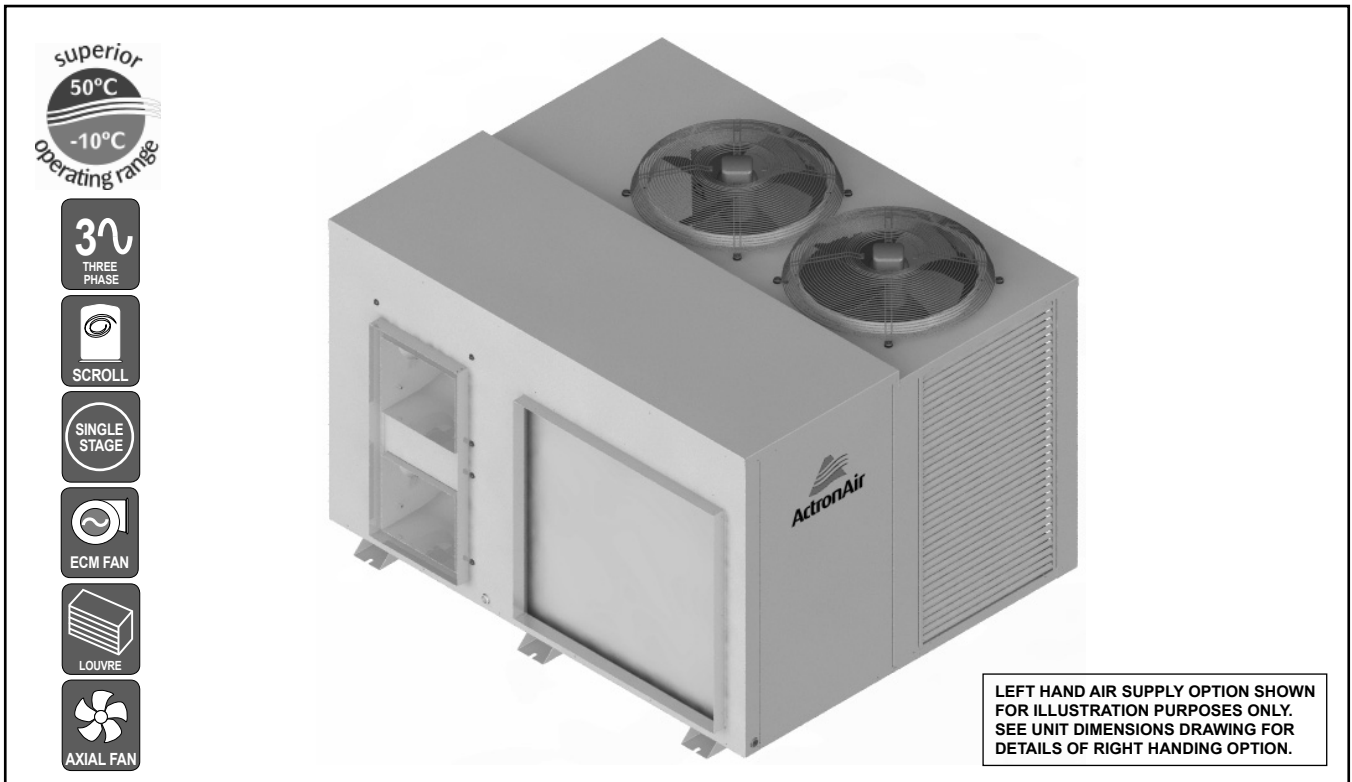


PACKAGE UNIT



3 Phase
1 Stage
29.50 kW

UNIT FEATURES

- Compliant Scroll Compressors
- Full Factory Charged with R410A Refrigerant
- Multiple Speed Outdoor Fans
- Blue Epoxy Coat Coil Fin Protection - Indoor & Outdoor Coils
- Louvred Outdoor Coil Guard
- Adaptive Demand Defrost
- EC Variable Speed Indoor Fan
- Adjustable Dial-Up Indoor Airflow

UNIT OPTIONS

- Low Ambient
- Compressor Soft Starters
- Phase Protection
- Additional Full Coil Coat Protection
- Fault Detection Board

CONTROL OPTIONS & FEATURES

ActronAir C7-4 (BCA Compliant)

- 7-Day Programmable Controller with 2 Events/Day
- Temperature Set Back and After Hours Timer
- Auto, Heat & Cool Modes
- Auto/Continuous Indoor Fan Operation
- 1 Speed Indoor Fan Setting
- Hot Start Feature
- 2 Stage Cooling/Heating with 3rd Stage Boost Heat
- Manual Control Inputs
- Remote Temperature Sensors
- 24-Hour ON/OFF Timer
- Home/Building Automation ON/OFF Capability

UNIT COMPLIANCE

- MEPS 2012 / GEMS 2012
- AS/NZS 4755.3.1 Demand Response Capabilities
- AS/NZS 60335.1 Electrical Appliance Safety
- AS/NZS CISPR 11:2011 (Group 1 ClassA) EMC Compliance

