

## Lo-Carbon Sentinel Econiq Constant Volume

- Best in class SFP's and thermal efficiencies up to 93%
- Approved Document F aligned commissioning wizard
- New Sentinel-X wireless control platform
- Intelligent smart app control as standard
- Horizontal duct option for space-saving installations (M & L only)
- ePM2.5 F7 Filtration as standard for supply and G4 for extract
- Sound levels as low as 15.5 dB(A) breakout
  - independently tested and verified by SRL
- Left/right handing via controls
- Developed and manufactured in the UK
- Constant Volume - Maintains pre-set airflow irrespective of system pressure within it's performance capabilities
- Sold exclusively through National Ventilation



| CODE   | DESCRIPTION                                                             |
|--------|-------------------------------------------------------------------------|
| 411077 | Lo-Carbon Sentinel Econiq SC                                            |
| 499638 | Lo-Carbon Sentinel Econiq MC                                            |
| 499647 | Lo-Carbon Sentinel Econiq LC                                            |
| 477988 | Acoustic Purge Fan                                                      |
| 479829 | Acoustic Purge Fan XL                                                   |
| 411628 | Wall Mounting Kit for Controller                                        |
| 414122 | Econiq M & L Floor Stand                                                |
| 414012 | Lo-Carbon Sentinel Econiq SC Acoustic Solution Enclosure Kit            |
| 414013 | Lo-Carbon Sentinel Econiq SC Acoustic Solution Top Box Kit              |
| 414014 | Lo-Carbon Sentinel Econiq SC Acoustic Solution Top Box & Enclosure Kit  |
| 411689 | Lo-Carbon Sentinel Econiq SC ISO 60% Coarse (G4) Filter 2 per Pack      |
| 472669 | Lo-Carbon Sentinel Econiq SC ISO ePM10 50% (M5) Filter 1 per Pack       |
| 472671 | Lo-Carbon Sentinel Econiq SC ISO ePM2.5 70% (F7) Filter 1 per Pack      |
| 411690 | Lo-Carbon Sentinel Econiq MC & LC ISO 60% Coarse (G4) Filter 2 per Pack |
| 411691 | Lo-Carbon Sentinel Econiq MC & LC ISO ePM10 50% (M5) Filter 1 per Pack  |
| 411692 | Lo-Carbon Sentinel Econiq MC & LC ISO ePM2.5 70% (F7) Filter 1 per Pack |

### Sensor Overview

| Code   | Power   | Colour | CO <sub>2</sub> | PIR | Temp. | Humidity | Wireless | 4 Speed Switch |
|--------|---------|--------|-----------------|-----|-------|----------|----------|----------------|
| 496431 | Battery | White  |                 |     | ✓     | ✓        | ✓        |                |
| 496437 | Battery | White  |                 |     | ✓     | ✓        | ✓        | ✓              |
| 497689 | Battery | Black  |                 |     | ✓     | ✓        | ✓        | ✓              |
| 496432 | 24V     | White  | ✓               |     | ✓     | ✓        |          |                |
| 496429 | 240V    | White  |                 |     | ✓     | ✓        | ✓        |                |
| 496433 | 240V    | White  | ✓               |     | ✓     | ✓        | ✓        |                |
| 496438 | 240V    | White  |                 | ✓   |       |          | ✓        |                |
| 496620 | 240V    | White  |                 |     | ✓     | ✓        | ✓        | ✓              |
| 497693 | 240V    | Black  |                 |     | ✓     | ✓        | ✓        | ✓              |
| 496621 | 240V    | White  |                 |     | ✓     | ✓        |          | ✓              |
| 497697 | 240V    | Black  |                 |     | ✓     | ✓        |          | ✓              |

For more Controller & Sensor information go to page <?>

The Lo-Carbon Sentinel Econiq Constant Volume is Vent-Axia's latest flagship mechanical ventilation with heat recovery system. Designed and developed in the UK, it offers the highest level of comfort and functionality all year round.

Introducing a full range of products, with air performance suitable for all types of homes, the new Sentinel-X wireless controls platform delivers complete control over the home environment, provided through a full range of wired/wireless sensors and a smartphone app.

### A Whole New Experience

The highly sculpted interior surfaces, designed using the latest CFD techniques, ensure airflows are maximised through the unit, minimising noise and energy use. This feature alone provides an experience, that will delight homeowners, providing the most discrete and highly efficient ventilation available.

