TECHNICAL SELECTION DATA | PKV240T

PACKAGE UNIT

3 Phase | 1 Stage | 21.55 kW

UNIT FEATURES

- Tru-Inverter™ Variable Speed Compressor and Drive Technology
- Pre-charged with R-410A Refrigerant
- Multiple Speed Outdoor Fans
- 40-100% Variable Refrigeration Capacity
- 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
- Active Power Factor Correction
- Bi-Flow Electronic Expansion Valves

UNIT OPTIONS

- 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)

SPECIFICATION SUMMARY

UNIT MODEL		PKV240T-T	
		(1) TOTAL	(2) NETT
(3) COOLING CAPACITY (kW)	MINIMUM	8.62	8.40
	RATED	21.55	21.00
	TRUMAX (9)	24.80	24.00
(4) HEATING CAPACITY (kW)	MINIMUM	9.45	9.66
	RATED	22.50	23.00
	TRUMAX (9)	24.25	25.00
(3) SENSIBLE CAPACITY (kW)	RATED	17.98	17.43
(5) COOLING INPUT POWER (kW)	RATED	6.10	
(5) HEATING INPUT POWER (kW)	RATED	6.57	
EER	RATED	3.53	3.44
COP	RATED	3.42	3.50
(6) INDOOR AIRFLOW (l/s) - MIN. / NOMINAL / MAX.		800 / 1100 / 1320	
MINIMUM AIRFLOW WHEN IN MODULATION (l/s)		290	
OUTDOOR SOUND PRESS. LEVEL @ 3M dB(A) - LOW / HIGH		52.0 / 60.0	
OUTDOOR SOUND POWER LEVEL dB(A) - LOW / HIGH		72.0 / 78.4	
POWER SUPPLY		400V/3Ph+N/50Hz	
(2) RATED LOAD AMPS		12.2	
(7) FULL LOAD AMPS		21.3	
(8) CIRCUIT BREAKER AND CABLE AMPS		25	
APPROXIMATE STARTING AMPS		< 45	
POWER FACTOR		0.96	
WEIGHT (kg)		331	

(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) Total input power excludes indoor fan kW.
Nett input power includes indoor fan kW.
(6) Max. - Min. airflow application range irrespective of external static pressure.
(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.
(9) **TRUMAX** - Maximum Capacity.

Note: Use nett input power to estimate running cost.

