



# SH140

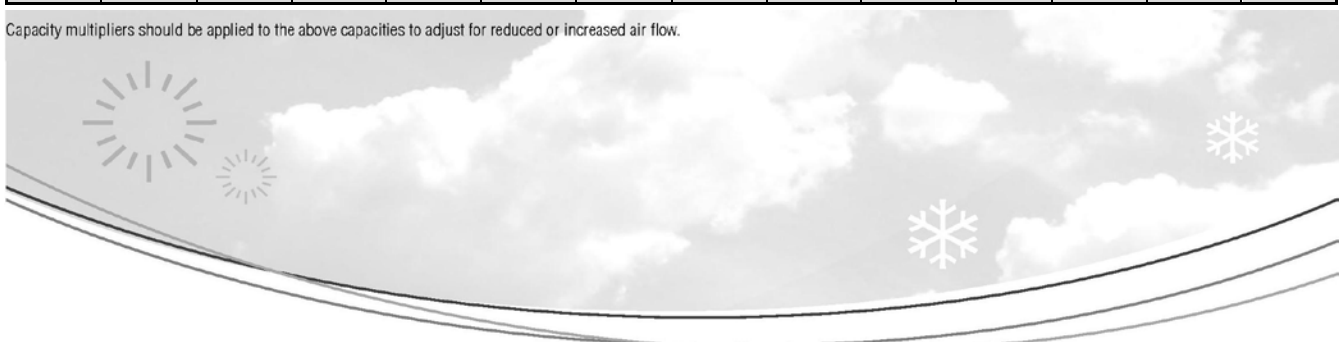
*Split Ducted Model*

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	135.1	82.1	11.4	128.2	79.2	11.7	120.8	76.1	12.1	115.7	76.1	12.3
	18	139.9	74.1	12.0	132.7	71.1	12.9	124.9	67.7	13.2	120.0	65.7	13.5
	19	145.0	65.7	13.8	137.3	62.7	14.1	129.2	59.3	14.5	124.5	57.4	14.7
	20	150.2	56.9	14.7	142.3	53.7	15.2	134.0	50.4	15.6	129.2	48.3	15.9
23	17	135.7	98.1	11.3	128.6	95.4	11.7	121.3	92.2	12.0	116.2	90.1	12.3
	18	139.9	89.9	12.4	132.7	87.0	12.8	124.9	83.6	13.2	120.0	81.5	13.5
	19	145.0	81.5	13.6	137.4	78.6	14.0	129.3	75.4	14.4	124.5	73.3	14.7
	20	150.3	72.8	14.7	142.3	69.6	15.2	134.0	66.3	15.6	129.3	64.2	15.8
	21	155.6	64.0	15.8	147.6	60.8	16.2	138.7	57.3	16.6	134.1	55.2	16.9
25	17	137.0	112.9	11.2	130.0	109.7	11.5	122.7	106.3	12.0	117.9	104.1	12.2
	18	140.3	109.1	12.5	133.1	103.5	12.9	125.3	100.2	13.3	120.4	98.1	13.6
	19	145.8	103.9	13.6	137.4	94.4	14.0	129.3	91.2	14.4	124.7	89.2	14.6
	20	150.3	97.9	14.7	142.5	85.6	15.2	134.0	82.1	15.6	129.3	80.2	15.8
	21	155.8	91.4	15.8	147.6	71.3	16.2	138.7	73.1	16.6	134.1	71.3	16.8
27	17	139.2	125.2	11.1	132.9	121.4	11.4	125.7	117.2	11.8	121.1	114.5	12.1
	18	141.9	122.4	12.3	134.4	119.4	12.7	126.6	116.1	13.1	123.0	114.0	13.3
	19	146.3	113.6	13.4	137.8	110.6	13.8	129.6	107.2	14.2	124.9	105.2	14.4
	20	150.5	105.6	14.6	142.5	102.4	14.9	134.0	99.1	15.4	129.3	97.2	15.6
	21	155.8	95.7	15.8	147.8	92.5	16.2	138.9	89.0	16.6	134.2	87.1	16.8
29	17	142.9	129.4	11.0	136.5	131.1	11.4	129.3	125.9	11.8	124.0	123.1	12.0
	18	144.2	127.2	12.2	137.2	129.1	12.7	129.6	125.2	13.1	124.9	119.4	13.3
	19	146.3	125.0	13.5	138.9	127.6	13.8	130.8	124.2	14.2	125.4	117.2	14.5
	20	150.5	121.1	14.6	142.7	117.9	14.9	134.2	114.2	15.5	129.5	112.5	15.7
	21	155.8	111.6	15.8	147.8	108.4	16.2	138.9	104.8	16.6	134.2	103.0	16.8
31	17	147.4	144.6	10.7	141.2	139.0	11.0	133.7	132.7	11.4	129.5	128.8	11.6
	18	148.2	124.9	12.0	141.4	138.4	12.3	134.2	132.3	12.8	130.2	128.3	13.1
	19	149.0	141.4	13.3	141.9	137.9	13.7	134.2	131.6	14.1	130.2	128.0	14.3
	20	151.4	137.7	14.5	143.9	134.7	14.9	135.3	130.0	15.4	130.5	127.6	15.7
	21	156.0	128.5	15.8	148.0	125.4	16.2	139.1	127.2	16.6	134.4	120.0	16.9