Air Quality and Health

The MVHR filter options offer numerous benefits, including improved indoor air quality by removing allergens and particulate matter. They maintain the system's energy efficiency, reduce heating and cooling costs, and enhance the overall longevity of the system. Additionally, they capture bacteria, viruses and VOCs, promoting a healthier living environment. Regular filter maintenance extends the system's lifespan and ensures uninterrupted operation.

Whatever the outside environment, the system can help improve the indoor air quality by filtering out impurities, with ISO 60% Coarse (G4) supplied as standard, which can filter out sand, fine hair and particles larger than 10µm. Additional filtration can be achieved with a selection of optional filters, such as ISO ePM10 (M5), which can filter pollen, stone dust and particles smaller or equal to 10µm and ISO ePM2.5 (F7), which can filter out mould spores, bacteria and particles smaller or equal to 2.5µm.

The various sensor options allow for flexible installation in individual rooms, supporting effective management of the air in the home. For example, a CO<sub>2</sub> sensor located within a habitable room helps ensure a healthy and safe working environment. CO<sub>2</sub> levels managed at less than 1000ppm help promote cognitive function. A humidity sensor located in the bathroom detects high levels of moisture can support good indoor air quality.

Low Noise Levels

The Lo-Carbon Sentinel Econiq Constant Volume is one of the quietest systems on the market, with a noise level as low as 15.5 dB(A). The range is designed with an integral acoustic enclosure, made of steel, foam and expanded polypropylene (EPP), minimising breakout noise. The highly efficient motors are mounted on anti-vibration mounts to ensure minimal vibration transmission.

Demand Control Ventilation

The Vent-Axia Connect smartphone application allows a multitude of functions to be adjusted from the comfort of the sofa, available on iOS and Android.

With smartphone-compatible controls, the homeowner is in full control of their ventilation all year round. They have the flexibility to increase the ventilation rate during hot periods in the summer or reducing the speed to minimise running costs while away.

The Sentinel control logic built within the MVHR ensures the system operates optimally with automated functions such as frost protection and summer bypass, providing comfort in the home.

Integral Humidity Sensor

The integral humidity sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The nighttime relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperatures.

Airtight Buildings

Low-energy buildings typically have very low leakage rates (below 3m<sup>3</sup>/(h.m<sup>2</sup>) at 50Pa). This reduces the effectiveness of the standard frost protection strategy which imbalances the airflows.

Spigot Options (M & L only)

The inclusion of horizontal spigots allows for flexible installation in tight spaces. It is possible to use both vertical and horizontal connections.

SEC Class

| Model     | SEC Class |
|-----------|-----------|
| Econiq SC | A+        |
| Econiq MC | A+        |
| Econiq LC | A+        |

SAP PCDB Test Results

|     | Econiq SC            |              | Econiq MC            |              | Econiq LC            |              |
|-----|----------------------|--------------|----------------------|--------------|----------------------|--------------|
|     | Thermal Efficiency % | SFP (W/ l/s) | Thermal Efficiency % | SFP (W/ l/s) | Thermal Efficiency % | SFP (W/ l/s) |
| K+1 | 93                   | 0.39         | 93                   | 0.41         | 93                   | 0.56         |
| K+2 | 92                   | 0.46         | 93                   | 0.41         | 93                   | 0.53         |
| K+3 | 91                   | 0.55         | 92                   | 0.46         | 93                   | 0.56         |
| K+4 | 91                   | 0.70         | 92                   | 0.55         | 92                   | 0.62         |
| K+5 | 90                   | 0.85         | 91                   | 0.66         | 91                   | 0.72         |
| K+6 | 89                   | 1.07         | 91                   | 0.81         | 91                   | 0.84         |
| K+7 | 89                   | 1.31         | 90                   | 1.00         | 90                   | 1.01         |





