

HANDLINE NOZZLES AND EDUCTORS

Data/Specifications



LOW-EXPANSION FOAM HANDLINE NOZZLES

FEATURES

- Noncorrosive materials
- Easy-to-operate ball shut off valve
- Light weight for ease of handling
- Good foam quality with pressure of 45 psi (310 kPa) and greater

APPLICATION

The ANSUL® KR-S low-expansion foam handline nozzles can be used with all low expansion foam agents such as fluoroprotein, AFFF, alcohol resistant AFFF, and Class A foam concentrates. These portable, air aspirating nozzles can be used in a variety of flammable liquid hazard areas using ANSULITE® Class B foam concentrates. Typical applications include municipal fire departments and crash-fire-rescue (CFR) vehicles, or for handline applications around tank farms, loading racks, aircraft hangars, and chemical plants.

Using SILV-EX® Class A foam concentrate, an effective blanketing foam is produced for use for structural fire attack and other deep-seated fires involving tires, rolled paper, baled cotton and coal bunkers.

The advantage of low expansion compared to medium expansion foam is the greater throw range and superior cooling effect achieved by the higher water content.

DESCRIPTION

Two sizes are available for nominal flow rates of 60 gpm (227 Lpm) and 120 gpm (454 Lpm) @ 100 psi (689 kPa). Foam solution is sprayed through the nozzle and foam is produced in the tube as air is drawn in. Each nozzle has a ball shut-off valve. The nozzle tube is constructed of stainless steel with a tough polyurethane handle providing optimum protection against corrosion. Although the normal operating pressure is 75 – 100 psi (517 – 689 kPa), a minimum operating pressure of 45 psi (310 kPa) is recommended. Foam concentrate is usually proportioned to the nozzle using the matching ANSUL Model Z eductor.

TECHNICAL DATA TABLE

Model Number	KR-S2	KR-S4
Flow rate @ 100 psi (689 kPa)	60 gpm (227 Lpm)	120 gpm (454 Lpm)
Normal Operating Pressure	75-100 psi (517-689 kPa)	75-100 psi (517-689 kPa)
Expansion Ratio	8:1 – 15:1	8:1 – 15:1
Stream Range	75 ft (23 m)	85 ft (25.9 m)
Overall Length	30 in (76 cm)	39 in (99 cm)
Maximum Width	8 in (20 cm)	8 in (20 cm)
Recommended Eductor	ANSUL Z-2	ANSUL Z-4



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ORDERING INFORMATION

The models listed below are provided with 1 1/2 in. NHT female inlet threads. Other thread types are available upon request. The flow rates listed are nominal; see Technical Data Table for performance characteristics.

Part No.	Description	Approximate Shipping Weight	
		lb	(kg)
415981	KR-S2 Low Expansion Nozzle 60 gpm (227 Lpm)	9	(4.1)
415982	KR-S4 Low Expansion Nozzle 120 gpm (454 Lpm)	11	(5.0)

MEDIUM-EXPANSION FOAM HANDLINE NOZZLES

FEATURES

- Compact and light weight
- Stainless steel and hard polyurethane construction for optimum corrosion protection
- Pressure gauge equipped
- Easy-to-operate ball shut-off valve
- Good foam quality with pressures of 45 psi (310 kPa) and greater

APPLICATION

ANSUL KR-M medium-expansion foam handline nozzles can be used with various types of foam agents. In particular, they are recommended for use with the following foam concentrates for typical applications as noted:

- ANSULITE 3X3 Foam – As a vapor suppressant foam for various hazardous fuming compounds including oleum and chlorosulfonic acids. ANSULITE 3X3 is also effective with these nozzles as a fire extinguishing foam both for flammable and combustible hydrocarbon and polar solvent (water miscible) fuels.
- FULL-EX® Multi-Expansion Foam – As a fire suppressant for hydrocarbon fuel products when proportioned at a 2% concentration.
- SILV-EX Class A Foam – As a high performance fire suppressant on difficult Class A fuel fires including wood, paper, coal and rubber. The medium expansion nozzles, when combined with SILV-EX foam, proportioned between 0.5% to 1.0%, provides for longer surface wetting with reduced risk of ignition/re-ignition. Additionally, it provides a foam blanket which provides an insulating barrier between the fuel and air results.

