



**DUNNAIR**  
(Aust) Pty Ltd

**PHS18**

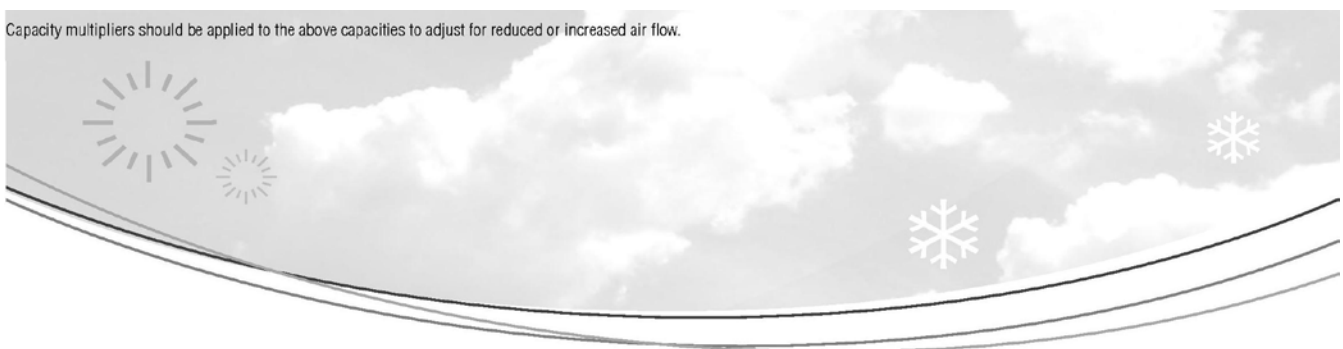
*Rooftop Packaged*

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	15.2	10.8	11.2	14.6	10.5	11.4	14.0	10.3	11.7	13.4	8.4	12.1
	18	15.8	9.9	12.2	15.2	9.7	12.4	14.6	9.5	12.7	14.3	8.3	13.2
	19	16.4	9.1	13.2	15.8	8.8	13.4	15.1	8.6	13.7	14.8	7.8	14.2
	20	17.0	8.2	14.2	16.3	8.0	14.5	15.6	7.7	14.7	15.0	7.0	15.4
23	17	15.2	11.6	11.2	14.6	11.4	11.4	14	11.2	11.7	14.2	9.2	12.1
	18	15.8	10.8	12.2	15.2	10.5	12.4	14.6	10.3	12.7	14.3	8.3	13.1
	19	16.4	9.9	13.2	15.8	9.7	13.4	15.1	9.4	13.7	14.4	7.4	14
	20	17	9.1	14.2	16.3	8.8	14.5	15.6	8.5	14.7	14.8	6.8	15
	21	17.6	8.2	15.2	17	7.9	15.5	16.2	7.7	15.7	14.9	7	16
25	17.0	15.2	12.5	12.2	14.6	12.2	11.4	14.0	12.0	11.7	133.0	8.3	12.0
	18.0	15.8	11.6	13.2	15.2	11.4	12.4	14.6	10.3	12.7	14.0	8.0	13.0
	19.0	16.4	10.8	14.2	15.8	10.5	13.4	15.6	9.4	13.7	15.0	8.0	14.0
	20.0	17.0	9.9	15.2	16.3	9.7	14.5	16.2	8.5	14.7	15.0	7.0	15.0
	21.0	17.6	9.0	16.2	17.0	8.8	15.5	16.8	7.6	15.7	15.1	7.1	16.0
27	17	16.6	16.6	12.0	15.9	16.2	12.2	15.3	15.3	12.4	15.0	15.0	12.7
	18	17.2	15.5	13.0	16.5	15.5	13.2	15.8	14.9	13.4	15.1	14.1	13.7
	19	17.9	14.4	14.0	17.1	14.4	14.2	16.3	13.8	14.5	15.8	14.6	14.8
	20	18.4	13.3	15.1	17.7	13.3	15.3	16.9	12.8	15.5	16.1	15.1	18.8
	21	19.1	12.2	16.1	18.3	12.3	16.3	17.5	11.7	16.5	17.0	16.0	16.8
29	17	16.6	16.6	12.0	15.9	15.9	12.2	15.3	15.3	12.4	14.6	14.6	12.8
	18	17.2	15.5	13.0	16.5	16.1	13.2	15.8	15.8	13.4	15.0	14.4	13.8
	19	17.9	14.4	14.0	17.1	15.2	14.2	16.3	14.7	14.5	15.3	14.0	14.8
	20	18.4	13.2	15.1	17.7	14.1	15.3	16.9	13.8	15.5	16.1	15.0	15.8
	21	19.1	12.2	16.1	18.3	13.5	16.3	17.5	13.2	16.5	17.3	16.0	16.8
31	17	16.9	16.9	11.8	16.5	16.5	12.1	16.3	16.3	11.4	16.1	15.9	12.0
	18	17.2	16.8	12.8	17.1	16.5	13.1	16.9	16.2	12.4	16.1	15.9	12.8
	19	17.9	16.2	13.8	17.7	15.9	14.1	17.5	15.7	13.4	17.1	15.5	13.8
	20	18.5	15.6	14.8	18.3	15.4	15.1	18.4	15.2	14.4	17.4	15.0	14.8
	21	19.4	14.9	15.8	19.0	14.7	16.1	19.1	14.5	15.0	18.1	14.3	15.8