## Model Range Overview

|                                                                          | <br>Lo-Carbon Sentinel<br>Econiq SC | <br>Lo-Carbon Sentinel<br>Econiq MC | <br>Lo-Carbon Sentinel<br>Econiq LC |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Constant Volume                                                          | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Recommended max system flow (l/s) @ Pressure (Pa)                        | 97 @ 150                                                                                                             | 125 @ 150                                                                                                            | 167 @ 150                                                                                                            |
| Acoustic Enclosure                                                       | O                                                                                                                    | X                                                                                                                    | X                                                                                                                    |
| Acoustic Top Box                                                         | O                                                                                                                    | X                                                                                                                    | X                                                                                                                    |
| Part F Compliant App Commissioning Certificate                           | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| 802.11b/g/n Wi-Fi and Bluetooth low energy 4.2                           | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Spigot Options Vertical - Horizontal                                     | Vertical                                                                                                             | Vertical & Horizontal                                                                                                | Vertical & Horizontal                                                                                                |
| Spigot size 125mm or 200mm                                               | 125                                                                                                                  | 200                                                                                                                  | 200                                                                                                                  |
| Left/Right Hand Orientation Through Control                              | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Fully automatic 100% summer bypass                                       | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Active Frost Protection to -20°C                                         | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Fault Code Indicator                                                     | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Easy Access Filters: ISO Coarse 65% (G4)                                 | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Easy Access Filters: ISO ePM10 50% (M5)                                  | O                                                                                                                    | O                                                                                                                    | O                                                                                                                    |
| Easy Access Filters: ISO ePM2.5 70% (F7)                                 | O                                                                                                                    | O                                                                                                                    | O                                                                                                                    |
| Clean Filter Indicator (Time frame)                                      | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| PIN Number Lock                                                          | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Running Time Indicator                                                   | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Enthalpy Heat Exchanger                                                  | O                                                                                                                    | O                                                                                                                    | O                                                                                                                    |
| Soft-Start Boost                                                         | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Delay-On                                                                 | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Number of controllable speeds                                            | 4                                                                                                                    | 4                                                                                                                    | 4                                                                                                                    |
| Installer function to copy/load unit setup                               | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Inputs 2 x 0-10V; 2 x LS; 5 x Volt-Free                                  | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Integral Humidistat                                                      | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Relay outputs - For example control heaters or geothermal heat exchanger | O                                                                                                                    | O                                                                                                                    | O                                                                                                                    |
| BMS - modbus supported over RS485                                        | ✓                                                                                                                    | ✓                                                                                                                    | ✓                                                                                                                    |
| Operating ambient temperature (°C)                                       | -20 to +40                                                                                                           | -20 to +40                                                                                                           | -20 to +40                                                                                                           |
| Operating Humidity (%RH)                                                 | 0 to 95                                                                                                              | 0 to 95                                                                                                              | 0 to 95                                                                                                              |
| Mounting                                                                 | Wall or Floor                                                                                                        | Wall or Floor                                                                                                        | Wall or Floor                                                                                                        |
| Maintenance access                                                       | From Front                                                                                                           | From Front                                                                                                           | From Front                                                                                                           |

O - Denote Optional

## Consultant's Specification

### Specification

The Mechanical Ventilation Heat Recovery Unit shall be the Lo-Carbon Sentinel Econiq SC, MC or LC as manufactured by Vent-Axia. It should be sized as indicated on the drawings and shall be in accordance with the particular specification. These Constant volume models will maintain pre-set airflow rates irrespective of system pressure within the units performance capabilities.

The unit shall be fully insulated for thermal and acoustic performance and shall incorporate a high-efficiency composite plastic counter-flow heat exchanger with an independently verified thermal efficiency of up to 93% when tested to EN 308.

The heat exchanger shall be protected by ISO 60% Coarse (G4) grade filters on extract and supply with the facility to accommodate ePM2.5 (F7) and ISO ePM10 (M5), or an inline filter such as the Vent-Axia Pure Air Carbon Filter. The built-in filters shall be accessible via tool-free access doors. The heat exchanger, motors, summer bypass and all other serviceable parts shall be accessible through the front of the unit.

The Sentinel Econiq Constant Volume shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from optional or in-built sensor inputs. When a signal is received, the fans shall either vary their speed proportionally or on a normal/boost principle. The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, alternative wired remote-control unit or via a compatible smartphone using the Vent-Axia Connect application. The fans themselves shall have independent, infinitely variable speed control.

