



# SH50

*Split Ducted Model*

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	47.8	29.7	11.4	45.2	28.6	11.8	42.8	27.6	12.1	40.3	27.6	12.4
	18	49.4	26.5	12.0	46.8	25.5	12.8	44.4	24.5	13.2	41.9	23.5	13.5
	19	51.1	23.5	13.5	48.5	22.5	13.8	46.0	21.5	14.1	43.5	20.6	14.4
	20	53.0	20.2	14.6	50.3	19.1	14.9	47.7	18.1	15.3	45.3	17.1	15.5
23	17	47.9	35.6	11.4	45.4	34.6	11.7	43.0	33.6	12.0	40.5	32.5	12.3
	18	49.4	32.4	12.5	46.8	31.3	12.8	44.3	30.3	13.1	41.8	29.3	13.5
	19	51.1	29.3	13.5	48.5	28.3	13.8	46.0	27.4	14.1	43.5	26.4	14.4
	20	52.9	26.0	14.6	50.3	24.9	14.9	47.7	23.9	15.3	45.3	22.9	15.5
	21	54.9	23.2	15.7	52.2	22.2	16.0	49.6	21.2	16.3	47.2	20.4	16.6
25	17	48.4	40.6	11.3	46.0	39.4	11.6	43.7	38.2	11.9	41.2	37.0	12.2
	18	49.5	39.4	12.4	46.9	37.4	12.7	44.5	36.4	13.1	42.0	25.4	13.4
	19	51.1	37.7	13.5	48.4	34.2	13.8	45.9	33.2	14.1	43.5	32.3	14.4
	20	52.9	35.7	14.6	50.2	30.8	14.9	47.6	29.8	15.2	45.2	28.8	15.5
	21	54.9	33.4	15.7	52.2	28.1	16.0	49.5	27.1	16.3	47.1	26.2	16.6
27	17	49.2	45.0	11.2	46.9	43.6	11.4	44.7	42.1	11.7	42.4	40.7	12.0
	18	50.0	43.5	12.3	47.5	42.3	12.7	45.1	41.2	13.0	42.7	40.1	13.3
	19	51.2	40.8	13.5	48.6	39.8	13.8	46.1	38.8	14.1	43.6	37.9	14.4
	20	52.8	37.7	14.6	50.2	36.6	14.9	47.6	35.6	15.2	45.2	34.6	15.5
	21	54.8	34.9	15.7	52.1	33.9	16.0	49.5	33.0	16.3	47.1	32.1	16.6
29	17	50.4	49.0	11.0	48.2	47.2	11.2	46.0	45.4	11.5	43.9	43.7	11.8
	18	51.0	47.6	12.2	48.6	46.2	12.5	46.3	44.8	12.8	44.0	43.5	13.1
	19	51.6	46.6	13.5	49.1	45.6	13.8	46.6	44.6	14.1	44.2	43.0	14.4
	20	52.9	44.1	14.6	50.3	43.1	14.9	47.7	42.1	15.3	45.3	41.1	15.6
	21	54.8	40.8	15.7	52.1	39.8	16.0	49.4	38.8	16.3	47.0	37.9	16.6
31	17	52.0	52.0	10.8	49.9	49.9	11.0	47.9	47.9	11.3	45.9	45.9	11.6
	18	52.3	51.2	12.2	50.1	49.5	12.5	47.9	47.8	12.8	45.9	45.9	13.0
	19	52.7	50.4	13.3	50.3	49.1	13.6	47.9	47.8	13.9	45.9	45.9	14.2
	20	53.3	49.8	14.4	50.7	48.7	14.8	48.2	47.7	15.1	45.9	45.9	15.4
	21	54.8	46.5	15.7	52.1	45.5	16.0	49.5	44.5	16.3	47.1	43.6	16.6

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



## Technical Specification SH50 Split Ducted Model

Indoor Unit Model Number	SH50N	Nominal Evaporator Air Flow (l/s)	2800
Outdoor Unit Model Number	SH50W	Number of Compressors	2
Total Cooling Capacity (kW)*	48.6	Power Requirements (Volt /Phase)	415 / 3
Sensible Cooling Capacity (kW)*	39.4	Normal Max. Current (Amps /Phase)	41.2
Heating Capacity (kW) **	47.8	Power Input (kW)	18.40
*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 2800 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)	38.3	40.7	45.3	49.5	59.6

### 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 15.8
Locked Rotor Current (amps /phase)	2 x 96
Displacement (m <sup>3</sup> /h)	2 x 15.2

