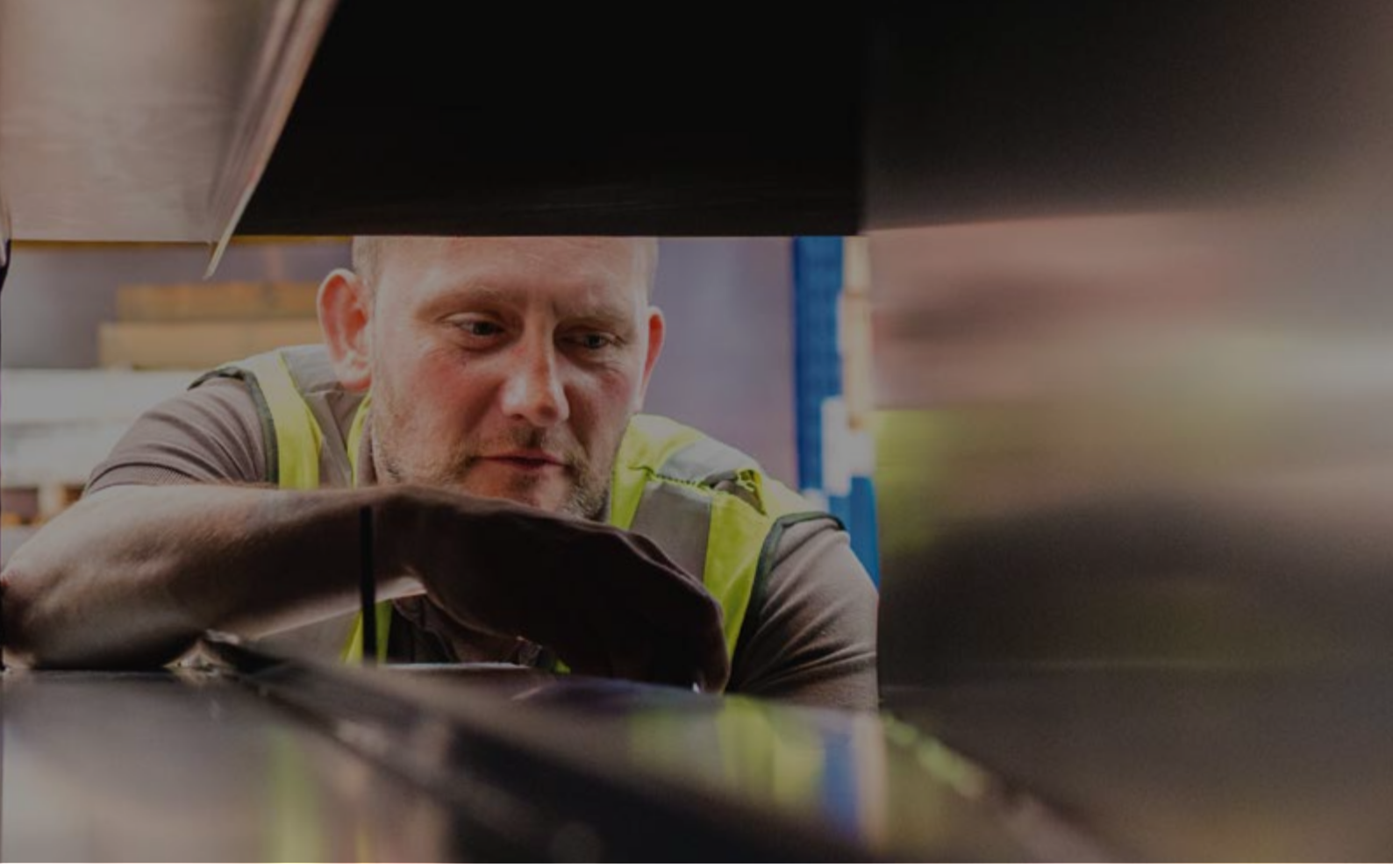
# AIR HANDLING
# PRODUCT PORTFOLIO

AIR DESIGN
AIR HANDLING | HEAT RECOVERY


# **AIR HANDLING**
# PRODUCT PORTFOLIO



# CONTENTS

# OVERVIEW

**Air Design's innovative Air Handling and Heat & Coolth Recovery Units are designed for the Building Services market and a range of specialised applications. Its extensive product range covers air volumes from 0.1 $m^3/s$ up to 20.0 $m^3/s$, providing air handling solutions that can meet most requirements.**

Air Design's engineered products encompass the latest, fully compliant technology and cover three main categories:

## PREMA & PREMA+

A standard range of frameless and compact Air Handling and Energy Recovery Units, with or without heating (PREMA & PREMA+).

Covering an **airflow envelope of 0.006 – 0.936 $m^3/s$.**

## PURA

A standard range of extruded aluminium pentapost frame of Air Handling and Energy Recovery Units with or without heating / cooling (PURA).

Covering an **airflow envelope of 0.5 – 2.5 $m^3/s$.**

## PURA+

Fully configured Air Handling Units with an extruded aluminium pentapost frame (PURA+).

Covering an **airflow envelope of 0.1 – 20.0 $m^3/s$.**

The products within all 3 categories are created using the latest, fully compliant component parts and construction trims including single phase and three phase fans with EC motors, plug fans with variable speed drives, high efficiency energy recovery devices, enhanced filtration, heating / cooling components, humidification, silencers, mixing box, etc. and fully integrated controls, suitable for internal or external applications.

Air Design's in-house technical engineers use specialist software to configure products that can be supplied **pre-assembled, in loose sections, or flat-packed.** These unique products are tailored to the customer's exact performance, efficiency and noise criteria, always taking into consideration compliance to the **latest regulations** and any site restrictions.

With a dedicated controls platform, Air Design is able to **fully integrate** its own control devices (Kinairtico) across all air handling and energy recovery products, offering different levels of machine management either locally (in unit or room controller) or via BMS interface protocols (Modbus or BACnet). **Project specific control devices** that are required to follow a TREND control systems philosophy are also available.

**Air Design is part of Elta Group and is currently selling its products via Elta Fans.**

Elta Fans has been creating high quality, innovative products for the Building Services, Applied Technology, OEM and Export markets for over 40 years.

Trading through Elta Fans gives Air Design access to a multitude of new technology, experienced designers and engineers and a large distribution network.


eltafans.com

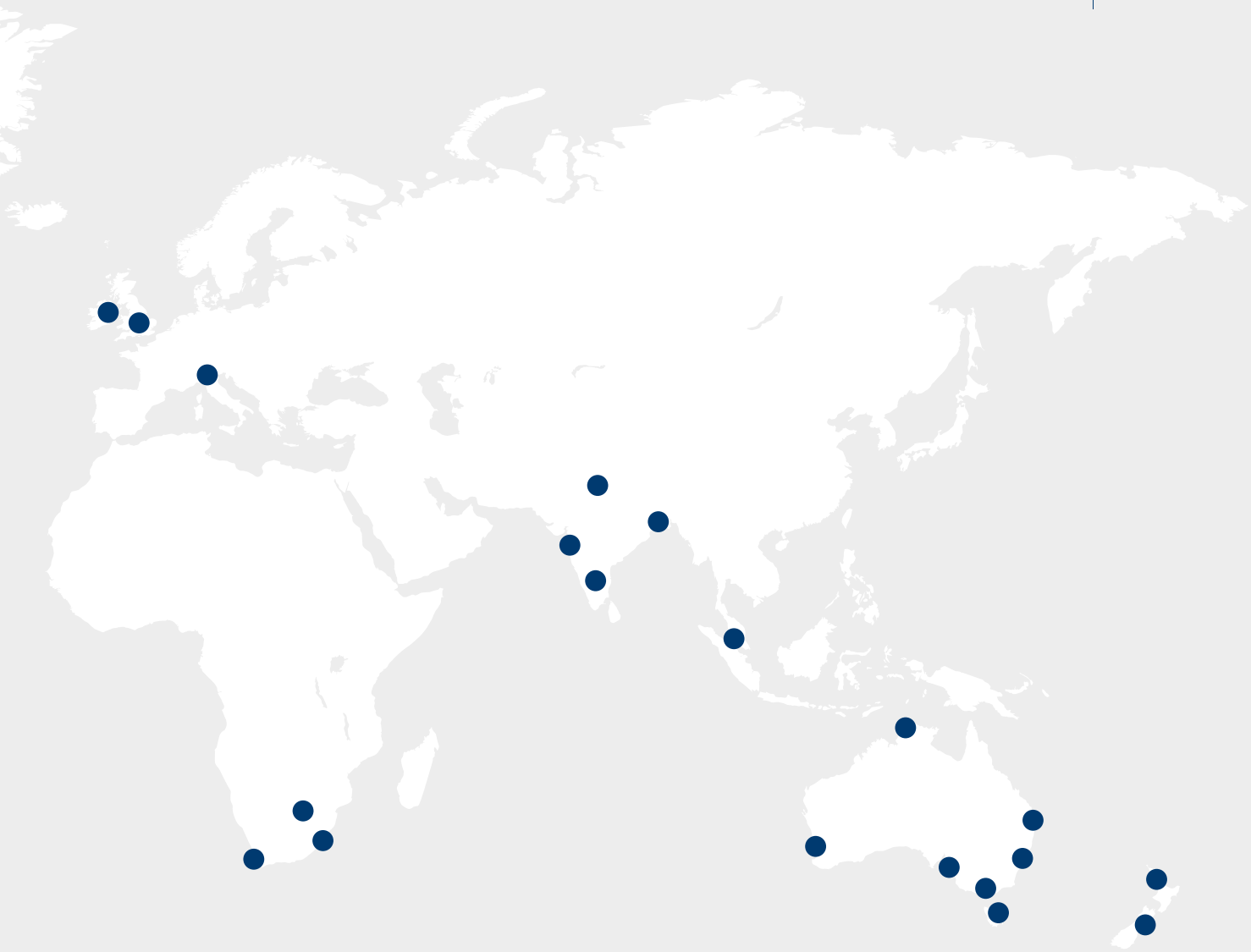
# PART OF ELTA GROUP

**Across all of our people, in all of our businesses, on all continents on which we operate, Elta Group has one purpose: To enhance life through air.**

For over 20 years we have been a proudly independent, family-owned group, but our foundations were laid over 45 years ago. Our foundations were built on an entrepreneurial spirit and a clear vision of meeting market needs and improving air quality. These have seen us become a leader in high-integrity solutions that move, filter, treat and distribute air, from agriculture to building services to applied technology. We're never standing still, always living and breathing our cause, and looking to the horizon.

**eltagroup.com**

ELTA GROUP



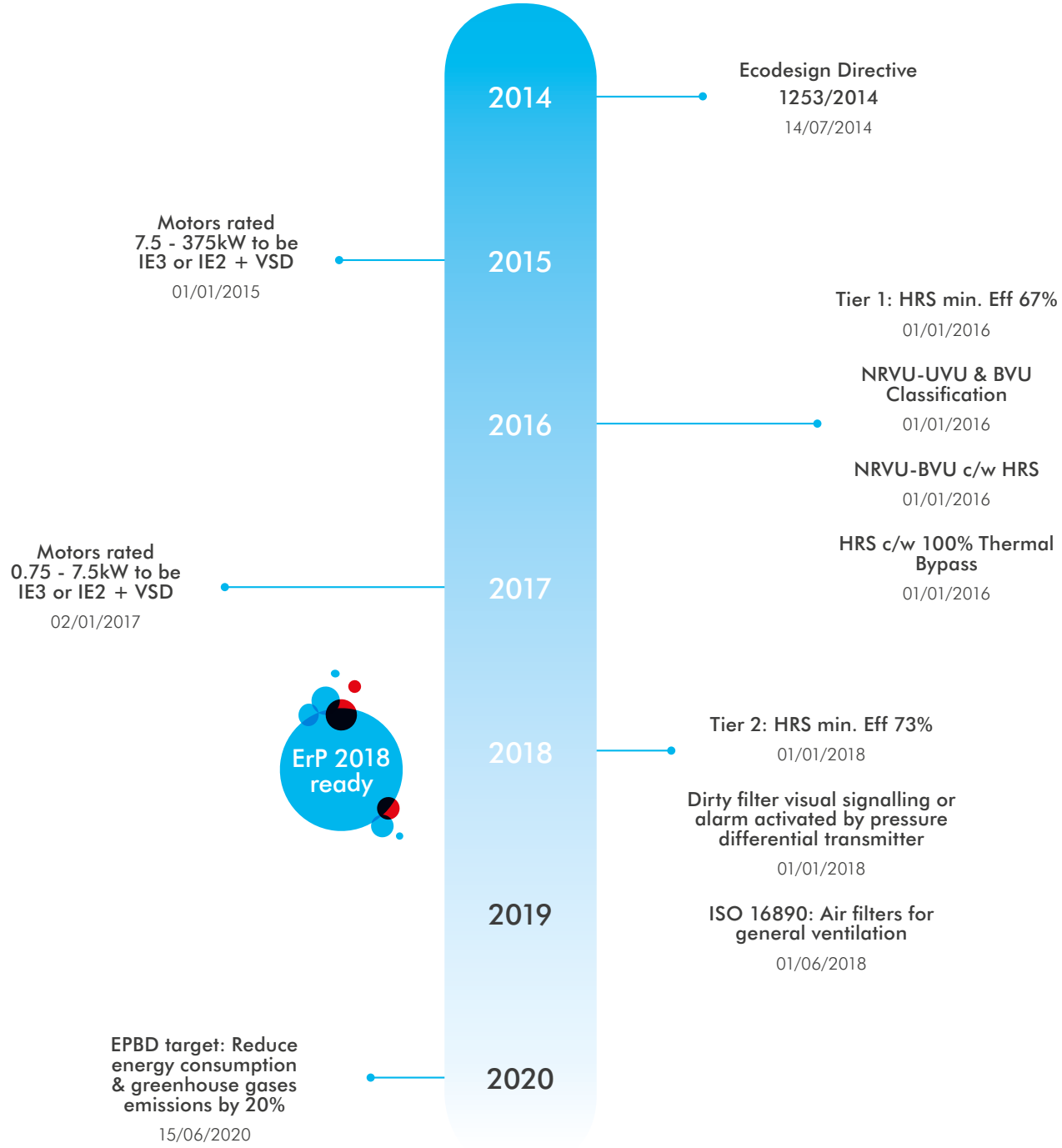
Europe
Africa
Asia
Australasia
**REGIONS**

Building Services
Applied Technology
Agriculture
International
**MARKETS**

Fans
Air Handling
Heat Recovery
Filtration
Natural Ventilation
Acoustics
Air Distribution
Controls
Heating
Cooling
Welfare
Lighting
**PRODUCTS**

# LEGISLATION

The timeline below sets out the legislative changes responsible for the innovative design of our PURA and PREMA ranges.



# TESTING

**All Air Design products undergo a combination of in-house and independent testing throughout the design and manufacture process to ensure optimum performance.**


All designs are based on the demands of Ecodesign Directive 1253/2014 and the following standards:

- **EN 30:1997**
  Heat exchangers; Definition and test procedures
- **EN 13779:2007**
  Ventilation for non-residential buildings; Performance requirements
- **EN 1886:2008**
  Air Handling Units; Mechanical performance
- **EN 13053:2011**
  Ratings and performance for units and components
- **EN ISO 16890:2016**
  Air filters for general ventilation
- **EN 16798-3:2017**
  Energy performance of buildings; Ventilation for buildings

# DESIGNING FOR GOOD INDOOR AIR QUALITY

## Clean air is a basic requirement of life

World Health Organisation (WHO) air quality recommendations call for countries to reduce their air pollution to annual mean values of 20$\mu$g/m$^3$ (for $PM_{10}$) and 10$\mu$g/m$^3$ (for $PM_{2.5}$).

Outdoor air pollution plays a significant role for indoor air exposure as ventilation provides continuous air from outside of the building, exposing indoor air to fine particulate matter, especially in areas affected by heavy traffic. As a result, 90% of particulate matter levels monitored outdoors, also occur indoors.

Applying correctly selected, efficient air filters in ventilation systems can significantly reduce the impact of particulate matter exposure. The new filter standard, EN ISO 16890, is a step forward in defining the efficiency of filters to arrest / remove various fractions of particle sizes such as $PM_{10}$, $PM_{2.5}$ and $PM_1$.

| Group Designation | Requirement | | |
|---|---|---|---|
| | $ePM_1$, min | $ePM_{2.5}$, min | $ePM_{10}$ |
| ISO COARSE | - | - | <50% |
| $ePM_{10}$ | - | - | ≥50% |
| $ePM_{2.5}$ | - | ≥50% | - |
| $ePM_1$ | ≥50% | - | - |

Filter groups.

Examples of reporting classes are ISO Coarse 60%, ISO $ePM_{10}$ 60%, ISO $ePM_{2.5}$ 80%, ISO $ePM_1$ 85% or $ePM_1$ >95%.

When designing a system, consideration needs to be given to the quality of the outdoor air around the building, or proposed location of the building. Outdoor air can be classified into three main categories that inform the designers, building owners and all involved parties, on the outdoor pollution and the required filtration and/or air cleaning device to be used.

| Category | Description |
|---|---|
| ODA1 | **Outdoor air which may be only temporarily dusty**<br>Applies where the WHO (2005) guidelines are fulfilled<br>(annual mean for $PM_{2.5}$ ≤ 10$\mu$g/m$^3$ and $PM_{10}$ ≤ 20$\mu$g/m$^3$) |
| ODA2 | **Outdoor air with high concentrations of particulate matter and / or gaseous pollutants**<br>Applies where the PM concentrations exceeds the WHO (2005) guidelines by a factor of up to 1.5<br>(annual mean for $PM_{2.5}$ ≤ 15$\mu$g/m$^3$ and $PM_{10}$ ≤ 30$\mu$g/m$^3$) |
| ODA3 | **Outdoor air with very high concentration of gaseous pollutants and / or particulate matter**<br>Applies where PM concentrations exceeds the WHO (2005) guidelines by a factor of greater than 1.5<br>(annual mean for $PM_{2.5}$ > 15$\mu$g/m$^3$ and $PM_{10}$ > 30$\mu$g/m$^3$) |

Classification of outdoor air (ODA).

| Category | Description |
|---|---|
| SUP1 | **Supply air with very low concentration of PM and / or gases**<br>Refers to supply air with PM concentrations which fulfilled the WHO (2005) guidelines limit values by a factor of x0.25 (annual mean for $PM_{2.5}$ ≤2.5μg/m³ and $PM_{10}$ ≤5μg/m³) |
| SUP2 | **Supply air with low concentration of particulate matter and / or gases**<br>Refers to supply air with PM concentrations which fulfilled the WHO (2005) guidelines limit values by a factor of x0.5 (annual mean for $PM_{2.5}$ ≤5μg/m³ and PM10 ≤10μg/m³) |
| SUP3 | **Supply air with medium concentration of particulate matter and / or gases**<br>Refers to supply air with PM concentrations which fulfilled the WHO (2005) guidelines limit values by a factor of x0.75 (annual mean for $PM_{2.5}$ ≤7.5μg/m³ and $PM_{10}$ ≤15μg/m³) |
| SUP4 | **Supply air with high concentration of particulate matter and / or gases**<br>Refers to supply air with PM concentrations which fulfilled the WHO (2005) guidelines limit values (annual mean for $PM_{2.5}$ ≤10μg/m³ and $PM_{10}$ ≤20μg/m³) |
| SUP5 | **Supply air with very high concentration of particulate matter and / or gases**<br>Refers to supply air with PM concentrations which fulfilled the WHO (2005) guidelines limit values by a factor x1.5 (annual mean for $PM_{2.5}$ ≤15μg/m³ and $PM_{10}$ ≤30μg/m³) |

Classification of supply air.

The recommended minimum efficiencies depending on ODA and SUP categories can now be presented as:

| Outdoor Air | | | Supply Air | | | | |
|---|---|---|---|---|---|---|---|
| | | | SUP1*<br>$PM_{2.5}$ ≤2.5μg/m³<br>$PM_{10}$ ≤5μg/m³ | SUP2*<br>$PM_{2.5}$ ≤5μg/m³<br>$PM_{10}$ ≤10μg/m³ | SUP3**<br>$PM_{2.5}$ ≤7.5μg/m³<br>$PM_{10}$ ≤15μg/m³ | SUP4<br>$PM_{2.5}$ ≤10μg/m³<br>$PM_{10}$ ≤20μg/m³ | SUP5<br>$PM_{2.5}$ ≤15μg/m³<br>$PM_{10}$ ≤30μg/m³ |
| Category | $PM_{2.5}$ | $PM_{10}$ | $ePM_1$ | $ePM_1$ | $ePM_{2.5}$ | $ePM_{10}$ | $ePM_{10}$ |
| ODA1 | ≤10 | ≤20 | 70% | 50% | 50% | 50% | 50% |
| ODA2 | ≤15 | ≤30 | 80% | 70% | 70% | 80% | 50% |
| ODA3 | >15 | >30 | 90% | 80% | 80% | 90% | 80% |

Recommended minimum ePMx filtration efficiencies depending on ODA and SUP categories. Annual mean PMx values in μg/m³

*Minimum filtration requirements ISO ePM1 50% refers to a final filter stage

**Minimum filtration requirements ISO ePM2.5 50% refers to a final filter stage

Presented efficiency values concern both single filter and multi-stage filtration systems with a cumulated efficiency.

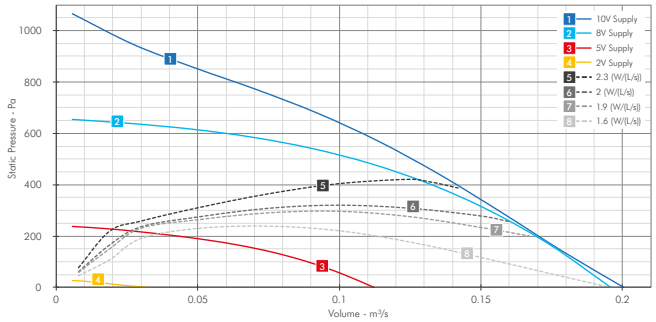
**PURA Air Handling Units supply air primary panel filter shall be rated as standard as $ePM_{10}$ 55%, followed by a secondary high efficiency pocket filter rated as ISO $ePM_1$ 70%.**

# CHOOSING AN ISO 16890 FILTER

**One of the advantages of BS EN ISO 16890, the standard for classifying filters for general ventilation, is that it makes it easier to choose an air cleaning device that will provide protection and the desired level of Indoor Air Quality (IAQ), whilst taking into account the local environment and ambient air quality.**

Both outdoor air quality and indoor air emissions should be considered when determining filtration efficiency for the desired IAQ.

