



**DUNNAIR**  
(Aust) Pty Ltd

**SHS20**

*Split Ducted Model*

R410a Refrigerant

**PERFORMANCE DATA**

INDOOR COIL ENTERING AIR TEMP °C		OUTDOOR COIL ENTERING TEMPERATURE °C											
		30			35			40			45		
		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	18.4	11.4	11.9	17.5	11.0	12.2	16.6	10.6	12.5	16.1	10.4	12.5
	18	18.9	10.2	13.0	18.0	9.8	13.3	17.1	9.4	13.5	16.6	9.1	13.6
	19	19.3	8.9	13.9	18.5	8.5	14.2	17.6	8.0	14.5	17.2	7.8	14.6
	20	20.0	7.7	15.1	19.0	7.4	15.4	18.1	6.6	15.6	17.6	6.4	15.8
23	17	18.4	13.7	11.6	17.6	13.3	11.8	16.7	13.0	12.1	16.2	12.8	12.2
	18	18.5	12.4	12.8	17.9	12.0	13.0	17.0	11.6	13.2	16.5	11.4	13.3
	19	19.3	11.2	13.9	18.5	10.8	14.1	17.6	10.3	14.3	17.2	10.1	14.3
	20	20.0	10.1	9.9	19.1	9.7	10.0	18.2	9.0	15.7	17.7	8.7	15.6
	21	20.5	8.9	8.6	19.6	8.6	8.7	18.7	7.7	16.6	18.2	7.4	16.6
25	17	18.5	16.3	11.4	17.7	16.0	11.7	16.8	15.4	12.0	16.3	15.2	12.3
	18	18.9	15.7	12.5	18.1	15.4	12.7	17.2	14.0	13.0	16.7	13.7	13.3
	19	19.3	15.0	13.8	18.6	14.6	14.1	17.6	12.6	14.2	17.2	12.3	14.3
	20	20.1	14.3	14.6	19.1	13.9	14.9	18.2	11.3	15.2	17.7	11.0	15.5
	21	20.6	13.6	15.7	19.6	13.3	16.2	18.7	10.1	16.5	18.2	9.8	16.5
27	17	18.6	17.6	11.6	17.8	17.2	11.8	16.9	16.6	11.6	16.4	16.3	11.7
	18	19.1	17.2	12.8	18.2	16.8	13.1	17.3	16.3	12.7	16.8	16.0	12.8
	19	19.4	16.0	13.6	19.6	15.7	13.7	17.8	15.2	13.8	17.3	14.8	13.9
	20	20.4	14.6	14.7	20.1	14.2	14.9	18.3	13.7	15.0	17.8	13.3	15.0
	21	20.8	13.3	16.3	20.9	12.9	16.5	18.9	12.3	16.1	18.4	11.8	16.1
29	17	19.1	19.2	11.2	18.3	18.6	11.3	17.4	17.9	11.3	16.9	17.3	11.3
	18	19.6	18.9	12.3	18.7	18.4	12.5	17.8	17.8	12.5	17.3	17.3	12.5
	19	20.5	18.4	13.5	20.3	17.9	13.7	17.9	17.3	13.8	17.5	16.8	13.9
	20	21.0	16.9	14.6	20.9	16.4	14.9	18.1	15.8	15.0	17.6	15.5	14.9
	21	21.6	15.8	15.7	21.0	15.4	16.0	18.3	14.8	16.0	17.8	14.3	15.9
31	17	20.0	20.0	10.6	19.4	19.5	10.9	18.4	18.5	11.4	17.9	17.6	11.9
	18	22.2	19.9	11.9	19.5	19.3	12.1	18.5	18.3	12.6	18.0	17.5	13.3
	19	20.6	19.7	13.6	20.3	19.2	13.6	18.3	18.3	13.7	18.0	17.4	13.8
	20	21.1	19.3	15.9	20.9	18.8	16.0	18.7	17.8	16.0	18.2	16.9	16.1
	21	21.3	18.5	18.0	21.1	18.0	18.1	18.9	16.9	18.3	18.4	16.0	18.4