### 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 <sup>2</sup> )	1.07
Air Quantity (l/s)	2800

### Evaporator (Indoor fan)

Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor Voltage /Phase /Frequency	415 / 3 / 50
Motor Power (kW)	3.0
Maximum Fan Speed (rpm)	850

### Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	41.2

### Condenser (Outdoor Coil)

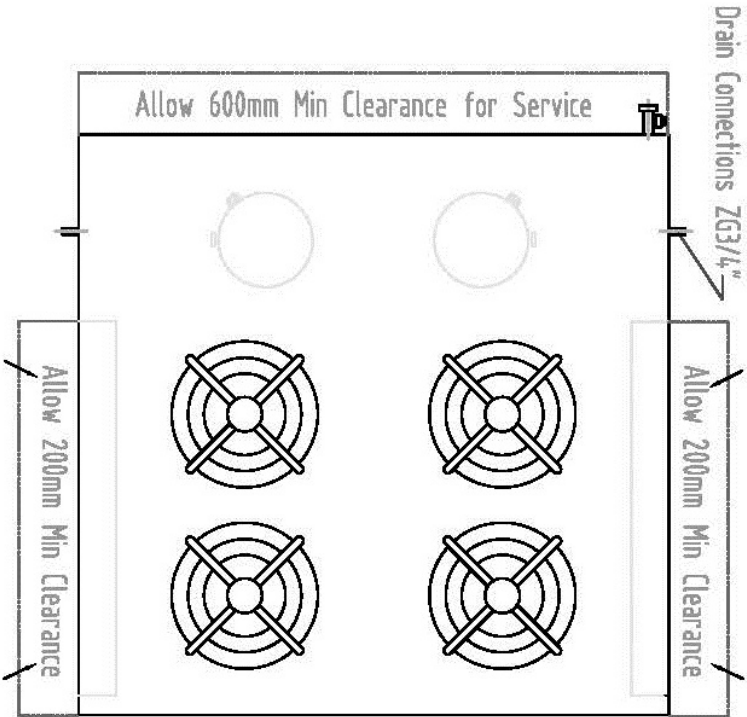
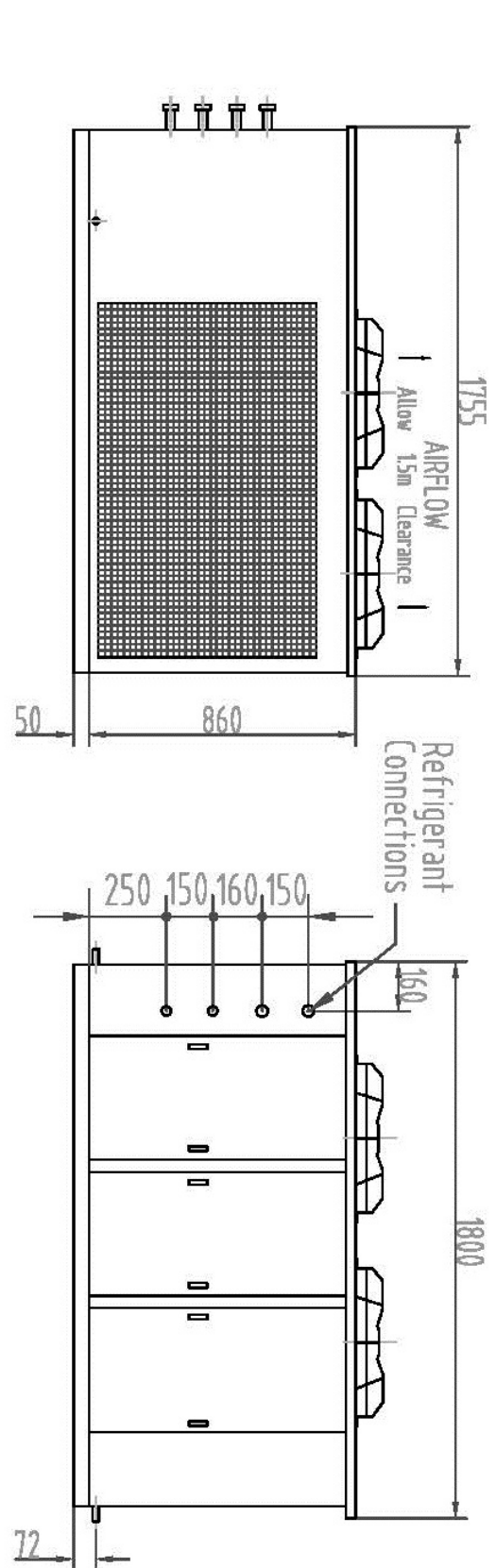
Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	2 x 1.03