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



## Technical Specification PHS18 Rooftop Packaged Model

Total Cooling Capacity (kW)*	17.1	Number of Compressors	1
Sensible Cooling Capacity (kW)*	14.4	Power Requirements (Volt /Phase)	415 / 3
Heating Capacity (kW)**	17.5	Normal Max. Current (Amps /Phase)	14.6
Nominal Evaporator Air Flow (L/S)	1000	Power Input (kW)	6.5
*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 1000 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)	12.7	14.4	18.4	19.8	21.0

### 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	1
Type	Scroll
RPM (Nom)	2900
Normal Max Current (Amps /Phase)	11.8
Locked Rotor Current (Amps /Phase)	68
Displacement (m <sup>3</sup> /h)	11.5

### 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> )	0.38
Air Quantity (l/s)	1000

### Evaporator Fan

Number of Fans	1
Type	Centrifugal
Drive	Direct
Motor Voltage /Phase /Frequency	415 /3 /50
Motor Power (kW)	0.45
Maximum Fan Speed (rpm)	960

### Electrical

Power Requirements	3 Phase /415V /50Hz
Normal Max. Current (Amps /Phase)	14.6

### Condenser Coil

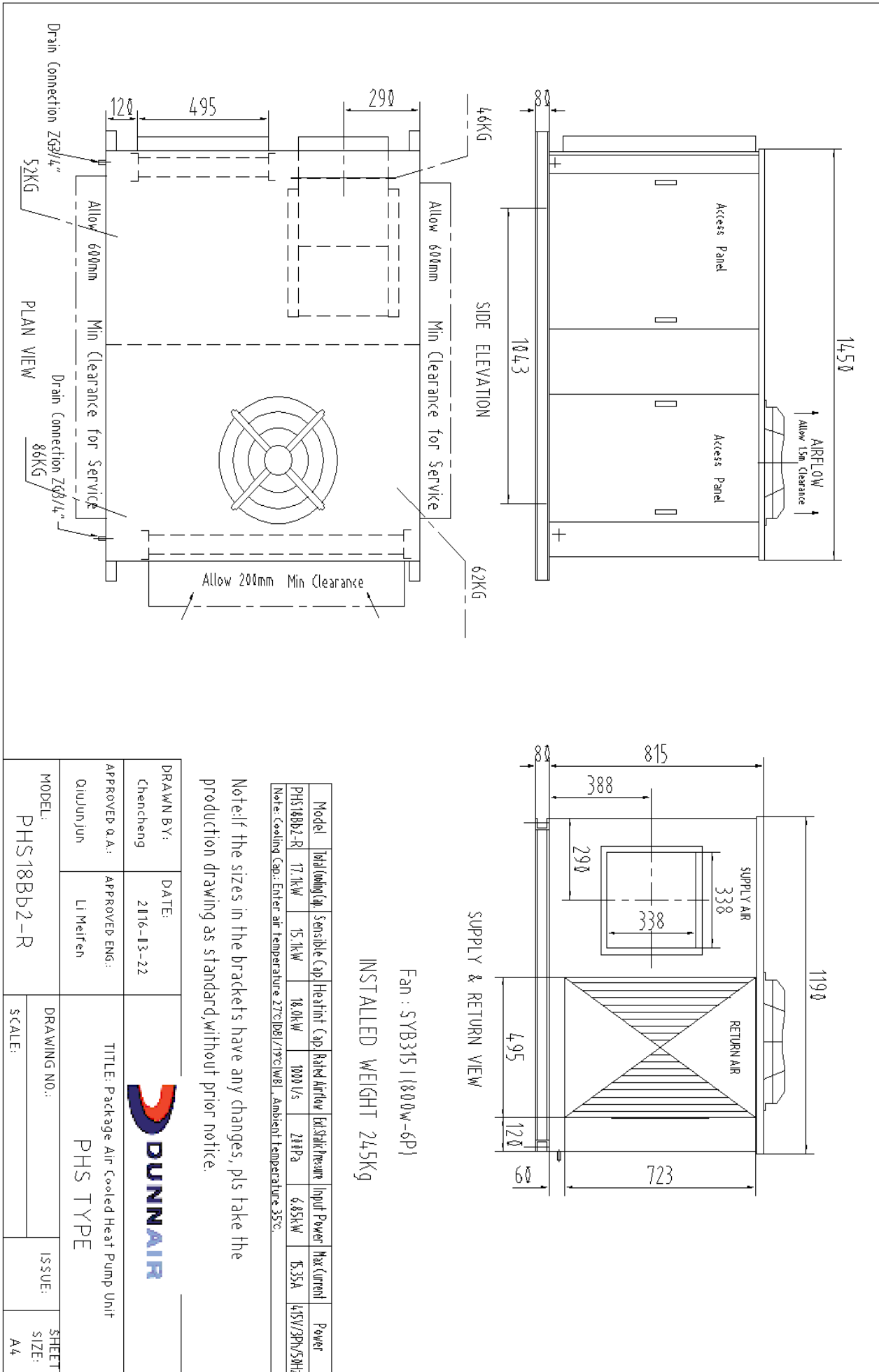
Type	Copper Tube /Aluminium Fins
Face Area(m <sup>2</sup> )	0.61

