

HYBRID PLUS AIRSTRACT SPECIFICATION DOCUMENT

Product Description:

Passivent Hybrid Plus Airstract forms part of the Passivent Roof Ventilation Terminals range primarily for natural ventilation applications in commercial and educational buildings.

Hybrid Plus Airstract roof terminal has been designed for applications where a single room space is ventilated directly through the roof. Particularly suited to applications where there could be significant internal heat gains through high occupancy levels and equipment heat energy.

Applications

Suitable for top floor classrooms, top floor offices, school halls, sports halls, retail spaces or other similar applications. The Hybrid Plus Airstract provides cost effective, energy efficient ventilation, allowing occupants to work and learn in a comfortable environment.



An innovative product which combines Passive Stack Ventilation during the majority of the year, an enhanced stack system in peak summer temperatures, and downwards displacement ventilation and re-circulation during the winter using the sound principles of natural ventilation combined with mechanical assistance and intelligent control. This combination gives very effective and energy-efficient ventilation throughout the year and in all weather conditions.

The unique terminal design does not require a vertical internal divider, and therefore the flow performance is dependent of wind direction. This ensures the system flow performance does not stall during adverse wind directions.

Hybrid Plus Airstract roof terminal comprises a structural base unit which houses the damper, mixing chamber and single low powered fan, with a double bank louvred terminal which provides excellent weather tightness and airflow. Patent applied for.

Developed for the Priority Schools requirement to mix fresh air before it is introduced to the room. In the output specification for the Priority School Building Programme PFI projects it states:

2.8.43. (pg 67) Environmental Requirements 'In naturally ventilated spaces, the Contractor shall provide mixing of ventilation air with room air to avoid cold draughts in the occupied zone during wintertime' This allows operation throughout the year with reduced risk of cold draughts.

Information Update

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

Construction Details

Terminal cladding and louvres manufactured from fire-retardant high-impact ABS on an aluminium frame, and mounted on an aluminium frame connected to a base unit of marine grade plywood from renewable forests.

Materials

Patented Mixing Chamber

ABS circular sleeve operating to allow the 3 modes to be selected.

Modulating Damper

Double skin aluminium with ABS thermal break and blade compression seals. Supplied as complete assembly.

Terminal

Louvres and cladding of ABS with aluminium frame. Included 4mm insect mesh. Connected to sub base assembly of marine grade plywood, provides structural support.

Dimensions

Size overall: 1250 x 1250mm

Roof opening required: 1160 x 1160mm

Height, standard: 1391mm

Weight: Terminal base with mixing chamber 100kg.

Terminal 50kg

Colour

Terminal: any standard RAL/BS colour.

Base unit: RAL9016, white clad below roof line.

Ceiling cover grille: RAL9016 (white) as standard, or any standard RAL/BS colour.

Weather resistance

Double bank louvres achieve Class A at 1.5m/s, independently tested at BSRIA to BS EN 13030: 2001.

Wind resistance

Resistant to continuous wind loads at 51m/s, demonstrated by independent BRE tests.

Biological resistance

Louvres exclude most birds in compliance with BRE Digest 415, 1996. 4mm insect screen behind the louvres excludes large insects.

Installation

Hybrid Plus Airstract roof terminal comprises two main elements: the sub-base unit which houses the modulating damper, mixing chamber and fan, and the double bank louvred terminal, with low-resistance air flow into and out of the building. The sub base unit is fixed to the structure to support the terminal. It is supplied with the necessary fixing brackets and can be used on flat or pitched roofs. The louvred terminal is fixed in position over the sub-base assembly.

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Controls

The system is fully controlled by the Passivent iC8000 intelligent controller. Each room or space has a combined average temperature and CO₂ sensor to monitor levels. A simple manual override is mounted in the room to allow users to control the system for a timed period, before it returns to automatic control. There is also an external temperature sensor linked to the controller, allowing the system to switch between modes, dependent upon external temperature.

Typical Controller Schematic

