

PACKAGE UNIT



3 Phase
1 Stage
15.27 kW

UNIT FEATURES

- Compliant Scroll Compressor
- ECM High Efficiency Indoor Fan Motor
- EC Variable Speed Indoor Fan
- Adjustable Dial-Up Indoor Airflow
- Fault Indication - Relay Output
- Two Speed Outdoor Fans
- Blue Epoxy Coat Coil Fin Protection - Indoor & Outdoor Coils
- Louvred Outdoor Coil Guard
- Full Factory Charged with R410A Refrigerant
- Adaptive Demand Defrost

UNIT OPTIONS

- Low Ambient Cooling
- Compressor Soft Starter
- 3-Phase Protection
- Fault Detection Board
- Third Party Control
- Additional Full Coil Coat Protection

CONTROL OPTIONS

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
- 1 Stage Cooling / Heating with 2nd Stage Boost Heat
- Remote Temperature Sensors
- 24-Hour ON/OFF Timer
- Manual Control Inputs
- 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 14.1 EMC Compliance

SPECIFICATION SUMMARY

PACKAGE MODEL	PCG153U
⁽¹⁾⁽²⁾ TOTAL COOLING CAPACITY (kW)	15.27
⁽¹⁾⁽²⁾ TOTAL COOLING SENSIBLE CAPACITY (kW)	12.61
⁽¹⁾⁽³⁾ TOTAL HEATING CAPACITY (kW)	14.45
⁽⁴⁾ COOLING INPUT POWER (kW)	4.43
⁽⁴⁾ HEATING INPUT POWER (kW)	3.95
⁽¹⁾⁽²⁾ EER	3.45
⁽¹⁾⁽³⁾ COP	3.66
⁽⁵⁾ INDOOR AIRFLOW (l/s) - MIN. / NOMINAL / MAX.	690 / 770 / 880
OUTDOOR SOUND PRESS. LEVEL @ 3M dB(A) - LOW / HIGH	51.0 / 53.0
OUTDOOR SOUND POWER LEVEL dB(A) - LOW / HIGH	68.0 / 70.0
POWER SUPPLY	400V / 3Ph+N / 50Hz
⁽⁶⁾ RATED LOAD AMPS	11.3
⁽⁷⁾ FULL LOAD AMPS	16.0
⁽⁸⁾ CIRCUIT BREAKER AND CABLE AMPS	20.0
APPROXIMATE STARTING AMPS	51.5
WEIGHT (kg)	227

- ⁽¹⁾ Total Capacities are based on unit rating excluding indoor fan kW.
- ⁽²⁾ At 27°C DB / 19°C WB entering air temperatures and 35°C ambient.
- ⁽³⁾ At 20°C DB entering air temperature and 7°C DB / 6°C WB ambient.
- ⁽⁴⁾ Input power includes indoor fan kW.
- ⁽⁵⁾ Max. - Min. airflow application range.
- ⁽⁶⁾ Measured and tested in accordance with AS/NZS 3823.1.2.
- ⁽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.



