

ProAir

HEAT RECOVERY VENTILATION SYSTEMS

OUR
EXPERIENCE
IS YOUR
PEACE OF
MIND



**Water Heater Coil
Data Sheet**

www.proair.ie

www.proair-systems.co.uk



Why ProAir?

- A proven track record in the field of HRV since 1995, with well over 2000 installations completed in Ireland the UK and a number of other countries.
- Turnkey approach from design to installation to after-sales.
- The network of installation teams is constantly being built up using a strict training and up-skilling regime
- With our active R&D department, the aim is not just to keep up with the technology, but to be ahead of it.

The ethos at ProAir is to provide the complete HRV solution. By this, we mean that it is equally as important to install correctly using suitable materials with the lowest resistance to airflow as it is to use the best unit for the application. Without proper installation the promised high efficiencies cannot be achieved. ProAir's trained team ensure that there is no disruption to the build process and magically make ducts disappear inside walls and ceiling spaces with nothing visible except a small disc in the ceiling of each room as see figure 1.

Like all technology, improvements are being made to the design all the time and efficiencies have almost doubled in recent years. The ProAir System has efficiencies in excess of 90%. This means that the fresh air being supplied to a building is virtually at the same temperature as that being exhausted, irrespective of outside temperature.

The fans in the ProAir HRV units are powered by the new generation, high efficiency, electronically commutated (EC) motors, ensuring extraordinarily low running costs.

