



DUNNAIR
(Aust) Pty Ltd

PHSE18

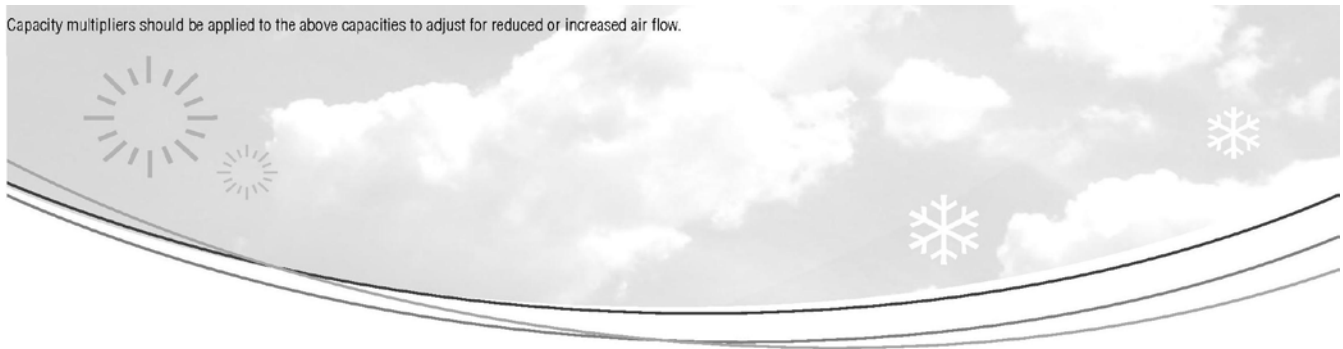
Economy Cycle Rooftop Packaged

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	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 PHSE18 Economy Cycle 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	

Air Quantity Multiplying Factors

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 (m³/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 (m²)	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

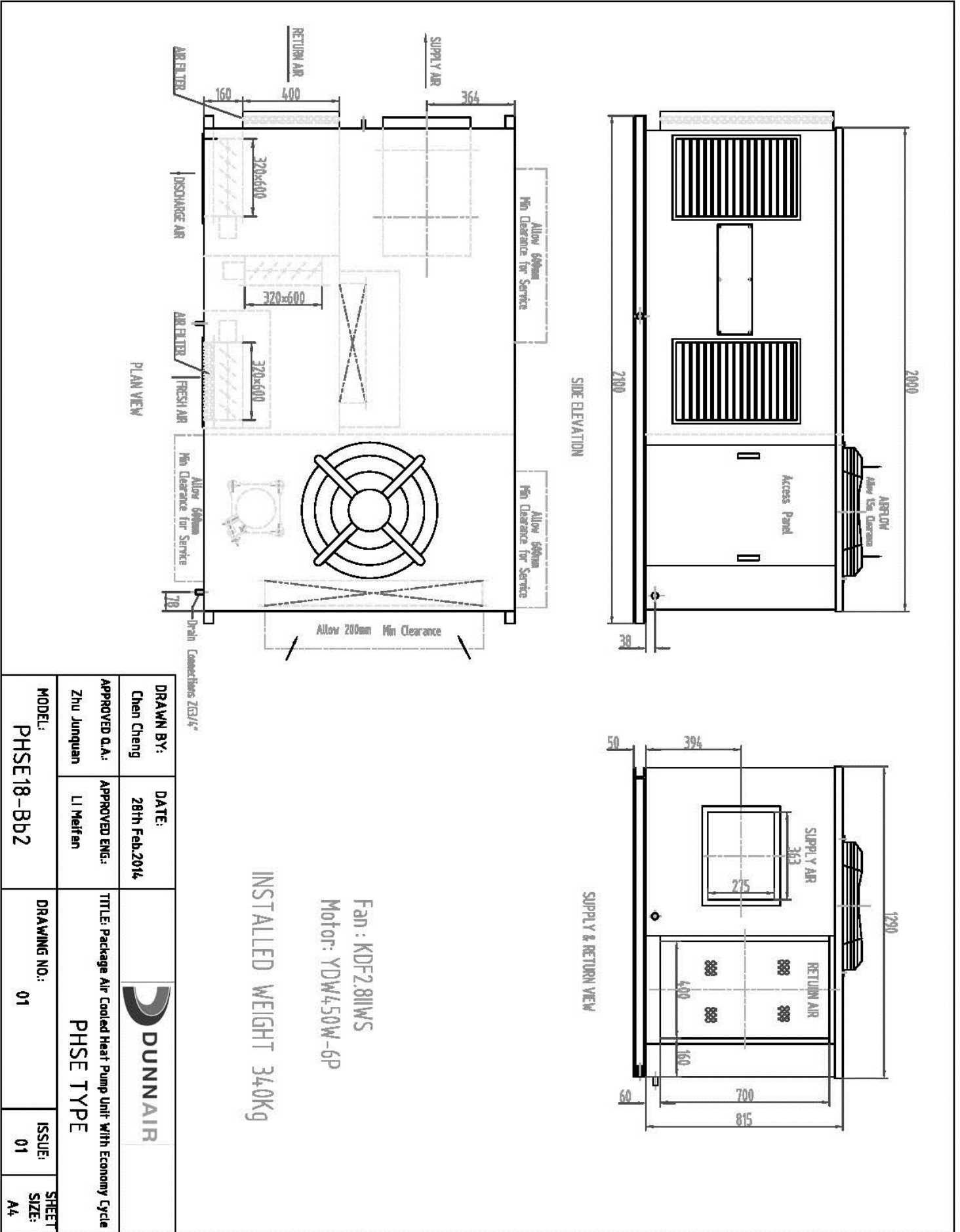
Type	Copper Tube /Aluminium Fins
Face Area(m²)	0.61

