



# PH85

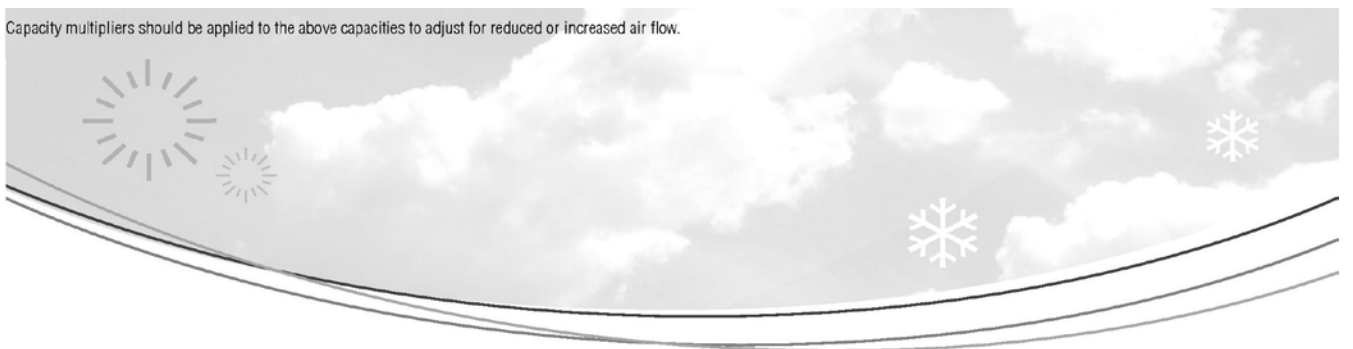
*Rooftop Packaged*

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	82.1	64.5	10.4	78.1	62.5	10.7	73.1	60.5	11.1	69.8	58.5	11.3
	18	82.6	54.1	11.0	78.6	52.1	11.8	73.6	50.1	12.1	70.3	48.1	12.4
	19	85.6	46.2	12.7	81.6	44.2	13.0	76.6	42.2	13.4	73.3	40.2	13.6
	20	86.1	41.6	13.6	82.1	39.6	14.0	77.1	37.6	14.4	73.8	35.6	14.7
23	17	83.1	64.5	10.3	79.1	62.5	10.7	74.9	60.5	11.0	71.6	58.5	11.3
	18	83.6	64.1	11.3	79.6	62.1	11.7	74.6	60.1	11.6	71.3	58.1	12.4
	19	86.6	56.2	12.6	82.6	54.2	13.0	77.6	52.5	13.4	74.3	50.5	13.7
	20	87.1	51.6	13.7	83.1	49.6	14.1	78.3	47.6	14.5	75	45.6	14.7
	21	87.8	44.5	14.6	83.8	42.5	15.1	78.8	40.5	15.5	75.5	45.6	15.8
25	17	85.1	72.5	10.3	81.1	70.5	10.6	76.1	68.5	11.0	72.8	66.5	11.3
	18	85.6	72.1	11.5	81.6	70.1	11.9	76.5	68.1	12.3	73.2	66.1	12.8
	19	88.6	64.2	12.6	84.6	62.2	13.0	79.6	60.2	13.4	76.3	58.2	13.7
	20	89.1	59.6	13.7	85.1	57.6	14.1	80.1	55.6	14.5	76.8	53.6	14.7
	21	90.8	52.5	14.8	86.8	50.5	15.1	81.8	48.5	15.5	78.5	46.5	15.7
27	17	87.1	78.5	10.3	83.1	76.5	10.6	78.3	74.5	11.0	75	72.5	11.3
	18	87.6	78.1	11.5	83.6	76.1	11.8	78.6	74.1	12.2	75.3	72.1	12.4
	19	90.6	70.2	12.5	86.6	68.2	12.9	81.6	66.2	13.3	78.3	64.2	13.5
	20	91.1	65.6	13.7	87.1	63.6	14.0	82.1	61.6	14.4	78.8	59.6	14.6
	21	92.8	58.5	14.8	88.8	56.5	15.2	83.8	54.5	15.6	80.5	52.5	15.8
29	17	89.1	84.5	10.1	85.1	82.5	10.5	80.1	76.5	10.9	76.8	74.5	11.1
	18	89.6	84.1	11.3	85.6	82.1	11.7	83.6	76.4	12.1	80.3	74.4	12.3
	19	92.6	76.2	12.5	88.6	74.2	12.8	86.6	72.2	13.2	83.3	70.2	13.4
	20	93.1	71.6	13.6	89.1	69.6	13.9	87.1	66.6	14.4	83.8	64.6	14.6
	21	94.8	64.5	14.7	90.8	62.5	15.1	88.8	60.5	15.5	85.8	58.5	15.7
31	17	91.1	89.5	9.6	87.1	85.5	10.2	85.1	82.5	10.6	81.8	80.5	10.8
	18	91.6	88.1	11.2	87.6	86.1	11.5	85.7	79.5	11.7	82.4	77.5	12.1
	19	94.6	81.2	12.4	90.6	79.2	12.8	88.6	77.2	13.1	85.3	75.2	13.3
	20	95.1	76.6	13.5	91.1	74.6	14.0	89.1	72.6	14.3	85.8	70.6	14.6
	21	96.8	68.5	14.7	92.8	66.5	15.1	90.8	64.5	15.5	87.5	62.5	15.9

