DUNNAIR (Aust) Pty Ltd

R410a Refrigerant

SH66

Split Ducted Model

PERFORMANCE DATA

INDOOR COIL ENTERING AIR TEMP °c		OUTDOOR COIL ENTERING TEMPERATURE °C											
		30°C			35°C			40°C			45°C		
DB °C	WB °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
21	17	64.5	39.1	10.1	61.0	37.6	10.5	57.5	36.0	11.0	54.6	36.0	11.3
	18	66.7	35.3	10.9	63.1	33.8	11.7	59.5	32.2	12.1	56.7	31.0	12.4
	19	69.0	31.7	12.4	65.4	30.2	12.9	61.6	28.6	13.3	58.9	27.5	13.7
	20	71.5	27.4	13.4	67.8	25.8	13.9	63.9	24.2	14.3	61.2	23.1	14.6
23	17	64.6	46.1	10.1	61.2	44.6	10.5	57.7	43.1	11.0	54.8	41.8	11.3
	18	66.6	42.2	11.1	63.1	40.7	11.5	59.5	39.2	12.0	56.6	38.0	12.3
	19	69.0	38.6	12.2	65.3	37.1	12.6	61.6	35.6	13.1	58.8	34.4	13.4
	20	71.4	34.4	13.3	67.7	32.8	13.7	63.9	31.2	14.1	61.2	30.0	14.4
	21	74.0	30.9	14.4	70.2	29.4	14.8	66.2	27.8	15.3	63.6	26.8	15.5
25	17	65.1	52.7	10.1	61.7	51.1	10.5	58.2	49.5	10.9	55.4	48.2	11.2
	18	66.8	50.8	11.1	63.3	47.9	11.5	59.6	46.4	11.9	56.8	45.2	12.3
	19	68.9	48.4	12.2	65.3	44.2	12.6	61.6	42.6	13.1	58.8	41.4	13.4
	20	71.3	45.7	13.3	67.7	39.8	13.7	63.8	38.2	14.1	61.1	37.0	14.4
	21	73.9	42.7	14.4	70.2	36.4	14.8	66.2	34.8	15.3	63.6	33.8	15.6
27	17	66.0	58.2	9.9	62.7	56.3	10.2	59.4	54.4	10.6	57.0	52.9	10.9
	18	67.2	56.3	11.1	63.7	54.8	11.5	60.1	53.3	12.0	58.0	52.1	12.3
	19	69.1	52.5	12.1	65.5	50.9	12.5	61.7	49.3	13.0	59.0	48.1	13.3
	20	71.2	48.4	13.2	67.6	46.8	13.6	63.7	45.2	14.1	61.0	44.1	14.4
	21	73.9	44.9	14.5	70.1	43.4	14.9	66.1	41.8	15.3	63.5	40.7	15.6
29	17	67.2	63.2	9.7	64.1	61.1	10.1	60.8	58.8	10.5	58.3	58.3	10.8
	18	68.2	61.5	10.9	64.8	59.8	11.3	61.3	58.0	11.7	58.3	58.3	12.0
	19	69.4	59.5	12.1	65.9	57.9	12.6	62.1	56.3	13.0	58.3	55.6	13.3
	20	71.4	55.9	13.1	67.7	54.4	13.6	63.9	52.9	14.0	61.2	51.8	14.3
	21	73.8	51.9	14.2	70.1	50.4	14.6	66.1	48.8	15.0	63.5	47.7	15.3
31	17	68.9	67.9	9.4	66.0	65.3	9.8	62.8	62.8	10.2	60.6	60.6	10.5
	18	69.6	66.4	10.7	66.4	64.3	11.0	62.8	62.8	11.5	60.6	60.6	11.7
	19	70.5	65.9	12.0	67.0	64.2	12.5	62.8	62.8	12.9	60.6	60.2	13.2
	20	71.7	62.9	13.2	68.1	61.3	13.7	64.3	59.8	14.1	61.7	58.7	14.4
	21	74.0	58.6	14.3	70.2	57.0	14.7	66.3	55.4	15.1	63.7	54.4	15.4

