COMPONENT SPECIFICATION FOR MODULAR ACOUSTIC ENCLOSURES FOR EXTERNAL CONDENSERS

The acoustic enclosures provided for the external units consist of three basic components:

1. Air inlet acoustic louvres
2. Air discharge attenuators
3. Acoustic Panels

The material specification of these components is as follows:

Air inlet acoustic louvres

Each louvre module consists of two fabricated galvanised steel channel frames fabricated from 1.0mm galvanised steel sheet, into which are fitted an array of horizontal parallel blades. The upper surface of each blade is fabricated from 1.0mm galvanised steel sheet and the lower surface is fabricated from 0.8mm galvanised perforated or expanded steel sheet.
The blades are filled with mineral fibre acoustic infill of 48kg/m^3 density. Each blade has a rain lip on the rear edge to limit ingress of precipitation. There is also a 12mm galvanised wire mesh attached to the rear face to prevent intrusion into the enclosure by birds, rodents and debris.
The standard depth of the louvres is 270mm. Where increased noise reduction is required a louvre 540mm deep can be used which has back-to-back blades fitted into wider channel frames.

The preferred location for the air inlet acoustic louvres is across of the back of the unit/s as this provides the optimum airflow. However, in situations where this is not possible, such as where units are located against or close to a wall, louvres can be located on both sides of the enclosure.

Air discharge attenuators

The attenuators consist of a rectangular box with one or two (depending on unit model) attenuated cylindrical air paths to match the unit fan diameter. Each air path includes a cylindrical centre pod to provide increased noise reduction and a 12mm galvanised wire mesh over the top or front apertures, as appropriate.
The external box is fabricated from 1.0mm galvanised steel sheet and the cylindrical air paths and centre pods are fabricated from 0.8mm perforated or expanded galvanised steel sheet. The box and pods are filled with mineral fibre acoustic infill of 48kg/m^3 density. The attenuator body dimensions are to suit the unit models and the standard length is 600mm. Longer attenuators can be used where greater noise reduction is required.

The discharge attenuators are attached to the units or close to the units, so that all air is discharged externally to eliminate the possibility of discharged air recirculating to the air inlet side of the units.

Acoustic panels

The remainder of the acoustic enclosure consists of acoustic panels. These are 50mm thick as standard and 100mm thick panels can be used where greater noise reduction is required. The edge frame, outer face, and any internal strengthening of the panels is fabricated from 1.2mm galvanised steel sheet. The inner face is fabricated from 0.8mm galvanised perforated or

galvanised expanded steel sheet. The whole panel is filled with mineral fibre acoustic infill of 48kg/m^3 density.

Some acoustic panels are required to be removable for maintenance access and these are equipped with handles for ease of removal and replacement, and are attached to the body of the enclosure using the minimum number of quick removal fixings as appropriate.

External Finish

The major components described above are fitted together by our installation team using prefabricated galvanised steel channels, angles, and trims specific to each enclosure.

Unless otherwise requested, all components will have a galvanised external finish. A polyester powder coated finish to any stock RAL colour can be supplied upon request.

It is inevitable that there will be some small gaps in the finished assembly and these are usually due to unevenness in the base or wall to which the enclosure is fixed and where necessary, these gaps will be filled with a non-hardening mastic sealant.

Acoustic Performance

The typical noise reduction figures for the above components are as follows:

'12dBA rated' enclosures:

Octave Band:	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
Standard Louvre	*7*	*8*	*11*	*12*	*15*	*16*	*13*	*11*
Standard Attenuator	*3*	*5*	*10*	*19*	*27*	*23*	*20*	*15*
Standard Panel	*19*	*19*	*21*	*30*	*43*	*44*	*45*	*45*
Full Enclosure *(Minimum at each frequency)*	*3*	*5*	*10*	*12*	*15*	*16*	*13*	*11*

'16dBA rated' enclosures:

Octave Band:	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
Upgraded Louvre	*9*	*10*	*14*	*20*	*30*	*33*	*32*	*30*
Upgraded Attenuator	*5*	*9*	*18*	*28*	*30*	*30*	*27*	*20*
Upgraded Panel	*26*	*24*	*29*	*40*	*52*	*56*	*56*	*57*
Full Enclosure *(Minimum at each frequency)*	*5*	*9*	*14*	*20*	*30*	*30*	*27*	*20*

'18dBA rated' enclosures:

Octave Band:	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
Upgraded Louvre	*9*	*10*	*14*	*20*	*30*	*33*	*32*	*30*
1200mm Attenuator	*6*	*11*	*22*	*32*	*33*	*34*	*31*	*23*
Upgraded Panel	*26*	*24*	*29*	*40*	*52*	*56*	*56*	*57*
Full Enclosure *(Minimum at each frequency)*	*6*	*10*	*14*	*20*	*30*	*33*	*31*	*23*