SPC

OCC
Passion for Excellence

Dehumidification
Energy Recovery Ventilator

ERV/DERV

ABOUT **OCC**

Oasis Coils and Coatings - (OCC) is a technology driven company and a specialist in the manufacturing and coating of HVAC Coils. Our expertise in the manufacturing and coating of coils enables us to offer quality coils at impressive prices. A dedicated team of professionals works towards achieving a sole purpose: to cater to the requirements of all companies, both small and large, in the area of manufacturing and coating of coils. We have the means, resources and expertise to design a custom-made solution for your application.

OCC manufactures all types and sizes of finned tube coils for a broad range of industrial applications and the core processes are well controlled through stringent quality control and quality assurance procedures in order to deliver the best results. With the use of high quality raw materials, modern computer controlled machinery, and the input of highly skilled technicians, OCC's customers are guaranteed to be the recipient of the superior quality coils.

- Specialised in designing and manufacturing of HVAC Coils
- Heresite and Bronz glow certified anti-corrosion coating experts
- AHRI standard 410-2001 for performance ratings
- ISO 9001-2015 QMS certified by Lloyd's UK
- Global presence with exports to 15 countries
- State-of-the-art manufacturing facility in Dubai
- Fully automated American machinery
- Top quality imported copper and aluminium
- Design and production team of 100+
- Coil selection using WinCoil Software, UK

QUALITY

The core processes of our organisation are well controlled through stringent quality control and quality assurance procedures in order to deliver the best results to our customers.

MANUFACTURING

We import the best raw materials from some of the largest mills around the globe and manufacture in our state-of-the-art facility blended with modern technology.

PEOPLE

We have some of the finest men working with us to ensure the highest level of quality is delivered to you every time!

DEHUMIDIFICATION & ENERGY RECOVERY VENTILATOR DERV/ERV

Enhancing the efficiency and comfort quotient of Ventilation Systems

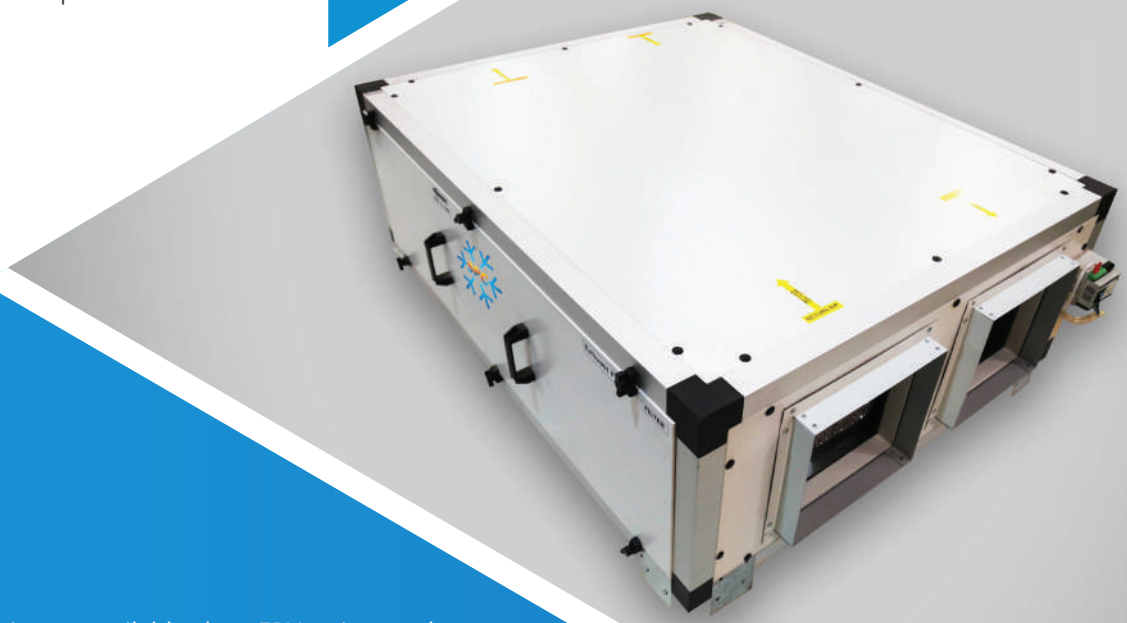
DERV

DERV units represent a significant advance in ventilation technology for residential and light commercial premises. The purpose-designed units are ideal for ventilating spaces subject to climates which are characterised by both high temperatures and high humidity levels.

The full range of units utilise energy efficient air-to-air heat exchangers technology to minimise the cost of ventilation while allowing designers and users to maintain ventilation rates which are necessary for comfortable occupation.