CAPACITY SELECTION DATA

PKV240T

COOLING PERFORMANCE

AIR ENTERING OUTDOOR DB - °C	AIR ENTERING INDOOR WB - °C	TOTAL CAPACITY kW	TOTAL SENSIBLE CAPACITY - kW AT DB TEMPERATURE ONTO INDOOR COIL - °C										
			20	21	22	23	24	25	26	27	28	29	30
25	16	21.90	14.21	15.06	15.92	16.77	17.62	18.53					
	17	22.60	13.69	14.37	15.04	16.24	17.43	18.16	18.88	19.61			
	18	23.29	13.18	13.67	14.16	15.70	17.24	17.79	18.34	19.49	20.63		
	19	24.05	12.92	13.32	13.71	14.68	15.66	17.05	18.44	18.70	18.96	19.34	
	20	24.80	12.66	13.14	13.66	14.04	14.41	15.76	17.10	18.18	19.26	19.38	19.50
	21	25.37		12.96	13.64	13.95	14.27	15.22	16.17	17.23	18.13	18.79	19.45
	22	25.95			13.61	13.87	14.12	14.68	15.25	16.28	17.00	18.20	19.40
30	16	21.17	13.78	14.70	15.62	16.50	17.39	18.08					
	17	21.88	12.95	13.81	14.66	15.87	17.08	17.74	18.40	19.06			
	18	22.60	12.12	12.92	13.71	15.24	16.78	17.40	18.02	18.60	19.18		
	19	23.06	12.09	12.62	13.15	14.19	15.24	16.72	18.19	18.30	18.40	19.06	
	20	23.73	12.06	12.47	13.07	13.49	13.92	15.30	16.67	17.80	18.55	18.92	19.28
	21	24.16		12.32	13.03	13.47	13.91	14.85	15.78	16.71	17.56	18.38	19.19
	22	24.59			12.99	13.44	13.90	14.40	14.89	15.62	16.57	17.84	19.11
35	16	20.88	13.11	14.07	15.03	16.14	17.26	17.98					
	17	20.84	12.26	13.17	14.09	15.42	16.75	17.53	18.30	19.08			
	18	20.81	11.41	12.28	13.16	14.70	16.25	17.08	17.92	18.16	18.40		
	19	**21.55**	11.09	11.89	12.68	13.68	14.69	16.18	17.68	**17.98**	18.28	18.97	
	20	22.33	10.78	11.69	12.06	12.62	13.17	14.66	16.15	17.32	18.37	18.63	19.09
	21	22.88		11.49	11.75	12.42	13.08	14.06	15.04	16.19	17.22	18.04	18.97
	22	23.43			11.44	12.22	12.99	13.46	13.93	15.06	16.08	17.46	18.84
40	16	18.98	12.79	13.78	14.77	15.82	16.87	17.66					
	17	19.64	11.72	12.75	13.78	15.07	16.37	17.17	17.97	18.78			
	18	20.30	10.64	11.71	12.79	14.32	15.86	16.68	17.50	17.95	18.41		
	19	20.67	10.59	10.94	11.28	12.77	14.26	15.69	17.12	17.32	18.10	18.88	
	20	21.42	10.54	10.55	10.64	11.67	12.71	14.29	15.87	16.68	18.52	18.70	19.01
	21	22.01		10.16	10.32	11.32	12.33	13.43	14.53	15.57	17.10	17.92	18.80
	22	22.60			10.00	10.98	11.96	12.58	13.20	14.46	15.69	17.14	18.59
45	16	18.03	12.36	13.26	14.15	15.30	16.45	17.20					
	17	18.55	11.74	12.44	13.13	14.54	15.95	16.74	17.53	18.32			
	18	19.07	11.11	11.61	12.12	13.78	15.44	16.28	17.12	17.76	18.40		
	19	19.49	10.44	10.82	11.21	12.53	13.86	15.36	16.86	17.42	18.07	18.72	
	20	20.05	9.76	10.42	10.48	11.37	12.26	13.79	15.32	16.75	18.17	18.49	18.80
	21	20.55		10.03	10.11	11.05	11.99	12.94	13.89	15.26	16.69	17.61	18.52
	22	21.05			9.75	10.73	11.72	12.09	12.46	13.77	15.21	16.73	18.25
50	16	16.99	11.92	12.44	12.96	14.51	16.06	17.02					
	17	17.55	10.90	11.67	12.43	14.00	15.56	16.52	17.48	18.43			
	18	18.11	9.89	10.90	11.91	13.48	15.06	16.01	16.96	17.32	17.67		
	19	18.41	9.67	9.97	10.27	11.88	13.49	15.00	16.51	16.94	17.37	17.80	
	20	18.93	9.45	9.50	9.75	10.85	11.94	13.46	14.99	16.19	17.40	17.58	17.77
	21	19.50		9.04	9.49	10.55	11.61	12.55	13.50	14.44	16.14	16.98	17.82
	22	20.07			9.24	10.26	11.28	11.64	12.01	12.69	14.89	16.38	17.87

21.55 kW | 1 Stage | 3 Phase

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	14.23	13.66	14.17	13.60	14.11	13.55	14.03	13.47	13.97	13.41
-8	15.17	14.42	15.09	14.34	15.01	14.26	14.93	14.19	14.85	14.11
-6	16.14	15.17	16.04	15.08	15.96	15.00	15.92	14.96	15.84	14.89
-4	17.16	15.79	17.04	15.68	17.00	15.64	16.90	15.55	16.80	15.46
-2	18.29	16.27	18.16	16.17	18.04	16.06	17.92	15.95	17.82	15.86
0	19.37	17.04	19.23	16.92	19.15	16.85	19.01	16.73	18.89	16.62
2	20.45	18.61	20.29	18.47	20.13	18.32	19.99	18.19	19.85	18.06
4	21.64	21.64	21.42	21.42	21.30	21.30	21.16	21.16	20.99	20.99
6	22.88	22.88	22.68	22.68	**22.50**	**22.50**	22.32	22.32	22.18	22.18
8	24.17	24.17	23.95	23.95	23.74	23.74	23.56	23.56	23.38	23.38
10	25.49	25.49	25.27	25.27	25.05	25.05	24.85	24.85	24.65	24.65
12	26.88	26.88	26.63	26.63	26.39	26.39	26.15	26.15	25.93	25.93
14	28.30	28.30	28.04	28.04	27.78	27.78	27.52	27.52	27.28	27.28
16	29.79	29.79	29.48	29.48	29.20	29.20	28.92	28.92	28.64	28.64
18	31.31	31.31	30.99	30.99	30.67	30.67	30.35	30.35	30.05	30.05

