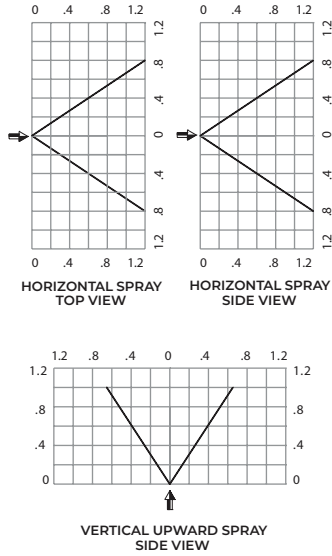
$Q = K\sqrt{P}$ where P is supply pressure in Kg./sq.cm., K= nozzle constant (K-factor) in metric
US K factor = Metric K factor $MK \div 14.2745$



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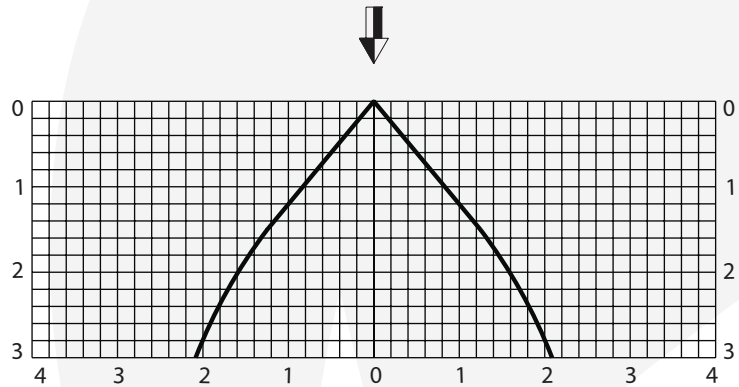
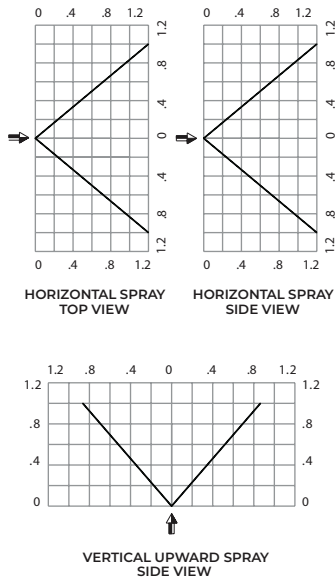
SPRAY PATTERN

SPRAY ANGLE 65°



VERTICAL DOWNWARD SPRAY

SPRAY ANGLE 80°



VERTICAL DOWNWARD SPRAY

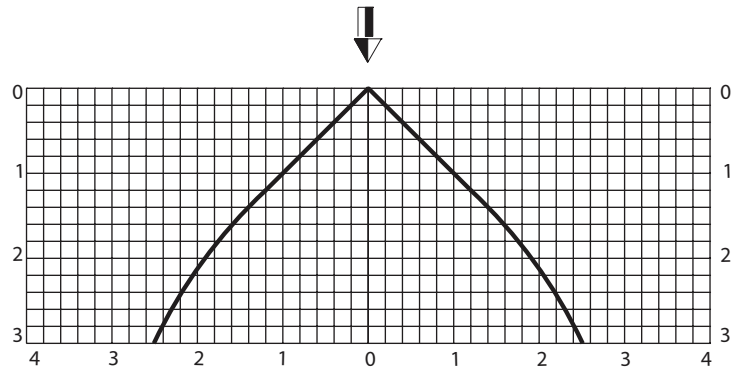
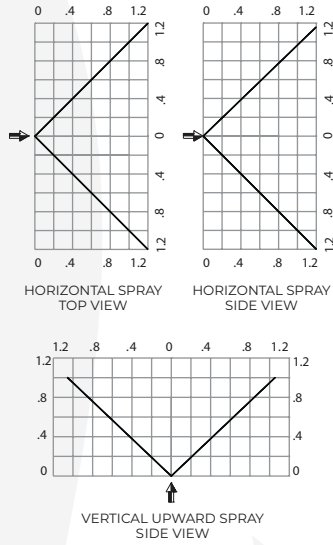
ALL DIMENSIONS ARE IN METERS