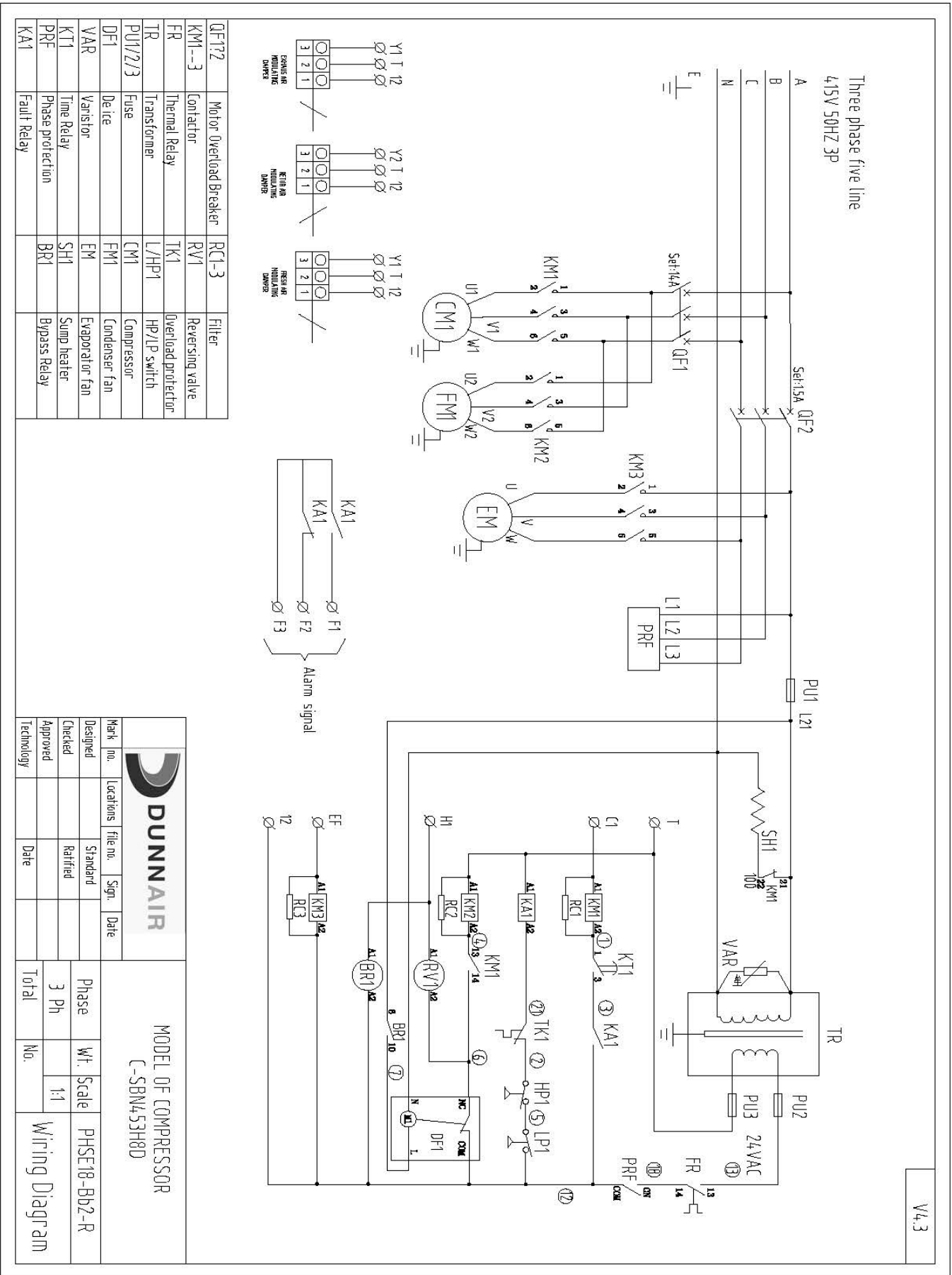
Condenser Fan

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

Refrigeration System

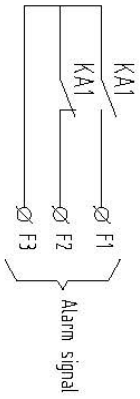
Refrigerant Type	R410A
Charge(kg)	4.8
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor unit	TX Valve





V4.3

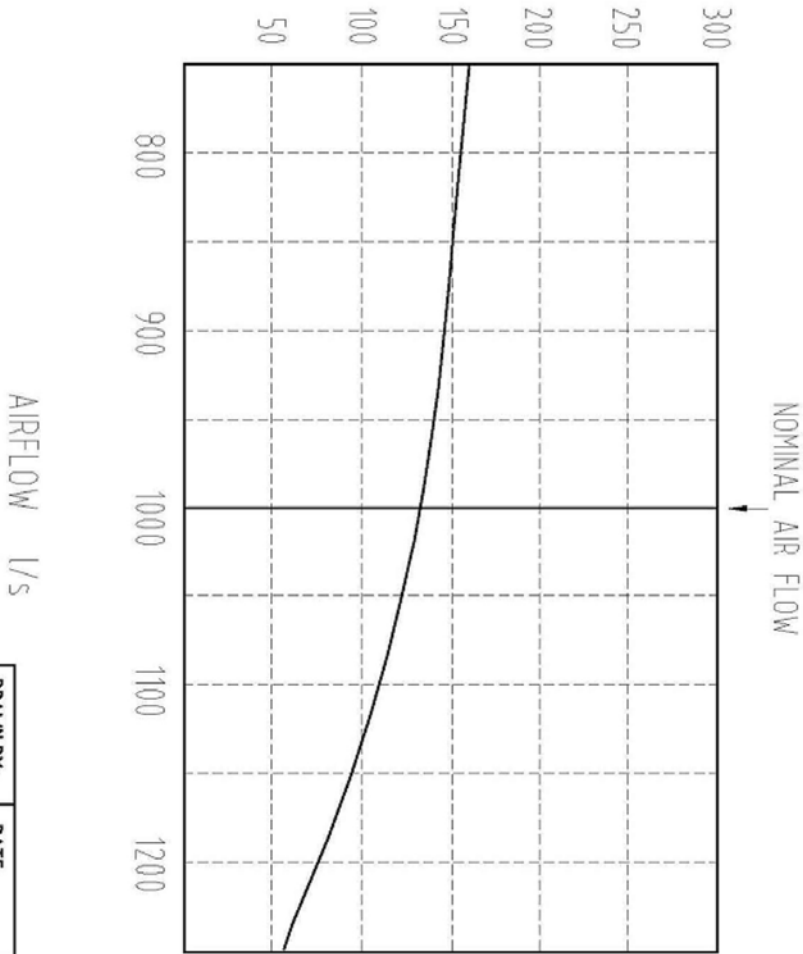
QF1?2	Motor Overload Breaker	RC1-3	Filter
KM1--3	Contactors	RV1	Reversing valve
FR	Thermal Relay	TK1	Overload protector
TR	Transformer	L/HP1	HP/LP switch
PU1/2/3	Fuse	CM1	Compressor
DF1	Defice	FM1	Condenser fan
VAR	Varistor	EM	Evaporator fan
KT1	Time Relay	SH1	Sump heater
PRF	Phase protection	BR1	Bypass Relay
KAT	Fault Relay		




