DUNNAIR (Aust) Pty Ltd

SHS12

R410a Refrigerant

Split Ducted Model

PERFORMANCE DATA

INDOOR COIL ENTERING AIR TEMP ^{0}c		OUTDOOR COIL ENTERING TEMPERATURE ^{0}C											
		30			35			40			45		
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	12.1	7.0	11.8	11.5	6.8	12.2	10.9	6.5	12.9	10.4	6.3	13.2
	18	12.5	6.2	13.1	11.8	6.0	13.4	11.1	5.7	14.0	10.6	5.5	14.2
	19	12.9	5.4	14.2	12.3	5.1	14.4	11.7	4.8	14.9	11.2	4.6	15.1
	20	13.4	4.6	14.8	12.8	4.3	15.1	12.2	4.0	15.8	11.7	3.8	16.1
23	17	12.1	8.6	11.9	11.4	8.3	12.2	10.8	8.0	12.6	10.2	7.8	12.8
	18	12.5	7.8	13.1	11.8	7.5	13.4	11.2	7.2	13.7	10.6	7.0	14.1
	19	13.0	6.9	14.0	12.4	6.5	14.4	11.8	6.2	14.7	11.2	6.0	14.9
	20	13.4	6.2	15.2	12.7	5.9	15.5	12.1	5.6	16.0	11.5	5.4	16.2
	21	13.9	5.2	16.8	13.2	4.8	17.1	12.6	4.5	17.1	12.0	4.3	17.2
25	17	12.4	10.1	11.5	11.8	9.8	11.8	11.2	9.6	12.1	10.4	9.4	12.5
	18	12.7	9.6	12.9	12.0	9.3	13.2	11.4	9.1	13.6	10.7	8.9	13.8
	19	12.8	9.0	13.7	12.1	8.7	14.0	11.5	8.3	14.5	10.8	8.1	14.8
	20	13.5	8.4	15.4	12.8	8.1	15.7	12.1	7.8	16.3	11.4	7.6	16.6
	21	14.0	7.9	16.2	13.3	7.6	16.5	12.7	7.3	17.1	12.0	7.1	17.4
27	17	12.8	11.3	11.7	11.8	11.0	12.0	11.4	10.7	12.5	10.6	10.5	12.6
	18	12.9	11.0	12.8	12.0	10.6	13.1	11.5	10.3	13.7	11.7	10.1	13.9
	19	13.2	10.2	14.0	12.2	9.9	14.3	11.8	9.6	14.6	11.1	9.4	14.8
	20	13.2	9.3	15.2	12.7	8.9	15.4	12.0	8.6	15.7	11.2	8.4	15.9
	21	13.9	8.4	16.3	13.2	8.0	16.6	12.6	7.7	16.8	11.8	7.5	17.0
29	17	12.7	12.2	11.7	12.1	11.6	12.0	11.5	11.0	12.3	10.6	10.8	12.6
	18	13.0	12.1	12.8	12.3	11.6	13.1	11.7	11.0	13.5	10.8	10.8	13.8
	19	13.2	11.7	14.0	12.5	11.4	14.2	11.8	11.1	14.8	10.9	10.8	15.0
	20	13.4	10.8	15.3	12.7	10.4	15.6	12.0	10.1	16.1	11.1	9.8	16.3
	21	13.8	9.9	16.2	13.2	9.5	16.5	12.5	9.2	16.9	11.6	9.0	17.1
31	17	13.1	12.7	11.4	12.5	12.0	11.7	12.8	11.2	12.1	11.8	11.0	12.3
	18	13.2	12.6	12.7	12.6	11.9	12.9	11.9	11.0	13.2	10.9	10.9	13.5
	19	13.2	12.6	13.9	12.6	11.9	14.2	11.9	11.0	14.4	10.9	10.9	14.8
	20	13.5	12.2	15.1	12.9	11.6	15.4	12.2	10.7	15.9	11.2	10.7	16.1
	21	13.9	11.4	16.3	13.3	11.2	16.6	12.7	10.4	17.2	11.7	10.6	17.4