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



## Technical Specification SHS20 Split Ducted Model

Indoor Unit Model Number	SHS20N	Nominal Evaporator Air Flow (l/s)	1030
Outdoor Unit Model Number	SHS20W	Number of Compressors	1
Total Cooling Capacity (kW)*	19.6	Power Requirements (Volt/Phase)	415/3
Sensible Cooling Capacity (kW)*	15.7	Normal Max. Current (Amps/Phase)	17
Heating Capacity (kW) **	19.3	Power Input (kW)	7.0
*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 1030 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)	14.4	15.6	20.0	22.0	24.0

### 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)	2880
Normal Max. Current (amps /phase)	14.0
Locked Rotor Current (amps /phase)	68
Displacement (m <sup>3</sup> /h)	13.4

### Electrical Controls and Safeties

High Pressure Switch (Setting kPa)	4500	Defrost	
Low Pressure Switch (Setting kPa)	300	Timing cycle	
Indoor door Fan Overload	Internal	Defrost time (min)	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 <sup>2</sup> )	0.5
Air Quantity (l/s)	1030

### Evaporator (Indoor fan)

Number of Fans	2
Type	Centrifugal
Drive	Direct
Motor Voltage /Phase /Frequency	240 / 1 / 50
Motor(kW)Standard	0.55
Maximum Fan Speed(rpm)	1300

### Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	17

### Condenser (Outdoor Coil)

Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	1.07

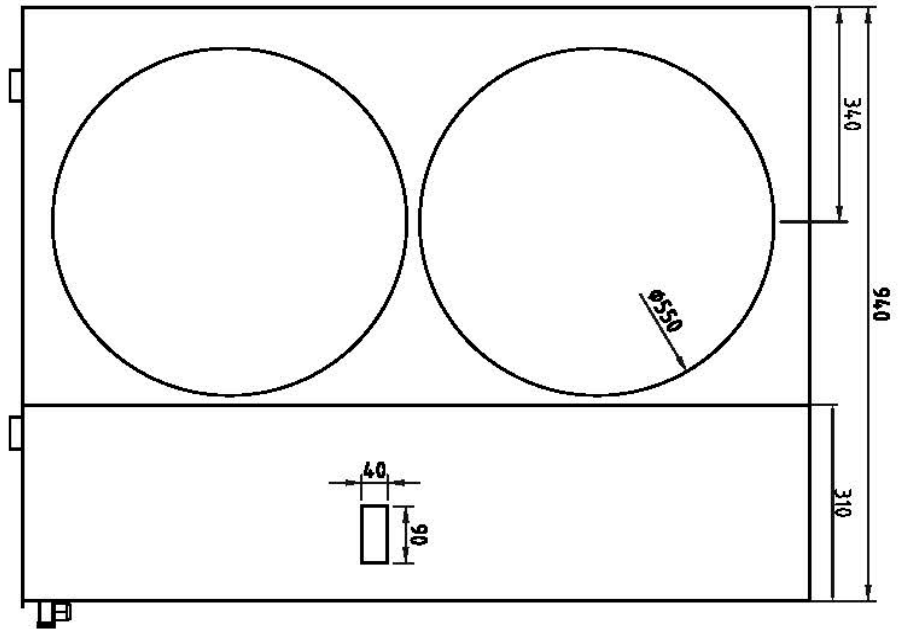
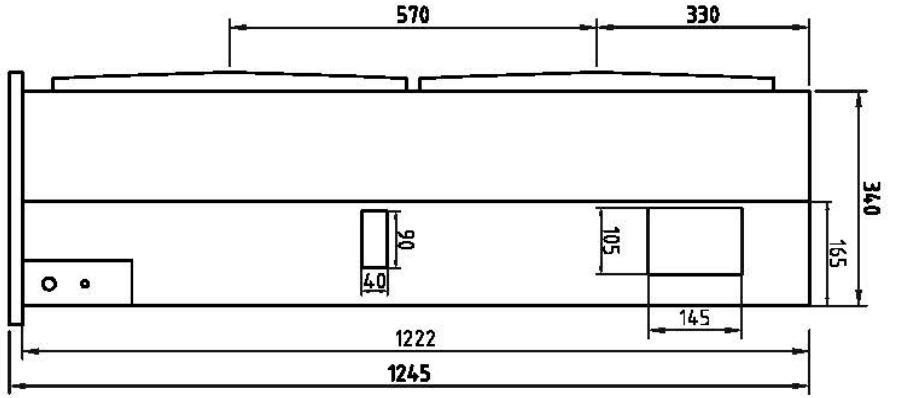
### Condenser (Outdoor Fan)


