ActronAir®
Australian for air conditioning™

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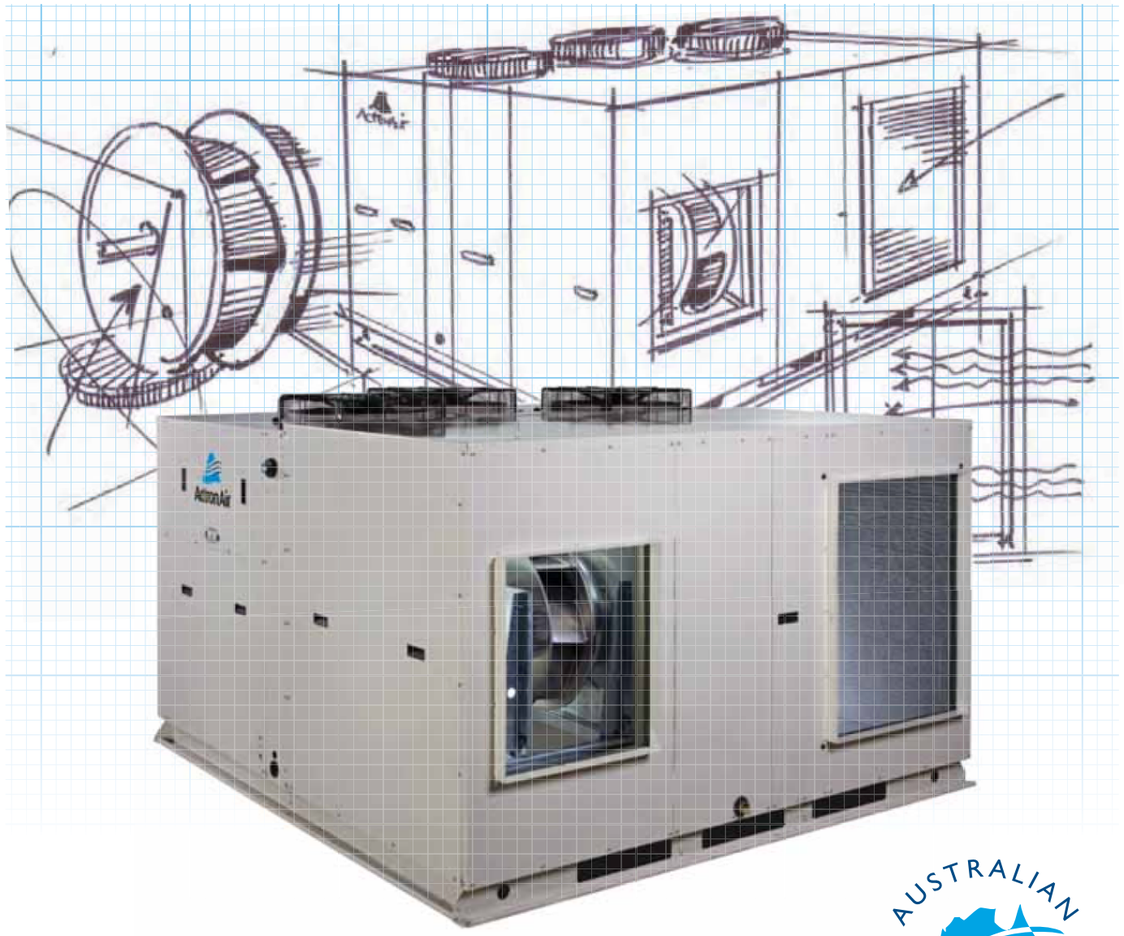
BRINGING BIG IDEAS TO LIFE.



Next Generation Commercial Ducted Technology

The 470 – 960 Series

AUSTRALIAN DESIGNED & BUILT

Tri-Capacity Product Overview

The next generation in Commercial ducted air conditioning has arrived. This Australian engineered system features new technology that delivers a combination of superior performance, energy efficiency, flexibility of design and installation time saving features. Furthermore, ActronAir® believes this technology has one of the lowest lifecycle costs of any product in its class.

Advanced energy efficiency

A'typical' commercial building air conditioner operates between 60% to 75% capacity most of the time. This is why ActronAir® chose to design an air conditioner better suited to meet the building load by developing the Tri-Capacity Series.

Energy usage is reduced through both the tri-capacity operation and the incorporation of a high efficiency EC plug fan. The tri-capacity twin compressor configuration is unique in its class and delivers 3-steps of cooling and heating, which allows the system to operate at 33%, 67% or 100% capacity. Not only does this improve seasonal energy efficiency through fewer adjustments, it also results in less cyclic degradation and improved end user comfort.