Our units are fully performance tested and supplied with fine particulate filters fitted, hence performance is not affected when upgrading from coarse particulate filtration to fine.




PERFORMANCE TESTED WITH ISO $ePM_1$ 55% (F7) / ISO $ePM_{10}$ 55% (M5) FILTERS FITTED.

## CALCULATING YOUR FILTER REQUIREMENT

**INCOMING AIR**

**$PM_{10}$**
48 $\mu g/m^3$

**$PM_{2.5}$**
33 $\mu g/m^3$

Reduction required: **58%** — Min. filter: **$ePM_{10}$ 60%**

Reduction required: **69%** — Min. filter: **$ePM_{2.5}$ 70%**

**DESIRED AIR QUALITY**

**$PM_{10}$**
20 $\mu g/m^3$

**$PM_{2.5}$**
10 $\mu g/m^3$

# AIR THAT MATTERS

## Indoor Air Quality (IAQ) is one of the many issues that building owners and developers must address to provide buildings that meet their needs and the needs of the building occupants without compromising building usability.

Design for IAQ should focus first on reducing contaminant sources, and then on capturing and exhausting contaminants close to their source. Air Handling Units (AHUs), which constitute the most important part of a ventilation and air conditioning system, remove polluted air from indoor spaces and replace it with clean, fresh, sometimes humidified, air at the right temperature.

To bring energy consumption and a healthy environment closer together, demand controlled ventilation has become increasingly popular. The indoor air $CO_2$ concentration is an important factor to control energy consumption while optimising productivity in offices and learning environments within schools.

### Air Design products can reduce the energy required to deliver good IAQ with a strategic ventilation approach that helps to:

**INTEGRATE DESIGN APPROACH & SOLUTIONS**

**PROVIDE PARTICLE FILTRATION CONSISTENT WITH ENHANCED IAQ OBJECTIVES**

**PROVIDE COMFORT CONDITIONS THAT ENHANCE OCCUPANT SATISFACTION**

**USE ENERGY RECOVERY VENTILATION TO FURTHER INCREASE ECONOMIC GAINS AND BUILDING USABILITY**

**HIGHLY ACCURATE $CO_2$ MEASUREMENT** GIVES A DIRECT INDICATION OF THE INDOOR AIR QUALITY AND OCCUPANCY LEVELS WHEN USED **IN CONJUNCTION WITH PREMA AND PURA UNITS.**

Source: Indoor Air Quality Guide by the American Society of Heating, Refrigeration and Air-Conditioning Engineers – ASHRAE Design Guide 2009.
Source: Eurovent – AHU guide.

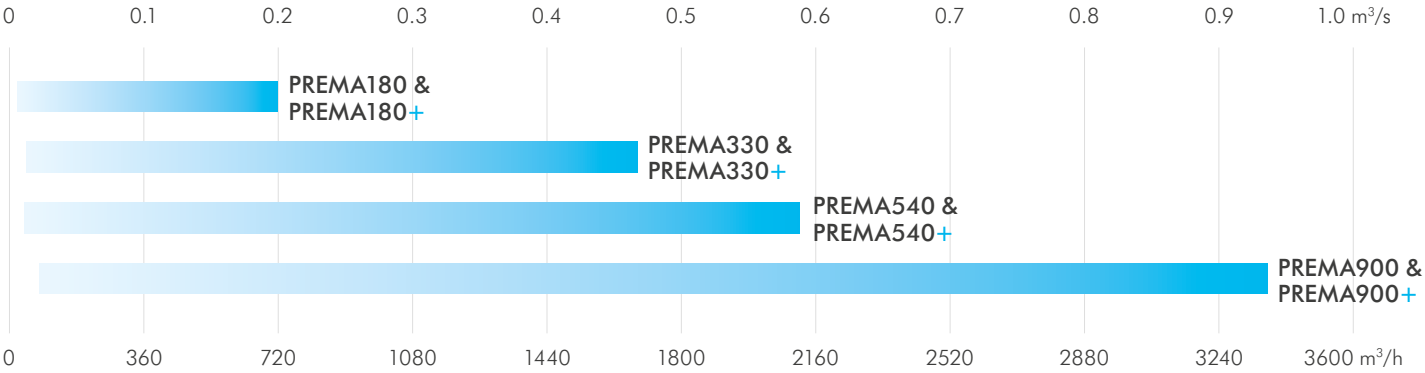
PREMA

**Air Design's PREMA units, with high efficiency energy recovery capabilities, have been specifically designed and manufactured for effective ceiling void mounted, low pressure ventilation systems. The units always provide fresh, clean and comfortable air, in line with the Ecodesign Directives and strict building regulations.**

The PREMA unit range now includes PREMA+ that comes with new product features focused on comfort ventilation and automation. Both PREMA and PREMA+ feature improved automation packages: Kinairtico0 and Kinairtico Mini are able to match your project requirements. Installation and maintenance has been made easier; a frameless, compact structure has been developed with all units being manufactured in the UK and undergoing vigorous quality checks at every stage.

# AVAILABLE IN 4 SIZES

There are 4 sizes available providing an airflow of 0.006 – 0.936 $m^3/s$, suitable for a wide range of markets and applications.




# APPLICATIONS

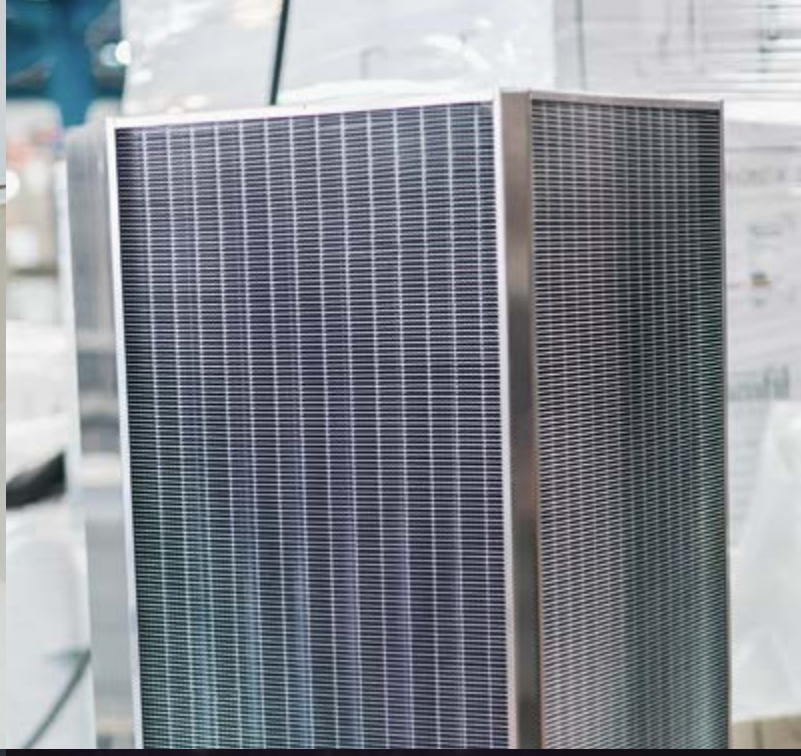
## Schools & Offices

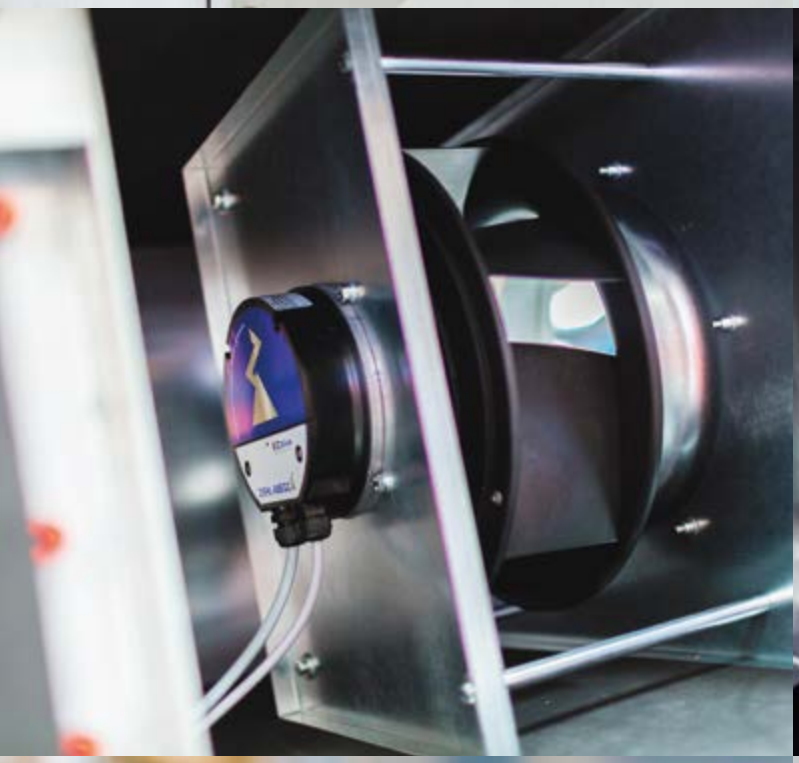
Failure to correct poor Indoor Air Quality within an educational or working environment can lead to increased illness and absences, and reduced cognitive function.[1] The PREMA range helps to maintain comfortable working temperatures by recovering thermal energy from the already warm air inside the occupied space to raise the temperature of the incoming fresh air. ISO $ePM_1$ 55% filters are fitted in the unit to remove pollutants and provide pure, clean, fresh air that encourages concentration and productivity.

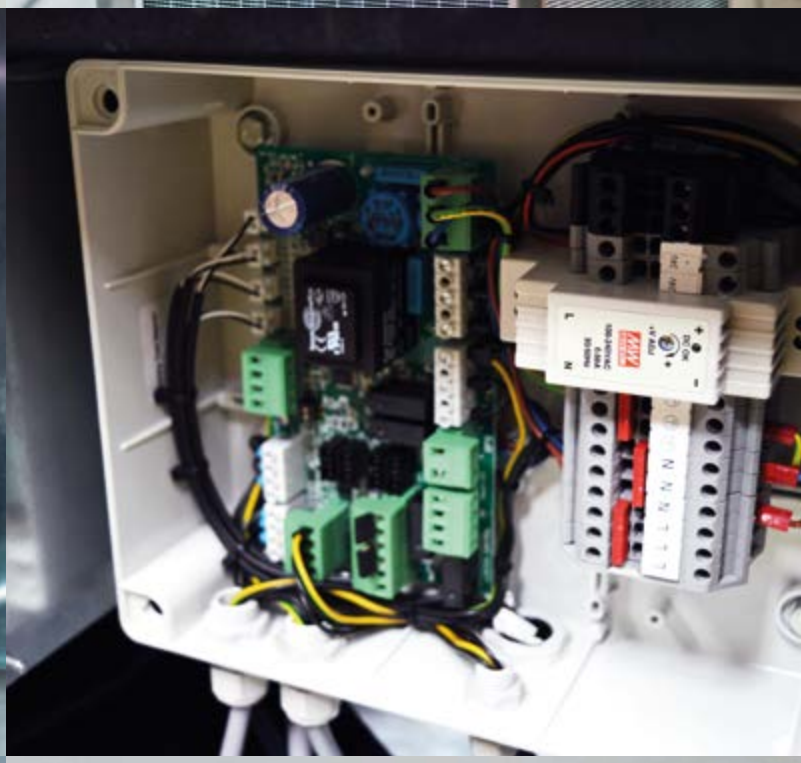
## Restaurants, Hotels & Leisure Centres

In building spaces with a high volume of guests and visitors, maintaining a comfortable and healthy indoor environment without increasing energy bills, can prove to be a challenge. The PREMA units maintain good Indoor Air Quality and comfortable temperature levels by efficiently transferring thermal energy from the stale air to the incoming fresh air.

[1] https://www.epa.gov/iaq-schools/why-indoor-air-quality-important-schools







# KEY BENEFITS

## Quiet

Peaceful performance for a comfortable indoor environment.

## Lightweight & Slimline

**Smallest and lightest energy recovery units available on the market.**

Despite their compact size, which helps to reduce building and maintenance costs, the units have a strong, solid construction with reduced environmental footprint and enhanced acoustic performance.

## Integrated Demand Control

The standard control system provides effective monitoring and targeting of energy consumption with the possibility of individual room control through integration with Building Management Systems.

## Compliance

ErP 2018 ready and fully compliant with Ecodesign Directive 1253/2014.

ErP 2018 compliant

## Finer Particulate Filters

The ISO ePM$_1$ 55% (F7) supply fine particulate filter improves Indoor Air Quality by always providing filtered, fresh and healthy air.

## Efficient Fans & Motors

All units have a free running, high performance backward curved impeller and special three-dimensional blade geometry that provides reduced rotational tone. The EC fans within the units are the most efficient in converting electrical power input into air power, resulting in low energy consumption and significant economic benefits for the end user.

## Counterflow Heat Exchanger

Thermal energy exchange is enhanced by the large surface area of the heat exchanger resulting in high efficiency rates of thermal energy recovery. All units are fitted with a 100% face and bypass damper. The bypass damper operates dependent on temperature parameters and values set via an LCD display to offer free heating mode in winter.

## Casing Air Leakage Rated at L2

Low risk of mixing filtered with non-filtered air and minimised infiltration of non-handling air inside the AHU.

92%

**RECOVERED THERMAL ENERGY**

90%

**REMOVED PARTICULATES** (up to 10µm)

70%

**REMOVED PARTICULATES** (up to 2.5µm)

## HEAT / COOLTH RECOVERY

In Heat Recovery mode, the unit will utilise the heat in the extracted air to warm the incoming air, via the integral high efficiency heat / coolth exchanger block, to increase the incoming external supply air to as close as possible to the desired temperature for the space or room.

In Coolth Recovery mode, the unit will utilise the coolth in the extracted air to reduce the incoming air temperature via the heat / coolth exchanger block when desirable. Only when it is beneficial to do so, will the unit's heat / coolth exchanger block bypass facility be activated.

## IMPROVED DUAL CONDENSATE TRAY

Condensate will be dealt with on both sides of the high efficiency heat /coolth exchanger block via two separate drain points which can be connected together on site and taken to a single drainage point. This twin condensate drainage arrangement prevents unit internal air leakage and the possible undesirable accumulation of condensate as can happen in other units with single drainage points.

# PREMA+

**Our PREMA+ units have a collection of added features to deliver good Indoor Air Quality whenever it is needed.**

## +HEATING (Electric or hot water)

The PREMA+ comes with thermal treatment options such as electric heater battery or hot water coil. When needed, it provides temperature demand within the occupied space with a controlled and efficient response.

## +KINAIRTICO MINI

A reduced version of the Kinairtico controller, our innovative controls solutions; only available for the PREMA+ units, it is offered loose on a flying lead for easy and adjustable installation, set-up and BMS monitoring.

# PRODUCT DETAIL

## Categorisation

In accordance with Ecodesign Directive 1253/2014, this product is a non-residential bidirectional ventilation unit; NRVU-BVU.

## Construction

All PREMA units have a frameless, self-supporting casing construction with double skin galvanised sheet steel, insulated with 25mm mineral wool (60kg/$m^3$). Units have a leakage class rating of L2 (BS EN 1886).

Access to fans and filters can be gained from both sides of the unit through secured panels that require a suitable tool to open. Unit isolator fitted across the range as standard.

## Supply and Extract Fan

All units are constructed with a backward curved impeller mounted onto a single phase EC motor for low SFPs and low noise levels. As standard, fans are fully speed controllable via 0-10V signal from the fitted controls package.

## Supply Filter

The ISO $ePM_1$ 55% (F7) supply filter that comes as standard with all units is fitted on purpose-built runners with a tight fit for reduced filter bypass leakage. Fully integrated differential pressure switches are also fitted across the filter bank to trigger a signal when filter maintenance is required.

Accessories available include an ISO $ePM_1$ 85% (F9) fine particulate filter, and as a duct mounted accessory, an IAQ molecular gas filter.

## Extract Filter

ISO $ePM_{10}$ 55% (M5) extract filter fitted as standard onto purpose built runners with a tight fit for reduced filter bypass leakage. Fully integrated differential pressure switches fitted across the filter bank to trigger a signal when filter maintenance is required.

## Counterflow Heat / Coolth Exchanger

All PREMA units contain a Eurovent certified counterflow heat exchanger that is fitted with a purpose built 100% thermal bypass facility for full compliance with Ecodesign Directives among other benefits:

- Seawater resistant
- Precision machine manufactured
- Achieves up to 92% efficiency of thermal energy recovery (according to standard air conditions EN 308)
- Highly airtight with specialised sealant
- High performance with low pressure drops
- Extremely hygienic due to complete and optimised drainage of condensate

Also available as an accessory is the smallest and quietest specialised condensate drain pump.

## Controls

### Kinairtico0 & Kinairtico Mini

Two controls packages available to complement both PREMA and PREMA+ capabilities and deliver superior controllability of the ventilation system and its connectivity to the BMS.

The range of PREMA and Kinairtico controllers are detailed on the opposite page.

# FEATURES

Ceiling Void Mounted Energy Recovery Ventilation

| Choose your PREMA | | |
|---|---|---|
| **Product Features** | **PREMA** | **PREMA+** |
| Frameless construction rated at L2 | • | • |
| Internal / ceiling void / circular spigots | • | • |
| Quiet / compact / lightweight | • | • |
| Side access removable panels | • | • |
| ErP 2018 ready and fully compliant | • | • |
| | | |
| Single phase EC fans | • | • |
| Counterflow heat / coolth exchanger | • | • |
| Heat & coolth recovery | • | • |
| Dual drain tray | • | • |
| 100% bypass control | • | • |
| Thermal treatment: Electric heater | | • |
| Thermal treatment: Hot water coil | | • |
| Supply particulate filter up to ePM1 85% | • | • |
| Duct mounted silencers | • | • |
| $CO_2$ sensor | • | • |
| Constant pressure sensor | • | • |
| Condensate drain pump | • | • |
| Ceiling void mounting kit | • | • |
| IAQ molecular gas filter | • | • |

Machine Management - Controls

| Choose your Controls | | | |
|---|---|---|---|
| **Controls features** | **Kinairtico0** | | **Kinairtico Mini** |
| | **PREMA** | **PREMA+** | **PREMA & PREMA+** |
| Power supply – phase | 1 ~ | 1 ~ | 1 ~ |
| Fire / unit enable | • | • | • |
| Hardwire control input #1 | •1 | •1 | •4 |
| Hardwire control input #2 | •2 | •2 | |
| | | | |
| Supply fan speed control | • | • | • |
| Extract fan speed control | • | • | • |
| Fan run-on control | | | • |
| Temperature control on supply or extract | | | • |
| | | | |
| Heating control | | • | • |
| Frost protection | | | • |
| | | | |
| Energy recovery bypass damper | • | • | • |
| | | | |
| Filter dirty | •3 | •3 | • |
| | | | |
| 0-10V Pressure / $CO_2$ / AQ input | • | • | • |
| | | | |
| 7 Day unit operation time clock | • | • | • |
| 7 Day unit fixed fan speed time clock | | | • |
| | | | |
| Condensate pump connect & monitor | | | • |
| | | | |
| BMS volt free fault | • | • | • |
| Modbus serial BMS connection | | | • |
| BACnet I/P BMS connection | | | • |
| Engineers Web browser | | | • |
| | | | |
| LCD Display | • | • | |
| Engineers display | | | • |
| Client monochrome display | | | O |
| Client colour touchscreen display | | | O |

LCD Display

Engineers display

Client monochrome display

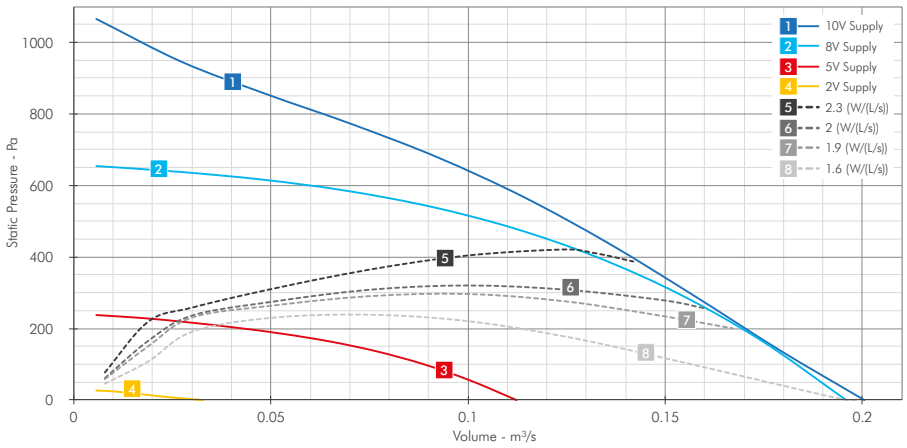
Client colour touchscreen display

1 – Boost
2 – Fixed speed
3 – Terminals only
4 – Enable, Boost, Fixed Speed
O – Optional

# PREMA180

The PREMA180 unit is optimised for any commercial building services application covering an airflow envelope of 0.008 – 0.188 $m^3/s$ at 75Pa ESP (low pressure duct systems). Overall unit SFP calculated with ISO $ePM_1$ 55% (F7) / ISO $ePM_{10}$ 55% (M5) filters under clean filter conditions.