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%
INDOOR AIRFLOW (l/s)	880	935	990	1045	**1100**	1155	1210	1265
TOTAL COOLING	0.965	0.982	0.989	0.997	**1.000**	1.004	1.009	1.015
SENSIBLE COOLING	0.884	0.916	0.945	0.974	**1.000**	1.024	1.046	1.072
HEATING FACTOR	0.969	0.976	0.983	0.991	**1.000**	1.011	1.022	1.033

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

ActronAir

9590-0013-04
Ver. 4 221021

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
880	36	273	41	350	45	426	49	506	63	582	81	674
900	38	296	42	367	46	443	50	522	65	597	84	688
950	41	328	45	401	49	489	55	567	72	653	90	744
1000	45	380	48	444	52	523	61	615	79	706	96	803
1050	48	419	52	498	57	585	68	671	86	765		
1100	51	455	**56**	**552**	60	633	76	735	94	837		
1150	56	524	60	604	66	700	84	797				
1200	60	576	64	661	74	767	92	870				
1250	64	631	69	735	84	841	MOTOR / BLOWER LIMIT					
1300	69	706	76	818	93	923						
1320	71	741	80	845.5	97	959						

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
200	MOTOR / BLOWER LIMIT										22	213
250									21	190	25	228
300							20	172	23	208	30	254
350							22	192	25	237	34	283
400					21	166	24	216	27	253	40	315
450					23	185	26	230	29	277	45	349
500			21	145	25	201	28	250	32	303	49	384
550			23	165	27	224	31	285	35	349	53	419
600	21	127	25	182	29	243	33	306	38	368	57	458
650	23	141	27	201	31	263	35	330	42	409	60	492
700	26	174	30	232	34	298	38	365	45	440	65	533
750	28	186	32	250	36	315	41	400	49	469	69	564
800	31	219	35	281	40	367	43	426	54	507	73	599

NOTES

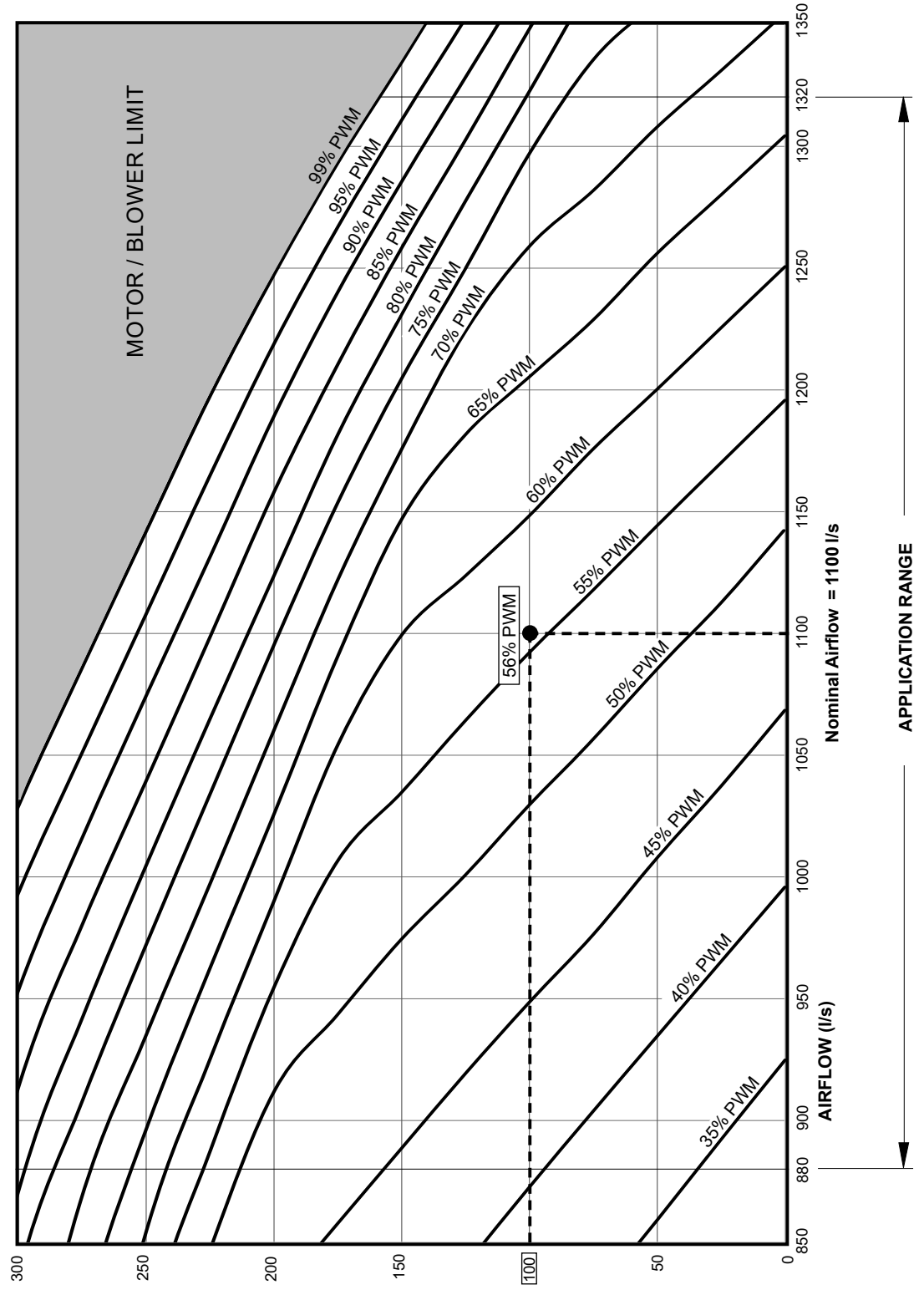
* Reduced fan airflow is the airflow during compressor OFF operation (optional feature)
W = Indoor Fan Power, Watts
PWM = Pulse Width Modulation Setting, % PWM (Adjustable through the NEO / LC7-2 Control Interface or Outdoor Board)

