



**DUNNAIR**  
(Aust) Pty Ltd

**PHE80**

*Economy Cycle Rooftop Packaged*

R410A Refrigerant

**PERFORMANCE DATA**

INDOOR COIL ENTERING AIR TEMP °C		OUTDOOR COIL ENTERING TEMPERATURE °C											
		30°C			35°C			40°C			45°C		
		Tot. Cap KW	Sens.Cap KW	LWB °C	Tot. Cap KW	Sens.Cap KW	LWB °C	Tot. Cap KW	Sens.Cap KW	LWB °C	Tot. Cap KW	Sens.Cap KW	LWB °C
DB °C	WB °C												
21	17	78.9	48.6	10.9	74.8	46.9	11.2	70.5	45.1	11.6	67.5	45.1	11.8
	18	81.6	43.7	11.5	77.4	42.1	12.3	72.9	40.1	12.6	67.0	38.9	12.9
	19	84.6	38.9	13.2	80.3	37.1	13.5	75.5	35.1	13.9	72.6	34.0	14.1
	20	87.8	33.7	14.1	83.2	31.8	14.5	78.3	29.8	14.9	75.5	28.6	15.2
23	17	79.2	58.1	10.8	75.1	56.4	11.2	70.8	54.5	11.5	67.8	53.3	11.8
	18	81.6	53.2	11.9	77.4	51.4	12.2	72.9	49.6	12.6	70.0	48.2	12.9
	19	84.6	48.2	13.1	80.2	46.5	13.5	75.4	44.6	13.9	72.6	43.2	14.2
	20	87.6	43.1	14.2	83.2	41.2	14.6	78.3	39.2	15.0	75.4	38.0	15.2
	21	91.1	37.9	15.1	86.3	36.0	15.6	81.1	33.9	16.0	78.4	32.7	16.3
25	17	79.9	66.8	10.8	75.8	64.9	11.1	71.5	62.9	11.5	68.8	61.6	11.8
	18	81.8	64.6	12.1	77.6	61.3	12.4	73.1	59.3	12.8	70.2	58.1	13.2
	19	84.5	61.5	13.1	80.2	55.9	13.5	75.4	54.0	13.9	72.5	52.8	14.1
	20	87.7	58.0	14.2	83.1	50.7	14.6	78.2	48.6	15.0	75.4	47.5	15.2
	21	91.0	54.1	15.2	86.3	45.4	15.6	81.1	43.3	16.0	78.4	42.2	16.2
27	17	81.4	74.1	10.8	77.5	71.9	11.1	73.3	69.3	11.5	70.7	67.8	11.8
	18	82.6	72.4	12.0	78.4	70.7	12.3	73.8	68.7	12.7	71.8	67.2	12.9
	19	84.7	67.2	13.0	80.4	65.5	13.4	75.6	63.5	13.8	72.9	62.3	14.0
	20	87.6	62.5	14.2	83.1	60.6	14.5	78.2	58.6	14.9	75.4	57.5	15.1
	21	90.8	56.6	15.3	86.2	54.8	15.7	84.3	52.7	16.1	78.3	51.6	16.3
29	17	83.4	80.3	10.6	79.6	77.6	11.0	75.4	74.5	11.4	72.9	72.9	11.6
	18	84.1	78.6	11.8	80.1	76.4	12.2	75.6	74.1	12.6	72.9	72.8	12.8
	19	85.3	77.3	13.0	81.0	75.5	13.3	76.3	73.5	13.7	72.9	72.8	13.9
	20	87.8	71.6	14.1	83.2	69.8	14.4	78.3	67.7	14.9	75.5	66.6	15.1
	21	90.9	66.0	15.2	86.2	64.1	15.6	81.0	62.0	16.0	78.3	60.9	16.2
31	17	86.0	85.6	10.4	82.4	82.2	10.7	78.3	78.3	11.1	76.0	76.0	11.3
	18	86.4	84.6	11.7	82.5	81.9	12.0	78.2	78.2	12.2	76.0	76.0	12.6
	19	86.9	83.7	12.9	82.7	81.6	13.2	78.2	78.2	13.6	76.0	76.0	13.8
	20	88.3	81.6	14.0	83.9	79.7	19.5	78.9	77.6	14.8	76.2	76.0	15.1
	21	91.0	76.1	15.2	86.3	74.2	15.6	81.1	72.1	16.0	78.4	71.0	16.4

Capacity multipliers should be applied to the above capacities to adjust for reduced or increased air flow.