### Condenser (Outdoor Fan)

Number of Fans	4
Type	Axial
Drive	Direct
Motor Watts /rpm	4 x 180 / 950
Motor Voltage /Phase /Frequency	415 / 3 / 50

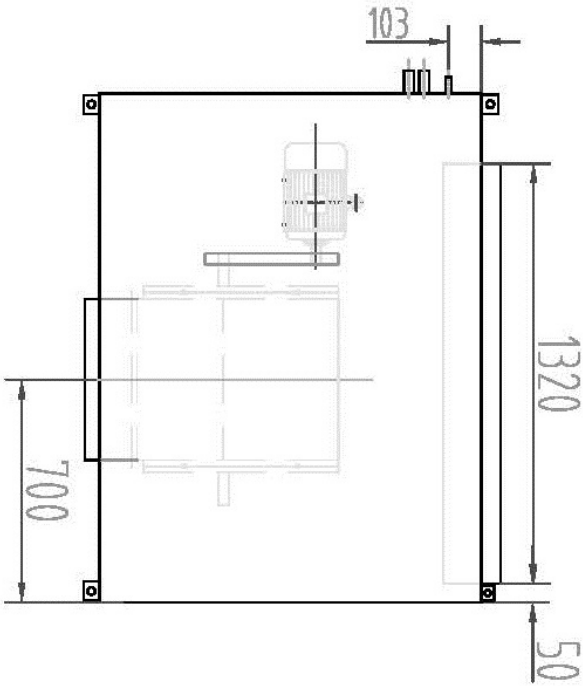
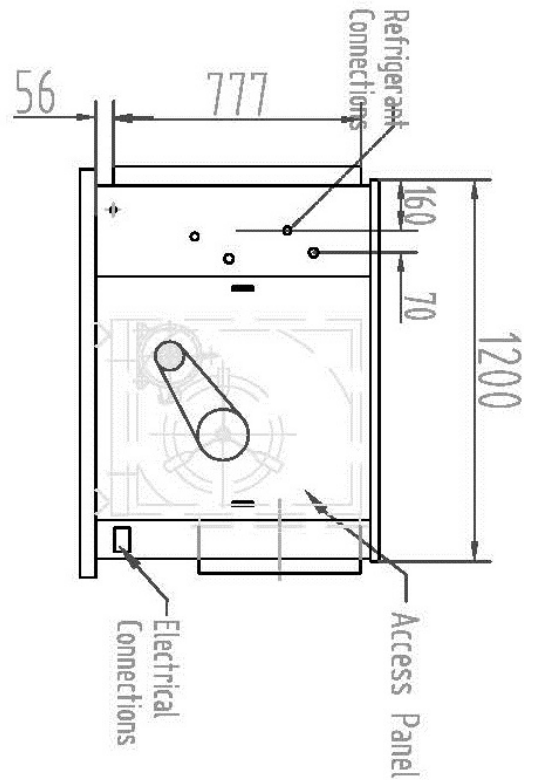
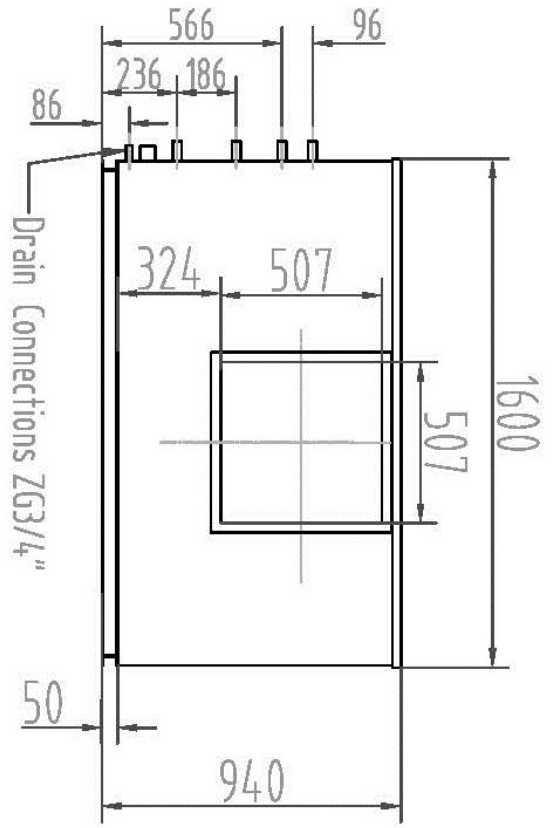
### Refrigeration System