Default Fan Speed Value at 100Pa	
Speed	**Default PWM (adjustable)**
High PWM (%)	80
Medium PWM (%)	56
Low PWM (%)	41

Indoor Fan PWM Limits	
PWM High Limit	99
PWM Low Limit	34

INDOOR FAN CURVE

PKV240T



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 1405 l/s.

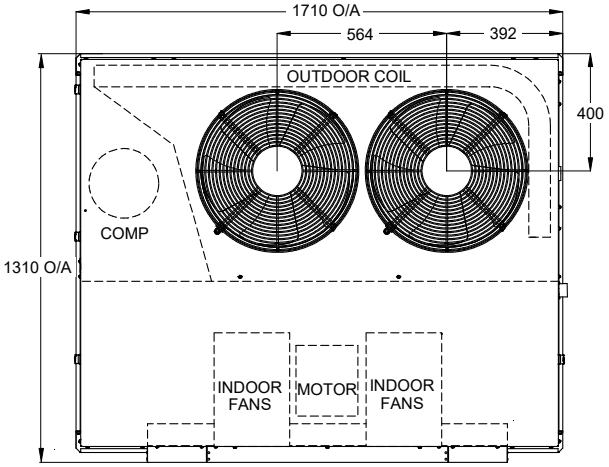
21.55 kW

3 Phase | **1 Stage**

UNIT DIMENSIONS

PKV240T

U PACKAGE UNIT - STANDARD MODEL



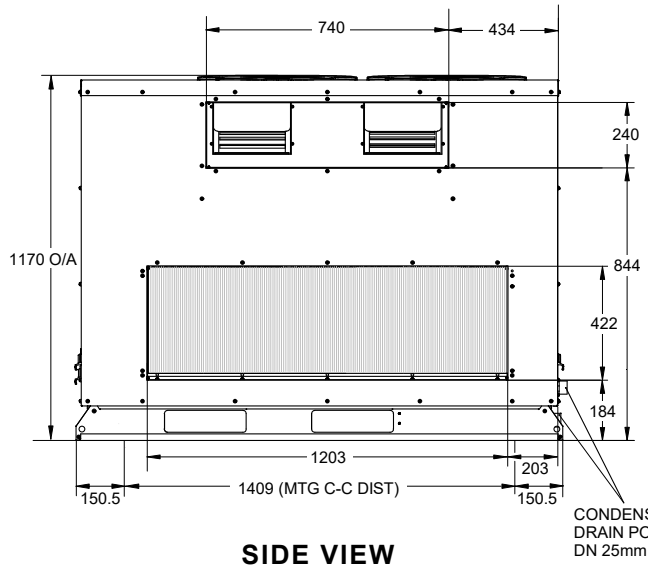
TOP VIEW

OVERALL NOMINAL DIMENSION (H x W x D)
= 1170 x 1710 x 1310
SUPPLY DUCT (H x W) = 240 x 740
RETURN DUCT (H xW) = 422 x 1203

