



*Natural Ventilation by Monodraught*



# Windcatcher® X-Air

The WINDCATCHER X-AIR is the next generation of Natural Ventilation system featuring Monodraught patented ACTIVLOUVRE® modulating aerofoil louvre technology. The system consists of an external static louvre and internal active louvre arrangement, which varies the opening and free area through the louvre face. The variable louvres can provide maximum ventilation rates when fully open or modulated to vary weather resistance or closed to prevent the ingress of precipitation allowing Monodraught to have our unique **no leak guarantee**.

In addition to the ACTIVLOUVRE arrangement, the system also incorporates external air catchment fins to provide greater area at the louvre improving performance in relation to wind speed. Pressure release vanes at the fins provide a means to reduce face pressure under high winds. The systems can also be specified to include solar powered architectural lighting.

## Why Choose WINDCATCHER X-AIR?

### Healthier

- Introduces natural ventilation within a building reducing CO<sub>2</sub> levels
- Creates and maintains a comfortable working environment
- Expels stale air

### Cost Effective

- Not affected by rising energy costs
- No running costs for the life of the product

### No Maintenance

- This means no disturbance, particularly useful in the health and education sectors

### Sustainable Energy in Action

- Uses no fossil fuels
- Maximises the use of wind power and the natural stack effect of thermal buoyancy
- Night Time Cooling utilises free cooling to cool the fabric of the building

### Long Term Track Record

- Monodraught have been utilising Natural Ventilation for over 40 years

# Technical Details

## Material

- Injection moulded luran S 757 G UV – ASA
- Extruded luran S 776SE UV – ASA
- Extruded shore A 58 flexible compound
- Extruded FLUOR-ACRYL® PMMA
- Extruded styron CALIBRE™ 603 3 polycarbonate
- Extruded thermoform sheet; P60R – recycled impact polystyrene
- Extruded thermoform sheet; P91UV – high impact polystyrene with UV resistant capping
- Extruded thermoform sheet; ASA200
- 6063 aluminium extrusion to T6 temper
- Carbon sheet steel construction to BS EN
- 10 W monocrystalline photovoltaic solar panel (LED version only)

## Options

- Colours (RAL 7037 Dusty Grey / RAL 7038 agate grey)
- Architectural LED lighting (white / blue /green)
- Acoustic foam (25 mm, 50 mm)
- GRP extended colour-matched skirt (to suit roof pitch from 15 – 35°)

## Guarantee

- 10 year limited warranty
- No leak guarantee

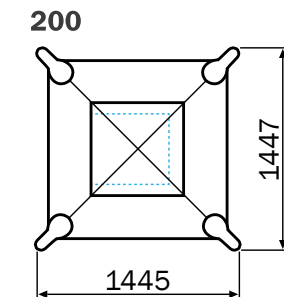
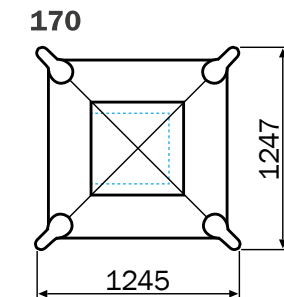
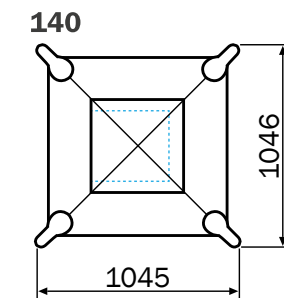
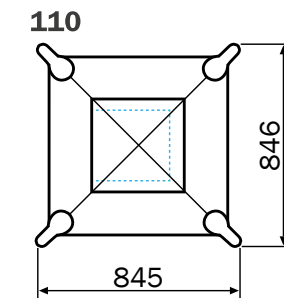
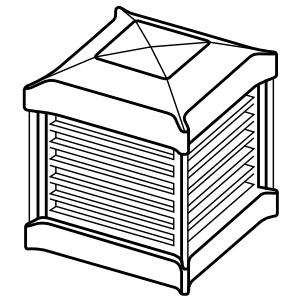
## Performance

- Fire: DIN EN 13501 - 1: 2010 - 01 (Class E)
- Sound: BS EN 20140 - 10:1992
- Sound: ISO 140 - 10:1991
- Power supply range; 19.2 – 28.8V DC.
- Running time: 150 s / 100 mm (for Active Louvre)
- Running time: 150 s / 95° (for volume control damper)
- IP54 rated actuator motors
- Power consumption:

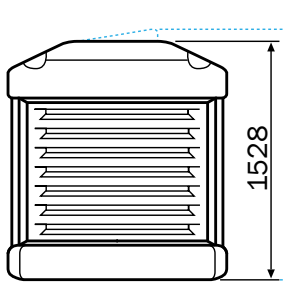
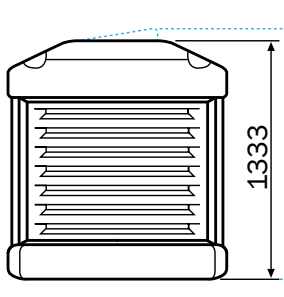
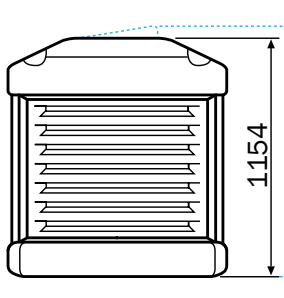
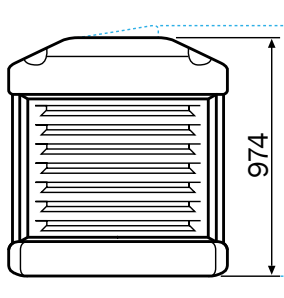
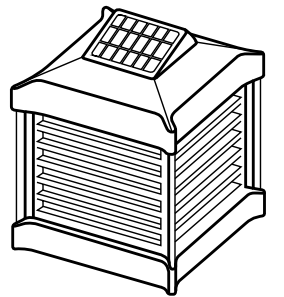
| Size | At Nominal Force | At Rest | Wire Sizing |
|------|------------------|---------|-------------|
| 110  | 4 W              | 0.8 W   | 8 VA        |
| 140  | 6 W              | 1.2 W   | 12 VA       |
| 170  | 6 W              | 1.2 W   | 12 VA       |
| 200  | 8 W              | 1.6 W   | 16 VA       |