The units take advantage of the cooling capacity of waste, extract air to absorb heat from high-temperature ventilation air before treating this air to remove moisture in the cooling coil.

This cooling coil incorporates another heat pipe to further precool the air and minimise the cooling load. Furthermore, the heat pipe reheats the overcooled air to reduce relative humidity and provide comfortable supply air ready for distribution directly to the occupied spaces.



ERV

If the external cooling medium is not available then ERV units can be used which incorporate only air-to-air heat exchanger.

These units use the cooling potential of the extract air to provide ventilation air to the space which has been precooled to a more acceptable level; though without the benefit of significant dehumidification.

The range of units cover ventilation rates that would be required of individual residential properties; if greater rates of ventilation are required then the units are ideal for use in larger dwellings or establishments which would benefit from the installation of multiple units serving separate zones.

SUPERIOR **FEATURES** WITH MULTIPLE **BENEFITS**

Designed to fit into small spaces

SPC ERV/DERV provide all the benefits associated with large, central outside air conditioning units within a small, low profile unit, which is specifically designed to fit within false ceilings.

Better comfort levels due to well-regulated and conditioned air flow

DERV Units with Heat Pipe Heat Recovery/PHE regulate air flow such that untreated outside air is not directly introduced into the space ensuring zero cross contamination, greater comfort and making it ideal for the hot, humid climate of the Gulf.

Dehumidification using most energy-efficient technique

To dehumidify the outside air, the SPC DERV units with Heat Recovery Wheel take advantage of the cooling capacity of extract air. Using it reduces both sensible and latent load on the downstream cooling/dehumidifying process.

Surface Disinfection and Air Purification using UVC Technology

SPC DERV units can be fitted with UV germicidal lamps that inhibit microbial growth/biofilm formation on the cooling coil fins/other surfaces and aid in the purification of the supply air. This essentially leads to energy savings.

Maximise cost savings

Not only do SPC ERV/DERV provide the designer with the necessary equipment to be able to provide properly conditioned spaces, but they also allow the client to realise considerable energy savings compared to the use of corresponding conventional outside air units. Typical energy consumption would be 70% of that of a traditional system operating against the same set of conditions.

AIR-TO-AIR HEAT EXCHANGERS

HEAT RECOVERY HEAT PIPE / WRAP AROUND HEAT PIPE

» Casing Material: Galvanized sheet steel *(standard)*, Stainless Steel 304 *(optional)*
» Casing Thickness: 1.5mm
» Fin Material: Aluminium *(standard)*, Copper *(optional)*
» Fin Thickness: 0.14mm
» Tube Material: Copper

HEAT RECOVERY WHEEL

» Casing Material: Galvanized sheet steel *(standard)*
» Casing Thickness: 1.5mm
» Wheel Matrix: Aluminium
» Desiccant Type: 3A molecular sieve

PLATE HEAT EXCHANGER

Crossflow heat exchanger shall consist of corrugated plate heat exchanger core, extruded aluminium corner profiles and Aluzinc endplate framing.

» Plate Material: Aluminium *(standard)*
» Optional Plate Material: Aluminium Epoxy Coated *(corrosion proctection)*

COOLING COIL

» Cooling coil will consist of copper tubes expanded into Aluminium fins. Tubes will be 1/2 inch diameter in a staggered pattern in order to maximize the heat transfer
» DX & Chilled water options are available

DRAIN TRAY

» Drain tray is fabricated from heavy stainless steel(SS304)

FANS (Direct Drive Plug Fan Set)

BLOWER *based on airflow*

» Backward curved centrifugal fan
» Fan section consisting of single or twin fans

EC MOTORS

» Protection Class : IP 44
» Insulation Class: B
» Available Voltage: 220-240V/1PH/50-60HZ
» Operating temperature range: - 20°C ~ +60°C
» Operating humidity range: 0%~ 90%
» Ambient atmospheric pressure: 80-110 Kpa

UNIT CASING

- Unit casing shall be of a double skin insulated internally, acoustically and thermally
- DERV Ceiling/Roof Mounted Units: Double skin 46mm thick PUF panel
- ERV Ceiling Mounted Units: Double skin 25mm thick PUF panel
- Inner Wall: 0.6mm thick GI, Outer Wall: 0.6mm thick pre-painted GI
- Thermal Conductivity: 0,0246 W/mK
- PPU Density: ρ = 44kg/m^3.
- Casing Heat Transfer Coefficient: K = 1.3 W/m^2K
- Casing Leakage Class: L3
- Thermal Bridging Classification: TB4

Dehumidification Energy Recovery Ventilator **(DERV)**

SPC DERV consist of supply & exhaust section, in which, various air-to-air heat exchangers for recovery of heat, Wrap around Heat Pipe for dehumidification, cooling coil, air filters & fans.