The MVHR unit shall be manufactured with an ABS Outer case construction and an Expanded Polystyrene (EPS) inner chassis with custom motor and impeller mounting features. The inner chassis will assist in reducing noise and act as a large anti-vibration mount avoiding transmission through to the back mounting plate or the base of the unit. The MVHR unit shall be tested to ensure it meets the maximum allowable vibration of no more than 1mm/s, measured on the unit wall fixing points. The unit shall have a fully automatic 100% summer bypass, integral minimum and maximum infinitely variable speed controls with fascia mounted failure indication. The unit shall have low-energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high-efficiency backward curved centrifugal type, achieving an SFP as low as 0.38W/l/s (EN 308).

The unit shall have two condensate drain outlets for handing to be defined onsite and during commissioning. The unit shall have wireless control capability options, using RF868 connectivity, 802.11b/g/n Wi-Fi and Bluetooth low energy 4.2. The unit shall use RF868 to connect to a wide ecosystem of wireless sensors including but not limited to CO<sub>2</sub>, temperature, and relative humidity. The unit shall be able to engage Wi-Fi to connect to local devices and create a local area network to allow for a larger network to be created for commissioning. The unit shall have Bluetooth low energy 4.2 to allow connectivity onto compatible smartphone devices. The unit shall be constructed with a removable tool free front panel which gives access to the removable on-board controller and other accessories. The EPS panel can then be removed with 4 screws allowing full maintenance access. This shall provide access to the following:

- ✓ Supply or extract fan
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The unit can be supplied with either a backlit user interface or a blank plate, both of which shall be removable for remote mounting if required. Filters shall be accessed via the two filter drawers found near the top of the unit, the SC shall have filter drawers and the MC and LC shall have filter caps.

Units shall be manufactured by Vent-Axia Ltd.

### Standard Controls

The Lo-Carbon Sentinel Econiq SC, MC or LP shall incorporate the following functions through a user interface fitted by the manufacturer or a paired smartphone with the Vent-Axia Connect application:

- ✓ Integral infinitely variable fan speed control on supply and extract
- ✓ 6 speeds; 4 adjustable
- ✓ Left or Right hand spigot configuration, programmable during commissioning
- ✓ Tool free filter access
- ✓ Integral BMS interfaces – control and status indication
- ✓ Heating interlocks
- ✓ 24V external sensor supply, eg PIR sensor
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ Fully automatic summer bypass
- ✓ Filter check facility
- ✓ Control panel PIN number lock

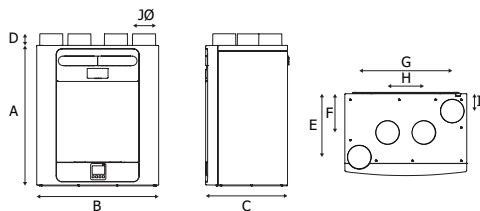
The unit shall incorporate:

- ✓ An integral humidity sensor with the following features: Ambient Response; Raises the humidity trigger point as dwelling temperature reduces.
- ✓ Rapid Response: Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached.
- ✓ Proportional Response; incrementally increases the fan speed to reduce noise and reduce energy consumption.
- ✓ RS485 connectivity – Long distance cabling to support multiple sensor connections.
- ✓ RF868 connectivity – Radio reference 868 MHz for multiple wireless sensors pairing Bluetooth low energy 4.2 – Enable pairing within compatible smartphone device
- ✓ 802.11b/g/n Wi-Fi – Enable localised access point or connect to the local area network using the Vent-Axia Connect application, via a compatible smartphone device
- ✓ The unit shall incorporate an automatic 100% summer bypass damper which monitors internal and external temperatures to maintain the user comfort temperature (default 25°C):
  - 'Evening Fresh' turns the unit to maximum speed with the bypass operational for 2 hours or until the user comfort temperature is reached (default 25°C).
  - 'Night Time Fresh' will run the unit at maximum speed with the bypass operational throughout the night or until the dwelling reaches minimum temperature (default 14°C).

