



DUNNAIR
(Aust) Pty Ltd

PHS20

R410a Refrigerant

Rooftop Packaged

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	18.8	11.6	11.5	17.9	11.2	11.8	17.0	10.8	12.1	16.5	10.8	12.2
	18	19.4	10.3	12.1	18.5	12.9	12.9	17.6	9.5	13.2	17.1	9.3	13.3
	19	20.0	9.1	13.6	19.1	13.9	13.9	18.1	8.3	14.2	17.6	8.0	14.3
	20	20.7	7.8	14.7	19.7	15.0	15.0	18.7	7.0	15.3	18.2	6.8	15.5
23	17	18.8	14.0	11.4	18.0	13.7	11.6	17.0	13.3	11.9	16.5	131.0	12.1
	18	19.4	12.7	12.5	18.5	12.3	12.8	17.5	11.9	13.1	17.0	11.7	13.3
	19	20.0	11.4	13.6	19.1	11.0	13.9	18.1	10.6	14.2	17.6	10.4	14.3
	20	20.7	10.1	14.8	19.7	9.8	15.1	18.7	9.3	15.5	18.2	9.1	15.6
	21	21.3	8.9	15.9	20.4	8.5	16.2	19.3	8.1	16.5	18.9	7.9	16.7
25	17	18.9	16.4	11.4	18.0	16.1	11.7	17.1	15.7	12.0	16.6	15.5	12.2
	18	19.4	15.9	12.6	18.5	14.8	12.8	17.6	14.4	13.0	17.1	14.2	13.3
	19	20.0	15.2	13.5	19.1	13.4	13.8	18.1	13.0	14.0	17.6	12.8	14.3
	20	20.6	14.5	14.7	19.7	12.1	15.0	18.7	11.6	15.3	18.2	11.4	15.5
	21	21.3	13.7	15.9	20.3	10.3	16.6	19.3	10.5	16.5	18.8	10.3	16.6
27	17	19.5	18.3	11.2	19.0	17.9	11.5	17.5	17.0	11.8	17.0	16.7	12.0
	18	19.6	17.8	12.4	19.2	17.4	12.7	17.6	17.1	13.0	17.1	16.4	13.2
	19	20.8	16.9	13.6	20.5	16.3	13.4	18.1	15.6	14.2	17.6	15.3	14.3
	20	21.3	15.6	14.7	20.6	14.9	14.6	18.6	14.2	15.3	18.2	13.8	15.4
	21	21.7	14.6	15.8	20.9	13.6	16.1	19.3	12.9	16.5	18.8	12.6	16.6
29	17	19.7	19.3	11.1	18.9	18.7	11.3	18.0	18.0	11.6	17.5	17.5	11.8
	18	19.8	19.1	12.3	18.9	18.6	12.6	18.0	18.0	12.9	17.5	17.5	13.0
	19	21.2	18.5	13.6	21.0	18.2	13.9	18.2	17.8	14.2	17.7	17.6	14.4
	20	21.6	17.1	14.7	21.5	16.7	15.0	18.7	16.3	15.3	18.2	16.1	14.4
	21	22.2	16.0	15.8	21.6	15.8	16.1	19.2	15.2	16.4	18.8	15.0	16.4
31	17	20.3	20.3	10.8	19.7	19.7	11.1	18.7	18.7	11.4	18.3	18.3	11.5
	18	20.4	20.3	12.2	19.7	19.7	12.4	18.7	18.7	12.8	18.3	18.3	12.9
	19	21.4	20.3	13.3	21.0	19.5	14.0	18.7	18.7	13.9	18.3	18.3	14.1
	20	21.7	19.7	14.6	21.5	19.4	15.0	18.7	18.7	15.2	18.3	18.3	15.3
	21	21.8	18.2	15.8	21.6	17.8	16.3	19.3	17.4	16.5	18.8	17.2	16.6

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



Technical Specification PHS20 Rooftop Packaged Model

Total Cooling Capacity (kW)*	20.5	Number of Compressors	1
Sensible Cooling Capacity (kW)*	16.3	Power Requirements (Volt /Phase)	415 / 3
Heating Capacity (kW)**	20.7	Normal Max. Current (Amps /Phase)	17.4
Nominal Evaporator Air Flow (L/S)	1110	Power Input (kW)	7.9

