

# PACKAGE UNIT



## UNIT FEATURES

- Compliant Digital Scroll Compressor
- Pre-charged with R-410A Refrigerant
- Multiple Speed Outdoor Fans
- 40-100% variable refrigeration capacity
- Electronic expansion valves
- Low ambient cooling operation to +5 deg
- Phase Protection
- Hydrophilic Blue Coat Coil Fin Protection - Indoor and Outdoor Coils
- Removable Louvred Outdoor Coil Guard
- Adaptive Demand Defrost
- EC Variable Speed Indoor Fan + Reduce Fan Airflow Feature
- Adjustable Indoor Airflow
- Foil Faced Polyethylene Insulation - Indoor unit

## UNIT OPTIONS

- Compressor Soft Starters
- Additional Full Coil Coat Protection

## CONTROL OPTIONS AND FEATURES

### ActronAir LC7-2 (BCA Compliant)

- Available in White or Grey
- 7-day Programmable Controller with 2 Events per Day
- 24-hour ON/OFF Timer
- Temperature Setback
- After Hours Time
- Auto / Cool / Heat / Fan Only / Night Modes Functions
- Auto / Continuous Indoor Fan Operation
- Optional 2nd and 3rd Controllers with Mimic Logic
- On-Board Temperature Sensor

### ActronAir Neo

- 7" Colour Touch Screen Master Controller
- In-built Wi-Fi and Blue-Tooth
- Neo Connect App
- On-Board Temperature, Humidity and Proximity Sensor
- Optional wireless Zone Sensor
- Available in White or Black

### ActronAir Group Control

### ActronAir BMS ICUNO (Modbus 485)

## THIRD PARTY CONTROL

- Manual Control Inputs (Heat, Cool and Fan Operation)
- Analogue Input (Fan and Cool Operation)

ActronAir is constantly seeking ways to improve the design of its products, therefore specifications are subject to change without notice. Please check prior to purchase. Copyright © 2019 Actron Engineering Pty. Ltd.

## SPECIFICATION SUMMARY

PACKAGE UNIT MODEL		PKV290T-T	
		(1) TOTAL	(2) NETT
(3) COOLING CAPACITY (kW)	MINIMUM	12.28	11.96
	RATED	30.40	29.6
(4) HEATING CAPACITY (kW)	MINIMUM	11.84	12.18
	RATED	29.00	29.80
(5) SENSIBLE CAPACITY (kW)		25.96	25.16
(6) COOLING INPUT POWER (kW)		8.63	
(6) HEATING INPUT POWER (kW)		7.91	
EER	RATED	3.43	
COP	RATED	3.77	
(6) INDOOR AIRFLOW (l/s) - MIN. / NOMINAL / MAX.		1200 / 1500 / 1800	
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		15.2	
(7) FULL LOAD AMPS		25.0	
(8) CIRCUIT BREAKER AMPS		32.0	
APPROXIMATE STARTING AMPS		128.0	
WEIGHT (kg)		400	

(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 circuit breaker size details.

