



**DUNNAIR**  
(Aust) Pty Ltd

**PHE40**

*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	39.0	24.0	11.4	37.3	23.3	11.7	25.4	22.5	12.0	34.2	22.5	12.2
	18	40.3	21.4	12.0	38.5	20.6	12.8	36.6	19.8	13.1	35.4	19.3	13.3
	19	41.6	18.8	13.5	38.8	18.0	13.8	37.8	17.2	14.1	36.6	16.7	14.3
	20	42.9	16.2	14.7	41.0	15.5	14.9	39.0	14.7	15.3	37.8	14.2	15.4
23	17	39.1	29.0	11.3	37.3	28.3	11.6	35.5	27.5	11.9	34.3	27.0	12.1
	18	40.2	26.2	12.5	38.4	25.5	12.7	36.5	24.7	13.0	35.3	24.2	13.2
	19	41.6	23.6	13.5	38.9	22.8	13.8	37.7	22.0	14.1	36.6	21.5	14.3
	20	42.9	21.0	14.8	41.0	20.2	15.1	38.9	19.4	15.4	37.8	18.9	15.6
	21	44.3	18.5	15.8	42.4	17.7	16.1	40.2	16.9	16.4	39.1	16.5	16.6
25	17	39.2	33.9	11.3	37.5	33.2	11.6	35.6	32.4	11.9	34.4	31.9	12.1
	18	40.3	32.8	12.5	38.5	30.6	12.8	36.6	29.8	13.1	35.4	29.3	13.3
	19	41.5	31.5	13.5	39.0	27.7	13.7	37.6	26.9	14.0	36.5	26.4	14.2
	20	42.9	30.0	14.6	41.0	25.0	14.9	38.9	24.1	15.2	37.8	23.7	15.4
	21	44.3	28.4	15.8	42.3	22.5	16.1	40.2	21.7	16.4	39.1	21.3	16.6
27	17	39.9	37.1	11.2	38.2	36.1	11.4	36.4	35.2	11.7	35.2	34.5	11.9
	18	40.4	35.9	12.3	38.6	35.2	12.6	36.7	34.3	12.9	35.5	33.8	13.1
	19	41.5	33.4	13.5	39.1	31.5	13.8	37.7	31.8	14.1	36.6	31.3	14.3
	20	42.8	30.7	14.6	40.9	29.9	14.9	38.8	29.0	15.2	37.7	28.6	15.4
	21	44.2	28.1	15.8	42.3	27.3	16.1	40.2	26.5	16.4	39.0	26.1	16.6
29	17	40.9	40.0	11.0	39.2	38.8	11.3	37.5	37.5	11.6	36.4	36.4	11.7
	18	41.1	39.4	12.2	39.4	38.5	12.5	37.5	37.5	12.8	36.3	26.3	13.0
	19	41.7	38.3	13.5	39.8	37.5	13.8	37.8	36.7	14.1	36.7	36.2	14.3
	20	42.9	35.3	14.6	41.0	34.5	14.9	38.9	33.6	15.3	37.8	36.2	14.4
	21	44.1	32.9	15.7	42.2	32.2	16.0	40.0	31.4	16.3	38.9	31.0	16.4
31	17	42.2	42.2	10.8	40.6	40.6	11.0	38.8	38.8	11.3	37.9	37.9	11.5
	18	42.2	42.0	12.1	40.6	40.6	12.4	38.8	38.8	12.7	37.9	37.9	12.8
	19	42.3	21.8	13.2	40.6	40.6	13.5	38.8	38.8	13.8	37.9	37.9	14.0
	20	43.0	40.6	14.5	41.1	39.9	14.8	39.0	39.0	15.1	37.9	38.1	15.3
	21	44.2	37.5	15.8	42.3	36.8	16.1	40.2	36.0	16.4	39.1	35.5	16.6

