



ACTIVE FIRE PROTECTION - EQUIPMENT LISTING SCHEME

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PRODUCT LISTING DATA SHEET (Active Fire Protection Equipment)

Product Designation

Grinnell, AquaMist®, Model Am4, 15NS x 3.5K(metric), Deluge System Open Pend. Nozzle

(Refer to the Technical Specification section of this document for further specific detail)

Designated Supplier

Tyco Services Distribution - Fixed Fire Products

81B Jemma Road, HOXTON PARK, NSW, AUSTRALIA, 2171

Designated Manufacturer

Grinnell Corporation

1467 Elmwood Avenue, CRANSTON, RI, U.S.A., 02910

Supplier's Description

The Grinnell, AquaMist®, Model Am4, 15NS x 3.5K(metric), Deluge System Open Pend. Nozzle is a stainless steel non-automatic nozzle for use in total-compartment pre-engineered or engineered hydraulically calculated water-mist deluge systems intended to protect machinery spaces and other compartments housing flammable liquids type risks. This listing of the Am4 nozzle covers its use only in engineered hydraulically calculated systems designed and installed in accordance with the National Fire Protection Association Standard for Installation of Water Mist Fire Suppression Systems, NFPA 750 or, when published, its equivalent Australian Standard for design, installation, and commissioning of water mist systems.

The Am4 nozzle utilises an intermediate-pressure single jet of aqueous fluid impinging on a diffuser which produces a spray having a range of water droplet sizes suitable for the extinguishment of Class B fires not more severe than with heptane.

Fire tests have demonstrated that these nozzles are effective for the extinguishment of a wide variety of exposed and shielded Class B hydrocarbon pool, spray, and cascading-pool fires, as well as for combinations of Class B and incidental Class A fires. They are also FM-Approved for the fire-protection of gas turbines in enclosures of up to 1,280 m³ nett volume.

The passageways of the inlet strainer and orifice insert have been designed to allow the nozzles to be used with unfiltered water supplies. However, a corrosion-resistant cleanable strainer with maximum basket square mesh aperture of 0.87 x 0.87 mm is required to be installed upstream of the first branching to a water mist nozzle.

An optional synthetic-rubber dust-cap is available for applications where dusts, insects, or airborne debris could accumulate within the nozzle and prevent proper operation. A retainer-wire prevents loss of the dust-cap following testing and fire discharges.

Systems fitted with AM4 nozzles may operate with natural sea water, provided that all pipe and fittings used in the system have acceptable corrosion-resistance to sea water exposure.



This product listing data sheet should be read in conjunction with the general requirements and conditions stated by the "Terms and conditions" of the Register of Fire Protection Equipment.

Manager - ActivFire

Testing, Appraisal & Quality Assurance

The Grinnell, AquaMist®, Model Am4, 15NS x 3.5K(metric), Deluge System Open Pend. Nozzle complies with the requirements of Underwriters Laboratories Test Procedure UL 2167, 'Water Mist Nozzles for Fire Protection Service' and Follow-up Service.

It is subject to an ActivFire/Tyco Services Distribution - Fixed Fire Products Supplier Listing Agreement.

Limitations of Use

Limitations of use, where identified on this Product Listing Data Sheet, are derived from qualifications within the report of the testing agency and/or other related technical documentation. It is recommended that all details with respect to design, assembly and installation restrictions should be checked against the designated supplier's/manufacturer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

The Grinnell, AquaMist®, Model Am4, 15NS x 3.5K(metric), Deluge System Open Pend. Nozzle shall be used only in pre-engineered or engineered hydraulically calculated systems designed and installed in accordance with the National Fire Protection Association Standard for Installation of Water Mist Fire Suppression Systems, NFPA 750 or, when published, its equivalent Australian Standard for design, installation, and commissioning of water mist systems.

This listing is valid only where the dimensions of compartments protected by water mist systems using Type Am4 nozzles do not exceed 8.0 m high and 1,600 m³ in volume. Except for doorway protection (where the nozzle axis may be inclined not more than 25° from vertical), the nozzles shall only be pendent oriented, and the ceiling to nozzle distance shall be not less than 0.2 m or more than 1.2 m. The nozzles to wall spacing shall be not more than 2.0 m, and spacing otherwise shall not exceed 4.0 m x 4.0 m. There is no minimum nozzle spacing requirement. The designed operating pressure range shall be 12.8 to 17.2 bar, and the nominal flow constant (K, metric) used for system design shall be 3.5. The vertical clearance between the nozzle diffusers and the maximum-height plane of protection shall be not less than 1.0 m.

Type Am4 nozzles are not listed for use in the protection of rack or palletised storage of flammable or combustible liquids.

The requirements of Grinnell Data Sheet TD1173 of June 1998 regarding operation of the protected enclosure's natural ventilation openings and forced ventilation systems shall be observed.

The Am4 nozzles shall not be used in environments which will corrode stainless steels of Types 316 or 304, or those complying with ASTM A-743, or which will unacceptably degrade Buna-N rubber (only where dust-cap is fitted).

Pipe (tube) and fittings located downstream of the main pipeline strainer shall be brass, copper, or stainless steel, as specified in NFPA 750 and in Grinnell Data Sheet TD1173 of June 1998. Non-stainless ferrous fittings and pipe shall not be used, even if galvanized or other coating is applied.

Technical Specification

The following details are a representative extract of the technical specification for the Grinnell, AquaMist®, Model Am4, 15NS x 3.5K(metric), Deluge System Open Pend. Nozzle and may be subject to change. Complete and current details should be determined from the designated supplier's/manufacturer's technical manual/data sheets.

Nom. Orifice Size :	2.31 mm
Inlet Strainer Perforation Size:	1.52 mm diameter
Nom. K Factor (metric):	3.5 (litres/minute, bar)
Thread Size:	15NS (available with NPT or ISO 7/1 thread)
Dimensions:	Overall Length (including inlet strainer) 80 mm approx.
Nominal Weight:	68 grams, including Dust Cap

Supplementary information

- Standard Finish:** Unpainted stainless steel (investment-cast finish).
- Deluge Valve:** Use Grinnell Model F446 Automatic Resetting Deluge Valve with electric actuation. This valve has a rated maximum working pressure of 17.2 bar.
- Tightening Torque:** 10 to 20 Nm should be adequate to give a leak-tight joint. However, 28 Nm must not be exceeded. A 200-250 mm long adjustable wrench should be used.