Independently acoustically tested to BS EN 13141-7:2010

## Lo-Carbon Sentinel Econiq SC

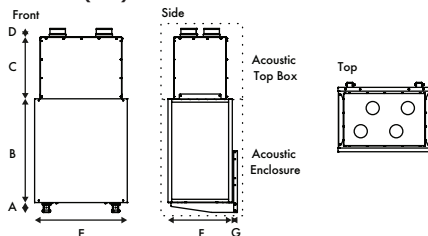
### Dimensions (mm) - Unit



| A   | B   | C   | D  | E   | F   | G   | H   | I  | JØ  | kg |
|-----|-----|-----|----|-----|-----|-----|-----|----|-----|----|
| 760 | 660 | 443 | 63 | 343 | 210 | 503 | 197 | 93 | 125 | 27 |

Packed weight: 32kg

### Dimensions (mm) - Acoustic Solution



| A  | B   | C   | D  | E   | F   | G  | Spigot |
|----|-----|-----|----|-----|-----|----|--------|
| 80 | 840 | 501 | 68 | 750 | 520 | 40 | 125    |

Acoustic Top Box 14 kg, Acoustic Enclosure 27 kg

### Sound Spectrum (unit only)

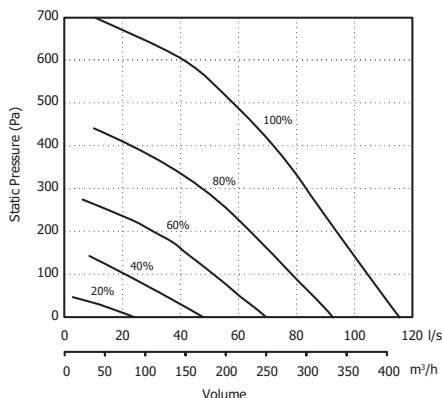
| Speed | Test mode | Octave Band (Hz) Sound Power Levels, dB |      |      |      |      |      |      | LWA dB(A) @ 3m |
|-------|-----------|-----------------------------------------|------|------|------|------|------|------|----------------|
|       |           | 63                                      | 125  | 250  | 500  | 1k   | 2k   | 4k   |                |
| 20%   | Supply    | 52.9                                    | 50.9 | 46.8 | 43.0 | 34.6 | 27.1 | 19.2 | 25.4           |
|       | Extract   | 50.3                                    | 49.0 | 36.0 | 31.5 | 23.6 | 16.1 | 18.9 | 25.3           |
|       | Breakout  | 34.6                                    | 34.8 | 35.7 | 34.9 | 29.6 | 25.1 | 21.0 | 25.3           |
| 40%   | Supply    | 59.5                                    | 56.5 | 59.4 | 55.0 | 48.2 | 42.6 | 31.8 | 26.1           |
|       | Extract   | 51.9                                    | 51.3 | 50.4 | 41.2 | 35.0 | 25.3 | 19.8 | 25.4           |
|       | Breakout  | 40.2                                    | 42.6 | 46.5 | 45.4 | 41.0 | 36.2 | 25.5 | 25.3           |
| 60%   | Supply    | 66.9                                    | 62.4 | 63.3 | 62.0 | 57.9 | 53.5 | 43.4 | 34.2           |
|       | Extract   | 60.6                                    | 60.3 | 54.2 | 49.5 | 44.4 | 36.2 | 27.9 | 26.3           |
|       | Breakout  | 45.5                                    | 49.8 | 52.5 | 53.1 | 49.7 | 46.7 | 36.2 | 26.9           |
| 80%   | Supply    | 82.4                                    | 67.6 | 65.2 | 67.6 | 64.2 | 60.8 | 50.8 | 43.2           |
|       | Extract   | 75.5                                    | 68.6 | 59.3 | 56.0 | 48.3 | 44.2 | 36.9 | 31.3           |
|       | Breakout  | 59.2                                    | 55.0 | 56.8 | 60.0 | 55.4 | 53.9 | 44.1 | 33.4           |
| 100%  | Supply    | 79.4                                    | 69.6 | 66.6 | 75.1 | 64.9 | 63.6 | 53.4 | 45.7           |
|       | Extract   | 72.4                                    | 70.5 | 60.5 | 56.4 | 49.8 | 46.3 | 39.0 | 33.4           |
|       | Breakout  | 63.0                                    | 57.1 | 63.7 | 56.8 | 55.9 | 46.4 | 36.2 | 36.5           |