SPECIFICATION SUMMARY

| PACKAGE UNIT MODEL | PCG290L/R | |
|--|---------------------|----------|
| | (1) TOTAL | (2) NETT |
| (3) COOLING CAPACITY (kW) | 29.50 | 28.30 |
| (3) SENSIBLE CAPACITY (kW) | 25.43 | 24.23 |
| (4) HEATING CAPACITY (kW) | 27.40 | 28.60 |
| (5) COOLING INPUT POWER (kW) | 8.45 | |
| (5) HEATING INPUT POWER (kW) | 7.97 | |
| EER | 3.49 | 3.35 |
| COP | 3.44 | 3.59 |
| (6) INDOOR AIRFLOW (l/s) - MIN. / NOMINAL / MAX. | 1275 / 1500 / 1650 | |
| OUTDOOR SOUND PRESS. LEVEL @ 3M dB(A) - LOW / HIGH | 56.9 / 60.9 | |
| OUTDOOR SOUND POWER LEVEL dB(A) - LOW / HIGH | 73.9 / 77.9 | |
| POWER SUPPLY | 400V / 3Ph+N / 50Hz | |
| (2) RATED LOAD AMPS | 24.5 | |
| (7) FULL LOAD AMPS | 30.9 | |
| (8) CIRCUIT BREAKER AND CABLE AMPS | 32.0 | |
| APPROXIMATE STARTING AMPS | 111.0 | |
| WEIGHT (kg) | 450 | |

(1) Based on unit rating excluding indoor fan kW.
 (2) Measured and tested in accordance with AS/NZS 3823.1.2.
 (3) At 27°C DB / 19°C WB entering air temperatures and 35°C ambient.
 (4) At 20°C DB entering air temperature and 7°C DB / 6°C WB ambient.
 (5) input power includes indoor fan kW.
 (6) Max. - Min. airflow application range.
 (7) Full Load Amps are based on compressor and fan motors' maximum expected current.
 (8) See Specifications sheet for cable size and circuit breaker size details.

Note: Use input power to estimate running cost.



| AIRFLOW (l/s) | EXTERNAL STATIC PRESSURE (Pa) | | | | | | | | | | | |
|---------------|-------------------------------|-----|-----------|------------|-------|------|-------|------|-------|------|-------------------------|---|
| | 50 | | 100 | | 150 | | 200 | | 250 | | 300 | |
| | % PWM | W | % PWM | W | % PWM | W | % PWM | W | % PWM | W | % PWM | W |
| 1275 | --- | --- | --- | --- | 53 | 801 | 57 | 924 | 62 | 1093 | MOTOR / BLOWER LIMIT | |
| 1300 | --- | --- | --- | --- | 54 | 810 | 58 | 947 | 63 | 1112 | | |
| 1350 | --- | --- | 52 | 741 | 57 | 870 | 61 | 1012 | 66 | 1178 | | |
| 1400 | 51 | 677 | 55 | 776 | 60 | 922 | 64 | 1070 | 69 | 1245 | | |
| 1450 | 54 | 709 | 58 | 838 | 63 | 989 | 67 | 1141 | 73 | 1312 | | |
| 1500 | 57 | 762 | 61 | 902 | 66 | 1052 | 70 | 1214 | 76 | 1380 | | |
| 1550 | 60 | 838 | 65 | 972 | 69 | 1132 | 74 | 1298 | 80 | 1458 | | |
| 1600 | 64 | 899 | 68 | 1042 | 73 | 1211 | 78 | 1375 | 84 | 1528 | | |
| 1650 | 67 | 979 | 72 | 1132 | 77 | 1300 | 82 | 1458 | 88 | 1676 | | |

NOTES:

W = Indoor Fan Power, Watts

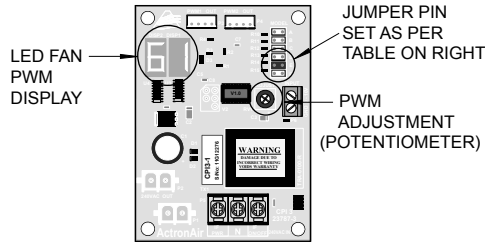
PWM = Pulse Width Modulation Setting, % PWM

(Adjustable through CPI3-1 Board located in electrical panel).

Factory PWM Setting = 61 % PWM for 100 Pa.

 - Data in the box indicates Factory Default Setting.

