



Air Cooled Packaged Units Technical Data

OPA 242, OPA 294, OPA 340, OPA 370

Cooling Capacity
23.5kW - 39.1kW

Heating Capacity
22.1kW - 37.8kW

Air cooled packaged units

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Air cooled packaged units

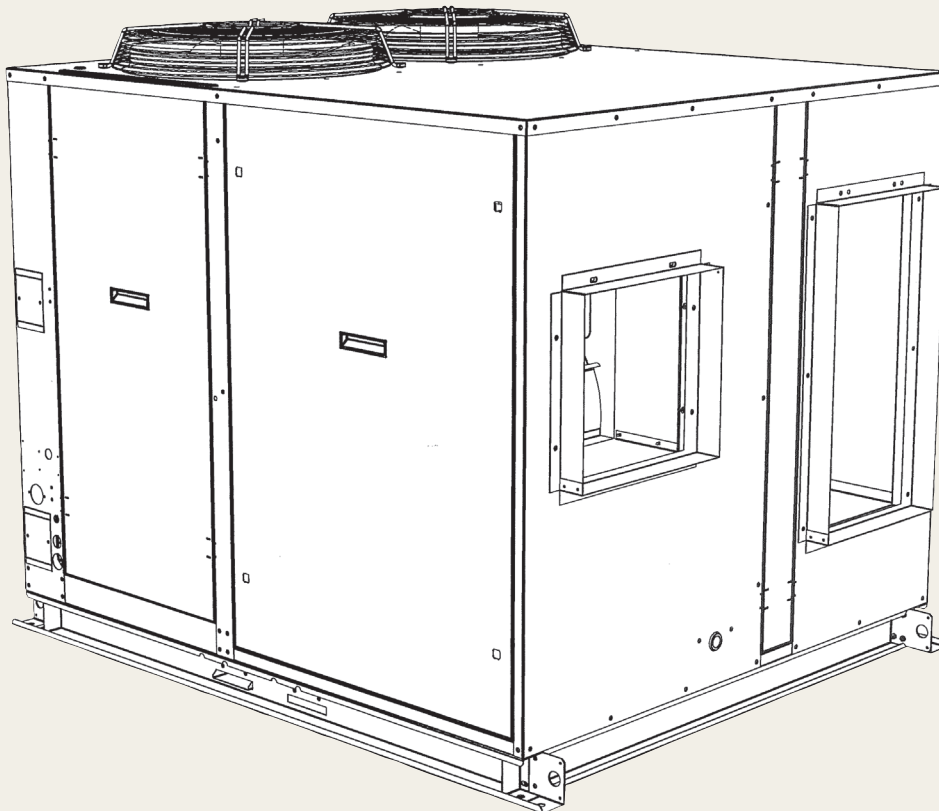
OPA 242, 294, 340, 370



Reverse Cycle (heat pump) packaged roof top A/C

Complies with AS/NZS 3823 specified conditions

Designed and tested to operate at 50°C ambient in cooling mode and -15°C ambient in heating mode



Air cooled packaged units

OPA 242, 294, 340, 370



Applications

Specifically developed for air conditioning of commercial premises i.e. offices, motels/hotels, restaurants and retail outlets

AIR FLOW SELECTION

If air returning to the indoor coil is regularly expected to be above 50% relative humidity then the coil face velocity should be limited to 2.5m/s or less (refer air flow graph page 8).

Consideration must be given to selecting a airflow and coil face velocity that avoids water carry - over problems i.e. in high humidity (tropical/subtropical) conditions or when heavily moisture laden fresh air is introduced .

Applications using complete or high proportion of fresh air should be discussed with a Temperzone sales engineer to establish the correct selection of unit.

FEATURES

Refrigerant R410A

R410A used which is deemed to have zero ozone depletion potential.

Efficiency

Incorporates high efficiency scroll compressors

Heat exchange coils incorporate inner grooved (rifled) tube for superior heat transfer

Performance

An adjustable pulley is fitted on the indoor fan motor of the OPA 294, 340 & 370 to allow for easy adjusting of the airflow during air balancing & commissioning.

The OPA 242 is fitted with a Plug Fan / EC Motor arrangement for the indoor fan .

A variable speed head pressure control is used, ensuring the condenser airflow is suited to the pressures within the refrigerant circuit. This also allows for reliable operation in Cooling mode at ambients below 20°C, and Heating mode above -15°C.