### Condenser Fan

Number of Fans	1
Type	Axial
Drive	Direct
Motor Watts /rpm	370 / 950
Motor Voltage /Phase /Frequency	415 / 3 / 50

### Refrigeration System

Refrigerant Type	R410A
Charge(kg)	4.8
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor unit	TX Valve



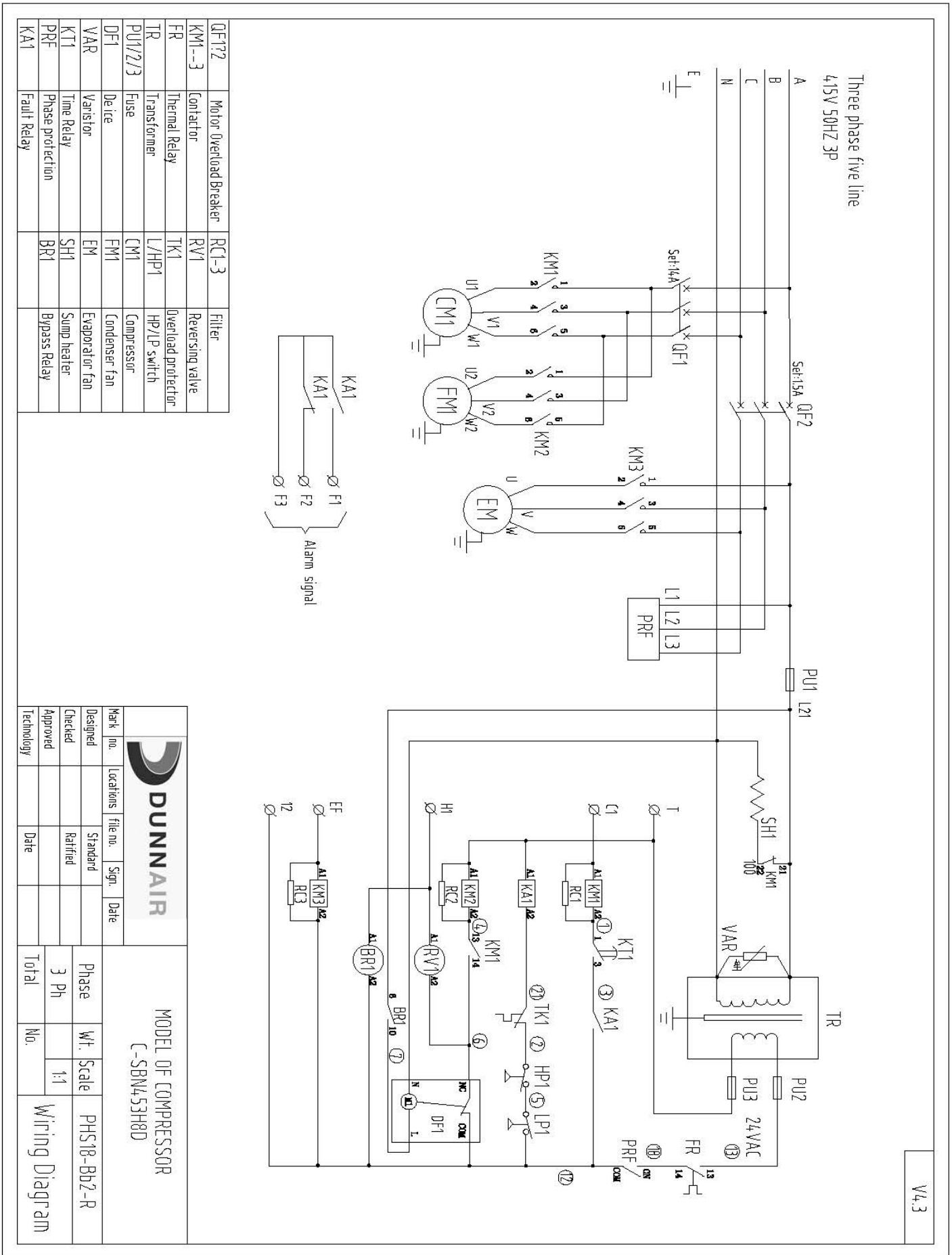
Fan : SYB315 (1800W-6P)  
 INSTALLED WEIGHT 245Kg

