



PYROPULSE (PP)

DELUGE NOZZLES, MEDIUM VELOCITY



PRODUCT DESCRIPTION

AVENTECH's PP-MV Nozzles: Precision and Flexibility for Fire Protection

Discover AVENTECH's PP-MV Nozzles – open (non-automatic) directional spray nozzles designed for water spray systems. The nozzle has an internal deflector that discharges water in a directional cone shaped pattern that give a small droplet size. The PP-MV nozzle is offered in various combinations of orifice size and spray angles used in deluge systems for fire protection applications addressing potential hazards. This variety empowers you to tailor your system design to meet specific needs and ensure optimal performance.

For additional technical details please refer to the complete datasheet.



CRUCIAL

Ensuring the long-lasting performance of your deluge system is crucial. Please pay close attention to essential precautions when handling and installing your deluge/sprinkler systems and components.

Handle and install these systems with care, as any deviation from proper procedures may result in permanent damage. Such damage could prevent the deluge system from operating during a fire emergency or, conversely, cause it to operate prematurely.

Your attention to these vital details will not only protect the system's integrity but also ensure its reliable functionality when it matters most. Thank you for your commitment to the safety and effectiveness of our deluge/sprinkler systems.

NOTIFICATION

Installing and maintaining nozzles requires precision, following NFPA guidelines and local regulations. Compliance with these standards is crucial to ensure the effectiveness of these devices.

Designing water spray fixed systems is a detailed process influenced by factors like hazard characteristics, system objectives, layout, and wind conditions. Given the complexity, it's essential to involve experienced professionals familiar with the nuances of nozzle spray options.

The responsibility for optimal fire protection system functionality lies with the owner. In case of issues or maintenance needs, promptly communicate with the installation contractor or product provider for expert assistance. Your attention to these details ensures the continued reliability of your fire protection system.

SPRAY PROFILE

Nozzles have been tested in still air.

Spray coverage in the data sheet is applicable for an inlet pressure of the nozzle ranging between 1.4 bar to 4.1 bar.

Max working pressure 12 bar.
Higher pressures may result in changes in spray coverage.

Contact Aventech for consultation.