CAPACITY SELECTION DATA

PCG153U

COOLING PERFORMANCE

AIR ENTERING		TOTAL CAPACITY kW	TOTAL SENSIBLE CAPACITY - kW											
OUTDOOR DB - °C	INDOOR WB - °C		AT DB TEMPERATURE ONTO INDOOR COIL - °C											
			20	21	22	23	24	25	26	27	28	29	30	
25	16	15.97	9.67	10.58	11.48	12.36	13.23	13.95						
	17	15.99	8.78	9.65	10.56	11.46	12.36	13.22	14.01					
	18	16.29	7.82	8.75	9.63	10.55	11.45	12.33	13.23	14.05	14.79			
	19	16.70	6.85	7.80	8.75	9.61	10.52	11.42	12.32	13.21	14.05	14.83	15.51	
	20	17.07	5.85	6.82	7.77	8.72	9.58	10.49	11.39	12.30	13.19	14.04	14.85	
	21	17.56		5.83	6.78	7.75	8.68	9.54	10.47	11.36	12.25	13.16	14.02	
	22	18.00			5.81	6.75	7.71	8.65	9.58	10.42	11.32	12.23	13.12	
30	16	15.42	9.40	10.30	11.20	12.08	12.91	13.55						
	17	15.39	8.51	9.38	10.30	11.20	12.08	12.93	13.70					
	18	15.67	7.57	8.50	9.36	10.28	11.17	12.06	12.93	13.76	14.39			
	19	15.99	6.60	7.55	8.48	9.35	10.26	11.16	12.05	12.92	13.76	14.51		
	20	16.39	5.62	6.58	7.53	8.46	9.33	10.24	11.14	12.03	12.91	13.77	14.56	
	21	16.86		5.58	6.54	7.49	8.44	9.31	10.20	11.11	12.02	12.88	13.74	
	22	17.28			5.55	6.51	7.46	8.40	9.26	10.17	11.08	11.97	12.85	
35	16	14.82	9.11	10.02	10.91	11.77	12.55							
	17	14.84	8.23	9.10	10.01	10.90	11.77	12.60	13.31					
	18	15.01	7.29	8.21	9.08	9.99	10.88	11.76	12.62	13.42				
	19	15.27	6.32	7.27	8.21	9.06	9.98	10.88	11.76	12.61	13.44	14.34		
	20	15.67	5.35	6.30	7.25	8.19	9.04	9.95	10.85	11.73	12.60	13.45	14.22	
	21	16.06		5.33	6.28	7.23	8.15	9.03	9.91	10.82	11.70	12.58	13.44	
	22	16.45			5.30	6.25	7.19	8.13	8.99	9.88	10.78	11.68	12.56	
40	16	14.09	8.77	9.68	10.55	11.39	12.09							
	17	14.11	7.86	8.77	9.67	10.55	11.42	12.19						
	18	14.20	6.97	7.90	8.75	9.67	10.55	11.40	12.23	12.92				
	19	14.43	6.01	6.96	7.95	8.73	9.64	10.54	11.40	12.25	13.02			
	20	14.77	5.04	6.00	6.94	7.86	8.72	9.62	10.51	11.39	12.24	13.05	13.73	
	21	15.13		5.02	5.97	6.92	7.84	8.70	9.59	10.49	11.37	12.22	13.07	
	22	15.51			5.00	5.95	6.88	7.81	8.67	9.55	10.46	11.34	12.22	
45	16	13.31	8.40	9.32	10.18	10.98								
	17	13.33	7.51	8.41	9.30	10.18	11.01	11.69						
	18	13.35	6.63	7.50	8.39	9.29	10.18	11.01	11.80					
	19	13.53	5.68	6.61	7.48	8.39	9.28	10.16	11.02	11.84	12.47			
	20	13.82	4.71	5.66	6.60	7.52	8.37	9.25	10.14	11.01	11.85	12.60		
	21	14.16		4.70	5.64	6.58	7.50	8.35	9.24	10.12	11.01	11.85	12.64	
	22	14.55			4.67	5.61	6.56	7.47	8.33	9.22	10.10	10.97	11.82	
50	16	12.45	8.01	8.93	9.75	10.43								
	17	12.46	7.12	8.01	8.92	9.76	10.54							
	18	12.48	6.26	7.12	8.00	8.90	9.77	10.58						
	19	12.56	5.32	6.24	7.11	8.00	8.88	9.77	10.59	11.33				
	20	12.80	4.36	5.30	6.23	7.10	7.99	8.86	9.74	10.60	11.39			
	21	13.11		4.34	5.29	6.22	7.12	7.97	8.84	9.73	10.60	11.40	12.12	
	22	13.45			4.31	5.26	6.19	7.10	7.95	8.83	9.71	10.57	11.40	

HEATING PERFORMANCE

WB TEMP ON OD COIL - °C	HEATING CAPACITY - kW									
	AT DB ENTERING INDOOR - °C									
	16		18		20		22		24	
	TH	IH	TH	IH	TH	IH	TH	IH	TH	IH
-10	9.06	8.52	9.02	8.48	8.98	8.44	8.93	8.40	8.89	8.36
-8	9.68	9.00	9.63	8.95	9.57	8.90	9.52	8.85	9.47	8.81
-6	10.31	9.48	10.24	9.42	10.19	9.37	10.16	9.35	10.11	9.30
-4	10.97	9.82	10.89	9.75	10.87	9.73	10.80	9.67	10.74	9.61
-2	11.71	10.18	11.63	10.12	11.55	10.05	11.47	9.98	11.41	9.92
0	12.41	10.68	12.32	10.60	12.27	10.55	12.18	10.47	12.10	10.41
2	13.12	11.68	13.02	11.58	12.91	11.49	12.82	11.41	12.73	11.33
4	13.89	13.20	13.75	13.06	13.67	12.99	13.58	12.90	13.47	12.80
6	14.70	14.70	14.57	14.57	14.45	14.45	14.34	14.34	14.25	14.25
8	15.54	15.54	15.40	15.40	15.27	15.27	15.15	15.15	15.03	15.03
10	16.41	16.41	16.26	16.26	16.12	16.12	15.99	15.99	15.86	15.86
12	17.31	17.31	17.15	17.15	16.99	16.99	16.84	16.84	16.69	16.69
14	18.24	18.24	18.07	18.07	17.90	17.90	17.73	17.73	17.57	17.57
16	19.21	19.21	19.01	19.01	18.83	18.83	18.64	18.64	18.46	18.46
18	20.20	20.20	19.99	19.99	19.78	19.78	19.57	19.57	19.38	19.38

TH - Total Heating Capacity (kW).
 IH - Integrated Heating Capacity (kW)
 Includes defrost losses.