Air-to-air heat exchangers are provided for pre-cooling of fresh air. The cooling coil is wrap-around by Heat Pipe for Dehumidification (HPD). HPD has a two stage energy benefit, firstly, the precool section of the heat pipe further cools the fresh outside air so as to minimize the load on the cooling coil. The cooling coil then cools & dehumidifies the air to a dew point level selected to maintain comfort conditions. The temperature associated with this dew point is too low to be supplied directly to the space and needs to be reheated. The downstream section of the heat pipe for Dehumidification (HPD) provides reheating without any cost penalty associated with traditional electric reheat.

The unit incorporate high efficiency EC backward curved blowers in both the supply and extract sections. These blowers allow the unit to overcome significant external resistance while maintaining the design airflow rates.

TECHNICAL **SPECIFICATIONS**

The conditions upon which, the following data is based on, are as follows:

» Outside air at 46/29°C

» Return air at 25/18.7°C

DERV WITH HEAT RECOVERY WHEEL

MODEL	150	250	500
Nominal Supply Volume (litre/sec)	150	250	500
Nominal Extract Volume (litre/sec)	150	250	500
Nominal Supply External Static (Pa)	100	100	100
Nominal Extract External Static (Pa)	150	150	150
Cooling Coil Capacity (kW)	5.15	8.36	17.89
Heat Recovery Heat Pipe Cooling (kW)	3.9	6.6	11.9
Wraparound Heat Pipe Precool/ Reheat Load Saving (kW)	1.1	1.9	3.8
Supply Air Dry Bulb Temperature (°C)	**20.1**	**20**	**20.2**
Supply Air Wet Bulb Temperature (°C)	**16**	**16**	**16**
Indoor Unit Electrical Power Supply (V/Ph/Hz)	230/1/50	230/1/50	230/1/50
Fan Motor Input Power (W)	165/165	350/350	750/365
Weight (Kg)	260	264	382

DERV WITH HEAT PIPE HEAT RECOVERY

MODEL	80	150	250	500
Nominal Supply Volume (litre/sec)	80	150	250	500
Nominal Extract Volume (litre/sec)	80	150	250	500
Nominal Supply External Static (Pa)	100	100	200	150
Nominal Extract External Static (Pa)	150	100	200	150
Cooling Coil Capacity (kW)	4.66	6.5	10.84	21.94
Heat Recovery Heat Pipe Cooling (kW)	1.3	2.1	3.4	6.8
Wraparound Heat Pipe Precool/ Reheat Load Saving (kW)	0.7	1.5	2.5	4.9
Supply Air Dry Bulb Temperature (°C)	**20**	**21.9**	**21.9**	**21.9**
Supply Air Wet Bulb Temperature (°C)	**16.1**	**16.9**	**16.9**	**16.9**
Indoor Unit Electrical Power Supply (V/Ph/Hz)	230/1/50	230/1/50	230/1/50	230/1/50
Fan Motor Input Power (Supply/Extract) (W)	113/113	167/113	170/160	340/320
Weight (Kg)	205	237	304	424

DERV WITH PLATE HEAT EXCHANGER

MODEL	150	250	500
Nominal Supply Volume (litre/sec)	150	250	500
Nominal Extract Volume (litre/sec)	150	250	500
Nominal Supply External Static (Pa)	100	100	100
Nominal Extract External Static (Pa)	150	150	150
Cooling Coil Capacity (kW)	5.88	9.8	20.08
Heat Recovery Heat Pipe Cooling (kW)	2.7	4.5	8.5
Wraparound Heat Pipe Precool/ Reheat Load Saving (kW)	1.1	1.9	3.9
Supply Air Dry Bulb Temperature (°C)	**20**	**20**	**20**
Supply Air Wet Bulb Temperature (°C)	**16**	**16**	**16**
Indoor Unit Electrical Power Supply (V/Ph/Hz)	230/1/50	230/1/50	230/1/50
Fan Motor Input Power (W)	165/165	350/165	750/365
Weight (Kg)	317	317	412

