



# SH160

*Split Ducted Model*

## 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	153.1	94.6	10.9	145.3	91.4	11.2	136.9	87.8	11.6	131.1	87.8	11.8
	18	158.6	85.4	11.5	150.4	81.9	12.3	141.5	78.1	12.6	136.0	75.7	12.9
	19	164.3	75.7	13.2	155.9	72.3	13.5	146.8	68.4	13.9	141.1	66.2	14.1
	20	170.6	65.6	14.1	161.7	61.9	14.5	152.1	58.0	14.9	146.8	55.7	15.2
23	17	153.8	113.1	10.8	145.9	109.9	11.2	137.5	106.2	11.5	131.7	103.9	11.8
	18	158.6	103.7	11.9	150.4	100.2	12.2	141.5	96.4	12.6	136.0	93.9	12.9
	19	164.3	93.9	13.0	155.7	90.6	13.4	146.6	86.9	13.8	141.1	84.5	14.1
	20	170.4	83.9	14.1	161.7	80.2	14.5	152.1	76.3	14.9	146.6	74.0	15.1
	21	177.0	73.8	15.1	167.7	70.1	15.5	157.7	66.0	15.9	152.3	63.6	16.2
25	17	155.3	130.1	10.7	147.3	126.4	11.0	139.0	122.6	11.4	137.3	120.0	11.7
	18	159.0	125.8	12.0	150.8	119.3	12.3	142.0	115.5	12.7	136.4	113.1	13.0
	19	164.1	119.8	13.0	155.7	108.8	13.4	146.6	105.2	13.8	140.9	102.8	14.0
	20	170.4	112.9	14.1	161.5	98.7	14.5	151.9	94.6	14.9	146.6	92.5	15.1
	21	176.6	105.4	15.1	167.7	82.1	15.5	157.7	84.3	15.9	152.3	82.1	16.1
27	17	162.0	144.3	10.6	150.6	140.0	10.9	142.4	135.1	11.3	137.3	132.0	11.6
	18	163.5	141.1	11.8	152.3	137.6	12.1	143.5	133.8	12.5	139.5	131.4	12.7
	19	165.8	130.9	12.8	156.2	127.5	13.2	146.9	123.7	13.6	141.5	121.3	13.8
	20	170.6	121.7	14.0	161.5	118.1	14.3	151.9	114.2	14.7	146.6	112.1	14.9
	21	176.6	110.3	15.1	167.5	106.6	15.5	157.5	102.6	15.9	152.1	100.4	16.1
29	17	162.0	149.1	10.5	154.6	151.2	10.9	146.6	145.1	11.3	141.5	141.5	11.5
	18	163.5	146.6	11.7	155.5	148.8	12.1	146.9	144.3	12.5	141.5	141.5	12.7
	19	165.8	144.0	12.9	157.5	147.1	13.2	148.2	143.2	13.6	141.5	135.2	13.9
	20	170.6	139.6	14.0	161.7	135.9	14.3	152.1	131.6	14.8	146.8	129.7	15.0
	21	176.6	128.6	15.1	167.5	124.9	15.5	157.5	120.9	15.9	152.1	118.7	16.1
31	17	167.1	166.7	10.2	160.0	160.0	10.5	152.1	152.0	10.9	147.5	147.5	11.1
	18	168.0	164.7	11.5	160.2	159.6	11.8	152.1	152.0	12.2	147.5	147.5	12.5
	19	168.8	163.0	12.7	160.6	159.0	13.1	152.1	151.7	13.5	147.5	147.5	13.7
	20	171.7	158.7	13.9	163.0	155.2	14.3	150.8	149.8	14.7	148.0	147.1	15.0
	21	176.8	148.2	15.1	167.7	144.5	15.5	140.1	139.7	15.9	152.3	138.3	16.2

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



## Technical Specification SH160 Split Ducted Model

Indoor Unit Model Number	SH160N	Nominal Evaporator Air Flow (l/s)	8500
Outdoor Unit Model Number	SH160W	Number of Compressors	2
Total Cooling Capacity (kW)*	156.2	Power Requirements (Volt /Phase)	415 / 3
Sensible Cooling Capacity (kW)*	127.5	Normal Max. Current (Amps /Phase)	133.9
Heating Capacity (kW) **	152.5	Power Input (kW)	63.5
*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 8500 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)	119.2	131.6	152.5	167.6	201.6

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)	2 x 46.6
Locked Rotor Current (amps /phase)	2 x 260
Displacement (m <sup>3</sup> /h)	2 x 49.7

