Information Update

PVCTI 1– Issue 2 – Sept 2018

Email: projects@passivent.com
Web: www.passivent.com
Tel: +44 (0)1732 850770

HYBRID PLUS2 AIRCOOL

Specification Document

Product Description:

Passivent Hybrid Plus2 Aircool forms part of the Passivent Aircool Ventilator range of controllable ventilators primarily for installation in facades (external walls and glazing systems) for education, commercial and similar buildings.
The Hybrid Plus2 Aircool is an attractive innovative Hybrid ventilation system which combines the Aircool ventilator with a façade mixing unit housing a single energy efficient fan to deliver a façade unit that ensures good levels of indoor air quality and thermal comfort.
The benefit of the Aircool ventilator is that it provides the thermal break, weatherability and secure night cooling abilities at the façade, meaning additional insulated ducting internally is not required to avoid cold bridging.

Adaptable modes

The unit can operate 3 modes of ventilation dependant on the internal and external environment of the room being ventilated;

Mixing mode

In winter, colder spring and autumn periods the Hybrid Plus2 Aircool tempers the incoming air with warmer internal air before it enters the space, thereby minimising the risk of cold draughts for the occupants. By mixing and utilising any excess of heat gains within the space, there is no need to use additional energy to warm the fresh air. Warm internal air enters the unit at ceiling level and is also discharged across the ceiling once mixed to ensure thermal comfort levels are the highest possible.

Cooling Mode

In peak summer conditions, the energy-efficient, fan can be activated to promote air movement, keeping the ventilation strategy operating and temperature under control.
When the building encounters high heat gains, the fan can be activated to purge the space more rapidly than a passive ventilation system. The fan speed will automatically adjust to suit the temperature and CO_2 requirements within the space.

Passive Mode

Due to the low airflow resistance of the system the Hybrid Plus2 Aircool is able to operate a passive mode offering single sided ventilation without any need for fan assistance. This mode is highly cost effective due to the lack of energy required to motorise the fan unit.

Applications

The Hybrid Plus2 Aircool It has been primarily designed to be used in single-sided ventilation strategy. Hybrid Plus2 Aircool provides cost effective, energy efficient ventilation, allowing occupants to work and learn in a comfortable environment. Particularly suited to applications where there could be significant internal heat gains through high occupancy levels and equipment heat energy, thus making it an ideal product for school applications or offices.

Email: projects@passivent.com
Web: www.passivent.com
Tel: +44 (0)1732 850770

Performance data

Equivalent free area of each unit: 0.054m^2.
Maximum flow rate when inlet and outlet resistances are equal and fan is in operation: 150 litres/second.
Acoustic performance: A-weighted Sound Power Level of 40.9dBL_{WA} with ventilation at 80 litres/second. When the ventilation is boosted to 150 litres/second the A-weighted Sound Power Level is 57.5dBL_{WA}, when tested to BS EN ISO 3743-1:2010*
A 30dB$_{Dn,e,w}$ noise reduction is possible through the product with the damper in the open position, when tested to BS EN ISO 10140-2:2010 for element-normalised level difference and BS EN ISO 717-1:2013. All acoustic testing was independent carried out by Acoustical Investigation and Research Organisation Ltd, an UKAS accredited testing laboratory.
Energy consumption: Specific Fan Power ranges between 0.133 to 0.40W/l/s, depending on the ventilation rate.
Compliance: Building Bulletins 93 & 101.

Predicted room Sound Pressure Level is 32dB(A) when two Hybrid Plus2 Aircools are operating in 180m^3 room with a ventilation rate of 80 litres/second per unit. The building designer / consultant needs to ensure suitability in the actual application and that the correct room coefficients are applied for compliance.

Installation

Designed to make installation fast & simple
- Flexible - can be positioned within the space, either on display or within a suspended ceiling or bulkhead (requiring additional grilles and ducts).
- Fast - three-component system makes for speedy installation.
- Lightweight - easy to lift into position.
- Easy maintenance - access panel for inspection.
- Simple fixings – straightforward installation via four drop rods.
- Secure - no external fixings on louvre.