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



## Technical Specification SH140 Split Ducted Model

Indoor Unit Model Number	SH140N	Nominal Evaporator Air Flow (l/s)	7500
Outdoor Unit Model Number	SH140W	Number of Compressors	2
Total Cooling Capacity (kW)*	137.8	Power Requirements (Volt /Phase)	415 / 3
Sensible Cooling Capacity (kW)*	110.6	Normal Max. Current (Amps /Phase)	117.6
Heating Capacity (kW) **	132.0	Power Input (kW)	55.3
*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 7500 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)	103.2	113.8	132.0	145.0	174.4

Heating cap is based on 21°C DB. Frost formation will have greatest effect at Amb. 4 -6°C. Above 8°C defrost is unlikely and a factor of 1 may be used.

### 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	Hermetic Scroll
RPM (Nom)	2900
Normal Max. Current (amps /phase)	37.8 / 46.6
Locked Rotor Current (amps /phase)	215 / 260
Displacement (m <sup>3</sup> /h)	39.6 / 49.7

### 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

HP / LP Cutouts	Thermal Overload Protection
Crankcase Heater	Limit Start Timer
Automatic De-Ice System	Indoor 25mm Insulation
Liquid Accumulator	240 Volt Control
Sight Glass	Evap. Unit is supplied with a variable speed motor pulley

### Evaporator (Indoor Coil)

Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	2.87
Air Quantity (l/s)	7500

### Evaporator (Indoor fan)

Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor Voltage /Phase /Frequency	415 / 3 / 50
Motor Power (kW)	11
Maximum Fan Speed(rpm)	681

### Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	117.6

### Condenser (Outdoor Coil)

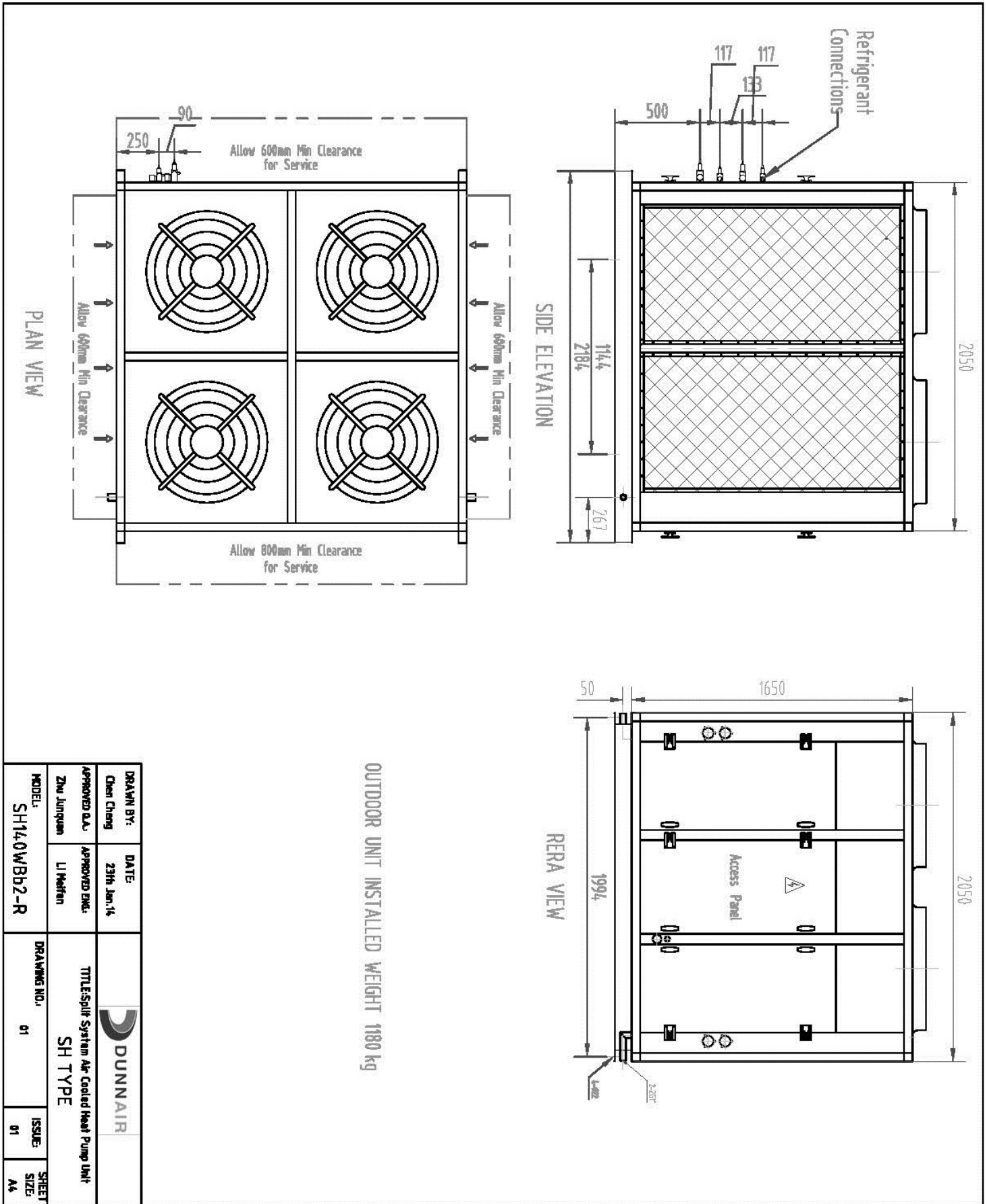
Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	2 x 2.51