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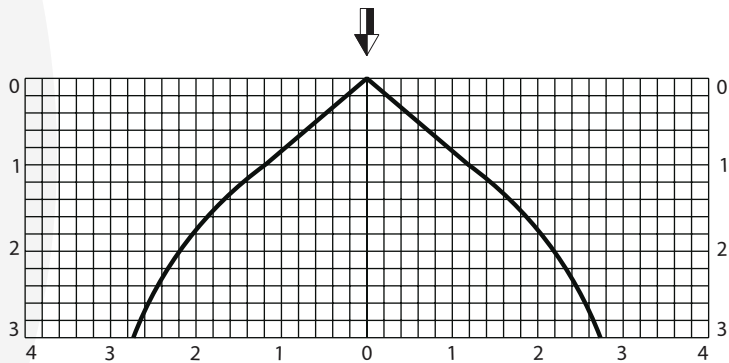
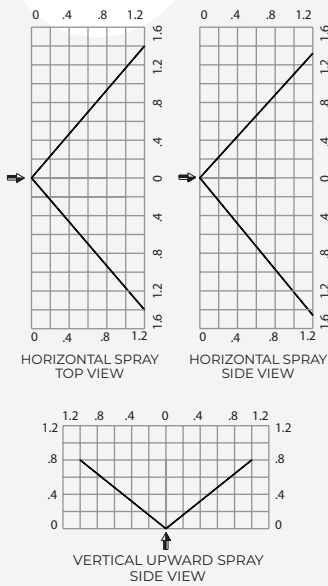
SPRAY PATTERN

SPRAY ANGLE 90°



VERTICAL DOWNWARD SPRAY

SPRAY ANGLE 100°

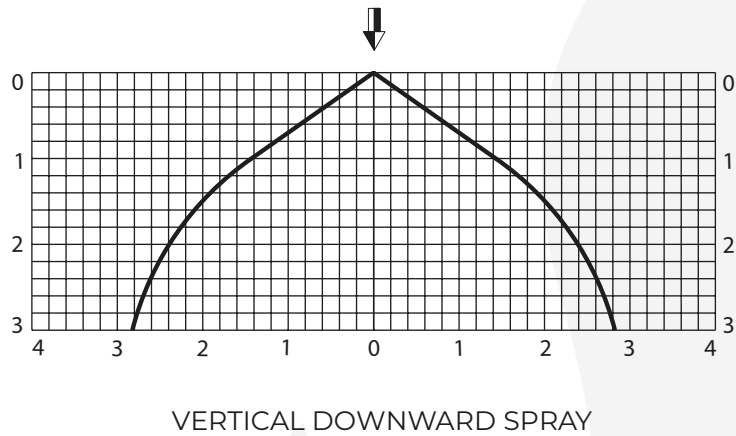
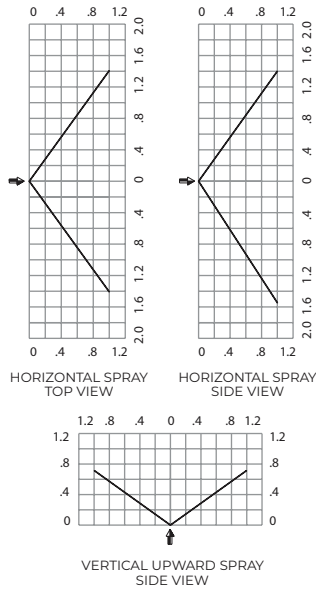