AIRFLOW CORRECTION MULTIPLIER

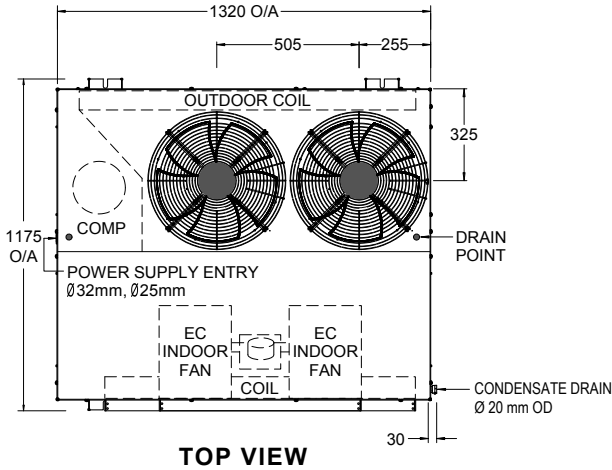
% VARIATION	-10.39%	-10%	-5%	NOMINAL	5%	10%	14.29%
INDOOR AIRFLOW (l/s)	690	693	732	770	809	847	880
TOTAL COOLING	0.983	0.985	0.994	1.000	1.008	1.014	1.020
SENSIBLE COOLING	0.939	0.941	0.971	1.000	1.030	1.057	1.081
HEATING FACTOR	0.995	0.995	0.998	1.000	1.002	1.004	1.006

NOTES:

- No allowance has been made for the effect of indoor fan motor.
- Selection tables are based on nominal airflows. Correction factors must be applied for selection away from these conditions.

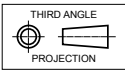


U PACKAGE UNIT - STANDARD MODEL

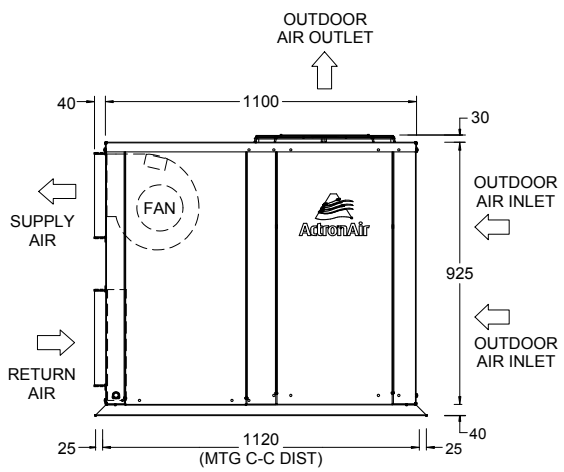
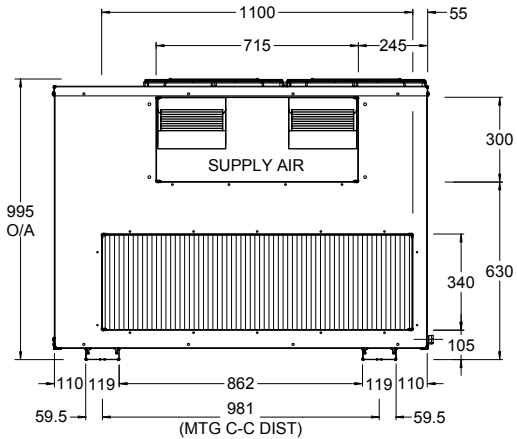


OVERALL NOMINAL DIMENSION (H x W x L)
 = 995 x 1320 x 1175
 SUPPLY DUCT (H x W) = 300 x 715
 RETURN DUCT (H x W) = 340 x 1100
 USE M12 BOLT FOR FEET MOUNTING

