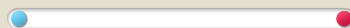




Air Cooled Packaged Units Technical Data

OPA 465, OPA 550, OPA 705, OPA 855, OPA 960 (ECO)



Cooling Capacity
44.9kW - 96.0kW

Heating Capacity
41.1kW - 90.0kW

Air Cooled Packaged units

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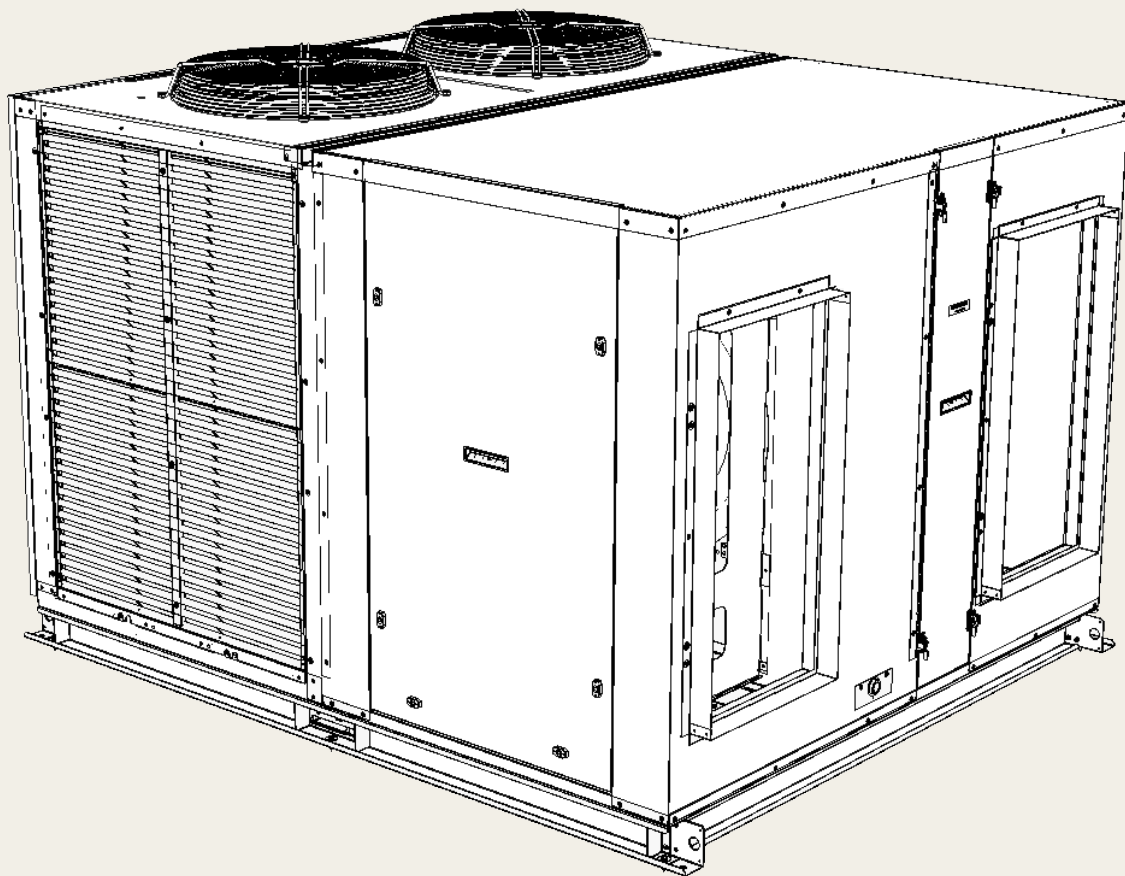
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Air Cooled Packaged units

OPA 465 - 960 ECO



Packaged rooftop HVAC units provide the flexibility and performance demanded in open plan commercial environments. Key benefits are noise isolation from occupied areas, ease of fresh air integration, and the reliability and durability inherent in a factory assembled packaged system. The OPA 465–960 range efficiently delivers controlled indoor environments from -15°C to +52°C ambient conditions.



Air Cooled Packaged units

OPA 465 - 960 ECO



Applications

Specifically developed for air conditioning of commercial premises i.e. supermarkets, shopping malls, auditoriums and restaurants

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 fan curves page 8 & 9).

Consideration must be given to selecting an 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

General

Each ECO unit include EC plug fans and variable capacity compressor technology (digital).

Refrigerant R410A

R410A used which has zero ozone depletion potential.

Economy

The units have 2 independent refrigeration circuits to provide the flexibility & economy of 2 stage operation i.e. utilizing 1 or 2 circuits as conditions vary, plus staggered starting.

An economiser option is available to comply with the National Construction Code (Aust.).

Efficiency

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

The indoor coil is interlaced for efficient part load performance.

Performance

These Digital systems include a digital scroll compressor and a conventional scroll compressor (nb OPA 855 & 960 have two digital). ECO units provides a variable capacity ability that enables close control of room temperature.

ECO units include highly efficient EC plug fans and provide high static capability for a wide range of indoor air flows. Continuous range fan speeds are achieved via a 0-10V DC signal (by others). They also make commissioning and air balancing easy.

Digital technology is particularly suitable for applications requiring full or high proportions of fresh air, VAV, close control and supply air temperature control.

Head pressure control technology ensures appropriate condensor pressures are maintained, through the control of airflow.

Quiet

Extensive use of insulation ensures a quiet unit.

Air Cooled Packaged units

OPA 465 - 960 ECO



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 (1999) & BS 476 parts 6 & 7.

Durable

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

Heat exchange coils comprise aluminium plate fins on mechanically expanded rifled copper tube. Outdoor and indoor coil fins are epoxy coated for extra protection in corrosive environments i.e. salt laden sea air. Coil protection guards protect against hail, accidental damage or vandalism.

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

Easy Access

These packaged outdoor units are typically installed on a rooftop, where maintenance access is relatively easy during operating hours.

Self Diagnosis

The unit controller (UC8) has a display of LEDs to indicate faults & running conditions. A common fault indicator is included for interface to external systems.

Control Options (ECO version)

Commissioning is made easier when the EC motor to be controlled variably by a 0–10 volt DC signal that can be supplied either by a BMS system, a sophisticated controller or Temperzone's optional TZT-100 Controller. The systems' UC8 controller is BMS compatible with multi-unit control possible – either via digital and analogue signals or via Modbus/485. A BACnet/IP option is available.

OPTIONAL EQUIPMENT

1. TZT-100 thermostat.
2. Filters rated to AS1324.1.2001 - G4 disposable or washable.
3. Factory fitted economiser -includes dampers, fresh air cowl.
4. Electronic control systems (available by arrangement) for temperature and economy cycle.
5. Factory fitted adjustable fresh air damper and cowl.
6. High static condenser fans for situations where there is external resistance from ducting the outside air, eg plant rooms.
7. Interface to BACnet/IP networks.
8. Alternative supply and return air configurations (refer page 15).

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

COMPRESSORS

Digital compressors have a greater variable capacity ability. This is achieved by avoiding on/off cycling of the compressor. These compressors have proven very reliable because of their design simplicity.

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

WIRING

The electrical supply required is 3 phase 400V ac 50Hz.

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

ECO Performance Data



COOLING CAPACITY (KW)

TC = Total Capacity (kW).

SC = Sensible Heat Capacity (kW).

PI = Power Input (kW)

E.A.T. = Entering Air Temperature .

○ = Nominal Capacity (kW) @ load specified

Nominal Air Flow: **2400 l/s**

Note: Capacities are **gross** and do not include allowance for fan motor heat loss.

OPA 465 ECO @100% (2400 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	43.0	37.6	10.7	42.4	37.6	11.5	41.1	36.9	12.3	39.2	35.7	13.2	36.6	33.9	14.2	33.4	31.3	15.3
	15	44.3	34.6	10.7	43.7	34.6	11.5	42.4	33.8	12.4	40.5	32.7	13.3	37.8	30.9	14.3	34.5	28.5	15.4
	16	45.6	31.3	10.8	45.1	31.2	11.6	43.7	30.5	12.5	41.7	29.4	13.4	38.9	27.8	14.4	35.6	25.5	15.5
	17	47.0	27.9	10.9	46.4	27.7	11.7	45.0	26.9	12.6	43.0	25.9	13.5	40.2	24.4	14.5	36.7	22.3	15.6
23	15	44.1	39.5	10.7	43.6	39.6	11.5	42.4	39.1	12.4	40.4	37.9	13.3	38.0	36.2	14.3	34.8	33.6	15.4
	16	45.5	37.1	10.8	44.9	37.2	11.6	43.8	36.7	12.5	41.7	35.5	13.4	39.3	33.9	14.4	35.9	31.4	15.5
	17	46.6	33.8	10.9	46.0	33.8	11.7	44.9	33.2	12.6	42.8	32.1	13.5	40.3	30.6	14.5	36.8	28.3	15.6
	18	48.1	30.4	10.9	47.5	30.3	11.8	46.3	29.8	12.6	44.1	28.7	13.6	41.5	27.2	14.6	38.0	25.1	15.7
27	18	47.6	41.4	10.9	47.0	41.3	11.7	45.9	40.8	12.6	43.6	39.6	13.5	41.4	37.6	14.6	38.0	35.2	15.7
	19	48.9	38.8	11.0	48.4	38.7	11.8	47.2	38.2	12.7	44.9	37.0	13.6	42.6	35.1	14.7	39.1	32.8	15.8
	20	50.5	36.2	11.0	49.9	36.0	11.9	48.7	35.4	12.8	46.3	34.3	13.7	44.0	32.5	14.8	40.4	30.4	16.0
	22	53.4	30.1	11.2	52.8	29.8	12.0	51.6	29.2	13.0	49.1	28.1	13.9	46.6	26.5	15.0	42.8	24.7	16.2
31	21	51.4	45.8	11.1	50.9	45.8	11.9	49.5	45.2	12.9	47.6	43.9	13.8	44.9	42.0	14.9	41.6	39.3	16.1
	22	52.8	43.4	11.1	52.2	43.4	12.0	50.8	42.8	12.9	48.9	41.5	13.9	46.1	39.7	15.0	42.8	37.1	16.2
	23	54.4	41.1	11.2	53.8	41.0	12.1	52.4	40.4	13.0	50.4	39.1	14.0	47.5	37.4	15.1	44.1	34.9	16.3
	25	57.7	35.1	11.3	57.0	34.9	12.2	55.6	34.2	13.2	53.5	33.0	14.2	50.5	31.4	15.3	46.8	29.3	16.6