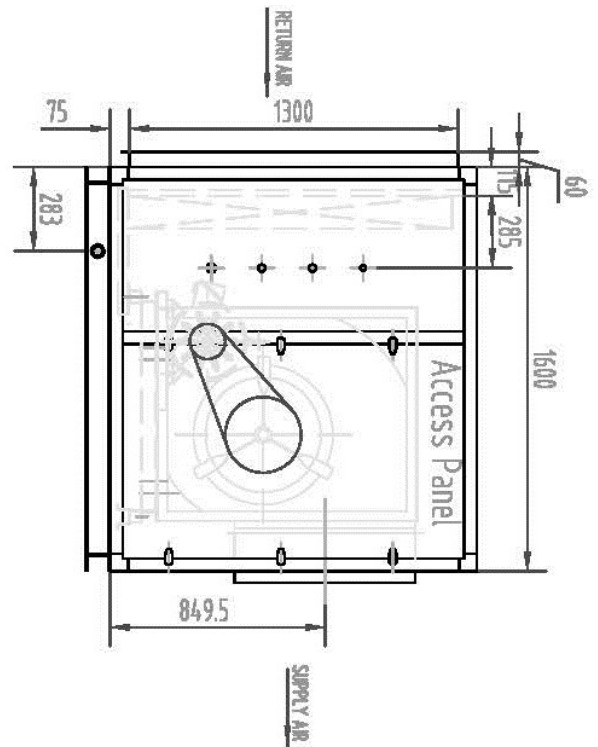
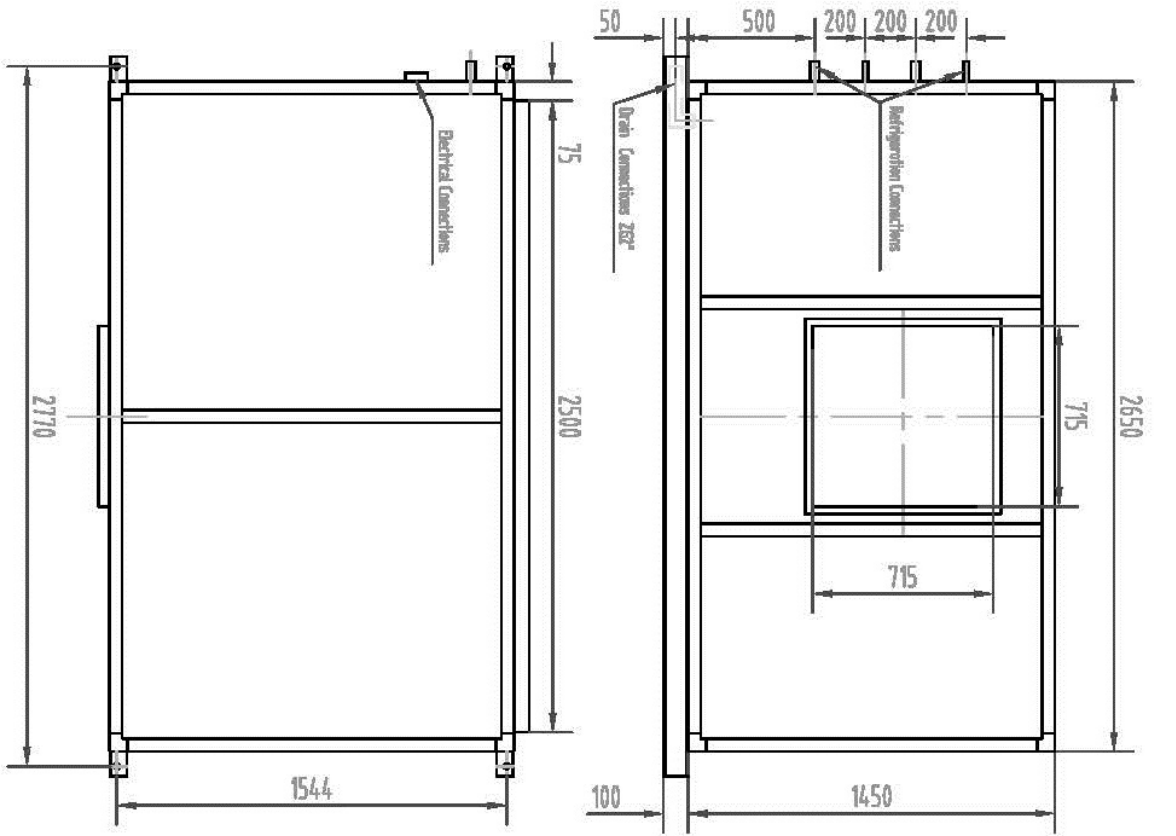
### Condenser (Outdoor Fan)

Number of Fans	4
Type	Axial
Drive	Direct
Motor Output Power (kW)	4 x 0.75
Motor Voltage /Phase /Frequency	415 / 3 / 50

### Refrigeration System


Refrigerant Type	R410A
Charge (kg)	14.6 / 18.8
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor Unit	TX Valve
Line Size (mm)	
Liquid Line 0 – 15 Meters	29 (1 <sup>1</sup> / <sub>8</sub> "
Gas 0 Line – 15 Meters	41 (1 <sup>5</sup> / <sub>8</sub> "
Liquid Line 15 – 30 Meters	29 (1 <sup>1</sup> / <sub>8</sub> "
Gas Line 15 – 30 Meters	41 (1 <sup>5</sup> / <sub>8</sub> "