(CPI3-1) COMMERCIAL PWM INTERFACE BOARD

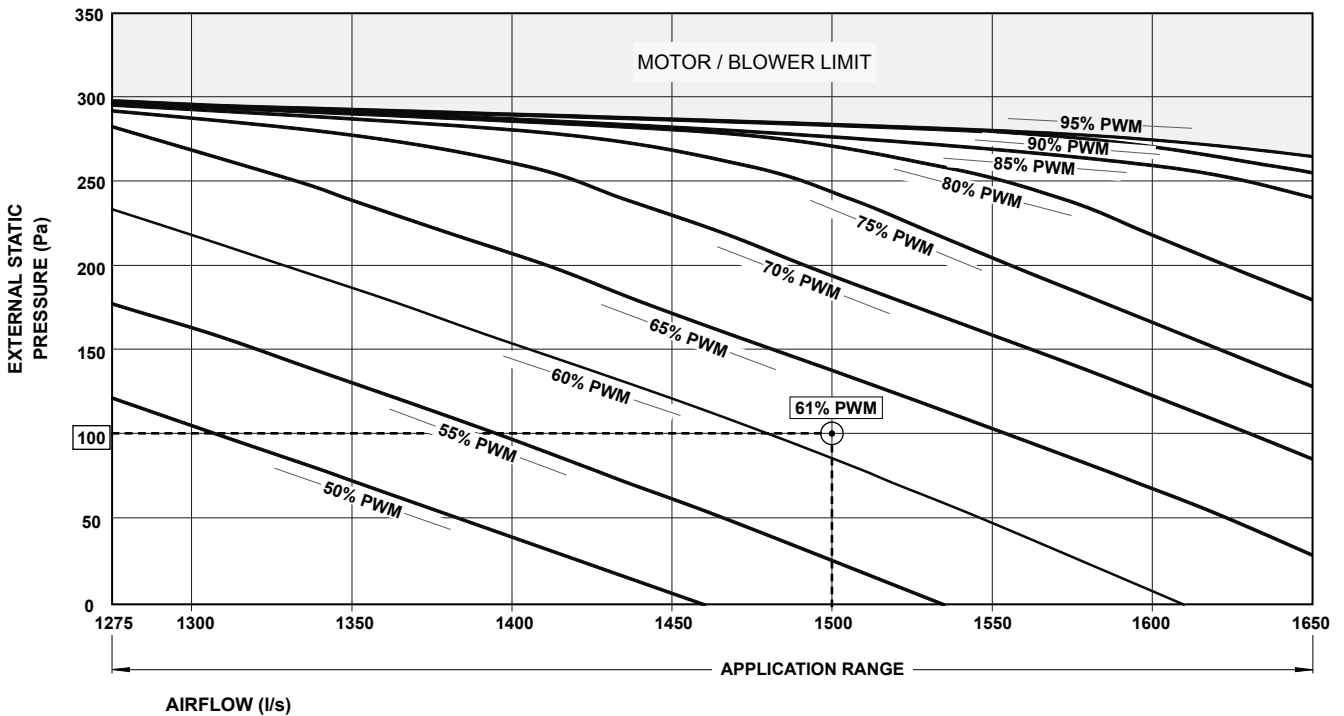


| JUMPER PIN POSITION | INDOOR FAN |
|---------------------|------------------------|
| A | SCG400E PCG400U/L/R |
| B | PCG340L/R |
| C | PCG330L/R |
| D | PCG300L/R |
| E | SCG290E PCG290U/L/R |
| F | NOT USED |

NOTES:

- LED will show PWM without %.
- Example: 61% PWM = 61 in LED.
- LED adjustments are in 1 digit increment.

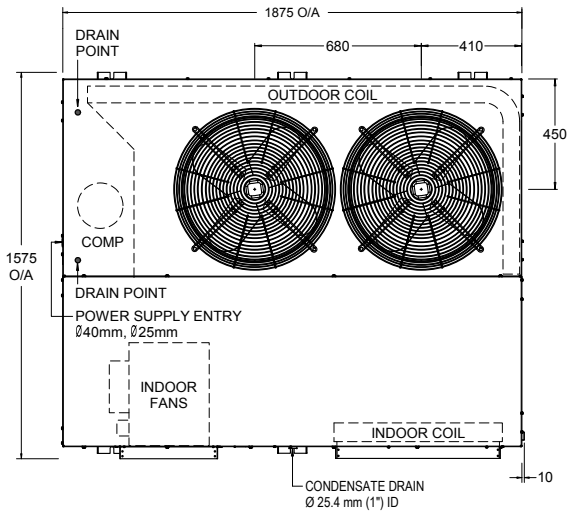
29.50 kW
3 Phase 1 Stage



UNIT DIMENSIONS

PCG290L

PACKAGE UNIT - WITH LEFT HAND AIR SUPPLY OPTION

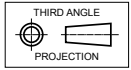


TOP VIEW

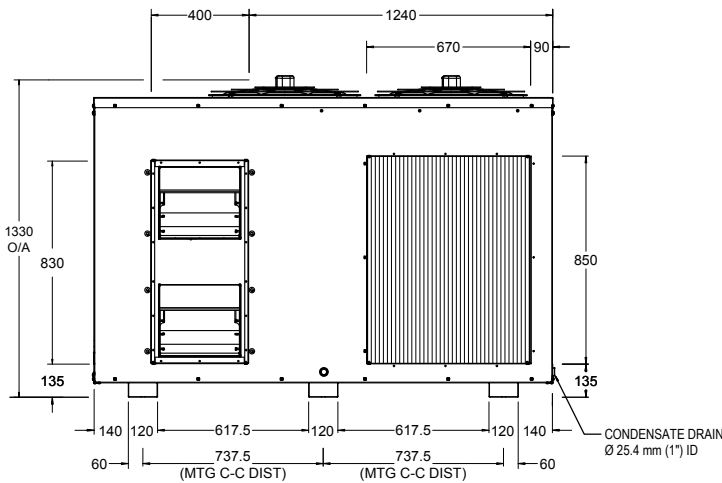
OVERALL NOMINAL DIMENSION (H x W x L)
 = 1330 x 1875 x 1575
 SUPPLY DUCT (H x W) = 830 x 400
 RETURN DUCT (H x W) = 850 x 670
 USE M12 BOLT FOR FEET MOUNTING

NOTES:

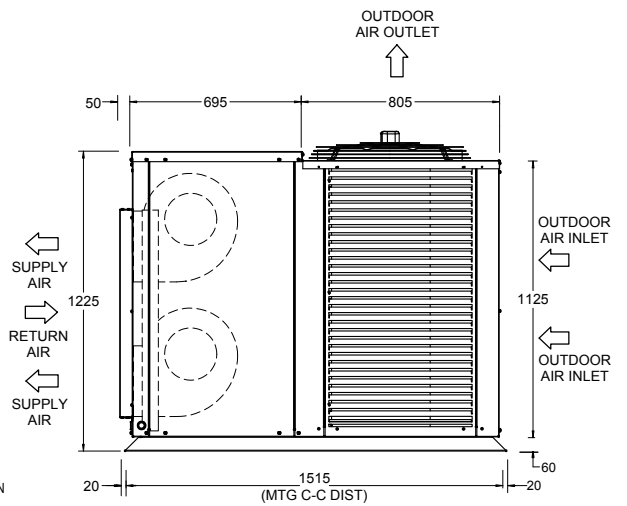
1. All dimensions are in mm unless specified.
2. Do not scale drawing.
3. Additional Full Coil Coat Protection option available on all units.
4. Suggested Service Clearance and Airflow Allowances are based on conditions that the spaces are free from obstructions and walkway passage of 1000mm is available.
5. Minimum service access areas are responsibilities of the installer.



29.50 kW
3 Phase 1 Stage



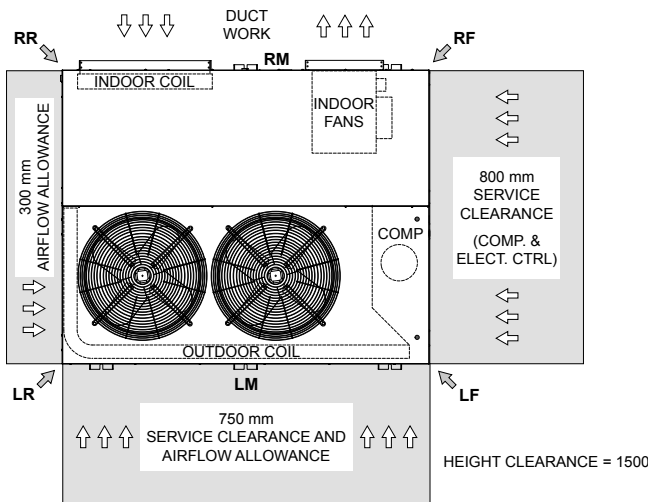
FRONT VIEW



SIDE VIEW

| UNIT MODEL NUMBER | UNIT WEIGHT (kg) | CORNER WEIGHTS (kg) | | | | | |
|-------------------|------------------|---------------------|-------|------|------|------|------|
| | | LF | RF | LR | RR | LM | RM |
| PCG290L | 450 | 120.8 | 126.6 | 67.2 | 53.6 | 37.0 | 44.8 |

MINIMUM SERVICE ACCESS CLEARANCES & AIRFLOW SPACE ALLOWANCES



PLEASE NOTE THAT UNDER ALL CIRCUMSTANCES, CONDENSER AIR MUST NOT RECIRCULATE BACK ONTO CONDENSER COIL. KEEP ALL CLEARANCES FREE OF ANY OBSTRUCTIONS

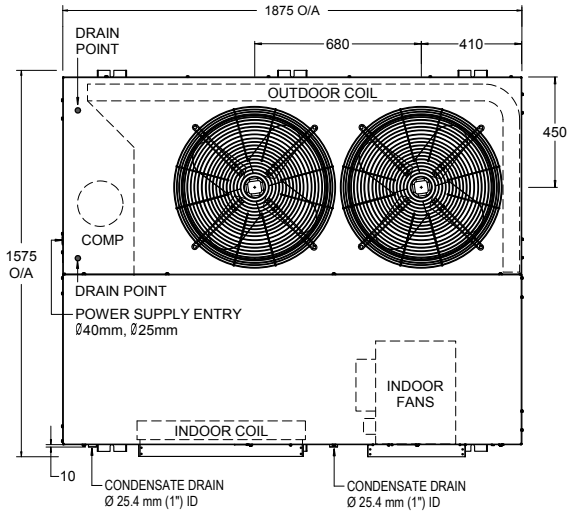
| STACKING OF UNITS | |
|---|--------------------------------------|
| ONE IN FRONT OF THE OTHER (DISTANCE BET. LF & RF) | SIDE BY SIDE (DISTANCE BET. LF & LR) |
| 1000 mm | 1000 mm |