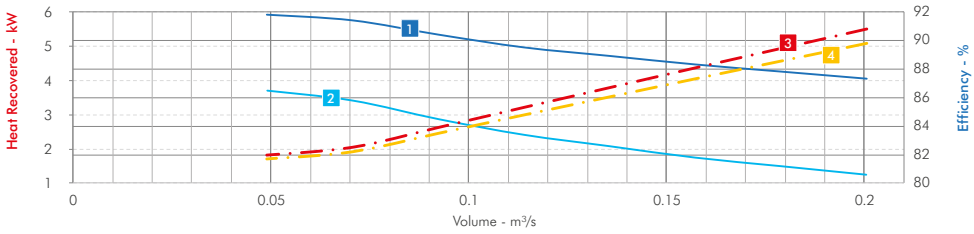
## Airflow Performance Curve




## Key Features

- **Heat / Coolth Recovery**
- **Dual Condensate Tray**
- **Low energy consumption** and quiet EC fans
- Counterflow heat exchanger offering **high thermal energy recovery**
- **100% motorised** bypass damper
- **Fine particulate filters** fitted as standard
- **ErP 2018** compliant
- **Demand control options** with BMS, $CO_2$ or constant pressure sensors
- **Airflow balancing** allows individual fan control and ensures a balanced supply and extract

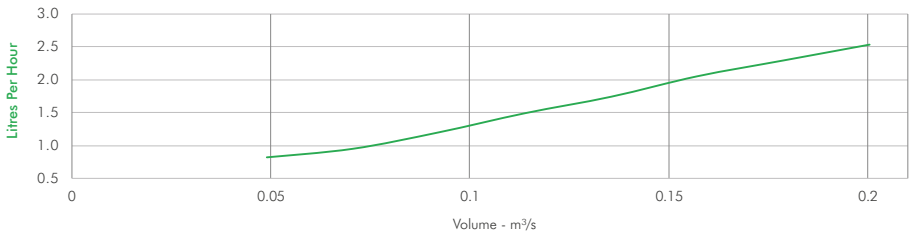
## Heat Exchanger Efficiency & Energy Recovery




Dry performance based on EN 308

Wet performance based on -5°C supply 95% RH, +21°C extract 50% RH

## Condensate Rate




Wet Performance based on -5°C supply 95% RH, +21°C extract 50% RH

## Performance Data

| Control Voltage | Speed r/min | Airflow SFP | Airflow $m^3/s$ @ Static Pressure Pa | | | | | | | | | | | | Input kW | Peak Amps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 25 | 50 | 75 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | | |
| 10V | 3849 | $m^3/s$ | **0.200** | **0.196** | **0.192** | **0.188** | **0.184** | **0.177** | **0.170** | **0.163** | **0.156** | **0.149** | **0.141** | **0.125** | 0.330 | 2.6 |
| | | W / (L/s) | 1.61 | 1.65 | 1.69 | 1.74 | 1.77 | 1.85 | 1.92 | 2.01 | 2.10 | 2.19 | 2.30 | 2.58 | | |
| 8V | 3750 | $m^3/s$ | **0.195** | **0.192** | **0.189** | **0.186** | **0.183** | **0.176** | **0.169** | **0.161** | **0.152** | **0.143** | **0.132** | **0.105** | 0.323 | 2.56 |
| | | W / (L/s) | 1.58 | 1.62 | 1.67 | 1.71 | 1.75 | 1.83 | 1.90 | 1.98 | 2.05 | 2.13 | 2.23 | 2.56 | | |
| 5V | 2255 | $m^3/s$ | **0.112** | **0.107** | **0.101** | **0.095** | **0.088** | **0.070** | **0.042** | - | - | - | - | - | 0.073 | 0.61 |
| | | W / (L/s) | 0.62 | 0.67 | 0.71 | 0.75 | 0.80 | 0.92 | 1.34 | - | - | - | - | - | | |
| 2V | 734 | $m^3/s$ | **0.032** | **0.009** | - | - | - | - | - | - | - | - | - | - | 0.009 | 0.1 |
| | | W / (L/s) | 0.27 | 0.78 | - | - | - | - | - | - | - | - | - | - | | |

Specific Fan Power figures (W / (L/s)) are total for both fans running under clean filter conditions (ref. the building regulations).
Data provided is at standard air density of 1.2 kg/m³. Air Performance: ISO 5801:2007.
Refer to Air Design Ecodesign document for data in accordance with ErP 1253/2014 of the European Parliament. Product category is NRVU:BVU. Measurement category used to determine energy efficiency: D.
A variable speed drive is integrated within the fan.
Peak Amps @ 230V / 1PH / 50Hz.

## Sound Data

| Control Voltage | Speed r/min | Location | Sound Power Level dBW @ Octave Band Hz | | | | | | | | | dBA @ 3m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1k Hz | 2k Hz | 4k Hz | 8k Hz | Total dB | |
| 10V | 3849 | **Intake (T21)** | 73 | 69 | 69 | 68 | 66 | 65 | 64 | 61 | 77 | 52 |
| | | **Supply (T22)** | 66 | 60 | 50 | 54 | 52 | 49 | 37 | 28 | 67 | 36 |
| | | **Extract (T11)** | 80 | 71 | 70 | 67 | 64 | 62 | 60 | 59 | 81 | 50 |
| | | **Exhaust (T12)** | 67 | 62 | 50 | 41 | 47 | 42 | 31 | 29 | 68 | 31 |
| | | **Break Out** | 62 | 61 | 57 | 51 | 43 | 41 | 39 | 35 | 65 | 33 |
| 8V | 3750 | **Intake (T21)** | 74 | 69 | 69 | 68 | 65 | 63 | 62 | 60 | 77 | 51 |
| | | **Supply (T22)** | 65 | 59 | 50 | 55 | 50 | 47 | 35 | 28 | 67 | 35 |
| | | **Extract (T11)** | 80 | 71 | 70 | 66 | 64 | 62 | 60 | 58 | 81 | 49 |
| | | **Exhaust (T12)** | 66 | 61 | 49 | 40 | 46 | 41 | 31 | 30 | 67 | 30 |
| | | **Break Out** | 61 | 61 | 57 | 51 | 44 | 41 | 39 | 35 | 65 | 33 |
| 5V | 2255 | **Intake (T21)** | 62 | 61 | 63 | 56 | 52 | 50 | 48 | 43 | 67 | 39 |
| | | **Supply (T22)** | 53 | 50 | 42 | 40 | 38 | 34 | 25 | 23 | 55 | 22 |
| | | **Extract (T11)** | 63 | 63 | 63 | 54 | 52 | 50 | 47 | 47 | 68 | 39 |
| | | **Exhaust (T12)** | 55 | 51 | 39 | 29 | 34 | 29 | 23 | 22 | 57 | 19 |
| | | **Break Out** | 50 | 51 | 48 | 40 | 31 | 28 | 25 | 27 | 55 | 22 |

The overall A-weighted sound pressure level is at a distance of 3m with spherical free-field propagation. It is expressed in dB re-20$\mu$Pa and is presented for comparative purposes only.
Tests and preparation of the sound data have been carried out in accordance with BS 848-2:1985 (ducted) and **independently tested** to ISO 3741:2010 (breakout).
The Sound Power Level Spectra are in dB re-1pW.

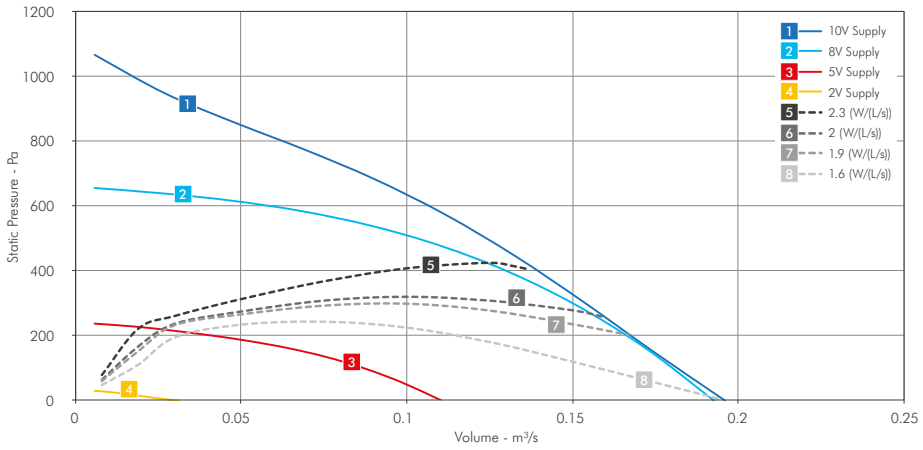
## Ordering Stock Codes

| Product Stock Code | Product | Product Description |
|---|---|---|
| 7835824-180 | PREMA180 | Standard version |
| 7835824-180CP | PREMA180CP | Standard version, constant pressure control |

# PREMA180+

The PREMA180+ have evolved to deliver comfort ventilation with added heating capabilities and a dedicated Kinairtico Mini controller for superior demand controlled ventilation and BMS connectivity.

## Airflow Performance Curve - Water Heater Version




## +Features

In addition to the features listed for PREMA180, the PREMA180+ includes:

- **Heating** (Electric or Hot Water)
- **Kinairtico0 / Kinairtico Mini**

## Performance Data - Heating Loads

| +Heating | Electric Heater Battery (kW)* | Hot Water Coil (kW) | Fluid Data | | |
|---|---|---|---|---|---|
| | | | Internal Volume (L) | Flow Rate (L/s) | Flow / Return temps. (°C) |
| PREMA180+ | 0.7 | 2.68 | 0.22 | 0.03 | 80/60 |

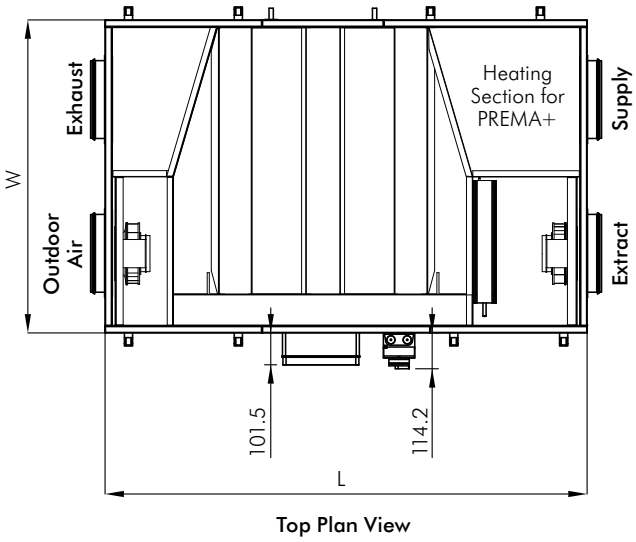
*1phase modulating heater battery.

## Ordering Stock Codes

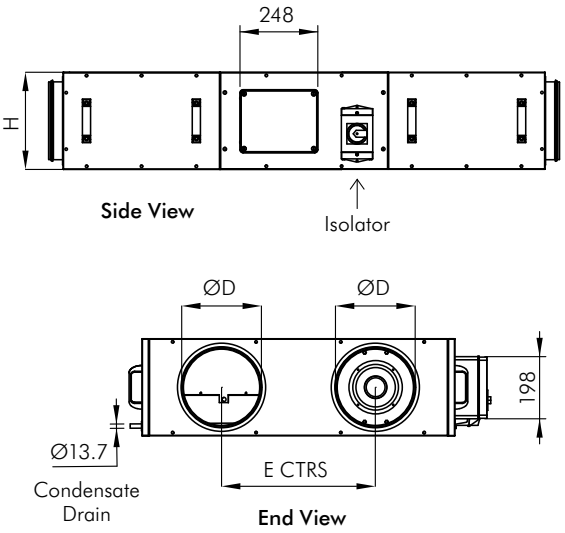
| Product Stock Code | Product | Product Description |
|---|---|---|
| 7835824-180E | PREMA180+E | Electric heater version (Kinairtico0 control) |
| 7835824-180ES | PREMA180+ES | Electric heater version (Kinairtico Mini control) |
| 7835824-180W | PREMA180+W | Water heater version (Kinairtico0 control) |
| 7835824-180WS | PREMA180+WS | Water heater version (Kinairtico Mini control) |
| 7835824-180ECP | PREMA180+ECP | Electric heater version (Kinairtico0 control) constant pressure control |
| 7835824-180ESCP | PREMA180+ESCP | Electric heater version (Kinairtico Mini control) constant pressure control |
| 7835824-180WCP | PREMA180+WCP | Water heater version (Kinairtico0 control) constant pressure control |
| 7835824-180WSCP | PREMA180+WSCP | Water heater version (Kinairtico Mini control) constant pressure control |

# Dimensional Data

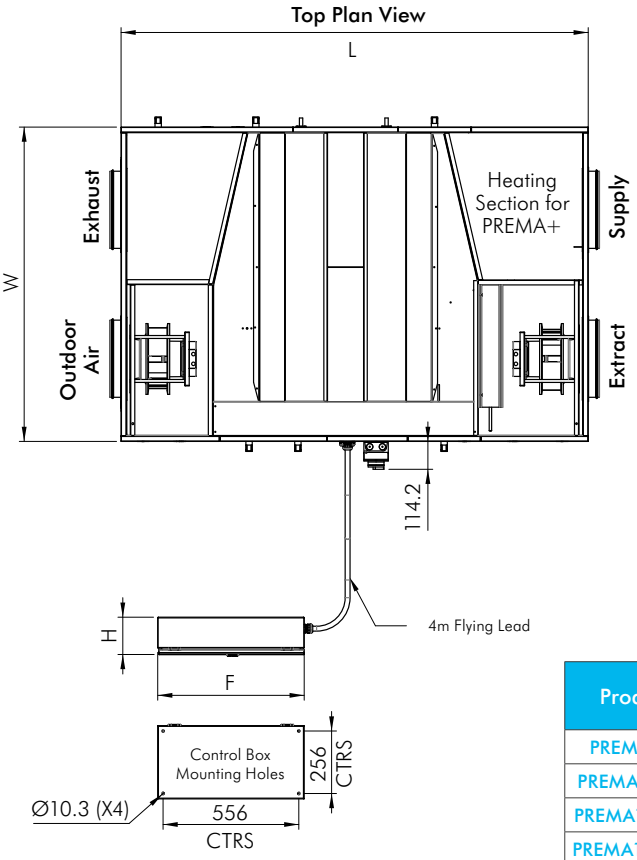
## PREMA180, PREMA180+E & PREMA180+W

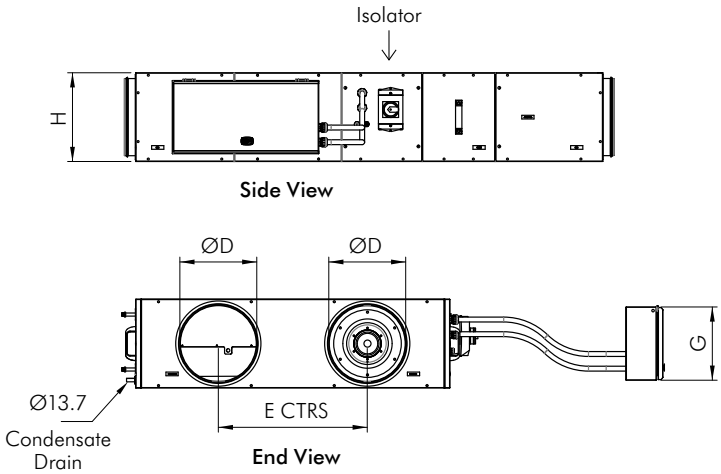



Top Plan View




## PREMA180+ES & PREMA180+WS



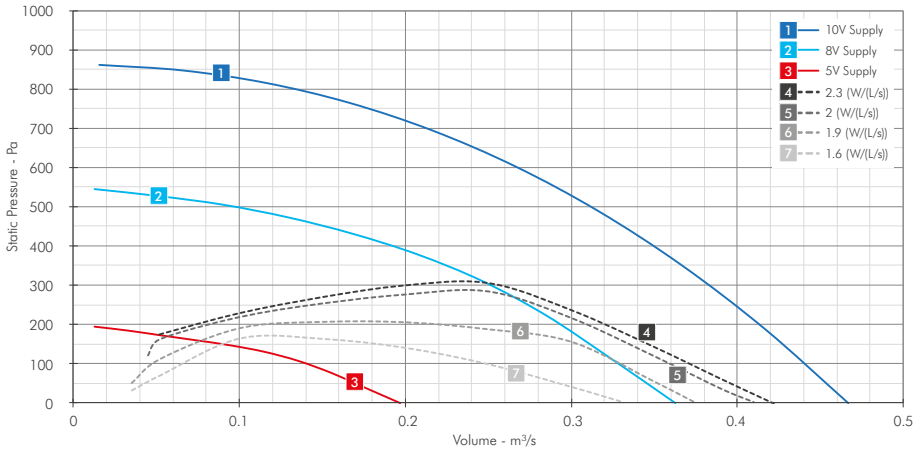

| Product | L | W | H* | D | E | F | G | H | Pipe** | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PREMA180 | 1537 | 997 | 308 | 250 | 490 | - | - | - | - | 125 |
| PREMA180+E | 1537 | 997 | 308 | 250 | 490 | - | - | - | - | 129 |
| PREMA180+W | 1537 | 997 | 308 | 250 | 490 | - | - | - | 1/2" | 144 |
| PREMA180+ES | 1537 | 997 | 308 | 250 | 490 | 600 | 300 | 152 | - | 148 |
| PREMA180+WS | 1537 | 997 | 308 | 250 | 490 | 600 | 300 | 152 | 1/2" | 164 |

All dimensions are expressed in mm.
*Overall height includes unit mounted condensate drain tray.
**LPHW Coil Header dimension.

# PREMA330

The PREMA330 unit is optimised for any commercial building services application covering an airflow envelope of 0.156 – 0.383 $m^3/s$ at 75Pa ESP (low pressure duct systems). Overall unit SFP calculated with ISO $ePM_1$ 55% (F7) / ISO $ePM_{10}$ 55% (M5) filters under clean filter conditions.

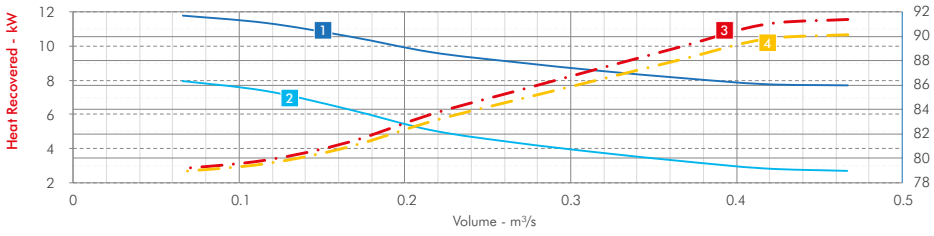
## Airflow Performance Curve




## Key Features

- **Heat / Coolth Recovery**
- **Dual Condensate Tray**
- **Low energy consumption** and quiet EC fans
- Counterflow heat exchanger offering **high thermal energy recovery**
- **100% motorised** bypass damper
- **Fine particulate filters** fitted as standard
- **ErP 2018** compliant
- **Demand control options** with BMS, $CO_2$ or constant pressure sensors
- **Airflow balancing** allows individual fan control and ensures a balanced supply and extract

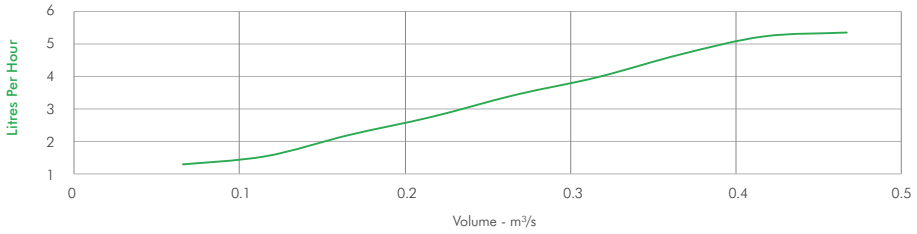
## Heat Exchanger Efficiency & Energy Recovery




Dry performance based on EN 308

Wet performance based on -5°C supply 95% RH, +21°C extract 50% RH

## Condensate Rate




Wet Performance based on -5°C supply 95% RH, +21°C extract 50% RH

## Performance Data

| Control Voltage | Speed r/min | Airflow SFP | Airflow $m^3/s$ @ Static Pressure Pa | | | | | | | | | | | | Input kW | Peak Amps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 25 | 50 | 75 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | | |
| 10V | 3082 | $m^3/s$ | **0.467** | **0.460** | **0.454** | **0.447** | **0.441** | **0.427** | **0.413** | **0.398** | **0.383** | **0.367** | **0.349** | **0.312** | 1.103 | 4.82 |
| | | W / (L/s) | 2.35 | 2.39 | 2.42 | 2.45 | 2.49 | 2.56 | 2.64 | 2.72 | 2.81 | 2.91 | 3.03 | 3.30 | | |
| 8V | 2446 | $m^3/s$ | **0.362** | **0.353** | **0.344** | **0.336** | **0.328** | **0.311** | **0.293** | **0.273** | **0.251** | **0.224** | **0.191** | **0.095** | 0.590 | 2.62 |
| | | W / (L/s) | 1.63 | 1.67 | 1.71 | 1.75 | 1.79 | 1.87 | 1.96 | 2.07 | 2.20 | 2.40 | 2.69 | 4.44 | | |
| 5V | 1454 | $m^3/s$ | **0.197** | **0.183** | **0.170** | **0.156** | **0.140** | **0.089** | - | - | - | - | - | - | 0.151 | 0.7 |
| | | W / (L/s) | 0.77 | 0.82 | 0.87 | 0.93 | 1.01 | 1.42 | - | - | - | - | - | - | | |

Specific Fan Power figures (W / (L/s)) are total for both fans running under clean filter conditions (ref. the building regulations).
Data provided is at standard air density of 1.2 kg/$m^3$. Air Performance: ISO 5801:2007.
Refer to Air Design Ecodesign document for data in accordance with ErP 1253/2014 of the European Parliament. Product category is NRVU:BVU. Measurement category used to determine energy efficiency: D.
A variable speed drive is integrated within the fan.
Peak Amps @ 230V / 1PH / 50Hz.