*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 1110 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 ²)	0.38
Air Quantity (l/s)	1110

Heating Performance Data

	Outdoor Coil Entering DB temperature °C				
	0	4	8	12	18
Heating Capacity (kW)	14.4	15.6	20.0	22.0	24.0

Evaporator Fan

Number of Fans	1
Type	Centrifugal
Drive	Direct
Motor Voltage /Phase /Frequency	415 /3 /50
Motor Power (kW)	0.8
Maximum Fan Speed (rpm)	1173

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)	14.6

Compressor

Number Per Unit	1
Type	Scroll
RPM (Nom)	2900
Normal Max Current (Amps /Phase)	14.0
Locked Rotor Current (Amps /Phase)	68
Displacement (m ³ /h)	13.0

Condenser Coil

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

Condenser Fan

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

Electrical Controls and Safeties

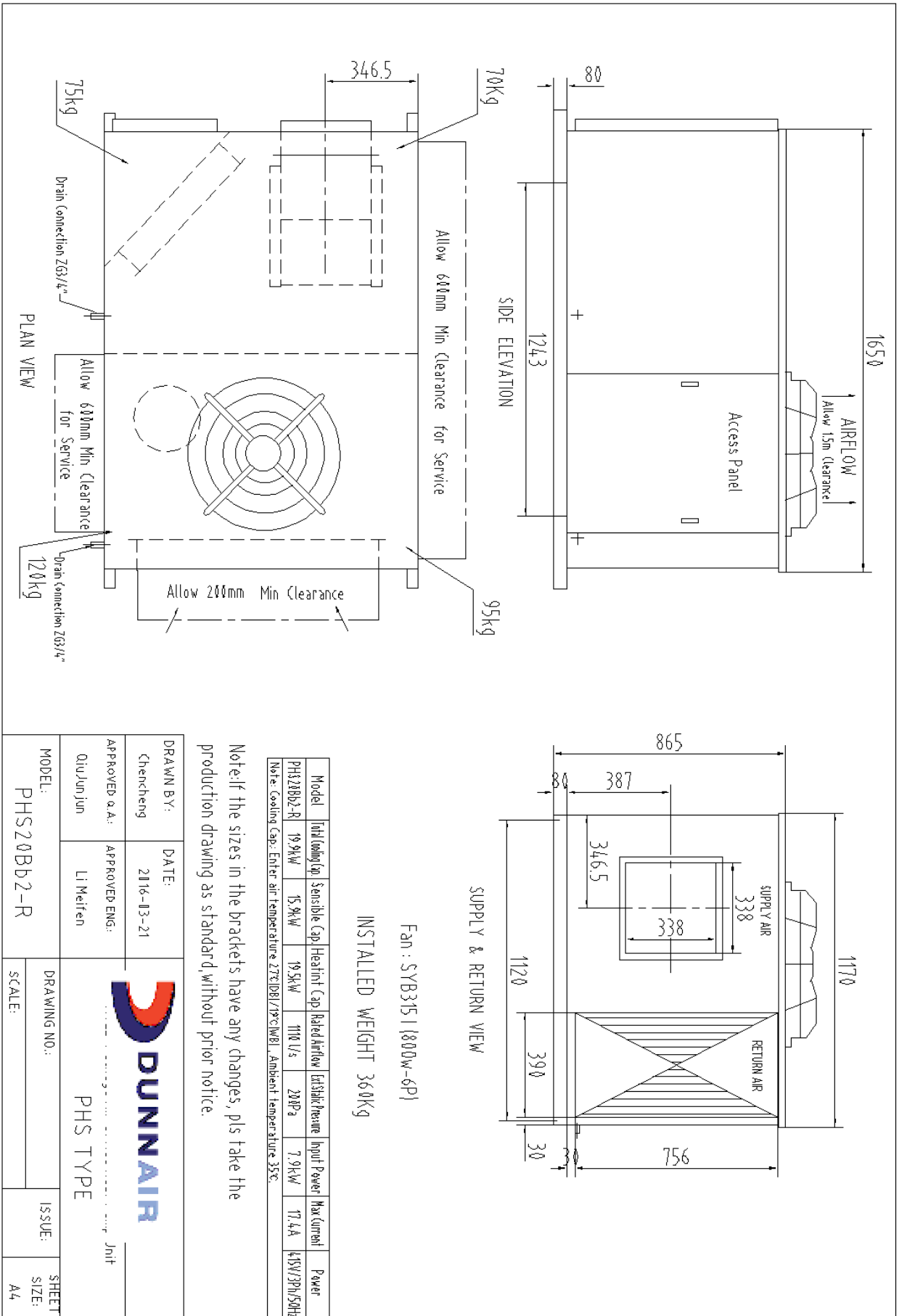
High Pressure Switch (Setting kPa)	4000	Defrost	
Low Pressure Switch (Setting kPa)	300	Initiation Temperature (°C)	-2
Indoor Fan Overload	Internal	Termination Temperature (°C)	18
Outdoor Fan Overload	Internal	Min. Period Between De-Ice (min)	30
Compressor Delay Timer	300 sec	Max De-Ice Period (min)	10