### Sound Spectrum (Solution Top Box & Enclosure Kit)

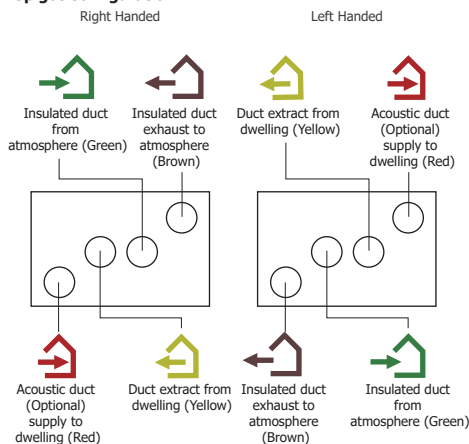
| Speed | Test mode | Octave Band (Hz) Sound Power Levels, dB |      |      |      |      |      |      | LWA dB(A) @ 3m |
|-------|-----------|-----------------------------------------|------|------|------|------|------|------|----------------|
|       |           | 63                                      | 125  | 250  | 500  | 1k   | 2k   | 4k   |                |
| 20%   | Supply    | 54.7                                    | 50.5 | 41.5 | 30.8 | 18.6 | 14.7 | 18.2 | 24.0           |
|       | Extract   | 54.8                                    | 41.7 | 31.4 | 20.2 | 15.2 | 13.8 | 18.3 | 24.3           |
|       | Breakout  | 36.6                                    | 47.3 | 38.0 | 24.7 | 19.3 | 16.6 | 19.1 | 23.6           |
| 40%   | Supply    | 61.0                                    | 57.7 | 56.0 | 39.0 | 27.5 | 16.6 | 18.4 | 24.1           |
|       | Extract   | 55.7                                    | 50.8 | 44.6 | 26.8 | 19.1 | 15.0 | 18.2 | 24.0           |
|       | Breakout  | 55.9                                    | 55.2 | 48.2 | 35.5 | 29.9 | 20.9 | 20.4 | 25.3           |
| 60%   | Supply    | 64.5                                    | 64.3 | 56.2 | 48.6 | 36.0 | 22.8 | 19.0 | 24.2           |
|       | Extract   | 59.4                                    | 57.3 | 46.6 | 36.0 | 25.6 | 17.4 | 18.6 | 24.5           |
|       | Breakout  | 43.5                                    | 60.5 | 49.5 | 43.5 | 39.0 | 32.0 | 23.8 | 23.7           |
| 80%   | Supply    | 68.9                                    | 65.9 | 59.9 | 53.9 | 41.4 | 29.3 | 21.6 | 24.7           |
|       | Extract   | 63.1                                    | 69.3 | 52.6 | 43.0 | 33.4 | 23.7 | 20.2 | 24.6           |
|       | Breakout  | 48.3                                    | 69.8 | 52.7 | 48.3 | 44.7 | 39.8 | 33.2 | 25.9           |
| 100%  | Supply    | 72.5                                    | 70.5 | 63.1 | 56.1 | 43.9 | 33.0 | 23.7 | 25.2           |
|       | Extract   | 70.3                                    | 61.9 | 56.2 | 45.4 | 36.8 | 28.0 | 22.9 | 24.6           |
|       | Breakout  | 54.3                                    | 67.1 | 63.3 | 51.3 | 47.9 | 43.9 | 38.5 | 28.7           |

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical. For in-duct data, end reflections are added based on the spigot size of the unit.

### Performance



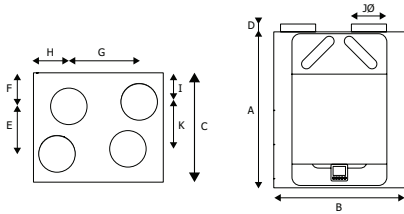
### Spigot Configuration



Hand-able through controller (except if pre-heater fitted)

Lo-Carbon Sentinel Econiq MC & LC

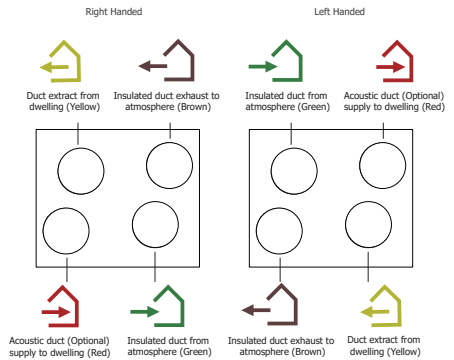
Dimensions (mm)



| A   | B   | C   | D  | E   | F   | G   | H   | I   | JØ  | K   | kg |
|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|
| 881 | 728 | 608 | 50 | 261 | 187 | 394 | 200 | 160 | 200 | 261 | 50 |