## Sound Data

| Control Voltage | Speed r/min | Location | Sound Power Level dBW @ Octave Band Hz | | | | | | | | | dBA @ 3m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1k Hz | 2k Hz | 4k Hz | 8k Hz | Total dB | |
| 10V | 3082 | **Intake (T21)** | 79 | 74 | 75 | 73 | 68 | 65 | 65 | 61 | 82 | 54 |
| | | **Supply (T22)** | 74 | 64 | 56 | 60 | 58 | 50 | 39 | 30 | 75 | 41 |
| | | **Extract (T11)** | 81 | 77 | 77 | 73 | 67 | 66 | 67 | 62 | 84 | 55 |
| | | **Exhaust (T12)** | 75 | 69 | 57 | 54 | 51 | 48 | 44 | 40 | 76 | 38 |
| | | **Break Out** | 70 | 67 | 65 | 55 | 47 | 45 | 42 | 35 | 73 | 39 |
| 8V | 2446 | **Intake (T21)** | 74 | 70 | 75 | 66 | 61 | 59 | 59 | 54 | 79 | 49 |
| | | **Supply (T22)** | 68 | 59 | 57 | 51 | 52 | 45 | 33 | 28 | 69 | 35 |
| | | **Extract (T11)** | 77 | 73 | 75 | 67 | 62 | 60 | 61 | 56 | 80 | 50 |
| | | **Exhaust (T12)** | 71 | 66 | 54 | 48 | 46 | 42 | 35 | 32 | 72 | 34 |
| | | **Break Out** | 65 | 62 | 66 | 45 | 40 | 39 | 36 | 29 | 69 | 37 |
| 5V | 1454 | **Intake (T21)** | 66 | 69 | 60 | 53 | 49 | 46 | 44 | 39 | 71 | 37 |
| | | **Supply (T22)** | 59 | 54 | 41 | 38 | 40 | 33 | 25 | 24 | 60 | 24 |
| | | **Extract (T11)** | 67 | 70 | 60 | 54 | 51 | 47 | 46 | 40 | 72 | 38 |
| | | **Exhaust (T12)** | 61 | 55 | 45 | 34 | 33 | 30 | 25 | 24 | 62 | 23 |
| | | **Break Out** | 55 | 57 | 50 | 38 | 28 | 26 | 22 | 19 | 60 | 24 |

The overall A-weighted sound pressure level is at a distance of 3m with spherical free-field propagation. It is expressed in dB re-20$\mu$Pa and is presented for comparative purposes only.
Tests and preparation of the sound data have been carried out in accordance with BS 848-2:1985 (ducted) and **independently tested** to ISO 3741:2010 (breakout).
The Sound Power Level Spectra are in dB re-1pW.

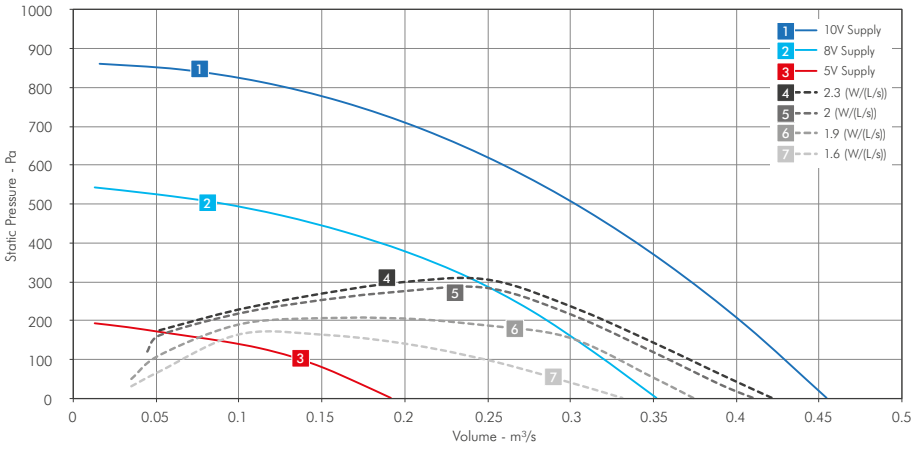
## Ordering Stock Codes

| Product Stock Code | Product | Product Description |
|---|---|---|
| 7835824-330 | PREMA330 | Standard version |
| 7835824-330CP | PREMA330CP | Standard version, constant pressure control |

# PREMA330+

The PREMA330+ have evolved to deliver comfort ventilation with added heating capabilities and a dedicated Kinairtico Mini controller for superior demand controlled ventilation and BMS connectivity.

## Airflow Performance Curve - Water Heater Version




## +Features

In addition to the features listed for PREMA330, the PREMA330+ includes:

- **Heating** (Electric or Hot Water)
- **Kinairtico0 / Kinairtico Mini**

## Heating Loads – Performance Table

| +Heating | Electric Heater Battery (kW)* | Hot Water Coil (kW) | Fluid Data | | |
|---|---|---|---|---|---|
| | | | Internal Volume (L) | Flow Rate (L/s) | Flow / Return temps. (°C) |
| PREMA330+ | 2.0 | 5.61 | 0.35 | 0.07 | 80/60 |

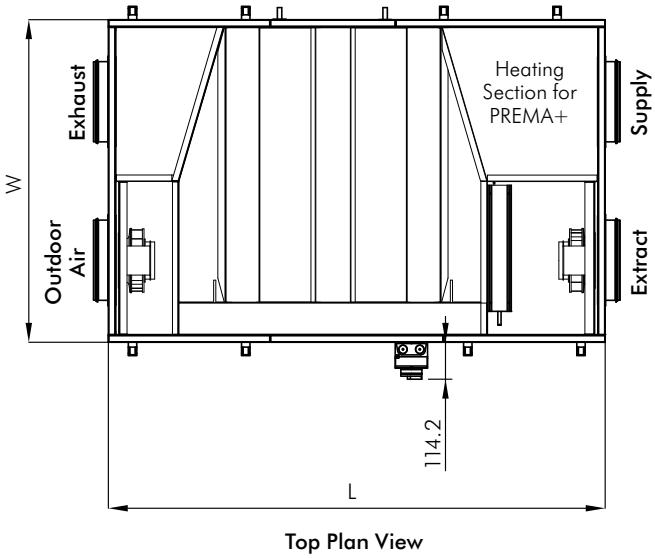
*1phase modulating heater battery.

## Ordering Stock Codes

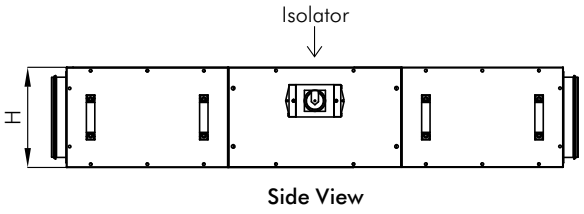
| Product Stock Code | Product | Product Description |
|---|---|---|
| 7835824-330E | PREMA330+E | Electric heater version (Kinairtico0 control) |
| 7835824-330ES | PREMA330+ES | Electric heater version (Kinairtico Mini control) |
| 7835824-330W | PREMA330+W | Water heater version (Kinairtico0 control) |
| 7835824-330WS | PREMA330+WS | Water heater version (Kinairtico Mini control) |
| 7835824-330ECP | PREMA330+ECP | Electric heater version (Kinairtico0 control) constant pressure control |
| 7835824-330ESCP | PREMA330+ESCP | Electric heater version (Kinairtico Mini control) constant pressure control |
| 7835824-330WCP | PREMA330+WCP | Water heater version (Kinairtico0 control) constant pressure control |
| 7835824-330WSCP | PREMA330+WSCP | Water heater version (Kinairtico Mini control) constant pressure control |

# Dimensional Data

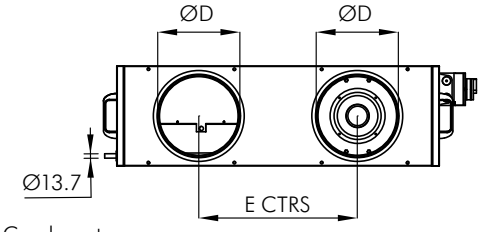
## PREMA330, PREMA330+E & PREMA330+W




Top Plan View

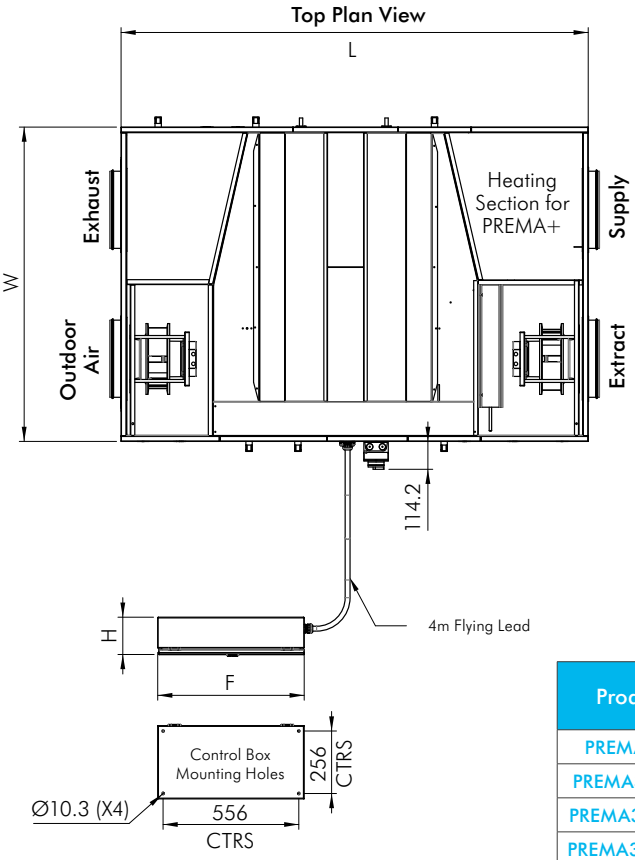


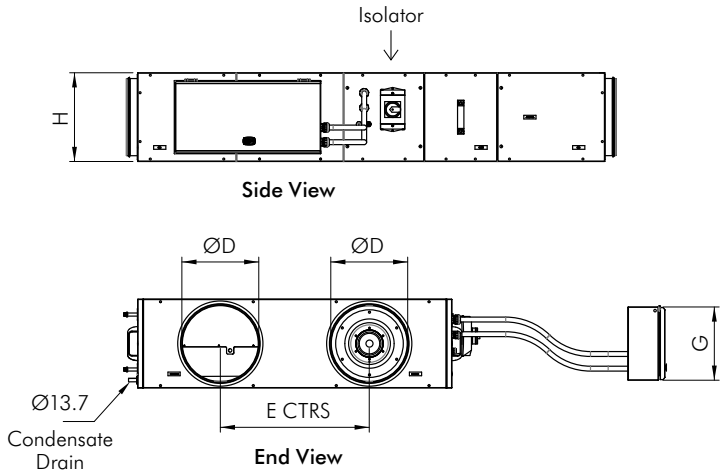

Side View




End View

## PREMA330+ES & PREMA330+WS



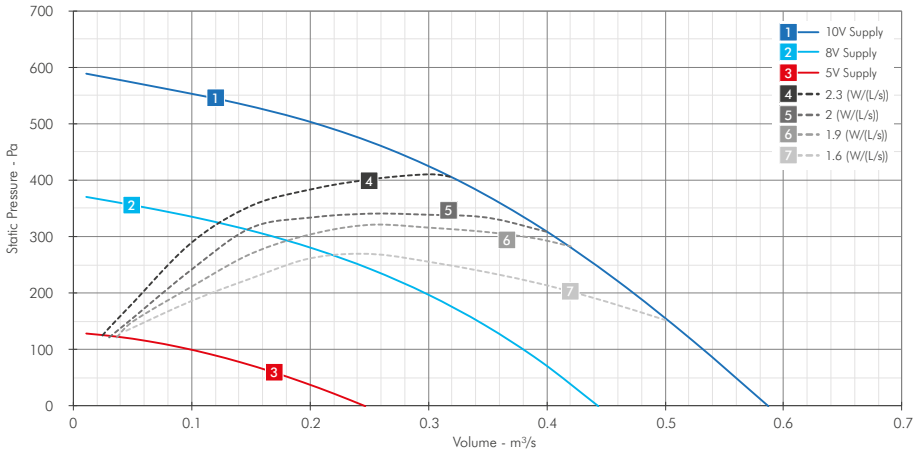

| Product | L | W | H* | D | E | F | G | H | Pipe** | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PREMA330 | 1914 | 1286 | 363 | 315 | 610 | - | - | - | - | 194 |
| PREMA330+E | 1914 | 1286 | 363 | 315 | 610 | - | - | - | - | 199 |
| PREMA330+W | 1914 | 1286 | 363 | 315 | 610 | - | - | - | 1/2" | 214 |
| PREMA330+ES | 1914 | 1286 | 363 | 315 | 610 | 600 | 300 | 152 | - | 218 |
| PREMA330+WS | 1914 | 1286 | 363 | 315 | 610 | 600 | 300 | 152 | 1/2" | 234 |

All dimensions are expressed in mm.
*Overall height includes unit mounted condensate drain tray.
**LPHW Coil Header dimension.

# PREMA540

The PREMA540 unit is optimised for any commercial building services application covering an airflow envelope of 0.145 – 0.546 $m^3/s$ at 75Pa ESP (low pressure duct systems). Overall unit SFP calculated with ISO $ePM_1$ 55% (F7) / ISO $ePM_{10}$ 55% (M5) filters under clean filter conditions.

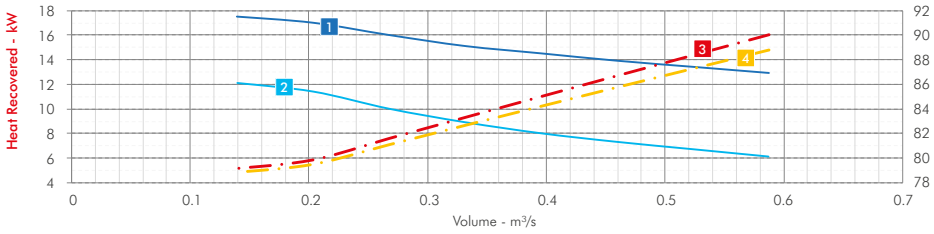
## Airflow Performance Curve




## Key Features

- **Heat / Coolth Recovery**
- **Dual Condensate Tray**
- **Low energy consumption** and quiet EC fans
- Counterflow heat exchanger offering **high thermal energy recovery**
- **100% motorised** bypass damper
- **Fine particulate filters** fitted as standard
- **ErP 2018** compliant
- **Demand control options** with BMS, $CO_2$ or constant pressure sensors
- **Airflow balancing** allows individual fan control and ensures a balanced supply and extract

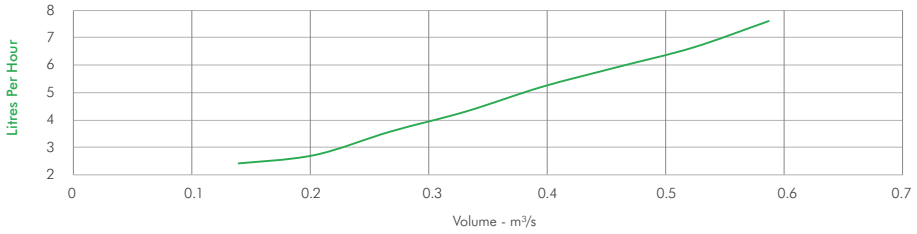
## Heat Exchanger Efficiency & Energy Recovery




Dry performance based on EN 308

Wet performance based on -5°C supply 95% RH, +21°C extract 50% RH

## Condensate Rate




Wet Performance based on -5°C supply 95% RH, +21°C extract 50% RH

## Performance Data

| Control Voltage | Speed r/min | Airflow SFP | Airflow $m^3/s$ @ Static Pressure Pa | | | | | | | | | | | | Input kW | Peak Amps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 25 | 50 | 75 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | | |
| 10V | 2016 | m /s | **0.587** | **0.573** | **0.560** | **0.546** | **0.532** | **0.503** | **0.473** | **0.441** | **0.407** | **0.368** | **0.325** | **0.206** | 0.804 | 3.55 |
| | | W / (L/s) | 1.37 | 1.40 | 1.43 | 1.46 | 1.50 | 1.58 | 1.68 | 1.78 | 1.90 | 2.04 | 2.19 | 2.82 | | |
| 8V | 1599 | $m^3/s$ | **0.443** | **0.428** | **0.413** | **0.397** | **0.380** | **0.342** | **0.297** | **0.241** | **0.168** | **0.064** | **-** | **-** | 0.417 | 1.85 |
| | | W / (L/s) | 0.94 | 0.97 | 1.01 | 1.04 | 1.09 | 1.19 | 1.33 | 1.52 | 1.90 | 3.69 | - | - | | |
| 5V | 955 | $m^3/s$ | **0.246** | **0.216** | **0.183** | **0.145** | **0.098** | - | - | - | - | - | - | - | 0.109 | 0.55 |
| | | W / (L/s) | 0.44 | 0.50 | 0.57 | 0.68 | 0.89 | - | - | - | - | - | - | - | | |

Specific Fan Power figures (W / (L/s)) are total for both fans running under clean filter conditions (ref. the building regulations).
Data provided is at standard air density of 1.2 kg/$m^3$. Air Performance: ISO 5801:2007.
Refer to Air Design Ecodesign document for data in accordance with ErP 1253/2014 of the European Parliament. Product category is NRVU:BVU. Measurement category used to determine energy efficiency: D.
A variable speed drive is integrated within the fan.
Peak Amps @ 230V / 1PH / 50Hz.

## Sound Data

| Control Voltage | Speed r/min | Location | Sound Power Level dBW @ Octave Band Hz | | | | | | | | | dBA @ 3m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1k Hz | 2k Hz | 4k Hz | 8k Hz | Total dB | |
| 10V | 2016 | **Intake (T21)** | 77 | 76 | 76 | 69 | 62 | 57 | 55 | 51 | 81 | 51 |
| | | **Supply (T22)** | 71 | 62 | 55 | 56 | 49 | 40 | 29 | 25 | 72 | 36 |
| | | **Extract (T11)** | 79 | 79 | 77 | 71 | 63 | 58 | 56 | 51 | 84 | 52 |
| | | **Exhaust (T12)** | 74 | 65 | 52 | 51 | 47 | 37 | 29 | 26 | 75 | 34 |
| | | **Breakout** | 67 | 63 | 66 | 52 | 37 | 32 | 32 | 22 | 70 | 38 |
| 8V | 1599 | **Intake (T21)** | 72 | 75 | 67 | 63 | 55 | 51 | 48 | 46 | 77 | 44 |
| | | **Supply (T22)** | 66 | 57 | 49 | 46 | 43 | 34 | 26 | 23 | 67 | 28 |
| | | **Extract (T11)** | 74 | 76 | 68 | 64 | 56 | 52 | 49 | 46 | 79 | 45 |
| | | **Exhaust (T12)** | 67 | 61 | 47 | 44 | 41 | 32 | 26 | 24 | 68 | 28 |
| | | **Breakout** | 63 | 61 | 58 | 43 | 31 | 27 | 24 | 19 | 66 | 31 |
| 5V | 955 | **Intake (T21)** | 70 | 66 | 56 | 49 | 43 | 36 | 34 | 29 | 72 | 33 |
| | | **Supply (T22)** | 58 | 52 | 37 | 33 | 30 | 24 | 22 | 20 | 59 | 19 |
| | | **Extract (T11)** | 71 | 67 | 57 | 49 | 43 | 36 | 33 | 30 | 73 | 34 |
| | | **Exhaust (T12)** | 59 | 53 | 34 | 30 | 28 | 23 | 21 | 19 | 60 | 19 |
| | | **Breakout** | 55 | 50 | 47 | 29 | 19 | 15 | 16 | 16 | 57 | 20 |

The overall A-weighted sound pressure level is at a distance of 3m with spherical free-field propagation. It is expressed in dB re-20$\mu$Pa and is presented for comparative purposes only.
Tests and preparation of the sound data have been carried out in accordance with BS 848-2:1985 (ducted) and **independently tested** to ISO 3741:2010 (breakout).
The Sound Power Level Spectra are in dB re-1pW.

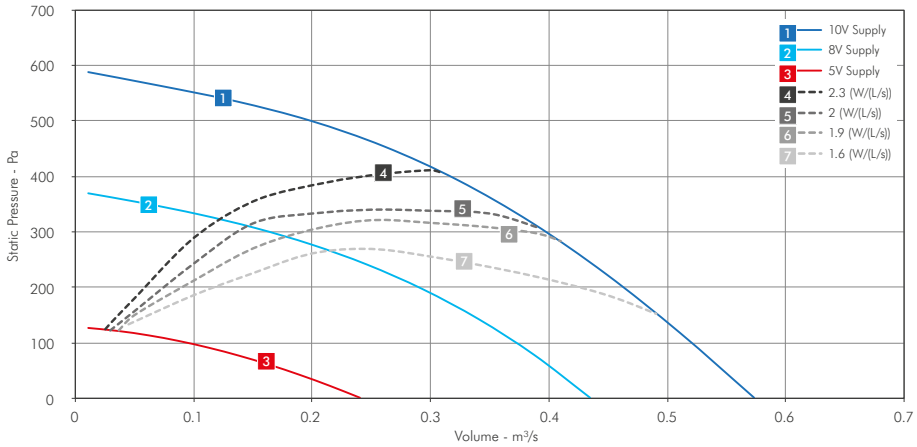
## Ordering Stock Codes

| Product Stock Code | Product | Product Description |
|---|---|---|
| 7835824-540 | PREMA540 | Standard version |
| 7835824-540CP | PREMA540CP | Standard version, constant pressure control |

# PREMA540+

The PREMA540+ have evolved to deliver comfort ventilation with added heating capabilities and a dedicated Kinairtico Mini controller for superior demand controlled ventilation and BMS connectivity.

## Airflow Performance Curve - Water Heater Version




## +Features

In addition to the features listed for PREMA540, the PREMA540+ includes:

- **Heating** (Electric or Hot Water)
- **Kinairtico0 / Kinairtico Mini**

## Heating Loads – Performance Table

| +Heating | Electric Heater Battery (kW)* | Hot Water Coil (kW) | Fluid Data | | |
|---|---|---|---|---|---|
| | | | Internal Volume (L) | Flow Rate (L/s) | Flow / Return temps. (°C) |
| PREMA540+ | 2.0 | 8.75 | 0.67 | 0.11 | 80/60 |

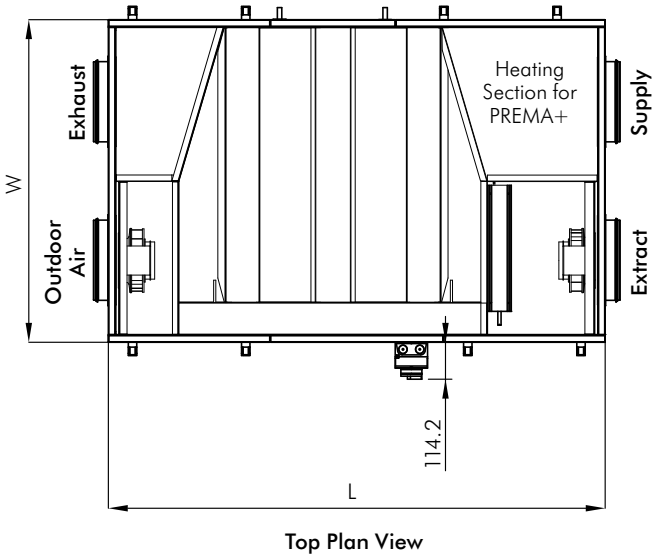
*1phase modulating heater battery.