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



## Technical Specification PHE40 Economy Cycle Rooftop Packaged Model

Total Cooling Capacity (kW)*	39.1	Number of Compressors	2
Sensible Cooling Capacity (kW)*	31.5	Power Requirements (Volt /Phase)	415 / 3
Heating Capacity (kW)**	38.4	Normal Max. Current (Amps /Phase)	30.8
Nominal Evaporator Air Flow (L/S)	2200	Power Input (kW)	14.1
*Entering air @ 27/19 °C and ambient 35°C		** Entering air @ 21 °C DB and 7°C ambient	

### Air Quantity Multiplying Factors

Capacity	% Rated Air Quantity - Nominal 2200 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)	30.1	32.4	37.1	40.7	48.7

### 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 11.7
Locked Rotor Current (Amps /Phase)	2 x 68
Displacement (m <sup>3</sup> /h)	2 x 11.6

### 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

### Evaporator Coil

Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	2 x 0.55
Air Quantity (l/s)	2000

### Evaporator Fan

Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor Voltage /Phase /Frequency	415 /3 /50
Motor Power (kW)	2.2
Maximum Fan Speed (rpm)	800

### Electrical

Power Requirements	3 Phase /415V /50Hz
Normal Max. Current (Amps /Phase)	30.8

### Condenser Coil

Type	Copper Tube /Aluminium Fins
Face Area(m <sup>2</sup> )	2 x 0.56

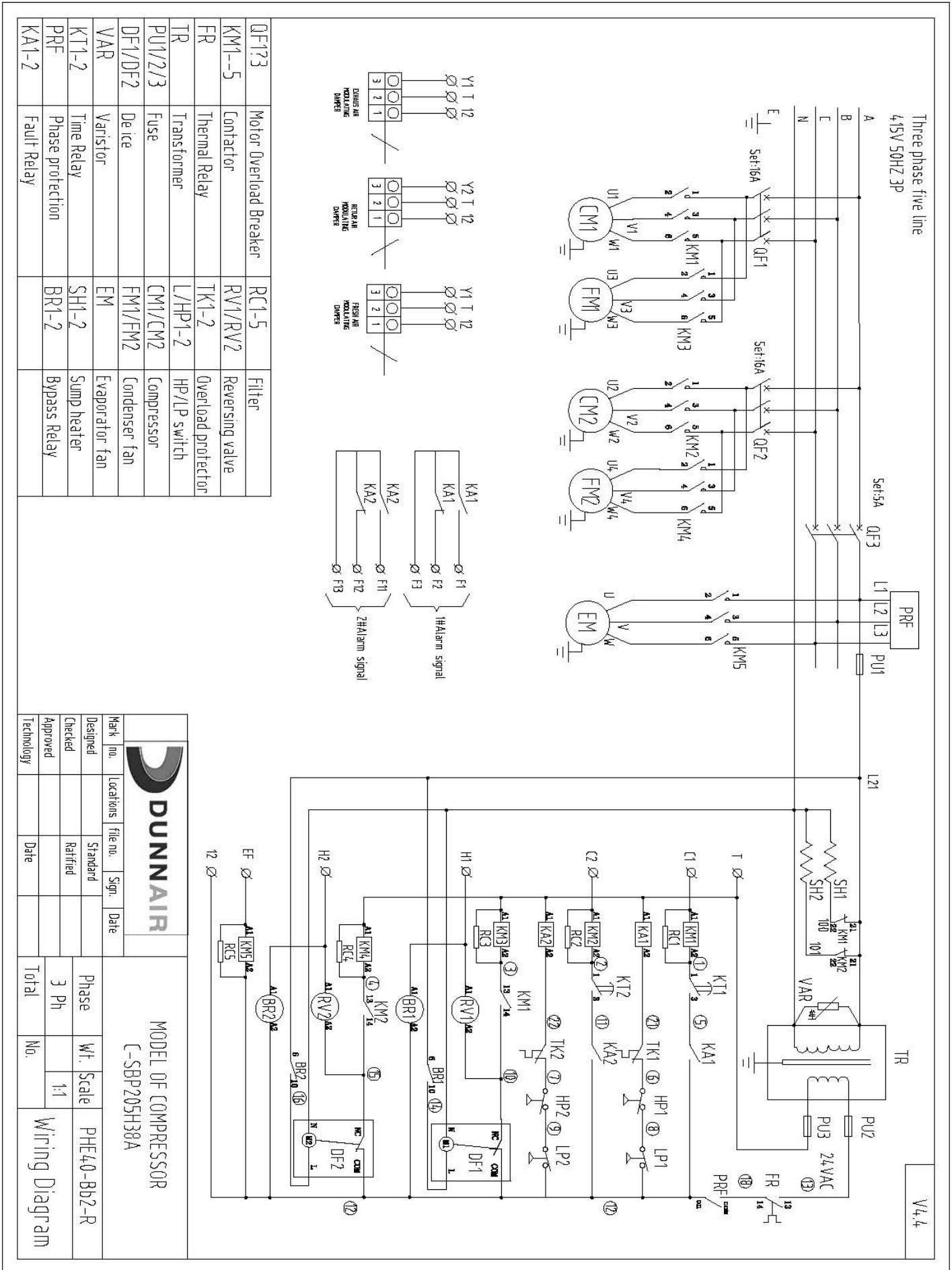
### Condenser Fan

Number of Fans	2
Type	Axial
Drive	Direct
Motor Watts /rpm	2 x 370 / 950
Motor Voltage /Phase /Frequency	415 / 3 / 50

### Refrigeration System

Refrigerant Type	R410A
Charge(kg)	2 x 4.4
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor unit	TX Valve