Packed weight: 55kg

Spigot Configuration



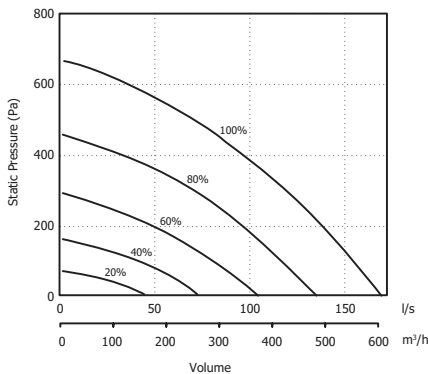
Sound Spectrum (Lo-Carbon Sentinel Econiq MC)

| Speed | Test mode | Octave Band (Hz) Sound Power Levels, dB |     |     |     |    |    |    |    | SPL dB(A) @ 3m |
|-------|-----------|-----------------------------------------|-----|-----|-----|----|----|----|----|----------------|
|       |           | 63                                      | 125 | 250 | 500 | 1k | 2k | 4k | 8k |                |
| 20%   | Breakout  | 32                                      | 41  | 35  | 31  | 24 | 17 | 19 | 23 | 12             |
|       | Inlet     | 48                                      | 42  | 33  | 23  | 19 | 14 | 17 | 22 | 13             |
|       | Outlet    | 55                                      | 55  | 48  | 41  | 34 | 23 | 18 | 22 | 27             |
| 40%   | Breakout  | 36                                      | 45  | 46  | 42  | 36 | 25 | 19 | 23 | 22             |
|       | Inlet     | 54                                      | 45  | 43  | 33  | 31 | 20 | 18 | 22 | 21             |
|       | Outlet    | 64                                      | 58  | 57  | 52  | 49 | 40 | 26 | 22 | 37             |
| 60%   | Breakout  | 43                                      | 50  | 51  | 48  | 44 | 36 | 22 | 23 | 29             |
|       | Inlet     | 59                                      | 51  | 51  | 39  | 39 | 29 | 20 | 22 | 28             |
|       | Outlet    | 69                                      | 64  | 65  | 58  | 58 | 51 | 38 | 26 | 45             |
| 80%   | Breakout  | 48                                      | 55  | 56  | 53  | 50 | 43 | 30 | 24 | 34             |
|       | Inlet     | 65                                      | 56  | 57  | 46  | 44 | 37 | 26 | 22 | 34             |
|       | Outlet    | 73                                      | 68  | 67  | 64  | 63 | 59 | 47 | 35 | 50             |
| 100%  | Breakout  | 60                                      | 60  | 57  | 58  | 55 | 47 | 36 | 29 | 38             |
|       | Inlet     | 69                                      | 59  | 54  | 48  | 48 | 41 | 31 | 24 | 35             |
|       | Outlet    | 76                                      | 70  | 67  | 69  | 66 | 63 | 53 | 42 | 53             |

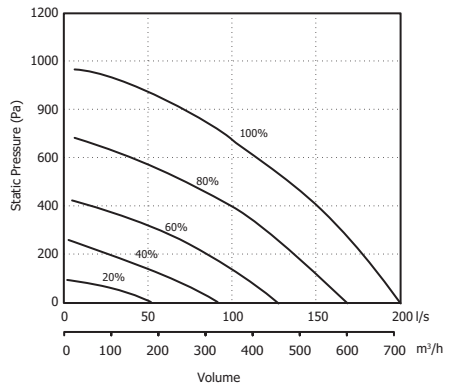
Sound Spectrum (Lo-Carbon Sentinel Econiq LC)