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

Technical Specification SH66 Split Ducted Model

Indoor Unit Model Number	SH66N	Nominal Evaporator Air Flow (l/s)	3500
Outdoor Unit Model Number	SH66W	Number of Compressors	2
Total Cooling Capacity (kW)*	65.5	Power Requirements (Volt /Phase)	415 / 3
Sensible Cooling Capacity (kW)*	50.9	Normal Max. Current (Amps /Phase)	54.5
Heating Capacity (kW) **	60.7	Power Input (kW)	25.3

*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 3500 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)	64.5	71.4	82.5	90.5	108.0

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	2
Type	Scroll
RPM (Nom)	2900
Normal Max. Current (amps /phase)	2 x 20.4
Locked Rotor Current (amps /phase)	2 x 96
Displacement (m^3 /h)	2 x 20.3

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 (Indoor Coil)

Type	Copper Tube / Aluminium Fins
Face Area (m^2)	1.60
Air Quantity (l/s)	3500

Evaporator (Indoor fan)

Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor Voltage /Phase /Frequency	415 / 3 / 50
Motor Power (kW)	4.0
Maximum Fan Speed (rpm)	790

Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	54.4

Condenser (Outdoor Coil)

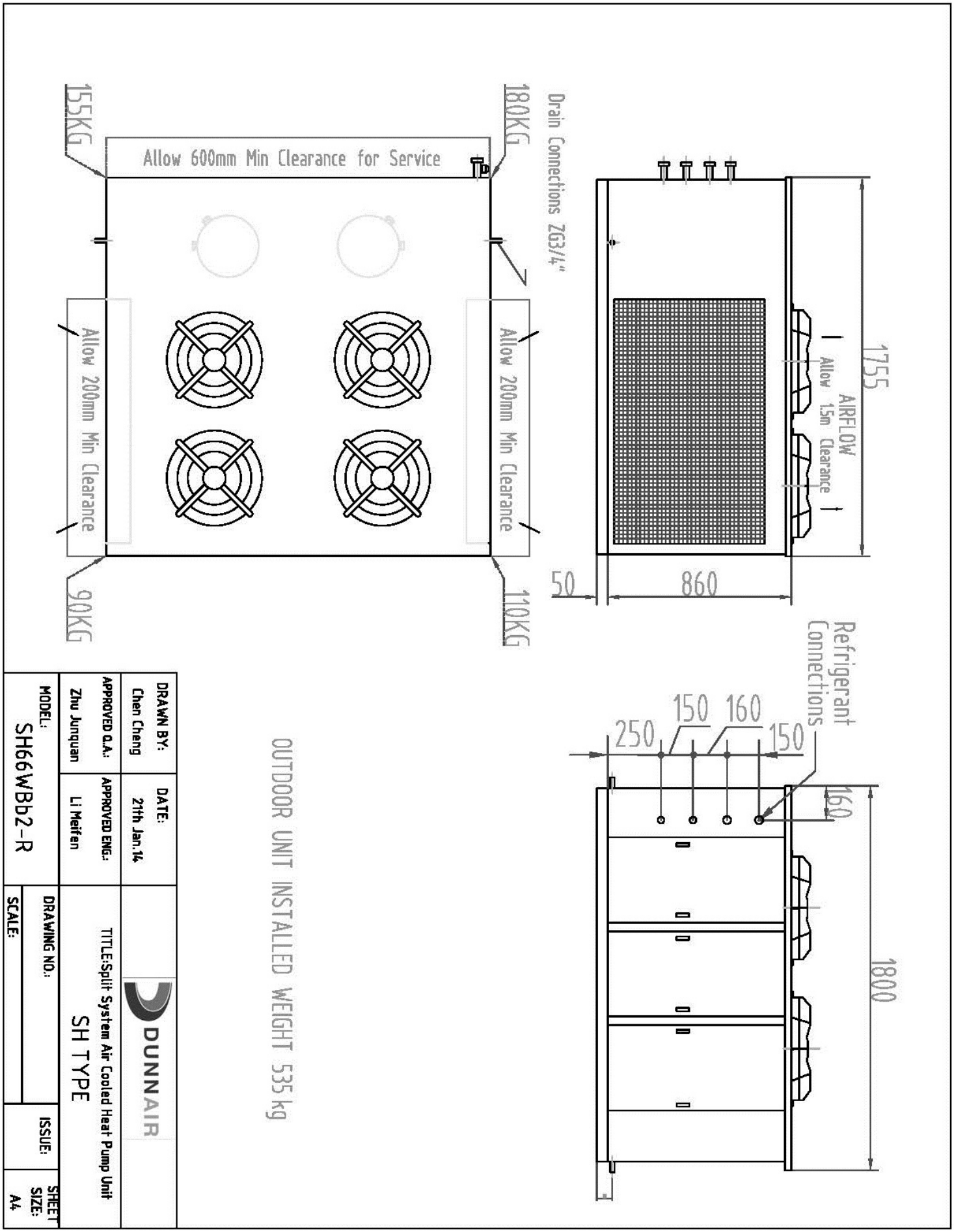
Type	Copper Tube / Aluminium Fins
Face Area (m^2)	2 x 1.03