Quiet

Generous use of insulation ensures a quiet unit.

Insulation

Closed cell foam insulation is used in indoor air section to ensure no particles in the air stream. The insulation is foil faced & meets fire test standards AS1530.3 (1989) & BS 476 parts 6 & 7.

Durable

Cabinet and drain tray constructed from high grade galvanized steel-polyester powdered coated (Grey) for all weather protection. External fasteners are stainless steel.

Heat exchange coils are aluminium corrugated plate fins on mechanically expanded rifled copper tube.

Outdoor & indoor coil fins are epoxy coated for extra protection in corrosive environments i.e. salt laden sea air.

Coil protection guards are supplied.

The OPA340 has a louvered hail guard.

Fan motor bearings are sealed for life so as not to incur regular maintenance.

Control Option

The OPA 340/370 are compatible with a BMS control system via Ethernet cable or internet i.e. Modbus, BACnet® or LonWorks® (refer to Temperzone for details)

Air cooled packaged units

OPA 242, 294, 340, 370



CONFIGURATIONS

The units are supplied as standard left hand supply air (as facing the supply air spigot), with right hand available as an option, also, we can supply alternative location for of the supply air and return air openings as per the chart below

Spigot Position

Models	Supply Air				Return Air			
	Front	Top	Side	Bottom	Front	Top	Side	Bottom
OPA 242	Std	Opt	Opt	Opt	Std	Opt	Opt	Opt
OPA 294	Std	Opt	Opt	Opt	Std	Opt	Opt	Opt
OPA 340	Std	Opt	Opt	Opt	Std	Opt	Opt	Opt
OPA 370	Std	Opt	Opt	Opt	Std	Opt	Opt	Opt

OPTIONAL EQUIPMENT

1. OPA 294 controller kit or SAT- 2 (24V Controller kit)
2. OPA 340/370 TZT-100 wall plaque for direct connection to UC6
3. Filters rated AS 1324.1.2001 (EU4/G4)
4. Factory fitted economiser - includes dampers, weatherhood
5. Manually adjustable fresh air damper & weather hood
6. Electronic control systems (available by arrangement)
7. BMS control adaptors for OPA 340 & 370
8. Electric booster heat (factory fitted) complete with heater safety cutout required to meet AS/NZS 3350.2.40 1997. Available in NZ only.

SAFETY FEATURES

1. HP & loss of refrigerant protection
2. Anti rapid cycle timer internal overload for compressor protection
3. Circuit breaker control circuits
4. Time & temperature controlled electronic de-ice switch prevents icing up of the outdoor coil during heating cycle
5. Frost protection on cooling cycle
6. Sensor fault indication
7. Crankcase heater prevents liquid refrigerant condensing in the compressors during the "off" cycle
8. Compressor minimum run time to ensure oil return
9. 24V control circuit
10. Phase rotation protection device

COMPRESSOR

Each high efficiency scroll type compressor is hermetically sealed quiet running and supported on rubber mounts to minimize vibration

REFRIGERATION SYSTEM

Factory charged with HFC-410A (R410A) refrigerant. Accurator expansion devices control the flow of refrigerant

WIRING

The electrical supply required (including voltage fluctuation limits) is 3 phase 400-415V ac 50Hz with neutral & earth

The compressor crankcase heater requires a 24hr power supply

The units control panel is fully wired ready to accept the main power supply

ECONOMISER OPTION

The factory fitted Economizer Damper option is supplied with Drive Open / Drive Closed damper motors. Temperzone can supply or supply and fit controls to manage the operation of the Economy Cycle, using either temperature or enthalpy to control the operation of the dampers. For the best result, discuss with your Temperzone Sales Engineer.

Air cooled packaged units

Performance Data



COOLING CAPACITY (kW)

Total = Total Capacity (kW).
 Sens. = Sensible Capacity (kW).
 E.A.T. = Entering Air Temperature.
 ○ = Nominal Capacity (kW).

Note: Capacities are gross and do not include allowance for fan motor heat loss. Capacities are for close coupled systems. Interconnecting pipework will reduce capacity.