## Ordering Stock Codes

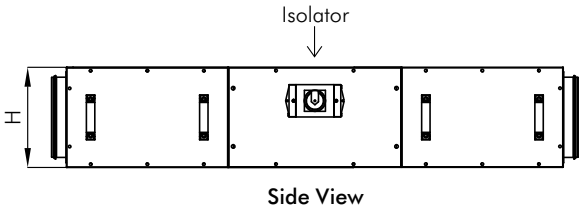
| Product Stock Code | Product | Product Description |
|---|---|---|
| 7835824-540E | PREMA540+E | Electric heater version (Kinairtico0 control) |
| 7835824-540ES | PREMA540+ES | Electric heater version (Kinairtico Mini control) |
| 7835824-540W | PREMA540+W | Water heater version (Kinairtico0 control) |
| 7835824-540WS | PREMA540+WS | Water heater version (Kinairtico Mini control) |
| 7835824-540ECP | PREMA540+ECP | Electric heater version (Kinairtico0 control) constant pressure control |
| 7835824-540ESCP | PREMA540+ESCP | Electric heater version (Kinairtico Mini control) constant pressure control |
| 7835824-540WCP | PREMA540+WCP | Water heater version (Kinairtico0 control) constant pressure control |
| 7835824-540WSCP | PREMA540+WSCP | Water heater version (Kinairtico Mini control) constant pressure control |

# Dimensional Data

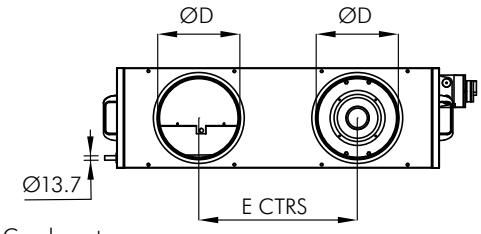
## PREMA540, PREMA540+E & PREMA540+W




Top Plan View

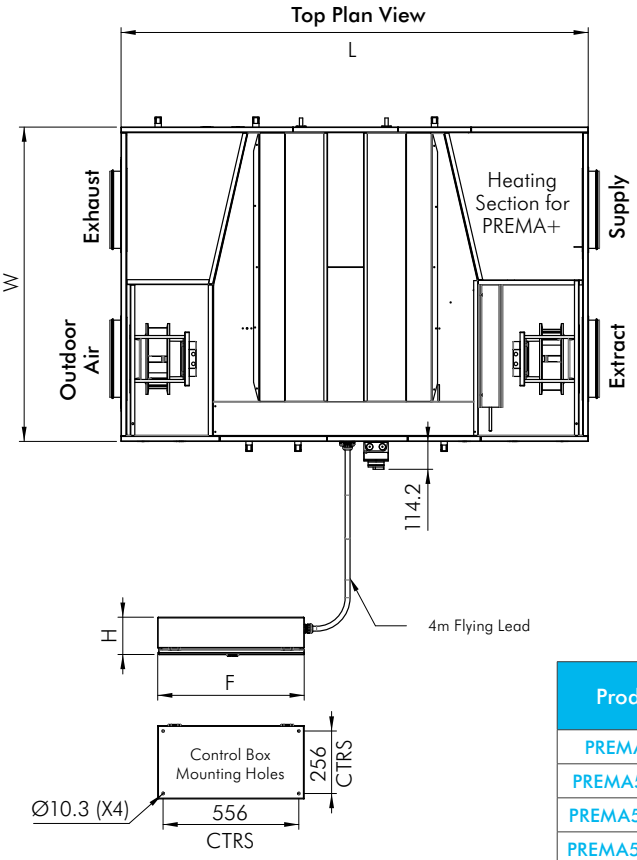


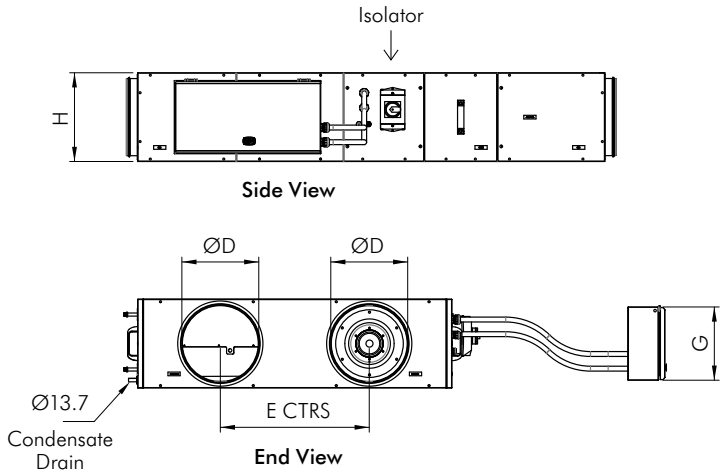

Side View




End View

## PREMA540+ES & PREMA540+WS



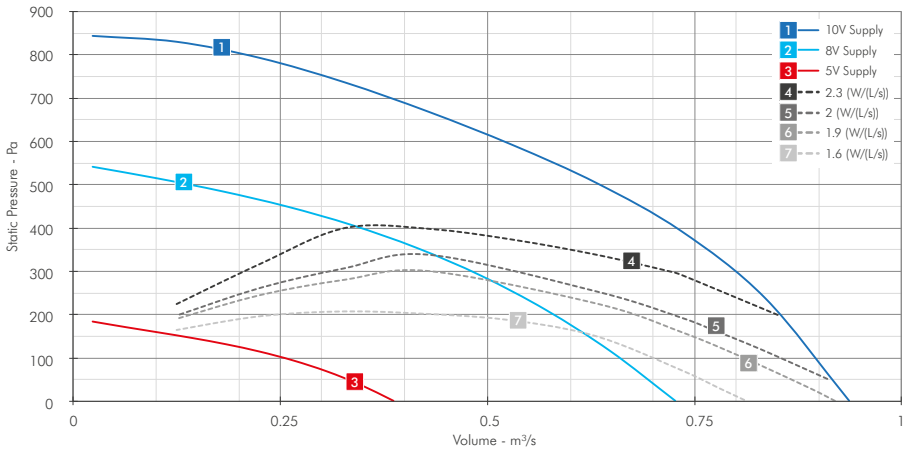

| Product | L | W | H* | D | E | F | G | H | Pipe** | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PREMA540 | 2066 | 1496 | 474 | 355 | 750 | - | - | - | - | 241 |
| PREMA540+E | 2066 | 1496 | 474 | 355 | 750 | - | - | - | - | 248 |
| PREMA540+W | 2066 | 1496 | 474 | 355 | 750 | - | - | - | 1/2" | 263 |
| PREMA540+ES | 2066 | 1496 | 474 | 355 | 750 | 600 | 300 | 152 | - | 267 |
| PREMA540+WS | 2066 | 1496 | 474 | 355 | 750 | 600 | 300 | 152 | 1/2" | 283 |

All dimensions are expressed in mm.
*Overall height includes unit mounted condensate drain tray.
**LPHW Coil Header dimension.

# PREMA900

The PREMA900 unit is optimised for any commercial building services application covering an airflow envelope of 0.296 – 0.909 $m^3/s$ at 75Pa ESP (low pressure duct systems). Overall unit SFP calculated with ISO $ePM_1$ 55% (F7) / ISO $ePM_{10}$ 55% (M5) filters under clean filter conditions.

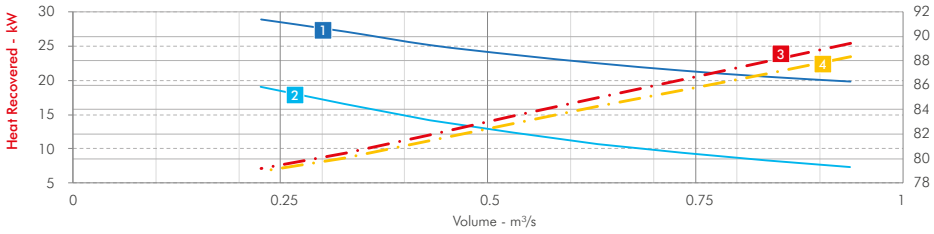
## Airflow Performance Curve




## Key Features

- **Heat / Coolth Recovery**
- **Dual Condensate Tray**
- **Low energy consumption** and quiet EC fans
- Counterflow heat exchanger offering **high thermal energy recovery**
- **100% motorised** bypass damper
- **Fine particulate filters** fitted as standard
- **ErP 2018** compliant
- **Demand control options** with BMS, $CO_2$ or constant pressure sensors
- **Airflow balancing** allows individual fan control and ensures a balanced supply and extract

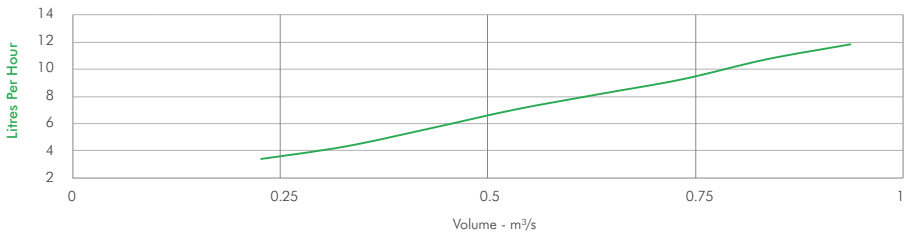
## Heat Exchanger Efficiency & Energy Recovery




Dry performance based on EN 308

Wet performance based on -5°C supply 95% RH, +21°C extract 50% RH

## Condensate Rate




Wet Performance based on -5°C supply 95% RH, +21°C extract 50% RH

## Performance Data

| Control Voltage | Speed r/min | Airflow SFP | Airflow $m^3/s$ @ Static Pressure Pa | | | | | | | | | | | | Input kW | Peak Amps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 25 | 50 | 75 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | | |
| 10V | 2199 | $m^3/s$ | **0.936** | **0.928** | **0.919** | **0.909** | **0.899** | **0.878** | **0.854** | **0.828** | **0.799** | **0.766** | **0.728** | **0.636** | 1.815 | 7.97 |
| | | W / (L/s) | 1.86 | 1.89 | 1.93 | 1.96 | 1.99 | 2.05 | 2.12 | 2.19 | 2.26 | 2.35 | 2.44 | 2.67 | | |
| 8V | 1805 | $m^3/s$ | **0.726** | **0.710** | **0.694** | **0.677** | **0.659** | **0.621** | **0.579** | **0.533** | **0.480** | **0.420** | **0.347** | **0.141** | 0.950 | 4.25 |
| | | W / (L/s) | 1.28 | 1.32 | 1.36 | 1.39 | 1.44 | 1.53 | 1.63 | 1.74 | 1.87 | 2.02 | 2.26 | 4.15 | | |
| 5V | 1200 | $m^3/s$ | **0.386** | **0.360** | **0.331** | **0.296** | **0.254** | **0.131** | - | - | - | - | - | - | 0.236 | 1.13 |
| | | W / (L/s) | 0.61 | 0.65 | 0.71 | 0.77 | 0.87 | 1.39 | - | - | - | - | - | - | | |

Specific Fan Power figures (W / (L/s)) are total for both fans running under clean filter conditions (ref. the building regulations).
Data provided is at standard air density of 1.2 kg/$m^3$. Air Performance: ISO 5801:2007.
Refer to Air Design Ecodesign document for data in accordance with ErP 1253/2014 of the European Parliament. Product category is NRVU:BVU. Measurement category used to determine energy efficiency: D.
A variable speed drive is integrated within the fan.
Peak Amps @ 230V / 1PH / 50Hz.

## Sound Data

| Control Voltage | Speed r/min | Location | Sound Power Level dBW @ Octave Band Hz | | | | | | | | | dBA @ 3m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1k Hz | 2k Hz | 4k Hz | 8k Hz | Total dB | |
| 10V | 2199 | **Intake (T21)** | 80 | 81 | 80 | 72 | 67 | 68 | 63 | 62 | 86 | 56 |
| | | **Supply (T22)** | 73 | 68 | 61 | 57 | 59 | 54 | 35 | 31 | 75 | 42 |
| | | **Extract (T11)** | 81 | 82 | 80 | 73 | 68 | 69 | 64 | 63 | 86 | 56 |
| | | **Exhaust (T12)** | 74 | 69 | 59 | 56 | 55 | 53 | 39 | 37 | 75 | 40 |
| | | **Breakout** | 72 | 68 | 71 | 52 | 43 | 41 | 37 | 28 | 75 | 42 |
| 8V | 1805 | **Intake (T21)** | 76 | 78 | 72 | 65 | 60 | 60 | 56 | 54 | 81 | 49 |
| | | **Supply (T22)** | 68 | 62 | 53 | 49 | 50 | 44 | 31 | 29 | 69 | 34 |
| | | **Extract (T11)** | 78 | 79 | 73 | 67 | 61 | 61 | 57 | 54 | 82 | 50 |
| | | **Exhaust (T12)** | 69 | 64 | 52 | 49 | 48 | 42 | 33 | 32 | 70 | 33 |
| | | **Breakout** | 66 | 64 | 62 | 46 | 37 | 33 | 30 | 25 | 69 | 34 |
| 5V | 1200 | **Intake (T21)** | 69 | 69 | 57 | 51 | 45 | 46 | 45 | 36 | 72 | 36 |
| | | **Supply (T22)** | 58 | 54 | 40 | 36 | 35 | 31 | 27 | 26 | 60 | 22 |
| | | **Extract (T11)** | 71 | 70 | 59 | 53 | 46 | 47 | 43 | 37 | 74 | 37 |
| | | **Exhaust (T12)** | 61 | 54 | 40 | 35 | 34 | 34 | 29 | 27 | 62 | 22 |
| | | **Breakout** | 56 | 57 | 53 | 32 | 24 | 19 | 20 | 18 | 60 | 25 |

The overall A-weighted sound pressure level is at a distance of 3m with spherical free-field propagation. It is expressed in dB re-20$\mu$Pa and is presented for comparative purposes only.
Tests and preparation of the sound data have been carried out in accordance with BS 848-2:1985 (ducted) and **independently tested** to ISO 3741:2010 (breakout).
The Sound Power Level Spectra are in dB re-1pW.

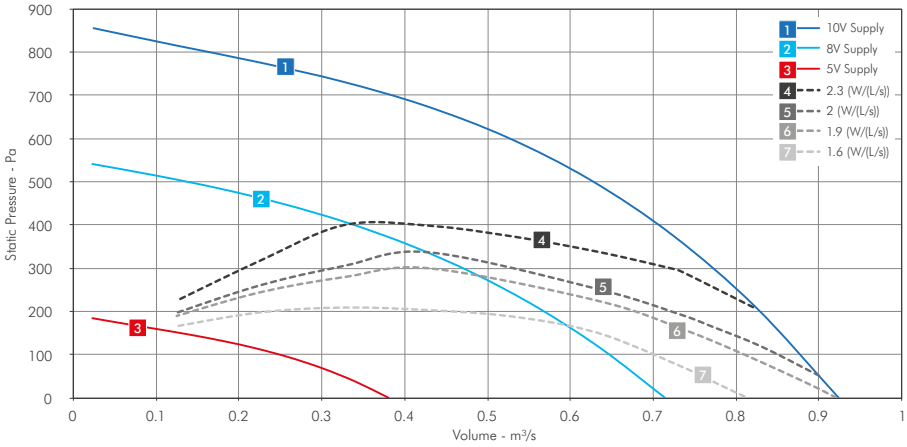
## Ordering Stock Codes

| Product Stock Code | Product | Product Description |
|---|---|---|
| 7835824-900 | PREMA900 | Standard version |
| 7835824-900CP | PREMA900CP | Standard version, constant pressure control |

# PREMA900+

The PREMA900+ have evolved to deliver comfort ventilation with added heating capabilities and a dedicated Kinairtico Mini controller for superior demand controlled ventilation and BMS connectivity.

## Airflow Performance Curve - Water Heater Version




## +Features

In addition to the features listed for PREMA900, the PREMA900+ includes:

- **Heating** (Electric or Hot Water)
- **Kinairtico0 / Kinairtico Mini**

## Heating Loads – Performance Table

| +Heating | Electric Heater Battery (kW)* | Hot Water Coil (kW) | Fluid Data | | |
|---|---|---|---|---|---|
| | | | Internal Volume (L) | Flow Rate (L/s) | Flow / Return temps. (°C) |
| PREMA900+ | 3.5 | 11.50 | 1.11 | 0.14 | 80/60 |

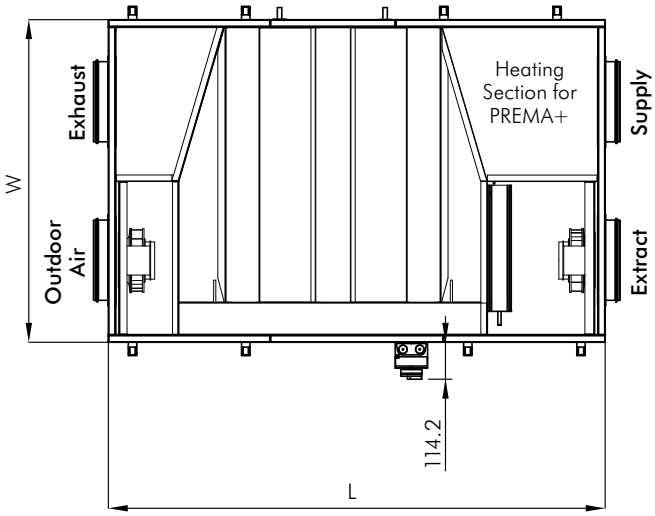
*1phase modulating heater battery.

## Ordering Stock Codes

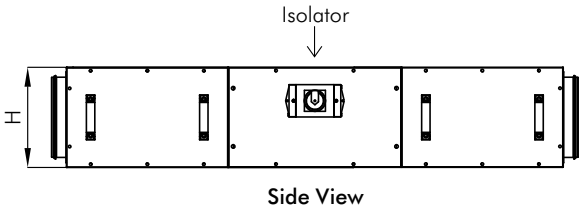
| Product Stock Code | Product | Product Description |
|---|---|---|
| 7835824-900E | PREMA900+E | Electric heater version (Kinairtico0 control) |
| 7835824-900ES | PREMA900+ES | Electric heater version (Kinairtico Mini control) |
| 7835824-900W | PREMA900+W | Water heater version (Kinairtico0 control) |
| 7835824-900WS | PREMA900+WS | Water heater version (Kinairtico Mini control) |
| 7835824-900ECP | PREMA900+ECP | Electric heater version (Kinairtico0 control) constant pressure control |
| 7835824-900ESCP | PREMA900+ESCP | Electric heater version (Kinairtico Mini control) constant pressure control |
| 7835824-900WCP | PREMA900+WCP | Water heater version (Kinairtico0 control) constant pressure control |
| 7835824-900WSCP | PREMA900+WSCP | Water heater version (Kinairtico Mini control) constant pressure control |

# Dimensional Data

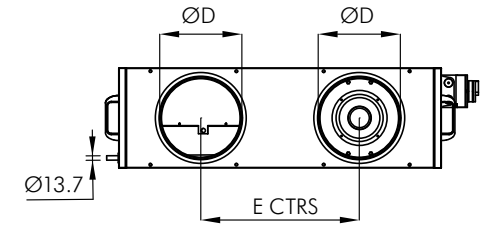
## PREMA900, PREMA900+E & PREMA900+W




Top Plan View

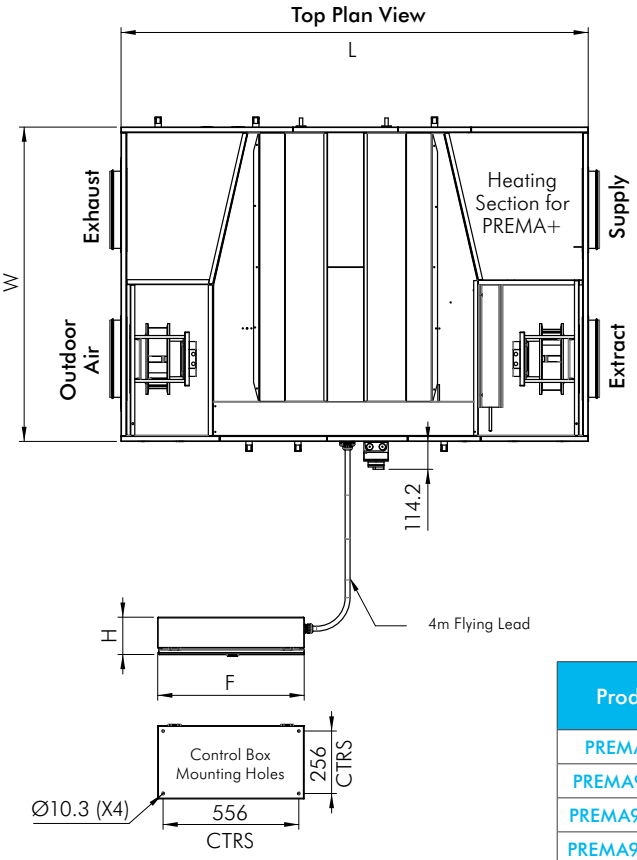


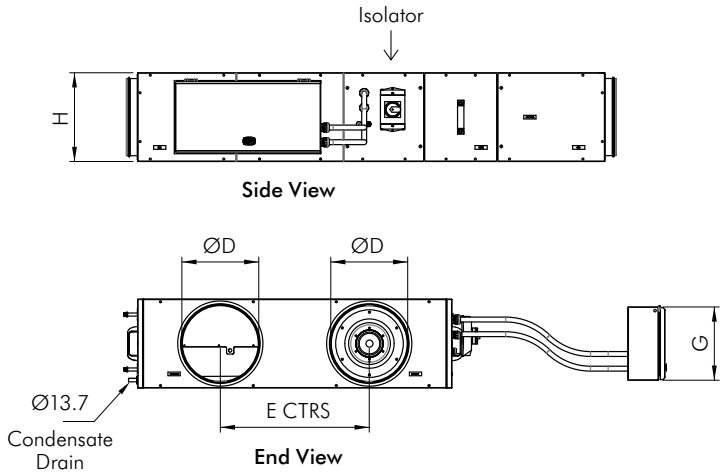

Side View




End View

## PREMA900+ES & PREMA900+WS




| Product | L | W | H* | D | E | F | G | H | Pipe** | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PREMA900 | 2066 | 1496 | 624 | 500 | 750 | - | - | - | - | 330 |
| PREMA900+E | 2066 | 1496 | 624 | 500 | 750 | - | - | - | - | 341 |
| PREMA900+W | 2066 | 1496 | 624 | 500 | 750 | - | - | - | 3/4" | 356 |
| PREMA900+ES | 2066 | 1496 | 624 | 500 | 750 | 600 | 300 | 152 | - | 361 |
| PREMA900+WS | 2066 | 1496 | 624 | 500 | 750 | 600 | 300 | 152 | 3/4" | 376 |

All dimensions are expressed in mm.
*Overall height includes unit mounted condensate drain tray.
**LPHW Coil Header dimension.