SECTIONAL DRAWING

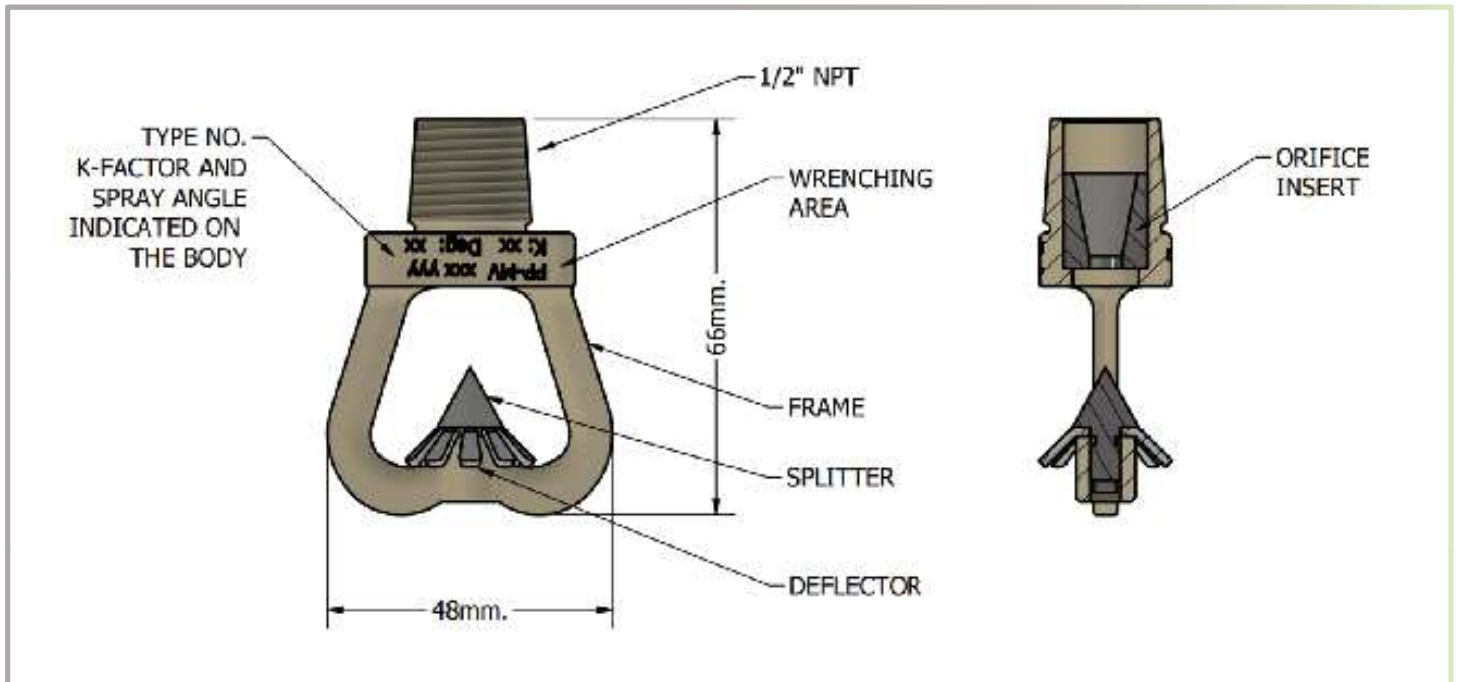
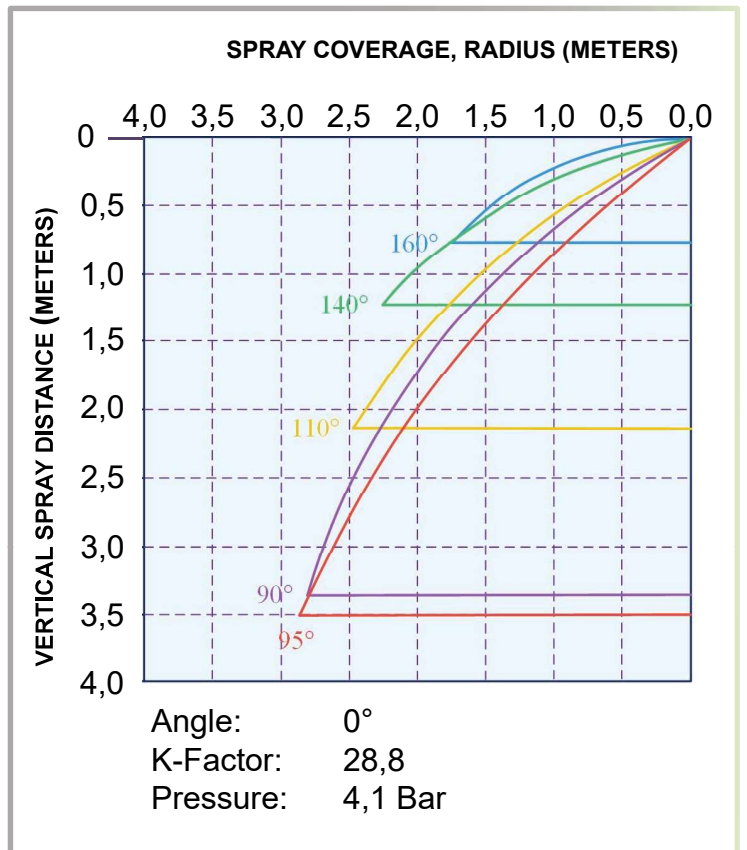