See below for Indoor Air Flow Correction factors

Models		Indoor coil E.A.T.		Outdoor coil entering air temperature °C D.B.											
		D.B. °C	W.B. °C	23		27		31		35		39		43	
Indoor Unit	Air l/s			Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
OPA 242	1400	21	15	23.2	17.8	22.9	17.8	22.2	17.4	21.1	16.8	19.7	15.9	18.0	14.6
		23	17	24.4	17.4	24.1	17.4	23.5	17.1	22.4	16.5	21.0	15.7	19.2	14.5
		27	19	25.6	20.0	25.3	19.9	24.7	19.6	23.5	19.0	22.3	18.1	20.4	16.9
		31	21	26.9	23.5	26.6	23.5	25.9	23.2	24.9	22.5	23.5	21.6	21.7	20.2
OPA 294	1600	21	15	28.9	22.9	28.6	22.8	27.7	22.4	26.4	21.7	24.7	20.5	22.5	18.9
		23	17	30.5	22.3	30.1	22.3	29.3	22.0	28.0	21.3	26.2	20.2	24.0	18.7
		27	19	32.0	25.6	31.6	25.6	30.8	25.2	29.5	24.5	27.8	23.3	25.6	21.7
		31	21	33.5	30.3	33.1	30.3	32.3	29.9	31.0	29.1	29.3	27.8	27.1	26.0
OPA 340	1800	21	15	33.4	26.4	33.0	26.4	32.0	25.9	30.5	25.0	28.5	23.7	26.0	21.8
		23	17	35.2	25.8	34.7	25.8	33.8	25.4	32.3	24.6	30.3	23.3	27.8	21.6
		27	19	36.9	29.6	36.5	29.6	35.5	29.1	33.6	28.3	32.1	26.9	29.5	25.1
		31	21	38.7	35.0	38.3	35.0	37.3	34.6	35.8	33.6	33.8	32.1	31.3	30.1
OPA 370	2100	21	15	38.4	30.3	37.9	30.3	36.8	29.8	35.1	28.8	32.8	27.2	29.9	25.1
		23	17	40.4	29.7	39.9	29.6	38.8	29.2	37.1	28.2	34.8	26.8	31.9	24.9
		27	19	42.5	34.0	42.0	34.0	40.9	33.5	39.1	32.5	36.9	31.0	34.0	28.9
		31	21	44.5	40.2	44.0	40.3	42.9	39.8	41.2	38.6	38.9	36.9	36.0	34.6

INDOOR AIR FLOW CORRECTION FACTORS @ NOMINAL CONDITIONS

Indoor Air Flow (%)

	-20%	-10%	Rated	+10%
Total Capacity	0.95	0.975	1.0	1.025
Sensible Capacity	0.89	0.950	1.0	1.050

Air cooled packaged units

Performance Data



HEATING CAPACITY (KW)

G = Gross Heating Capacity kW, based on nominal air flow.

N = Net Heating Capacity kW allowing for average defrost.

○ = Nominal Capacity (kW).

Models	Indoor Entering Air Temp. °C		Outdoor coil entering air temperature °C D.B.															
	D.B.	-5		-3		-1		1		3		5		7		9		
		G	N.	G	N.	G	N.	G	N.	G	N.	G	N.	G	N.	G	N.	
OPA 242	15	15.1	13.6	16.4	14.7	17.5	15.5	18.6	15.9	19.7	16.8	21.2	20.1	22.6	22.6	23.7	23.7	
	20	14.8	13.3	16.0	14.4	17.3	15.3	18.4	15.7	19.5	16.6	20.8	19.7	22.1	22.1	23.2	23.2	
	25	14.3	12.9	15.4	13.9	16.6	14.6	17.5	15.0	18.6	15.9	20.1	18.8	21.2	21.2	22.3	22.3	
OPA 294	15	18.6	16.8	20.1	18.1	21.5	19.2	22.9	19.7	24.3	20.8	26.1	24.8	27.8	27.8	29.2	29.2	
	20	18.3	16.4	19.8	17.8	21.1	18.8	22.5	19.3	23.8	20.4	25.6	24.3	27.2	27.2	28.6	28.6	
	25	17.6	15.8	19.0	17.1	20.3	18.1	21.6	18.6	23.0	19.6	24.7	23.2	26.2	26.2	27.5	27.5	
OPA 340	15	23.1	21.8	24.5	21.6	25.8	21.9	27.1	23.2	28.4	28.4	29.7	29.7	31.1	31.1	32.4	32.4	
	20	22.8	21.5	24.1	21.3	25.4	21.6	26.8	22.9	28.1	28.1	29.4	29.4	30.7	30.7	32.1	32.1	
	25	22.1	21.0	23.4	20.7	24.7	21.0	26.0	22.4	27.4	27.4	28.7	28.7	30.0	30.0	31.3	31.3	
OPA 370	15	25.8	23.2	27.9	25.1	29.9	26.6	31.8	27.3	33.7	28.8	36.2	34.4	38.5	38.5	40.5	40.5	
	20	25.3	22.8	27.4	24.7	29.3	26.1	31.2	26.8	33.1	28.3	35.5	33.7	37.8	37.8	39.7	39.7	
	25	24.4	21.9	26.4	23.7	28.2	25.1	30.0	25.8	31.8	27.2	34.2	32.1	36.4	36.4	38.2	38.2	