Refrigeration System

Refrigerant Type	R410A
Charge(kg)	5.0
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



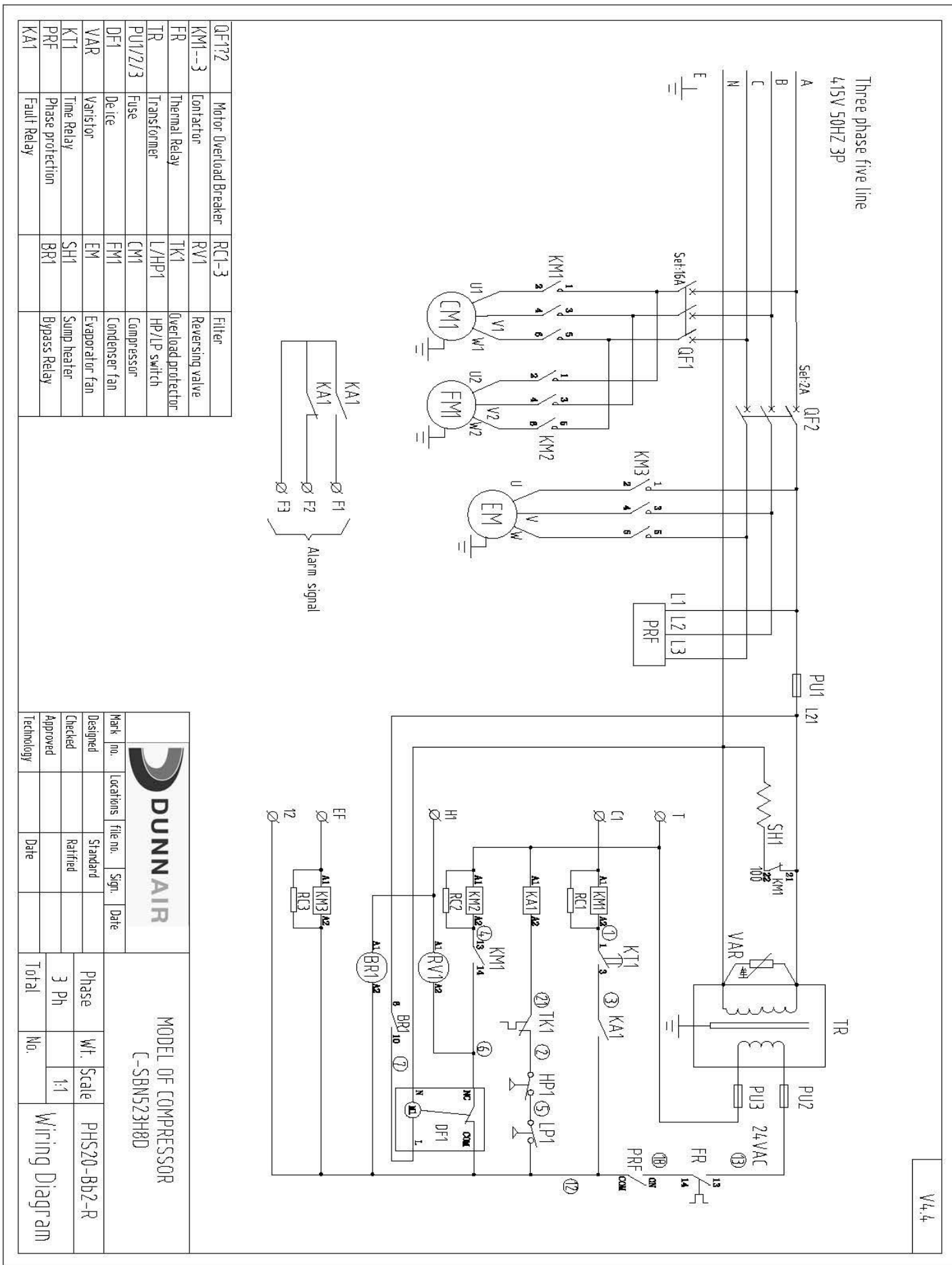
Fan : SYB315 (800W-6P)
 INSTALLED WEIGHT 360Kg