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

Technical Specification SHS12 Split Ducted Model

Indoor Unit Model Number	SHS12N	Nominal Evaporator Air Flow (l/s)	695
Outdoor Unit Model Number	SHS12W	Number of Compressors	1
Total Cooling Capacity (kW)*	12.2	Power Requirements (Volt/Phase)	415/3
Sensible Cooling Capacity (kW)*	9.9	Normal Max. Current (Amps/Phase)	14.0
Heating Capacity (kW) **	12.6	Power Input (kW)	4.52

*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 695 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 ℃					
	0	4	8	12	18
Heating Capacity (kW)	10.5	11.8	12.8	13.6	15.1

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)	2880
Normal Max. Current (amps /phase)	9.0
Locked Rotor Current (amps /phase)	64
Displacement (m^3/h)	9.6

Electrical Controls and Safeties

High Pressure Switch (Setting kPa)	4500	Defrost	
Low Pressure Switch (Setting kPa)	50	Timing cycle	
Indoor Fan Overload	Internal	Defrost time	4
Outdoor Fan Overload	Internal	Min. Period Between De-Ice (min)	45
Compressor Delay Timer	180 sec	Max De-Ice Period (min)	4

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)	0.38
Air Quantity (l/s)	695

Evaporator (Indoor fan)

Number of Fans	2
Type	Centrifugal
Drive	Direct
Motor Voltage /Phase /Frequency	240 / 1 / 50
Motor(kW)Standard	0.4
Maximum Fan Speed(rpm)	930

Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	14

Condenser (Outdoor Coil)

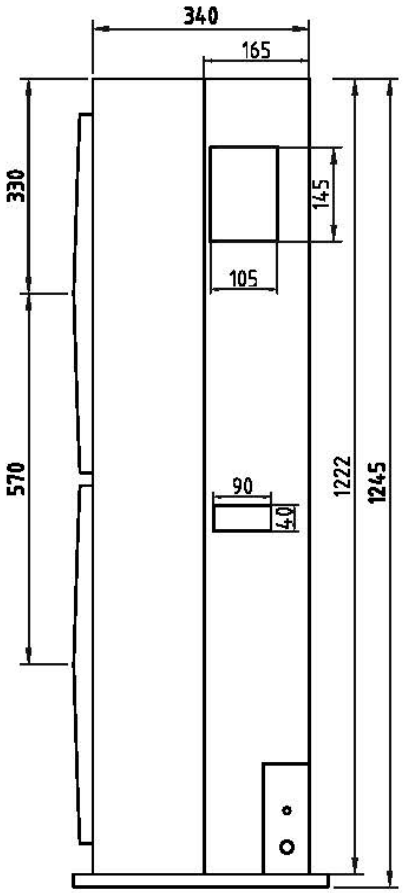
Type	Copper Tube / Aluminium Fins
Face Area (m^2)	1.09

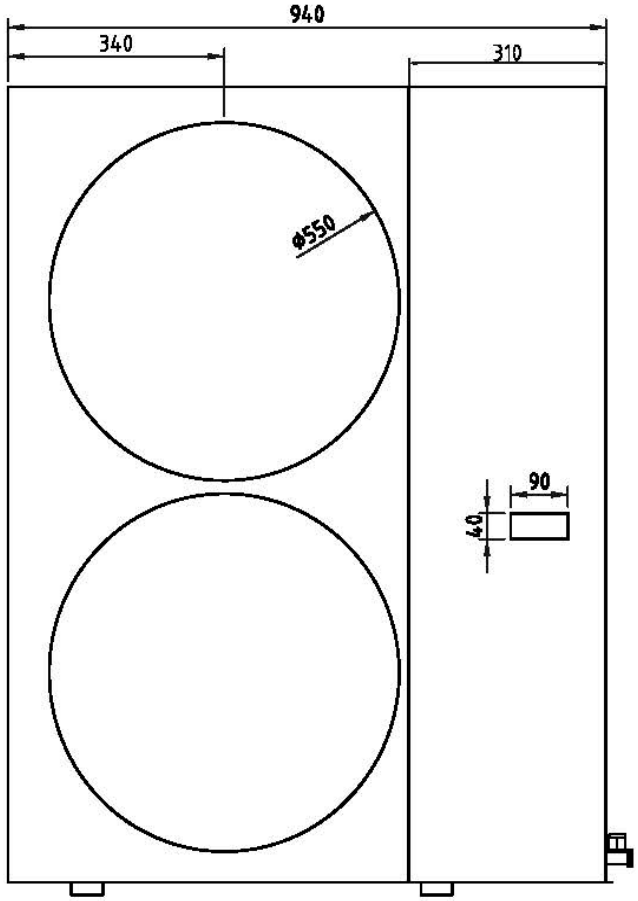
Condenser (Outdoor Fan)