Air Cooled Packaged units

ECO Performance Data at part load



OPA 465 ECO @75% (2400 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	33.1	29.0	8.4	32.1	28.4	9.0	31.0	27.8	9.6	29.9	27.0	10.3	28.6	26.1	11.0	27.3	25.1	11.8
	15	34.1	28.2	8.5	33.1	27.6	9.0	32.0	26.9	9.7	30.8	26.1	10.3	29.5	25.2	11.1	28.1	24.2	11.9
	16	35.1	27.3	8.5	34.1	26.6	9.1	33.0	25.9	9.7	31.8	25.1	10.4	30.4	24.2	11.2	29.0	23.2	12.0
	17	36.2	26.3	8.5	35.1	25.6	9.1	34.0	24.9	9.8	32.7	24.1	10.5	31.4	23.2	11.2	29.9	22.2	12.1
23	15	34.1	30.7	8.5	33.0	30.1	9.1	31.9	29.4	9.7	30.8	28.7	10.4	29.5	27.7	11.1	28.1	26.7	11.9
	16	35.1	30.1	8.5	34.1	29.5	9.1	32.9	28.8	9.7	31.7	28.0	10.4	30.4	27.1	11.2	29.0	26.1	12.0
	17	36.0	29.0	8.6	34.9	28.4	9.2	33.8	27.7	9.8	32.5	26.9	10.5	31.2	26.0	11.2	29.7	25.0	12.1
	18	37.1	28.1	8.6	36.0	27.4	9.2	34.8	26.7	9.9	33.6	25.9	10.6	32.2	24.9	11.3	30.7	23.9	12.2
27	18	37.2	33.4	8.6	36.1	32.8	9.2	34.9	32.1	9.9	33.6	31.3	10.6	32.3	30.4	11.3	30.7	29.3	12.1
	19	38.2	32.7	8.6	37.1	32.1	9.3	35.9	31.4	9.9	34.6	30.6	10.6	33.2	29.6	11.4	31.7	28.5	12.2
	20	39.4	32.0	8.7	38.3	31.4	9.3	37.1	30.7	10.0	35.7	29.8	10.7	34.3	28.8	11.5	32.7	27.7	12.3
	22	41.7	30.3	8.8	40.6	29.6	9.4	39.3	28.8	10.1	37.9	27.9	10.8	36.3	26.9	11.6	34.7	25.8	12.5
31	21	40.5	36.0	8.7	39.3	35.4	9.4	38.1	34.7	10.0	36.7	33.8	10.8	35.2	32.8	11.5	33.6	31.7	12.4
	22	41.5	35.5	8.8	40.4	34.8	9.4	39.1	34.1	10.1	37.7	33.2	10.8	36.2	32.2	11.6	34.5	31.1	12.5
	23	42.8	36.0	8.8	41.6	34.3	9.5	40.3	33.6	10.2	38.8	32.7	10.9	37.3	31.7	11.7	35.6	30.5	12.5
	25	45.4	33.5	8.9	44.1	32.8	9.6	42.7	32.0	10.3	41.2	31.0	11.0	39.6	31.9	12.0	37.8	28.8	12.8

OPA 465 ECO @50% (2400 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	20.9	16.8	6.1	20.3	16.6	6.5	19.6	16.3	6.9	18.9	16.0	7.4	18.1	15.6	7.9	17.2	15.1	8.5
	15	21.6	15.5	6.1	20.9	15.3	6.5	20.2	15.0	7.0	19.5	14.7	7.4	18.7	14.3	8.0	17.8	13.8	8.5
	16	22.2	14.2	6.1	21.6	13.9	6.6	20.8	13.6	7.0	20.1	13.3	7.5	19.2	12.9	8.0	18.3	12.4	8.6
	17	22.9	12.7	6.2	22.2	12.5	6.6	21.5	12.2	6.6	20.7	11.8	7.5	19.8	11.4	8.1	18.9	11.0	8.7
23	15	21.5	18.1	6.1	20.9	17.9	6.5	20.2	17.6	7.0	19.4	17.3	7.4	18.6	16.9	8.0	17.7	16.4	8.5
	16	22.2	17.1	6.1	21.5	16.9	6.5	20.8	16.6	7.0	20.1	16.3	7.5	19.2	15.9	8.0	18.3	15.4	8.6
	17	22.8	15.7	6.2	22.1	15.4	6.6	21.4	15.2	7.0	20.6	14.8	7.5	19.7	14.4	8.1	18.8	13.9	8.7
	18	23.5	14.2	6.2	22.8	14.0	6.6	22.0	13.7	7.1	21.2	13.4	7.6	20.3	13.0	8.1	19.4	12.5	8.7
27	18	23.5	19.7	6.2	22.8	19.5	6.6	22.1	19.2	7.1	21.3	18.9	7.6	20.4	18.5	8.1	19.4	17.9	8.7
	19	24.2	18.5	6.2	23.5	18.4	6.7	22.7	18.1	7.1	21.9	17.8	7.6	21.0	17.3	8.2	20.0	16.8	8.8
	20	24.9	17.4	6.2	24.2	17.2	6.7	23.4	16.9	7.2	22.6	16.6	7.7	21.7	16.1	8.2	20.7	15.6	8.8
	22	26.4	14.7	6.3	25.6	14.5	6.8	24.8	14.2	7.3	23.9	13.8	7.8	23.0	13.4	8.4	21.9	12.9	9.0
31	21	25.6	21.0	6.3	24.9	20.9	6.7	24.1	20.6	7.2	23.2	20.3	7.7	22.3	19.9	8.3	21.2	19.3	8.9
	22	26.3	20.1	6.3	25.5	19.9	6.8	24.7	19.6	7.2	23.8	19.3	7.8	22.9	18.8	8.3	21.8	18.3	9.0
	23	27.1	19.1	6.3	26.3	18.9	6.8	25.5	18.6	7.3	24.6	18.3	7.8	23.6	17.8	8.4	22.5	17.3	9.0
	25	28.7	16.5	6.4	27.9	16.3	6.9	27.0	16.0	7.4	26.1	15.7	7.9	25.0	15.2	8.5	23.9	14.7	9.1

Air Cooled Packaged units

ECO Performance Data



COOLING CAPACITY (KW)

TC = Total Capacity (kW).

SC = Sensible Heat Capacity (kW).

PI = Power Input (kW)

E.A.T. = Entering Air Temperature .

○ = Nominal Capacity (kW) @ load specified

Nominal Air Flow: **2800 l/s**

Note: Capacities are **gross** and do not include allowance for fan motor heat loss. motor heat loss.