Air cooled packaged units

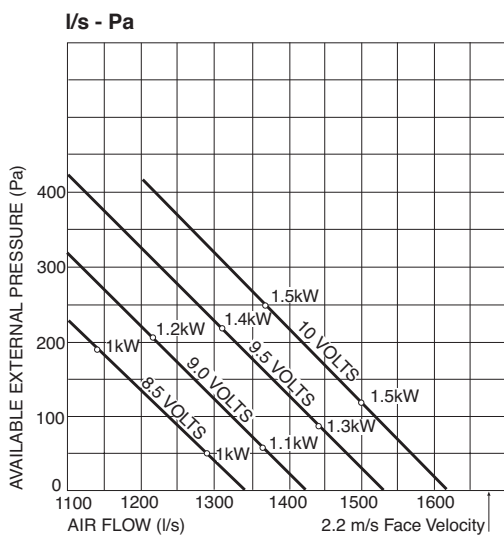
Performance Data



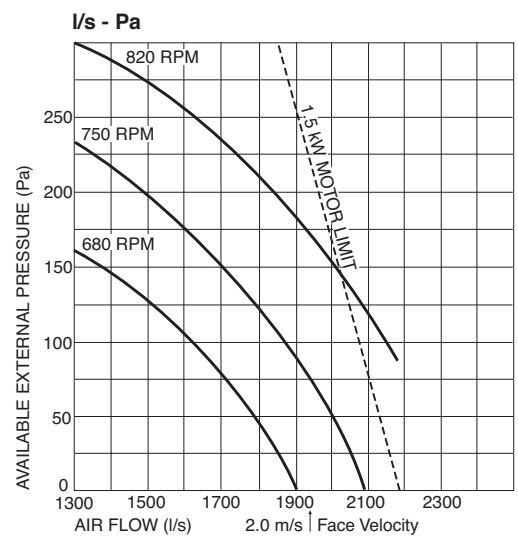
AIR HANDLING

Note: Airflows are for a dry coil. Reduce airflow by 5% in high moisture removal conditions. In a free blow or low resistance application, beware of exceeding indoor fan motor's full load amp limit (refer back page). The fan curves make no allowance for optional filters.