Number of Fans	2
Type	Axial
Drive	Direct
Motor Watts /rpm	50/850
Motor Voltage /Phase /Frequency	240 / 1 / 50

Refrigeration System

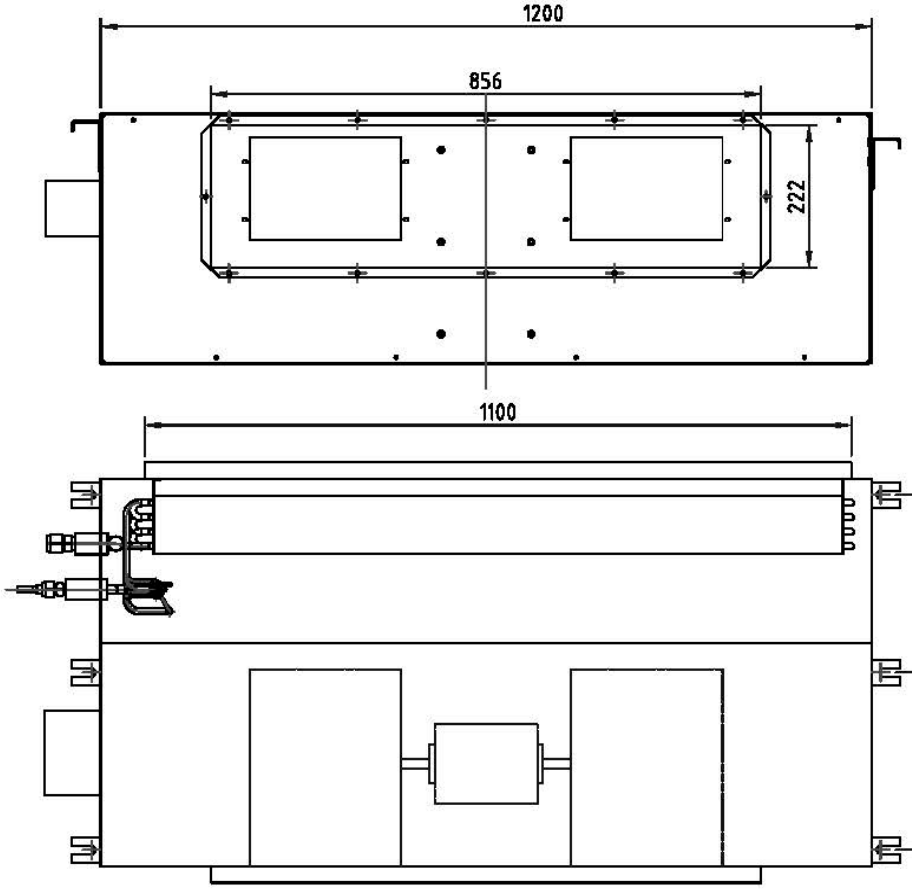
Refrigerant Type	R410A
Charge (kg)	3.4
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor Unit	TXV
Line Size (mm)	
Liquid Line 0 – 50 Meters	9.52
Gas Line 0 – 50 Meters	19.02

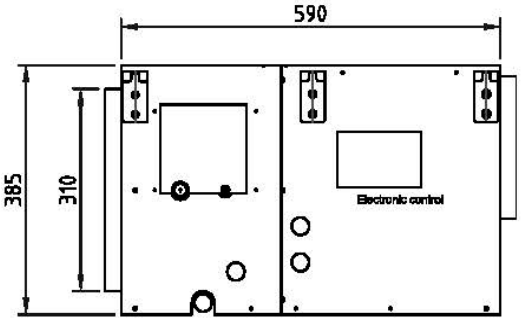




OUTDOOR UNIT INSTALLED
WEIGHT 108 kg

DRAWN BY: Fajun Lv	DATE: 4 Feb 2015	DUNNAIR		
APPROVED Q.A.: Nina Zhou	APPROVED ENG.: Jeffy Bai	TITLE: Split System Air Cooled Heat Pump Unit SHS TYPE		
MODEL: SHS12W-HBb		DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4