The EC evaporator plug fan uses significantly less energy versus traditional belt and pulley systems. The backward curve fan is non-overloading for maximum durability and results in lower life cycle costs. These plug fans also offer greater flexibility in supply and return air configurations.

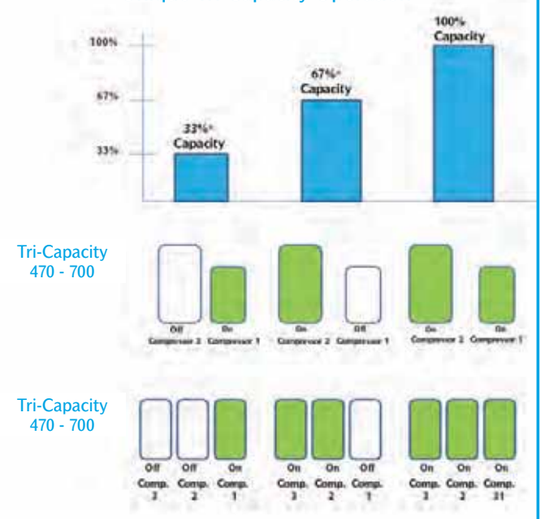
Ease of Commissioning

The Tri-Capacity Series offer noticeable time savings for the mechanical contractor/installer during the commissioning process. For example the indoor air flow is adjusted using a simple 'dial-up' feature and results in more accurate air flow control.

In addition, standard inclusions such as a 3-phase load break isolation switch, in-built filter cavity, flexible handing configurations, Demand Response Ready operation, in-built safety tray (indoor units) and condensate drain points make life easier by reducing the amount of work required on site.

Designed to use the ActronAir® C7-4 controller with after hours run timer, the units are also easy to wire. The Commercial Control Interface (CCI) is included as standard and will suit most third party controls
for greater flexibility.

Unique Tri-Capacity Operation



- Tri-Capacity delivers 3 steps of Cooling/Heating - (~33%, ~66% and 100% capacity)

*Exact percentage varies slightly between units.

Durability inside and out

Features to extend durability include powder coating that exceeds Australian standards, the use of the highest quality components such as compliant scroll compressors and high performance Outdoor fans, coil fin protection, louvre grille to protect the coil from the elements.

Built for Australian conditions

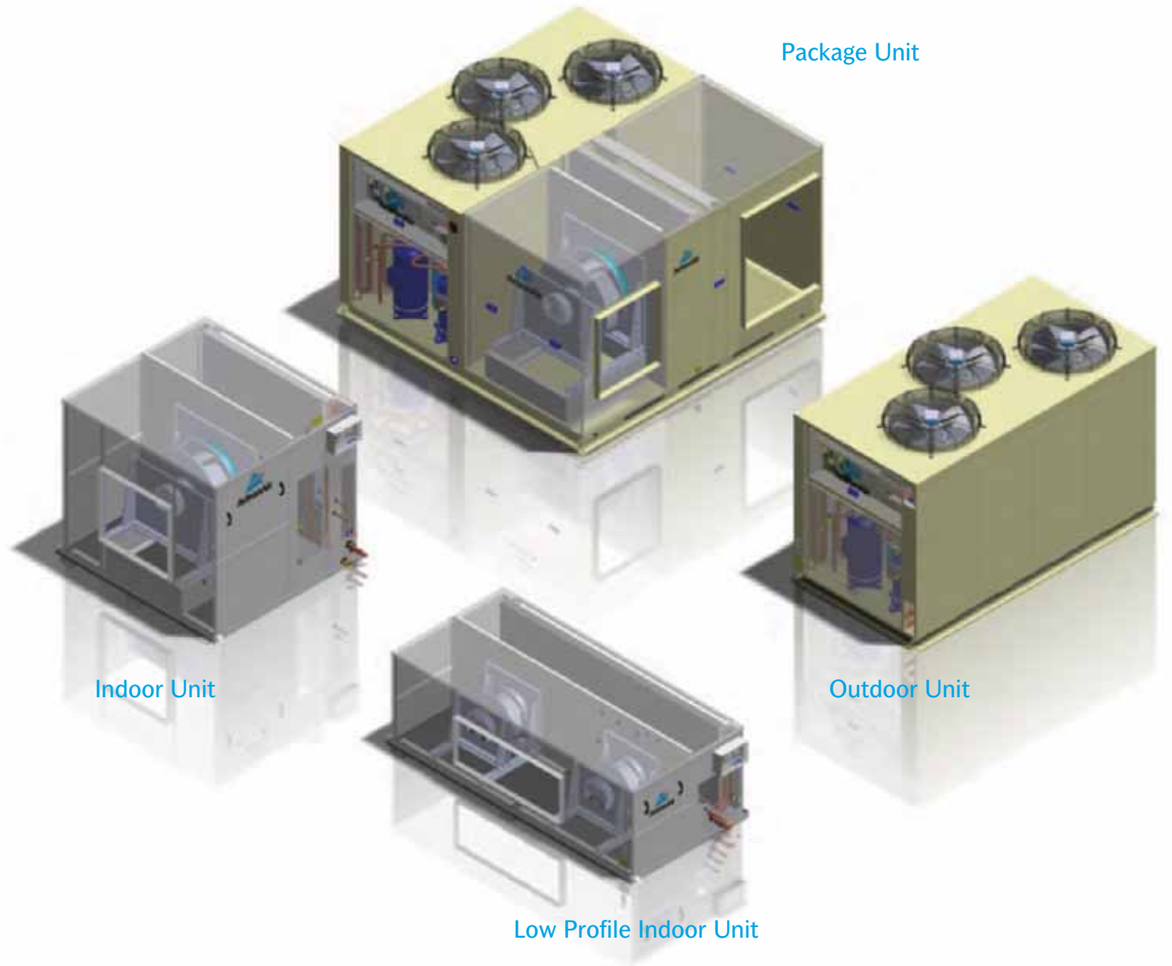
Purpose built and designed for Australian conditions, these units have an operating range of -10°C to 50°C. In fact, all ActronAir® models are subjected to further Maximum Cooling Capacity tests at 52°C (AS 3823.1.2 Table 2 T3).