Model	Total Cooling Cap.	Sensible Cap.	Heating Cap.	Rated Airflow	Discharge Pressure	Input Power	Max Current	Power
PHS20BB2-R	19.9kW	15.9kW	19.5kW	1100 L/s	20MPa	7.9kW	17.4A	415V/3PH/50Hz

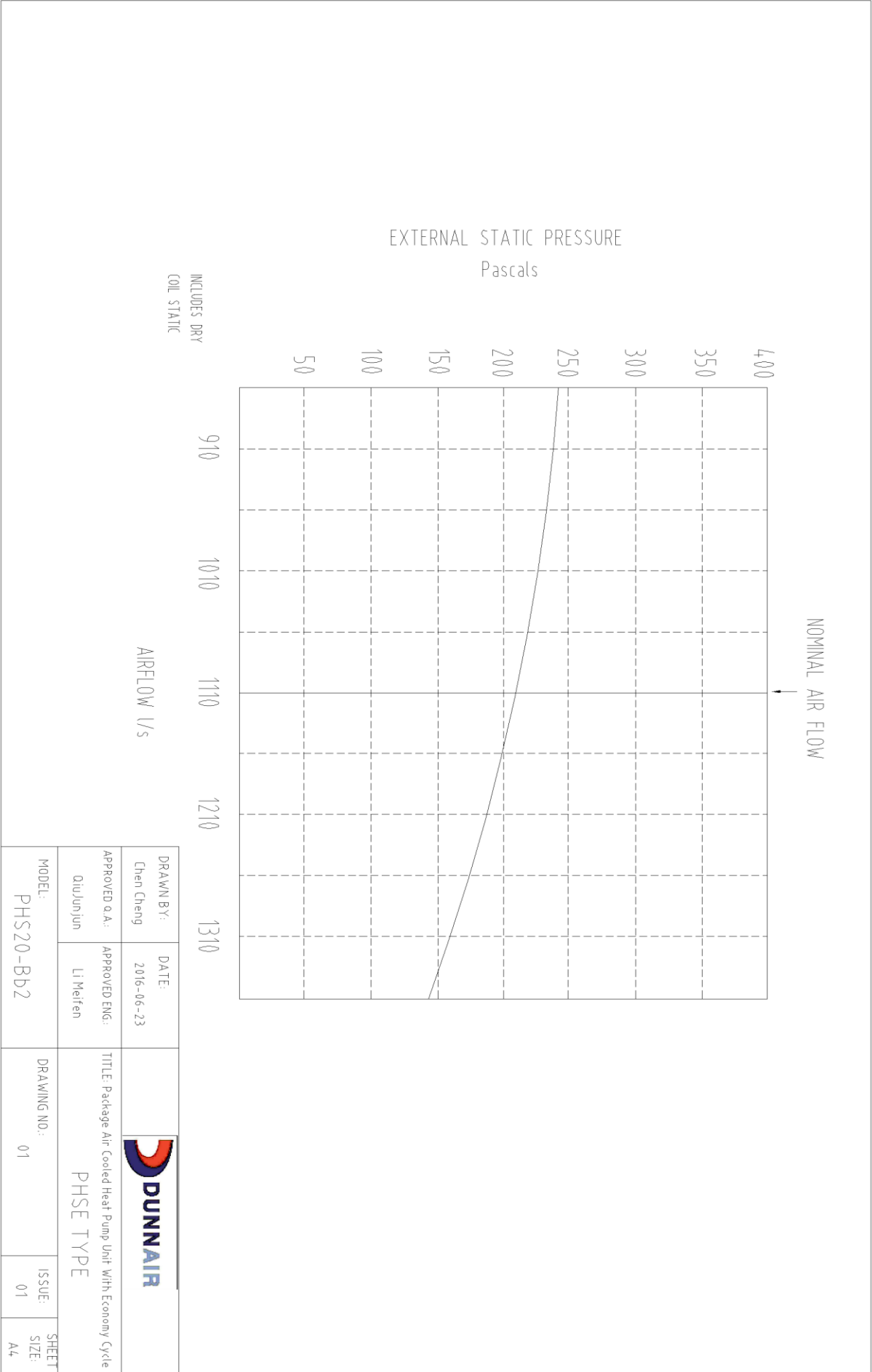
Note: Cooling Cap: Enter air temperature 27°C(DB)/19°C(WB), Ambient temperature 35°C.