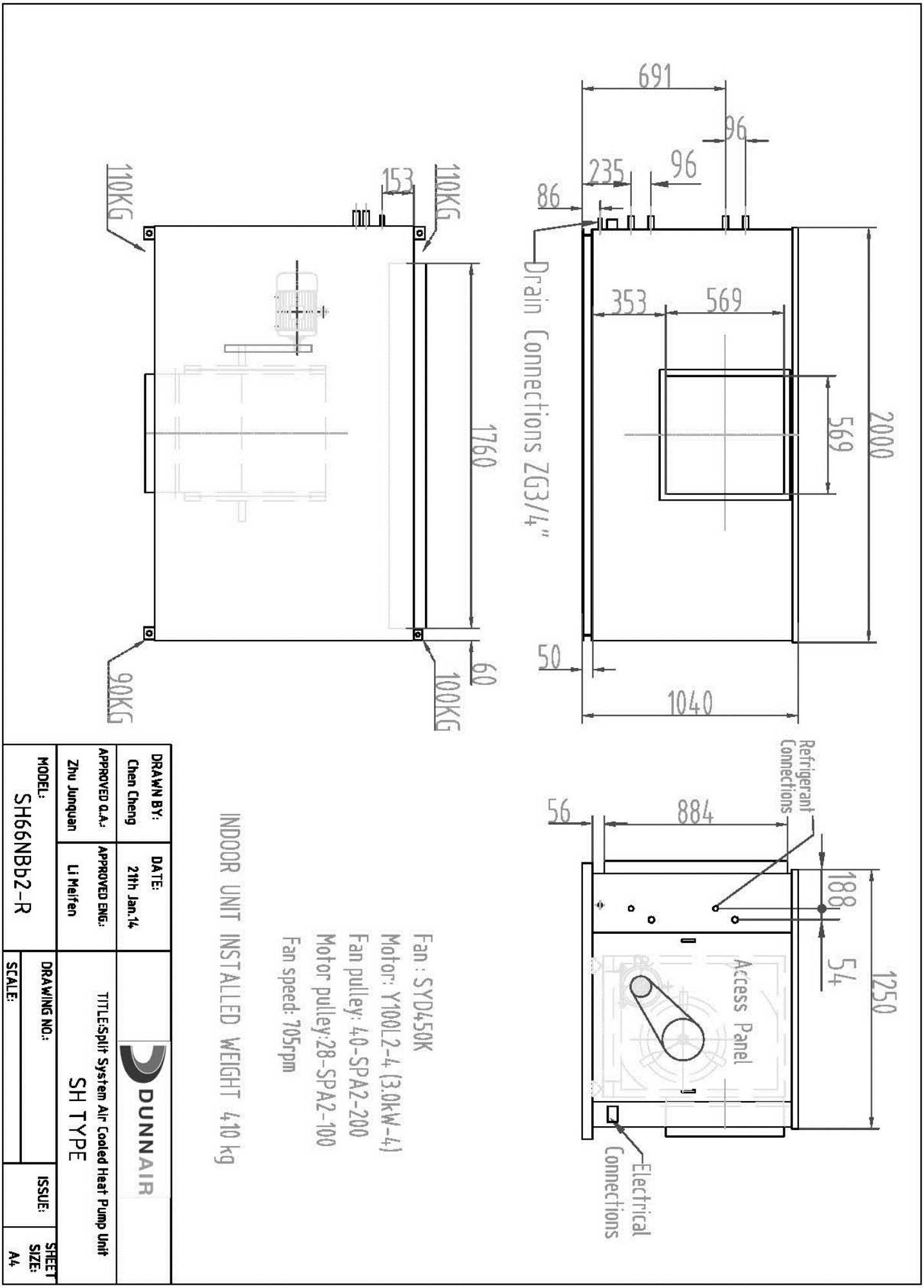
Condenser (Outdoor Fan)