**Note:** Use input power to estimate running cost.

# CAPACITY SELECTION DATA

# PKV290T-T

## COOLING PERFORMANCE

AIR ENTERING			TOTAL SENSIBLE CAPACITY - kW												
OUTDOOR DB - °C	INDOOR WB - °C	TOTAL CAPACITY kW	AT DB TEMPERATURE ONTO INDOOR COIL - °C												
			20	21	22	23	24	25	26	27	28	29	30		
25	16	31.81	19.81	21.71	23.59	25.45	27.27	28.77							
	17	32.11	17.94	19.77	21.68	23.57	25.44	27.25	28.89						
	18	32.47	15.95	17.89	19.73	21.65	23.54	25.38	27.27	28.99	30.53				
	19	33.28	13.91	15.90	17.88	19.68	21.59	23.48	25.36	27.23	28.98	30.61	32.05		
	20	34.04	11.83	13.85	15.84	17.82	19.63	21.53	23.41	25.31	27.17	28.97	30.66		
	21	35.02		11.77	13.76	15.79	17.73	19.54	21.49	23.35	25.21	27.11	28.92		
22	35.92			11.73	13.70	15.71	17.68	19.62	21.39	23.27	25.17	27.03			
30	16	30.70	19.26	21.14	23.03	24.86	26.59	27.93							
	17	30.97	17.39	19.22	21.14	23.01	24.85	26.63	28.25						
	18	31.22	15.41	17.37	19.16	21.08	22.96	24.82	26.65	28.37	29.69				
	19	31.87	13.39	15.38	17.33	19.15	21.05	22.94	24.79	26.61	28.38	29.95			
	20	32.66	11.34	13.34	15.34	17.28	19.10	21.01	22.89	24.74	26.59	28.39	30.04		
	21	33.61		11.26	13.26	15.26	17.23	19.05	20.93	22.83	24.72	26.54	28.33		
22	34.45			11.20	13.19	15.19	17.15	18.96	20.85	22.76	24.64	26.47			
35	16	29.50	18.64	20.54	22.41	24.21	25.85								
	17	29.61	16.79	18.63	20.52	22.38	24.21	25.94	27.44						
	18	29.88	14.84	16.76	18.58	20.49	22.35	24.18	25.99	27.66					
	19	30.40	12.81	14.79	16.76	18.54	20.45	22.34	24.18	25.96	27.70	29.59			
	20	31.22	10.77	12.76	14.75	16.71	18.51	20.39	22.28	24.13	25.94	27.73	29.34		
	21	32.00		10.73	12.72	14.71	16.63	18.47	20.32	22.23	24.06	25.91	27.70		
22	32.79			10.67	12.65	14.62	16.60	18.38	20.26	22.14	24.01	25.87			
40	16	28.04	17.93	19.85	21.67	23.42	24.89								
	17	28.06	16.02	17.92	19.82	21.65	23.48	25.10							
	18	28.25	14.17	16.11	17.89	19.80	21.66	23.44	25.18	26.63					
	19	28.71	12.15	14.13	16.22	17.85	19.75	21.64	23.43	25.22	26.83				
	20	29.39	10.12	12.13	14.11	16.03	17.82	19.71	21.58	23.41	25.19	26.90	28.31		
	21	30.13		10.09	12.07	14.05	15.98	17.78	19.64	21.53	23.38	25.15	26.92		
22	30.89			10.03	12.02	13.98	15.93	17.73	19.57	21.46	23.30	25.14			
45	16	26.46	17.16	19.08	20.87	22.55									
	17	26.49	15.29	17.17	19.04	20.88	22.62	24.04							
	18	26.68	13.45	15.28	17.14	19.02	20.88	22.63	24.27						
	19	26.89	11.47	13.40	15.23	17.13	19.00	20.85	22.64	24.35	25.68				
	20	27.49	9.44	11.42	13.39	15.30	17.09	18.94	20.81	22.62	24.37	25.96			
	21	28.17		9.40	11.39	13.34	15.27	17.05	18.90	20.75	22.62	24.38	26.03		
22	28.96			9.35	11.32	13.31	15.21	17.00	18.87	20.71	22.54	24.31			
50	16	24.72	16.35	18.26	19.97	21.40									
	17	24.75	14.48	16.34	18.23	20.00	21.63								
	18	24.86	12.68	14.48	16.33	18.20	20.02	21.73							
	19	24.94	10.70	12.64	14.46	16.33	18.17	20.02	21.75	23.30					
	20	25.43	8.71	10.66	12.61	14.44	16.29	18.13	19.96	21.76	23.41				
	21	26.05		8.65	10.64	12.59	14.48	16.25	18.08	19.95	21.77	23.45	24.94		
22	26.73			8.60	10.58	12.54	14.44	16.21	18.06	19.90	21.70	23.44			