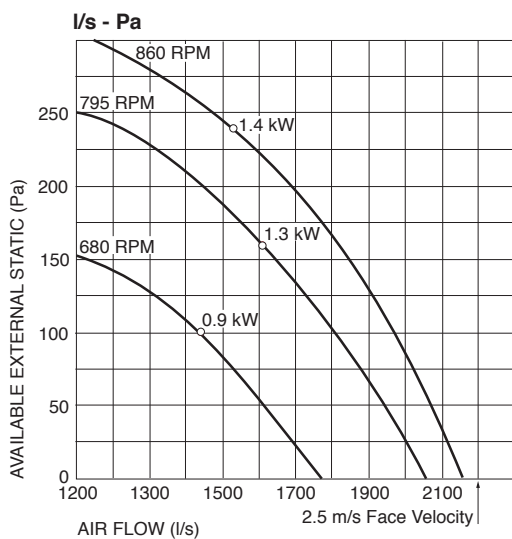
OPA 242



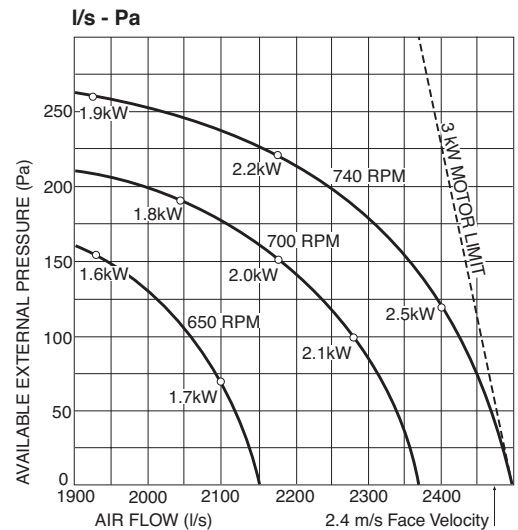
OPA 294



OPA 340



OPA 370



Model :	OPA 294	OPA 340	OPA 370
Std Motor Size kW	1.5	2.2	3
Max. D.O.L. Motor kW	3.0	3.0	4.0
Max. Fan Speed RPM	1500	1400	850
Std Pulley Range RPM	660-820	680-860	650-740
Factory Setting RPM	725	725	750

Air cooled packaged units

Performance Data



SOUND LEVELS

Sound Power Levels (SWL) - Radiated

Measured in decibels re 1 picowatt, at nominal airflow.

Models	OUTDOOR FAN SPEED	SWL dB(A)	OCTAVE BAND FREQUENCY Hz					
			125	250	500	1K	2K	4K
			SOUND POWER LEVELS (SWL) dB					
OPA 242	HIGH	78	85	77	75	74	68	60
OPA 294	HIGH	73	80	73	68	68	62	60
OPA 340	HIGH	81	82	79	79	76	71	64
OPA 370	HIGH	81	82	79	79	76	71	64

Sound Pressure Levels (SPL)

Measured in decibels re 20 μ Pa, at nominal airflow.

Models	OUTDOOR FAN SPEED	SPL dB(A) @ 3m	OCTAVE BAND FREQUENCY Hz					
			125	250	500	1K	2K	4K
			SOUND PRESSURE LEVELS (SPL) dB					
OPA 242	HIGH	62	69	61	59	58	52	44
OPA 294	HIGH	57	64	57	52	52	46	44
OPA 340	HIGH	65	66	63	63	60	55	48
OPA 370	HIGH	65	66	63	63	60	55	48

Sound Power Levels (SWL) - Supply Air Outlet

Test Conditions: BS 848 PT2 1985.

Installation Type A (free inlet and outlet).

Direct method of measurement (reverberant room).

Measured in decibels re 1 picowatt.

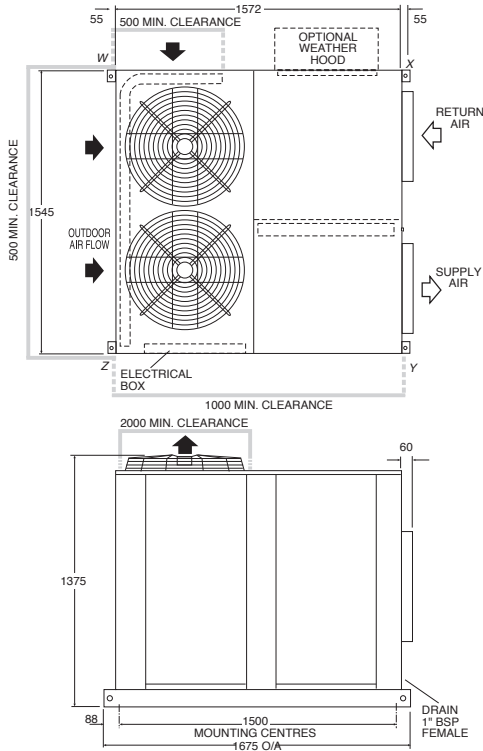
Models	INDOOR FAN SPEED	SWL dB(A)	OCTAVE BAND FREQUENCY Hz					
			125	250	500	1K	2K	4K
			SOUND POWER LEVELS (SWL) dB					
OPA 242	LOW (8.5V)	74	72	72	71	69	65	58
	MED (9V)	78	74	76	76	73	70	63
	HIGH (10V)	80	76	80	78	76	73	67
OPA 294	680 RPM	74	71	69	72	69	67	65
	750 RPM	81	75	73	78	76	73	71
	820 RPM	82	75	74	79	78	75	73
OPA 340	760 RPM	87	82	81	83	83	80	77
OPA 370	740 RPM	87	82	81	83	83	80	77

Air cooled packaged units

Dimensions (in mm)



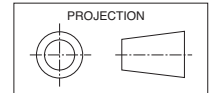
FIG. 1 OPA 242 – HORIZONTAL SUPPLY & RETURN AIR