- 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
 15.27 kW



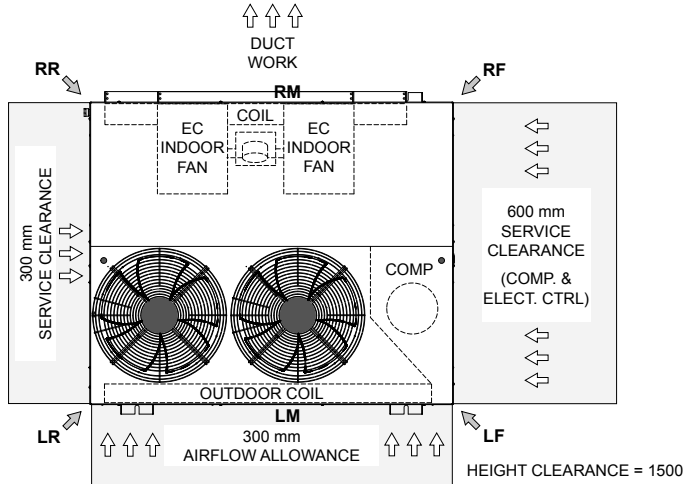
TOP VIEW

FRONT VIEW

SIDE VIEW

UNIT MODEL NUMBER	UNIT WEIGHT (kg)	CORNER WEIGHTS (kg)					
		LF	RF	LR	RR	LM	RM
PCG153U	227	70.4	65.5	48.4	42.7	N/A	N/A

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. LR & RR)
1000 mm	1000 mm



15.27 kW
3 Phase 1 Stage

AIRFLOW (l/s)	EXTERNAL STATIC PRESSURE (Pa)													
	50		75		100		125		150		175		200	
	% PWM	W	% PWM	W	% PWM	W	% PWM	W	% PWM	W	% PWM	W	% PWM	W
690	64	298	69	341	71	360	77	421	81	467	86	515	90	559
700	65	301	70	344	74	384	78	425	82	472	87	519	91	562
725	69	325	73	365	77	409	81	453	86	499	90	547	96	591
750	72	345	76	389	81	437	85	481	90	530	95	579		
770	74	370	79	411	84	468	88	516	93	560	98	609		
775	75	374	80	417	85	471	89	518	94	564				
800	79	398	84	443	89	495	94	546	98	596				
825	83	426	88	475	93	525	98	582						
850	87	455	92	510	97	566								
875	92	500	97	556										
880	93	507	98	564										

MOTOR / BLOWER LIMIT

NOTES:

W = Indoor Fan Power, Watts

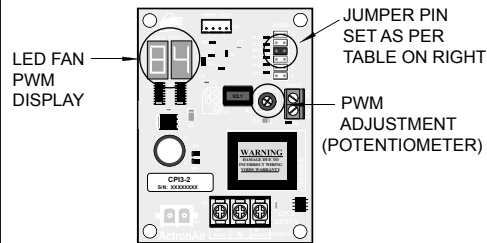
PWM = Pulse Width Modulation Setting, % PWM

(Adjustable through CPI3-2 Board located in electrical panel).

Factory PWM Setting = 84 % PWM for 100 Pa.

84 - Data in the box indicates Factory Default Setting.

(CPI3-2) RESIDENTIAL PWM INTERFACE BOARD



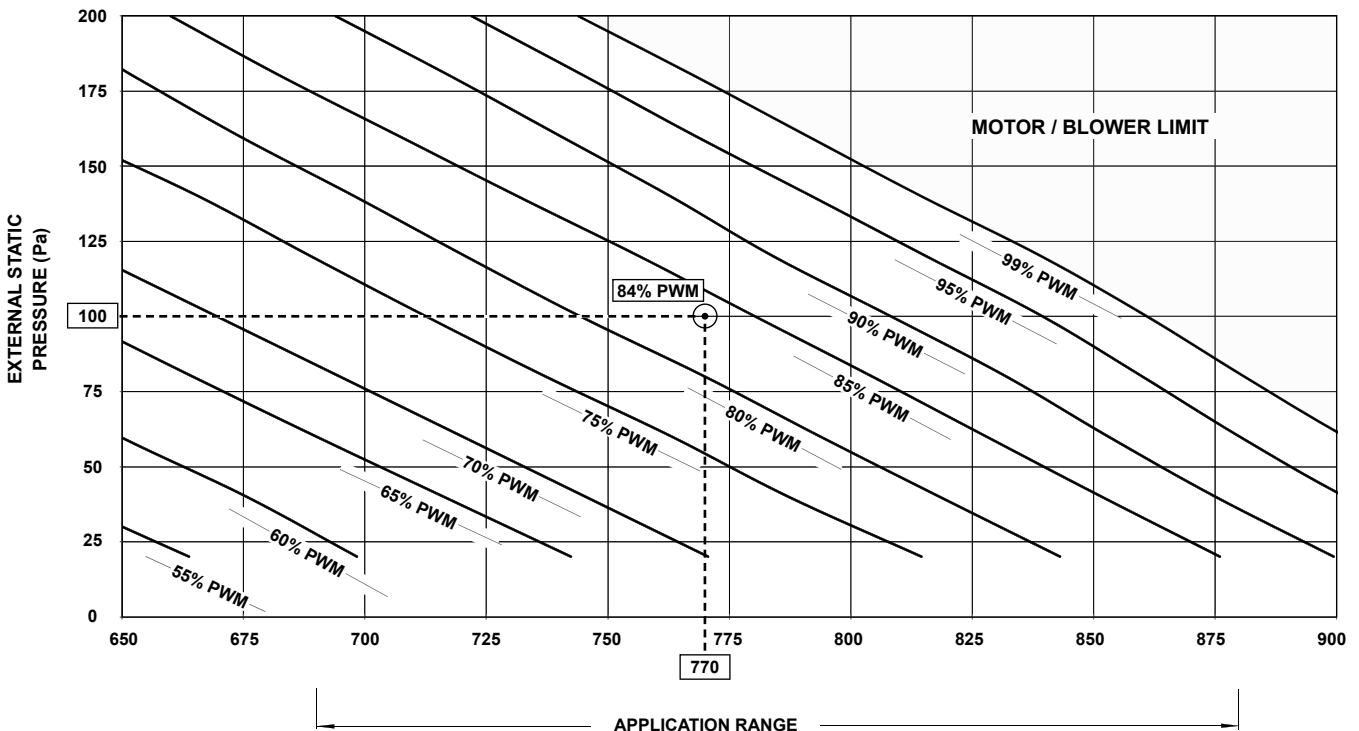
JUMPER PIN POSITION	INDOOR FAN
A	NOT USED
B	NOT USED
C	PCG153U
D	PCG173U
E	PCG203U
F	NOT USED