OPA 550 ECO @100% (2800 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	52.4	44.8	14.4	51.7	45.0	15.2	50.1	44.1	16.2	47.9	42.7	17.2	44.7	40.6	18.4	40.8	37.4	19.8
	15	53.9	41.1	14.5	53.2	41.1	15.4	51.6	40.2	16.3	49.2	38.8	17.4	46.0	36.8	18.6	42.0	33.9	20.0
	16	55.4	37.1	14.7	54.7	36.9	15.5	53.0	36.0	16.5	50.6	34.7	17.5	47.2	32.8	18.8	43.1	30.1	20.2
	17	57.0	32.7	14.8	56.2	32.5	15.7	54.5	31.6	16.6	52.0	30.3	17.7	48.5	28.5	19.0	44.2	26.0	20.4
23	15	53.6	47.1	14.5	53.0	47.3	15.3	51.7	46.7	16.3	49.3	45.3	17.4	46.4	43.4	18.6	42.5	40.3	20.0
	16	55.2	44.1	14.6	54.5	44.3	15.5	53.1	43.6	16.5	50.7	42.2	17.5	47.7	40.3	18.8	43.6	37.4	20.2
	17	56.7	40.2	14.8	56.0	40.2	15.6	54.6	39.5	16.6	52.1	38.2	17.7	49.0	36.4	19.0	44.8	33.6	20.4
	18	58.4	36.0	14.9	57.6	35.9	15.8	56.2	35.1	16.8	53.5	33.8	17.9	50.3	32.1	19.2	46.0	29.6	20.6
27	18	57.9	49.4	14.9	57.3	49.3	15.8	55.9	48.7	16.8	53.2	47.3	17.9	50.5	45.0	19.1	46.4	42.1	20.6
	19	59.6	46.2	15.0	58.9	46.1	15.9	57.5	45.4	16.9	54.6	44.0	18.1	51.8	41.8	19.3	47.6	39.1	20.8
	20	61.2	42.8	15.2	60.5	42.6	16.1	59.0	41.9	17.1	56.1	40.5	18.2	53.2	38.4	19.5	48.9	35.8	21.0
	22	64.7	35.3	15.5	63.9	34.9	16.4	62.3	34.1	17.4	59.2	32.8	18.6	56.1	30.9	19.9	51.5	28.7	21.4
31	21	62.6	54.4	15.3	61.9	54.4	16.2	60.3	53.8	17.2	57.9	52.2	18.4	54.6	49.9	19.7	50.7	46.7	21.2
	22	64.3	51.7	15.5	63.6	51.6	16.4	61.9	50.8	17.4	59.5	49.3	18.6	56.1	47.1	19.9	52.0	44.0	21.4
	23	66.1	48.7	15.6	65.3	48.5	16.5	63.5	47.7	17.6	61.0	46.2	18.8	57.5	44.0	20.1	53.3	41.1	21.7
	25	69.7	41.1	15.9	68.9	40.8	16.8	67.0	39.9	17.9	64.3	38.4	19.2	60.5	36.5	20.5	56.0	33.9	22.1

Air Cooled Packaged units

ECO Performance Data at part load



OPA 550 ECO @75% (2800 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	39.4	33.8	11.5	38.1	33.0	12.1	36.7	32.1	12.8	35.2	31.1	13.6	33.7	30.0	14.5	32.0	28.7	15.5
	15	40.6	32.7	11.6	39.2	31.9	12.2	37.8	31.0	12.9	36.3	29.9	13.7	34.6	28.8	14.6	32.9	27.6	15.6
	16	41.7	31.6	11.7	40.3	30.7	12.3	38.8	29.7	13.0	37.2	28.7	13.8	35.6	27.5	14.8	33.8	26.3	15.8
	17	42.9	30.3	11.8	41.5	29.4	12.5	39.9	28.4	13.2	38.2	27.3	14.0	36.5	26.1	14.9	34.7	24.9	16.0
23	15	40.5	35.7	11.6	39.2	34.9	12.2	37.7	34.0	12.9	36.2	32.9	13.7	34.6	31.8	14.6	32.9	30.5	15.6
	16	41.7	35.0	11.7	40.3	34.1	12.3	38.8	33.2	13.0	37.2	32.1	13.8	35.5	30.9	14.7	33.8	29.6	15.8
	17	42.9	33.8	11.8	41.4	32.9	12.4	39.9	31.9	13.2	38.2	30.8	14.0	36.5	29.6	14.9	34.7	28.3	15.9
	18	44.1	32.6	11.9	42.6	31.6	12.6	41.0	30.6	13.3	39.3	29.5	14.1	37.5	28.3	15.0	35.6	26.9	16.1
27	18	43.9	38.7	11.9	42.4	37.8	12.5	40.8	36.8	13.3	39.1	35.6	14.1	37.3	34.3	15.0	35.5	32.9	16.1
	19	45.2	37.8	12.0	43.6	36.9	12.7	42.0	35.9	13.4	40.2	34.7	14.2	38.4	33.4	15.2	36.4	32.0	16.2
	20	46.5	36.9	12.1	44.8	35.9	12.8	43.1	34.8	13.5	41.3	33.6	14.4	39.4	32.3	15.3	37.4	30.9	16.4
	22	49.1	34.8	12.3	47.3	33.7	13.0	45.5	32.6	13.8	43.6	31.3	14.6	41.5	29.9	15.6	39.3	28.5	16.7
31	21	47.5	41.4	12.2	45.9	40.5	12.9	44.1	39.3	13.6	42.2	38.1	14.5	40.3	36.7	15.4	38.2	35.2	16.5
	22	48.8	40.8	12.3	47.1	39.8	13.0	45.3	38.7	13.7	43.4	37.4	14.6	41.3	36.0	15.6	39.2	34.4	16.7
	23	50.2	40.2	12.4	48.4	39.1	13.1	46.5	37.9	13.9	44.5	36.6	14.7	42.4	35.1	15.7	40.2	33.6	16.9
	25	52.9	38.2	12.6	51.0	37.1	13.3	49.0	35.8	14.1	46.9	34.4	15.0	44.6	32.9	16.1	42.2	31.3	17.2

OPA 550 ECO @50% (2800 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	26.0	20.0	8.5	25.1	19.7	9.0	24.2	19.3	9.5	23.2	18.9	10.1	22.2	18.3	10.7	21.1	17.7	11.4
	15	26.7	18.5	8.6	25.8	18.1	9.0	24.9	17.7	9.6	23.9	17.3	10.1	22.8	16.7	10.8	21.7	16.1	11.5
	16	27.5	16.7	8.7	26.6	16.4	9.1	25.6	16.0	9.6	24.5	15.5	10.2	23.4	14.9	10.9	22.2	14.3	11.7
	17	28.2	14.9	8.7	27.3	14.5	9.2	26.3	14.1	9.7	25.2	13.6	10.3	24.0	13.1	11.0	22.8	12.5	11.8
23	15	26.7	21.7	8.6	25.8	21.3	9.0	24.8	21.0	9.6	23.8	20.5	10.1	22.8	19.9	10.8	21.6	19.2	11.5
	16	27.5	20.4	8.7	26.5	20.0	9.1	25.5	19.6	9.6	24.5	19.1	10.2	23.4	18.6	10.9	22.2	17.9	11.7
	17	28.2	18.7	8.7	27.3	18.3	9.2	26.3	17.9	9.7	25.2	17.4	10.3	24.0	16.8	11.0	22.8	16.2	11.8
	18	29.0	16.8	8.8	28.1	16.5	9.3	27.0	16.0	9.8	25.9	15.5	10.4	24.7	14.9	11.1	23.4	14.3	11.9
27	18	28.9	23.4	8.8	27.9	23.1	9.3	26.9	22.7	9.8	25.8	22.1	10.4	24.6	21.5	11.1	23.3	20.8	11.9
	19	29.7	22.0	8.9	28.7	21.7	9.4	27.6	21.2	9.9	26.5	20.7	10.5	25.2	20.1	11.2	24.0	19.3	12.0
	20	30.6	20.5	9.0	29.5	20.1	9.4	28.4	19.7	10.0	27.2	19.1	10.6	25.9	18.5	11.3	24.6	17.8	12.1
	22	32.3	17.2	9.1	31.2	16.7	9.6	30.0	16.3	10.2	28.7	15.7	10.8	27.3	15.1	11.5	25.9	14.4	12.3
31	21	31.3	24.9	9.0	30.2	24.5	9.5	29.0	24.1	10.1	27.8	23.5	10.7	26.5	22.8	11.4	25.1	22.0	12.2
	22	32.2	23.7	9.1	31.0	23.3	9.6	29.8	22.9	10.2	28.5	22.3	10.8	27.2	21.6	11.5	25.8	20.8	12.3
	23	33.0	22.5	9.2	31.9	22.1	9.7	30.6	21.6	10.3	29.3	21.0	10.9	27.9	20.3	11.6	26.4	19.5	12.5
	25	34.8	19.3	9.3	33.6	18.8	9.9	32.3	18.3	10.4	30.8	17.7	11.1	29.4	17.0	11.9	27.8	16.3	12.7

Air Cooled Packaged units

ECO Performance Data



COOLING CAPACITY (KW)

TC = Total Capacity (kW).

SC = Sensible Heat Capacity (kW).

PI = Power Input (kW)

E.A.T. = Entering Air Temperature .

○ = Nominal Capacity (kW) @ load specified

Nominal Air Flow: **3700 l/s**

Note: Capacities are **gross** and do not include allowance for fan motor heat loss.

