DATA SHEET

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ANSUL® Acoustic Nozzle

Description

Data Centers and server rooms are continuously improving their efficiencies to store and process more data. Improvements in computing hardware have led to an increase in Hard Disk Drive (HDD) sensitivity to sound. Inert gas fire suppression systems, normally used to protect this type of equipment, can produce sound levels that may have adverse effects on noise sensitive equipment. The ANSUL® Acoustic Nozzle, designed for inert gas fire suppression systems, decreases the acoustic footprint during a discharge.

The ANSUL Acoustic Nozzle directs agent into the hazard area and reduces the sound level compared with standard nozzles. Flow calculations are used to specify the nozzle orifice size for the correct quantity and distribution of agent.

Application

The ANSUL Acoustic Nozzle, in combination with the iFLOW Fire Suppression System, is particularly useful for suppressing fires in hazards where sound levels may affect sensitive electronic equipment. Typical applications for the Acoustic Nozzle include server rooms and data centers.

Technical Specifications

- 360 degree discharge pattern.
- Aluminum body with fiberglass and wire wool damping materials.
- Steel orifice pipe assembly complete with brass orifice plate.
- DN40 (1.5 in.) National Pipe Thread (NPT) size.
- See Figure 1 for nozzle dimensions.
- Acoustic Nozzle weight with pipe coupling is 3.4 kg (7.4 lb) and without coupling is 2.3 kg (5.1 lb).
- Assembly includes the Acoustic Nozzle (Part Number 445710) and Orifice Pipe Assembly (Part Number 445715 or 27511), complete with the Orifice Plate.

Nozzle Limitations

- Maximum area coverage per nozzle is 9.8 m x 9.8 m (32.0 ft x 32.0 ft).
- Maximum protected height is 6.1 m (20.0 ft).
- Maximum installation distance from ceiling is 305 mm (12 in.).



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Ordering Information

Part Number	Description
445710	Acoustic Nozzle
445715	Orifice Pipe Assembly, NPT
27511	Orifice Pipe Assembly, BSPT

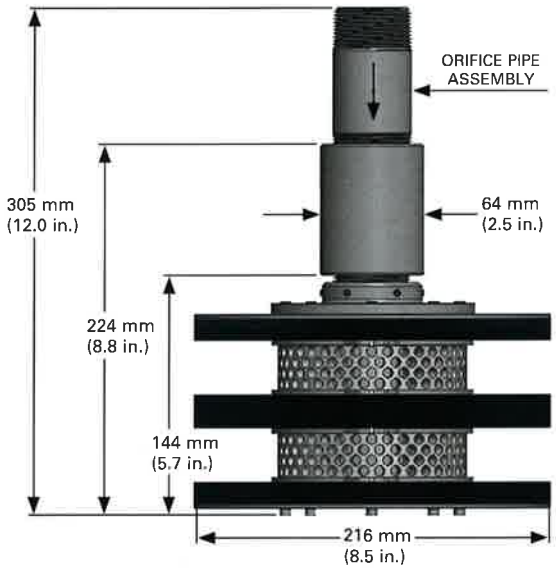


Figure 1: Nozzle Dimensions

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Notes:

1. Use the appropriate Orifice Pipe Assembly depending on the pipe threads used in the system pipework.
2. The Nozzle Orifice size must be specified when ordering the Orifice Pipe Assembly.

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Sound Performance

Sound power is the amount of sound energy produced by a noise source like a fire suppression system discharge nozzle. The Acoustic Nozzle is designed to reduce the sound power level produced during a discharge of the iFLOW Suppression System.

A summary of the estimated nozzle peak acoustic sound power across 500 Hz to 10k Hz frequencies at different flow rates is shown in Figures 2A and 2B.

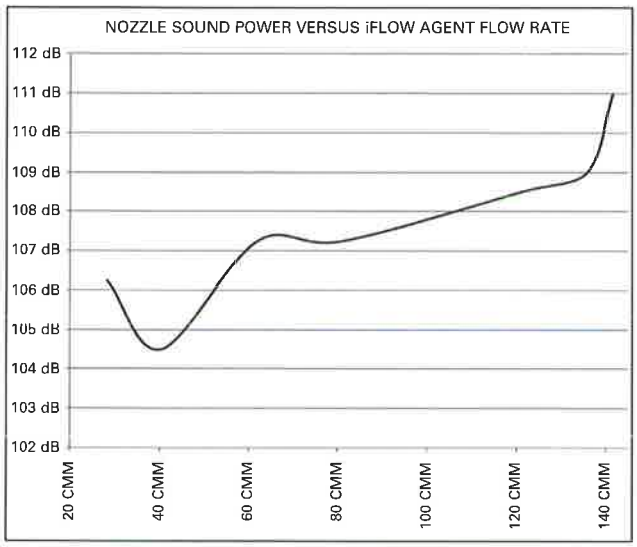


Figure 2A: Sound power in dB versus Flow Rate in Cubic Meters per Minute (CMM)

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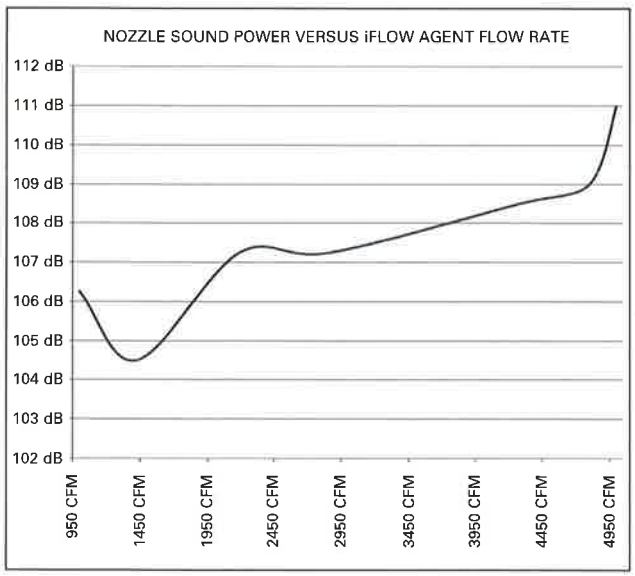


Figure 2B: Sound power (in dB) versus flow rate in Cubic Feet per Minute (CFM)

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Note: The values stated above are based on actual testing performed by Tyco.

The sound that is received at a location remote from the noise source is known as the sound pressure. The remote location may include HDDs. The ANSUL Acoustic Nozzle is one of the factors that assists in reducing the sound pressure to an acceptable level and therefore reduces the risk of HDD damage. The sound pressure level can be further improved by a number of other factors including the positioning of the nozzles, optimizing the room acoustics, use of sound absorbing room construction materials, and installation of sound absorption panels.

Tyco strongly recommends that data center operators review the room acoustics. Contact Tyco Fire Protection Products (TFPP) to help you understand the impact of these measures and estimate the sound pressure level experienced at a given location.

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