TECHNICAL **CONFIGURATIONS**

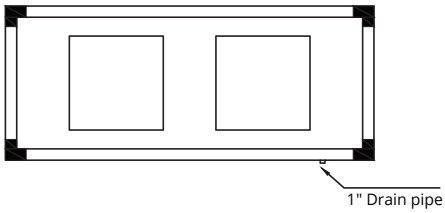
DERV-HEAT PIPE HEAT RECOVERY

MODEL		DERV-80/25/46/ H-HPHR-DX/CHW	DERV-150/25/46/ H-HPHR-DX/CHW	DERV-250/25/46/ H-HPHR-DX/CHW	DERV-500/25/46/ H-HPHR-DX/CHW
SUPPY AIRFLOW (L/s)		80	150	250	500
EXTRACT AIRFLOW (L/s)		80	150	250	500
DUCT CONNECTION SIZE HxW (mm)	S*	250 X 250	300 X 330	360 X 450	360 X 450
	E*	250 X 250	300 X 330	360 X 450	360 X 450
DIMENSIONS 25 mm Thick PUF Panel (mm)	L	1490	1490	1490	1490
	W	980	1130	1380	1870
	H	410	460	510	615

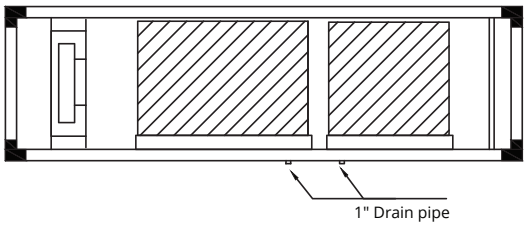
46 mm thick PUF panel is available on request for both vertical and horizontal orientation.

* S - Supply | E - Extract

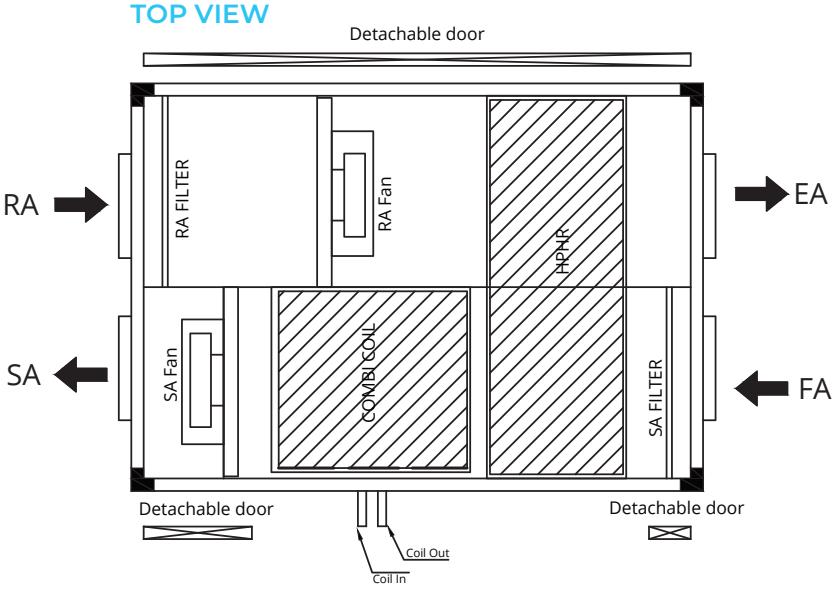
FRONT VIEW



SIDE VIEW



TOP VIEW



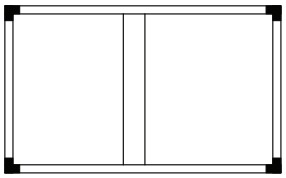
DERV - HEAT RECOVERY WHEEL

MODEL		DERV- HRW- DX/CHW -150	DERV- HRW- DX/CHW -250	DERV- HRW- DX/CHW -500
SUPPY AIRFLOW (L/s)		150	250	500
EXTRACT AIRFLOW (L/s)		150	250	500
DUCT CONNECTION SIZE HxW (mm)	S*	560 X 410	560 X 410	600 X 600
	E*	560 X 410	560 X 410	600 X 600
DIMENSIONS 25 mm Thick PUF Panel (mm)	L	1990	1990	2540
	W	660	660	1530
	H	1530	1530	700

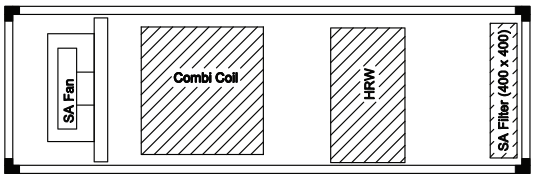
46 mm thick PUF panel is available on request for both vertical and horizontal orientation.