OPA 705 ECO @100% (3700 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	66.9	58.6	16.2	66.0	58.7	17.3	64.0	57.5	18.4	61.1	55.7	19.7	57.0	52.9	21.2	52.0	48.8	22.7
	15	68.8	53.9	16.3	67.9	53.9	17.4	65.8	52.8	18.6	62.8	51.0	19.9	58.6	48.3	21.4	53.5	44.5	22.9
	16	70.7	49.0	16.5	69.8	48.8	17.6	67.7	47.6	18.8	64.6	45.9	20.1	60.3	43.4	21.5	55.1	39.8	23.2
	17	72.7	43.7	16.6	71.8	43.4	17.7	69.6	42.2	18.9	66.4	40.5	20.3	62.0	38.2	21.7	56.7	34.9	23.4
23	15	68.4	61.2	16.3	67.5	61.4	17.4	65.9	60.6	18.6	62.7	58.8	19.9	59.0	56.2	21.3	53.9	52.1	22.9
	16	70.4	57.6	16.5	69.5	57.7	17.6	67.8	56.9	18.8	64.6	55.0	20.1	60.8	52.5	21.5	55.5	48.7	23.2
	17	72.4	52.8	16.6	71.5	52.8	17.7	69.7	51.9	18.9	66.4	50.1	20.3	62.5	47.7	21.7	57.1	44.2	23.4
	18	74.5	47.6	16.8	73.5	47.5	17.9	71.7	46.5	19.1	68.3	44.8	20.4	64.3	42.6	21.9	58.8	39.3	23.6
27	18	73.9	64.5	16.8	73.0	64.4	17.8	71.3	63.6	19.1	67.8	61.8	20.4	64.3	58.7	21.9	59.0	54.9	23.5
	19	76.0	60.6	16.9	75.1	60.5	18.0	73.3	59.6	19.2	69.7	57.8	20.6	66.1	54.8	22.1	60.7	51.3	23.7
	20	78.1	56.5	17.0	77.2	56.2	18.2	75.3	55.3	19.4	71.6	53.5	20.8	68.0	50.7	22.3	62.5	47.3	23.9
	22	82.5	47.2	17.3	81.5	46.7	18.5	79.5	45.7	19.7	75.6	44.0	21.1	71.8	41.5	22.6	66.0	38.6	24.3
31	21	79.9	71.4	17.2	79.0	71.4	18.3	76.9	70.5	19.5	73.9	68.5	20.9	69.7	65.5	22.4	64.6	61.4	24.1
	22	82.1	68.0	17.3	81.1	67.9	18.5	79.0	67.0	19.7	75.9	65.0	21.1	71.6	62.1	22.6	66.4	58.1	24.3
	23	84.2	64.3	17.5	83.3	64.1	18.6	81.1	63.1	19.9	77.9	61.1	21.3	73.5	58.3	22.8	68.2	54.5	24.6
	25	88.8	55.0	17.8	87.8	54.6	18.9	85.5	53.5	20.2	82.2	51.6	21.6	77.6	49.1	23.2	72.0	45.7	25.0

Air Cooled Packaged units

ECO Performance Data at part load



OPA 705 ECO @75% (3700 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	48.9	43.2	12.8	47.4	42.3	13.6	45.8	41.3	14.5	44.0	40.1	15.4	42.1	38.7	16.5	40.0	37.1	17.7
	15	50.3	41.9	12.9	48.8	41.0	13.7	47.1	39.9	14.6	45.2	38.7	15.6	43.3	37.3	16.6	41.1	35.7	17.8
	16	51.7	40.5	13.0	50.1	39.5	13.8	48.4	38.4	14.7	46.5	37.1	15.7	44.5	35.7	16.8	42.3	34.1	18.0
	17	53.2	39.0	13.1	51.5	37.9	14.0	49.7	36.8	14.8	47.8	35.5	15.8	45.8	34.1	16.9	43.5	32.5	18.1
23	15	50.2	45.6	12.9	48.7	44.7	13.7	47.0	43.6	14.6	45.2	42.4	15.6	43.2	41.0	16.6	41.1	39.3	17.8
	16	51.7	44.7	13.0	50.1	43.8	13.8	48.3	42.7	14.7	46.5	41.4	15.7	44.5	39.9	16.8	42.3	38.3	18.0
	17	53.2	43.4	13.1	51.5	42.3	14.0	49.7	41.2	14.9	47.8	39.9	15.8	45.7	38.4	16.9	43.5	36.8	18.1
	18	54.7	41.8	13.3	53.0	40.8	14.1	51.1	39.6	15.0	49.2	38.3	16.0	47.0	36.8	17.1	44.8	35.2	18.3
27	18	54.4	49.3	13.2	52.7	48.4	14.0	50.9	47.2	14.9	48.9	45.9	15.9	46.8	44.4	17.0	44.6	42.7	18.2
	19	56.0	48.3	13.3	54.2	47.3	14.2	52.3	46.1	15.1	50.3	44.8	16.1	48.1	43.3	17.2	45.8	41.6	18.4
	20	57.5	47.2	13.4	55.7	46.1	14.3	53.8	44.9	15.2	51.7	43.5	16.2	49.5	42.0	17.3	47.1	40.3	18.6
	22	60.7	44.6	13.7	58.8	43.4	14.5	56.8	42.1	15.4	54.6	40.7	16.5	52.3	39.2	17.6	49.8	37.5	18.9
31	21	59.0	52.9	13.5	57.1	51.9	14.4	55.1	50.6	15.3	53.0	49.2	16.3	50.7	47.7	17.4	48.3	45.9	18.7
	22	60.6	52.2	13.7	58.7	51.1	14.5	56.6	49.8	15.4	54.5	48.4	16.4	52.1	46.8	17.6	49.7	45.1	18.8
	23	62.2	51.4	13.8	60.2	50.2	14.6	58.1	48.9	15.6	55.9	47.4	16.6	53.5	45.8	17.7	51.0	44.1	19.0
	25	65.6	49.0	14.0	63.5	47.7	14.8	61.3	46.3	15.8	58.9	44.8	16.8	56.5	43.2	18.0	53.9	41.4	19.3

OPA 705 ECO @50% (3700 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	32.4	26.4	9.4	31.4	26.1	10.0	30.3	25.6	10.6	29.1	25.1	11.3	27.9	24.3	12.1	26.5	23.5	12.9
	15	33.3	24.5	9.5	32.3	24.1	10.1	31.2	23.6	10.7	30.0	23.0	11.4	28.7	22.3	12.2	27.3	21.5	13.0
	16	34.3	21.6	9.6	33.2	21.2	10.2	32.1	20.8	10.8	30.8	20.2	11.5	29.5	19.5	12.3	28.0	18.8	13.2
	17	35.2	20.1	9.7	34.1	19.7	10.3	33.0	19.2	10.9	31.7	18.6	11.6	30.3	17.9	12.4	28.8	17.1	13.3
23	15	33.3	28.5	9.5	32.2	28.1	10.1	31.1	27.7	10.7	29.9	27.1	11.4	28.6	26.3	12.2	27.2	25.5	13.0
	16	34.2	26.9	9.6	33.2	26.5	10.2	32.0	26.1	10.8	30.8	25.5	11.5	29.5	24.7	12.3	28.0	23.9	13.2
	17	35.2	24.0	9.7	34.1	23.7	10.3	32.9	23.2	10.9	31.7	22.6	11.6	30.3	21.9	12.4	28.8	21.1	13.3
	18	36.2	22.6	9.8	35.1	22.1	10.3	33.9	21.6	11.0	32.6	21.0	11.7	31.2	20.3	12.5	29.7	19.5	13.4
27	18	36.1	30.7	9.7	34.9	30.4	10.3	33.7	29.9	11.0	32.4	29.3	11.7	31.0	28.5	12.5	29.5	27.6	13.3
	19	37.1	29.0	9.8	35.9	28.6	10.4	34.7	28.1	11.1	33.3	27.5	11.8	31.9	26.8	12.6	30.4	25.9	13.5
	20	38.1	26.3	9.9	36.9	25.9	10.5	35.6	25.5	11.1	34.3	24.9	11.9	32.8	24.2	12.7	31.2	23.4	13.6
	22	40.2	23.1	10.0	39.0	22.6	10.6	37.6	22.0	11.3	36.2	21.4	12.1	34.6	20.7	12.9	33.0	19.9	13.8
31	21	39.1	32.7	10.0	37.8	32.3	10.6	36.5	31.8	11.2	35.1	31.2	12.0	33.6	30.5	12.8	32.0	29.5	13.7
	22	40.1	31.3	10.0	38.9	30.9	10.6	37.5	30.4	11.3	36.1	29.7	12.0	34.6	29.0	12.9	32.9	28.1	13.8
	23	41.2	28.8	10.1	39.9	28.4	10.7	38.5	27.9	11.4	37.0	27.3	12.2	35.5	26.6	13.0	33.8	25.7	13.9
	25	43.4	25.8	10.3	42.1	25.3	10.9	40.6	24.7	11.6	39.0	24.0	12.3	37.4	23.3	13.2	35.7	22.5	14.1

Air Cooled Packaged units

ECO Performance Data



COOLING CAPACITY (KW)

TC = Total Capacity (kW).

SC = Sensible Heat Capacity (kW).

PI = Power Input (kW)

E.A.T. = Entering Air Temperature .

○ = Nominal Capacity (kW) @ load specified

Nominal Air Flow: **4200 l/s**

Note: Capacities are **gross** and do not include allowance for fan motor heat loss.