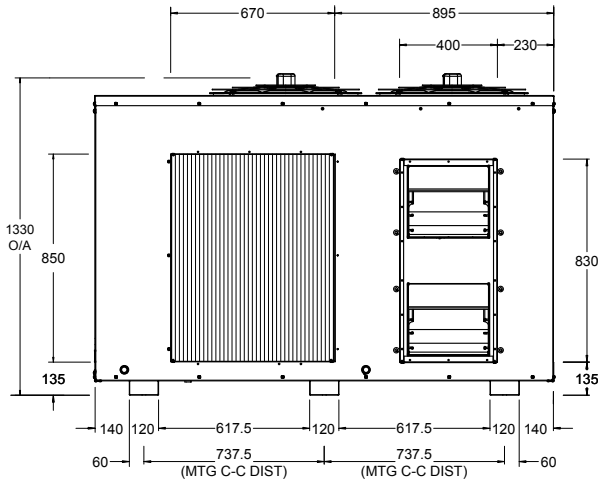
UNIT DIMENSIONS

PCG290R

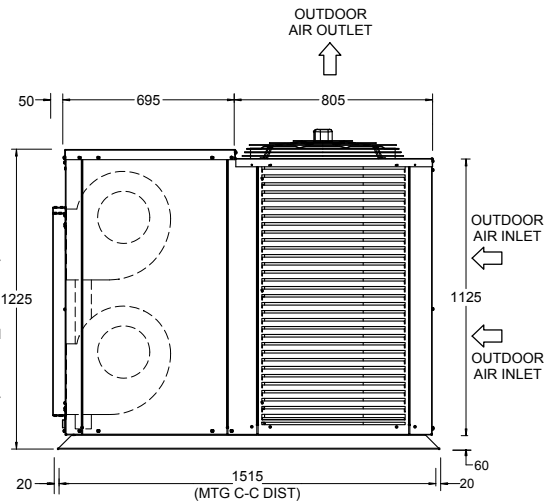
R PACKAGE UNIT - WITH RIGHT HAND AIR SUPPLY OPTION



TOP VIEW



FRONT VIEW

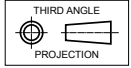


SIDE VIEW

OVERALL NOMINAL DIMENSION (H x W x L)
 = 1330 x 1875 x 1575
 SUPPLY DUCT (H x W) = 830 x 400
 RETURN DUCT (H x W) = 850 x 670
 USE M12 BOLT FOR FEET MOUNTING

NOTES:

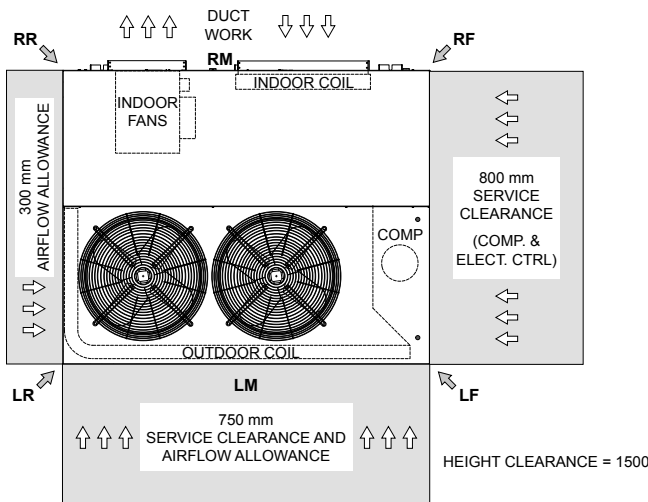
1. All dimensions are in mm unless specified.
2. Do not scale drawing.
3. Additional Full Coil Coat Protection option available on all units.
4. Suggested Service Clearance and Airflow Allowances are based on conditions that the spaces are free from obstructions and walkway passage of 1000mm is available.
5. Minimum service access areas are responsibilities of the installer.



3 Phase
1 Stage
29.50 kW

| UNIT MODEL NUMBER | UNIT WEIGHT (kg) | CORNER WEIGHTS (kg) | | | | | |
|-------------------|------------------|---------------------|------|------|-------|------|------|
| | | LF | RF | LR | RR | LM | RM |
| PCG290R | 450 | 120.8 | 53.6 | 67.2 | 126.6 | 37.0 | 44.8 |

MINIMUM SERVICE ACCESS CLEARANCES & AIRFLOW SPACE ALLOWANCES



PLEASE NOTE THAT UNDER ALL CIRCUMSTANCES, CONDENSER AIR MUST NOT RECIRCULATE BACK ONTO CONDENSER COIL. KEEP ALL CLEARANCES FREE OF ANY OBSTRUCTIONS

| STACKING OF UNITS | |
|---|--------------------------------------|
| ONE IN FRONT OF THE OTHER (DISTANCE BET. LF & RF) | SIDE BY SIDE (DISTANCE BET. LF & LR) |
| 1000 mm | 1000 mm |



Outdoor Radiated

Sound Power Level (SWL)

| Fan Speed | Sound Power Level dB(A) | Octave Band Centre Frequency (Hz), dB | | | | | | |
|-----------|-------------------------|---------------------------------------|------|------|------|------|------|------|
| | | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| Low | 73.9 | 72.1 | 71.9 | 71.5 | 68.5 | 65.1 | 64.1 | 60.6 |
| High | 77.9 | 75.9 | 75.7 | 75.2 | 72.5 | 69.5 | 67.9 | 64.6 |

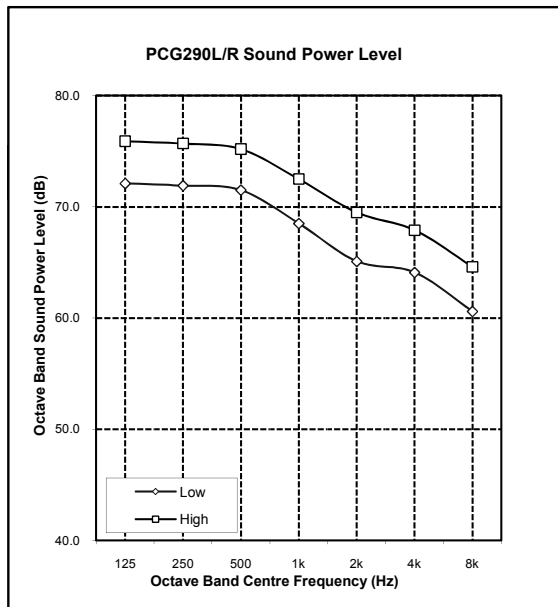
Indoor Outlet

Sound Power Level (SWL)