* S - Supply | E - Extract

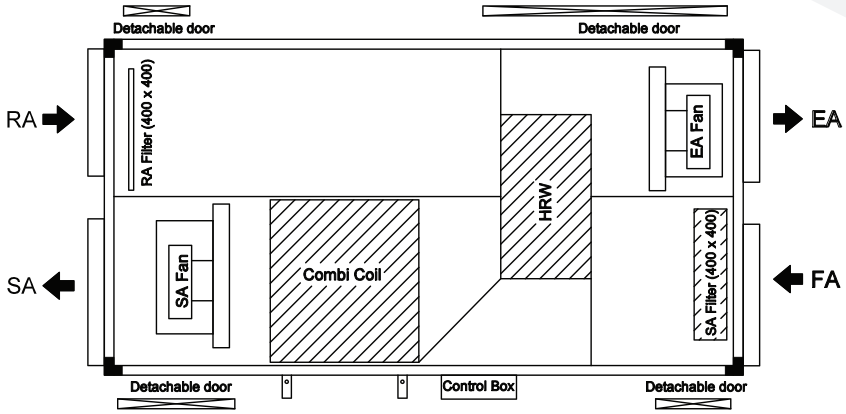
FRONT VIEW



SIDE VIEW



TOP VIEW



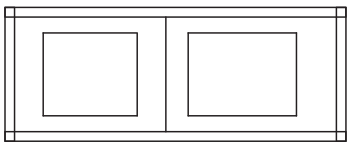
DERV - PLATE HEAT EXCHANGER

MODEL		DERV-150/25/46/ H-PHE-DX/CHW	DERV-250/25/46/ H-PHE-DX/CHW	DERV-500/25/46/ H-PHE-DX/CHW
EXTRACT AIRFLOW (L/s)		150	250	500
DUCT CONNECTION SIZE HxW (mm)	S*	490 x 500	490 x 500	560 x 600
	E*	490 x 500	490 x 500	560 x 600
DIMENSIONS 25 mm Thick PUF Panel (mm)	L	2320	2320	2400
	W	1160	1160	1560
	H	550	550	620

46 mm thick PUF panel is available on request for both vertical and horizontal orientation.

* S - Supply | E - Extract

FRONT VIEW



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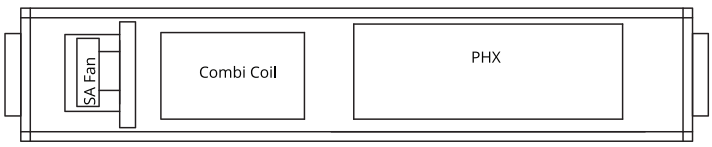
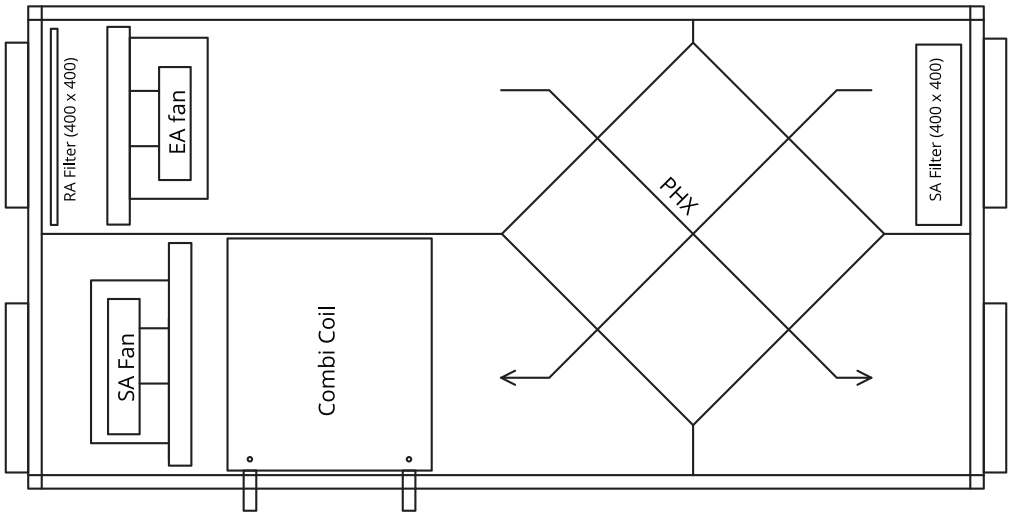


TOP VIEW



Energy Recovery Ventilator **(ERV)**

SPC ERV consist of supply & exhaust section, in which, air-to-air heat exchangers for recovery of heat, air filters & fans.

Air-to-air heat exchangers is used to pre-cool the fresh outside air using cooling capacity of waste extract air.

The unit incorporate high efficiency EC backward curved blowers in both the supply and extract sections. These blowers allow the unit to overcome significant external resistance while maintaining the design airflow rates.