To provide independent performance verification, ActronAir® has gone one step further by testing these units in an ISO17025 accredited US laboratory. This reinforces ActronAir's commitment to delivering and exceeding both current and future standards.

Tri-Capacity Options include:

- Fault detection
- Economiser
- Fresh air operation
- Additional coil protection
- 3Ph soft starter

Product Range 470-960 Series



C7-4 Controller:

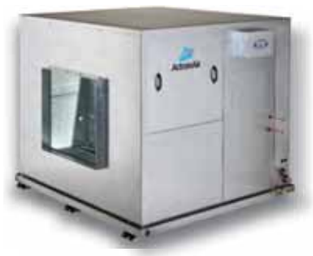
Capacity Table (kW):

Total Capacity (kW)	47.0	53.5	63.0	71.0	82.5	96.0
Packaged Unit (PKY)	•	•	•	•	•	•
Outdoor Unit (CAY)	•	•	•	•	n/a	n/a
Indoor Unit (EVY)	•	•	•	•	n/a	n/a
Indoor Unit Low Profile (ELY)	•	•	•	•	n/a	n/a

For additional information regarding kW capacity please refer to the Unit Specifications tables located on the back page.

Tri-Capacity 470-960 Series

Outdoor Unit



Standard Indoor Unit

Low Profile Indoor Unit

Packaged Unit

1

ActronAir® Louvre Grill

- Standard inclusion for Packaged unit and Outdoor Unit
- Protects condenser coil against mechanical damage eg. hail

2

Outdoor Coil

- High performance outdoor coil to deliver improved cooling and heating performance -10ºC to 50ºC operating range
- Blue fin hydrophilic protection supplied standard for improved durability