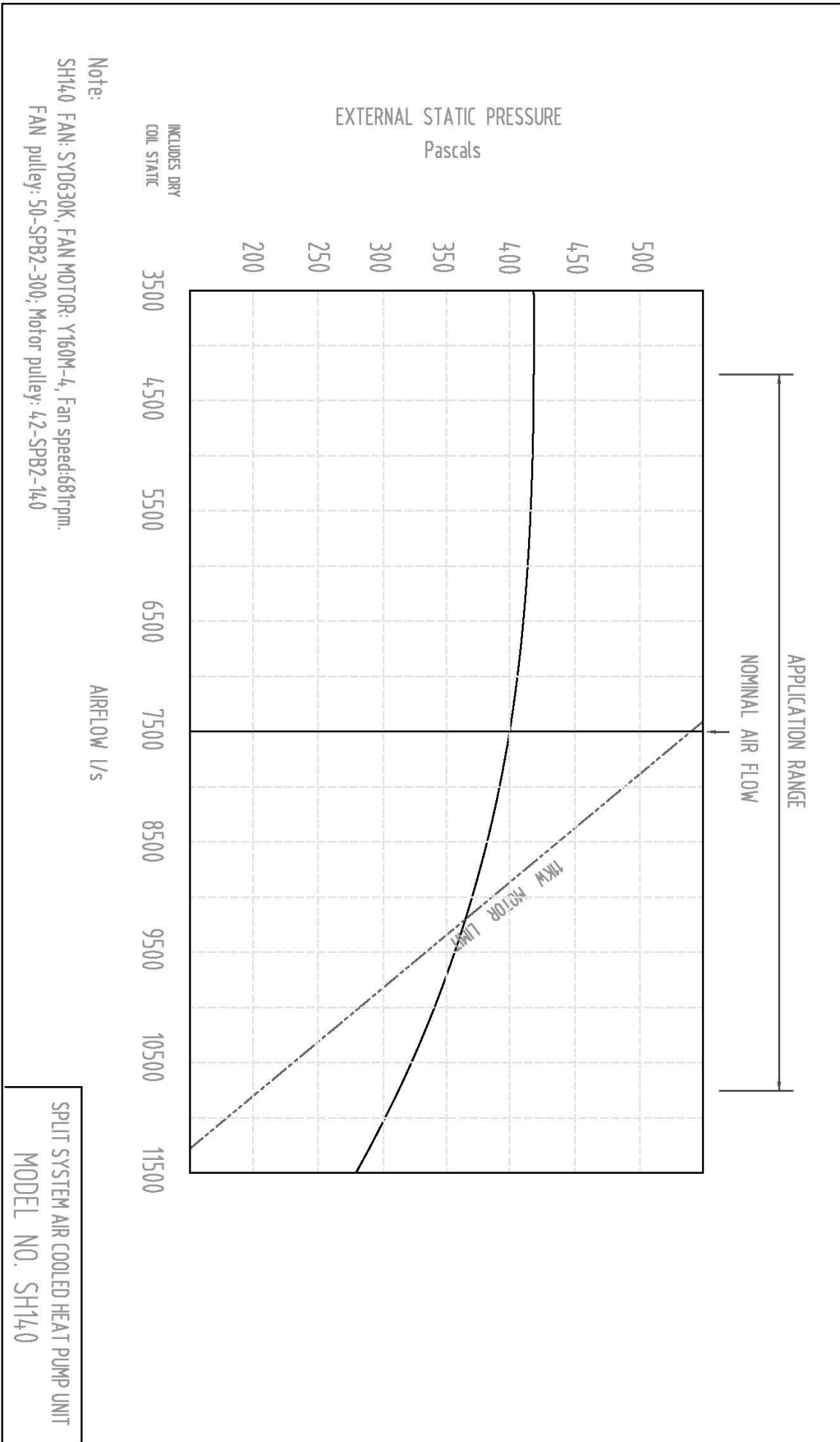


INDOOR UNIT INSTALLED WEIGHT 660 kg

Fan : SYD560K  
 Motor: Y160M-4 (11.0KW)  
 Fan pulley: 50-SPB2-300  
 Motor pulley: 42-SPB2-140  
 Fan speed: 681rpm