TECHNICAL **SPECIFICATIONS**

The conditions upon which, the following data is based on, are as follows:

» Outside air at 46/29°C » Return air at 25/18.7°C

ERV WITH HEAT RECOVERY WHEEL

MODEL	150	250	500
Nominal Supply Volume (litre/sec)	150	250	500
Nominal Extract Volume (litre/sec)	150	250	500
Nominal Supply External Static (Pa)	100	100	100
Nominal Extract External Static (Pa)	150	150	150
Heat Recovery Cooling (kW)	3.9	6.6	11.9
Supply Air Dry Bulb Temperature (°C)	**34.5**	**34.2**	**35.4**
Supply Air Wet Bulb Temperature (°C)	**24.1**	**23.9**	**24.4**
Indoor Unit Electrical Power Supply (V/Ph/Hz)	230/1/50	230/1/50	230/1/50
Fan Motor Input Power (Suppy/Extract) (W)	165/165	165/350	365/365
Weight (Kg)	198	201	284

ERV WITH HEAT PIPE HEAT RECOVERY

MODEL	80	150	250	500
Nominal Supply Volume (litre/sec)	80	150	250	500
Nominal Extract Volume (litre/sec)	80	150	250	500
Nominal Supply External Static (Pa)	100	100	250	150
Nominal Extract External Static (Pa)	150	100	250	150
Heat Recovery Heat Pipe Cooling (kW)	1.3	2.1	3.4	6.8
Supply Air Dry Bulb Temperature (°C)	**34.8**	**34.5**	**34.5**	**34.7**
Supply Air Wet Bulb Temperature (°C)	**26.5**	**26.4**	**26.4**	**26.5**
Indoor Unit Electrical Power Supply (V/Ph/Hz)	230/1/50	230/1/50	230/1/50	230/1/50
Fan Motor Input Power (Supply/Extract) (W)	113/113	113/113	160/160	334/334
Weight (Kg)	176	203	261	351

ERV WITH PLATE HEAT EXCHANGER

MODEL	150	250	500
Nominal Supply Volume (litre/sec)	150	250	500
Nominal Extract Volume (litre/sec)	150	250	500
Nominal Supply External Static (Pa)	100	100	100
Nominal Extract External Static (Pa)	150	150	150
Heat Recovery Cooling (kW)	2.7	4.5	8.5
Supply Air Dry Bulb Temperature (°C)	**29.9**	**30**	**30.8**
Supply Air Wet Bulb Temperature (°C)	**25.2**	**25.2**	**25.5**
Indoor Unit Electrical Power Supply (V/Ph/Hz)	230/1/50	230/1/50	230/1/50
Fan Motor Input Power (Suppy/Extract) (W)	165/165	350/165	365/365
Weight (Kg)	261	261	295

TECHNICAL **CONFIRGURATIONS**

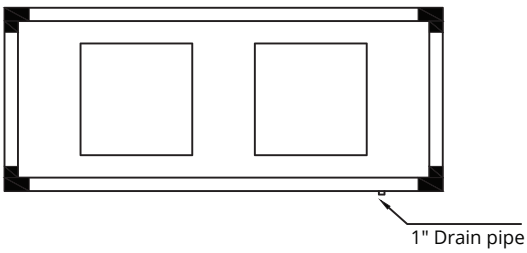
ERV - HEAT PIPE HEAT RECOVERY

MODEL		ERV-80/25/46/ H-HPHR	ERV-150/25/46/ H-HPHR	ERV-250/25/46/ H-HPHR	ERV-500/25/46/ H-HPHR
SUPPY AIRFLOW (L/s)		80	150	250	500
EXTRACT AIRFLOW (L/s)		80	150	250	500
DUCT CONNECTION SIZE HxW (mm)	S*	250 X 250	300 X 330	360 X 450	460 X 700
	E*	250 X 250	300 X 330	360 X 450	460 X 700
DIMENSIONS 25 mm Thick PUF Panel (mm)	L	1070	1070	1180	1320
	W	980	1130	1380	1870
	H	410	460	510	615

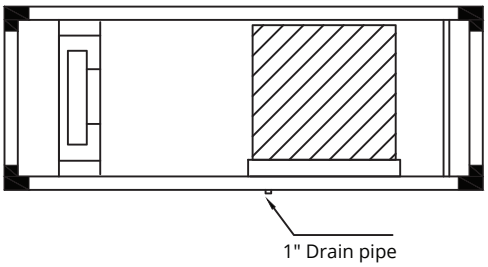
46 mm thick PUF panel is available on request for both vertical and horizontal orientation.