Benefits

Economy

Reduces home heating costs

Health

Clean fresh air benefits everybody

Comfort

Draught free ventilation and ultra-silent operation

Energy Efficiency

Collects heat from the air leaving the building

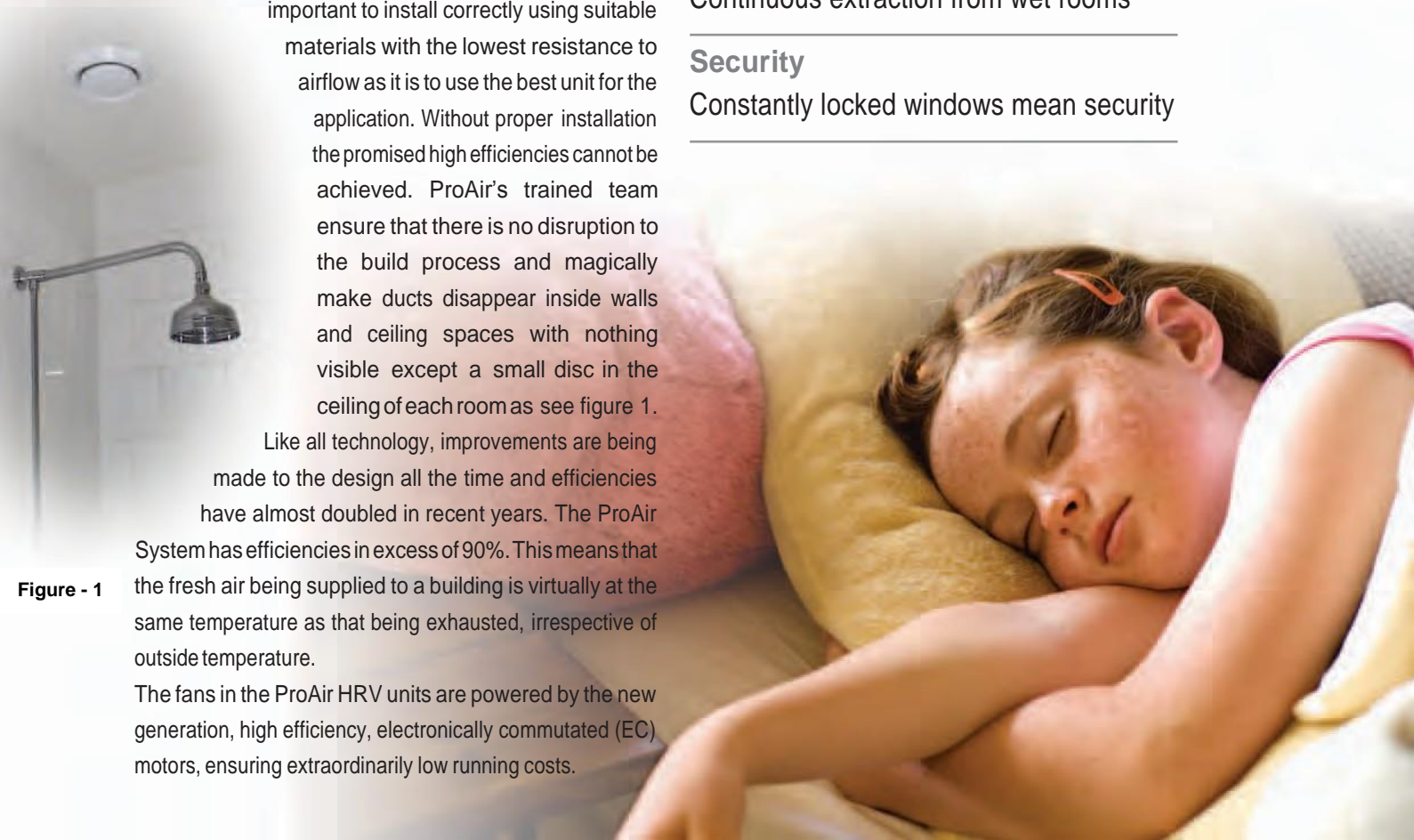
Condensation Control

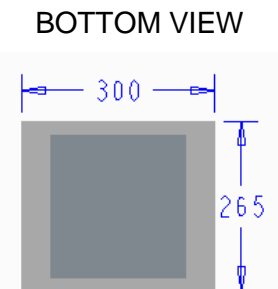
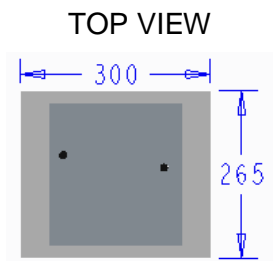
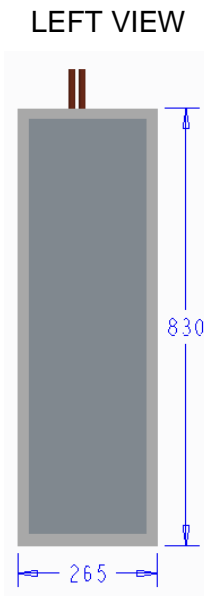
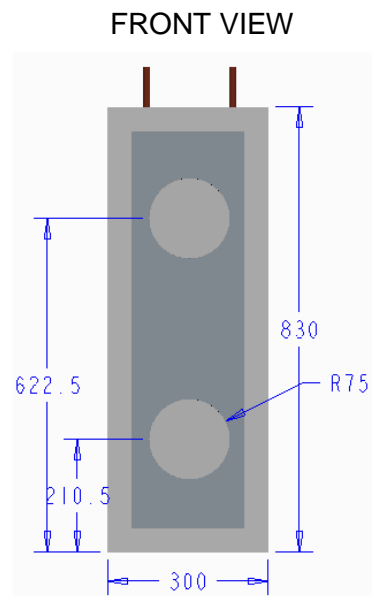
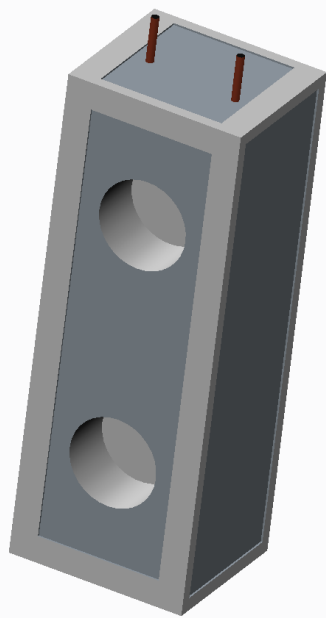
Continuous extraction from wet rooms

Security

Constantly locked windows mean security

Figure - 1





Coil Construction	
Coil Pattern No. (N)	9
No. of Rows Deep (ROWS)	2
Fin height(FH)	152.4 mm
Finned Length (FL)	700 mm
No.of Circuits (CKT)	2
Number of Tubes (NT)	12
Tube Inserts(TB)	Bare Tube
Circuiting Arrangement (FLO)	Cross
Connections per Header(NCON)	1
Fin Spacing (FPI)	12 fpi
Fin Material (MTL)	Aluminium
Fin Thickness (FIN)	0.12 mm
Number of Coils (QTY)	1
Header Fabricating Technique(HDR)	Normal Header
Fluid Header Diameter(HDR)	15.88 mm
Header Length (HDRL)	180 mm
Tube Treatment (TT)	Smooth
Tube Wall Thickness (TW)	0.28 mm
Connection O.D(CON)	19 mm