## Technical Specification PH80 Rooftop Packaged Model

Total Cooling Capacity (kW)*	80.4	Number of Compressors	2
Sensible Cooling Capacity (kW)*	65.5	Power Requirements (Volt /Phase)	415 / 3
Heating Capacity (kW)**	80.7	Normal Max. Current (Amps /Phase)	63.3
Nominal Evaporator Air Flow (L/S)	4300	Power Input (kW)	29.3
*Entering air @ 27/19 °C and ambient 35°C		** Entering air @ 21 °C DB and 7°C ambient	

### Cooling Performance Correction

Capacity	% Rated Air Quantity - Nominal 4300 l/s				
	80	90	100	110	120
Total Cooling	0.95	0.98	1.00	1.02	1.04
Sensible Cooling	0.89	0.95	1.00	1.05	1.09

### Heating Performance Data

	Outdoor Coil Entering DB temperature °C				
	0	4	8	12	18
Heating Capacity (kW)	64.5	71.4	82.5	90.5	108.0

### Heating Performance Correction

% Rated Air Quantity	Multiplier	Return Air Temp °C	Multiplier	Outdoor Air Temp °C	Approx. Defrost Factor
80	0.93	15	1.05	0	0.80
90	0.97	18	1.03	2	0.78
100	1.00	21	1.00	4 - 6	0.75
110	1.03	24	0.97	7	0.87
120	1.05	27	0.95	8	1.00

### Compressor

Number Per Unit	2
Type	Scroll
RPM (Nom)	2900
Normal Max Current (Amps /Phase)	2 x 25.5
Locked Rotor Current (Amps /Phase)	N/A *
Displacement (m <sup>3</sup> /h)	2 x 25.9

### Electrical Controls and Safeties

High Pressure Switch (Setting kPa)	4000	Defrost	
Low Pressure Switch (Setting kPa)	300	Initiation Temperature (°C)	-2
Indoor Fan Overload	Internal	Termination Temperature (°C)	18
Outdoor Fan Overload	Internal	Min. Period Between De-Ice (min)	30
Compressor Delay Timer	300 sec	Max De-Ice Period (min)	10

### Standard Features

Auto reset high pressure and auto reset low pressure cutouts	
Thermal overload protection on all motors	Suction line accumulator
Compressor crankcase heater	Automatic de-ice system
Limit start timer (anti short cycling)	Thermally insulated indoor unit

\* SANYO compressor: Manufacturer does not offer this information

### Evaporator (Coil)

Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	2 x 0.84
Air Quantity (l/s)	4300

### Evaporator (Fan Motor)

Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor Voltage /Phase /Frequency	415 /3 /50
Motor Power (kW)	5.5
Maximum Fan Speed (rpm)	807