## HEATING PERFORMANCE

WB TEMP ON OD COIL - °C	TOTAL HEATING CAPACITY - kW									
	AT DB ENTERING INDOOR - °C									
	16		18		20		22		24	
	TH	IH	TH	IH	TH	IH	TH	IH	TH	IH
-10	19.38	18.61	19.29	18.52	19.19	18.42	19.11	18.34	19.01	18.25
-8	20.45	19.43	20.35	19.33	20.23	19.22	20.13	19.12	20.02	19.02
-6	21.58	20.29	21.45	20.17	21.33	20.05	21.20	19.93	21.06	19.80
-4	22.79	20.97	22.64	20.83	22.49	20.69	22.35	20.56	22.20	20.42
-2	24.04	21.39	23.87	21.25	23.71	21.10	23.54	20.95	23.37	20.80
0	25.38	22.34	25.21	22.18	25.02	22.02	24.84	21.86	24.65	21.69
2	26.67	24.27	26.48	24.09	26.27	23.90	26.06	23.71	25.85	23.52
4	28.06	28.06	27.83	27.83	27.60	27.60	27.37	27.37	27.13	27.13
6	29.49	29.49	29.24	29.24	29.00	29.00	28.83	28.83	28.56	28.56
8	31.05	31.05	30.86	30.86	30.59	30.59	30.31	30.31	30.02	30.02
10	32.77	32.77	32.48	32.48	32.17	32.17	31.87	31.87	31.56	31.56
12	34.48	34.48	34.15	34.15	33.83	33.83	33.49	33.49	33.15	33.15
14	36.27	36.27	35.91	35.91	35.53	35.53	35.17	35.17	34.80	34.80
16	38.09	38.09	37.71	37.71	37.31	37.31	36.91	36.91	36.52	36.52
18	40.00	40.00	39.58	39.58	39.16	39.16	38.74	38.74	38.29	38.29

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

## AIRFLOW CORRECTION MULTIPLIER

% VARIATION	-20%	-15%	-10%	-5%	NOMINAL	+5%	+10%	+15%	+20%
INDOOR AIRFLOW (l/s)	1200	1275	1350	1425	1500	1575	1650	1725	1800
TOTAL COOLING	0.962	0.973	0.982	0.999	1.000	1.008	1.015	1.023	1.029
SENSIBLE COOLING	1.184	0.922	0.948	0.973	1.000	1.025	1.050	1.074	1.097
HEATING FACTOR	0.988	0.991	0.995	0.998	1.000	1.002	1.005	1.007	1.009

### 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.



## APPLICATION RANGE (COMPRESSOR ON)

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
1200	33	333	38	452	42	557	46	668	50	787	54	905
1250	36	380	40	480	44	585	48	698	52	821	56	950
1300	38	408	42	508	47	642	51	760	54	859	60	1003
1350	40	434	45	559	49	670	53	794	57	919	62	1069
1400	43	484	47	587	51	700	55	826	60	981	66	1107
1450	45	507	50	639	54	763	58	886	63	1037	71	1171
1500	48	559	52	671	57	822	61	943	66	1091	74	1225
1550	51	612	55	730	59	848	64	1000	69	1156	78	1292
1600	53	641	58	785	62	903	67	1060	72	1205	83	1355
1650	56	694	61	838	66	989	70	1121	75	1276	88	1426
1700	59	750	64	890	69	1048	73	1181	79	1344	93	1500
1750	62	797	67	945	72	1106	77	1271	83	1414	99	1551
1800	66	877	70	1000	75	1163	79	1316	88	1497		

## REDUCED AIRFLOW \*(COMPRESSOR OFF)

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	
350											21	333	
400											23	372	
450										20	295	24	381
500								21	291	23	340	26	408
550								22	301	25	371	28	439
600						20	242	23	310	27	406	30	480
650						22	274	25	341	28	418	32	521
700						23	282	26	351	30	452	34	555
750						24	290	28	385	31	460	35	561
800						26	320	30	416	33	493	37	592
850						28	351	31	423	35	524	39	621
900	20	179	24	260	28	351	31	423	35	524	39	621	
950	21	186	25	265	29	357	33	454	37	563	41	675	
1000	23	212	27	294	31	386	35	483	40	622	43	710	
1050	25	235	29	321	33	414	38	542	42	656	45	744	
1100	27	261	31	347	35	440	40	574	44	689	48	804	
1150	29	286	33	374	37	472	42	606	46	719	50	831	
1200	31	310	35	398	39	502	44	637	48	754	52	874	