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

DRAWN BY: Chencheng	DATE: 2016-13-21		Jmt PHS TYPE
APPROVED a.A.: QiuJunjun	APPROVED ENG.: Li Meiren		
MODEL: PHS20BB2-R	DRAWING NO.:	ISSUE:	SHEET SIZE: A4
	SCALE:		



V4.4

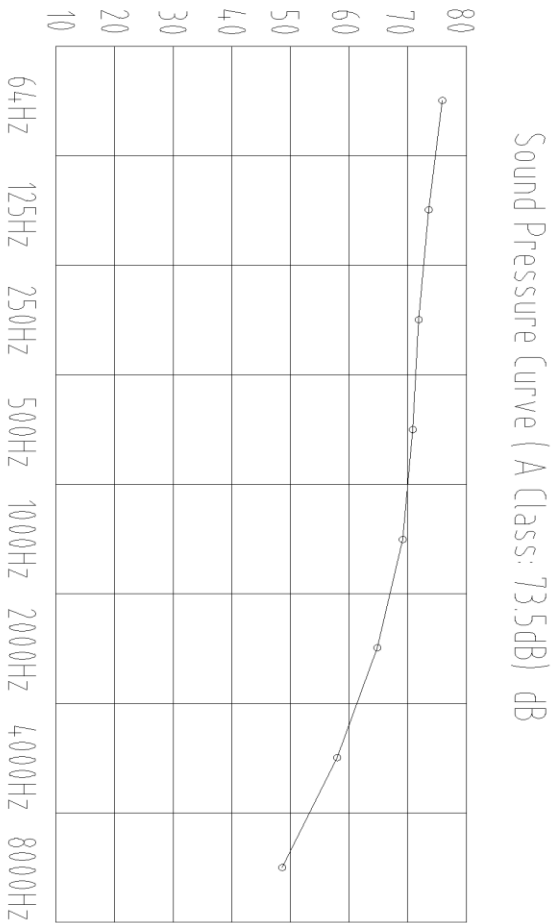



PHS20 Sound Pressure Curve

A Class: 73.5dB

Hz	dB
64Hz	76.5
125Hz	72.5
250Hz	70.8
500Hz	70.2
1000Hz	69.2
2000Hz	66.5
4000Hz	58.5
8000Hz	49.1

Note: Occupant at least 1.0m from sound source.



DRAWN BY: Chen Cheng	DATE: 2016-06-25	
APPROVED Q.A.: QiuJunjun	APPROVED ENG.: Li Meifan	
TITLE: Packaged Air-Cooled Heat Pump Unit		PHS TYPE
MODEL: PHS20	DRAWING NO.: 01	ISSUE: 01
		SHEET SIZE: A4