| Speed | Test mode | Octave Band (Hz) Sound Power Levels, dB |     |     |     |    |    |    |    | SPL dB(A) @ 3m |
|-------|-----------|-----------------------------------------|-----|-----|-----|----|----|----|----|----------------|
|       |           | 63                                      | 125 | 250 | 500 | 1k | 2k | 4k | 8k |                |
| 20%   | Breakout  | 41                                      | 41  | 51  | 47  | 40 | 18 | 19 | 23 | 26             |
|       | Inlet     | 50                                      | 43  | 42  | 38  | 31 | 16 | 18 | 23 | 21             |
|       | Outlet    | 57                                      | 56  | 53  | 47  | 40 | 29 | 19 | 24 | 31             |
| 40%   | Breakout  | 41                                      | 44  | 53  | 52  | 43 | 32 | 20 | 23 | 31             |
|       | Inlet     | 60                                      | 48  | 50  | 38  | 37 | 26 | 19 | 23 | 27             |
|       | Outlet    | 68                                      | 62  | 62  | 56  | 55 | 49 | 33 | 24 | 42             |
| 60%   | Breakout  | 44                                      | 50  | 55  | 56  | 48 | 42 | 27 | 23 | 34             |
|       | Inlet     | 63                                      | 54  | 59  | 44  | 43 | 37 | 24 | 23 | 35             |
|       | Outlet    | 71                                      | 67  | 67  | 62  | 62 | 59 | 46 | 34 | 49             |
| 80%   | Breakout  | 55                                      | 54  | 54  | 60  | 52 | 47 | 36 | 24 | 38             |
|       | Inlet     | 69                                      | 60  | 55  | 50  | 48 | 43 | 33 | 24 | 36             |
|       | Outlet    | 78                                      | 72  | 66  | 70  | 67 | 65 | 56 | 44 | 54             |
| 100%  | Breakout  | 67                                      | 67  | 58  | 72  | 58 | 50 | 42 | 27 | 50             |
|       | Inlet     | 81                                      | 64  | 58  | 57  | 51 | 47 | 39 | 27 | 42             |
|       | Outlet    | 91                                      | 76  | 69  | 74  | 70 | 69 | 62 | 50 | 58             |

Performance (Lo-Carbon Sentinel Econiq MC)



Performance (Lo-Carbon Sentinel Econiq LC)



## Sentinel-X Controllers

### Battery Controllers & Sensors



**Battery - Internal Temperature and Humidity - Wireless**  
Room mounted humidity and temperature sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by batteries.

- Dimensions (HxWxD) (mm) 60 x 60 x 22
- 2 x AAA Batteries included
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Status LED indicator for pairing, health check and fault conditions
- Mounted using provided back plate

**Code**

**496431**



### Battery - 4 Speed Switch with Temperature and Humidity - Wireless

Room mounted Speed Switch for wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency) communication whilst being powered by batteries.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- 2 x AAA Batteries included
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless
- Mounted using provided back plate or compatible with a standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions

**Model**

**White**

**Black**

**Code**

**496437**

**497689**

### HMI Kit



### Wall-mounted HMI Kit to suit Econiq models with full HMI

Includes HMI Blank controller, HMI backplate and cable.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box

**Code**

**411628**

### 24V Sensors



### 0-10V CO<sub>2</sub> Temperature and Humidity - Wired

Room mounted CO<sub>2</sub> sensor with 0-10V signal output powered by an external 24V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- 24V Power supply required
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- CO<sub>2</sub> range 0-2000PPM
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index
- 0-10V Wired Communication

**Code**

**496432**

Sentinel-X Controller

240V Controllers & Sensors



**240V - Internal Temperature and Humidity - Wireless**

Room mounted humidity and temperature sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index

**Code**  
**496429**



**240V - CO<sub>2</sub>, Temperature and Humidity - Wireless**

Room mounted CO<sub>2</sub> sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- CO<sub>2</sub> Range 0-2000 PPM
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index

**Code**  
**496433**



**240V - 4 Speed Switch with Temperature and Humidity - Wired**

Room mounted Speed Switch for wired communication with a compatible system. Using an in-built RS485 communication method powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power Supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Mounted using provided back plate or compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions
- RS485 Wired Connection

**Model**  
**White**  
**Black**

**Code**  
**496621**  
**497697**



**240V - 4 Speed Switch with Temperature and Humidity - Wireless**

Room mounted Speed Switch for wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency) communication whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power Supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless
- Mounted using provided back plate or compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions

**Model**  
**White**  
**Black**

**Code**  
**496620**  
**497693**



**240V - PIR Sensor - Wireless**

Room mounted PIR sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply. Room mounted presence detector for min/max or on/off control. Wall or ceiling mounting.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- 5-25min run on timer
- PIR Range 3m
- Compatible with standard single gang or surface mounted pattress box
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication

**Code**  
**496438**