NOTES:

• LED will show PWM without %.

Example: 84% PWM = 84 in LED.

• LED adjustments are in 1 digit increments.



Nominal Airflow = 770 l/s

AIRFLOW (l/s)



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	68.0	70.3	69.7	65.1	61.9	60.0	53.9	48.2
High	70.0	71.6	71.2	67.1	63.9	62.4	55.6	49.0

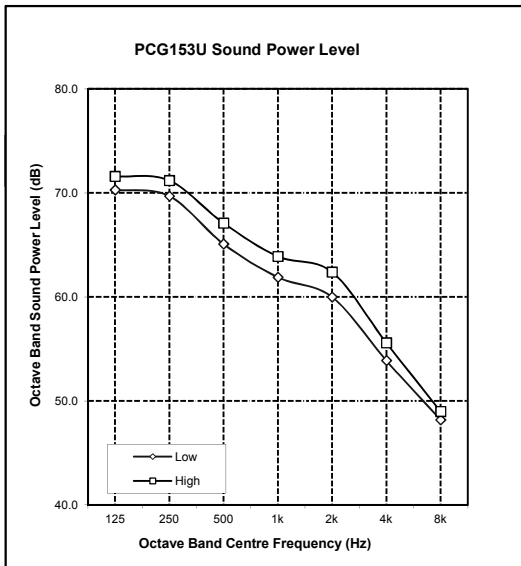
Indoor Outlet

Sound Power Level (SWL)

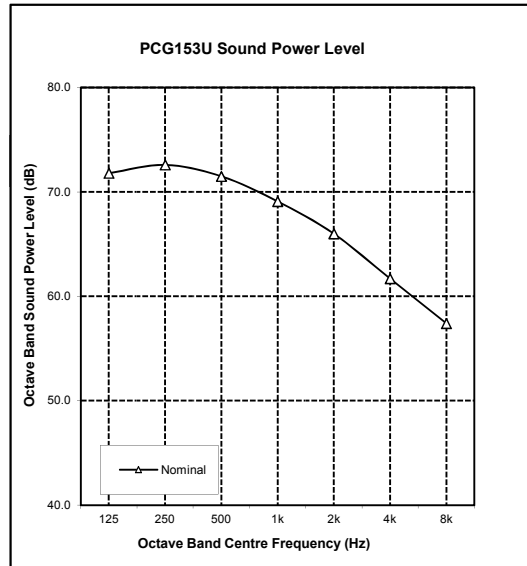
Airflow Setting	Airflow Li/s	Sound Power Level dB(A)	Octave Band Centre Frequency (Hz), dB						
			125	250	500	1k	2k	4k	8k
Nominal	770	74.0	71.8	72.6	71.5	69.1	66.0	61.7	57.4

3 Phase
1 Stage
15.27 kW

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

PCG153U

15.27 kW
3 Phase 1 Stage

CONSTRUCTION	
CABINET BASE	1.2 mm Galvanized Steel
CABINET TOP AND SIDES	0.9 - 1.2 mm ZA & Galv. Steel
SURFACE FINISH	65 µ Baked Polyester Powder Coat

INSULATION (Indoor Unit)	
TYPE	10 mm Foil Faced Polyethylene 12 mm Expanded Polystyrene

ELECTRICAL	
VOLTAGE	400 Volts
FREQUENCY	50 Hz
No. OF PHASES	3 Phase + N
MINIMUM VOLTAGE	380 V
MAXIMUM VOLTAGE	440 V
FULL LOAD AMPS PHASE - 1*	16.0
FULL LOAD AMPS PHASE - 2 & 3*	10.6
RATED LOAD AMPS**	11.3
APPROX. STARTING AMPS	51.5
IP RATING	IP 44