3

TX Valves

- Supplied standard for improved seasonal efficiency

4

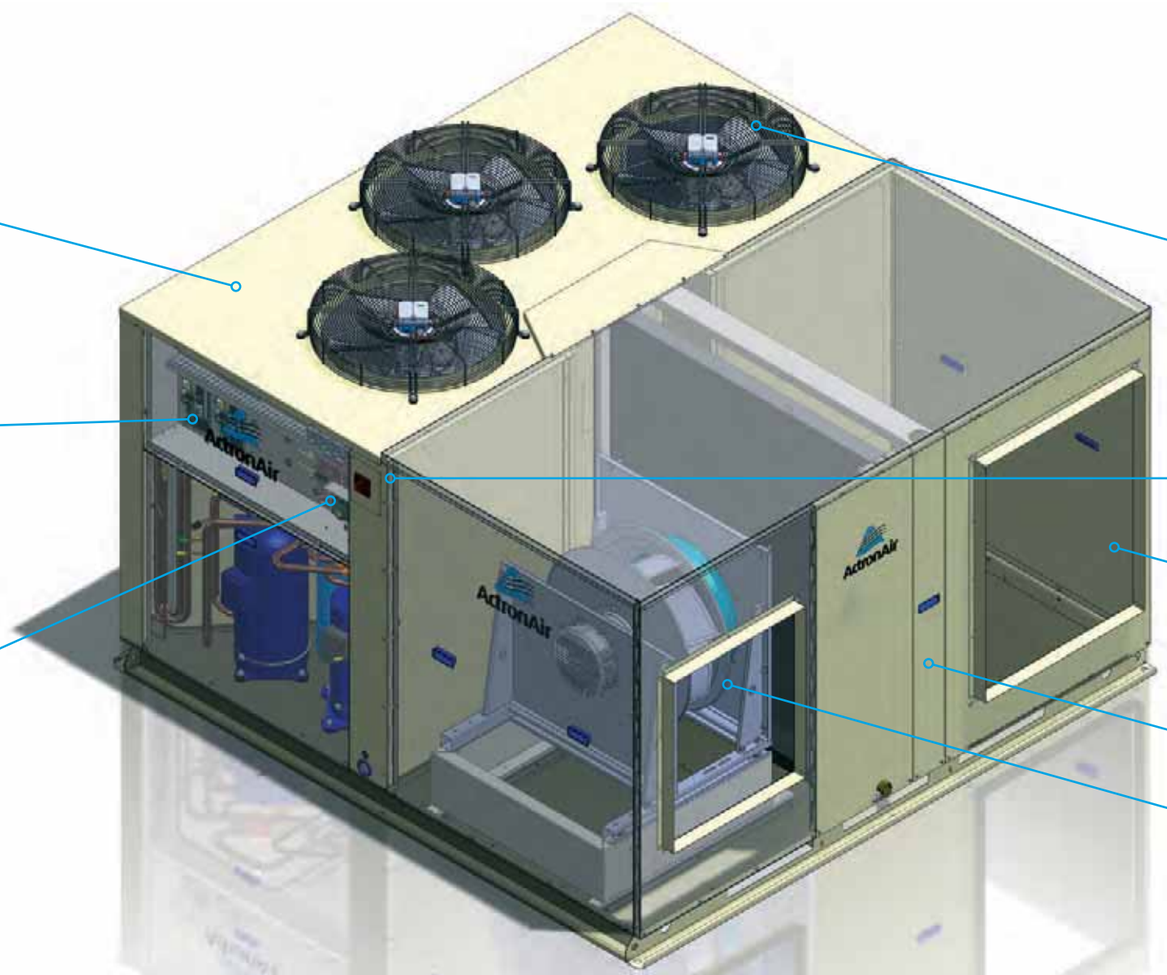
Electrical Control Board

- User-friendly wiring layout
- Standard inclusions:
  - Individual motor protection (circuit breaker and thermal overload) and isolation (lockable)
  - Commercial Control Interface (CCI)
  - Demand Response Ready

5

Dial-up Indoor Air Flow

- Quick and easy commissioning
- Improved air flow control accuracy



6

High Performance Outdoor Fans

- High quality, high performance fans, engineered and manufactured in Germany
- Improved air flow
- Quieter operation vs. traditional axial fans

7

3 Phase Load Break Isolation Switch

- Standard inclusion
- External lockable handle

8

High performance 25mm Foil-Faced Polyethylene Insulation

- Standard inclusion

9

In-built Filter Cavity

- Standard inclusion
- To suit 96mm filter width

10

High Efficiency EC Plug Fan

- Uses significantly less energy than traditional belt and pulley systems
- Backward curve non-overloading for maximum durability
- High static as standard (up to 500 Pa)
- Designed for maximum durability and lower life cycle operating costs
- Greater flexibility in supply and return air configurations

11

Unique Tri-Capacity Operation

- Designed for improved seasonal energy efficiency vs. traditional compressor configurations
- Tri-capacity delivers 3 steps of cooling/heating
  - (~33%, ~66% and 100% capacity)
- Designed for maximum durability and lower life cycle operating costs
  - High quality Copeland compliant scroll compressors

Note: image shown is for illustrative purposes only.