# ACCESSORIES

## $CO_2$ Sensor

Highly accurate $CO_2$ measurement by means of infrared light, gives a direct indication of the Indoor Air Quality and occupancy levels. A 0-10V signal will prompt the ventilation unit to adjust the ventilation rates to bring $CO_2$ levels below the critical set-point and thus automatically improve Indoor Air Quality whilst enhancing energy efficiency.

The $CO_2$ sensor has integrated auto-calibration, so manual recalibration is not required during the lifetime of the sensor.

Ventilation systems set-up to automatically adjust the ventilation rates of the occupied space will require this sensor fitted within the room.

| Unit Size | $CO_2$ Sensor |
|---|---|
| PREMA180 | 149-DCV-CO2 |
| PREMA330 | |
| PREMA540 | |
| PREMA900 | |

## Constant Pressure Sensor

The differential pressure sensor has 3 selectable ranges; 0-100Pa, 0-300Pa and 0-500Pa depending on the HVAC application, whilst maintaining high accuracy of the sensor when measuring lower pressures. Pressure is measured via movement of a ceramic beam connected to a diaphragm. It's the unique properties of the ceramic element that ensures that the transmitter has excellent long-term stability.

A 0-10V signal prompts the ventilation unit to control constant pressure depending on the measured differential pressure.

Ventilation systems set-up for constant pressure control will require this sensor fitted near the duct work.

| Unit Size | Constant Pressure Sensor |
|---|---|
| PREMA180 | 149-DCV-DPT150 |
| PREMA330 | |
| PREMA540 | |
| PREMA900 | |

## Duct Mounted Silencers

There are two options for silencers, listed below:

### Flanged Silencers

Circular attenuators are suitable for most dry HVAC and industrial applications and are available in two lengths; nominally one or two times the inner diameter of the attenuator. Constructed from galvanised sheet steel, with a peripheral, out of air stream acoustic lining, they produce nominal increases in air flow pressure drop over plain duct. The end connections are end ring flanges with threaded inserts, normally for bolting to ducting or fan flanges.

| Unit Size | Flanged Silencers | |
|---|---|---|
| | 1DENP | 2DENP |
| PREMA180 | 068-0250-1DENP | 068-0250-2DENP |
| PREMA330 | 068-0315-1DENP | 068-0315-2DENP |
| PREMA540 | 068-0350-1DENP | 068-0350-2DENP |
| PREMA900 | 068-0500-1DENP | 068-0500-2DENP |

### Spigotted Silencers

This range of lightweight circular attenuators are constructed from galvanised sheet steel, with a peripheral, out of air stream acoustic lining. The range produces nominal increases in air flow pressure drop over plain duct. The end connections are with spun end caps designed for easy connection to a fan or ductwork. This range of silencers is available in four lengths: nominally JF1 – 300mm, JF2 – 600mm, JF3 – 900mm and JF4 – 1200mm.

| Unit Size | Spigotted Silencers | | | |
|---|---|---|---|---|
| | 300mm | 600mm | 900mm | 1200mm |
| PREMA180 | 068-0250-JF1 | 068-0250-JF2 | 068-0250-JF3 | 068-0250-JF4 |
| PREMA330 | 068-0315-JF1 | 068-0315-JF2 | 068-0315-JF3 | 068-0315-JF4 |
| PREMA540 | 068-0355-JF1 | 068-0355-JF2 | 068-0355-JF3 | 068-0355-JF4 |
| PREMA900 | 068-0500-JF1 | 068-0500-JF2 | 068-0500-JF3 | 068-0500-JF4 |

## ISO $ePM_1$ 85% (F9) Supply Filters

The ISO ePM1 85% supply filter is an optional, compact, highly efficient, pleated fine filter designed to remove high levels of very small airborne particulates (classification standard BS EN ISO 16890). The filter is 85% efficient in arresting particles as small as 1$\mu$m and has a large surface area, long operating life and a manufacturer suggested economical change point at 250Pa.

| Unit Size | ISO ePM1 85% (F9) Class Supply Filters |
|---|---|
| PREMA180 | 783-SF-180-F9 |
| PREMA330 | 783-SF-330-F9 |
| PREMA540 | 783-SF-540-F9 |
| PREMA900 | 783-SF-900-F9 |

## IAQ Molecular Gas Filter

For heavily polluted areas, this is the perfect solution to remove harmful gases such as $NO_2$, $SO_2$, $O_3$ and VOCs, to create a cleaner and healthier Indoor Air Quality.

This optional duct mounted molecular gas filter is suitable for horizontal or vertical duct mounting.

| Unit Size | IAQ Molecular Gas Filter |
|---|---|
| PREMA180 | 783-SF-180-IAQ |
| PREMA330 | 783-SF-330-IAQ |
| PREMA540 | 783-SF-540-IAQ |
| PREMA900 | 783-SF-900-IAQ |

## Condensate Drain Pump

Powered by ASPEN Pumps, the standalone optional plug & play, intelligent condensation removal Micro-V i4 pump is the quietest in the market (19dB(A) @ 1m) with capacity up to 14.5L/hr max. Included is a small multi-orientation sensor with visual pump status diagnostics and no breather tube.

| Unit Size | Condensate Drain Pump |
|---|---|
| PREMA180 | 783-CDP |
| PREMA330 | |
| PREMA540 | |
| PREMA900 | |

## Ceiling Void Mounting Kit

The Ceiling Void Mounting Kit (CVMK) is comprised of 3 appropriately sized 2.5mm thick, galvanised mild steel supporting Unistrut channels with neoprene isolation pads and 6 unit stops.

| Unit Size | Ceiling Void Mounting Kit |
|---|---|
| PREMA180 | 783-MK-180 |
| PREMA330 | 783-MK-330 |
| PREMA540 | 783-MK-540 |
| PREMA900 | 783-MK-900 |

## Replacement Filters

| Unit Size | ISO $ePM_1$ 55% Spare Supply Filter Set |
|---|---|
| PREMA180 | 783-SF-180-F7 |
| PREMA330 | 783-SF-330-F7 |
| PREMA540 | 783-SF-540-F7 |
| PREMA900 | 783-SF-900-F7 |

| Unit Size | ISO $ePM_{10}$ 60% Spare Extract Filter Set |
|---|---|
| PREMA180 | 783-EF-180-M5 |
| PREMA330 | 783-EF-330-M5 |
| PREMA540 | 783-EF-540-M5 |
| PREMA900 | 783-EF-900-M5 |

PURA

# PURA UNITS ARE A SUSTAINABLE AND IMPORTANT PIECE OF TECHNOLOGY THAT PERFORMS THE CRUCIAL FUNCTION OF DELIVERING AIR PURITY AND COMFORT.

PURA units are energy recovery Air Handling Units with thermal treatment capabilities, built with an extruded aluminium pentapost frame and integrated Kinairtico controls.

Covering an airflow envelope of 0.5 – 2.5 $m^3/s$, the PURA units are available as double decked or vertical arrangement and side by side, or horizontal, arrangement. Independently tested against BS EN 1886 – Ventilation for buildings; Air Handling Units; Mechanical performance, the PURA Units achieve a **classification of L1, D1 & T3** and a filter bypass leakage rating below 1%, allowing for a **usable filter class up to $ePM_1$ 90%.**

# PRODUCT DETAIL

## Categorisation

In accordance with Ecodesign Directive 1253/2014, this product is a non-residential bidirectional ventilation unit; NRVU-BVU.

## Construction

1. **Panels:** Standard double skin with a soft core infill (50mm mineral wool (60kg/m$^3$)), and secured to the frame with a new Stop & Block system for enhanced air tightness. With the new Stop & Block system, panel assembly and fitting are drill free and no fixing screws are used. Panels can still be easily removed with the performance of the unit remaining unaffected, thus ensuring good seals throughout the whole of the product lifetime.

2. **Frame:** From the innovative Stop & Block system, the extruded aluminium pentapost frame has a special profile design for quick assembly whilst guaranteeing unit air tightness and performance.

3. **Base:** Factory made 100 x 50mm galvanised steel base frame, with 2 sets of rectangular lifting slots on each side.

4. **Weatherproofing Kit:** Double pitched roof with a mica finish completed with flashing on joints. Weather cowls with dampers are factory fitted with spring return actuators.


## Accessibility

5. **Doors:** All access doors are hinged and fitted with at least one lockable handle.

6. **Viewports & Lights:** Polycarbonate double port-holes are circular, optically transparent and UV stabilised for durability. Bulkhead lights are included and also fitted to both fan chambers for easy visual inspection inside.


## Wiring & Connectivity

7. **Internal Wiring:** Innovative HDC$^3$ system for safe and speedy interconnectivity of sections, offering extra protection against dirt, mechanical stress and moisture. The new HDC$^3$ system uses high quality couplings that are responsible for secure electrical functioning and guaranteed electrical signal integrity.

## Sizes & Layouts

**Double Deck:** 0.5; 1.0; 1.5; 2.0; 2.5 ($m^3/s$)
**Side by Side:** 0.5; 1.0 ($m^3/s$)

## Component Parts

8. **Filters:** Rated according to EN ISO 16890, the standard filters achieve efficiencies up to $ePM_1$ 70% (ISO 16890) thus promoting good supply air quality. Units have Click & Slide rails, specially designed for easy maintenance.

9. **Fans:** Direct driven free-running, backward-curved with sealed for life ball bearings, completed with an electronic commutated motor, providing infinite speed control. Each fan section is factory fitted and wired to an IP66 isolator.

10. **Energy Recovery Components:** Components transfer thermal energy from the extract air to the incoming supply air, resulting in lower heating demand downstream to the system.

11. **Heating & Cooling:** For heating, an electric heater or hot water coil can be used. For cooling, a chilled water or refrigerant coil can be used.


## Controls (Machine Management)

12. **Kinairtico Controller:** An in-house engineered pre-programmed controller available as a three phase inset backplate specifically designed for use with the range of PURA units. Various modes of operation are determined by a set of parameters pre-set at the factory during testing and once set-up, no further adjustment should be necessary. The Kinairtico is our unique, innovative Indoor Air Quality and energy recovery management device that delivers efficient, clean and comfortable ventilation whenever it is required. Available as standard with built-in screen for easy set-up, the Kinairtico is also available with remote, wall-mounted push button monochromatic display unit or colour touchscreen.


## KINAIRTICO

**THERMAL ENERGY RECOVERY** WITH
SUMMER BYPASS CONTROL
THERMAL WHEEL CONTROL
NIGHT PURGE

**SYSTEM DAMPER CONTROL**
OPEN / CLOSE SPRING RETURN +
DIRTY FILTER STATUS +
FIRE INTERLOCK ON
CONTROLLER OUTPUTS

**BMS MONITORING** VIA:
BACNET IP
MODBUS RS485 SERIAL

2 X **CONFIGURABLE DIGITAL INPUTS**
(ENABLE / FIRE .
SET BACK)

**DEMAND CONTROLLED VENTILATION** ON:
IAQ OR $CO_2$
CONSTANT PRESSURE
TEMPERATURE & FAN
VARIABLE SPEED CONTROL

**HUMAN MACHINE INTERFACE** AS:
BUILT-IN SCREEN
BUILT-IN ENGINEERS WEB BROWSER
REMOTE SCREEN (OP.)
TOUCHSCREEN (OP.)

# KEY BENEFITS

**PURA** UNITS ARE DESIGNED TO MAKE LIFE **EASIER** FOR INSTALLERS, MAINTENANCE TEAMS AND THE END-USER

## ENHANCED IAQ

Casing air leakage class as L1 for minimum ingress of polluted air; Usable filter class up to $ePM_1$ 90%; Filter bypass leakage rate below 1% by **Click & Slide** system; Demand controlled ventilation on $CO_2$; Guaranteed delivery of purer ventilation air

## EASY TO SELECT

Dedicated **selection software** with pre-configured standard layouts and quick design parameters adjustment of air handling components to match project specification requirements and applications; Quick response to project enquiries

## EASY TO INSTALL

Optimised component arrangement for improved footprint; **HDC³** system for secure electrical signal integrity and power supply; **Stop & Block** system for guaranteed air tightness, performance and quicker assembly; HMI integrated screen or remote displays

## EFFICIENT TO RUN

**Kinairtico** controller for energy recovery management; Demand controlled ventilation on temperature; Variable fan speed control; Highly efficient EC fan/ motor technology for reduced utility bills; **BMS interface**

## EASY TO MAINTAIN

Hinged access doors with lockable handles, soft close & superior air tightness; Inspection viewports & bulkhead lights pre-wired to main switch; Unique **Click & Slide** system for easy replacement of filters & extra low filter bypass; Dirty filter & fault signal indication via **Kinairtico** controller

# KEY APPLICATIONS

## PURA units minimise utility bills by using heat / coolth recovery technologies for improved energy savings and increased performance.

The range of PURA units take in outdoor air, filter it and deliver a purer and fresher supply of air that enhances the level of Indoor Air Quality for well-being and productivity.

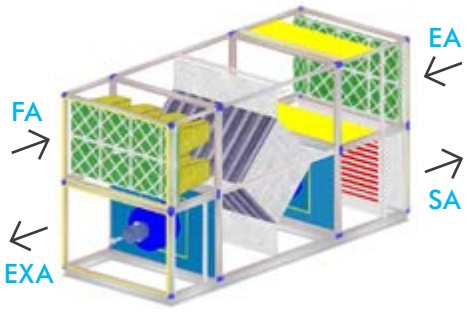
PURA units are suitable for a variety of building applications, including:

- Industrial
- Commercial / retail
- Recreation / leisure
- Public buildings
- Healthcare
- Schools

# DATA SHEETS

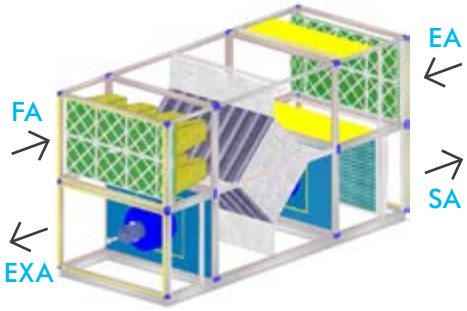
## Double Decked + Plate Heat Exchanger + Electric Heater

| Sizes / Dims. | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | Electric Supply |
|---|---|---|---|---|---|---|
| Electric heat output (kW) | 4.5 | 9.0 | 15 | 18 | 24 | 3~400V/50Hz |
| Fans FLC (amps) | 3.2 | 3.8 | 3.8 | 6.6 | 6.8 | |
| L (mm) | 3000 | 3400 | 3800 | 4150 | 4150 | |
| W (mm) | 1000 | 1300 | 1900 | 1900 | 1900 | |
| H (mm) + 100 (mm) base frame | 1520 + 100 | 1520 + 100 | 1520 + 100 | 2200 + 100 | 2400 + 100 | |
| Weight (kg) | 638 | 1083 | 1413 | 1617 | 1885 | |
| Factory fitted with integrated controls | | | | | | |



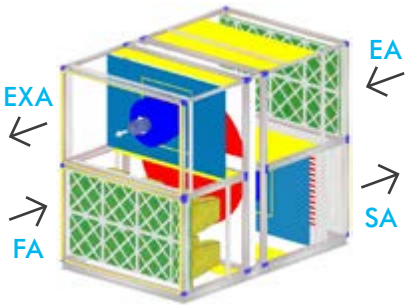

## Double Decked + Plate Heat Exchanger + LPHW Coil

| Sizes / Dims. | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | Electric Supply |
|---|---|---|---|---|---|---|
| LPHW output (kW) | 15.75 | 31.52 | 47.25 | 63.0 | 78.75 | 3~400V/50Hz |
| Fans FLC (amps) | 3.2 | 3.8 | 3.8 | 6.6 | 6.8 | |
| L (mm) | 3000 | 3400 | 3800 | 4150 | 4150 | |
| W (mm) | 1000 | 1300 | 1900 | 1900 | 1900 | |
| H (mm) + 100 (mm) base frame | 1520 + 100 | 1520 + 100 | 1520 + 100 | 2200 + 100 | 2400 + 100 | |
| Weight (kg) | 638 | 982 | 1257 | 1471 | 1674 | |
| Factory fitted with integrated controls | | | | | | |



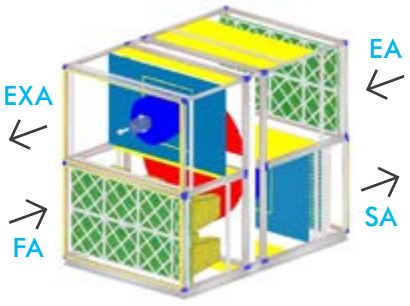

## Double Decked + Rotor + Electric Heater

| Sizes / Dims. | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | Electric Supply |
|---|---|---|---|---|---|---|
| Electric heat output (kW) | 4.5 | 9.0 | 15 | 18 | 24 | 3~400V/50Hz |
| Fans FLC (amps) | 3.2 | 3.8 | 3.8 | 6.6 | 6.8 | |
| L (mm) | 2500 | 2484 | 2700 | 2800 | 2800 | |
| W (mm) | 1000 | 1300 | 1900 | 1900 | 1900 | |
| H (mm) + 100 (mm) base frame | 1520 + 100 | 1520 + 100 | 1520 + 100 | 2200 + 100 | 2400 + 100 | |
| Weight (kg) | 559 | 695 | 834 | 1011 | 1150 | |
| Factory fitted with integrated controls | | | | | | |



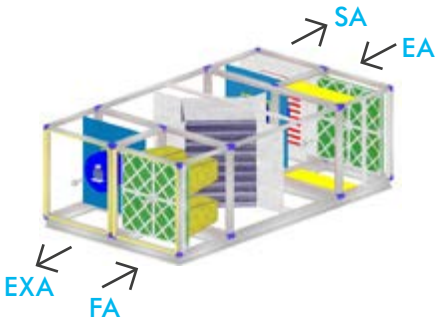

## Double Decked + Rotor + LPHW Coil

| Sizes / Dims. | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | Electric supply |
|---|---|---|---|---|---|---|
| LPHW output (kW) | 15.75 | 31.52 | 47.27 | 63.00 | 78.75 | 3~400V/50Hz |
| Fans FLC (amps) | 3.2 | 3.8 | 3.8 | 6.6 | 6.8 | |
| L (mm) | 2500 | 2484 | 2700 | 2800 | 2800 | |
| W (mm) | 1000 | 1300 | 1900 | 1900 | 1900 | |
| H (mm) + 100 (mm) base frame | 1520 + 100 | 1520 + 100 | 1520 + 100 | 2200 + 100 | 2400 + 100 | |
| Weight (kg) | 505 | 601 | 745 | 902 | 1040 | |
| Factory fitted with integrated controls | | | | | | |



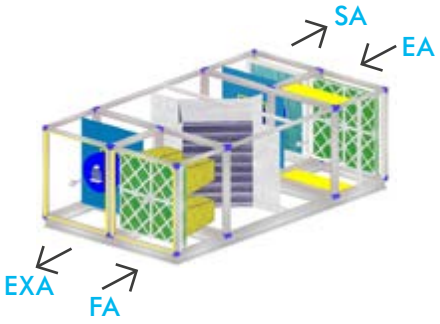
## Side by Side + Plate Heat Exchanger + Electric Heater

| Sizes / Dims. | 0.5 | 1.0 | Electric Supply |
|---|---|---|---|
| Electric heat output (kW) | 4.5 | 9.0 | 3~400V/50Hz |
| Fans FLC (amps) | 3.2 | 3.2 | |
| L (mm) | 2900 | 3550 | |
| W (mm) | 1400 | 1700 | |
| H (mm) + 100 (mm) base frame | 860 + 100 | 1200 + 100 | |
| Weight (kg) | 651 | 966 | |
| Factory fitted with integrated controls | | | |



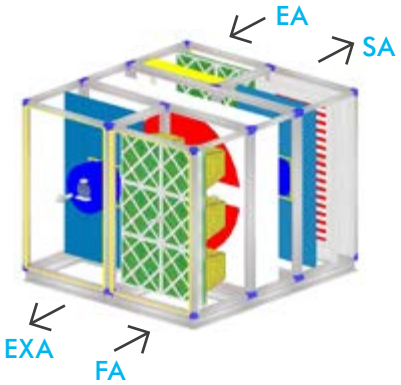

## Side by Side + Plate Heat Exchanger + LPHW Coil

| Sizes / Dims. | 0.5 | 1.0 | Electric Supply |
|---|---|---|---|
| LPHW output (kW) | 15.76 | 31.52 | 3~400V/50Hz |
| Fans FLC (amps) | 3.2 | 3.2 | |
| L (mm) | 2900 | 3550 | |
| W (mm) | 1400 | 1700 | |
| H (mm) + 100 (mm) base frame | 860 + 100 | 1200 + 100 | |
| Weight (kg) | 593 | 874 | |
| Factory fitted with integrated controls | | | |



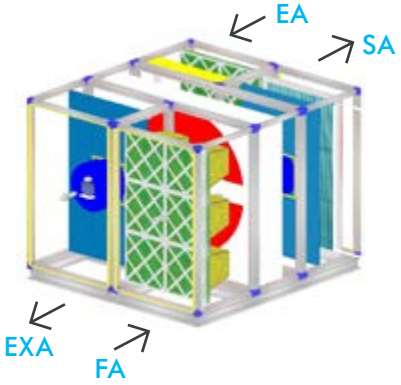

## Side by Side + Rotor + Electric Heater

| Sizes / Dims. | 0.5 | 1.0 | Electric Supply |
|---|---|---|---|
| Electric heat output (kW) | 45 | 9.0 | 3~400V/50Hz |
| Fans FLC (amps) | 3.2 | 3.2 | |
| L (mm) | 2350 | 2350 | |
| W (mm) | 1400 | 1700 | |
| H (mm) + 100 (mm) base frame | 860 + 100 | 1200 + 100 | |
| Weight (kg) | 584 | 732 | |
| Factory fitted with integrated controls | | | |




## Side by Side + Rotor + LPHW Coil

| Sizes / Dims. | 0.5 | 1.0 | Electric Supply |
|---|---|---|---|
| LPHW output (kW) | 15.76 | 31.52 | 3~400V/50Hz |
| Fans FLC (amps) | 3.2 | 3.2 | |
| L (mm) | 2350 | 2350 | |
| W (mm) | 1400 | 1700 | |
| H (mm) + 100 (mm) base frame | 860 + 100 | 1200 + 100 | |
| Weight (kg) | 522 | 647 | |
| Factory fitted with integrated controls | | | |




FA: Fresh Air, SA: Supply Air, EA: Extract Air, EXA: Exhaust Air

PURA+

## Modern Air Handling Units adhere to the ever-changing requirements for modern buildings in terms of energy efficiency and Indoor Air Quality, along with stricter regulations such as Ecodesign.