### Electrical

Power Requirements	3 Phase /415V /50Hz
Normal Max. Current (Amps /Phase)	63.3

### Condenser (Coil)

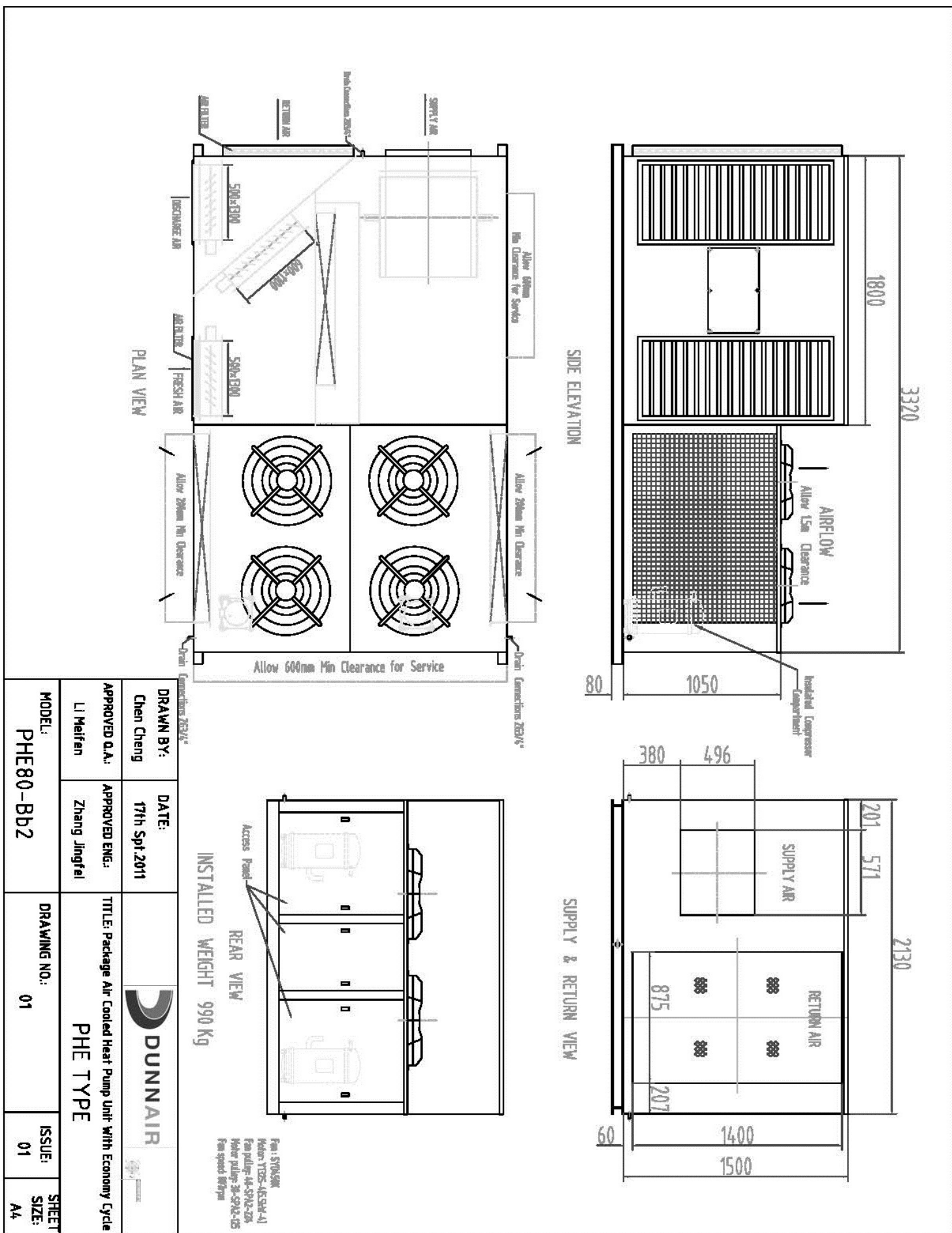
Type	Copper Tube /Aluminium Fins
Face Area(m <sup>2</sup> )	2 x 1.28