OPA 855 ECO @100% (4200 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	81.4	71.6	20.4	80.4	71.8	21.7	77.9	70.4	23.1	74.4	68.2	24.6	69.5	64.8	26.3	63.5	59.8	28.2
	15	84.0	65.9	20.6	82.9	65.9	21.8	80.4	64.4	23.2	76.7	62.3	24.8	71.6	59.0	26.5	65.4	54.3	28.4
	16	86.4	59.6	20.7	85.3	59.4	22.0	82.6	57.8	23.4	78.8	55.7	25.0	73.5	52.6	26.7	67.1	48.2	28.7
	17	89.0	52.9	20.9	87.8	52.5	22.2	85.0	50.9	23.6	81.1	48.8	25.2	75.6	45.8	26.9	68.9	41.8	28.9
23	15	83.3	75.0	20.6	82.3	75.4	21.8	80.3	74.5	23.2	76.6	72.3	24.8	72.1	69.3	26.5	66.0	64.5	28.4
	16	85.8	70.5	20.7	84.8	70.7	22.0	82.7	69.7	23.4	78.8	67.5	25.0	74.2	64.5	26.7	67.9	59.9	28.6
	17	88.4	64.4	20.9	87.3	64.4	22.2	85.1	63.4	23.6	81.1	61.2	25.2	76.3	58.3	26.9	69.8	53.9	28.9
	18	91.0	57.9	21.1	89.9	57.7	22.4	87.6	56.5	23.8	83.4	54.4	25.4	78.5	51.6	27.1	71.7	47.6	29.1
27	18	90.1	78.9	21.0	89.1	78.8	22.3	87.0	77.8	23.8	82.8	75.7	25.3	78.5	72.0	27.1	72.2	67.4	29.1
	19	92.8	74.1	21.2	91.7	73.9	22.5	89.5	72.8	24.0	85.1	70.6	25.6	80.7	67.0	27.3	74.1	62.6	29.3
	20	95.5	68.8	21.4	94.3	68.5	22.7	92.0	67.3	24.2	87.5	65.1	25.8	82.9	61.6	27.6	76.1	57.5	29.5
	22	101.0	57.2	21.8	99.7	56.6	23.1	97.2	55.2	24.6	92.4	53.1	26.2	87.5	49.9	28.0	80.2	46.2	30.0
31	21	97.5	87.3	21.6	96.4	87.3	22.9	93.9	86.2	24.4	90.2	83.6	26.0	85.1	80.0	27.8	78.9	74.9	29.8
	22	100.2	83.0	21.8	99.0	82.8	23.1	96.4	81.6	24.6	92.6	79.1	26.2	87.3	75.5	28.1	80.8	70.6	30.1
	23	103.0	78.4	22.0	101.8	78.1	23.3	99.0	76.9	24.8	95.1	74.3	26.4	89.6	70.8	28.3	83.0	66.0	30.3
	25	108.7	66.7	22.3	107.4	66.1	23.7	104.4	64.7	25.2	100.2	62.2	26.9	94.3	58.9	28.8	87.2	54.6	30.9

Air Cooled Packaged units

ECO Performance Data at part load



OPA 855 ECO @75% (4200 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	58.4	48.1	17.0	56.2	46.8	17.9	54.0	45.2	18.9	51.5	43.4	20.1	49.0	41.5	21.4	46.4	39.5	22.8
	15	60.2	46.8	17.1	58.0	45.3	18.0	55.6	43.7	19.1	53.1	41.9	20.2	50.5	40.0	21.5	47.8	37.9	22.9
	16	61.9	45.1	17.2	59.6	43.6	18.2	57.2	41.9	19.2	54.6	40.1	20.4	51.9	38.1	21.7	49.0	36.0	23.1
	17	63.8	43.4	17.3	61.4	41.8	18.3	58.9	40.1	19.4	56.2	38.2	20.5	53.3	36.2	21.8	50.4	34.1	23.3
23	15	60.1	51.1	17.1	57.9	49.7	18.0	55.5	48.1	19.1	53.0	46.3	20.2	50.4	44.3	21.5	47.7	42.2	22.9
	16	61.9	50.2	17.2	59.6	48.7	18.1	57.2	47.0	19.2	54.6	45.1	20.4	51.9	43.1	21.6	49.0	40.9	23.1
	17	63.8	48.6	17.3	61.4	47.0	18.3	58.9	45.3	19.3	56.2	43.4	20.5	53.3	41.3	21.8	50.4	39.1	23.2
	18	65.7	46.8	17.5	63.2	45.2	18.4	60.6	43.4	19.5	57.8	41.5	20.7	54.8	39.4	22.0	51.8	37.2	23.4
27	18	65.4	55.9	17.4	63.0	54.3	18.4	60.4	52.6	19.5	57.6	50.5	20.6	54.6	48.3	22.0	51.6	45.9	23.4
	19	67.3	54.8	17.6	64.8	53.1	18.5	62.1	51.3	19.6	59.2	49.2	20.8	56.2	47.0	22.1	53.0	44.5	23.6
	20	69.3	53.5	17.7	66.7	51.8	18.7	63.9	49.9	19.8	60.9	47.8	21.0	57.7	45.5	22.3	54.4	43.0	23.8
	22	73.3	50.5	18.0	70.5	48.7	19.0	67.5	46.6	20.1	64.3	44.5	21.3	60.9	42.1	22.6	57.3	39.6	24.1
31	21	71.0	60.3	17.8	68.3	58.6	18.8	65.4	56.6	19.9	62.3	54.4	21.1	59.0	52.0	22.5	55.6	49.3	24.0
	22	72.9	59.5	18.0	70.1	57.7	19.0	67.1	55.7	20.1	63.9	53.4	21.3	60.6	50.9	22.7	57.0	48.2	24.2
	23	75.0	58.6	18.1	72.1	56.7	19.1	69.0	54.6	20.2	65.7	52.3	21.5	62.2	49.8	22.8	58.5	47.0	24.3
	25	79.1	55.8	18.4	76.0	53.8	19.4	72.7	51.6	20.5	69.2	49.2	21.8	65.4	46.6	23.2	61.5	43.8	24.7

OPA 855 ECO @50% (4200 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	39.6	29.0	13.6	38.2	28.3	14.2	36.6	27.6	15.0	35.0	26.7	15.8	33.3	25.6	16.7	31.5	24.5	17.7
	15	40.9	26.7	13.6	39.4	26.0	14.3	37.8	25.2	15.0	36.1	24.3	15.9	34.3	23.3	16.8	32.5	22.2	17.8
	16	42.1	23.0	13.7	40.5	22.4	14.4	38.8	21.6	15.2	37.1	20.7	16.0	35.2	19.8	16.9	33.3	18.7	18.0
	17	43.3	21.4	13.8	41.7	20.7	14.5	40.0	19.9	15.3	38.1	18.9	16.1	36.2	17.9	17.1	34.2	16.9	18.1
23	15	40.8	31.5	13.6	39.3	30.9	14.3	37.7	30.1	15.0	36.0	29.2	15.9	34.2	28.1	16.8	32.4	26.9	17.8
	16	42.1	29.7	13.7	40.5	29.0	14.4	38.8	28.2	15.2	37.1	27.2	16.0	35.2	26.2	16.9	33.3	24.9	17.9
	17	43.3	26.0	13.8	41.7	25.4	14.5	40.0	24.6	15.3	38.2	23.7	16.1	36.2	22.6	17.0	34.2	21.5	18.1
	18	44.6	24.4	13.9	42.9	23.7	14.6	41.1	22.8	15.4	39.2	21.9	16.2	37.2	20.8	17.2	35.2	19.7	18.2
27	18	44.4	34.5	13.9	42.8	33.8	14.6	41.0	33.0	15.3	39.1	31.9	16.2	37.1	30.7	17.1	35.0	29.4	18.2
	19	45.7	32.5	14.0	44.0	31.7	14.7	42.2	30.9	15.4	40.2	29.8	16.3	38.1	28.6	17.3	36.0	27.3	18.3
	20	47.1	29.0	14.1	45.3	28.3	14.8	43.4	27.4	15.6	41.3	26.4	16.4	39.2	25.3	17.4	37.0	24.0	18.4
	22	49.8	25.2	14.3	47.9	24.4	15.0	45.8	23.5	15.8	43.6	22.4	16.7	41.3	21.3	17.6	38.9	20.0	18.7
31	21	48.2	37.1	14.2	46.4	36.3	14.9	44.4	35.4	15.4	42.3	34.2	16.5	40.1	32.9	17.5	37.8	31.4	18.6
	22	49.5	35.3	14.3	47.6	34.5	15.0	45.6	33.5	15.8	43.4	32.4	16.7	41.1	31.1	17.7	38.7	29.6	18.7
	23	50.9	32.1	14.4	49.0	31.3	15.1	46.9	30.4	15.9	44.6	29.3	16.8	42.2	28.1	17.8	39.8	26.6	18.9
	25	53.8	28.6	14.6	51.6	27.7	15.3	49.4	26.7	16.1	47.0	25.5	17.0	44.4	24.3	18.0	41.8	22.9	19.2

Air Cooled Packaged units

ECO Performance Data



COOLING CAPACITY (KW)

TC = Total Capacity (kW).

SC = Sensible Heat Capacity (kW).

PI = Power Input (kW)

E.A.T. = Entering Air Temperature .

○ = Nominal Capacity (kW) @ load specified

Nominal Air Flow: **4750 l/s**

Note: Capacities are **gross** and do not include allowance for fan motor heat loss.