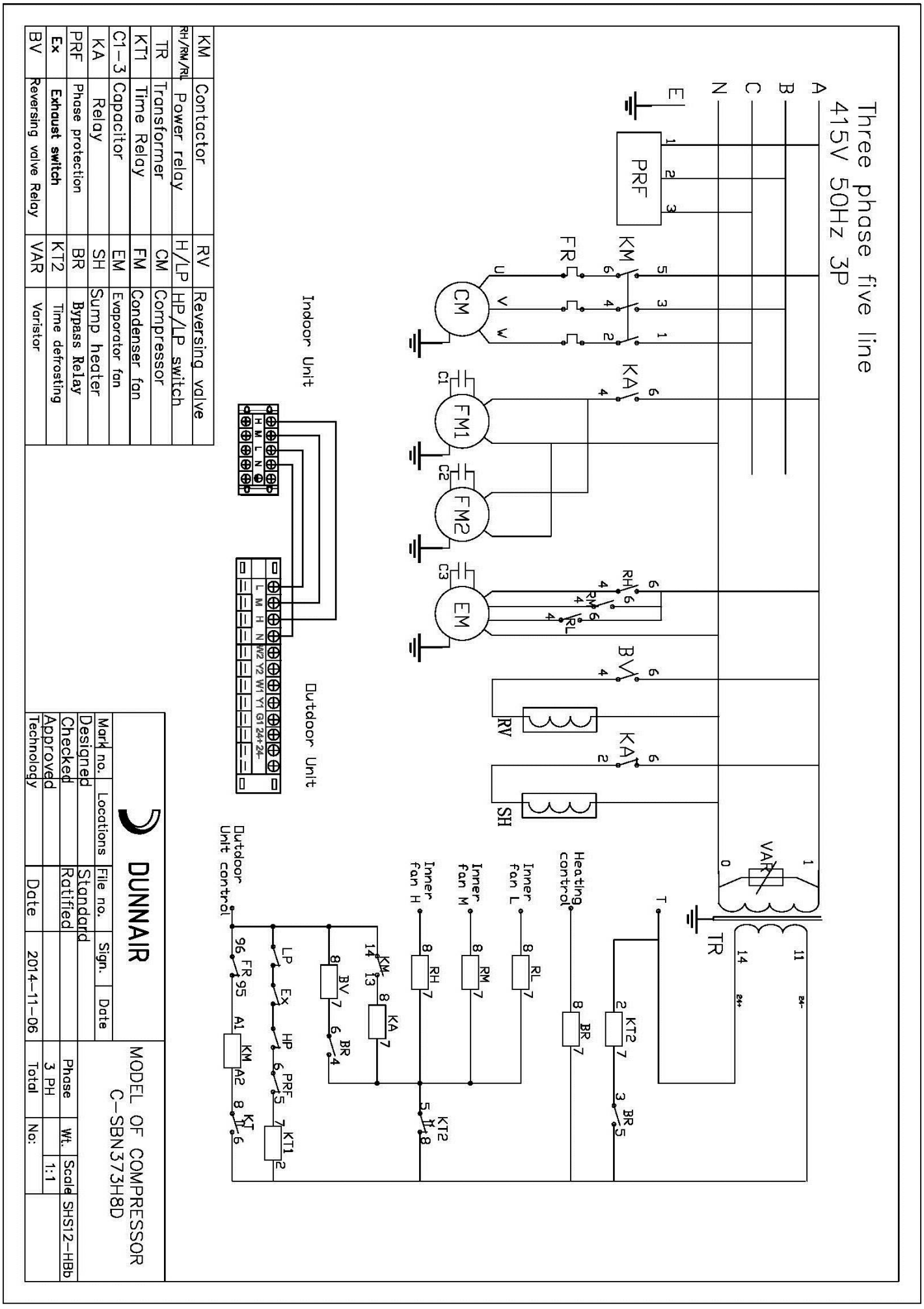


Drain connection

Evaporator Motor: YLK400-4

INDOOR UNIT INSTALLED WEIGHT 58 kg

DRAWN BY: Fajun Lv	DATE: 4 Feb 2015	DUNNAIR		
APPROVED Q.A.: Nina Zhou	APPROVED ENG.: Jeffy Bai	TITLE: Split System Air Cooled Heat Pump Unit SHS TYPE		
MODEL: SHS12N-HBd		DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4