### Condenser (Fan Motor)

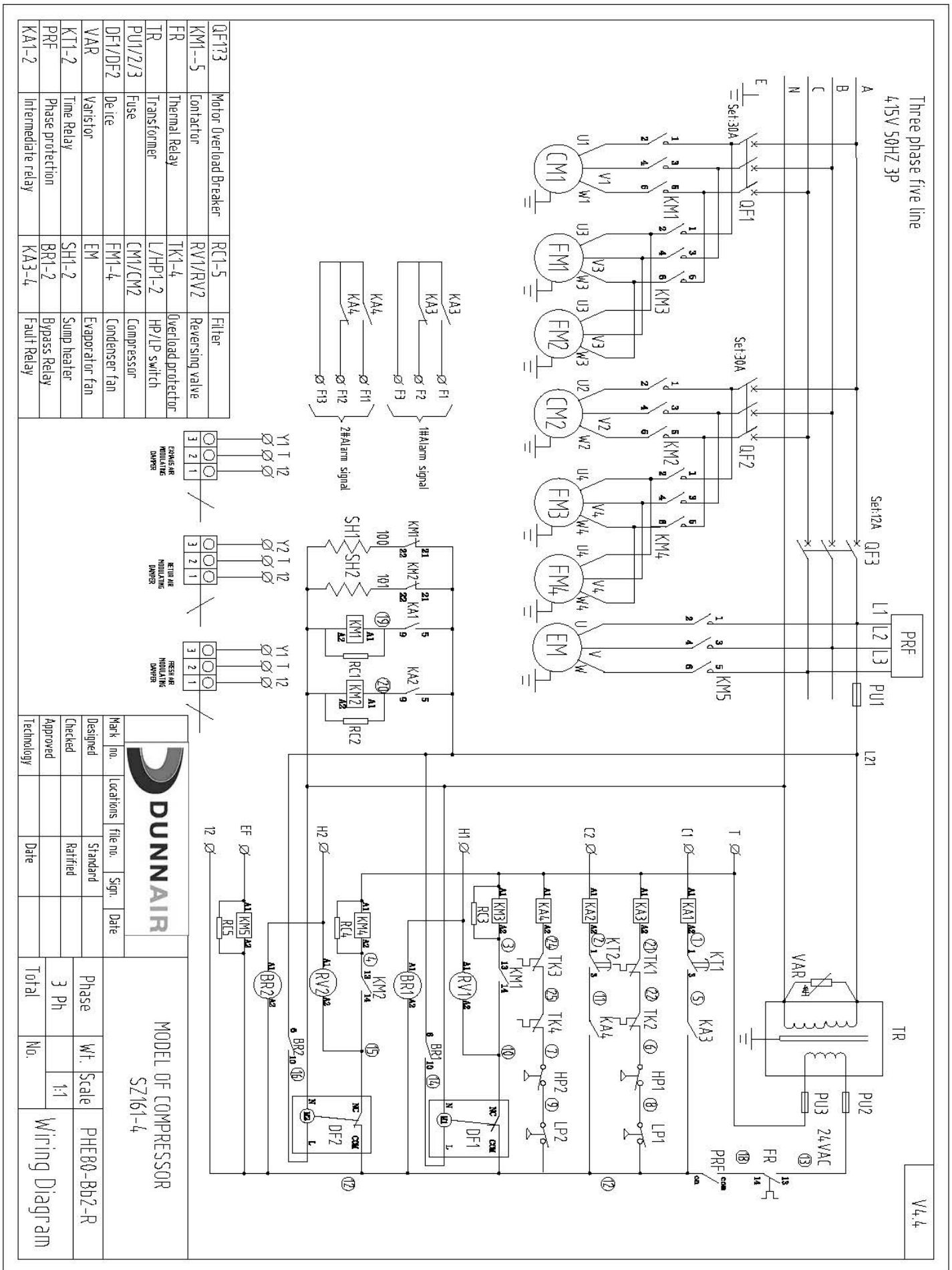
Number of Fans	4
Type	Axial
Drive	Direct
Motor Type	Enclosed
Motor Watts /rpm	4 x 370 / 950
Motor Voltage /Phase /Frequency	415 / 3 / 50

