

Ecovent[®] *Acoustic*

"VES create innovative HVAC solutions across a wide range of projects and market sectors"

- ▶ Acoustic Performance
- ▶ Ventilation Solutions
- ▶ Energy Efficiency
- ▶ Heat Recovery
- ▶ Intelligent Controls



Ecovent Unit Size 2
All sizes available on vesdirect.co.uk

Contact VES for Acoustic guidance
and a copy of our Acoustic brochure.

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Acoustics Explained...

Terminology



- Noise is any sound undesirable by the recipient
- Noise generated by a mechanical system can be classified into 5 categories; Airborne, Duct borne, Structure borne, Self-generated and Break-out noise
- Understanding noise sources and frequency pitches allows for a better understanding on how a particular noise will be transmitted in real application

Principle

- Sound power emitted from a sound source stated in Watts(W) cannot be measured directly but the small fluctuations in the air pressure, i.e sound pressure can be, and is expressed in Pascals(Pa)

Sound Pressure Level (SPL)

$$L_p = 10 \log \left[\left(\frac{p}{20\mu\text{Pa}} \right)^2 \right]$$

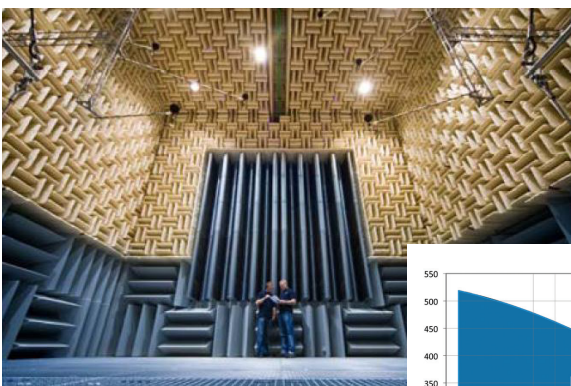
Sound Power Level (PWL)

$$L_w = 10 \log \left[\frac{p}{10^{-12} \text{ W}} \right]$$

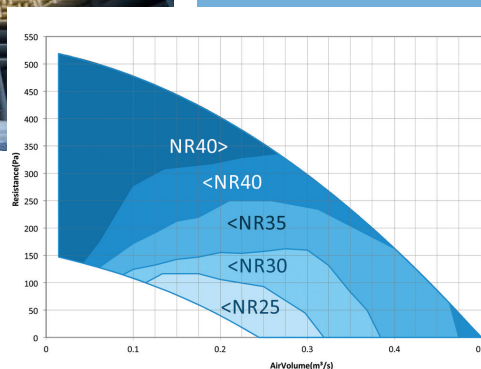
- Sound measurements are made across frequencies between 100Hz -10kHz that represent the human hearing range, and generally recorded in 8 Octave bands
- The measurements can be weighted to an approximation as to how the human ear perceives sound; the most common used is A- weighted (dBA)
- The environment surrounding the source will effect how the sound power radiates away from the source
- Understanding sound power emitted from the product and the type of environment allows for an accurate interpretation of acoustic data

"Providing information for each frequency band means that noise migration solutions can be tailored to individual products"

Ecovent Acoustic



- VES units are tested to EN ISO 3744:2010, the 'Determination of Sound Power Levels', ensuring VES provides accurate and transparent data to allow acoustic judgements to be made
- Detailed acoustic data, which is relevant to a number of readers, presented in a clear and concise manner is key to the correct selection and application of VES products



"The tests provided conclusive results for a variety of conditions and equipment specifications"