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

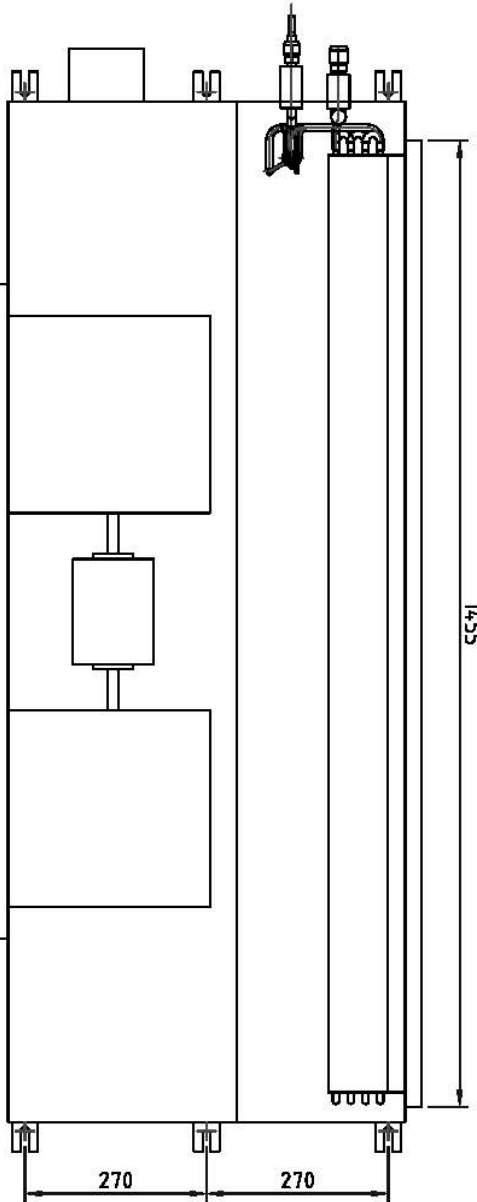
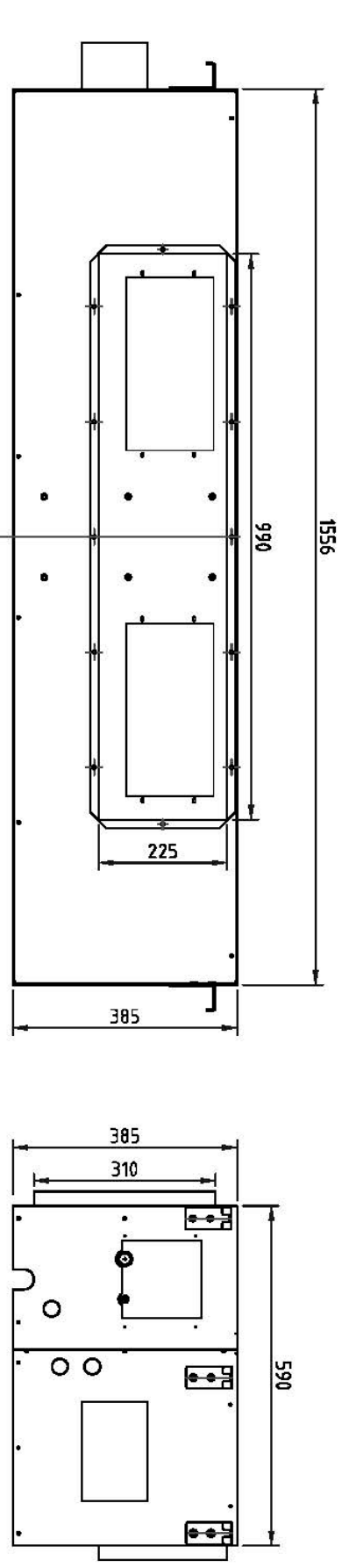
### Refrigeration System

Refrigerant Type	R410A
Charge (kg)	4.2
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 120 kg