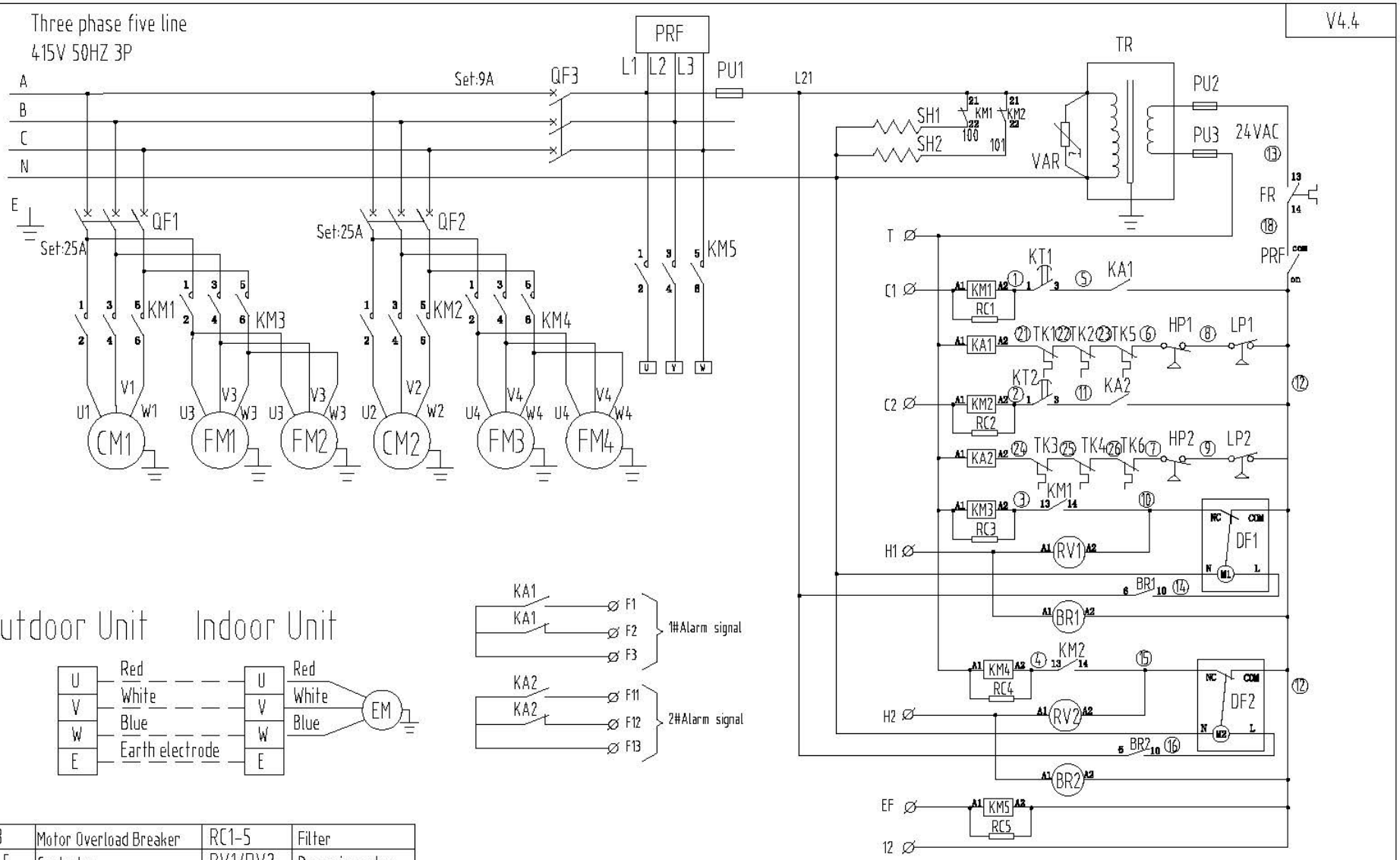
Number of Fans	4
Type	Axial
Drive	Direct
Motor Watts /rpm	4 x 370 / 950
Motor Voltage /Phase /Frequency	415 / 3 / 50