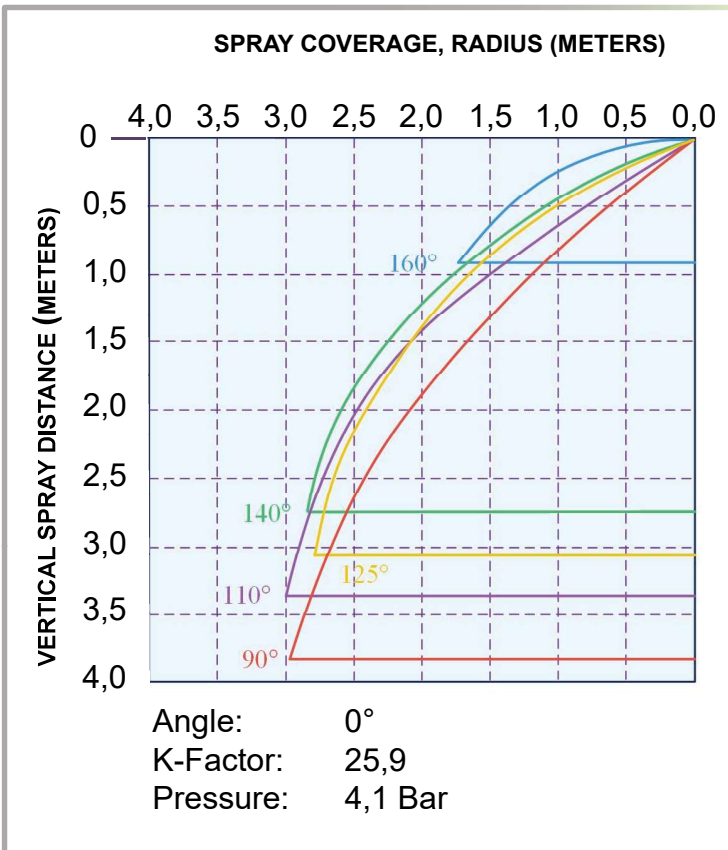
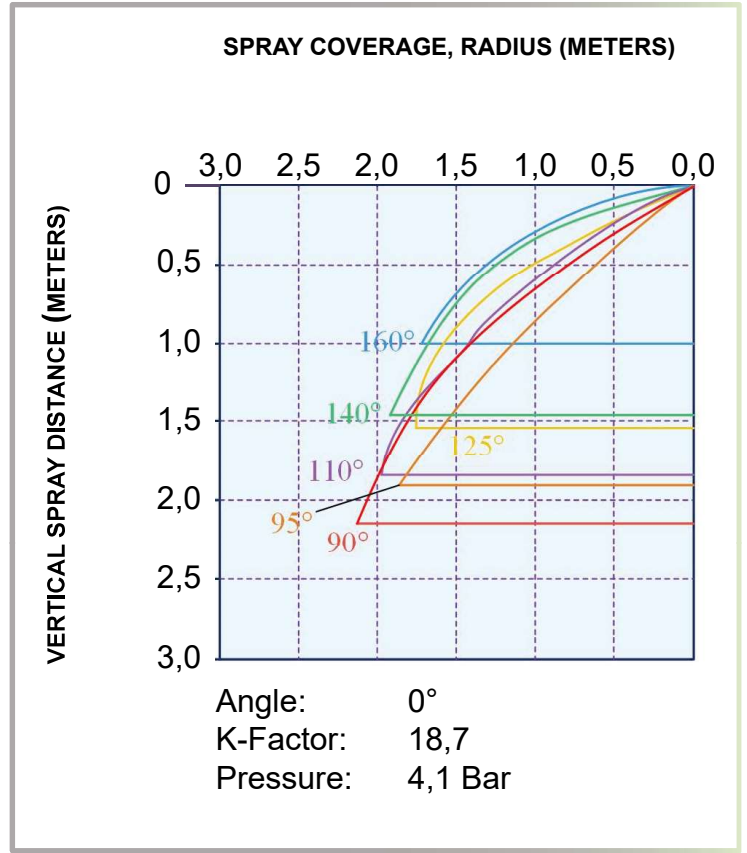
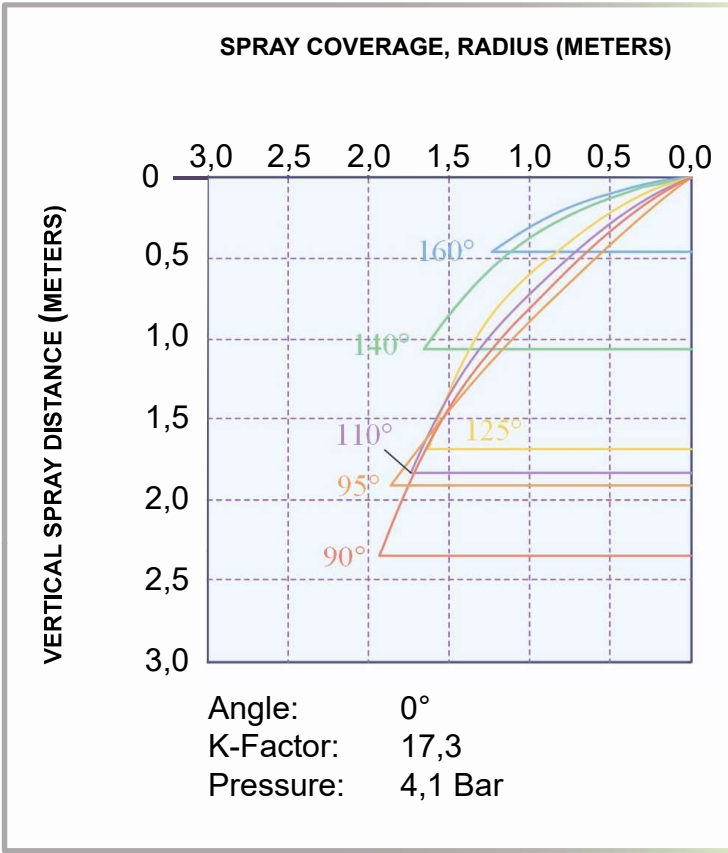