<b>DRAWN BY:</b> Fajun Lv	<b>DATE:</b> 4 Feb 2015	
<b>APPROVED Q.A.:</b> Nina Zhou	<b>APPROVED ENG.:</b> Jeffy Bai	
<b>MODEL:</b> SHS20W-HBR		<b>TITLE:</b> Split System Air Cooled Heat Pump Unit
<b>DRAWING NO.:</b> 01		<b>SHS TYPE</b>
<b>ISSUE:</b> 01	<b>SHEET SIZE:</b> A4	

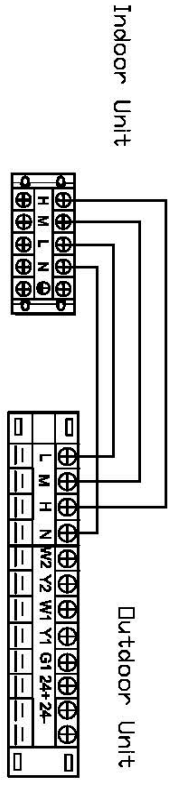
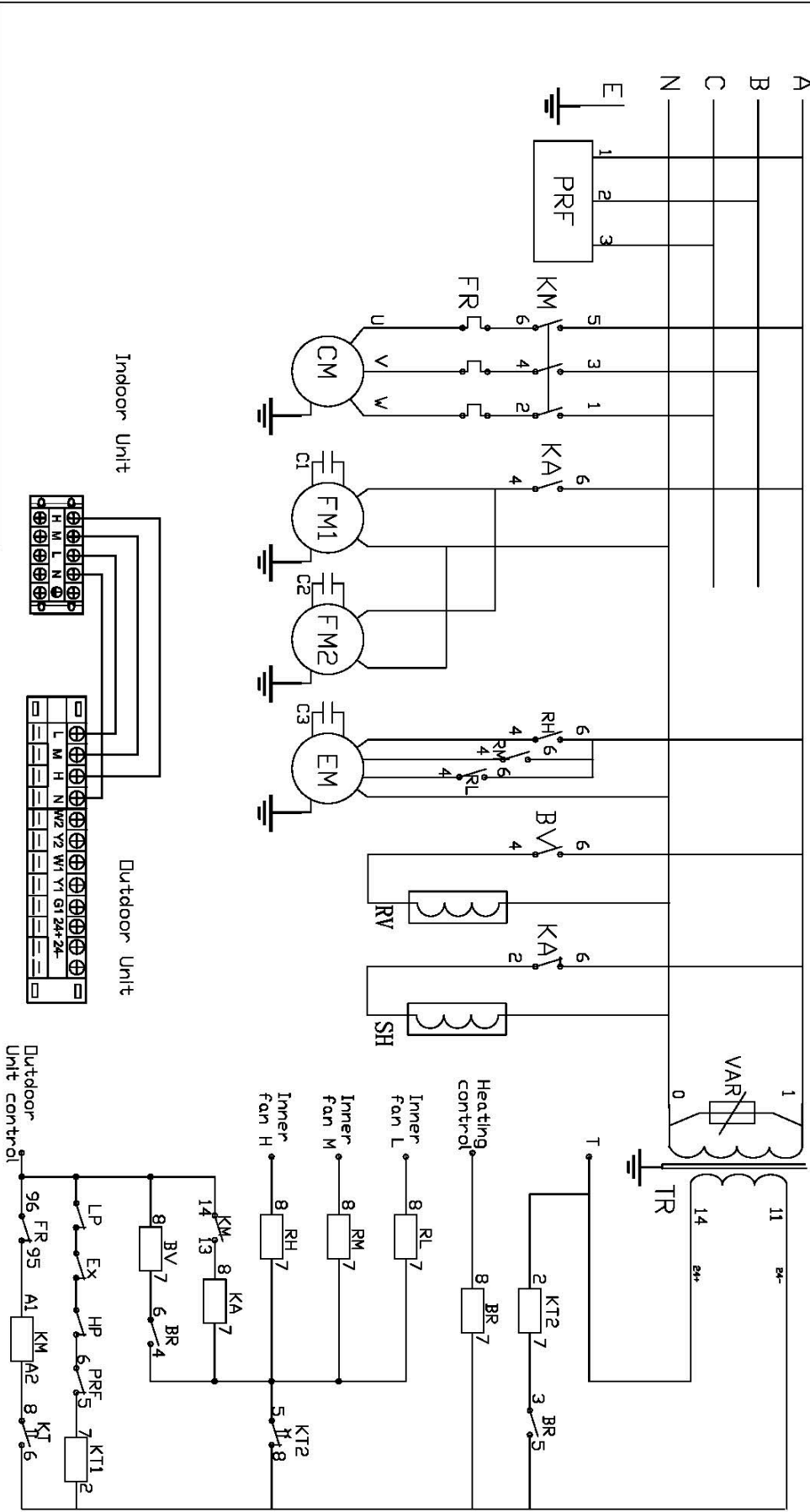