POINT LOAD (kg)

W	X	Y	Z
89	98	107	149

Not to Scale



Note: A 2m clearance is required above the exhaust air fans

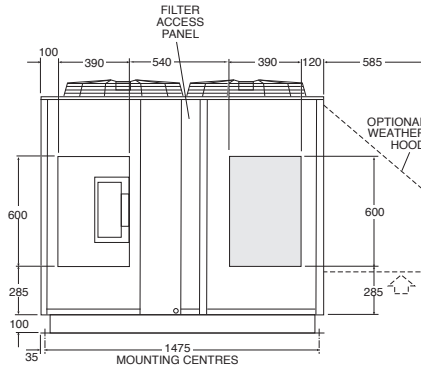
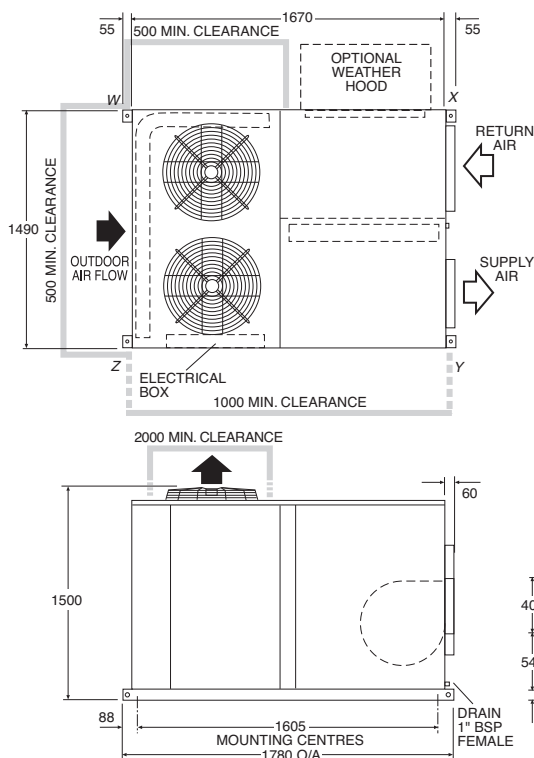


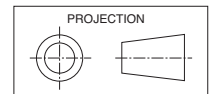
FIG. 2 OPA 294 – HORIZONTAL SUPPLY & RETURN AIR



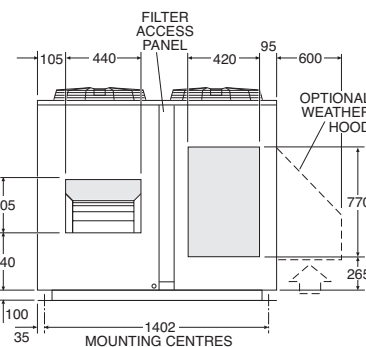
POINT LOAD (kg)