### NOTES:

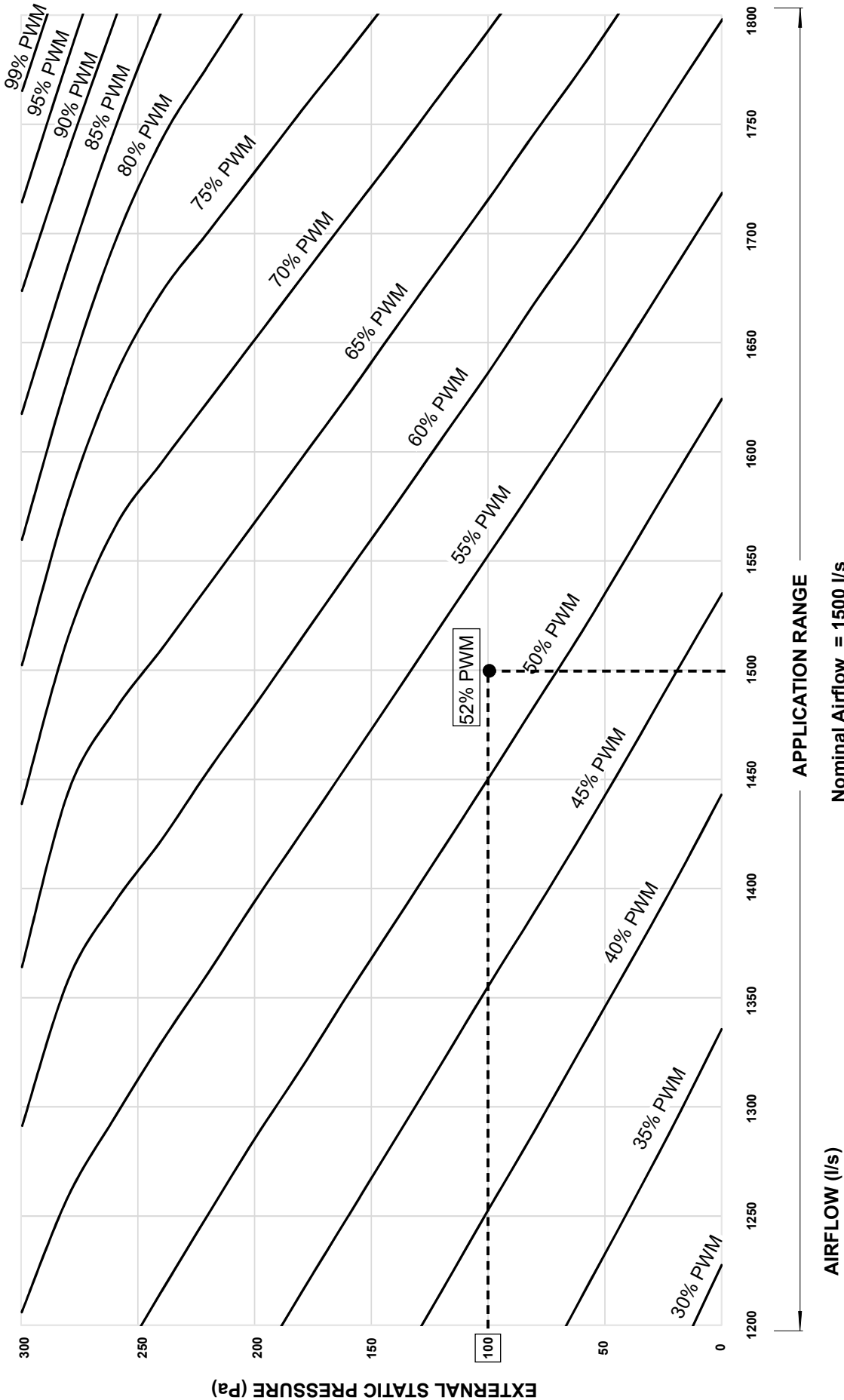
\*Reduced fan airflow is the airflow during compressor OFF operation (optional feature)