SUPREME COURTS BUILDING ADELAIDE

Background

In 2010 System Solutions Engineering were engaged by DTEI Building Management Facilities Services, on behalf of the Courts Administration Authority (CAA), to design and document the replacement of the air conditioning system serving the Library of the Supreme Courts building in the Adelaide CBD.

Investigations & Design

Before undertaking the design and documentation for the air conditioning system, System Solutions Engineering placed a data logger for a period of 1 week on the original system to obtain a base line of the fan energy consumed by the original air conditioning system, and to independently substantiate the manufacturer's claims by recording energy data prior to the changeover.

After viewing all options on the market in regards to energy savings and cost, System Solutions Engineering chose the Actron Air, Tri Stage Split ducted unit (pictured). It represented a projected 50% energy saving when compared to the original air conditioning system, based on the manufacturer's data.

Benefits & Outcome

At the end of the 1 week period, the resulting power consumption of the original system was 14,976 kW hours/year which is equivalent to 14.6 tonnes of CO_2.

The new high efficiency EC fan motor (Electronic Communicated fan) recorded a power consumption of 8,320 kW hours/ year which is equivalent to 5.9 tonnes of CO_2. Therefore, this represents a saving of 8.7 tonnes per annum of CO_2, which was exceeded the manufacturer's claims, by providing 55% savings.

Original Fan energy per annum: 14,976 kW hours	Tonnes of CO2 per annum: 14.6	Estimated annual running cost: $ 2,695.68
New Fan Energy per annum: 8,320 kW hours	Tonnes of CO2 per annum: 5.9	Estimated annual running cost: $ 1,497.60
Reduction / Savings p.a.: 6,656.00 kWh	8.7 Tonnes p.a.	$1,198.08 p.a.

Image (A)
OUTDOOR MODEL: CAY470T- 6Q1
(Outdoor Condensing Unit.)

Image (B)
Indoor Fan Coil Unit with EC Motor and Plug Fan.

Image (C)
INDOOR MODEL: ELY470T-6Q1
Indoor Fan Coil Unit with EC Motor and Plug Fan.

The above information was obtained from:
C:\Documents and Settings\koreilly.SYSSOLENG\Desktop\Supreme Court Library Newsletter article March 2011.docx 5/4/2006. Level 1, 75 Fullarton Road, Kent Town SA 5067 Phone: (08) 8333 1855 Facsimile: (08) 8333 1866 ABN: 61 007 654 971

Tri-Capacity Split Ducted Unit Specifications

Technical Information

OUTDOOR MODEL / INDOOR MODEL		CAY470T-6Q1 EVY470T-6Q1 Std Profile	CAY470T-6Q1 ELY470T-6Q1 Low Profile	CAY540T-6Q1 EVY540T-6Q1 Std Profile	CAY540T-6Q1 ELY540T-6Q1 Low Profile	CAY620T-6Q1 EVY620T-6Q1 Std Profile	CAY620T-6Q1 ELY620T-6Q1 Low Profile	CAY700T-6Q1 EVY700T-6Q1 Std Profile	CAY700T-6Q1 ELY700T-6Q1 Low Profile
Nett (Rated) Capacity (kW)	Cooling	45.77	46.00	51.85	52.20	60.80	61.00	68.17	68.30
(AS/NZS3823.1.2)	Heating	47.37	47.20	53.20	52.96	62.47	62.30	70.20	70.00
Input Power (kW)	Cooling	15.40	15.42	17.57	17.57	20.50	20.35	24.12	23.94
(AS/NZS3823.1.2)	Heating	14.16	14.02	16.20	16.03	20.15	19.98	22.32	22.12
[3] EER Rated (AS/NZS3823.1.2)	Cooling	2.97	2.98	2.95	2.97	2.97	3.00	2.83	2.85
[3] COP Rated (AS/NZS3823.1.2)	Heating	3.35	3.37	3.28	3.30	3.10	3.12	3.15	3.16
Airflow Indoor (l/s)	Maximum	2900		3300		3900		4100	
	Nominal	2400		2700		3200		3600	
	Minimum	1900		2100		2500		2800	
External Static Pressure (@H)	Maximum Airflow	305	325	125	75	155	175	75	
	Nominal Airflow	500	500	390	450	410	500	270	340
Power Supply - (V / Ph / Hz)	Outdoor	415V / 3Ph + N / 50Hz							
	Indoor	415V / 3Ph + N / 50Hz							
[4] Circuit Breaker Amps (Suggested)		50.0				63.0		80.0	
Compressor	Type / No. per Unit	Compliant Scroll / 2							
No. of refrigeration Circuits / No. Capacity Stages (Capacity range)		2 / Tri-Capacity (~33% 67% 100%)							
Refrigerant		R410a							
Fans (Type x Number per unit)	Outdoor	Axial Low Noise / 6 Pole External Rotor / Direct Drive x 3							
	Indoor	Variable Speed EC Motor Direct Drive Backward Curve Plug Fan x 1 (EVY Models), 2 (ELY Models)							
Outdoor Dimensions (mm)	Depth	1195				1195			
	Height	1465				1695			
	Width	2305				2305			
Indoor Dimensions (mm)	Depth	1450	1160	1450	1160	1450	1160	1450	1160
	Height	1280	770	1280	770	1510	895	1510	895
	Width	1590	2410	1590	2410	1590	2410	1590	2410
[1] Nominal Weight (kgs)	Outdoor	532		542		577		604	
	Indoor	292	268	298	277	340	318	340	318
[6] Sound Pressure Level (dBA)	Outdoor (low/high fan)	58 / 63				59 / 64			
[7] Sound Power Level (dBA)	Outdoor (low/high fan)	75 / 80				76 / 81			
MEPS Certified		Yes	Yes	Yes	Yes	Yes	Yes	BCA Table J5.4c Compliant	
Maximum Field Pipe Length Range - (m)		75							
Maximum Vertical Height Differential - (m) included in max length		20							