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)	2.5 mm ² (SUGGESTED MINIMUM)
CIRCUIT BREAKER SIZE	20.0 Amps

OUTDOOR COIL	
TUBE TYPE	Copper - Rifle Bore
FIN TYPE	Aluminium - Wave
FACE AREA (m sqr)	1.10
FIN SPACING (per m)	709
COIL COATING	Blue Epoxy Coat Coil Fin Protection
ROWS	---

OUTDOOR FAN	
NUMBER OF FANS x TYPE	2 x Axial
NUMBER OF BLADES PER FAN	5
DIAMETER (mm)	450
OUTPUT kW	0.145
MOTOR TYPE / DRIVE TYPE	6 Pole External Rotor / Direct
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)	0.41
FIN SPACING (per m)	590
COIL COATING	Blue Epoxy Coat Coil Fin Protection
ROWS	---

INDOOR FAN	
NUMBER OF FANS x TYPE	1 x Twin Deck Centrifugal EC Fan
DIAMETER / WIDTH (mm)	240 x 180
OUTPUT kW	0.373
MOTOR TYPE / DRIVE TYPE	Variable Speed EC Motor / Direct

COMPRESSOR	
NUMBER PER UNIT x TYPE	1 x Scroll (Hermetic)
FULL LOAD AMPS	10.0
LOCKED ROTOR AMPS	51.5
STARTING METHOD	D.O.L. (optional soft starter)

REFRIGERATION SYSTEM	
REFRIGERANT TYPE	R-410A
EXPANSION CONTROL	Direct Expansion Orifice
FACTORY CHARGE (grams)	4,050

FILTER DRIER	
CONNECTION SIZE & TYPE	9.52 mm (3/8") ODF Soldered Bi-Flow
FACTORY SUPPLIED / FITTED	No
See Installation Section Section for complete Filter Drier specifications.	

PROTECTION DEVICES	
HIGH PRESSURE CUTOOUT SWITCH	Nonadjustable (Automatic Reset)
LOW PRESSURE CUTOOUT 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 *	30 (if fitted)
*Crankcase Heater is an optional Kit & needs to be ordered separately if required.	

ELECTRIC CONTROLS	
DEFROST METHOD	Reverse Cycle
DEFROST TYPE	Adaptive Demand Defrost
CONTROL CIRCUIT BREAKER	10.0 Amps
CONTROL FIELD 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	
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.	



LEGEND

CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CM	COMPRESSOR MOTOR
CMC	COMPRESSOR MOTOR CONTACTOR
CPI	INDOOR FAN VARIABLE SPEED BOARD
EMC	EC FILTER
HP	HIGH PRESSURE SWITCH
IF	INDOOR FAN MOTOR
LP	LOW PRESSURE SWITCH
LSC	LOW SPEED CAPACITOR
OF	OUTDOOR FAN MOTOR
OCB	OUTDOOR CONTROL BOARD
OFRC	OUTDOOR FAN RUN CAPACITOR
RV	REVERSING VALVE
WC	WALL CONTROLLER

FINAL COMMISSIONING FAN SETPOINT	
PWM % PWM
Date:/...../.....

If using remote sensor for Sensor 1 allocate Dipswitch 6 to Remote SNS1.
If using Onboard sensor only allocate Dipswitch 6 to integral SNS.