OPA 960 ECO @100% (4750 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	92.4	81.8	24.3	91.2	82.1	25.5	88.5	80.6	26.9	84.5	78.1	28.4	78.9	74.2	30.0	72.1	68.5	31.8
	15	94.8	74.4	24.5	93.5	74.4	25.7	90.6	72.8	27.1	86.5	70.3	28.6	80.8	66.6	30.2	73.7	61.3	32.0
	16	97.2	66.5	24.6	95.9	66.2	25.9	92.9	64.5	27.3	88.6	62.1	28.8	82.7	58.6	30.4	75.5	53.7	32.3
	17	99.9	58.2	24.8	98.5	57.7	26.0	95.3	55.9	27.4	90.9	53.5	29.0	84.8	50.3	30.6	77.4	45.8	32.5
23	15	94.6	86.3	24.5	93.6	86.8	25.7	91.3	85.9	27.1	87.1	83.4	28.6	82.1	79.9	30.2	75.1	74.4	32.0
	16	97.1	80.4	24.6	96.0	80.7	25.9	93.6	79.6	27.3	89.3	77.2	28.8	84.1	73.8	30.4	76.9	68.5	32.3
	17	99.7	72.8	24.8	98.5	72.8	26.1	96.0	71.5	27.5	91.5	69.1	29.0	86.1	65.8	30.7	78.7	60.9	32.5
	18	102.3	64.6	25.0	101.0	64.3	26.3	98.4	62.9	27.7	93.7	60.5	29.2	88.2	57.4	30.9	80.5	52.9	32.8
27	18	102.0	89.8	24.9	100.8	89.7	26.2	98.5	88.6	27.6	93.7	86.2	29.2	88.9	82.0	30.9	81.7	76.8	32.7
	19	104.6	83.6	25.1	103.4	83.4	26.4	100.9	82.2	27.8	96.0	79.7	29.4	91.1	75.6	31.1	83.6	70.7	33.0
	20	107.4	77.0	25.3	106.1	76.6	26.6	103.5	75.3	28.0	98.3	72.8	29.6	93.2	68.9	31.4	85.6	64.2	33.3
	22	119.1	66.4	26.0	117.3	65.5	27.4	114.1	63.7	28.9	108.2	61.1	30.5	102.3	57.3	32.4	93.7	52.9	34.4
31	21	110.0	98.5	25.4	108.8	98.5	26.7	105.9	97.3	28.2	101.8	94.4	29.8	96.0	90.3	31.5	89.0	84.6	33.5
	22	112.9	93.2	25.6	111.6	93.0	26.9	108.5	91.6	28.4	104.2	88.7	30.0	98.3	84.7	31.8	91.1	79.2	33.7
	23	115.7	87.4	25.8	114.3	87.0	27.2	111.1	85.5	28.6	106.6	82.6	30.3	100.4	78.6	32.1	93.0	73.3	34.1
	25	121.7	73.0	26.2	120.0	72.2	27.6	116.5	70.5	29.1	111.6	67.6	30.8	105.0	64.0	32.6	97.1	59.2	34.7

Air Cooled Packaged units

ECO Performance Data at part load



OPA 960 ECO @75% (4750 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	68.0	53.5	20.4	65.9	52.3	21.4	63.6	50.8	22.4	61.0	49.1	23.5	58.1	46.9	24.7	54.8	44.4	26.0
	15	69.8	51.6	20.6	67.6	50.2	21.5	65.1	48.7	22.5	62.5	46.9	23.6	59.5	44.7	24.8	56.1	42.2	26.2
	16	71.6	49.5	20.7	69.3	48.0	21.6	66.7	46.4	22.6	64.0	44.5	23.8	60.9	42.4	25.0	57.4	39.8	26.4
	17	73.6	47.3	20.8	71.1	45.8	21.7	68.5	44.0	22.8	65.6	42.1	23.9	62.4	39.9	25.2	58.9	37.4	26.5
23	15	69.7	56.7	20.6	67.4	55.4	21.5	65.0	53.9	22.5	62.4	52.0	23.6	59.4	49.8	24.8	56.0	47.2	26.2
	16	71.5	55.3	20.7	69.2	53.9	21.6	66.7	52.3	22.7	63.9	50.4	23.8	60.8	48.1	25.0	57.3	45.5	26.4
	17	73.4	53.2	20.8	71.0	51.7	21.8	68.4	50.0	22.8	65.5	48.1	23.9	62.3	45.8	25.2	58.7	43.1	26.6
	18	75.4	51.0	20.9	72.8	49.4	21.9	70.1	47.6	22.9	67.1	45.6	24.1	63.8	43.3	25.4	60.1	40.7	26.8
27	18	75.1	61.4	20.9	72.6	59.9	21.9	69.9	58.2	22.9	66.9	56.1	24.1	63.6	53.7	25.3	59.9	50.9	26.7
	19	77.1	59.9	21.0	74.4	58.3	22.0	71.6	56.5	23.1	68.5	54.4	24.2	65.1	51.9	25.5	61.3	49.0	26.9
	20	79.1	58.2	21.2	76.4	56.5	22.2	73.4	54.6	23.2	70.2	52.4	24.4	66.6	49.9	25.7	62.7	47.0	27.1
	22	87.7	57.7	21.7	84.4	55.6	22.7	80.9	53.4	23.9	77.2	50.9	25.1	73.1	48.2	26.4	68.7	45.1	27.9
31	21	80.9	65.8	21.3	78.0	64.1	22.3	75.0	62.2	23.3	71.6	59.9	24.5	68.0	57.2	25.8	64.0	54.1	27.3
	22	83.0	64.8	21.4	80.0	62.9	22.4	76.8	60.9	23.5	73.4	58.6	24.7	69.6	55.8	26.0	65.5	52.7	27.5
	23	85.1	63.5	21.6	82.0	61.6	22.6	78.6	59.4	23.7	75.1	57.0	24.9	71.2	54.2	26.2	66.9	51.1	27.7
	25	89.5	60.0	21.9	86.1	57.9	22.9	82.5	55.5	24.0	78.6	53.0	25.3	74.4	50.2	26.6	69.8	47.0	28.1

OPA 960 ECO @50% (4750 l/s)

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		
		TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
21	14	45.0	30.1	16.7	43.6	29.6	17.4	42.1	29.0	18.1	40.4	28.2	18.9	38.5	27.1	19.8	36.3	25.7	20.8
	15	46.2	27.2	16.8	44.7	26.7	17.5	43.1	26.0	18.2	41.3	25.2	19.0	39.4	24.1	19.9	37.1	22.8	20.9
	16	47.4	24.2	16.9	45.8	23.6	17.6	44.2	22.9	18.3	42.3	22.1	19.2	40.3	21.0	20.1	38.0	19.7	21.0
	17	48.7	21.1	17.0	47.1	20.4	17.7	45.3	19.7	18.4	43.4	18.8	19.3	41.3	17.8	20.2	39.0	16.6	21.2
23	15	46.1	32.8	16.8	44.6	32.3	17.5	43.0	31.6	18.2	41.3	30.8	19.0	39.3	29.6	19.9	37.1	28.2	20.9
	16	47.3	30.5	16.9	45.8	30.0	17.6	44.1	29.3	18.3	42.3	28.4	19.2	40.2	27.2	20.1	38.0	25.8	21.0
	17	48.6	27.5	17.0	47.0	26.9	17.7	45.2	26.2	18.5	43.3	25.2	19.3	41.2	24.1	20.2	38.8	22.8	21.2
	18	49.9	24.3	17.1	48.2	23.6	17.8	46.4	22.9	18.6	44.4	21.9	19.4	42.2	20.8	20.3	39.8	19.5	21.3
27	18	49.7	35.6	17.1	48.0	35.1	17.8	46.2	34.3	18.5	44.3	33.3	19.4	42.1	32.1	20.3	39.7	30.5	21.3
	19	51.0	33.1	17.2	49.3	32.5	17.9	47.4	31.7	18.6	45.3	30.7	19.5	43.1	29.5	20.4	40.6	28.0	21.4
	20	52.4	30.5	17.3	50.5	29.8	18.0	48.6	29.0	18.8	46.4	28.0	19.6	44.1	26.8	20.5	41.5	25.3	21.6
	22	58.1	26.5	17.7	55.9	25.6	18.4	53.6	24.6	19.2	51.1	23.5	20.1	48.4	22.2	21.1	45.5	20.7	22.2
31	21	53.5	38.0	17.4	51.6	37.3	18.1	49.6	36.5	18.8	47.4	35.4	19.7	45.0	34.1	20.6	42.4	32.4	21.7
	22	55.0	35.9	17.5	53.0	35.2	18.2	50.9	34.3	19.0	48.6	33.2	19.8	46.1	31.9	20.8	43.3	30.2	21.8
	23	56.3	33.7	17.6	54.3	32.9	18.3	52.1	32.0	19.1	49.7	30.9	20.0	47.1	29.5	20.9	44.3	27.9	22.0
	25	59.2	28.1	17.8	57.0	27.3	18.5	54.6	26.3	19.3	52.0	25.1	20.2	49.3	23.8	21.2	46.2	22.3	22.3

Air Cooled Packaged units

ECO 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).