VERTICAL DOWNWARD SPRAY

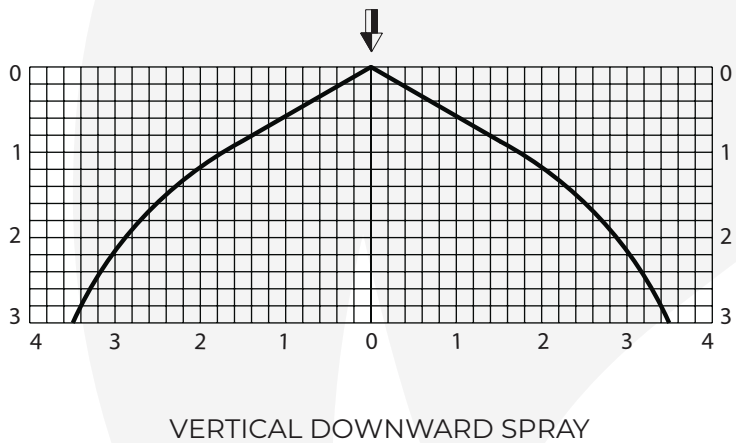
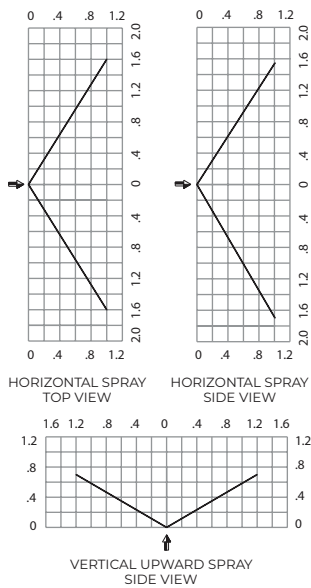
ALL DIMENSIONS ARE IN METERS

SPRAY PATTERN

SPRAY ANGLE 110°



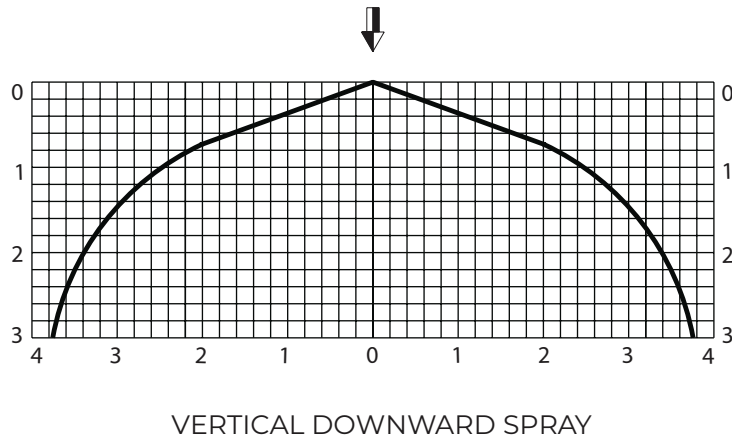
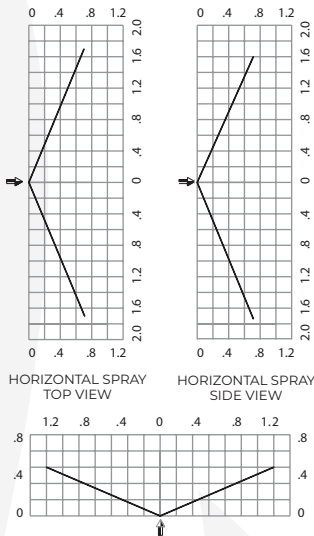
SPRAY ANGLE 120°



ALL DIMENSIONS ARE IN METERS

SPRAY PATTERN

SPRAY ANGLE 140°



ALL DIMENSIONS ARE IN METERS

Note:

1) The design spray pattern given in graph are included spray angle of 65 Deg. to 140 Deg. at nozzle inlet pressure of 1.4 to 3.5 Bar. When the nozzle pressure above 3.5 is applied, the coverage area will decrease because the spray pattern tends to draw inward at higher pressure.

2) The spray data are obtained from the test in still air .