Evaporator Motor: YSK550-4C

INDOOR UNIT INSTALLED WEIGHT 61 kg

DRAWN BY: Fa Jun Lv		DATE: 3 Feb 2015	
APPROVED Q.A.:		APPROVED ENGR:	
Nina Zhou		Jeffy Bai	
MODEL: SHS20N-HB6		DRAWING NO.:	
		01	
		ISSUE:	
		01	
		SHEET SIZE:	
		A4	
			
TITLE: Split System Air Cooled Heat Pump Unit SH TYPE			

Three phase five line  
415V 50Hz 3P



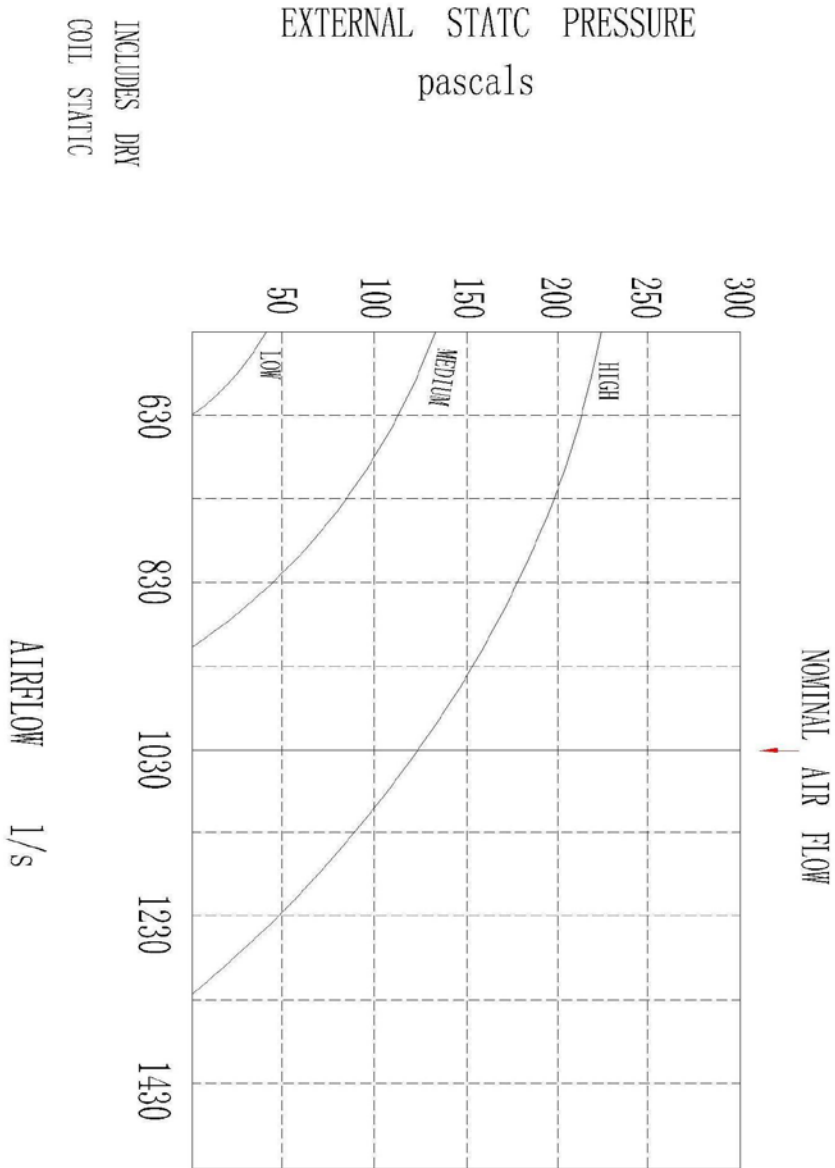
KM	Contactors	RV	Reversing valve
RH/RM/RL	Power relay	H/LP	HP/LP switch
TR	Transformer	CM	Compressor
KT1	Time Relay	FM	Condenser fan
C1-3	Capacitor	EM	Evaporator fan
KA	Relay	SH	Sump heater
PRF	Phase protection	BR	By-pass Relay
Ex	Exhaust switch	KT2	Time defrosting
BV	Reversing valve Relay	VAR	Varistor