Refrigeration System

Refrigerant Type	R410A
Charge (kg)	2 x 7.6
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor Unit	TX Valve
Line Size (mm)	
Liquid Line 0 – 50 Meters	19 (3/4")
Gas 0 Line 0 – 50 Meters	29 ($1^1/_8$")


Allow 600mm Min Clearance for Service
155KG
180KG
90KG
110KG
Allow 200mm Min Clearance
Allow 200mm Min Clearance
Drain Connections ZG3/4"
1755
AIRFLOW
Allow 1.5m Clearance
50
860
Refrigerant Connections
250
150
160
150
160
1800
OUTDOOR UNIT INSTALLED WEIGHT 535 kg
DRAWN BY: Chen Cheng
DATE: 21th Jan.14
APPROVED Q.A.: Zhu Junquan
APPROVED ENG.: Li Meifen
DUNNAIR
TITLE:Split System Air Cooled Heat Pump Unit
SH TYPE
MODEL: SH66WBb2-R
DRAWING NO.:
ISSUE:
SCALE:
SHEET SIZE: A4


691
96
96
235
86
Drain Connections ZG3/4"
353
569
569
2000
50
1040
110KG
153
110KG
1760
60
90KG
100KG
Refrigerant Connections
56
884
188
54
1250
Access Panel
Electrical Connections
Fan : SYD450K
Motor: Y100L2-4 (3.0kW-4)
Fan pulley: 40-SPA2-200
Motor pulley:28-SPA2-100
Fan speed: 705rpm
INDOOR UNIT INSTALLED WEIGHT 410 kg
DRAWN BY: Chen Cheng
DATE: 21th Jan.14
APPROVED Q.A.: Zhu Junquan
APPROVED ENG: Li Meifen
DUNNAIR
TITLE:Split System Air Cooled Heat Pump Unit
SH TYPE
MODEL: SH66NBb2-R
DRAWING NO.:
ISSUE:
SCALE:
SHEET SIZE: A4