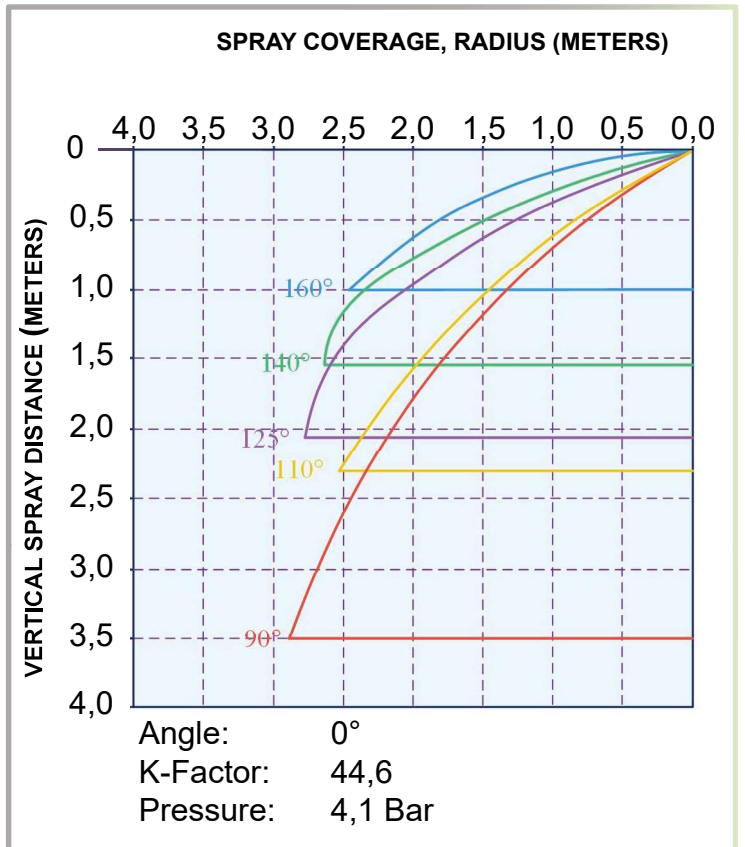
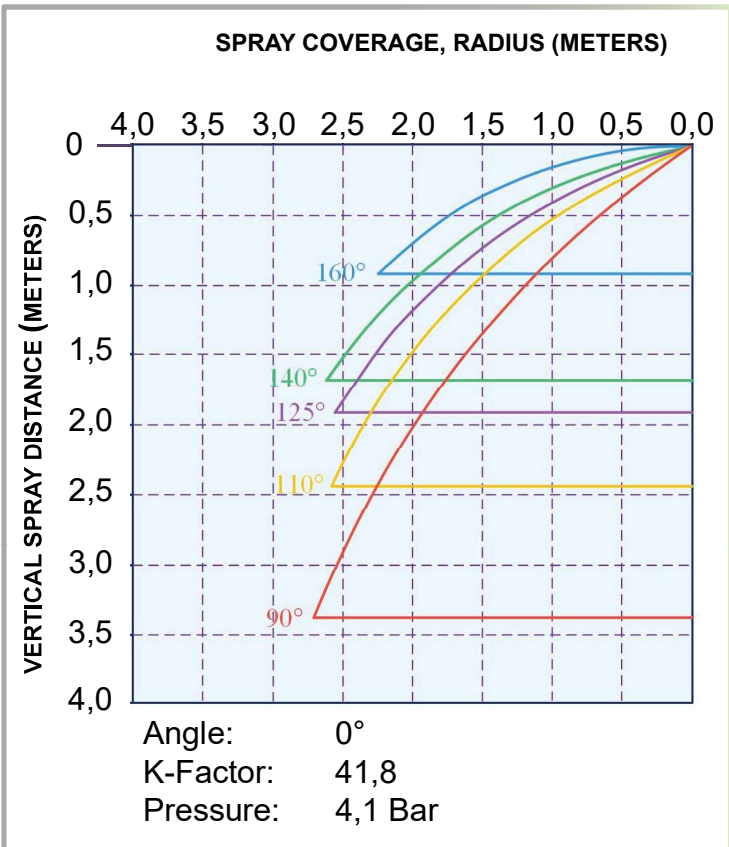
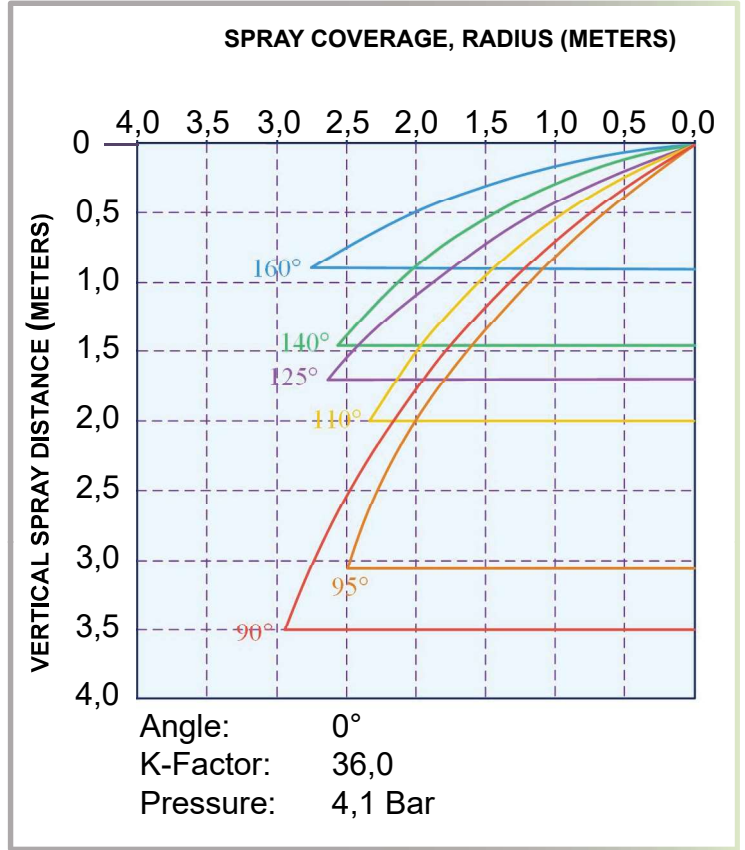
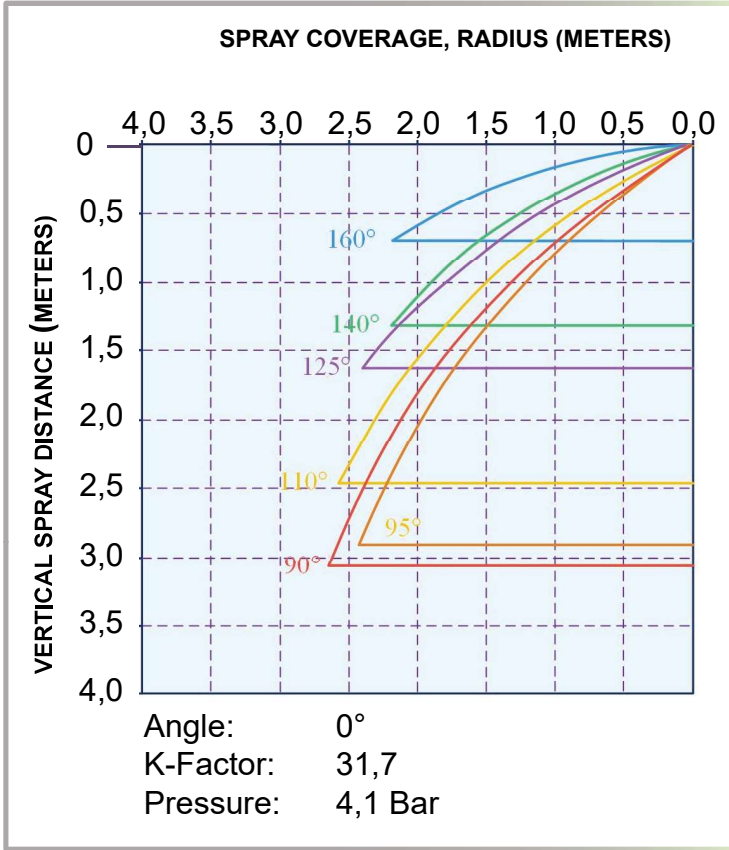
TABLE A: TYPE, BORE, K-FACTOR & MATERIAL SELECTION, SPRAY ANGLE & THREADS