**DUNNAIR**

MODEL OF COMPRESSOR  
C-SBN453H8D

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

Phase	3 PH	Scale	SHS20-HBb
Wt.			
No.			



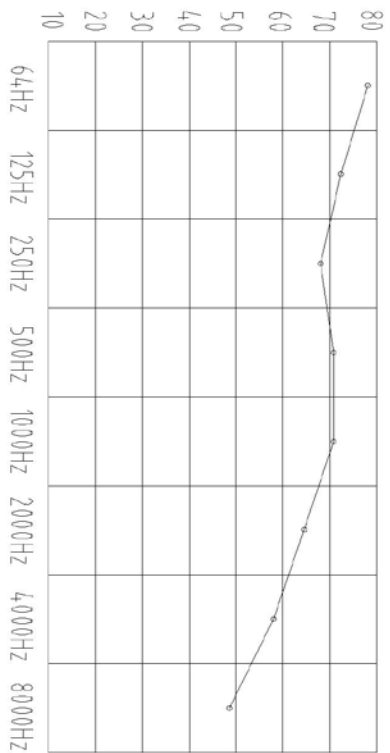
Note:  
SHS20N FAN: 2-SYP225/250J, FAN MOTOR: YSK-550W-4

SPLIT SYSTEM AIR COOLED HEAT PUMP UNIT  
MODEL NO. SHS20

SHS20W Sound Pressure Curve  
A Class: 73.7dB

Hz	dB
64Hz	78.4
125Hz	72.5
250Hz	68.8
500Hz	70.5
1000Hz	70.6
2000Hz	64.8
4000Hz	58.0
8000Hz	49.3

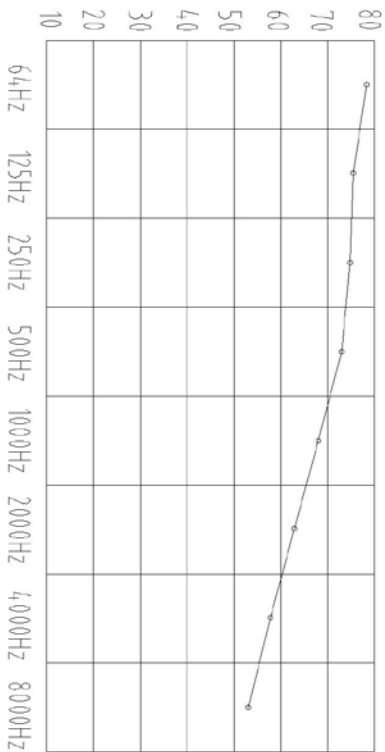
Sound Pressure Curve (A Class: 73.7dB) dB




SHS20N Sound Pressure Curve  
A Class: 70.5dB

Hz	dB
64Hz	78.2
125Hz	76.1
250Hz	76.8
500Hz	72.3
1000Hz	68.8
2000Hz	63.0
4000Hz	58.4
8000Hz	53.1

Sound Pressure Curve (A Class: 70.5dB) dB



Note: Occupant at least 1.0m from sound source.

DRAWN BY:	DATE:	
APPROVED Q.A.:	2014-08-30	
APPROVED ENG.:	TITLE: Split System Air-Cooled Heat Pump Unit	SHS TYPE
MODEL: SHS20	DRAWING NO: 01	
ISSUE: 01	SHEET SIZE: A4	