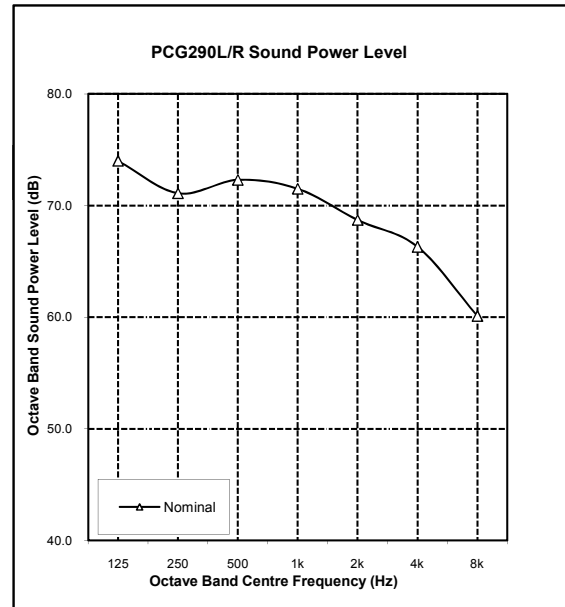
| Airflow Setting | Airflow Li/s | Sound Power Level dB(A) | Octave Band Centre Frequency (Hz), dB | | | | | | |
|-----------------|--------------|-------------------------|---------------------------------------|------|------|------|------|------|------|
| | | | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| Nominal | 1500 | 76.1 | 74.0 | 71.1 | 72.3 | 71.5 | 68.7 | 66.3 | 60.1 |

29.50 kW
3 Phase 1 Stage

OUTDOOR RADIATED



INDOOR OUTLET



NOTES:

1. Radiated sound power levels are based on ISO 3743-2.
2. Outlet sound power levels are based on ISO 13347-2.



SPECIFICATIONS

PCG290L/R

| CONSTRUCTION | |
|-----------------------|---|
| CABINET BASE | 1.9 mm Galvanised Steel |
| CABINET TOP AND SIDES | 0.9 - 1.6 mm Galvanized Steel |
| SURFACE FINISH | 65 microns Baked Polyester Powder Coat |

| INSULATION | |
|------------|---|
| TYPE | 10 mm Foil Faced Polyethylene 20 mm Expanded Polystyrene |

| SOUND LEVEL * dB(A) | |
|--|---------------------------|
| SOUND PRESS. - Low / High | 55.9 / 59.9 @ 3m Distance |
| SOUND POWER LEVEL - Low / High | 72.9 / 76.9 |
| * Sound data are based on outdoor fan's manufacturer sound level data. | |

| ELECTRICAL | |
|--------------------------------|-------------------------------|
| POWER SUPPLY - 50 Hz | 400 Volts x 3 Phase + Neutral |
| VOLTAGE RANGE (min - max) | 380V - 440V |
| FULL LOAD AMPS * - Phase 1 | 30.9 |
| FULL LOAD AMPS * - Phase 2 & 3 | 16.3 & 17.1 |
| RATED LOAD AMPS** | 24.5 |
| APPROX. STARTING AMPS | 111.0 |
| IP RATING | IP44 |

IMPORTANT - The local electricity authority may require limits on starting current and voltage drop, please check prior to purchase.

* Full Load Amps are based on compressor and fan motor's maximum expected current.

** Rated Load Amps are measured and tested in accordance with AS/NZS3823.1.2.

| CABLE SIZE & CIRCUIT BREAKER SIZE | |
|---|--|
| Suggested minimum cable size should be used as a guide only, refer to AS/NZS 3000 "Australian/New Zealand Wiring Rules" for more details. | |
| CABLE SIZE (MAIN LINE) | 6.0mm ² (SUGGESTED MINIMUM) |
| CIRCUIT BREAKER SIZE - AMPS | 32.0 |

| OUTDOOR COIL | |
|---------------------|-------------------------------------|
| TUBE TYPE | Copper - Rifle Bore |
| FIN TYPE | Aluminium - Wave |
| FACE AREA (m sqr) | 2.51 |
| FIN SPACING (per m) | 630 |
| COIL COATING | Blue Epoxy Coat Coil Fin Protection |
| ROWS | --- |

| OUTDOOR FAN | |
|---|--------------------------------------|
| NUMBER OF FANS x TYPE | 2 x Axial |
| NUMBER OF BLADES PER FAN | 4 |
| DIAMETER (mm) | 560 |
| OUTPUT kW | 0.37 |
| MOTOR TYPE / DRIVE TYPE | 6 Pole External Rotor / Direct Drive |
| FAN SPEED CONTROL | 2 Speed via Capacitor |
| The standard type outdoor fans fitted to this unit will accept up to 5Pa of external static resistance. | |