W	X	Y	Z
109	131	129	191

Not to Scale



Note: A 2m clearance is required above the exhaust air fans

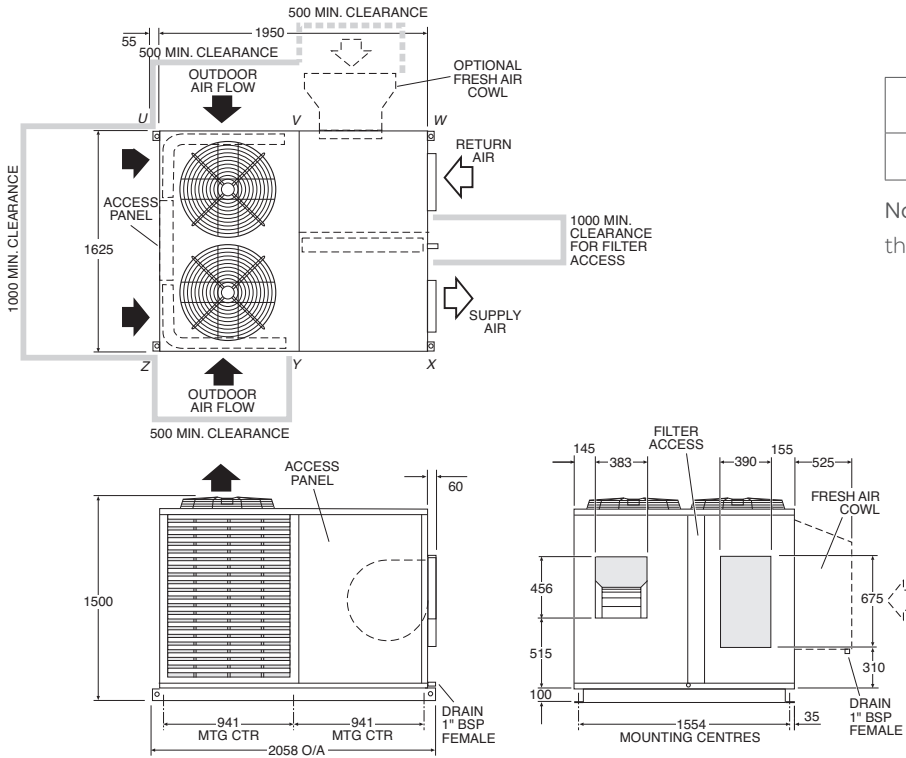


Air cooled packaged units

Dimensions (in mm)



FIG. 3 OPA 340 - HORIZONTAL SUPPLY & RETURN AIR

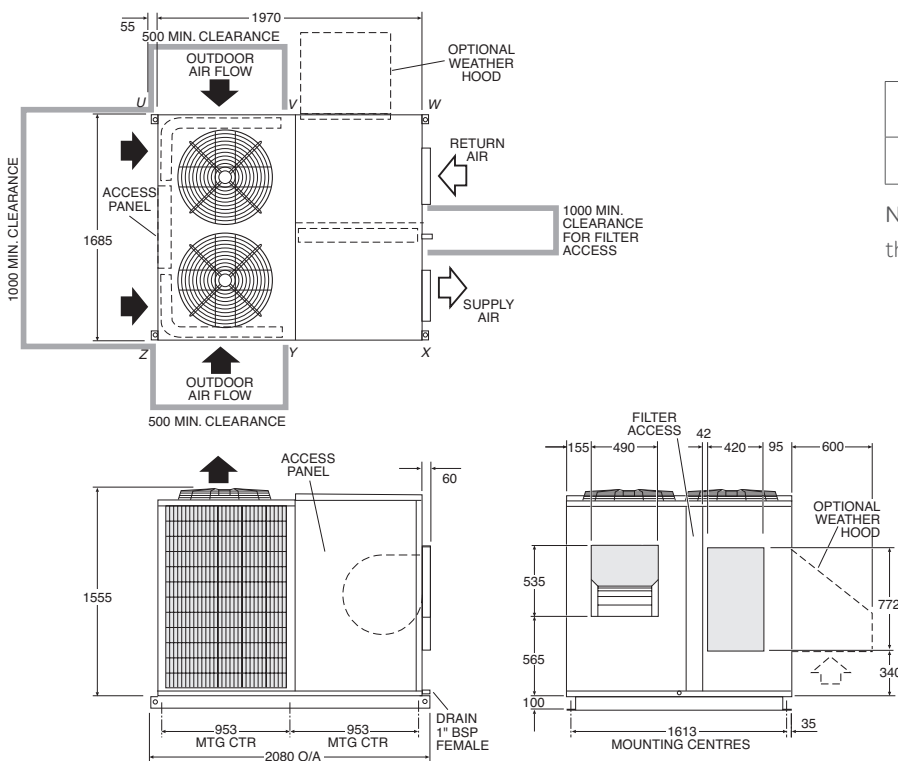


POINT LOAD (kg)

U	V	W	X	Y	Z
110	96	82	106	115	122

Note: A 2m clearance is required above the exhaust air fans

FIG. 4 OPA 370 - HORIZONTAL SUPPLY & RETURN AIR



POINT LOAD (kg)

U	V	W	X	Y	Z
110	105	101	111	115	120

Note: A 2m clearance is required above the exhaust air fans

Air cooled packaged units

Dimensions (in mm)