Indoor Entering Air ECO Models Temp. °C		Outdoor coil entering air temperature °C D.B.															
Unit	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 465	15	31.0	27.1	32.7	26.8	34.5	27.2	36.3	29.0	38.0	32.7	39.8	38.9	41.6	41.6	43.3	43.3
	20	30.5	26.8	32.3	26.4	34.1	26.9	35.8	28.6	37.6	32.3	39.4	38.6	41.1	41.1	42.9	42.9
	25	29.5	26.0	31.3	25.7	33.1	26.1	34.8	27.9	36.6	31.6	38.4	37.8	40.1	40.1	41.9	41.9
OPA 550	15	40.2	35.3	42.5	34.8	44.8	35.4	47.1	37.7	49.4	42.5	51.7	50.6	54.0	54.0	56.3	56.3
	20	39.6	34.8	41.9	34.4	44.2	34.9	46.5	37.2	48.8	42.0	51.1	50.1	53.4	53.4	55.7	55.7
	25	38.4	33.8	40.7	33.4	43.0	33.9	45.3	36.2	47.6	41.0	49.9	49.1	52.2	52.2	54.5	54.5
OPA 705	15	50.9	44.6	53.8	44.0	56.7	44.7	59.6	47.6	62.5	53.7	65.4	65.4	68.3	68.3	71.2	71.2
	20	50.1	44.0	53.0	43.4	55.9	44.1	58.8	47.0	61.7	53.1	64.6	64.6	67.5	67.5	70.4	70.4
	25	48.5	42.7	51.4	42.2	54.3	42.8	57.2	45.7	60.1	51.8	63.0	63.0	65.9	65.9	68.8	68.8
OPA 855	15	58.8	51.5	62.1	50.9	65.5	51.7	68.8	55.0	72.2	62.0	75.5	73.9	78.9	78.9	82.3	82.3
	20	57.9	50.8	61.3	50.2	64.6	51.0	68.0	54.3	71.3	61.4	74.7	73.2	78.0	78.0	81.4	81.4
	25	56.1	49.4	59.4	48.7	62.8	49.5	66.1	52.9	69.5	59.9	72.8	71.7	76.2	76.2	79.5	79.5
OPA 960	15	67.8	59.4	71.7	58.7	75.6	59.6	79.4	63.5	83.3	71.6	87.2	85.2	91.0	91.0	94.9	94.9
	20	66.8	58.6	70.7	57.9	74.6	58.8	78.4	62.7	82.3	70.8	86.2	84.5	90.0	90.0	93.9	93.9
	25	64.7	56.9	68.6	56.2	72.4	57.1	76.3	61.0	80.2	69.1	84.0	82.8	87.9	87.9	91.8	91.8

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

ECO Performance Data

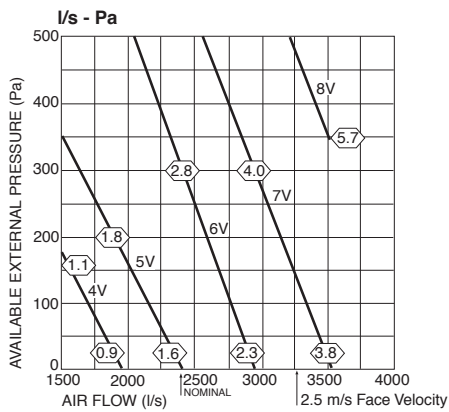


AIR HANDLING

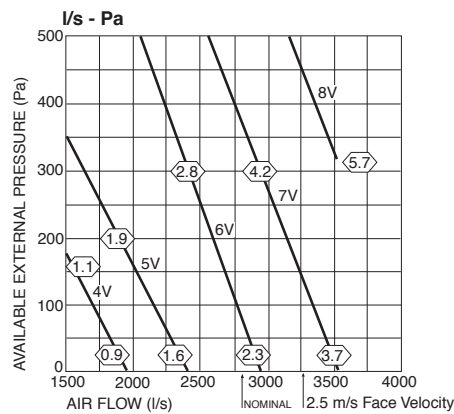
Note: Airflows are for a dry coil. Reduce airflow by 10% for wet coil conditions. In a free blow or low resistance application, beware of exceeding indoor fan motor's full load amp limit (refer to page 21). As filters are optional, the fan air flows given are for units installed without filters.

◇ Amps

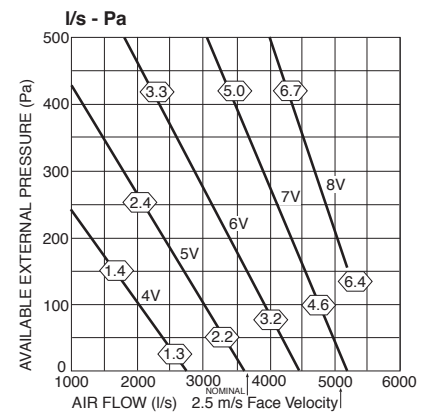
OPA 465RKTBG-P



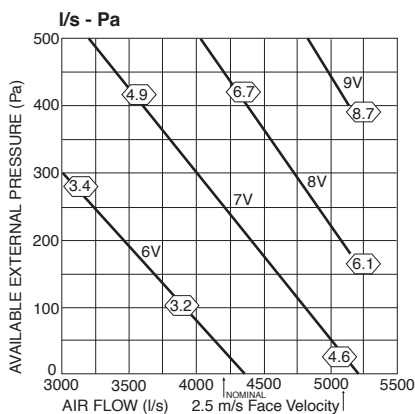
OPA 550RKTBG-P



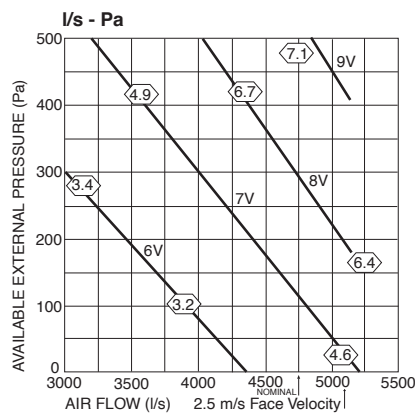
OPA 705RKTBG-P



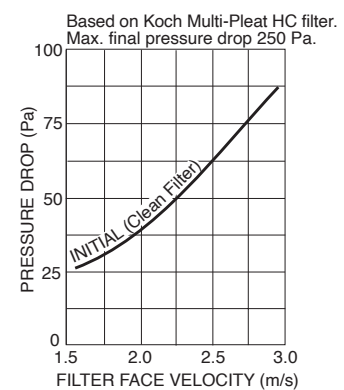
OPA 855RKTBG-P



OPA 960RKTBG-P



OPTIONAL FILTERS



Air Cooled Packaged units

ECO Performance Data



SOUND LEVELS - OUTDOOR

Sound Power Levels (SWL) - Radiated

Measured in decibels re 1 picowatt, at nominal airflow.

			OCTAVE BAND FREQUENCY Hz					
			125	250	500	1K	2K	4K
Models	OUTDOOR FAN SPEED	SWL dB(A)	SOUND POWER LEVELS (SWL) dB					
OPA 465	HIGH	84	85	80	80	79	77	69
OPA 550	HIGH	81	91	80	77	75	72	65
OPA 705	HIGH	79	90	75	74	73	71	65
OPA 855	HIGH	79	90	75	74	73	71	65
OPA 960	HIGH	79	90	75	74	73	71	65

Sound Pressure Levels (SPL)

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

			OCTAVE BAND FREQUENCY Hz					
			125	250	500	1K	2K	4K
Models	OUTDOOR FAN SPEED	SPL @ 3m dB(A)	SOUND PRESSURE LEVELS (SPL) dB					
OPA 465	HIGH	68	69	64	64	63	61	53
OPA 550	HIGH	65	75	64	61	59	56	49
OPA 705	HIGH	63	74	59	58	57	55	49
OPA 855	HIGH	63	74	59	58	57	55	49
OPA 960	HIGH	63	74	59	58	57	55	49

SOUND LEVELS - INDOOR - PLUG FAN

Sound Power Levels (SWL) - Supply Air Outlet

Test Conditions: BS 848.2 : 2004.

Installation Type A (free inlet and outlet).

Direct method of measurement (reverberant room).

Measured in decibels re 1 picowatt.