W = Indoor Fan Power, Watts

PWM = Pulse Width Modulation Setting, % PWM (Adjustable through NEO / LC7-2 Control Interface or Outdoor Board)

Default Fan Speed Value at 100 Pa	
Speed	Default PWM
High PWM (%)	70 (adjustable)
Medium PWM (%)	52 (adjustable)
Low PWM (%)	38 (adjustable)

Indoor Fan PWM Limits	
High PWM (%)	99
Low PWM (%)	33



APPLICATION RANGE

Nominal Airflow = 1500 l/s

AIRFLOW (l/s)

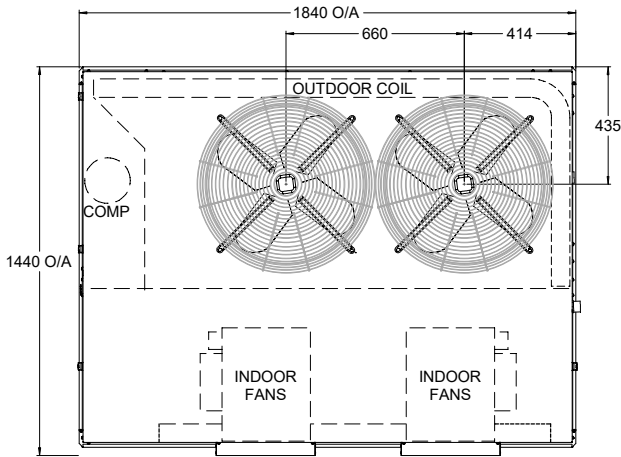
**Notes:**

1. Performance Fan Curve shown is at Dry Coil Condition.
2. Airflow should be reduce with respect to the moisture content in the air.
3. All data provided does not include filters. Please review filter manufacturer for application.
4. 2.5 m/s face velocity point will occur at 2150 l/s.

# UNIT DIMENSIONS

# PKV290T-T

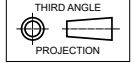
## PACKAGE UNIT - STANDARD MODEL



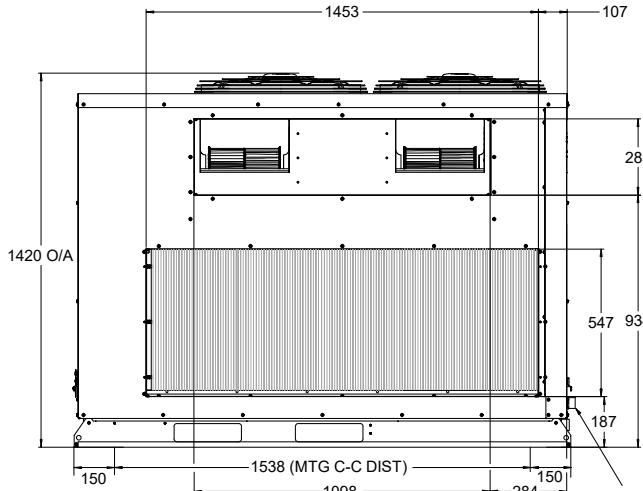
**TOP VIEW**

OVERALL NOMINAL DIMENSION (H x W x D)  
 = 1420 x 1840 x 1440  
 SUPPLY DUCT (H x W) = 283 x 1098  
 RETURN DUCT (H x W) = 547 x 1453  
 DRAIN CONNECTION = DN 25mm PN12