PURA+ units are made of a fully configurable design of unidirectional and bidirectional Air Handling Units with capabilities for fresh air supply, energy recovery, enhanced filtration, thermal treatment, humidification, mixing box, noise attenuation and other various specialised components. These specially engineered products can be fully factory fitted with any controls device available in the Kinairtico controller range and even TREND control systems devices.

# PRODUCT DETAIL

**We have a combination of in-house technical expertise, knowledgeable service and advanced manufacturing with the experience and capability to fulfil any requirement of air handling design. This ensures that you will receive the very best Air Handling and Energy Recovery Units for your needs.**

Built with an extruded aluminium pentapost frame and fully insulated double skin panels, PURA+ units are available in different finishing trims suitable for internal and external locations and hygienic environments.

The PURA+ range covers an airflow envelope of 0.1 up to 20.0 $m^3/s$ and is available in a range of design combinations listed below.

### Layout

- Horizontal inline
- Vertical up / downwards
- Double decked
- Side by side

A number of **different airflow configurations** are available through our dedicated selection software.

### Fan / Motor Arrangement

- Run / run
- Run and standby
- All EC; AC plug fan with variable speed drive

## Categorisation

In accordance with Ecodesign Directive 1253/2014, this product is a non-residential bidirectional ventilation unit; NRVU-BVU.

## Delivery

All configured units can be delivered as:

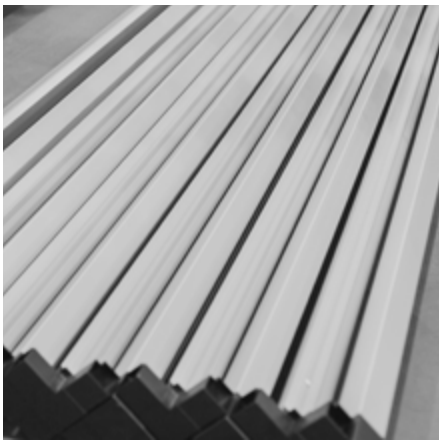
**ONE** PIECE

Delivered as one piece.

**MODULAR** SECTIONS

Delivered as modular sections.

**FLAT** PACK



Delivered as flat pack, to be re-assembled on site by our own team of skilful engineers or by others (variations in warranty terms may apply).

# COMPONENTS

**The Air Design range of configured AHUs offers a wide array of components and layouts to complete the innovative design that better suits your project requirements.**

## Components available for selection:

### Filters:

Types & grades:

- Panel
- Bag
- Rigid
- HEPA
- Carbon
- Others

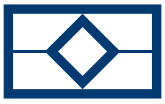

### Coils:

Heating:

- Electric
- Water
- Steam
- Indirect gas burner

Cooling:

- Water
- DX + RDX (heat pump)



### Thermal energy recovery:

Types:

- Run-a-round coils
- Plate heat exchangers:
  - Crossflow
  - Counterflow
- Rotary heat wheel:
  - Sorption
  - Enthalpy
  - Condensation


### Fans:

- EC + pot
- AC + inverters

### Humidifiers:

- Electrode boiler steam humidifier
- Evaporative

### Attenuators (as accessory only):

- Loose – duct mounted
- Unit mounted

### Mixing box:

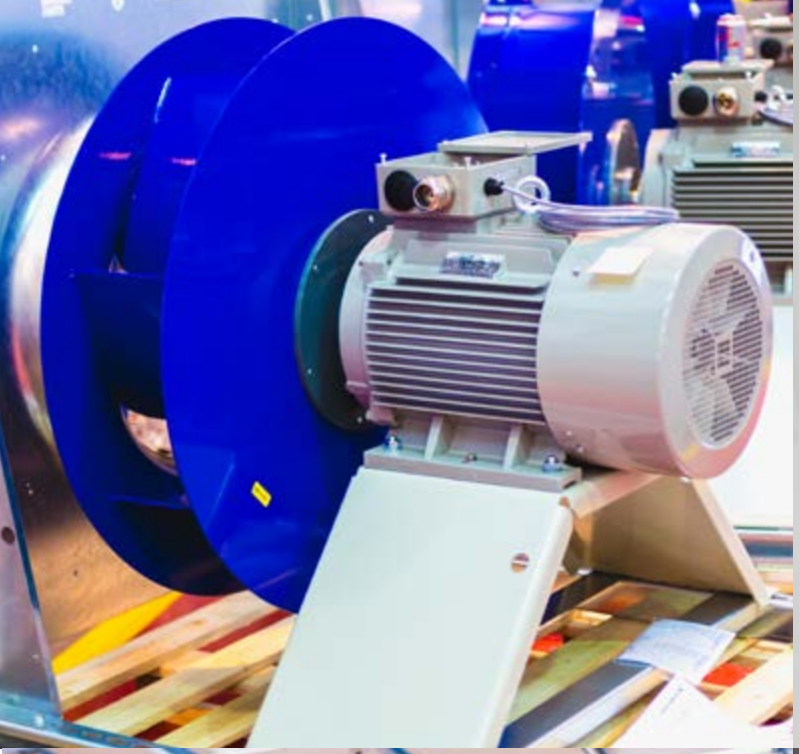
- Spigot + internal dampers
- Bolt-on dampers

### Intake / discharge sections:

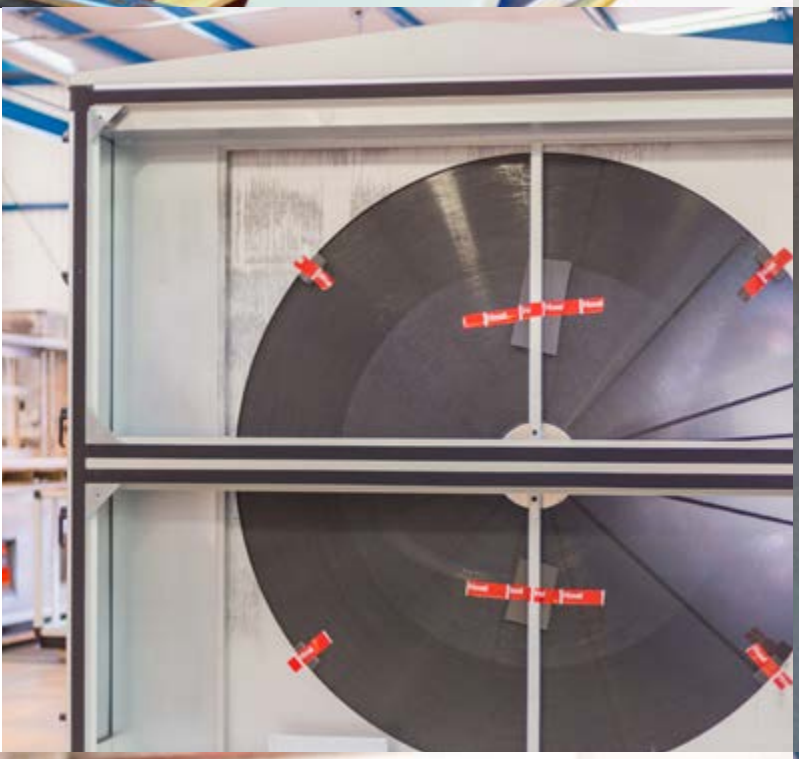
- Spigots
- Louvres
- Weather cowls
- Bolt-on dampers
- Internal dampers

### Controls:

- Optimised & Performance Powered by Schneider (TM172)
- Configured OEM Powered by TREND



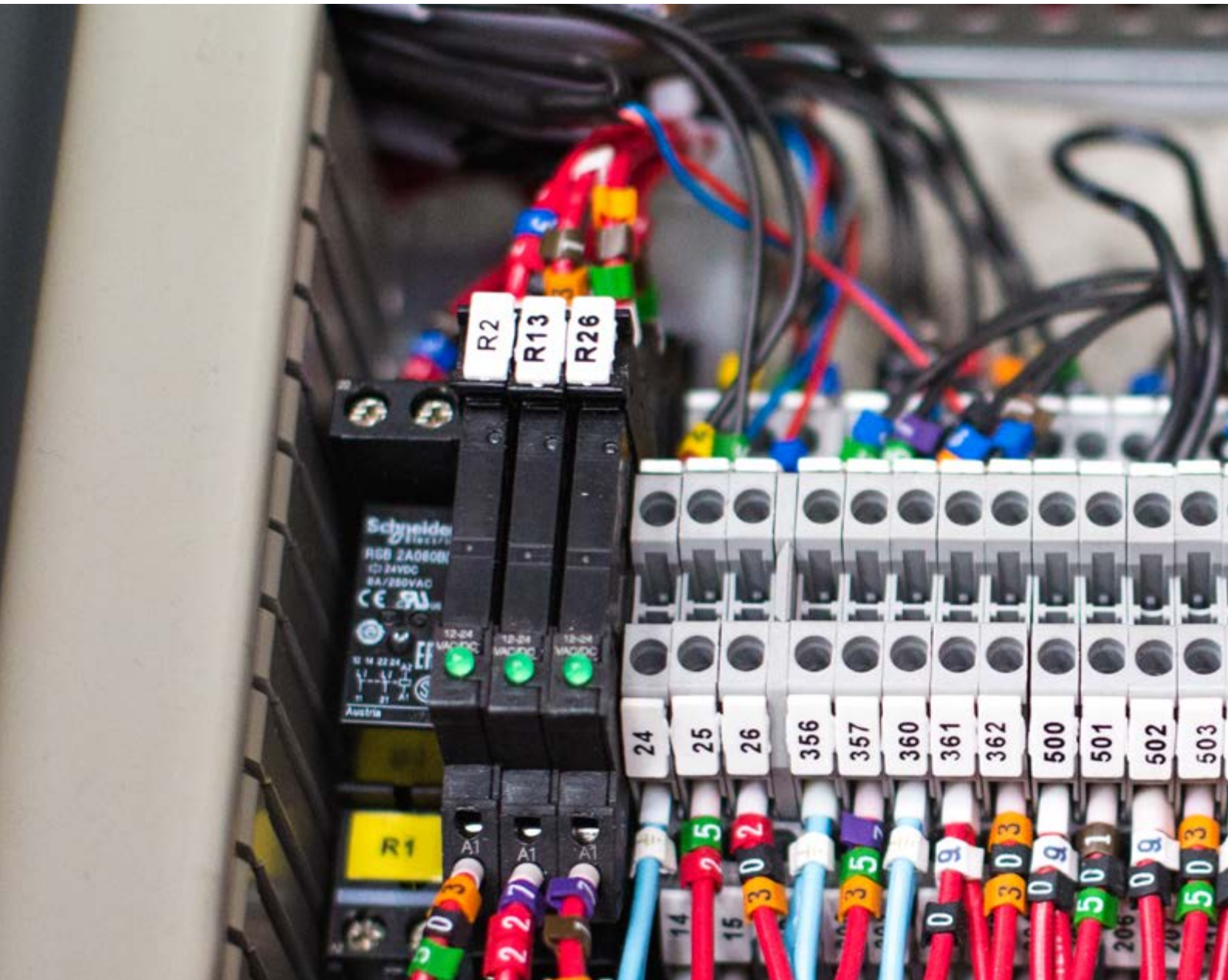

IMPORTANT
INSTALLATION NOTE




DANGER
DISCONNECT THE MAINS SUPPLY
BEFORE REMOVING THIS COVER
TREND
IQ EC031
IQeco


Icontrol
Icontrol

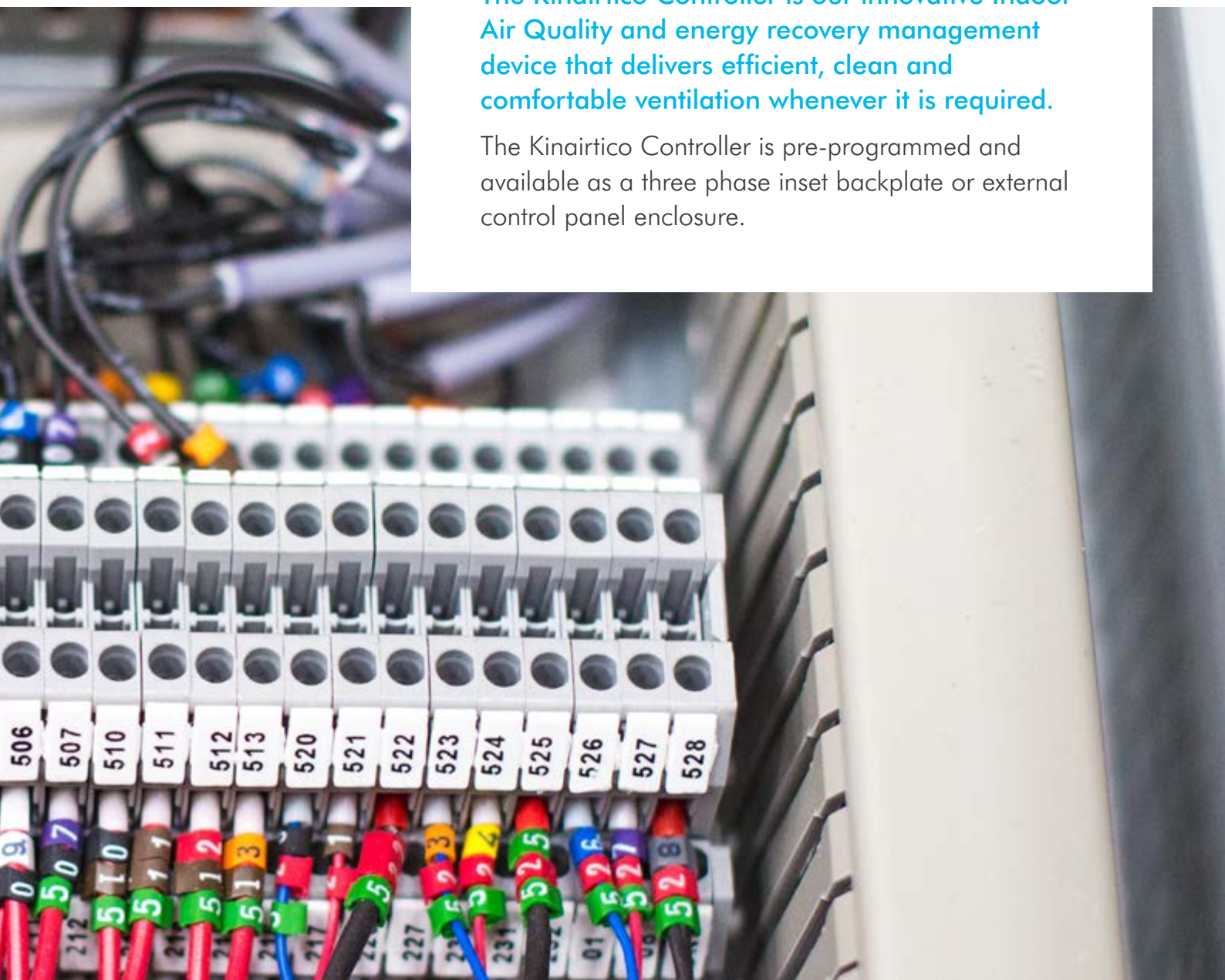
# CONTROLS



# DIVERSIFIED CONTROLS PACKAGES AVAILABLE WITH AIR DESIGN AIR HANDLING & ENERGY RECOVERY UNITS

**The Kinairtico Controller is our innovative Indoor Air Quality and energy recovery management device that delivers efficient, clean and comfortable ventilation whenever it is required.**

The Kinairtico Controller is pre-programmed and available as a three phase inset backplate or external control panel enclosure.

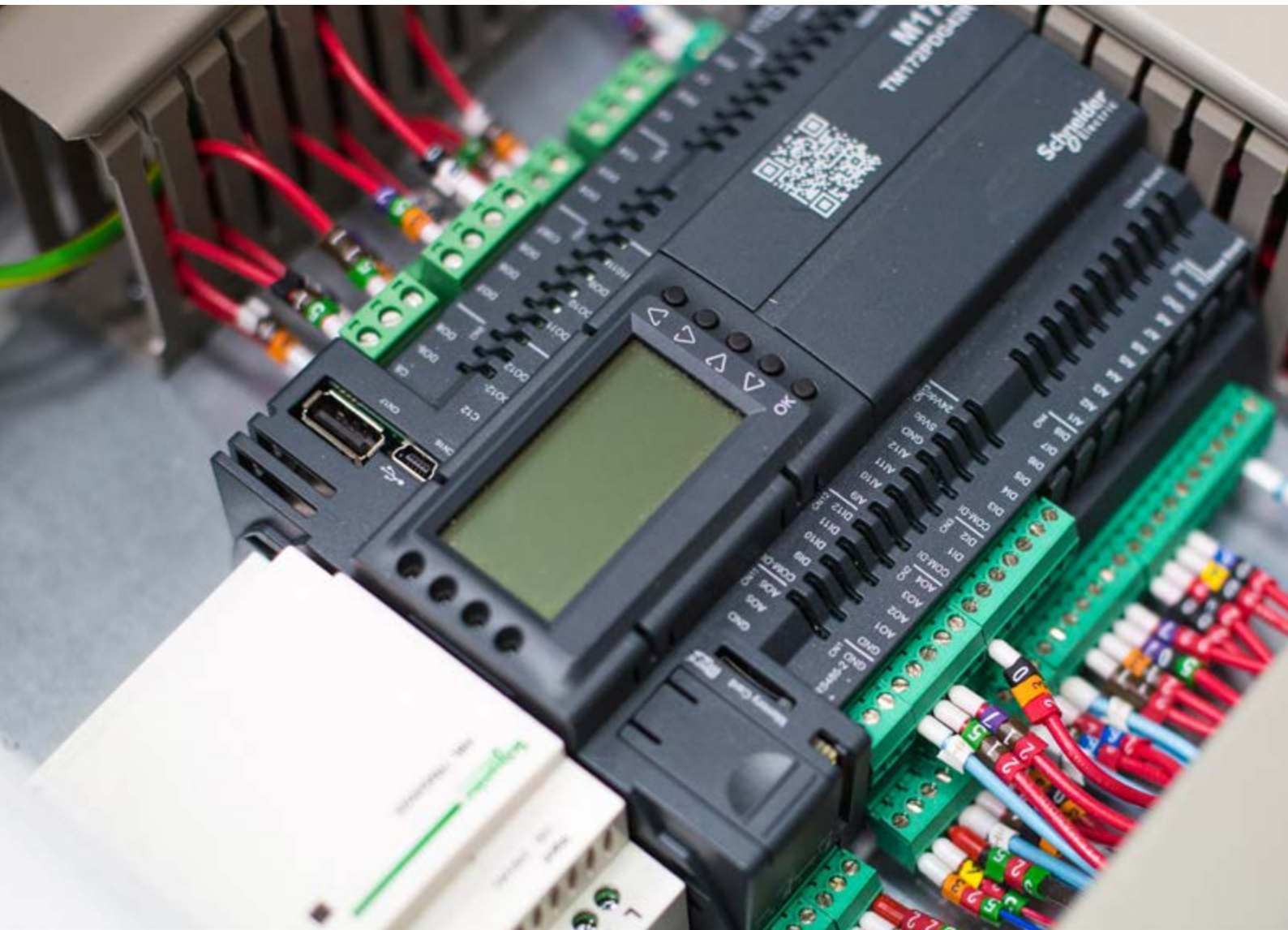


# KINAIRTICO

## The Kinairtico Controller is an all-in-one controller for all Air Design products. The controller is pre-loaded with controls software written by our in-house engineers and is configured for the target application via a set of parameters on the controller.

| Product Platform | AirKinetics | | | | | |
|---|---|---|---|---|---|---|
| **Product Name** | **Kinairtico0** | | **Kinairtico Mini** | **Kinairtico** | **Kinairtico+** | **K-TREND** |
| **Type** | Basic | Basic + Heating | Mini TM172 | Std TM172 | Config. TM172 | TREND |
| **Status** | Ready as:<br>-factory fitted | Ready as:<br>-factory fitted | Ready as:<br>-factory fitted<br>-flying lead | Ready as:<br>-factory fitted | Ready as:<br>-factory fitted | Fully configurable, engineered on a project by project basis as:<br>-factory fitted |
| **BMS Protocols** | None | None | Modbus serial<br>BACnet IP | Modbus serial<br>BACnet IP | Modbus serial<br>BACnet IP | BACnet IP; IQ Network; MS/TP; Modbus; TREND LAN (option) |

From a standalone single fan unit with time clock control, through to a double deck energy recovery unit with BMS network connection, this one universal controller can cover all of the standard key features with spare capacity for configured applications. The various modes of operation are determined by a set of parameters pre-set at the factory during testing and once set up, no further adjustment should be required.