Model	Total Cooling Cap.	Sensible Cap.	Heating Cap.	Rated Airflow	Ex.Static Pressure	Input Power	Max Current	Power
PHS18BB2-R	17.1kW	15.1kW	18.0kW	1000 Us	211Pa	6.85kW	15.35A	415V/3P/50Hz

Note: Cooling Cap: Enter air temperature 27°C(DB)/19°C(WB). Ambient Temperature 35°C.

Note: If the sizes in the brackets have any changes, pls take the production drawing as standard, without prior notice.

DRAWN BY: Chen Cheng	DATE: 2016-03-22		TITLE: Package Air Cooled Heat Pump Unit PHS TYPE
APPROVED A.A.: Qiu Jun Jun	APPROVED ENG.: Li Meifen		
MODEL: PHS18BB2-R	DRAWING NO.:	ISSUE:	SHEET SIZE: A4
	SCALE:		



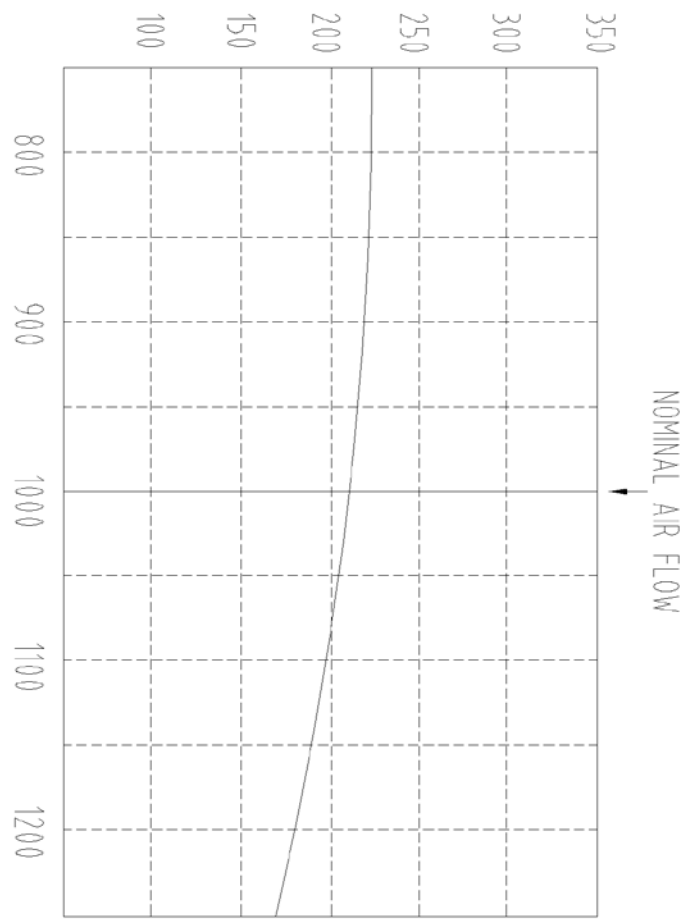
QF1?2	Motor Overload Breaker	RC1-3	Filter
KM1--3	Contactors	RV1	Reversing valve
FR	Thermal Relay	TK1	Overload protector
TR	Transformer	L/HP1	HP/LP switch
PUI1/2/3	Fuse	CM1	Compressor
DF1	De ice	FM1	Condenser fan
VAR	Varistor	EM	Evaporator fan
KT1	Time Relay	SH1	Sump heater
PRF	Phase protection	BR1	Bypass Relay
KA1	Fault Relay		