| INDOOR COIL | |
|---------------------|-------------------------------------|
| TUBE TYPE | Copper - Rifle Bore |
| FIN TYPE | Aluminium - Louvre |
| FACE ARE (m sqr) | 0.863 |
| FIN SPACING (per m) | 472 |
| COIL COATING | Blue Epoxy Coat Coil Fin Protection |
| ROWS | --- |

| INDOOR FAN | |
|-------------------------|----------------------------------|
| NUMBER OF FANS x TYPE | 2 x Centrifugal EC Fan |
| DIAMETER / WIDTH (mm) | 270 x 270 |
| OUTPUT kW / INPUT kW | 1.12 / 1.26 |
| MOTOR TYPE / DRIVE TYPE | Variable Speed EC Motor / Direct |

| COMPRESSOR | |
|------------------------|--------------------------------|
| NUMBER PER UNIT x TYPE | 1 x Scroll (Hermetic) |
| FULL LOAD AMPS | 16.7 |
| LOCKED ROTOR AMPS | 111.0 |
| STARTING METHOD | D.O.L. (optional soft starter) |

| REFRIGERATION SYSTEM | |
|------------------------|--------------------------|
| REFRIGERANT TYPE | R-410A |
| EXPANSION CONTROL | Direct Expansion Orifice |
| FACTORY CHARGE (grams) | 10,475 |

| FILTER DRIER | |
|--|-------------------------------------|
| CONNECTION SIZE & TYPE | 15.9 mm (7/8") ODF Soldered Bi-Flow |
| FACTORY SUPPLIED / FITTED | No |
| See Installation Section for complete Filter Drier specifications. | |

| PROTECTION DEVICES | |
|-----------------------------|---------------------------------|
| HIGH PRESSURE CUTOFF SWITCH | Nonadjustable (Automatic Reset) |
| LOW PRESSURE CUTOFF SWITCH | Nonadjustable (Automatic Reset) |
| COMPRESSOR MOTOR TEMP. | Internal Thermal Cut-Out |
| INDOOR FAN OVERLOAD | Internal Thermal Cut-Out |
| OUTDOOR FAN OVERLOAD | Internal Thermal Cut-Out |
| SUMP HEATER WATTS | 50.0 W during Comp. Off Cycle |

| ELECTRIC CONTROLS | |
|---------------------------|---------------------------------|
| DEFROST METHOD | Reverse Cycle |
| DEFROST TYPE | Adaptive Demand Defrost |
| CONTROL CIRCUIT BREAKER | 16.0 Amps |
| C7-4 FIELD CONTROL WIRING | 2 Core 14 / 0.20 Screened Cable |

OPERATING RANGE
It is essential that the unit is correctly sized for the application and operates within its recommended range of operating conditions as shown below.

| MODE | RANGE | INDOOR AIR INTAKE TEMPERATURE | OUTDOOR AIR INTAKE TEMPERATURE |
|---------|-------|-------------------------------|--------------------------------|
| | | 30°C DB / 22°C WB | 50°C DB |
| Cooling | Max. | 30°C DB / 22°C WB | 50°C DB |
| | Min. | 20°C DB / 16°C WB | 15°C DB |
| Heating | Max. | 24°C DB | 19.5°C DB / 18°C WB |
| | Min. | 16°C DB | -10°C WB |

IMPORTANT - For low ambient cooling use option S. Lower ambient available on request. Contact your nearest ActronAir office for more details.

| Low Ambient Cooling | Option S | Max. | 29°C DB / 19°C WB | 50°C DB |
|---------------------|------------|------|-------------------|---------|
| | | Min. | 20°C DB / 15°C WB | 5°C DB |
| | On Request | Max. | 29°C DB / 19°C WB | 50°C DB |
| | | Min. | 20°C DB / 15°C WB | -5°C DB |

AIR FILTERS

All return air including fresh air must have adequate filters supplied and fitted by the installing contractor. Filters must be located in accessible location between the return air grille and the unit.

ActronAir® does not supply or make any provisions for return air filter.

3 Phase
1 Stage

29.50 kW



WIRING DIAGRAM

PCG290L/R

29.50 kW
3 Phase | **1 Stage**

DEFAULT FAN SPEED SETTINGS (@ 100pa)