Type	Minimum Diameter mm	K-factor	Spray Angles	Threads	Materials
		LPM/bar ¹ / ₂			
PP-17	5,15	17,3	All models: 90 ° 95 ° 110 ° 125 ° 140 ° 160 °	All models: 1/2" NPT MALE	All models: Titanium Duplex NiAlBr 6Mo
PP-18 (**)	5,40	18,7			
PP-26	6,35	25,9			
PP-29	6,80	28,8			
PP-32	7,15	31,7			
PP-36	7,70	36,0			
PP-42	8,35	41,8			
PP-45	8,80	44,6			
PP-49	9,00	49,0			
PP-59 (**)	9,60	59,0			
PP-79	11,20	79,2	<i>Other upon request.</i>	<i>Materials could be delivered according to M650</i>	
PP-101* (**)	12,60	100,8			

* PP-101 are made without orifice insert, as it is not needed.

(**) Titanium versions of PP-18 (90 & 110 degrees), PP-59 (110 degrees) & PP-101 (90 & 110 degrees) are UL Listed.





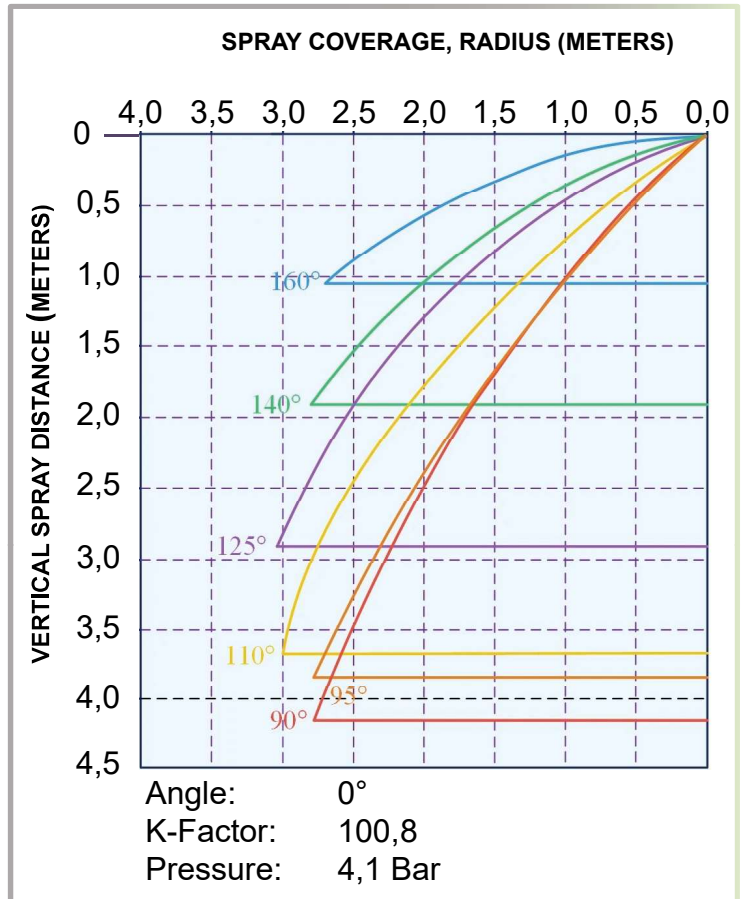
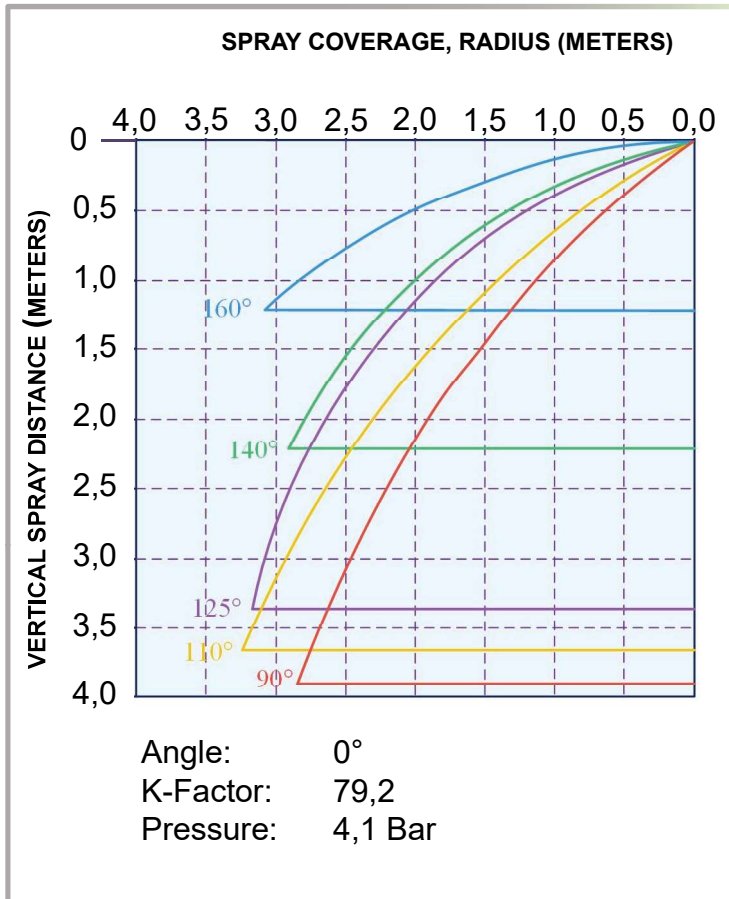
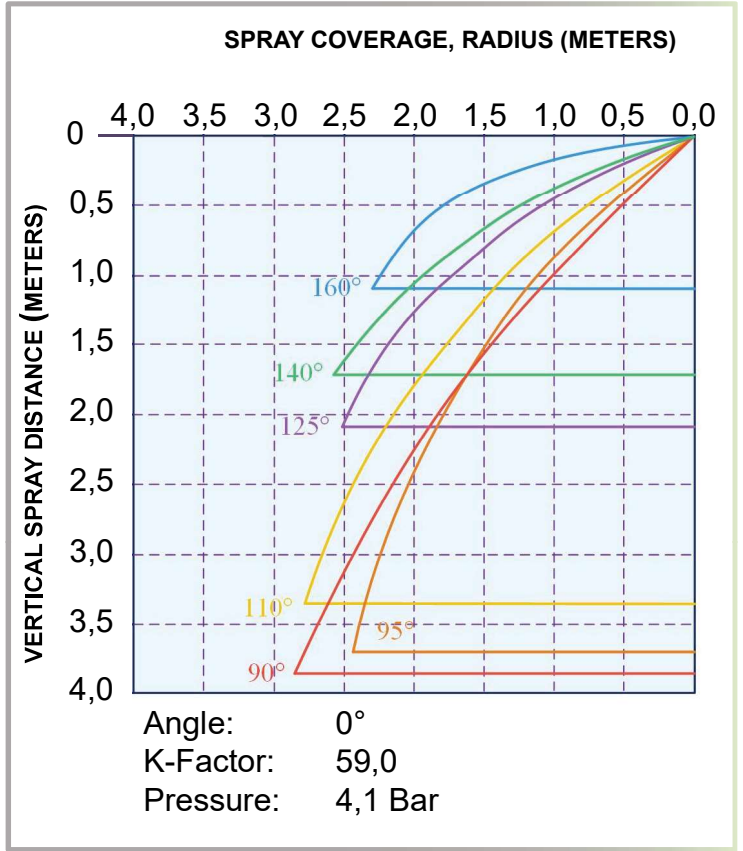
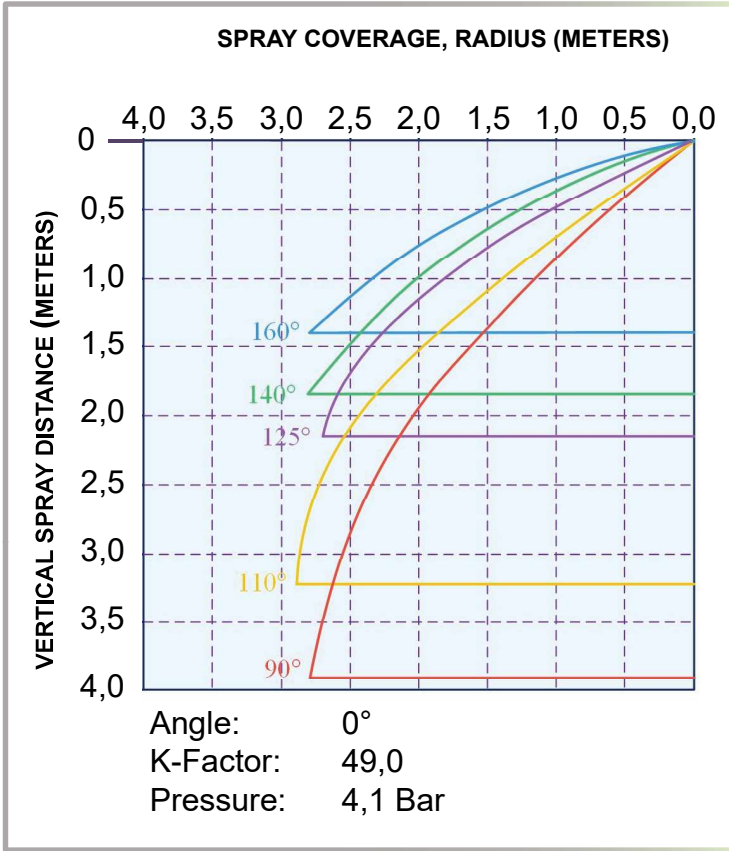