Refrigerant Type	R410A
Charge (kg)	2 x 7.2
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 – 50 Meters	29 (1 1/8")




OUTDOOR UNIT INSTALLED WEIGHT 530 kg

<b>DRAWN BY:</b> Chen Cheng	<b>DATE:</b> 21th Jan.16	
<b>APPROVED D.A.:</b> Zhu Junquan	<b>APPROVED ENG.:</b> LI Meifen	
<b>TITLE:</b> Split System Air Cooled Heat Pump Unit		
<b>SH TYPE</b>		
<b>MODEL:</b> SH50WBb2-R	<b>DRAWING NO.:</b>	<b>ISSUE:</b>
<b>SCALE:</b>		<b>SHEET SIZE:</b> A4

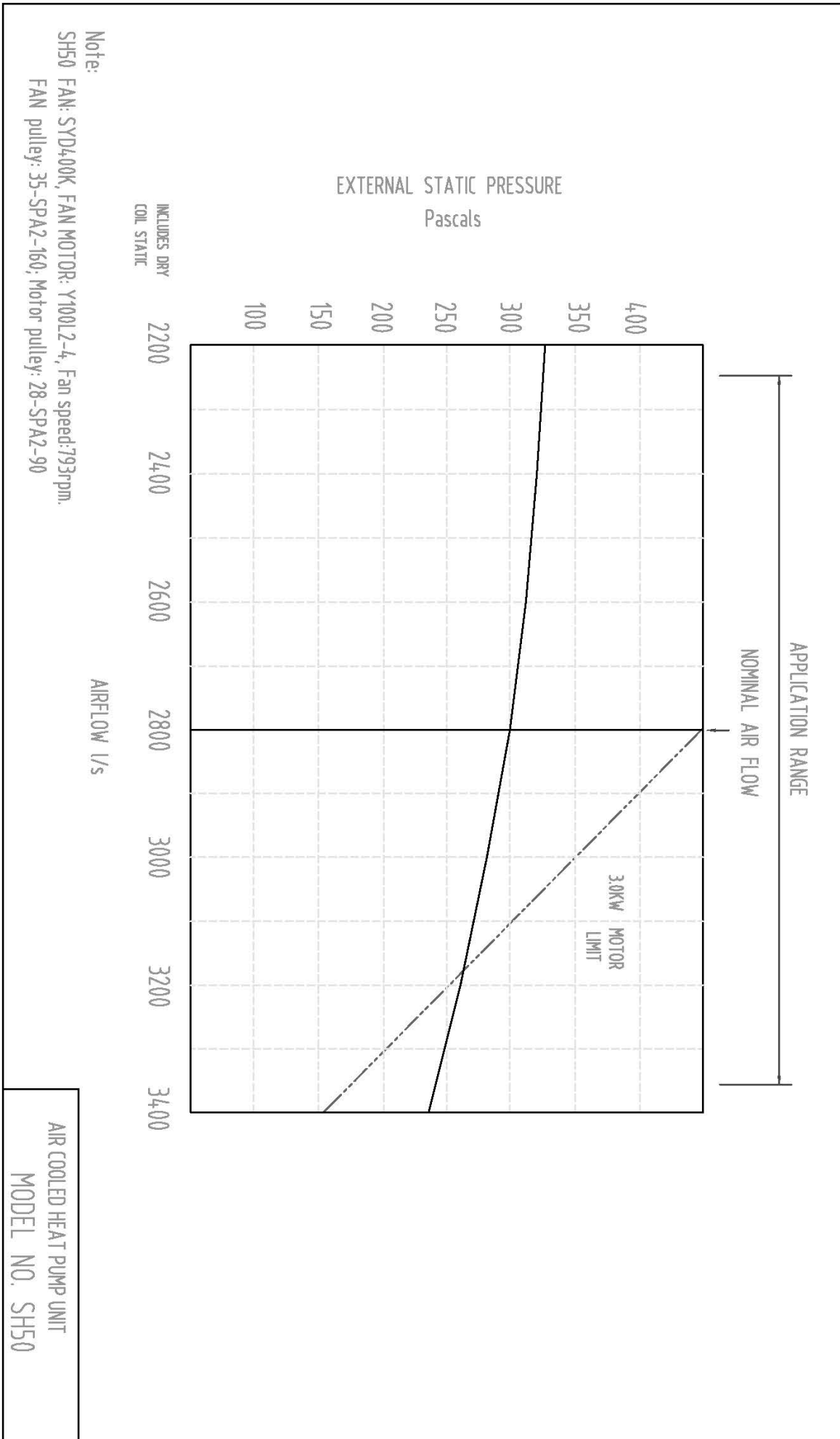


INDOOR UNIT INSTALLED WEIGHT 290 kg

Fan : SYD400K  
 Motor: Y100L2-4 (3.0KW-4)  
 Fan pulley: 35-SPA2-160  
 Motor pulley: 28-SPA2-90  
 Fan speed: 793rpm