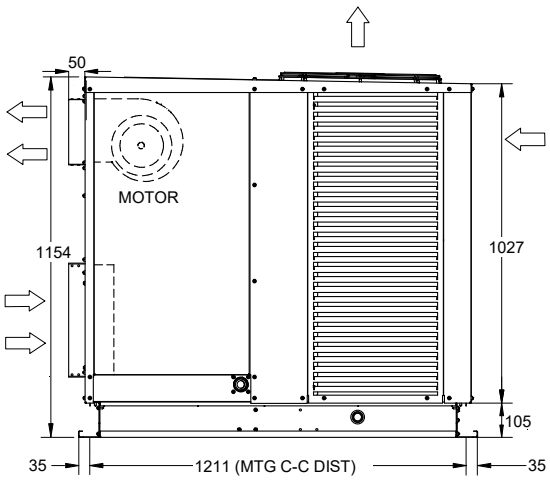
NOTES:

THIRD ANGLE PROJECTION

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.



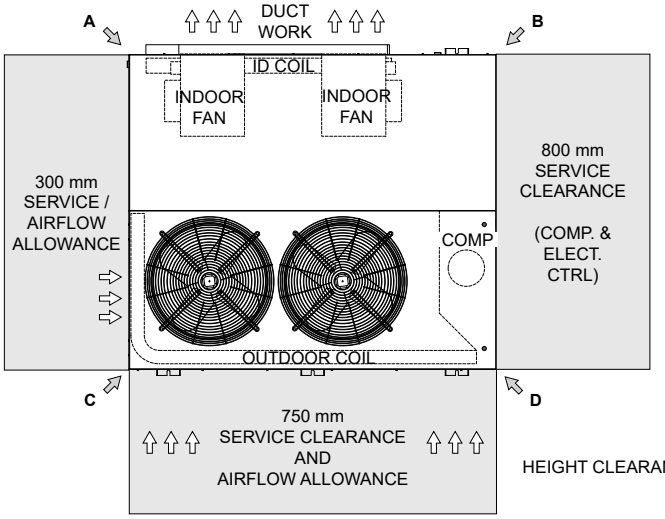
SIDE VIEW



FRONT VIEW

UNIT MODEL NUMBER	UNIT WEIGHT (kg)	CORNER WEIGHTS (kg)			
		A	B	C	D
PKV240T	331	90	59	54	128

MINIMUM SERVICE ACCESS CLEARANCES and AIRFLOW SPACE ALLOWANCES



HEIGHT CLEARANCE = 1500

ActronAir

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	72.0	68.0	66.0	71.4	68.5	57.9	57.2	51.6
High	78.4	80.8	79.4	75.8	73.6	68.3	63.7	55.9

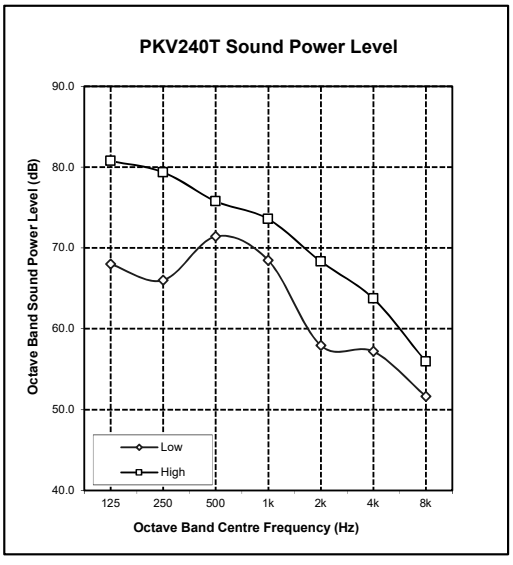
Indoor Outlet

Sound Power Level (SWL)