TABLE B: Max recommended distance between the nozzle tip and the protection plane for exposure safety (metric).

Fixed Angle	SPRAY ANGLE 90°											
	Nozzle Type											
	PP-17	PP-18	PP-26	PP-29	PP-32	PP-36	PP-42	PP-45	PP-49	PP-59	PP-79	PP-101
0°	2,4	2,1	3,8	3,7	3,0	3,5	3,4	3,5	3,9	3,8	3,9	4,1
45°	1,9	1,6	1,7	2,0	1,8	2,1	2,1	2,1	2,4	1,9	2,1	2,5
90°	1,0	1,1	1,3	1,5	1,7	1,7	1,5	1,4	1,7	1,7	1,8	2,3
135°	0,8	0,8	0,8	0,8	0,8	0,9	1,2	1,3	1,1	1,1	1,2	1,6
180°	0,5	0,5	0,5	0,8	0,8	0,8	0,8	0,8	1,0	0,9	1,1	1,4

Fixed Angle	SPRAY ANGLE 95°											
	Nozzle Type											
	PP-17	PP-18	PP-26	PP-29	PP-32	PP-36	PP-42	PP-45	PP-49	PP-59	PP-79	PP-101
0°	1,9	1,9	3,6	3,5	2,9	3,0	2,7	2,7	3,5	3,7	3,7	3,8
45°	1,5	1,5	1,5	1,9	1,7	1,8	1,8	2,1	2,0	1,8	2,0	2,2
90°	0,9	1,0	1,2	1,4	1,5	1,2	1,4	1,4	1,6	1,6	1,7	2,1
135°	0,8	0,7	0,7	0,8	0,8	0,8	0,9	1,0	0,9	1,1	1,1	1,4
180°	0,5	0,5	0,5	0,6	0,7	0,5	0,7	0,7	0,8	0,8	1,0	1,2

Fixed Angle	SPRAY ANGLE 110°											
	Nozzle Type											
	PP-17	PP-18	PP-26	PP-29	PP-32	PP-36	PP-42	PP-45	PP-49	PP-59	PP-79	PP-101
0°	1,8	1,8	3,4	2,1	2,4	2,0	2,4	2,3	3,2	3,0	3,7	3,7
45°	1,1	1,4	1,4	1,5	1,8	1,6	1,7	2,0	1,6	1,7	1,8	2,1
90°	0,8	0,9	1,1	1,2	1,2	1,2	1,3	1,3	1,5	1,5	1,6	1,8
135°	0,5	0,6	0,6	0,7	0,6	0,7	0,8	0,7	0,8	0,9	0,9	1,0
180°	0,4	0,3	0,4	0,5	0,5	0,5	0,6	0,6	0,7	0,8	0,8	0,8

Fixed Angle	SPRAY ANGLE 125°											
	Nozzle Type											
	PP-17	PP-18	PP-26	PP-29	PP-32	PP-36	PP-42	PP-45	PP-49	PP-59	PP-79	PP-101
0°	1,7	1,5	3,0	1,7	1,6	1,7	1,9	2,1	2,1	2,1	3,4	2,9
45°	1,1	1,3	1,4	1,2	1,4	1,4	1,4	1,4	1,3	1,5	1,3	1,8
90°	0,6	0,7	0,9	1,0	1,1	1,1	1,1	1,2	1,2	1,4	1,2	1,4
135°	0,5	0,5	0,5	0,5	0,5	0,5	0,6	0,6	0,7	0,8	0,8	0,8
180°	0,3	0,2	0,3	0,4	0,4	0,4	0,5	0,4	0,5	0,6	0,7	0,6