Table 1 – Coil construction data

Operating Conditions	
Air In Dry Bulb Temp.(TWE)	15 - 22 °C
Air In Wet Bulb Temp.(TWB)	14 - 21 °C
Air Flow (CFM)	60 - 323 m³/h
Altitude/Air Pressure (P)	Altitude
Value (P)	0 Meter/Bar
Standard Air (SA)	Standard
Fluid Inlet Temp. (TF)	40 - 80 °C
Fluid Number(FNO)	Water
Fluid Flow Rate (GPM)	Calculate by Delta-T
Value(GPM)	3 L/Min (Delta-T °C)
% Volume Glycol (PG)	0 %
Average yearly temperature	10 °C
Average yearly relative humidity	76%
HRV return (room) air temperature	20 °C
HRV supply air temperature (dry)	19.7 °C
HRV supply air temperature (wet)	17 °C
Heat pump fluid inlet temp. range	40 - 55 °C
Boiler fluid inlet temp. range	55 - 70 °C

Table 2 – Coil operating conditions

Operating Conditions	
Air In Dry Bulb Temp.(TWE)	19.7 °C
Air In Wet Bulb Temp.(TWB)	17.0 °C
Air Flow (CFM)	323 m³/h
Altitude/Air Pressure (P)	Altitude
Value (P)	0 Meter/Bar
Standard Air (SA)	Standard
(Fluid Inlet Temp. (TF)	60.0 °C
Fluid Number(FNO)	Water
Fluid Flow Rate (GPM)	Calculate by Delta-T

Table 3 – Common coil operating conditions

Results (based on table 3 operating conditions)	
Total Capacity (QT)	3.982 KW
Leaving Air Temp. Dry Bulb (DBL)	46.83 °C
Leaving Air Temp. Wet Bulb (WBL)	22.72 °C
Resistance To Air-Flow ("WG)	7.47 Pascal
Fluid Flow Rate (GPM)	19.3 L/Min
REV WLHPA12 20120816:	0.0
Leaving Fluid Temp (TFL)	57.00 °C
Fluid Pressure Drop (DP)	72.2 kPa
Face Area	0.107 m ²
Airflow Velocity	1.09 m/s
REYNOLDS #:	45472

Table 4 – Coil operating results

Recorded Total Capacity kW @ Volumetric Air Flow Rate 323 m³/h, Resistance To Air-Flow 4.89 Pa, Air In (Dry Bulb) Temperature 19.7 °C

Fluid Inlet Temp. (TF)	(Q _{total}) Total Capacity kW	(DBL) Leaving Air Temp. Dry Bulb °C
25	0.189	21.39
30	0.642	25.5
35	1.087	29.5
40	1.518	33.44
45	1.948	37.33
50	2.37	41.22
55	2.809	45.00
60	3.24	49.00
65	3.67	52.89
70	4.1	56.78
75	4.53	60.67
80	4.96	64.56