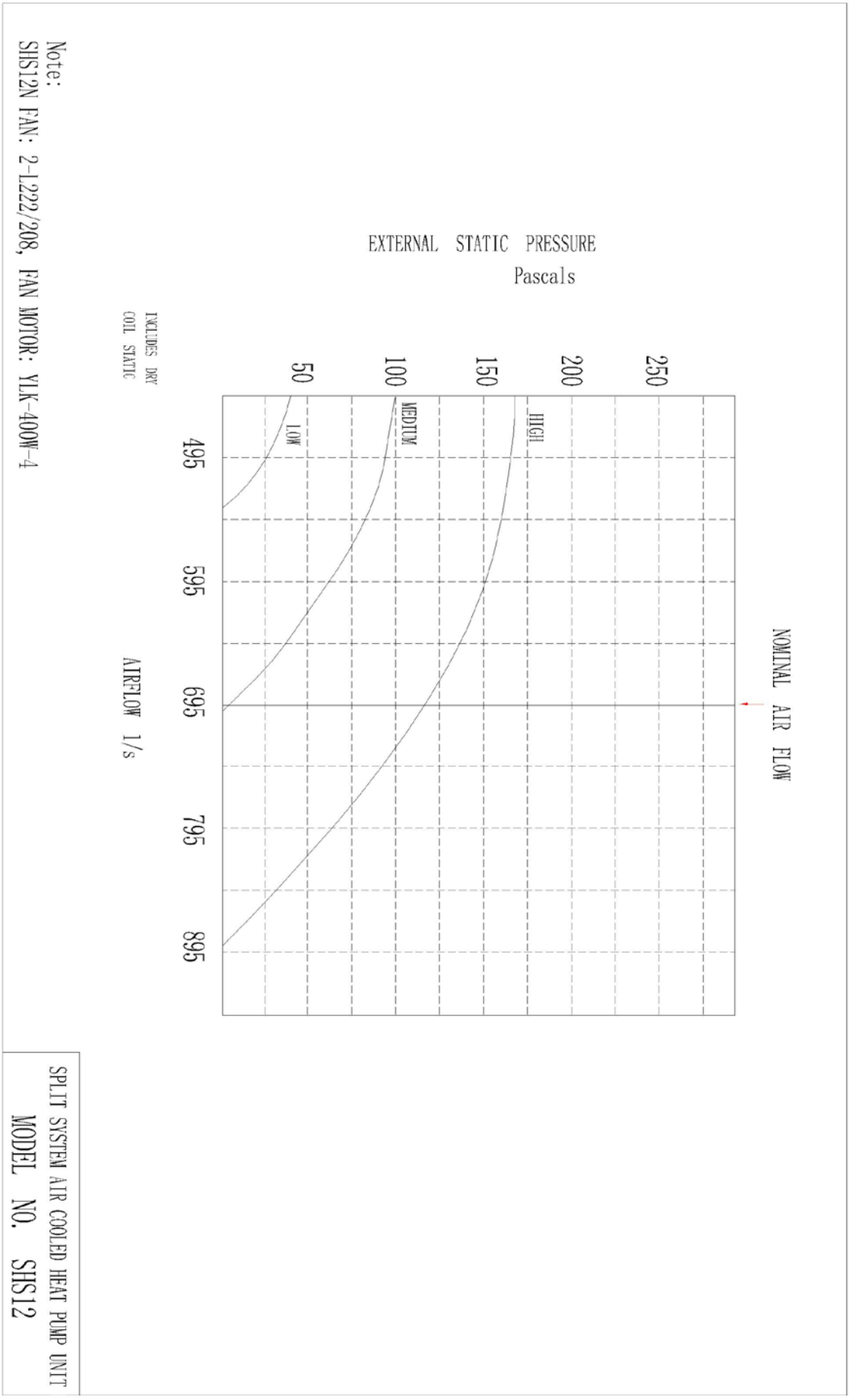
KM	Contactor	RV	Reversing valve
RH/RM/RL	Power relay	H/LP	HP/LP switch
TR	Transformer	CM	Compressor
KT1	Time Relay	FM	Condenser fan
C1–3	Capacitor	EM	Evaporator fan
KA	Relay	SH	Sump heater
PRF	Phase protection	BR	Bypass Relay
Ex	Exhaust switch	KT2	Time defrosting
BV	Reversing valve Relay	VAR	Varistor