The advantage of medium expansion foam compared to low expansion foam is that far more foam can be produced using less water. For some hazard types (i.e., tire fires), three-dimensional protection can be achieved. Medium expansion foam is also effective when injected through door, window or basement openings.

DESCRIPTION

Two sizes are available for nominal flow rates of 60 gpm (227 Lpm) and 120 gpm (454 Lpm) @ 100 psi (689 kPa). Foam solution is sprayed through the nozzle and foam is produced in the tube as air is drawn in. Each nozzle has a ball shut-off valve. The nozzle tube is constructed of stainless steel with a tough polyurethane handle providing optimum protection against corrosion. Although the normal operating pressure is 75 – 100 psi (517 – 689 kPa), a minimum operating pressure of 45 psi (310 kPa) is recommended. Foam concentrate is usually proportioned to the nozzle using the matching ANSUL Model Z eductor.

TECHNICAL DATA TABLE

Model Number	KR-S2	KR-S4
Flow rate @ 100 psi (689 kPa)	60 gpm (227 Lpm)	120 gpm (454 Lpm)
Normal Operating Pressure	75-100 psi (517-689 kPa)	75-100 psi (517-689 kPa)
Expansion Ratio	50:1	50:1
Quality of Foam Produced	400 ft ³ /min (11.3 m ³ /min)	800 ft ³ /min (22.6 m ³ /min)
Stream Range	25 ft (7.6 m)	30 ft (9.1 m)
Overall Length	20 in (51 cm)	24 in (61 cm)
Maximum Width	7 1/2 in (19 cm)	10 1/2 in (26.7 cm)
Recommended Eductor	ANSUL Z-2	ANSUL Z-4



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ORDERING INFORMATION

The models listed below are provided with 1 1/2 in. NHT female inlet threads. Other thread types are available upon request. The flow rates listed are nominal; see Technical Data Table for performance characteristics.

Part No.	Description	Approximate Shipping Weight	
		lb	(kg)
415983	KR-M2 Medium Expansion Nozzle 60 gpm (227 Lpm)	8	(3.6)
415984	KR-M4 Medium Expansion Nozzle 120 gpm (454 Lpm)	9	(4.1)

DUAL-EXPANSION FOAM HANDLINE NOZZLES

FEATURES

- Two foam handline nozzles in one
- Change over from medium to low expansion foam in seconds
- Noncorrosive materials
- Pressure gauge equipped
- Easy-to-operate ball shut-off valve
- Good foam quality with pressure of 45 psi (310 kPa) and greater

APPLICATION

ANSUL KR-S/M dual-expansion foam handline nozzles can be used with various types of foam agents. In particular, they are recommended for use with the following foam concentrates for typical applications as noted:

- **ANSULITE 3X3 Foam** – As a vapor suppressant foam for various hazardous fuming compounds including oleum and chlorosulfonic acids. ANSULITE 3X3 is also effective with these nozzles as a fire extinguishing foam both for flammable and combustible hydrocarbon and polar solvent (water miscible) fuels.
- **FULL-EX Multi-Expansion Foam** – As a fire suppressant for hydrocarbon fuel products when proportioned at a 2% concentration in the medium-expansion setting.
- **SILV-EX Class A Foam** – As a high performance fire suppressant on difficult Class A fuel fires including wood, paper, coal and rubber. The dual-expansion nozzles, when combined with SILV-EX foam proportioned between 0.5% to 1.0%, provides for longer surface wetting with reduced risk of ignition/re-ignition. Additionally, it produces a foam blanket which provides an insulating barrier between the fuel and air.

The advantage of medium expansion foam compared to low expansion foam is that far more foam can be produced using less water. For some hazard types (i.e., tire fires), three-dimensional protection can be achieved. Medium expansion foam is also effective when injected through door, window or basement openings.

DESCRIPTION

Two sizes are available for nominal flow rates of 60 gpm (227 Lpm) and 120 gpm (454 Lpm) @ 100 psi (689 kPa). Foam solution is sprayed through the nozzle and foam is produced in the tube as air is drawn in. Each nozzle has a ball shut-off valve. The nozzle tube is constructed of stainless steel with a tough polyurethane handle providing optimum protection against corrosion. Although the normal operating pressure is 75 – 100 psi (517 – 689 kPa), a minimum operating pressure of 45 psi (310 kPa) is recommended. Foam concentrate is usually proportioned to the nozzle using the matching ANSUL Model Z eductor.