		Mark no.    Locations    file no.    Sign.    Date	
		Designed	Standard
Checked	Ratified	Phase	
Approved		3 Ph	
Technology		Scale	
		1:1	
MODEL OF COMPRESSOR C-SBN453H8D		PHS18-Bb2-R	
Date		Total    No.	
Date		Wiring Diagram	


V4.3

EXTERNAL STATC PRESSURE  
pascals

INCLUDES DRY  
COIL STATIC



AIRFLOW l/s

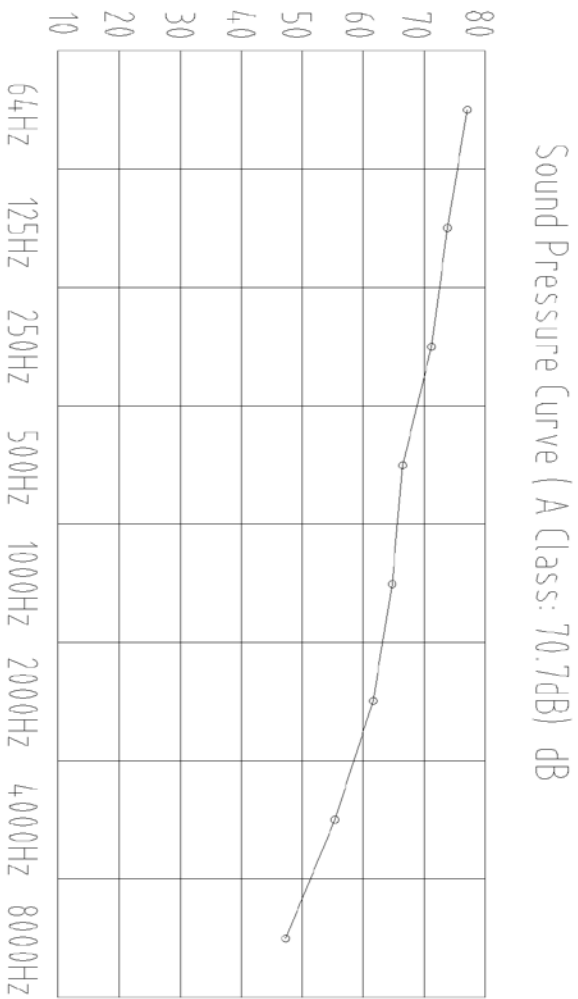
DRAWN BY: Chen Cheng	DATE: 2016-06-23	 <b>DUNNAIR</b>
APPROVED Q.A.: QiuJunjun	APPROVED ENG.: Li Meifen	
TITLE: Package Air-Cooled Heat Pump Unit with Economy Cycle		<b>PHSE TYPE</b>
MODEL: PHS18-Bb2	DRAWING NO.: 01	
		ISSUE: 01
		SHEET SIZE: A4


PHS18 Sound Pressure Curve

A Class: 70.7dB

Hz	dB
64Hz	78.5
125Hz	73.7
250Hz	71.1
500Hz	67.5
1000Hz	65.9
2000Hz	61.6
4000Hz	56.8
8000Hz	48.5

Note: Occupant at least 1.0m from sound source.



DRAWN BY: Chen Cheng		DATE: 2016-06-25			
APPROVED Q.A.: QiuJunjun		APPROVED ENG.: Li Meifen			
MODEL: PHS18		DRAWING NO.: 01		ISSUE: 01	
		TITLE: Packaged Air-Cooled Heat Pump Unit		SHEET SIZE: A4	
		PHS TYPE			