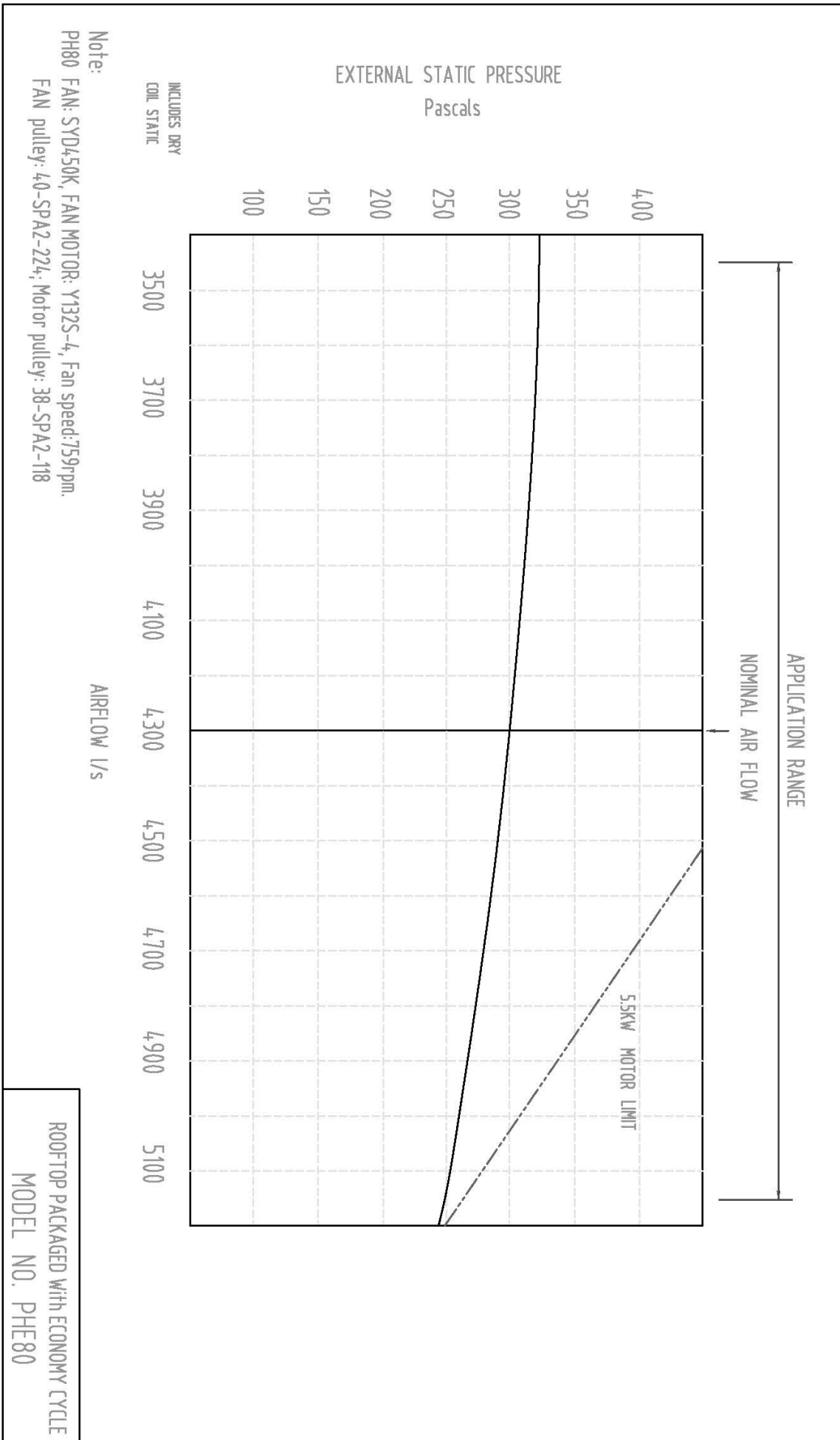
### Refrigeration System

Refrigerant Type	R410A
Charge(kg)	2 x 9.0
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor unit	TX Valve



<b>MODEL:</b> PHE80-Bb2	<b>DRAWING NO.:</b> 01	<b>ISSUE:</b> 01	<b>SHEET SIZE:</b> A4
<b>DRAWN BY:</b> Chen Cheng	<b>DATE:</b> 17th Spt 2011	<b>DUNNAIR</b>	
<b>APPROVED O.A.:</b> Li Meifen	<b>APPROVED ENG.:</b> Zhang Jingfei		
<b>TITLE:</b> Package Air Cooled Heat Pump Unit With Economy Cycle		<b>PHE TYPE</b>	





Note:  
PH80 FAN: SYD450K, FAN MOTOR: Y132S-4, Fan speed: 759rpm.  
FAN pulley: 40-SPA2-224; Motor pulley: 38-SPA2-118

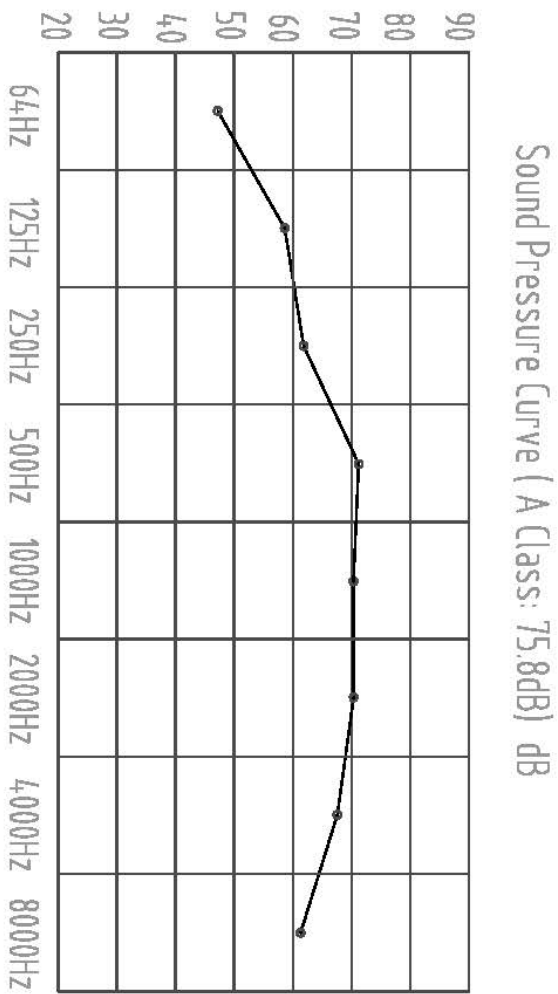
ROOFTOP PACKAGED with ECONOMY CYCLE  
MODEL NO. PHE80


PHE80 Sound Pressure Curve

A Class: 75.8dB

Hz	dB
64Hz	47
125Hz	59
250Hz	62
500Hz	71
1000Hz	70
2000Hz	70
4000Hz	68
8000Hz	61

Note: Occupant at least 1.0m from sound source.



<b>DRAWN BY:</b> Chen Cheng	<b>DATE:</b> 13th, Feb, 2014		
<b>APPROVED O.A.:</b> Zhu Junquan	<b>APPROVED ENG.:</b> Li Melfen		
<b>TITLE:</b> Packaged Rooftop With Economy Cycle		<b>PHE TYPE</b>	
<b>MODEL:</b> PHE80	<b>DRAWING NO.:</b> 01	<b>ISSUE:</b> 01	<b>SHEET SIZE:</b> A4