# Product Options

## Standard Capping



## LED Capping



# Modes of Operation

## Night Time and Mid-Season Operation

The Monodraught WINDCATCHER X-Air will still continue to operate during mid-seasons, in the evenings or at weekends, when the building is unoccupied, providing all the benefits of this “free air conditioning”. The WINDCATCHER X-Air system is not dependent on openable windows or vents in the side of the building, allowing the building to remain fully secure.

This is particularly important during warmer periods. The system will continue to operate in Night Time Cooling mode utilising the cooler night time air to remove heat from the fabric of the building and cool the room ready for the next day.

Volume control dampers at the base of the system at ceiling level will precisely control the amount of airflow through the system. If the internal temperature falls below 15°C the dampers will automatically close to prevent over cooling.

## Summer Operation

In the summer months, warm air will naturally rise to ceiling level and out of the system. At the same time any prevailing wind on the WINDCATCHER X-Air system

carries a supply of fresh air down into the room below, thereby slightly pressurising the building and increasing the outward flow of stale air. Perimeter windows can be utilised to aid cross flow ventilation.

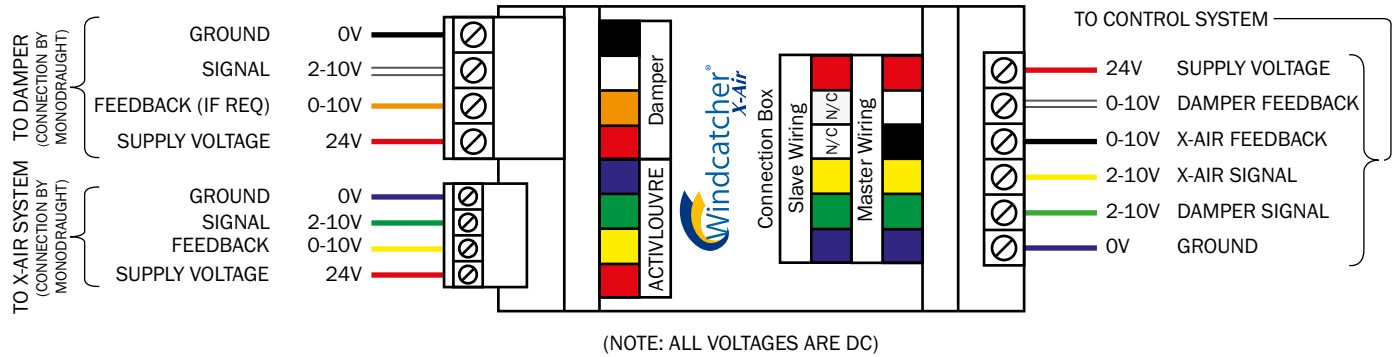
With fresh air coming in through the windows on the windward side of the building, stale air will be exhausted through the passive stack element of the WINDCATCHER X-Air system.

## Winter Operation

To minimise ventilation heat loss, control is essential. Monodraught achieve this through the use of insulated (U-Value of 1.2W/m) fully modulating dampers in conjunction with our fully automatic iNVent 2 controls system which is in turn linked to internal and external temperature sensors and CO<sub>2</sub> sensors. This allows the systems to continuously meet occupant loading without over ventilating an area, maintaining carbon dioxide concentrations in the 1000 ppm to 1500 ppm range.

Such control can most efficiently be achieved by ensuring that the building structure is airtight and therefore Monodraught specify a damper with low leakage rates of 2.76m<sup>3</sup>/hr/m<sup>2</sup> at 50Pa static pressure.

# Wiring Details



# Cable Specification

## 4-Core Cable:

- PVC Cable
  - Farnell: 2240121
  - RS: 660-4096
  - Elec. Wholesaler: 16-2-4A
  - CSA: 0.5mm<sup>2</sup> (Stranded)
- LSZH Cable
  - Elec. Wholesaler: 1896/4L
  - CSA: 0.5mm<sup>2</sup> (Stranded)

## 6-Core Cable (Optional):

- PVC Cable
  - Farnell: 2240123
  - RS: 660-4099
  - Elec. Wholesaler: 16-2-6A
  - CSA: 0.5mm<sup>2</sup> (Stranded)
- LSZH Cable
  - Elec. Wholesaler: 1896/6L
  - CSA: 0.5mm<sup>2</sup> (Stranded)

Wiring for Master connection box out to slave units in the same control zone should use 4 core cable (16-2-4A. RS: 660-4096 or Farnell 1190286), and only the Blue, Green, Yellow and Red cables are connected to the subsequent slave systems. (The feedback lines MUST NOT be commoned between systems)



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