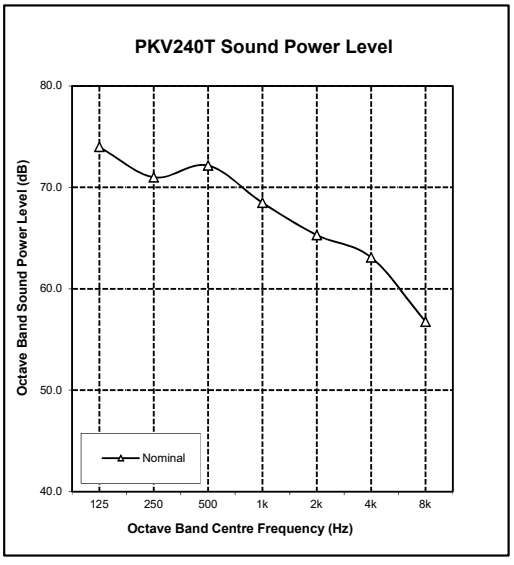
Airflow Setting	Airflow l/s	Sound Power Level dB(A)	Octave Band Centre Frequency (Hz), dB						
			125	250	500	1k	2k	4k	8k
Nominal	1100	73.9	74.0	71.0	72.2	68.5	65.3	63.1	56.8

21.55 kW | 3 Phase | 1 Stage

OUTDOOR RADIATED



INDOOR OUTLET



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

SPECIFICATIONS

PKV240T

CONSTRUCTION	
CABINET BASE	1.1 - 1.6 Galvanised Steel
CABINET TOP AND SIDES	0.9 - 1.1 mm Galvanised Steel
SURFACE FINISH	65 μ Baked Polyester Powder Coat

INSULATION	
TYPE	Foil Faced Polyethylene

ELECTRICAL	
POWER SUPPLY - 50 Hz	400 Volts x 3 Phase + N
VOLTAGE RANGE (min - max)	380 V - 440 V
FULL LOAD AMPS* - (L1 / L2 / L3)	16.6 / 21.3 / 14.4
RATED LOAD AMPS**	12.2
APPROXIMATE STARTING AMPS	< 45.0
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 the accordance with the latest edition of the AS/NZS 3000 "Australian/New Zealand Wiring Rules" for more details.

CABLE SIZE (main line)	4.0 mm^2 (SUGGESTED MINIMUM)
CIRCUIT BREAKER SIZE	25.0 Amps

OUTDOOR COIL	
TUBE TYPE	Copper - Rifle Bore
FIN TYPE	Aluminium - Wave
FACE AREA (m sqr)	2.02
FIN SPACING (per m)	472
COIL COATING	Hydrophilic Blue Coat Coil Fin Protection

OUTDOOR FAN	
NUMBER OF FANS x TYPE	2 x Axial
NUMBER OF BLADES PER FAN	5
DIAMETER (mm)	500
OUTPUT kW (each)	0.27
MOTOR TYPE / DRIVE TYPE	6 Pole External Rotor / Direct
FAN SPEED CONTROL	3 Speed via Capacitor

The standard type outdoor fans fitted to this unit will only accept 5 Pa of external static resistance.

INDOOR COIL	
TUBE TYPE	Copper - Rifle Bore
FIN TYPE	Aluminium - Louvre
FIN SPACING (per m)	472
COIL COATING	Hydrophilic Blue Coat Coil Fin Protection

INDOOR FAN	
NUMBER OF FANS x TYPE	1 x Twin Deck Centrifugal EC Fan
DIAMETER (mm)	240 x 180
INPUT kW (each)	0.55
MOTOR TYPE / DRIVE TYPE	Variable Speed EC Motor / Direct
FAN SPEED CONTROL	Electronic Control

COMPRESSOR	
NUMBER PER UNIT x TYPE	Tru-Inverter Variable Speed Scroll / 1
FULL LOAD AMPS	14.4
LOCKED ROTOR AMPS	128.0
STARTING METHOD	In-built Soft Starting

REFRIGERATION SYSTEM	
REFRIGERANT TYPE	R-410A
EXPANSION CONTROL	Direct Expansion Orifice / EEV
FACTORY CHARGE (grams)	8050

PROTECTION DEVICES	
HIGH PRESSURE CUTOUT SWITCH	Nonadjustable (Automatic Reset)
LOW PRESSURE CUTOUT 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	37 W during compressor off cycle

ELECTRONIC CONTROLS	
DEFROST METHOD	Reverse Cycle
DEFROST TYPE	Adaptive Demand Defrost
CONTROL CIRCUIT BREAKER	16.0 Amps
LC7-2 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	-15°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.

UNIT COMPLIANCE

- AS/NZS 3823.2 (MEPS)
- AS/NZS 4755.3.1 (DRM1, 2 and 3)
- AS/NZS CISPR 11, Group 1 Class A (EMC)

3 Phase | 1 Stage | 21.55 kW

ActronAir

WIRING DIAGRAM

PKV240T

21.55 kW

3 Phase | 1 Stage