Tri-Capacity Roof Top Packaged Unit Specifications

Technical Information

PACKAGE MODEL		PKY470T-6Q1	PKY540T-6Q1	PKY620T-6Q1	PKY700T-6Q1	PKY820T-3Q1	PKY960T-3Q1
Nett (Rated) Capacity (kW)	Cooling	45.77	51.85	60.80	68.17	80.04	92.96
(AS/NZS3823.1.2)	Heating	47.37	53.20	62.47	70.20	82.75	95.40
Input Power (kW)	Cooling	15.40	17.57	20.50	24.12	27.21	32.54
(AS/NZS3823.1.2)	Heating	14.16	16.20	20.15	22.32	24.55	27.20
[3] EER Rated (AS/NZS3823.1.2)	Cooling	2.97	2.95	2.97	2.83	2.94	2.86
[3] COP Rated (AS/NZS3823.1.2)	Heating	3.35	3.28	3.10	3.15	3.37	3.51
Airflow Indoor (l/s)	Maximum	2900	3300	3900	4100	4800	6000
	Nominal	2400	2700	3200	3600	4000	5000
	Minimum	1900	2100	2500	2800	3200	4000
External Static Pressure (@)	Maximum Airflow	305	125	155	75	410	100
	Nominal Airflow	500	390	410	270	500	365
Power Supply - (V / Ph / Hz)		400 - 415V / 3Ph + N / 50Hz					
[4] Circuit Breaker Amps (Suggested)		50.0	50.0	63.0	80.0	100.0	100.0
Compressor	Type / No. per Unit	Compliant Scroll / 2 (470-700 Models), 3 (820-960 Models)					
No. of refrigeration Circuits / No. Capacity Stages (Capacity range)		2 (470-700 Models, 3 (820-960 Models) / Tri-Capacity (~33% 66% 100%) All Models					
Refrigerant		R410a					
Fans (Type x Number per unit)	Outdoor	Axial Low Noise / 6 Pole External Rotor / Direct Drive x 3					
	Indoor	Variable Speed EC Motor Direct Drive Backward Curve Plug Fan x 1 (6Q1 Models), 2 (3Q1 Models)					
Unit Dimensions (mm)	Depth	2305				2250	
	Height	1465		1695		2155	
	Width	2365				2920	
[1] Nominal Weight (kgs)		836	853	937	964	1263	1350
[6] Sound Pressure Level (dBA)	Outdoor (low/high fan)	59 / 64		60 / 65		61 / 66	61 / 66
[7] Sound Power Level (dBA)	Outdoor (low/high fan)	76 / 81		77 / 82		78 / 83	78 / 83
MEPS Certified		Yes	Yes	Yes	BCA Compliant	BCA Compliant	BCA Compliant

AUSTRALIAN DESIGNED & BUILT

Quality System — Quality Endorsed Company ISO9001: Lic. 22925 SAI Global

2 YEAR Commercial Warranty Conditions Apply

ARC Refrigerant Trading Authorisation No. AU06394

N2018

MEPS CERTIFIED ActronAir Air Conditioning Units are MEPS Certified.