FIG. 5 OPA 294/370 ECONOMISER OPTION

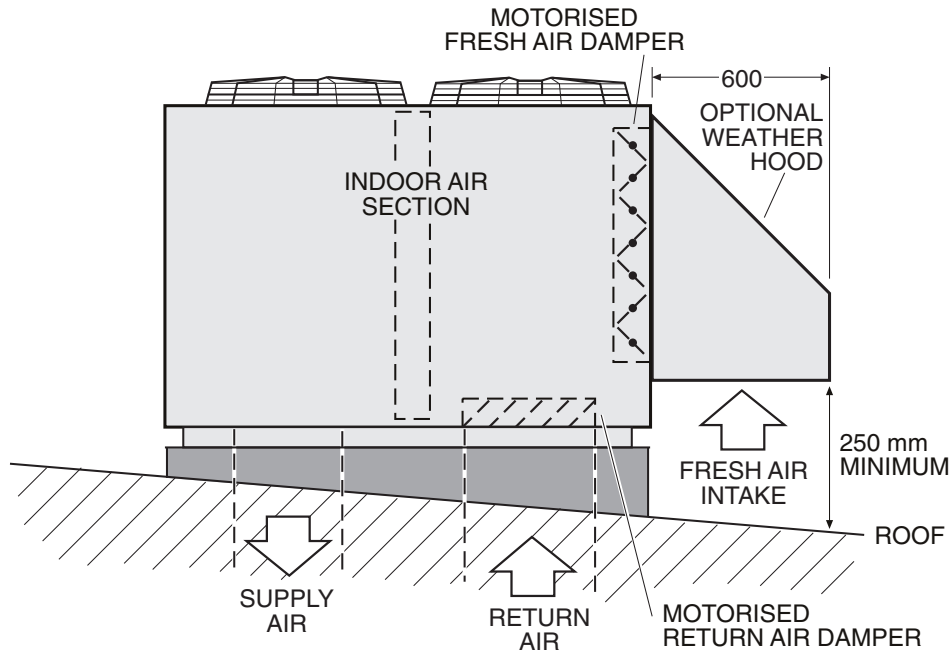
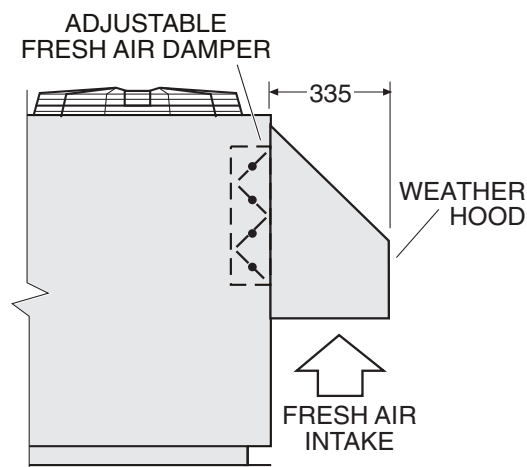


FIG. 6 OPA 294/370 FRESH AIR DAMPER OPTION



Air cooled packaged units

Specifications



Model	OPA 242	OPA 294	OPA 340	OPA 370
System				
Nominal Cooling Capacity * ¹ kW	23.5	29.5	33.6	39.1
Net Cooling Capacity (MEPS) kW	22.34	28.3	32.1	36.9
Heating Capacity * ² kW	22.20	27.2	30.7	35.6
EER / AEER (cooling)	3.19 / 3.17	3.21 / 3.20	3.31 / 3.29	3.23 / 3.22
Air Flow * ³ l/s	1400	1600	1800	2100
Power Source	3 phase 400 V a.c. 50 Hz			
Indoor Fan Maximum Current A	1.9	3.1	4.6	6.2
Running Amps (Total System) A/ph.	13 / 10 / 10	18 / 15 / 15	17.5 / 20 / 17.5	20 / 24 / 20
Max. Running Amps (Total System) A/ph.	17 / 14 / 14	23	23 / 25 / 22	28 / 24 / 24
Finish				
Outdoor Unit	grey polyester powder coat			
Weight kg				
Net Weight	443	560	631	662
Shipping Weight (approx.)	513	626	740	775

Notes:

- *¹ Nominal Cooling Capacity at AS/NZS 3823 conditions:
 - Indoor Entering Air Temperature 27°C D.B., 19°C W.B.;
 - Outdoor Entering Air Temperature 35°C D.B.
 Net Cooling Capacity at AS/NZS 3823 includes an allowance for indoor fan motor heat loss.
- *² Heating Capacity (reverse cycle units only) at AS/NZS 3823 conditions:
 - Indoor Entering Air Temp. 21°C D.B.;
 - Outdoor Entering Air Temp. 7°C D.B., 6°C W.B.
- *³ Supply air flow at Nominal Cooling Capacity conditions stated above.

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