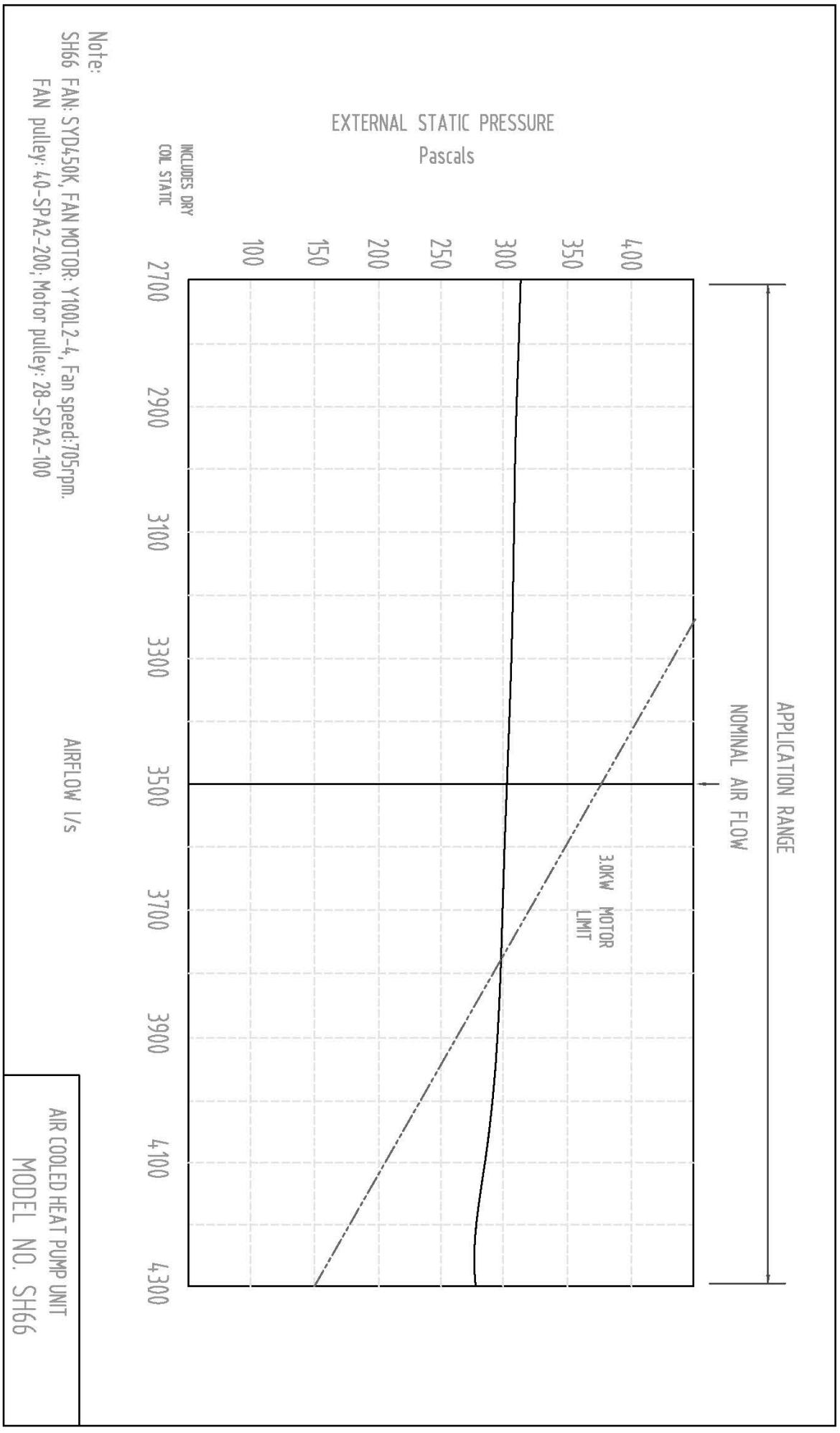
QF1-3	Motor Overload Breaker	RC1-5	Filter
KM1--5	Contactor	RV1/RV2	Reversing valve
FR	Thermal Relay	TK1-4	Overload protector
TR	Transformer	TK5-6	Disch.temp.sensor
PU1/2/3	Fuse	L/HP1-2	HP/LP switch
DF1/DF2	De ice	CM1/CM2	Compressor
VAR	Varistor	FM1-4	Condenser fan
KT1-2	Time Relay	EM	Evaporator fan
PRF	Phase protection	SH1-2	Sump heater
KA1-2	Fault Relay	BR1-2	Bypass Relay