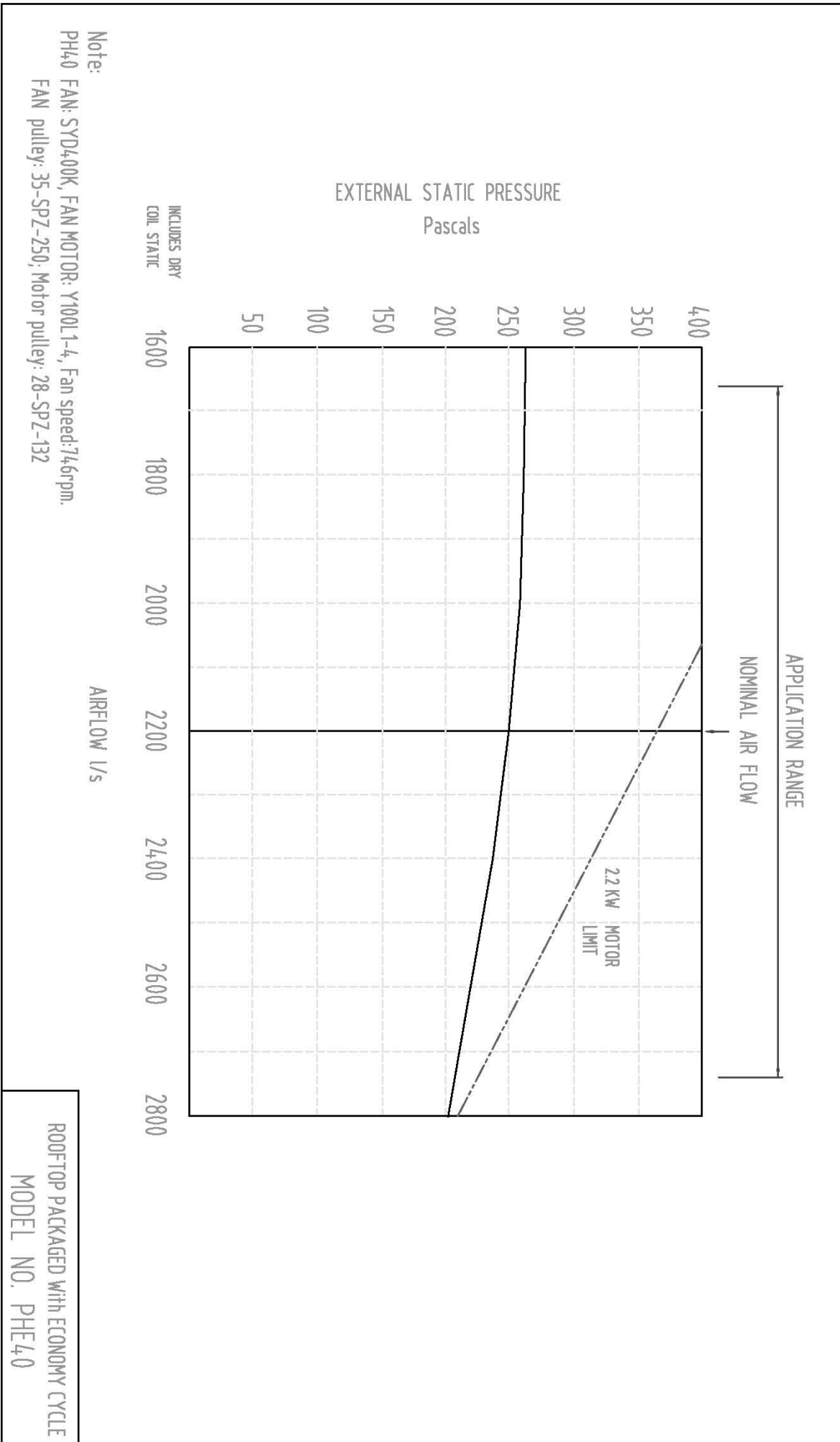




**MODEL OF COMPRESSOR**  
C-SBP205H38A

Mark	Ino.	Locations	file no.	Sign.	Date
Designed			Standard		
Checked			Ratified		
Approved					
Technology					

Phase	Wt. Scale	PHE40-BB2-R
3 Ph	1:1	
Total	No.	Wiring Diagram

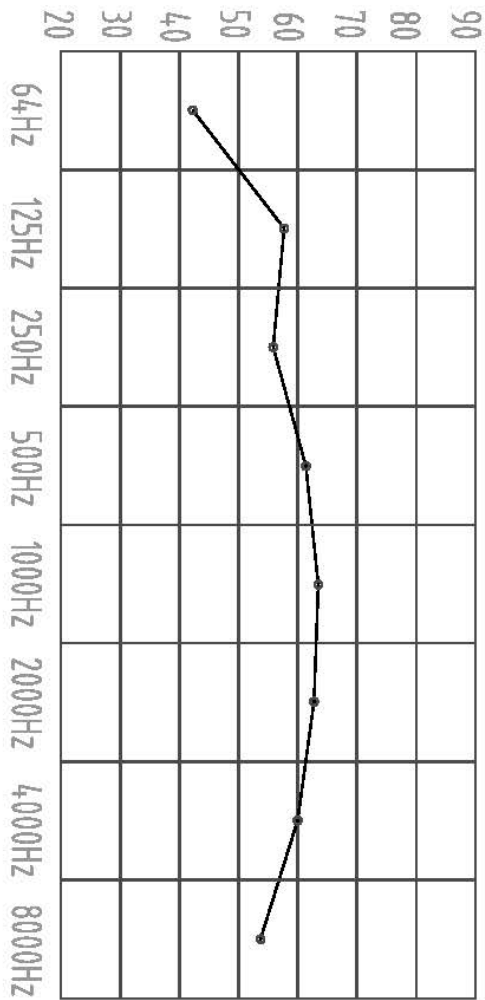


PHE40 Sound Pressure Curve


A Class: 68.2dB

Hz	dB
64Hz	42
125Hz	58
250Hz	56
500Hz	61
1000Hz	64
2000Hz	62
4000Hz	60
8000Hz	54

Sound Pressure Curve ( A Class: 68.2dB) dB



Note: Occupant at least 1.0m from sound source.

<b>DRAWN BY:</b> Chen Cheng	<b>DATE:</b> 13th, Feb, 2014	
<b>APPROVED Q.A.:</b> Zhu Junquan	<b>APPROVED ENG.:</b> Li Meifen	
<b>TITLE:</b> Packaged Rooftop With Economy Cycle		<b>PHE TYPE</b>
<b>MODEL:</b> PHE40	<b>DRAWING NO.:</b> 01	
<b>ISSUE:</b> 01	<b>SHEET SIZE:</b> A4	