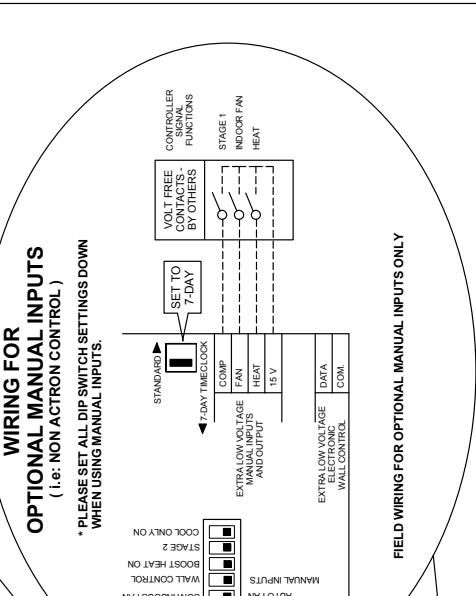
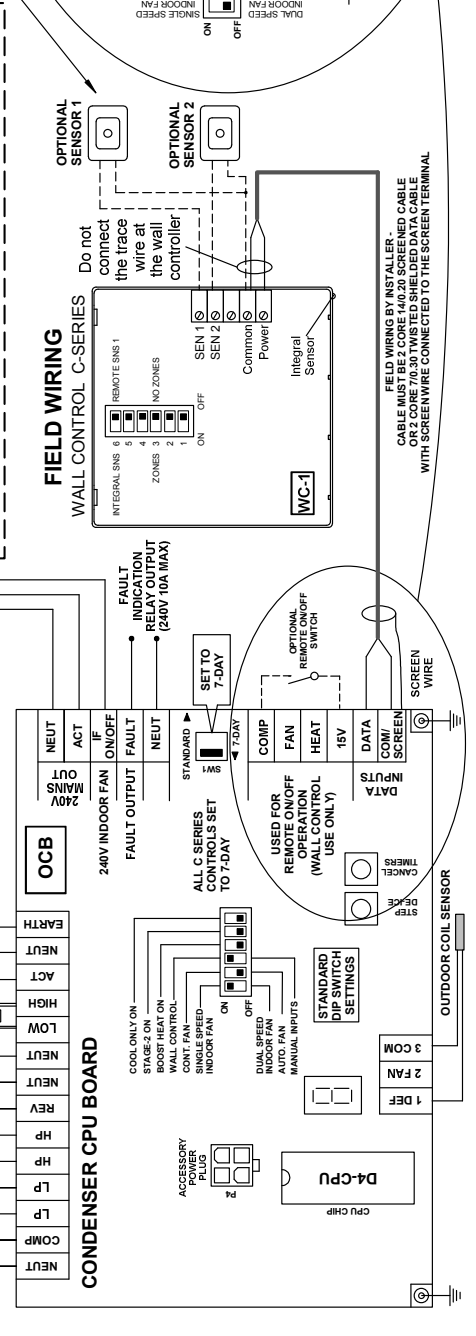
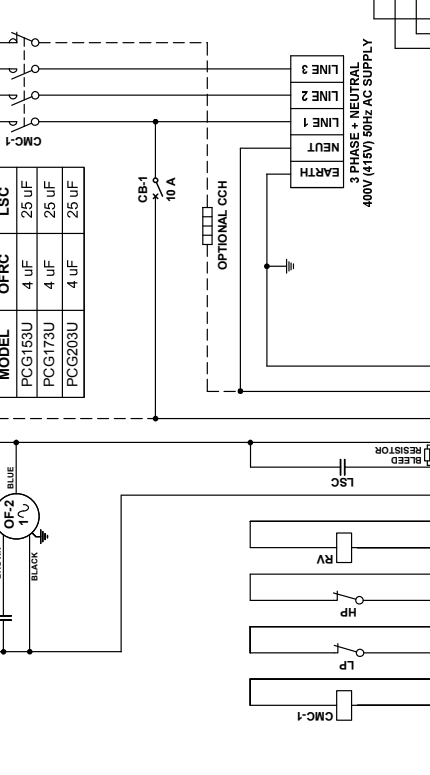
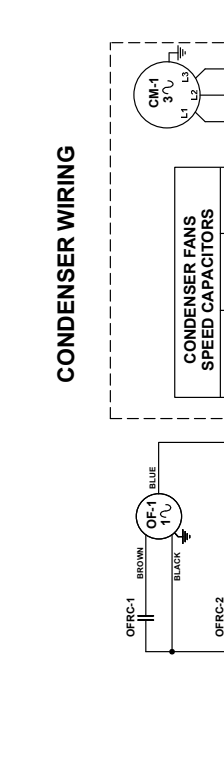
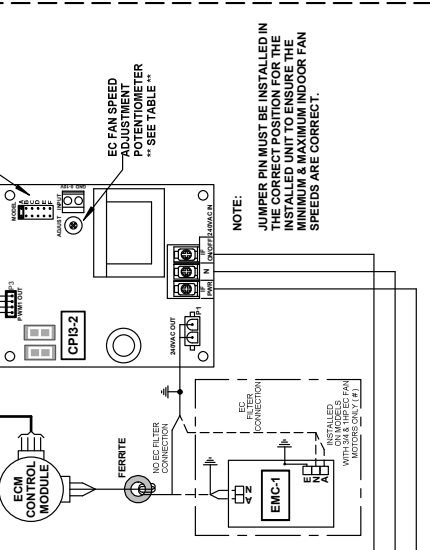
If using Onboard and remote sensor, allocate Dipswitch 6 to integral SNS and wire in optional sensor to SEN 2 and Common.

If using 2 Remote sensors, allocate Dipswitch 6 to Remote SNS 1.