DRAWN BY: Chen Deng		DATE: 23th Jan,14		 TITLE:Squirrel System Air Cooled Heat Pump Unit SH TYPE	
APPROVED D.A. Zhu Junqun		APPROVED ENG. LI Weifen			
MODEL: SH140NBb2-R	DRAWING NO.: 01		ISSUE: 01	SHEET SIZE: A4	





Note:

SH140 FAN: SYD630K, FAN MOTOR: Y160M-4, Fan speed: 681rpm.  
 FAN pulley: 50-SPB2-300; Motor pulley: 42-SPB2-140

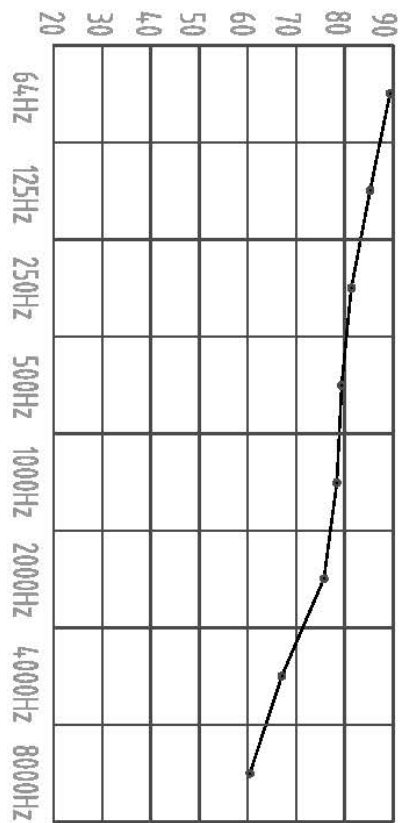
AIRFLOW l/s

SPLIT SYSTEM AIR COOLED HEAT PUMP UNIT  
 MODEL NO. SH140

SH14.0W Sound Pressure Curve  
A Class: 83.3dB

Hz	dB
64Hz	89.2
125Hz	85.7
250Hz	82.3
500Hz	79.4
1000Hz	78.6
2000Hz	76.2
4000Hz	67.8
8000Hz	60.1

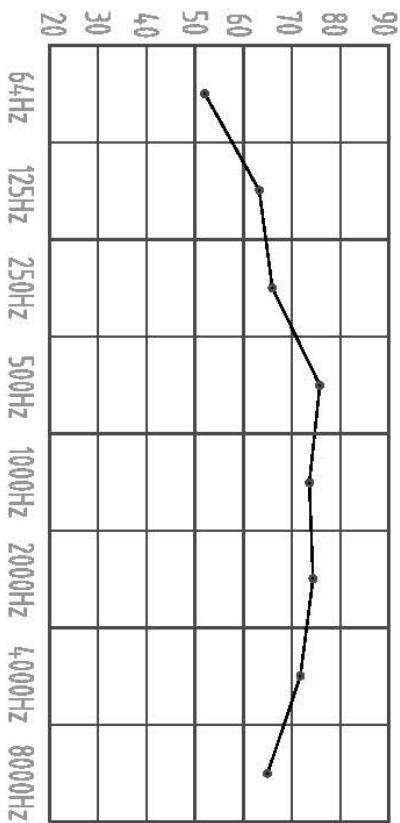
Sound Pressure Curve (A Class: 83.3dB) dB




SH14.0N Sound Pressure Curve  
A Class: 80.4dB

Hz	dB
64Hz	51
125Hz	63
250Hz	66
500Hz	76
1000Hz	74
2000Hz	75
4000Hz	72
8000Hz	65

Sound Pressure Curve (A Class: 80.4dB) dB



Note: Occupant at least 1.0m from sound source.

<b>DRAWN BY:</b> Chen Cheng	<b>DATE:</b> 2014-3-5	 <b>DUNNAIR</b>
<b>APPROVED A.A.:</b> Zhu Junquan	<b>APPROVED ENG.:</b> Li Meifen	
<b>MODEL:</b> SH14.0		<b>TITLE:</b> Split System Air Cooled Heat Pump Unit <b>SH TYPE</b>
<b>DRAWING NO.:</b> 01	<b>ISSUE:</b> 01	<b>SHEET SIZE:</b> A4