		Mark no.		Locations		file no.		Sign.		Date	
		Designed		Standard		Checked		Ratified		Approved	
		Phase		Wt.		Scale		PHSE18-BD2-R		Wiring Diagram	
MODEL OF COMPRESSOR		3 Ph				1:1		C-SBN453H8D		Total No.	
Technology		Date		Date		Date		Date		Date	

EXTERNAL STATC PRESSURE
pascals

INCLUDES DRY
COIL STATIC



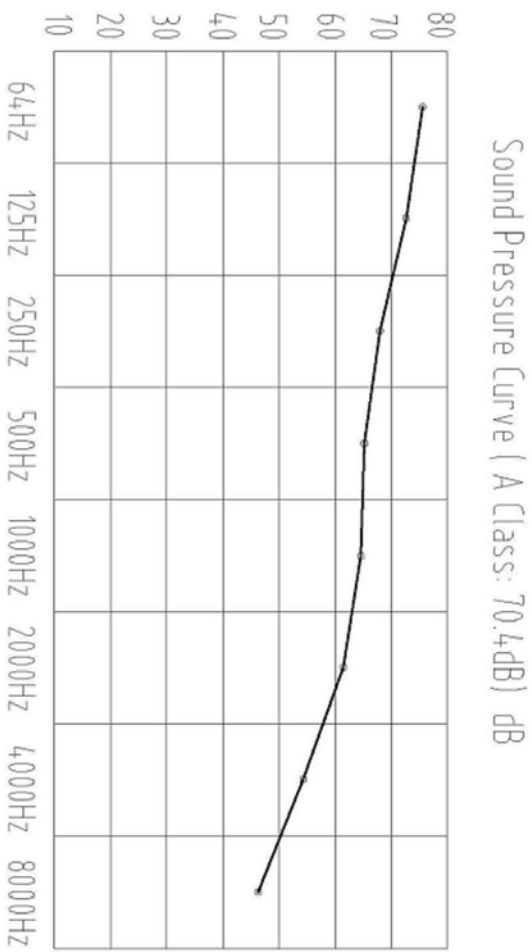
DRAWN BY: Chen Cheng	DATE: 15th Spt 2011	 DUNNAIR	TITLE: Package Air Cooled Heat Pump Unit With Economy Cycle PHSE TYPE
APPROVED O.A.: LI Meifen	APPROVED ENG.: Zhang Jingfei		
MODEL: PHSE18-Bb2	DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4


PHSE18 Sound Pressure Curve

A Class: 70.4dB

Hz	dB
64Hz	77.3
125Hz	72.1
250Hz	69.0
500Hz	66.2
1000Hz	65.9
2000Hz	61.1
4000Hz	55.5
8000Hz	47.2

Note: Occupant at least 1.0m from sound source.



DRAWN BY: Chen Cheng	DATE: 24th Dec 2011	
APPROVED Q.A.: Li Meifen	APPROVED ENG.: Zhang Jingfei	
TITLE: Packaged Air Cooled Heat Pump Unit		PHS TYPE
MODEL: PHSE18-Bb2	DRAWING NO.: 01	
ISSUE: 01	SHEET SIZE: A4	