Fig. 1 - Fluid Inlet Temp vs. Total Capacity

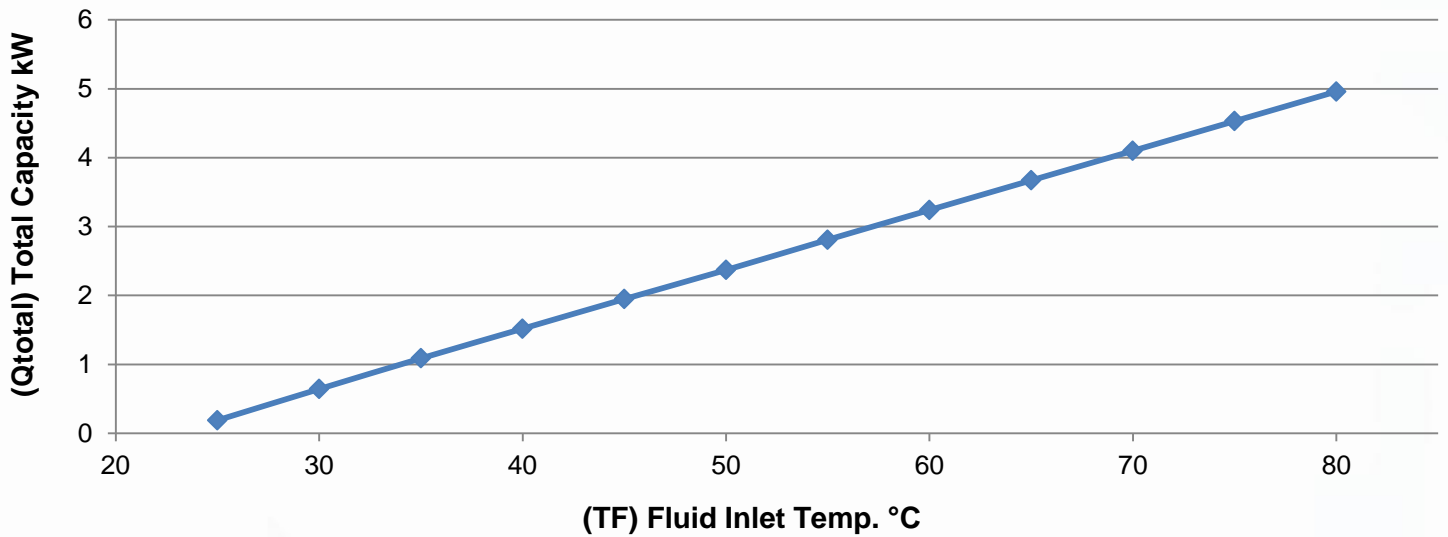
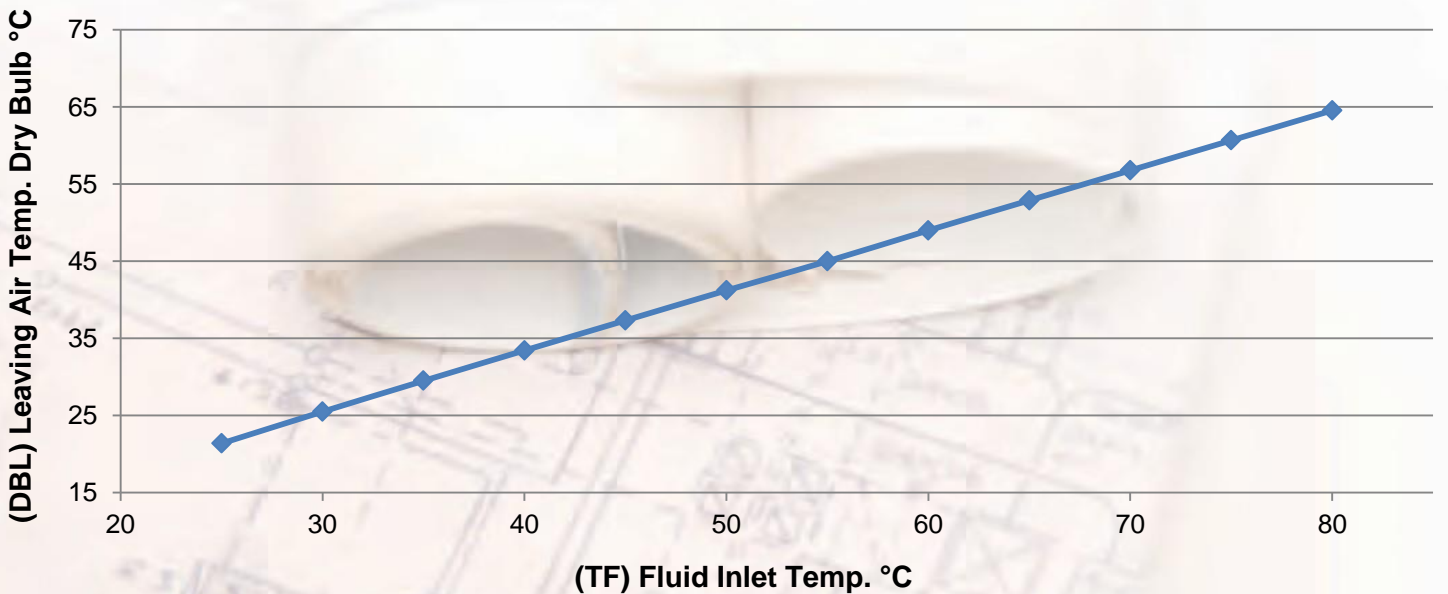
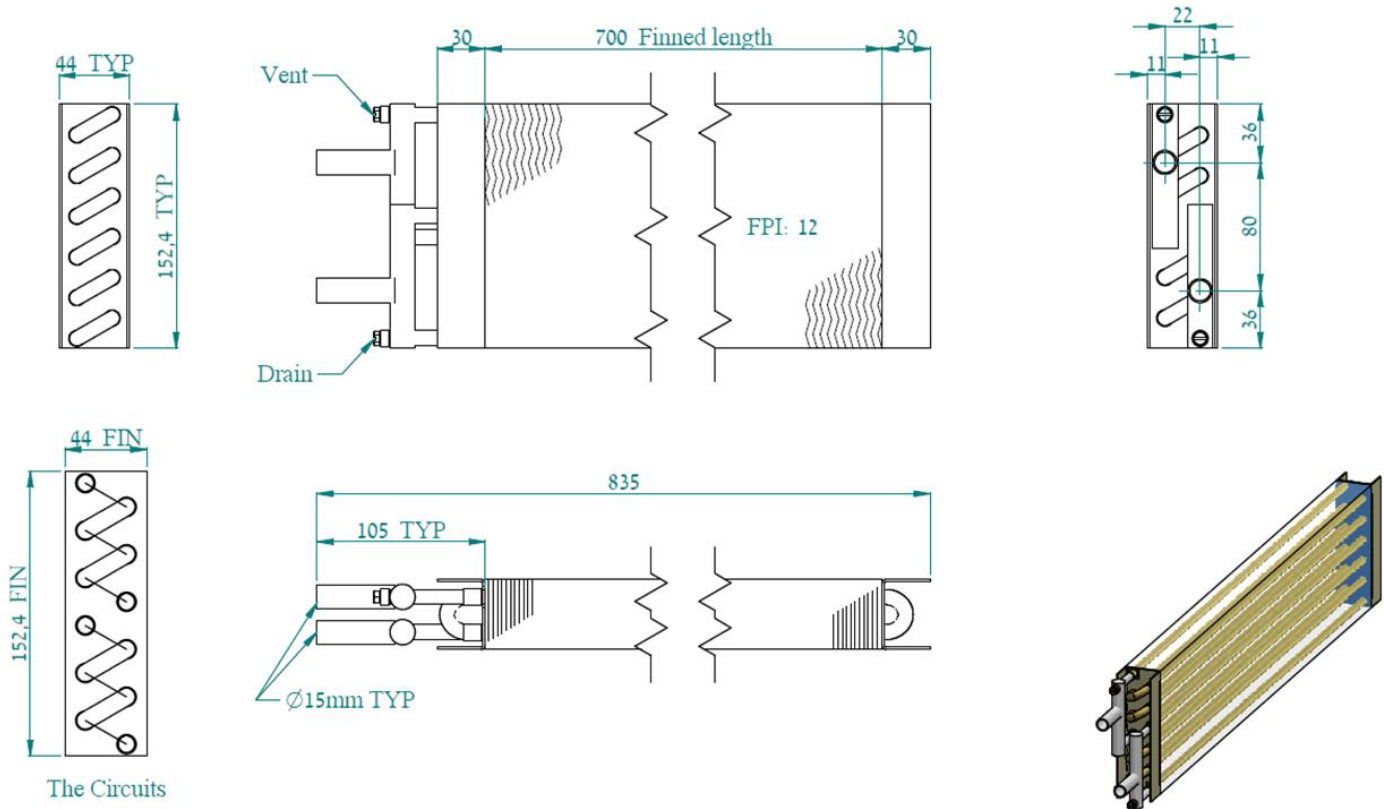


Fig. 2 - Fluid Inlet Temp vs. Leaving Air Temp





Fin: ALUMINIUM, 0.12 mm , CORRUGATED
 Tubes: COPPER, 0.012"
 End Plates: GALVANIZED, 1.5mm

TOLERANCE UNLESS SPECIFIED			
LINEAR DIMENSIONS	ANGULAR DIMENSIONS	SURFACE FINISH	
UP TO 400mm ±0.1	OVER 400 - ISO 2768-C	±4°	±4.0µ

NO	DATE	BY
A11		11
REVISIONS		

ProAir
 Model No. ProAir WH 700

Description: 9/2x6x700/12-2 (0)		COR	
Cat No. 809 - CV2C4		SCALE	
design	date	by	proj
draw	11/06/2015	david	
check			Dr/Pr
app.			CV2C4
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