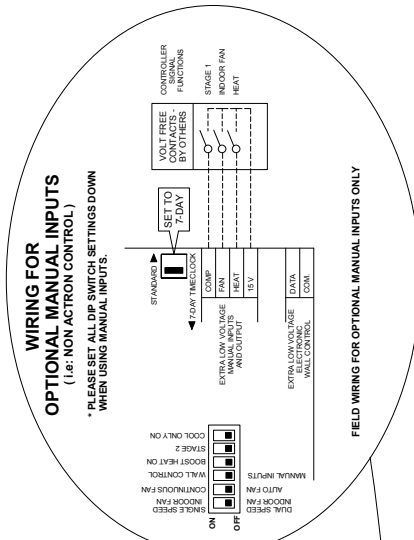
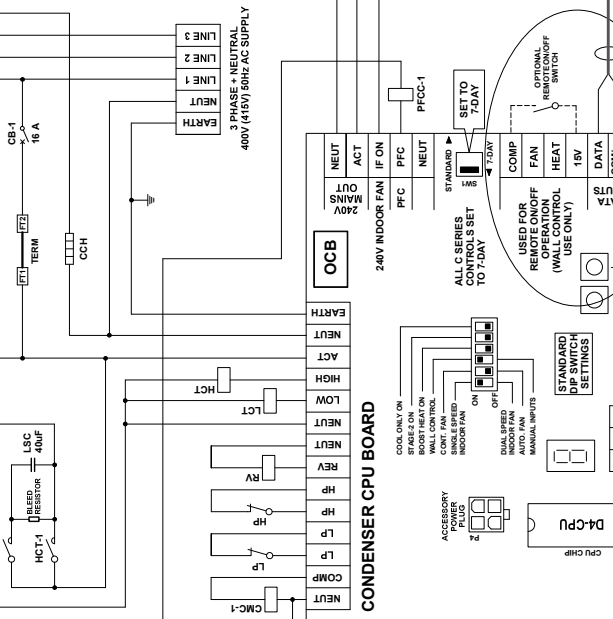
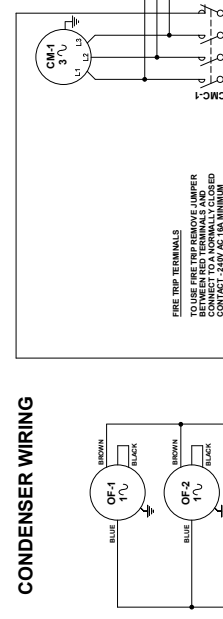
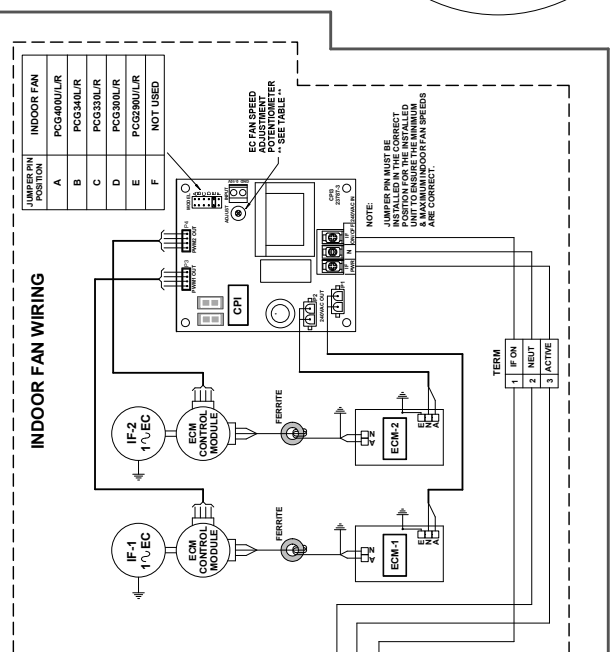
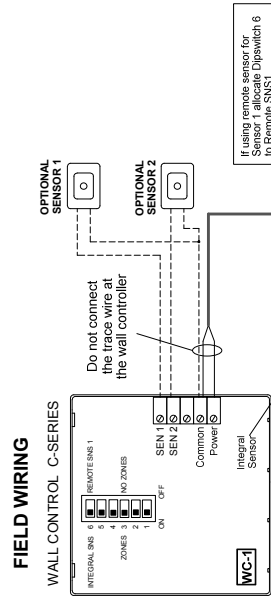
| | |
|-----------|---------|
| PCG290L/R | 61% PWM |
| PCG330L/R | 69% PWM |

FINAL COMMISSIONING FAN SETPOINT

| | |
|-------|-------------------|
| PWM: |% PWM |
| Date: |/...../..... |

LEGEND

| | |
|------|------------------------------------|
| CB | CIRCUIT BREAKER |
| CCH | CRANKCASE HEATER |
| CM | COMPRESSOR MOTOR |
| CMC | COMPRESSOR MOTOR CONTACTOR |
| CPI | INDOOR FAN VARIABLE SPEED BOARD |
| ECM | EC FILTER |
| HCT | HIGH SPEED FAN CONTACTOR |
| HP | HIGH PRESSURE SWITCH |
| IF | INDOOR FAN MOTOR |
| LCT | LOW SPEED FAN CONTACTOR |
| LP | LOW PRESSURE SWITCH |
| LSC | LOW SPEED CAPACITOR |
| OF | OUTDOOR FAN MOTOR |
| OCB | OUTDOOR CONTROL BOARD |
| PFC | POWER FACTOR CORRECTION CAPACITORS |
| PVCC | POWER FACTOR CORRECTION CONTACTOR |
| RV | REVERSING VALVE |
| TERM | MAIN TERMINAL BLOCKS |
| WC | WALL CONTROLLER |



ActronAir

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| | | |
|--------|--------------------------------------|------------|
| Rev. A | Description | ORIGINAL |
| B | CHANGE FAN SETPOINT VOLTAGE TO % PWM | 1992 |
| Rev. | By | PCR |
| | Date | 27-02-2014 |

| | | | |
|----------------|--|-----------------|----------|
| Base Model No: | PCG290U / L / R | Variation Code: | STANDARD |
| Description: | ACT-D4 CONTROL SYSTEM WIRING DIAGRAM WITH C SERIES WALL CONTROL, CPI VARIABLE SPEED INDOOR FAN CONTROL BOARD & PFC | | |
| Approved: | MJH | Drawing No: | WD0750 |
| Date: | 27-02-2014 | Revision: | B |
| | | Size: | A3 |