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



## Technical Specification PH85 Rooftop Packaged Model

Total Cooling Capacity (kW)*	86.6	Number of Compressors	2
Sensible Cooling Capacity (kW)*	68.2	Power Requirements (Volt /Phase)	415 / 3
Heating Capacity (kW) **	87.1	Normal Max. Current (Amps /Phase)	63.2
Nominal Evaporator Air Flow (L/S)	4500	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

### Evaporator Coil

Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	1.62
Air Quantity (l/s)	4500

### Heating Performance Data

	Outdoor Coil Entering DB temperature °C				
	0	4	8	12	18
Heating Capacity (kW)	74.4	81.8	89	97.7	126.2

### Evaporator Fan

Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor Voltage /Phase /Frequency	415 / 3 / 50
Motor Power (kW)	5.5
Maximum Fan Speed (rpm)	809

### 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

### Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	63.2

### Compressor

Number Per Unit	2
Type	Scroll
RPM (Nom)	2900
Normal Max. Current (amps /phase)	2 x 28.8
Locked Rotor Current (amps /phase)	-
Displacement (m <sup>3</sup> /h)	2 x 29.8

### Condenser Coil

Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	2 x 1.37

### Condenser Fan

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

### 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

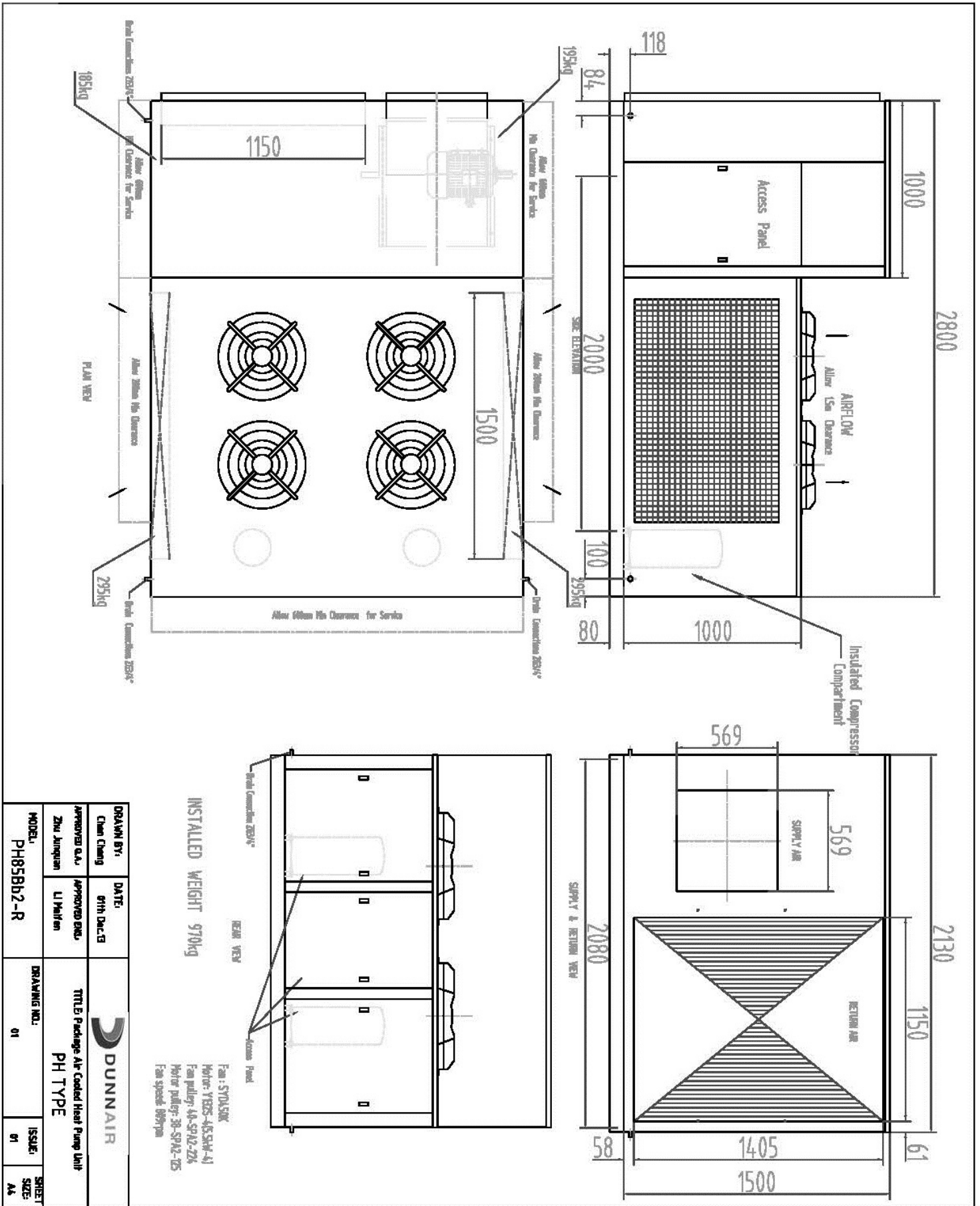
### Refrigeration System

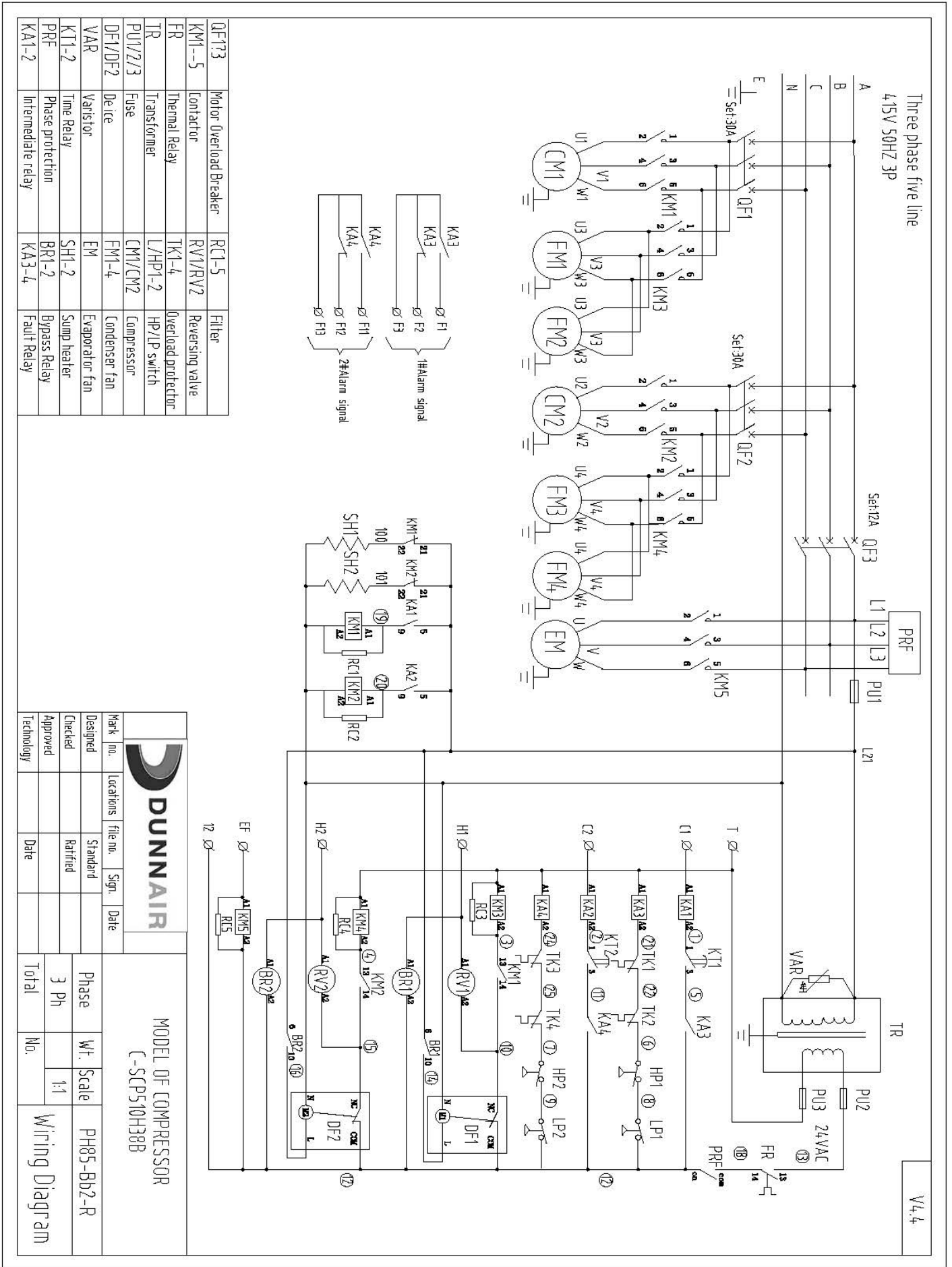
Refrigerant Type	R410A
Charge (kg)	2 x 10.0
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor Unit	TX Valve