TECHNICAL DATA TABLE

Model Number	KR-S/M2	KR-S/M4
Flow rate @ 100 psi (689 kPa)	60 gpm (227 Lpm)	120 gpm (454 Lpm)
Normal Operating Pressure	75-100 psi (517-689 kPa)	75-100 psi (517-689 kPa)
Expansion Ratio (low)	8:1 – 15:1	8:1 – 15:1
Expansion Ratio (medium)	50:1	50:1
Quality of Foam Produced (medium)	400 ft ³ /min. (11.3 m ³ /min)	800 ft ³ /min. (22.6 m ³ /min)
Stream Range (low)	65 ft (19.8 m)	85 ft (25.9 m)
Stream Range (medium)	23 ft (7 m)	26 ft (7.9 m)
Overall Length	30 in (76 cm)	32 in (81 cm)
Maximum Width	11 in (28 cm)	13 in (33 cm)
Recommended Eductor	ANSUL Z-2	ANSUL Z-4

ORDERING INFORMATION

The models listed below are provided with 1 1/2 in. NHT female inlet threads. Other thread types are available upon request. The flow rates listed are nominal; see Technical Data Table for performance characteristics.

Part No.	Description	Approximate Shipping Weight	
		lb.	(kg)
415985	KR-S/M2 Dual Expansion Nozzle 60 gpm (227 Lpm)	15	(6.8)
415986	KR-S/M4 Dual Expansion Nozzle 120 gpm (454 Lpm)	17 1/2	(8.0)

FOAM EDUCTORS

FEATURES

- Tough proven design
- Metering valve adjustable up to 6%
- Efficient, low cost proportioning

APPLICATION

ANSUL Z model eductors are designed to introduce a variable percentage of foam concentrate into a pressurized water stream. They provide an inexpensive foam proportioning means where available water supply pressures are adequate. Typical applications include use by municipal fire departments, industrial fire brigades and CFR type vehicle personnel. These eductors can be used with all ANSUL foam concentrates. It is important that a matched foam nozzle be used with the eductor to ensure proper performance.

DESCRIPTION

Both the Model Z-2 and Z-4 eductor bodies are constructed of brass. The standard inlet and outlet couplings are anodized aluminum with NHT threads. The eductors have a metering valve variably adjustable from 0% to 6% concentration and have a flexible pick-up hose by which foam concentrate is drawn up from a container. A check valve is incorporated to prevent water from flowing back into the pick-up hose and thus into the foam container when a foam handline nozzle is shut off.

The outlet pressure recovery of the ANSUL Z model eductors is 70% of operating inlet pressure. This correlates to an approximate 30% drop in water pressure when matched together with the nozzles covered in this data sheet. Typical operating pressure at the inlet to the eductor should be approximately 125 – 175 psi (862 – 1207 kPa).

TECHNICAL DATA TABLE

Model Number	Z-2	Z-4
Flow/Pressure	60 gpm @ 175 psi (227 Lpm @ 1206 kPa)	120 gpm @ 175 psi (454 Lpm @ 1206 kPa)
Normal Operating Pressure	125-175 psi (862 – 1206 kPa)	125-175 psi (862 – 1206 kPa)
Maximum Allowed Back-Pressure	70%	70%
Maximum Hose Lay (1 1/2 in.) (Eductor to Nozzle)	300 ft (91 m)	100 ft (30.5 m)
Overall Length	14 in (36 cm)	14 in (36 cm)
Maximum Width	6 in (15 cm)	6 in (15 cm)
Maximum Height	6 in (15 cm)	6 in (15 cm)



ORDERING INFORMATION

The models listed below are provided with a 1 1/2 in. NHT female inlet thread and 1 1/2 in. NHT male outlet thread. Other thread types are available upon request. The flow rates listed are nominal; see Technical Data Table for performance characteristics.

Part No.	Description	Approximate Shipping Weight	
		lb.	(kg)
415979	Z-2 Foam Eductor 60 gpm (227 Lpm)	15	(6.8)
415980	Z-4 Foam Eductor 120 gpm (454 Lpm)	17	(7.7)

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