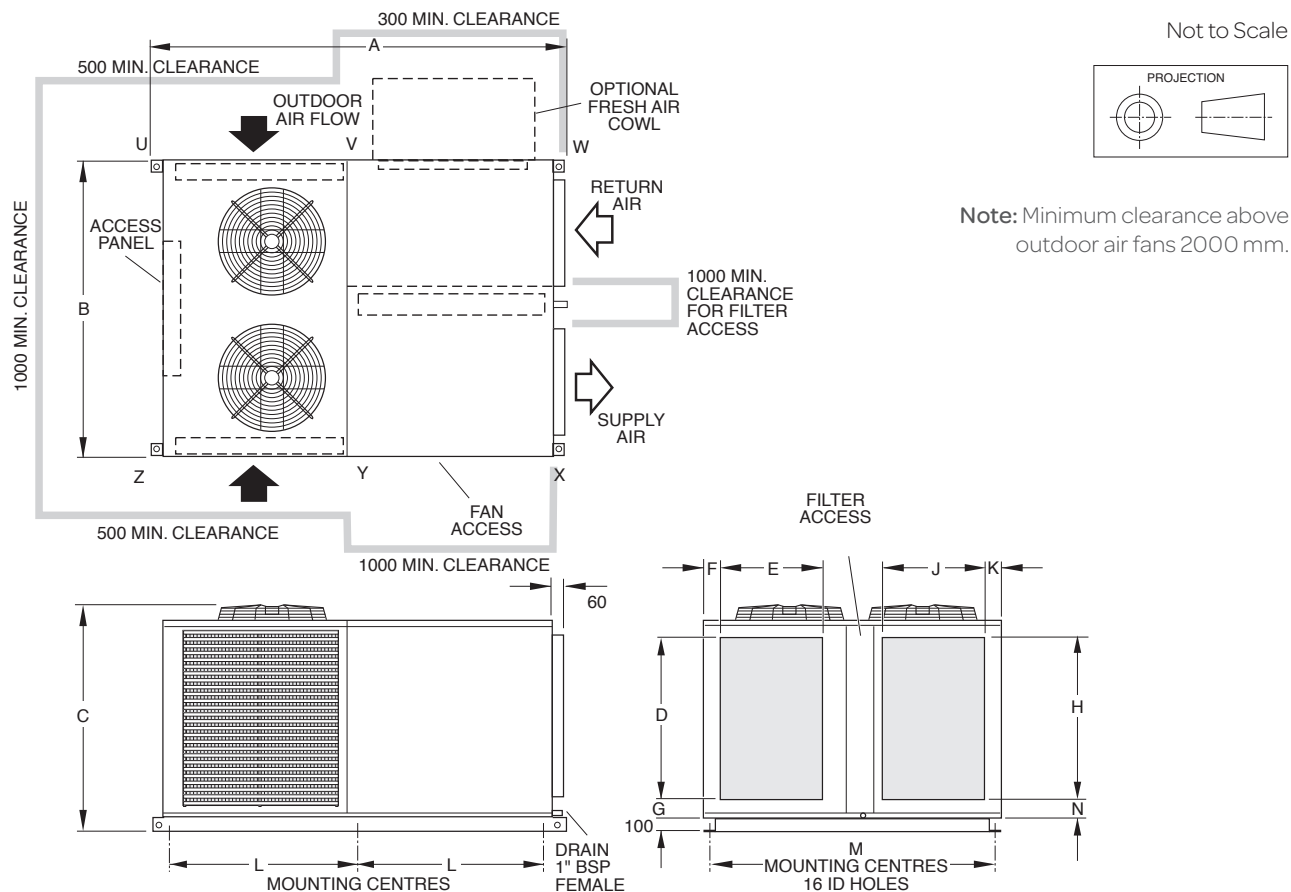
Models	FAN SPEED @NOMINAL AIR FLOW	SWL dB(A)	OCTAVE BAND FREQUENCY Hz					
			125	250	500	1K	2K	4K
SOUND POWER LEVELS (SWL) dB								
OPA 465	5.5V	80	68	76	75	76	74	67
OPA 550	6.5V	84	71	79	79	79	78	72
OPA 705	6V	85	77	77	80	81	79	75
OPA 855	7V	89	80	81	84	85	82	78
OPA 960	7.5V	92	81	84	86	87	86	81

Air Cooled Packaged units

Dimensions (mm)



OPA *RKTBG-P : HORIZONTAL SUPPLY & RETURN AIR



MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N
OPA 465	2344	1949	1635	957	500	52	209	957	500	130	1078	1879	209
OPA 550	2344	1949	1793	957	500	70	209	957	500	130	1078	1879	209
OPA 705	2902	2149	1859	1200	600	114	265	1200	600	131	1364	2078	263
OPA 855	2902	2149	1859	1200	600	114	265	1200	600	131	1364	2078	263
OPA 960	2902	2149	1859	1200	600	114	265	1200	600	131	1364	2078	263

POINT LOADS (kg)

Model	U	V	W	X	Y	Z
OPA 465	147	125	104	141	141	140
OPA 550	158	143	127	139	150	161
OPA 705	195	173	151	190	195	201
OPA 855	204	178	151	190	200	210
OPA 960	204	178	151	190	200	210

Note: The OPA 705, 855, 960 models have four outdoor air fans.

Note: The manufacturer reserves the right to make changes in specifications at any time without notice or obligation. Certified data is available on request.

Air Cooled Packaged units

Dimensions (mm)

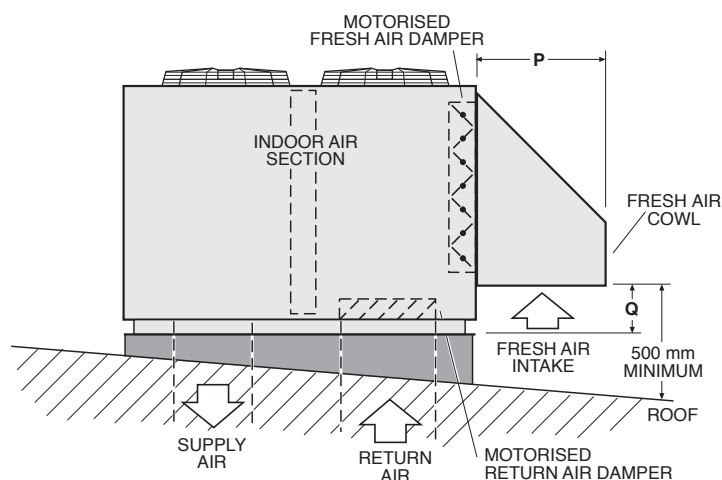


OPTIONS

Economiser Fresh Air Cowl

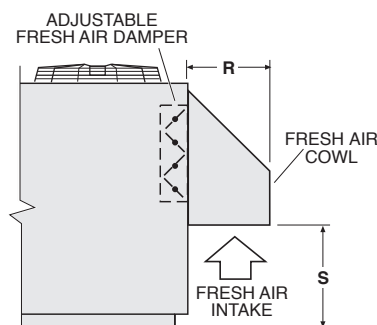
MODEL	P	Q
OPA 465	730	335
OPA 550	730	335
OPA 705	880	310
OPA 855	880	310
OPA 960	880	310

Downward discharge model shown here. Same cowl dimensions apply to horizontal discharge model.



Fresh Air Cowl

MODEL	R	S
OPA 465	430	785
OPA 550	430	785
OPA 705	435	810
OPA 855	435	810
OPA 960	435	810



CONFIGURATIONS

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

Spigot Position

Supply Air				Return Air			
Front	Top	Side	Bottom	Front	Top	Side	Bottom
Std	Opt	Opt	Opt	Std	Opt	Opt	Opt

Note: The manufacturer reserves the right to make changes in specifications at any time without notice or obligation. Certified data is available on request.

Air Cooled Packaged units

ECO Specifications



ECO Models	OPA 465	OPA 550	OPA 705	OPA 855	OPA 960
System					
Nominal Cooling Capacity * ¹ kW	8.9~44.9	10.9~54.6	13.9~69.7	17.0~85.1	19.2~96.0
Net Cooling Capacity (MEPS) kW	43.9	52.9	67.9	79.4	87.9
Heating Capacity * ² kW	8.2~41.1	10.7~53.4	13.5~67.5	15.6~78.0	18~90.0
EER / AEER (cooling) * ⁴	3.22 / 3.21	2.93 / 2.92	3.30 / 3.28	3.10 / 3.09	2.99 / 2.98
COP / ACOP (heating) * ⁴	3.62 / 3.60	3.35 / 3.34	3.75 / 3.73	3.28 / 3.27	3.40 / 3.39
Air Flow * ³ l/s	2400	2800	3700	4200	4750
Power Source	3 phase 400 V a.c. 50 Hz				
Controller	UC8 (x2)				
Compressors	variable (digital) + fixed			twin variable (digital)	
Indoor Air Fan Type	EC Plug, backward curved				
Indoor Fan Full Load Amps A/ph.	5	6	4.5 (x 2)	4.5 (x2)	4.5 (x2)
Running Amps (Total Sys.) * ¹	20 / 26 / 20	29 / 38 / 29	33 / 40 / 34	45 / 52 / 45	58 / 66 / 57
Max. Running Amps (Total Sys.)	27 / 34 / 27	36 / 46 / 37	46 / 54 / 47	58 / 64 / 56	68 / 77 / 67
Finish					
Exterior	grey polyester powder coat				
Weight (kg)					
Net Weight	798	878	1105	1133	1129
Shipping Weight (approx.)	880	960	1193	1221	1217

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 at AS/NZS 3823 conditions:
 - Indoor Entering Air Temperature 21°C D.B.;
 - Outdoor Entering Air Temperature 7°C D.B., 6°C W.B.

*³ Supply air flow at Nominal Cooling Capacity conditions stated above.

Materials and specifications are subject to change without notice due to the manufacturer's ongoing research and development programme.

Air Cooled Packaged units

Notes



Air Cooled Packaged units

Notes



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