DUNNAIR

Mark no.	Locations	File no.	Sign.	Date
Designed		Standard		
Checked		Ratified		
Approved				
Technology		Date	2014–11–06	

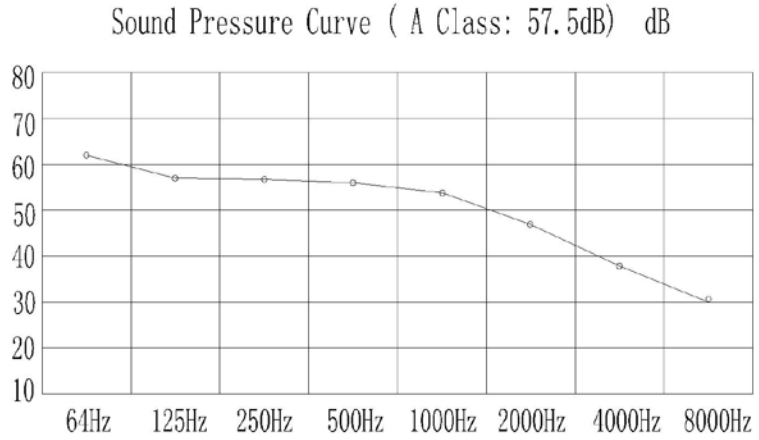
MODEL OF COMPRESSOR
C–SBN373H8D

Phase	Wt.	Scale	SHS12–HBb
3 PH		1:1	
Total	No:		


EXTERNAL STATIC PRESSURE
Pascals
50
100
150
200
250
LOW
MEDIUM
HIGH
NOMINAL AIR FLOW
495
595
695
795
895
AIRFLOW l/s
INCLUDES DRY COIL STATIC
Note:
SHS12N FAN: 2-L222/208, FAN MOTOR: YLK-400W-4
SPLIT SYSTEM AIR COOLED HEAT PUMP UNIT
MODEL NO. SHS12

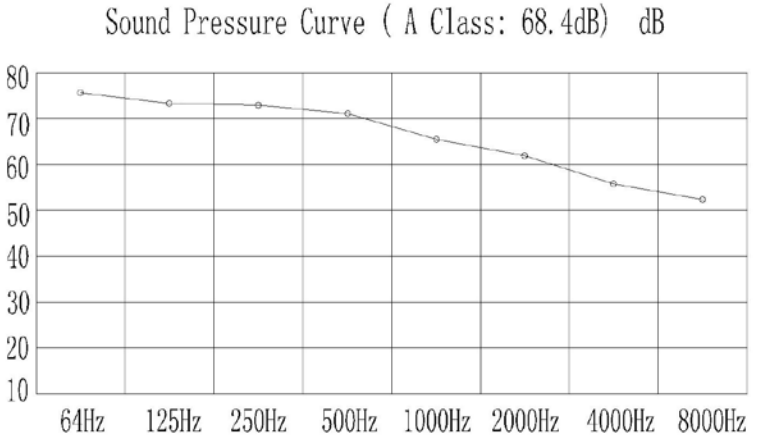
SHS12W Sound Pressure Curve
A Class: 57.5dB

Hz	dB
64Hz	61.6
125Hz	57.1
250Hz	56.0
500Hz	55.8
1000Hz	53.9
2000Hz	47.0
4000Hz	38.7
8000Hz	30.3



SHS12N Sound Pressure Curve
A Class: 68.4dB

Hz	dB
64Hz	76.8
125Hz	72.9
250Hz	72.2
500Hz	70.7
1000Hz	66.6
2000Hz	61.2
4000Hz	56.6
8000Hz	51.8



Note: Occupant at least 1.0m from sound source.

DRAWN BY:	DATE: 2014-09-10	DUNNAIR		
APPROVED Q.A.:	APPROVED ENG.:	TITLE: Split System Air Cooled Heat Pump Unit SHS TYPE		
MODEL: SHS12		DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4