DUNNAIR

MODEL OF COMPRESSOR
C-SCP360H38A

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

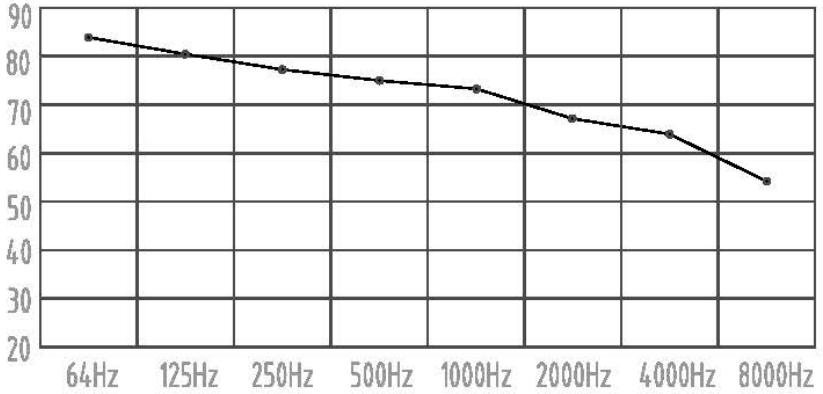
Phase	Wt.	Scale	SH66-Bb2-R
3 Ph		1:1	Wiring Diagram
Total	No.		


EXTERNAL STATIC PRESSURE
Pascals
INCLUDES DRY COIL STATIC
100
150
200
250
300
350
400
2700
2900
3100
3300
3500
3700
3900
4100
4300
AIRFLOW l/s
APPLICATION RANGE
NOMINAL AIR FLOW
3.0KW MOTOR LIMIT
Note:
SH66 FAN: SYD450K, FAN MOTOR: Y100L2-4, Fan speed:705rpm.
FAN pulley: 40-SPA2-200; Motor pulley: 28-SPA2-100
AIR COOLED HEAT PUMP UNIT
MODEL NO. SH66

SH66W Sound Pressure Curve
A Class: 77.7dB

Hz	dB
64Hz	83.3
125Hz	80.1
250Hz	76.8
500Hz	76.1
1000Hz	72.8
2000Hz	67.6
4000Hz	64.0
8000Hz	53.5

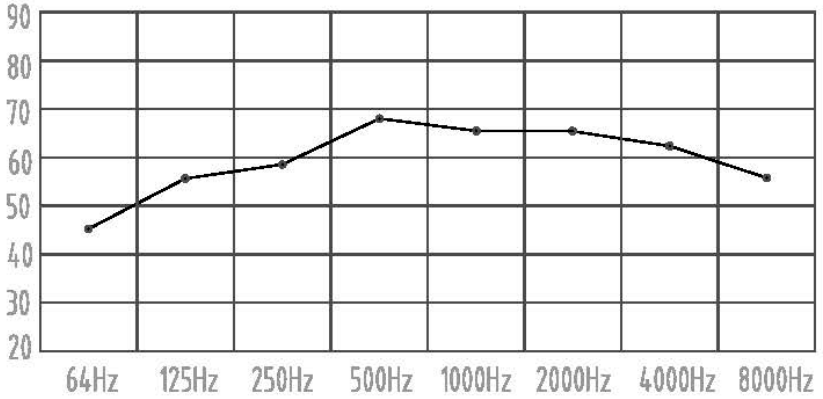
Sound Pressure Curve (A Class: 77.7dB) dB



SH66N Sound Pressure Curve
A Class: 71.2dB

Hz	dB
64Hz	45
125Hz	56
250Hz	59
500Hz	68
1000Hz	65
2000Hz	65
4000Hz	63
8000Hz	56

Sound Pressure Curve (A Class: 71.2dB) dB



Note: Occupant at least 1.0m from sound source.

DRAWN BY: Chen Cheng	DATE: 2014-3-5	DUNNAIR	
APPROVED Q.A.: Zhu Junquan	APPROVED ENG.: Li Meifen	TITLE: Split System Air Cooled Heat Pump Unit SH TYPE	
MODEL: SH66	DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4