The product can be integrated with most wall or window applications creating a flexible and modular ventilation strategy.

Control

Effective intelligent control of the Hybrid Plus2 Aircool is achieved using its own unique version of the Passivent iC8000 Controller and this can also be integrated through a building management system via BAC net communications Internal combined CO_2 and temperature sensors and an external temperature sensor are used with predefined set points for different operating modes.

Construction Details

Case construction: ABS construction. The internal case construction is finished in white RAL 9016 as standard. Other RAL colours available at extra cost.

Dimensions

Internal tempering and mixing unit: 967(w) x 330(h) x 1253(d)mm.
Aircool size would be supplied to suit the building requirements: typically 842(w) x 320(h)mm for a wall application and 873(w) x 351 (h)mm for the window application.
Weight of mixing unit: approximately 30kg.

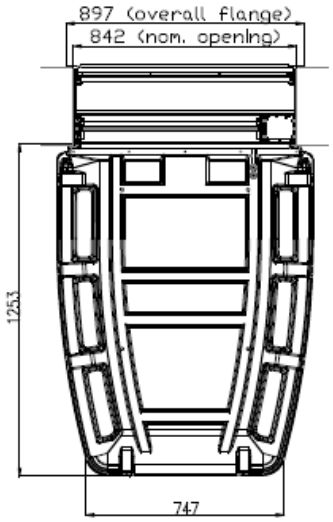
Information Update

PVCTI 1– Issue 2 – Sept 2018

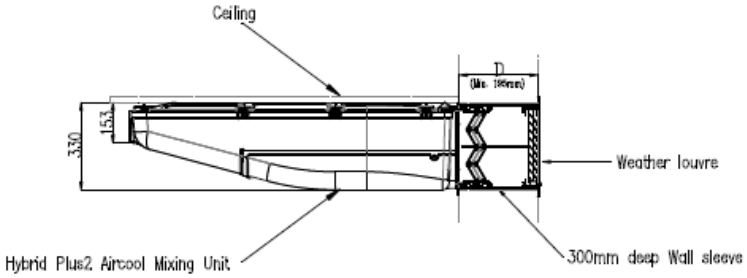
Email: projects@passivent.com
Web: www.passivent.com
Tel: +44 (0)1732 850770

Technical Drawing:

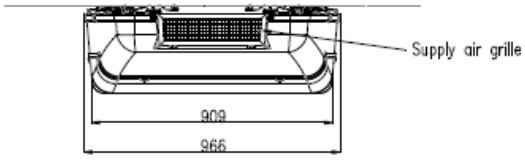
Wall Version



Plan View

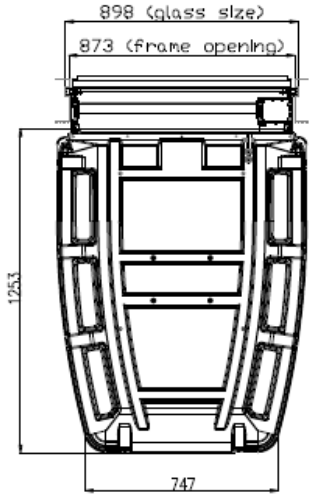


Section View

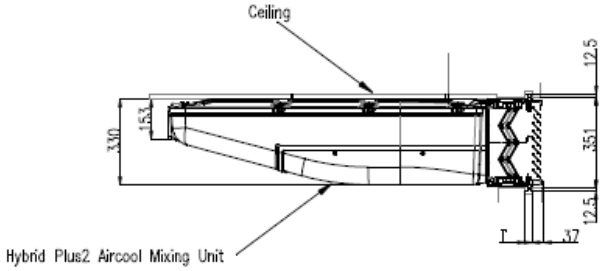


End View

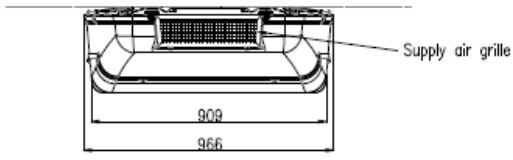
Window Version



Plan View



Section View



End View