* S - Supply | E - Extract

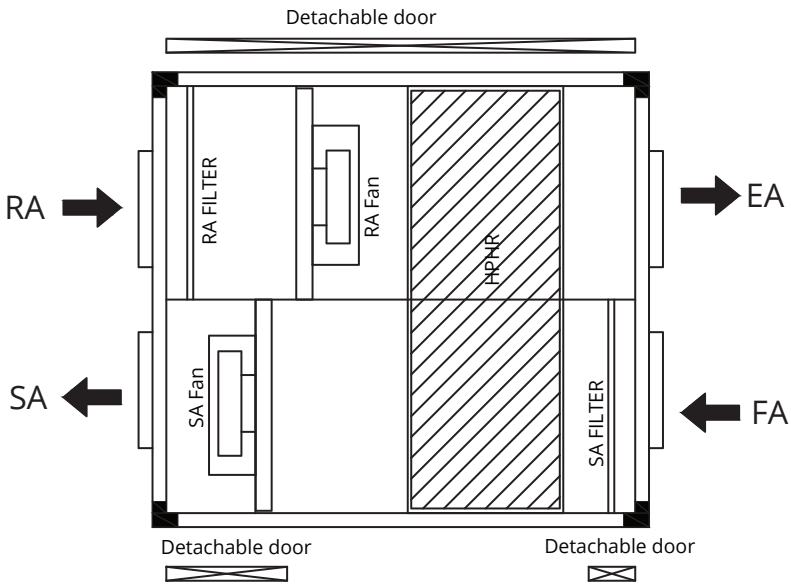
FRONT VIEW



SIDE VIEW



TOP VIEW



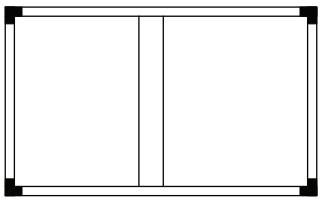
ERV - HEAT RECOVERY WHEEL

MODEL		ERV-150/25/46/H-HRW	ERV-250/25/46/H-HRW	ERV-500/25/46/H-HRW
SUPPY AIRFLOW (L/s)		150	250	500
EXTRACT AIRFLOW (L/s)		150	250	500
DUCT CONNECTION SIZE HxW (mm)	S*	560 X 410	560 X 410	600 X 600
	E*	560 X 410	560 X 410	600 X 600
DIMENSIONS 25 mm Thick PUF Panel (mm)	L	1350	1350	1700
	W	960	960	1340
	H	620	620	660

46 mm thick PUF panel is available on request for both vertical and horizontal orientation.

* S - Supply | E - Extract

FRONT VIEW



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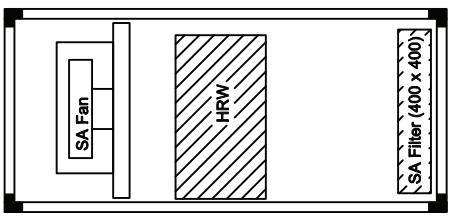
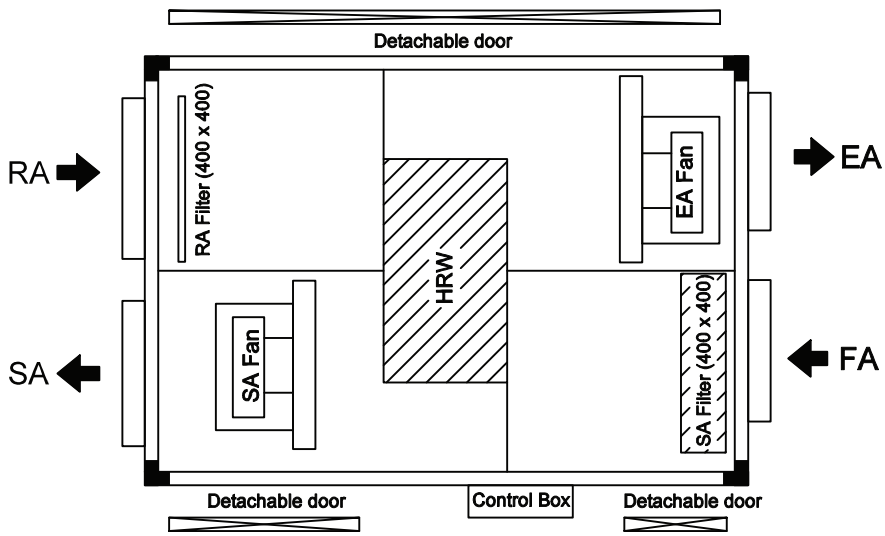