**NOTES:**

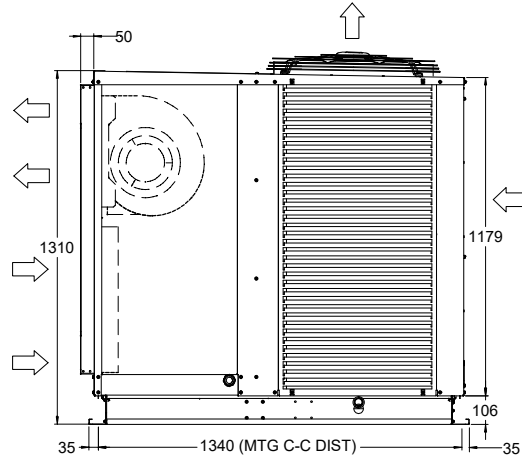


1. Do not scale drawing.
2. All dimensions are in mm unless specified. Refer to corresponding unit dimensional drawing for mounting hole details
3. Suggested Service Clearance and Airflow Allowances are based on conditions that the spaces are free from obstructions and walkway passage of 1m is available to allow coil replacement without lifting coil over the top of the unit.
4. Minimum service access areas and space for airflow clearances are responsibilities of the installer.
5. Under circumstances, condenser air must not recirculate back onto condenser coil. Keep all clearances free of any obstructions.
6. STACKING OF UNITS: Ensure that minimum airflow and service clearances are met.
7. MTG C-C DIST = Mounting Centre to Centre Distance.
8. Use M12 bolt for feet mounting.



**FRONT VIEW**

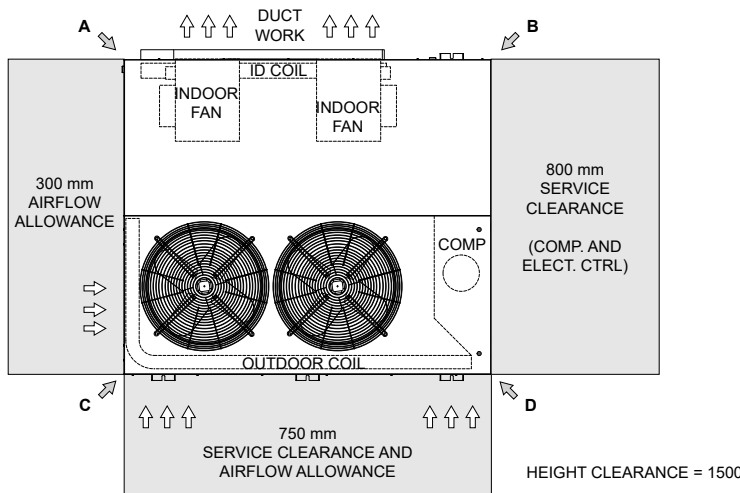
CONDENSATE DRAIN POINTS  
 DN 25mm PN12



**SIDE VIEW**

UNIT MODEL NUMBER	UNIT WEIGHT (kg)	CORNER WEIGHTS (kg)			
		A	B	C	D
PKV290T-T	400	121	66	56	157

## MINIMUM SERVICE ACCESS CLEARANCES & AIRFLOW SPACE ALLOWANCES



**Outdoor Radiated**

**Sound Power Level (SWL)**

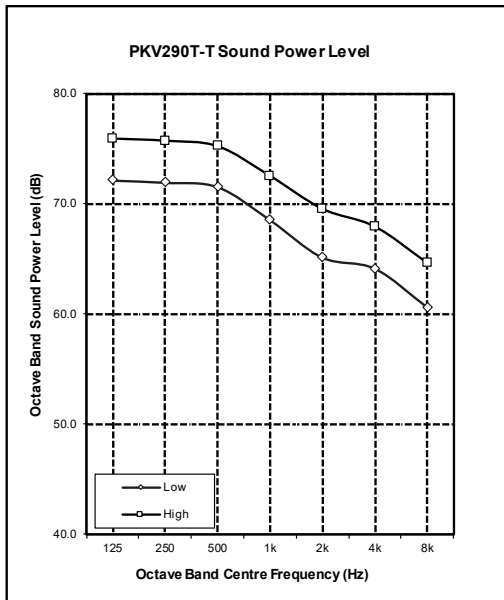
Fan Speed	Sound Power Level dB(A)	Octave Band Centre Frequency (Hz), dB						
		125	250	500	1k	2k	4k	8k
Low	73.9	72.1	71.9	71.5	68.5	65.1	64.1	60.6
High	77.9	75.9	75.7	75.2	72.5	69.5	67.9	64.6