PCB JUMPER PIN POSITION TABLES

- MODEL HAS EC FILTER FITTED
JUMPER PIN POSITION INDOOR FAN SPEED SETTINGS (@ 100rpm)

POSITION	DEFAULT FAN SPEED	NOT USED
A	NOT USED	NOT USED
B	NOT USED	NOT USED
C	PCG153U	B4
D	PCG173U	B8
E	PCG203U	#
F	NOT USED	NOT USED



Base Model No: PCG153/173/203U		Variation Code: STANDARD
Description: D4 CONTROL SYSTEM WITH C7 SERIES WALL CONTROL WIRING DIAGRAM		
Drawn: RL	Date: 05-12-2011	Drawing No: WD0790
Approved: MJH	Date: 18-02-2014	Revision: B
Size: A4		

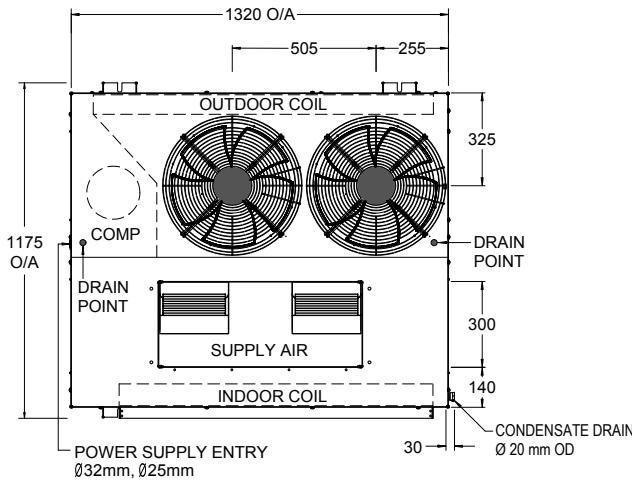


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3 Phase 1 Stage
15.27 kW

V PACKAGE UNIT - WITH FAN COIL VERTICAL DISCHARGE

15.27 kW
3 Phase 1 Stage

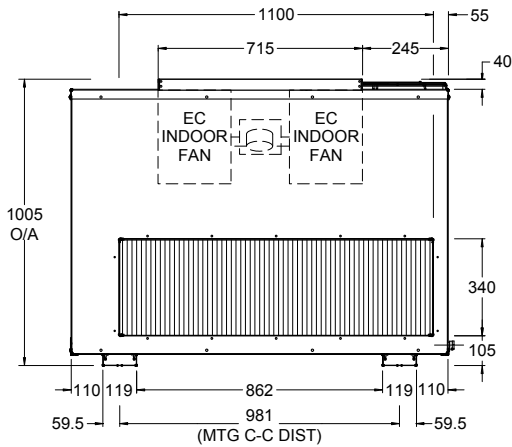
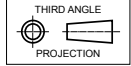


TOP VIEW

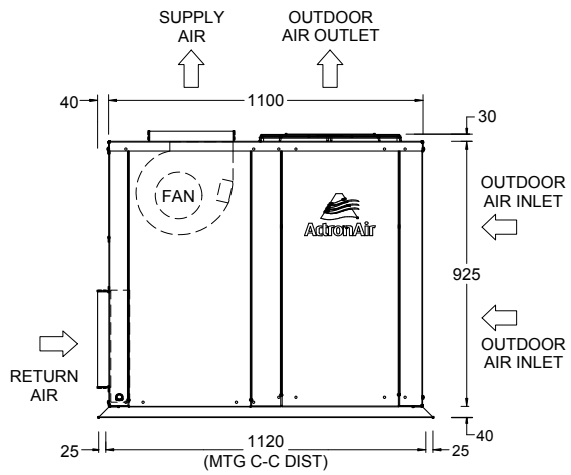
OVERALL NOMINAL DIMENSION (H x W x L)
= 1005 x 1320 x 1175
SUPPLY DUCT (H x W) = 300 x 715
RETURN DUCT (H x W) = 340 x 1100
USE M12 BOLT FOR FEET MOUNTING

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.

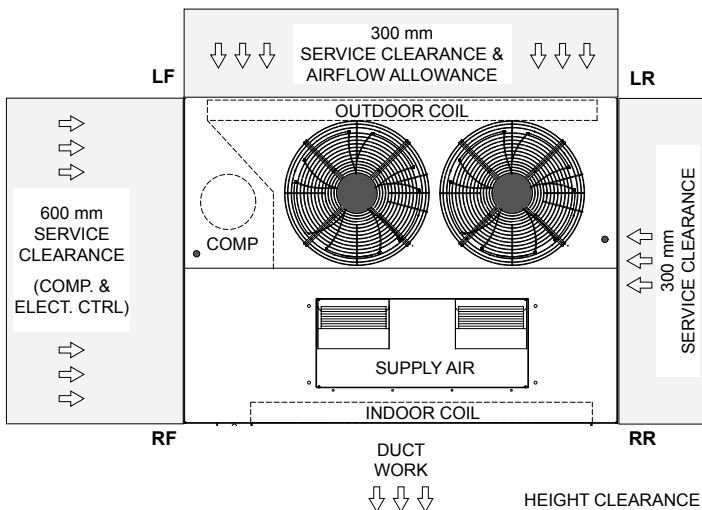


FRONT VIEW



SIDE VIEW

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	800 mm