TOP VIEW



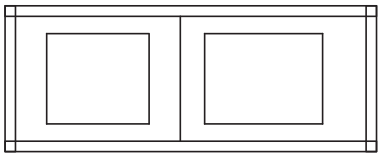
ERV - PLATE HEAT EXCHANGER

MODEL		ERV-150/25/46/H-PHE	ERV-250/25/46/H-PHE	ERV-500/25/46/H-PHE
SUPPY AIRFLOW (L/s)		150	250	500
EXTRACT AIRFLOW (L/s)		150	250	500
DUCT CONNECTION SIZE HxW (mm)	S*	490 x 500	490 x 500	560 x 600
	E*	490 x 500	490 x 500	560 x 600
DIMENSIONS 25 mm Thick PUF Panel (mm)	L	1750	1750	1900
	W	1130	1130	1380
	H	550	550	620

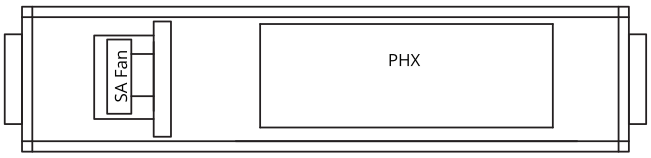
46 mm thick PUF panel is available on request for both vertical and horizontal orientation.

* S - Supply | E - Extract

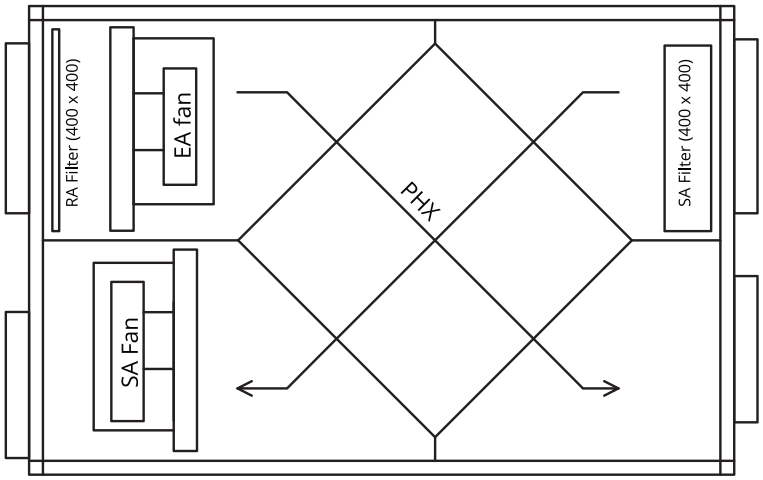
FRONT VIEW



SIDE VIEW



TOP VIEW

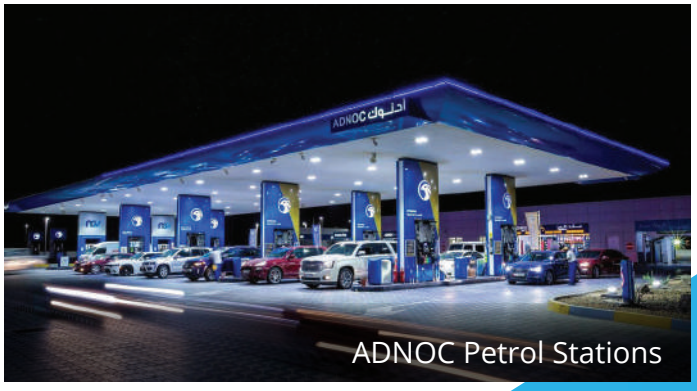


PROJECT **REFERENCES**

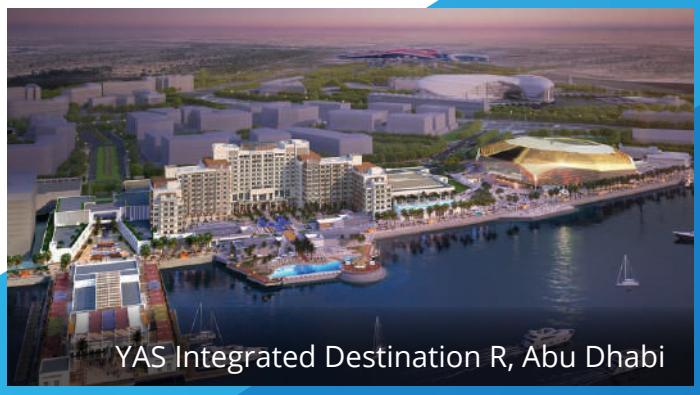

Museum Of The Future Metro & Jet Link Bridges, Dubai


Bluewaters Warf Retail, Dubai


Jewel of the Creek, Dubai



ADNOC Petrol Stations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