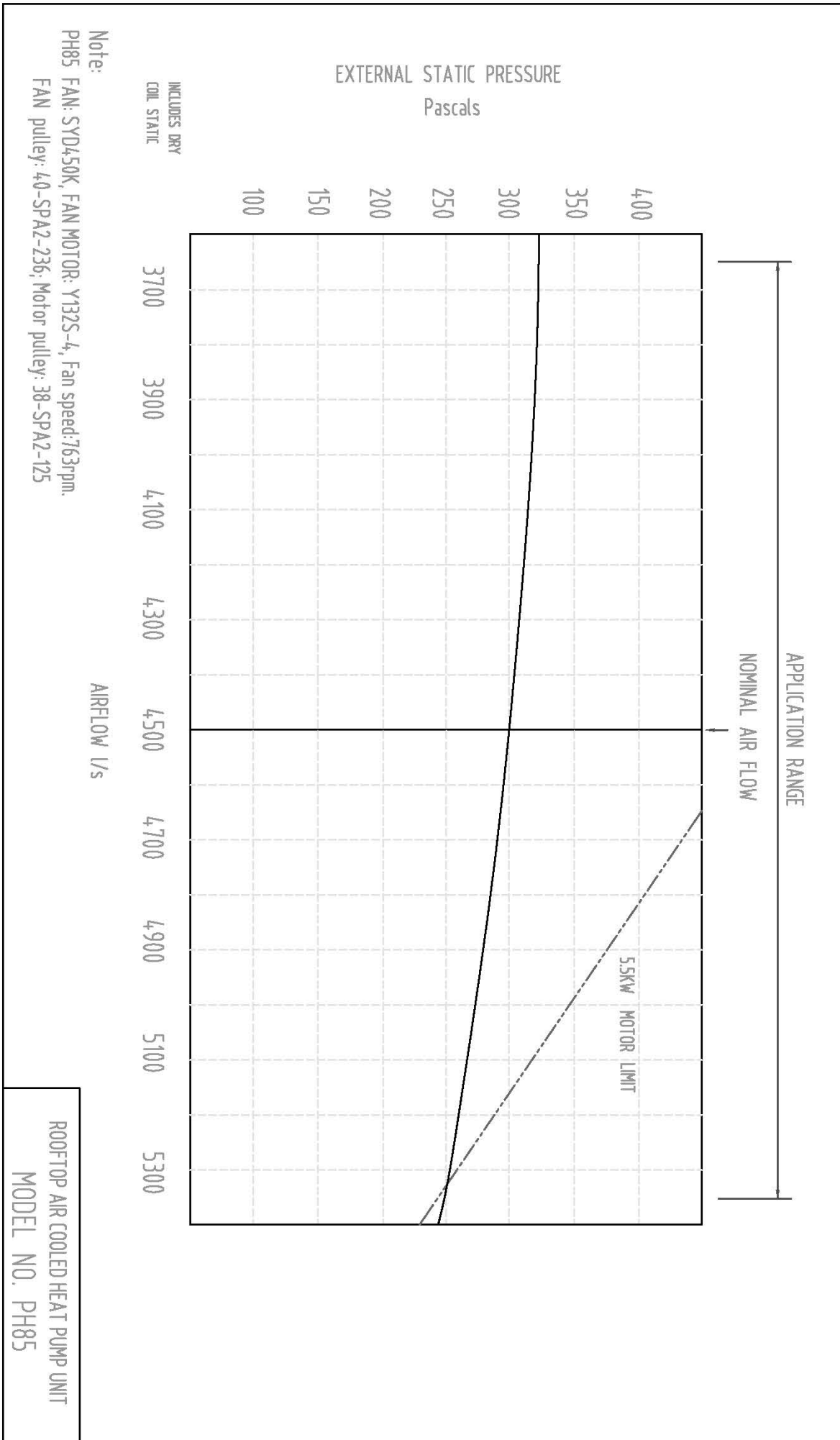
### Standard Features

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





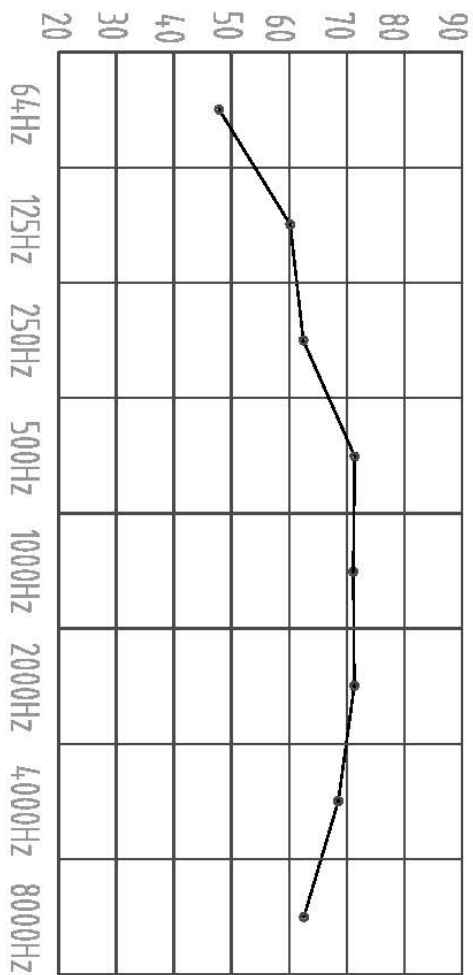


PH85 Sound Pressure Curve


A Class: 75.8dB

Hz	dB
64Hz	48
125Hz	60
250Hz	63
500Hz	72
1000Hz	71
2000Hz	72
4000Hz	69
8000Hz	62

Sound Pressure Curve ( A Class: 75.8dB) 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 Air-Cooled Heat Pump Unit		<b>PH TYPE</b>	
<b>MODEL:</b> PH85	<b>DRAWING NO.:</b> 01	<b>ISSUE:</b> 01	<b>SHEET SIZE:</b> A4