

CONSULTANTS SPECIFICATION

XB55

OPERATION

The supply and extract ventilation unit shall be as indicated on the drawings. The heat recovery ventilation unit shall ensure that the rooms design conditions are maintained by the effective and continuous control of the integrated heat exchanger matrix, heat exchanger bypass, and the heating/cooling coils.

The ventilation unit shall automatically vary the ventilation rate in the classroom dependant upon the signals received from the interconnected sensors. When signals are received, the fan shall vary its speed proportionally until the desired level is met.

The unit shall have the facility to commission the supply and extract fans individually via inbuilt minimum and maximum speed adjustment, the fans themselves shall have infinitely variable speed control.

The unit shall be the XB55-**** as manufactured by Nuaire.

UNIT SPECIFICATION

The heat recovery ventilation unit together with the room side silencer, atmospheric silencer with optional bolt on mixing box shall have a maximum depth of 470mm.

The ventilation unit and attenuators shall all be manufactured utilising the latest specialist acoustic treatment to ensure that the noise impact on the room occupants is minimal and in accordance with the specification. They shall be supplied complete with an integrated mounting system.

The unit shall have a high efficiency aluminium heat exchanger matrix with a thermal efficiency of up to 70%. The heat exchanger matrix shall be protected by G4 grade pleated filters on supply and extract; the filters shall be split to facilitate removal. The heat exchanger shall incorporate a full automatic bypass arrangement with actuator and pre-programmed control logic.

The unit shall have low energy, high efficiency EC fan/motor assemblies with sealed for life bearings with an anticipated working life of 70,000 hours (L10) and shall be suitable for single phase supply.

Impellers shall be high efficiency centrifugal type.

The heating/cooling coil shall be sized to meet the room specific requirements. The control for the coils shall be fully integrated and shall maintain a constant off coil temperature matched to meet the room's requirements.

The ventilation unit shall comprise the following:-

Supply and extract fans, high efficiency heat exchanger matrix, supply and extract filters, full automatic heat exchanger bypass, heating/cooling coil & condensate drip tray (an additional condensate drip tray is provided if a cooling coil is required).

Matching atmospheric & room side silencer can also be provided. Atmospheric silencer can be provided with an optional mixing box arrangement.

The unit shall be constructed with removable panels allowing full maintenance access from both sides depending on specific handing (access handing to be confirmed and verified on site prior to order).

The removable panels shall provide access to the following:-

- Supply and extract fan.
- Supply & extract filter.
- Heater battery temperature adjustment (where included).
- Mixing box (where included)

ECOSMART CONTROL OPTION

provides the facility for energy saving via an intelligent stand-alone AHU function, or for convenient integration with the client BMS with minimal coordination requirement. The factory fitted control includes:- integral infinitely variable speed / duty control for the supply and extract fans, with independent minimum and maximum adjustment for accurate commissioning.

A run on timer and "background" ventilation function. The unit is provided as is unit status indication, run and fail relay and interface connection for Ecosmart sensors/enablers and system dampers.

The Ecosmart control module can additionally be pre-configured to provide the following integrated BMS interfaces.

- 0 - 10 volt contacts to provide a full BMS interface. This will enable the following functions:- Switch the unit ON/OFF. Variable speed / duty control Switch from low speed to high speed, enable heating/cooling
- 2 No. Volt free contacts to provide fan run and failure indication to provide system status.

NO CONTROL OPTIONAL

Unit provides side access to direct supply and extract fan motor wiring (terminal boxes) for interface to custom built control panels. For this option, no sensors are fitted to the unit, but note that in the case of plate heat exchanger units, the bypass damper actuator is included, and for thermal wheel units, the wheel motor and drive unit is included.

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