DRAWN BY: Chen Cheng		DATE: 21th Jan. 14			
APPROVED Q.A.:		APPROVED ENG.:			
Zhu Junquan		Li Meifen		TITLE: Split System Air-Cooled Heat Pump Unit	
MODEL: SH50NBB2-R		DRAWING NO.:		SH TYPE	
SCALE:		ISSUE:		SHEET SIZE: A4	

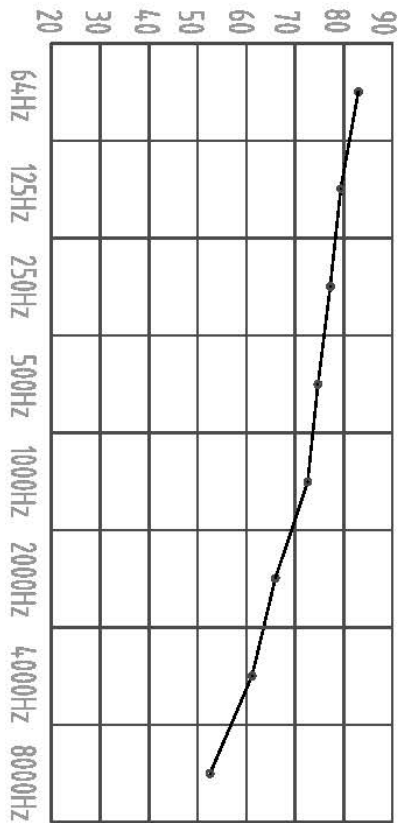




SH50W Sound Pressure Curve  
A Class: 76.7dB

Hz	dB
64Hz	82.5
125Hz	79.5
250Hz	76.7
500Hz	74.3
1000Hz	72.2
2000Hz	67.2
4000Hz	61.3
8000Hz	52.6

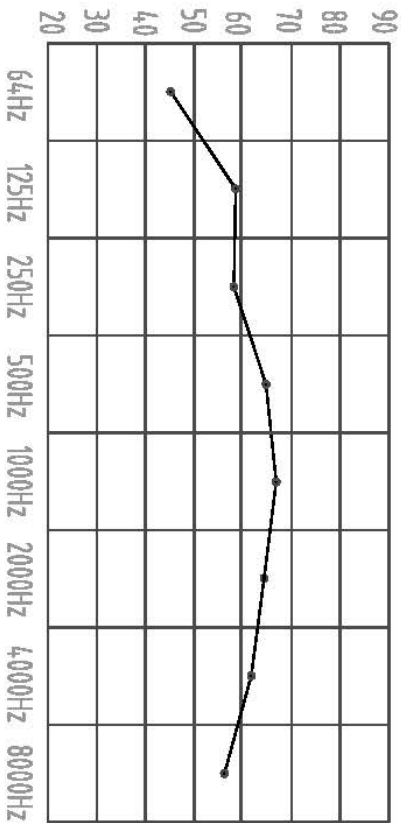
Sound Pressure Curve (A Class: 76.7dB) dB




SH50N Sound Pressure Curve  
A Class: 71.3dB

Hz	dB
64Hz	44
125Hz	59
250Hz	58
500Hz	64
1000Hz	67
2000Hz	65
4000Hz	63
8000Hz	57

Sound Pressure Curve (A Class: 71.3dB) dB



Note: Occupant at least 1.0m from sound source.

<b>DRAWN BY:</b> Chen Cheng	<b>DATE:</b> 2014-3-5	
<b>APPROVED Q.A.:</b> Zhu Junquan	<b>APPROVED ENG.:</b> Li Meifen	
<b>MODEL:</b> SH50	<b>DRAWING NO.:</b> 01	<b>TITLE:</b> Split System Air Cooled Heat Pump Unit <b>SH TYPE</b>
	<b>ISSUE:</b> 01	<b>SHEET SIZE:</b> A4