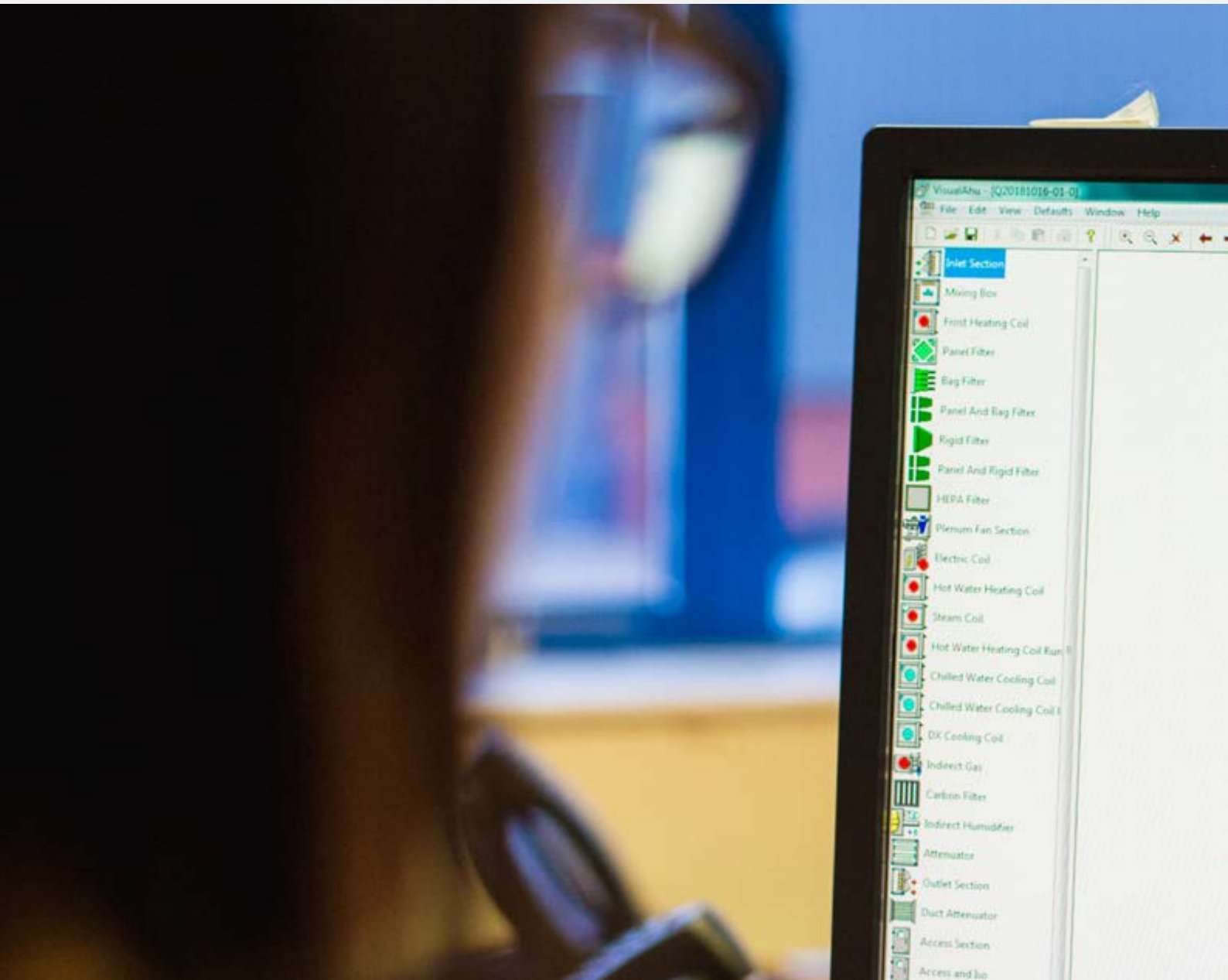
# CONTROLS FEATURES SUMMARY

| Product Name | Kinairtico0 | | Kinairtico Mini | Kinairtico | Kinairtico+ | K-TREND |
|---|---|---|---|---|---|---|
| Product usability | PREMA | PREMA+ | PREMA & PREMA+ | PURA & PURA+ | PURA+ | PURA+ |
| Controls features | | | | | | |
| Power supply – phase | 1 ~ | 1 ~ | 1 ~ | 3 ~ | 3 ~ | 1 ~ & 3 ~ |
| Fire / unit enable | • | • | • | • | • | ○ |
| Hardwire control input #1 | •1 | •1 | •4 | •4 | •4 | ○ |
| Hardwire control input #2 | •2 | •2 | | •4 | •4 | ○ |
| | | | | | | ○ |
| Damper(s) enable (open spring return) | | | | • | • | ○ |
| Mixing box control (raise / lower) | | | | | • | ○ |
| | | | | | | |
| Supply fan speed control | • | • | • | • | • | ○ |
| Extract fan speed control | • | • | • | • | • | ○ |
| Fan run on control | | | • | • | • | ○ |
| Temperature control on supply or extract | | | • | • | • | ○ |
| Duty share fan control* | | | | • | • | ○ |
| | | | | | | |
| Frost heater control | | | | | • | ○ |
| Pre heater control** | | | | | • | ○ |
| Heating control | | • | • | • | • | ○ |
| Cooling control | | | | • | • | ○ |
| Condenser mode (H/C) | | | | • | • | ○ |
| Frost Protection | | | • | • | • | ○ |
| | | | | | | |
| Energy recovery bypass damper | • | • | • | • | • | ○ |
| Thermal wheel speed control | | | | • | • | ○ |
| | | | | | | |
| Filter dirty x 2 | •3 | •3 | • | • | • | ○ |
| Additional Filter dirty x 2 | | | | • | • | ○ |
| | | | | | | |
| 0-10V pressure / $CO_2$ / AQ input | • | • | • | • | • | ○ |
| | | | | | | |
| 7 Day unit operation time clock | • | • | • | • | • | ○ |
| 7 Day unit fixed fan speed time clock | | | • | • | • | ○ |
| 7 Day duty fan rotate clock | | | • | • | • | ○ |
| | | | | | | |
| Condensate pump connect & monitor | | | • | | | ○ |
| | | | | | | |
| BMS volt free fault | • | • | • | • | • | ○ |
| Modbus serial BMS connection | | | • | • | • | ○ |
| BACnet I/P BMS connection | | | • | • | • | ○ |
| Engineers Web browser | | | • | • | • | ○ |
| | | | | | | |
| LCD Display | • | • | | | | |
| Engineers display | | | • | • | • | ○ |
| Client monochrome display | • | • | ○ | ○ | ○ | ○ |
| Client colour touchscreen | | | ○ | ○ | ○ | ○ |

Notes:
1 – Boost
2 – Fixed Speed
3 – Terminals Only
4 – Enable, Boost, Fixed Speed
○ – Optional

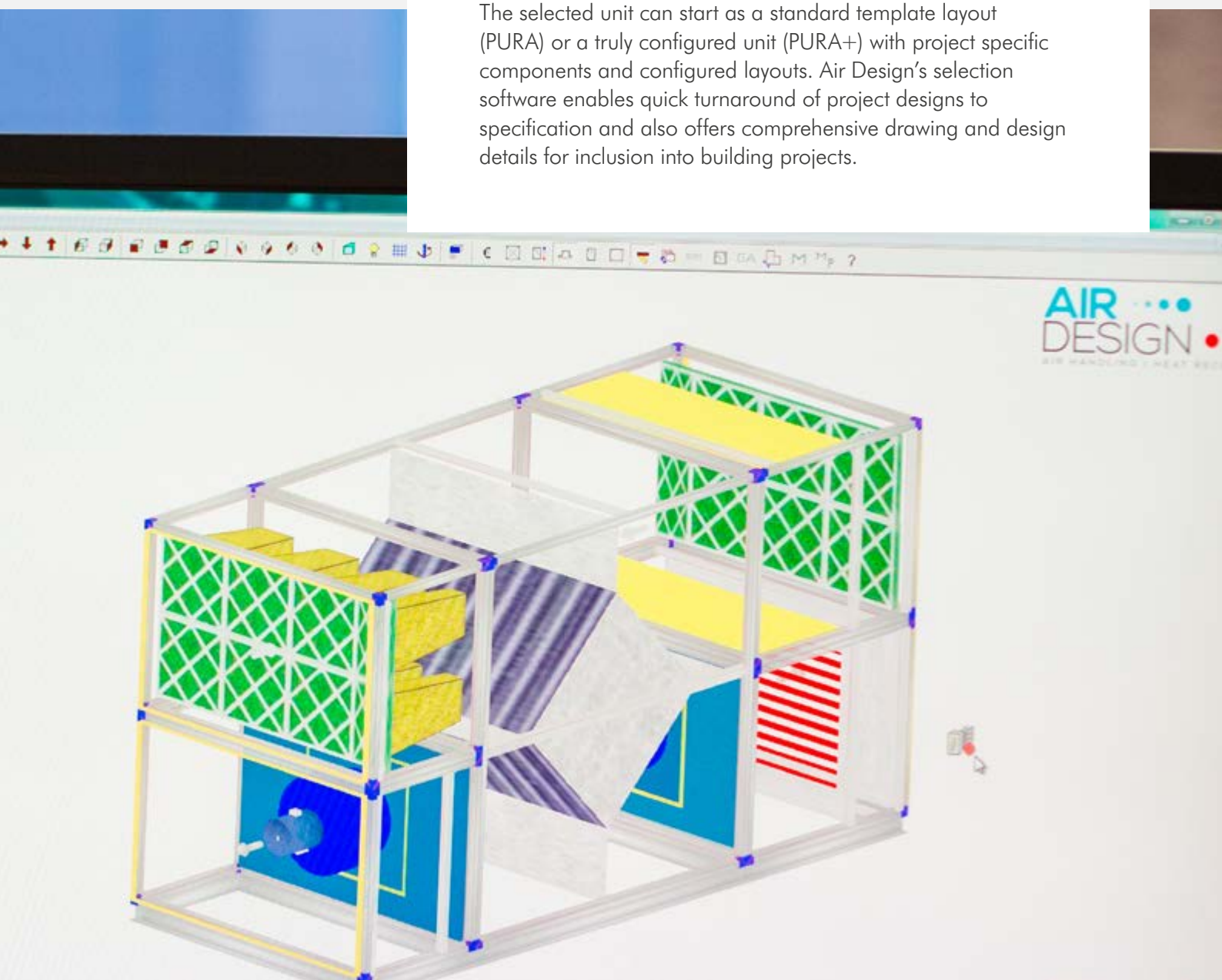
* NRVU-UVU only
** DXR config. only

# SELECTION


File Edit View Defaults Window Help
Inlet Section
Mixing Box
Front Heating Coil
Panel Filter
Bag Filter
Panel And Bag Filter
Rigid Filter
Panel And Rigid Filter
HEPA Filter
Plenum Fan Section
Electric Coil
Hot Water Heating Coil
Steam Coil
Chilled Water Cooling Coil
DX Cooling Coil
Indirect Gas
Carbon Filter
Attenuator
Outlet Section
Duct Attenuator
Access Section

## All air handling solutions are initially selected through an engineered software suite that uses a library of specialised components and frame sizes.

The selected unit can start as a standard template layout (PURA) or a truly configured unit (PURA+) with project specific components and configured layouts. Air Design's selection software enables quick turnaround of project designs to specification and also offers comprehensive drawing and design details for inclusion into building projects.



# CONSULTANT SPECIFICATION

**Air Design's PREMA and PREMA+ Energy Recovery Units as supplied by Elta Fans Ltd., 46 Third Avenue, Pensnett Trading Estate, Kingswinford, West Midlands, DY6 7US, UK. Tel: +44 (0) 1384 275800.**

## Casing

The casing shall be self-supporting and constructed from double skin galvanised sheet steel panels insulated with 25mm mineral wool (60kg/m$^3$). The unit shall be leakage rated in accordance with BS EN 1886:2007 to class L2.

Access shall be provided on both sides for filter replacement and motor access. Panels shall be fitted with black nylon handles and secured with fasteners that require unfastening via a tool.

Units shall incorporate a pre-fitted IP66 isolator complete with non-removable cover in off position and lockable by three padlocks to prevent unit switch on.

## Motors

The supply and extract motors shall have high efficiency energy saving electronically commutated (EC) external rotor motors with integrated EC controller and active temperature management fitted as standard. The motors contain high-grade deep-grove ball bearings with lifetime lubrication. Thermal motor protection shall be by means of motor integrated electronics. All motors are suitable for use in ambient air conditions up to +60°C.

## Impellers

Units shall incorporate high efficiency impellers with low acoustic emissions due to special three-dimensional blade geometry and directly driven by the motor to provide a smooth airflow through the unit.

## Thermal Treatment (PREMA+ Only)

The PREMA+ units have thermal treatment capabilities to top-up the heating demand of the ventilation system. The thermal treatment components available with the PREMA+ units are electric heater or hot water coil.

## Heat / Coolth Exchanger

The Heat / Coolth Exchanger shall be seawater resistant aluminium counterflow with adhesive diffusion to ensure optimal sealing and shall be certified to Eurovent and AHRI. The unit shall have a thermal efficiency of up to 92% and fitted with purpose built thermal bypass facility.

Bypass damper shall operate dependent on temperature parameters and values set via LCD display to offer free cooling mode in summer and free heating mode in winter. In Coolth Recovery mode the unit will utilise the coolth in the extracted air to reduce the incoming air temperature via the heat / coolth exchanger block when desirable.

## Drainage Points

Condensate will be dealt with on both sides of the high efficiency heat/coolth exchanger block via two separate drain points. This twin condensate drainage arrangement prevents unit internal air leakage and the possible undesirable accumulation of condensate.

## Filters

Supply Filter shall be high efficiency ultra-compact ISO ePM$_1$ 55% (F7) grade fitted on purpose built runners for reduced filter bypass leakage as standard. Filter media shall be Wet-laid glass fibre paper within a water-resistant frame. ISO ePM$_1$ 85% (F9) grade filters shall be available as an option.

Extract filter shall be high efficiency ultra-compact ISO ePM$_{10}$ 55% (M5) grade fitted on purpose built runners for reduced filter bypass leakage as standard. Filter media shall be Wet-laid glass fibre paper within a water-resistant frame.

Connections shall be provided for filter monitoring with signalling or an alarm in the control system which shall be activated if the filter pressure drop exceeds the maximum allowable final pressure drop.

## Controls

The PREMA units can now benefit from two distinct machine management capabilities. With the Kinairtico0, control shall be provided as standard for applications with $CO_2$ control via separate sensor. Units for constant pressure application shall be provided with pressure sensor. Manual operation shall be provided by supplied LCD display unit which shall allow adjustment of application parameters, operation of system automatically / manually and display of error messaging. Integrated working hours counter, programmable 7-day timeclock with four on / off functions per day shall be adjustable from the LCD display unit. Airflow balancing allows individual fan control and ensures a balanced supply and extract.

Digital input terminal connections shall be available for remote enable, fixed speed for boost speed, or set back speed. Digital output terminal connections shall be available for an electric heater. The function of the heater shall be dependent on heating type, temperature parameters and temperature values adjustable from LCD display unit, and the unit running without fault.

With the Kinairtico Mini, the control panel is supplied as single phase remote panel connected to the PREMA Energy Recovery Units via a 4m long connecting cord. The Kinairtico Mini offers true output heating control (full modulating) and come with BMS interface via wire connections or via industry standard communication protocols of Modbus serial RS485 and BACnet IP.

## Categorisation

In accordance with Ecodesign Directive 1253/2014, the PURA units are non-residential bidirectional ventilation units, NRVU-BVU.

## Quality Management

Units are to be designed and manufactured with procedures as defined in BS EN ISO 9001:2015.

# CONSULTANT SPECIFICATION

**Air Design's PURA Air Handling Units as supplied by Elta Fans Ltd., 46 Third Avenue, Pensnett Trading Estate, Kingswinford, West Midlands, DY6 7US, UK. Tel: +44 (0) 1384 275800.**

## Casing

The PURA units shall be built with an extruded aluminium pentapost frame with Stop & Block system (56mm profile anodised finish and specialist nylon corners), and double skin panel with a soft core infill (50mm mineral wool (60kg/$m^3$)) and outer skins with a mica finish. The base frame will be of fabricated 100mm x 50mm x 2mm galvanised sheet steel and completed with 2 sets of rectangular lifting slots on each side. For external installation, the PURA units will be completed with a weatherproofing kit with a mica finish including a double pitched roof with 50mm overhang, flashing joints and intake / discharge cowls factory fitted with dampers.

The PURA units will have hinged access doors fitted with at least one lockable handle, specialist sealing gasket and plate fitted to all access door profile corners and internal periphery for a soft close and enhanced air tightness. For ease of internal visual inspection, the PURA units will feature circular polycarbonate double port-holes, optically transparent and UV stabilised and standard bulkhead lights pre-wired to main switch on all fan chambers. Each fan chamber should be fitted with an IP66 isolator completed with non-removable cover in on position and lockable by padlocks to prevent unit fan switch on. The PURA units shall be independently tested and rated at L1, D1 and T3 in accordance with BS EN 1886:2007.

## Internal Wiring

In the PURA units the internal wiring of air handling components is specifically designed to run along one side of the unit. All access doors and fixed panels are earthed for continuity and prevent electrical discharge on contact. The PURA units should be fitted with the $HDC^3$ system for safe and fast interconnectivity of sections, offering extra protection against dirt, mechanical stress and moisture. The new $HDC^3$ system of the PURA units uses high quality couplings with protective and corrosion resistant die-cast aluminium housing. This $HDC^3$ system uses stainless steel clips that make them waterproof and dustproof. The $HDC^3$ system is responsible for secure electrical functioning and guaranteed electrical signal integrity. The PURA units $HDC^3$ system should be fully integrated within the unit.

## Airflow Range & Layouts

Covering an airflow range from 0.5$m^3$/s up to 2.5$m^3$/s, the PURA units are available as double decked or vertical layout with opposite air streams and side by side or horizontal with opposite air streams.

## Motors

The supply and extract motors on the PURA units shall have three phase high efficiency energy saving electronically commutated (EC) external rotor motors with integrated EC controller and active temperature management fitted as standard. The motors contain high-grade deep-grove ball bearings with lifetime lubrication. Thermal motor protection shall be by means of motor integrated electronics. All motors are suitable for use in ambient air conditions up to +60°C.

## Impellers

The PURA units shall incorporate high efficiency impellers with low acoustic emissions due to special three-dimensional blade geometry and directly driven by the motor to provide a smooth airflow through the unit.

## Thermal Energy Recovery Components

In the PURA units, the thermal energy recovery components shall be of two types: recuperative and regenerative. The recuperative type of thermal energy recovery component shall be an air to air crossflow heat exchanger, made of an aluminium core, fitted with bypass facility and plate spacing optimised for Ecodesign compliant efficiency performance. This component should also be fully Eurovent certified, TÜV certified (RLT 01) and Hygiene certified. The regenerative type of thermal energy recovery component shall be a rotary thermal wheel fitted with drive gear, optimised wave heights for Ecodesign compliant efficiency performance. This component should be fully Eurovent certified and AHRI certified.

## Filters

The PURA units are fitted with two stages dry pollutant control on supply and one stage dry pollutant control on extract as standard. Supply air primary panel filter shall be rated as standard as $ePM_{10}$ 55%, followed by a secondary high efficiency pocket filter rated as ISO $ePM_1$ 70% and fitted on purpose built runners with the Click & Slide system for reduced filter bypass leakage (below 1%) as standard. The extract panel filter shall be rated as standard as $ePM_{10}$ 55%. Higher grades of dry pollutant control are available as optional extras with the PURA units achieving a usable filter class of up to $ePM_1$ 90% (in accordance with BS EN 1886:2007).

## Thermal Treatment

The PURA units have thermal treatment capabilities to top up the heating or cooling demand of the ventilation system. The thermal treatment components can be for heating (electric, hot water or cooling (chilled water or refrigerant).

## Machine Management & Connectivity

The PURA units shall be factory fitted / supplied with a dedicated Kinairtico controller. The Kinairtico controller included in the PURA units (integrated factory fitted) is a unique Indoor Air Quality and energy recovery management device, capable of delivering efficient, clean and comfort ventilation whenever is required. The Kinairtico controller comes with an engineer's built-in screen and is available with remote, wall-mounted push button monochromatic display or colour touchscreen. The Kinairtico controller allows all PURA units to be suitable for standalone operation, BMS interface via wire connections or via industry standard communication protocols of Modbus serial RS485 and BACnet IP.

## Categorisation

In accordance with Ecodesign Directive 1253/2014, the PURA units are non-residential bidirectional ventilation units, NRVU-BVU.

## Quality Management

The PURA units are to be designed and manufactured with procedures as defined in BS EN ISO 9001:2015.

**PURA units are designed and built in the UK.**

# AFTERSALES SUPPORT PACKAGES

## Our engineers are available nationwide to ensure your Air Handling Unit performs year-round without any disruption to your business.

We also offer on site start-up to ensure your Air Handling Unit runs according to project specifications (prior to commissioning; commissioning services by others).

Our aftersales support response cycle is as follows:

- Customer service call
- Site start-up request / mechanical / electrical fault reported
- Site visit by engineer booked

# INTEGRATED, INTELLIGENT SYSTEMS

**Our units can be fully integrated with a range of products from idealair group, an Elta Fans brand, to create an intelligent energy recovery ventilation system.**

Rickard DCV Supply Diffusers

Fixed Multi-Cone Diffusers

Eggcrate Extract Grilles

\+

PREMA Unit

\+

PURA Unit

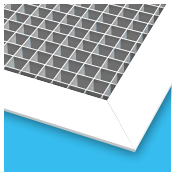
**Series EWB50 Louvres**
Independently tested and rated to EN13030 for weather performance

Series SWC Cowls

## = A complete energy recovery ventilation system

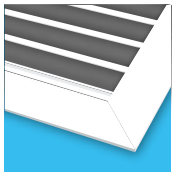
idealair group

**The idealair range from Elta Fans specialises in grilles, diffusers and louvres with a strong focus on developing complementary air distribution products using sustainable solutions.**



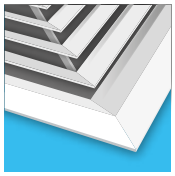
### ideal grilles

A wide range of egg crate grilles with or without opposed blade dampers can be supplied by idealair group to suit the vast majority of extract ventilation systems.



### ideal louvres

Idealair group supply a stocked range of small format weather louvres and 50mm pitch weather louvres in any size up to 2000 x 2000mm.



### ideal diffusers

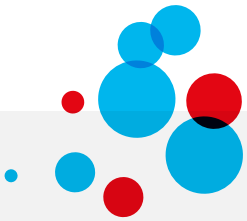
Idealair group supply a range of high quality fixed multi-cone diffusers. They are available with or without opposed blade dampers in the most common sizes used by ventilation specialists.

### ideal valves

Idealair group's range of ceiling or wall mounted supply and extract air valves are available in sizes ranging from 100mm diameter on to 200mm diameter duct connections.

AIR DESIGN

AIR HANDLING | HEAT RECOVERY

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ISSUE 1. NOV 18.