**Indoor Outlet**

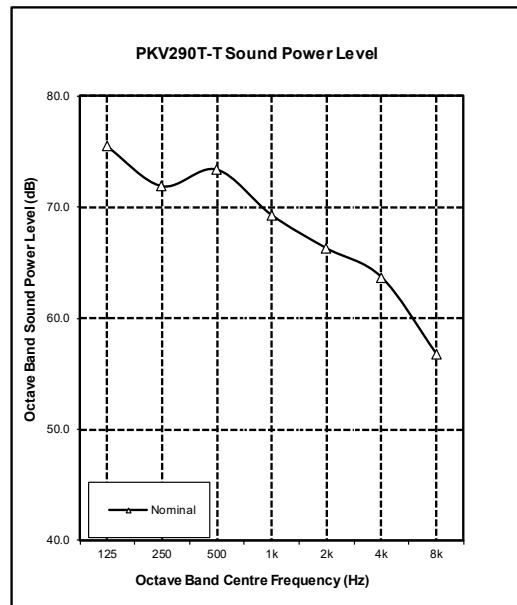
**Sound Power Level (SWL)**

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	74.9	75.5	71.9	73.4	69.3	66.3	63.7	56.8

**OUTDOOR RADIATED**



**INDOOR OUTLET**



**NOTE:**  
Radiated sound power levels are based on ISO 3743-1.

# SPECIFICATIONS

# PKV290T-T

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

INSULATION	
TYPE	Foil Faced Polyethylene

ELECTRICAL	
POWER SUPPLY - 50 Hz	400 Volts x 3 Phase + Neutral
VOLTAGE RANGE (min - max)	376 V - 424 V
FULL LOAD AMPS * - (L1 / L2 / L3)	23.4 / 25.0 / 24.2
RATED LOAD AMPS**	15.2
APPROX. STARTING AMPS	128.0
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 and CIRCUIT BREAKER SIZE	
Refer to latest edition of AS/ANZ 3000 or AS/ANZ 3008 Australian/New Zealand Wiring Rules to determine required cable size.	
CIRCUIT BREAKER AMPS	32.0

OUTDOOR COIL	
TUBE TYPE	Copper - Rifle Bore
FIN TYPE	Aluminium - Wave
FACE AREA (m sqr)	2.46
FIN SPACING (per m)	630
COIL COATING	Hydrophilic Blue Coat Coil Fin Protection

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	3 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 - Wave
FIN SPACING (per m)	590
COIL COATING	Hydrophilic Blue Coat Coil Fin Protection

INDOOR FAN	
NUMBER OF FANS x TYPE	1 x Twin Deck Centrifugal EC Fan
DIAMETER / WIDTH (mm)	270 x 270
INPUT kW TOTAL	0.80
MOTOR TYPE / DRIVE TYPE	Variable Speed EC Motor / Direct
FAN SPEED CONTROL	Electronic Control

COMPRESSOR	
NUMBER PER UNIT x TYPE	1 x Digital Scroll (Hermetic)
FULL LOAD AMPS	20.0
LOCKED ROTOR AMPS	128.0
STARTING METHOD	D.O.L. (optional soft starter)

REFRIGERATION SYSTEM	
REFRIGERANT TYPE	R-410A
EXPANSION CONTROL	Direct Expansion Orifice
FACTORY CHARGE (grams)	9100

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	50.0 W during Comp. Off Cycle

ELECTRIC CONTROLS	
DEFROST METHOD	Reverse Cycle
DEFROST TYPE	Adaptive Demand Defrost
CONTROL CIRCUIT BREAKER	10.0 Amps
LC7 FIELD CONTROL WIRING	Cat5e UTP (AWG24) Data 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	5°C DB
Heating	Max.	24°C DB	19.5°C DB / 18°C WB
	Min.	16°C DB	-10°C WB

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.	

UNIT COMPLIANCE	
<ul style="list-style-type: none"> <li>AS/NZS 3823.2 (MEPS)</li> <li>AS/NZS 4755.3.1:2012 (DRM1, 2 and 3)</li> <li>AS/NZS CISPR 11, Group 1 Class A (EMC)</li> </ul>	