Fixed Angle	SPRAY ANGLE 140°											
	Nozzle Type											
	PP-17	PP-18	PP-26	PP-29	PP-32	PP-36	PP-42	PP-45	PP-49	PP-59	PP-79	PP-101
0°	1,1	1,4	2,7	1,2	1,3	1,4	1,7	1,5	1,8	1,7	2,2	1,9
45°	0,8	1,0	1,3	0,9	1,1	1,1	1,3	1,1	1,2	1,3	1,2	1,7
90°	0,5	0,5	0,8	0,8	0,9	1,0	1,0	1,0	1,0	1,1	1,1	1,2
135°	0,4	0,4	0,4	0,4	0,4	0,4	0,5	0,5	0,5	0,8	0,6	0,7
180°	0,2	0,2	0,2	0,3	0,2	0,3	0,4	0,3	0,4	0,5	0,6	0,5

Fixed Angle	SPRAY ANGLE 160°											
	Nozzle Type											
	PP-17	PP-18	PP-26	PP-29	PP-32	PP-36	PP-42	PP-45	PP-49	PP-59	PP-79	PP-101
0°	0,5	1,0	0,9	0,8	0,7	0,9	0,9	1,0	1,1	1,1	1,2	1,4
45°	0,5	0,7	0,8	0,5	0,6	0,8	0,9	1,1	1,1	1,1	1,1	1,1
90°	0,2	0,4	0,4	0,7	0,7	0,7	0,7	0,8	0,8	0,8	0,8	1,1
135°	0,2	0,3	0,2	0,2	0,3	0,2	0,2	0,2	0,3	0,5	0,5	0,5
180°	0,2	0,1	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,4	0,5	0,4

TECHNICAL NOTES

Nozzle Placement

Where direct impingement of water spray onto all of the protected surfaces is required by the authority having jurisdiction, Aventech PP-MV Nozzles are to be spaced and directed so that their spray patterns will completely cover the plane-of-protection with the minimum required average density. However, it is recommended that indoor nozzle spacing be 3.7 m (12 ft) or less and that outdoor nozzle spacing be 3.0 m (10 ft) or less. Where rundown or slippage is planned, for example, exposure protection of vessels per NFPA 15, the above recommended indoor and outdoor spacings also apply. When used for protecting the surfaces of a vessel, for example, nozzles are positioned normal to and approximately 0.6 m (2 ft) from the surface. This approach, in conjunction with a properly selected spray angle, will tend to make more effective use of the spray as well as help minimize the disturbance effects of wind/draft conditions on the water spray patterns. Contact Aventech if any questions about nozzle placement.

Spray Patterns

The Design Spray Profiles for PP-MV nozzle spray angles of 90 to 160 degrees are shown in Graphs A through M and apply to discharge pressures of 1.4 to 4.1 bar (20 to 60 psi). Discharge pressures in excess of 4.1 bar (60 psi) will result in a decrease in coverage area since the spray patterns tend to draw inwards at higher pressures. The maximum axial distances between the nozzle tip and plane-of-protection, for exposure protection, are given in Table B. When the axial distance from the nozzle tip to the plane-of-protection is 0.6 m (3 ft) or less, the Design Spray Profile is the same as the nominal spray angles of 90 to 140 degrees. In general, we refer to NFPA guidelines and regulations.



Care and Maintenance

The Aventech PP-MV Nozzles must be maintained and serviced according to this section. Before closing a fire protection system main control valve for maintenance, obtain permission from the proper authorities and notify all affected personnel. Nozzles must never be painted, plated, coated, or altered after leaving the factory, as this may impair spray performance. Handle nozzles with care to avoid damage before, during, and after installation. Replace nozzles damaged by dropping, striking, or wrench twist/slippage.

Frequent visual inspections are recommended for nozzles installed in potentially corrosive atmospheres to verify material integrity. Thereafter, annual inspections per NFPA 25 are required. Water spray fixed systems for fire protection require regular care and maintenance by trained personnel. Inspect nozzles for proper spray performance during water flow trip tests and periodically check for broken or missing parts, obstructions, or other issues. Inspections should be scheduled weekly or as necessary, and corrective action must be taken to ensure proper nozzle performance in the event of a fire.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices, complying with this document, applicable NFPA standards, and standards of any authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions. Water spray fixed systems should be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

Installation

General Instructions

A leak-tight 1/2 in. NPT sprinkler joint should be obtained by applying a minimum-to-maximum torque of 9,5 to 19,0 N·m (7 to 14 ft-lb). Higher levels of torque can distort the nozzle Inlet with consequent impairment of the nozzle.

Step 1. With pipe-thread sealant applied to the pipe threads, hand-tighten the nozzle into the nozzle fitting.

Step 2. Apply an appropriate size adjustable wrench to the wrenching area and tighten the nozzle into the nozzle fitting.

ORDERING

Contact your local distributor for availability.
When placing an order, indicate the full product according to table A.

Contact details also provided below.