### Electrical Controls and Safeties

High Pressure Switch (Setting kPa)	4000	Defrost	
Low Pressure Switch (Setting kPa)	300	Initiation Temperature (°C)	-4
Indoor Fan Overload	Internal	Termination Temperature (°C)	10
Outdoor Fan Overload	Internal	Min. Period Between De-Ice (min)	33
Compressor Delay Timer	300 sec	Max De-Ice Period (min)	4

### 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> )	3.11
Air Quantity (l/s)	8500

### Evaporator (Indoor fan)

Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor Voltage /Phase /Frequency	415 / 3 / 50
Motor Power (kW)	15
Maximum Fan Speed(rpm)	584

### Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	133.9

### Condenser (Outdoor Coil)

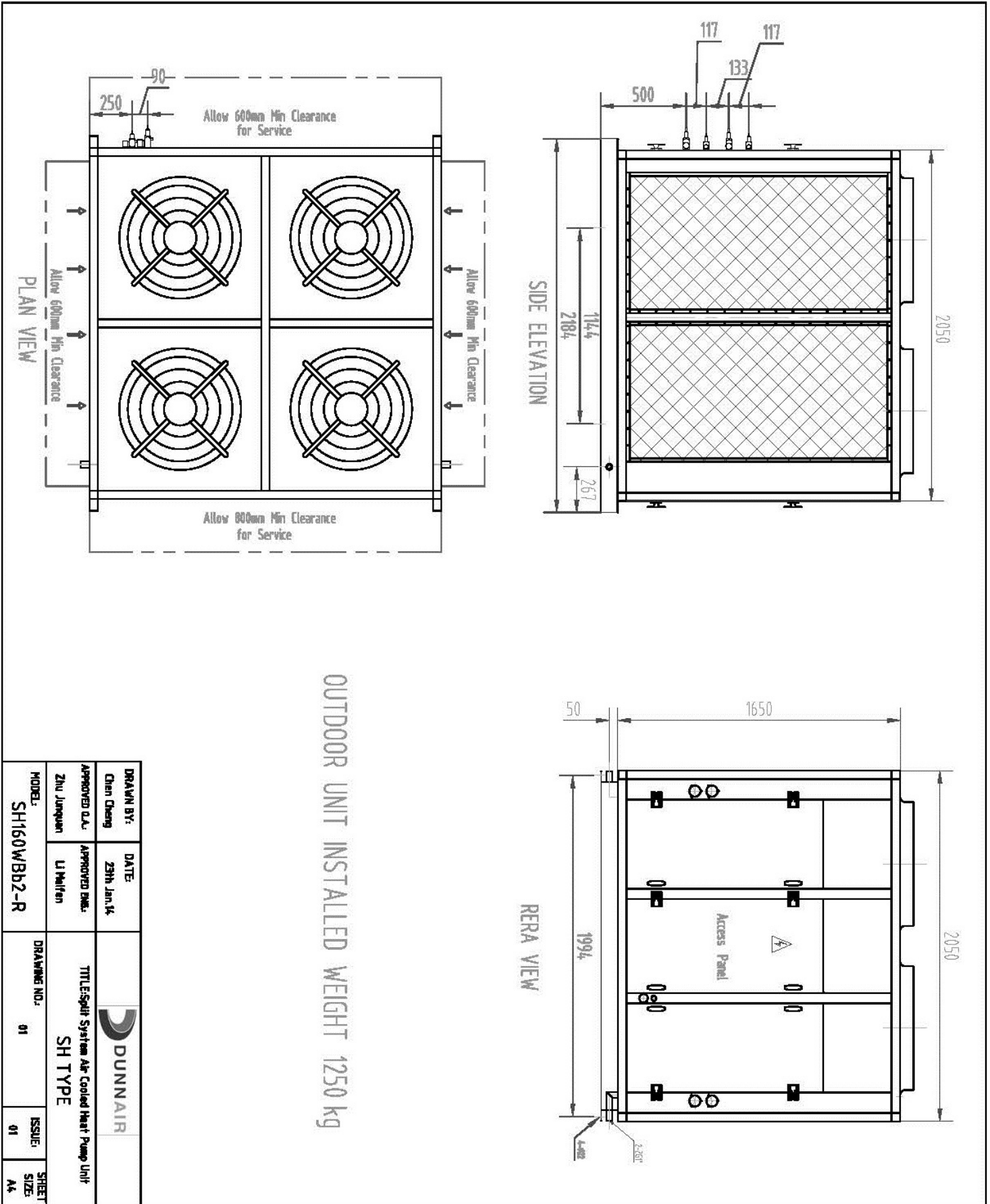
Type	Copper Tube / Aluminium Fins
Face Area (m <sup>2</sup> )	2 x 2.51

### Condenser (Outdoor Fan)

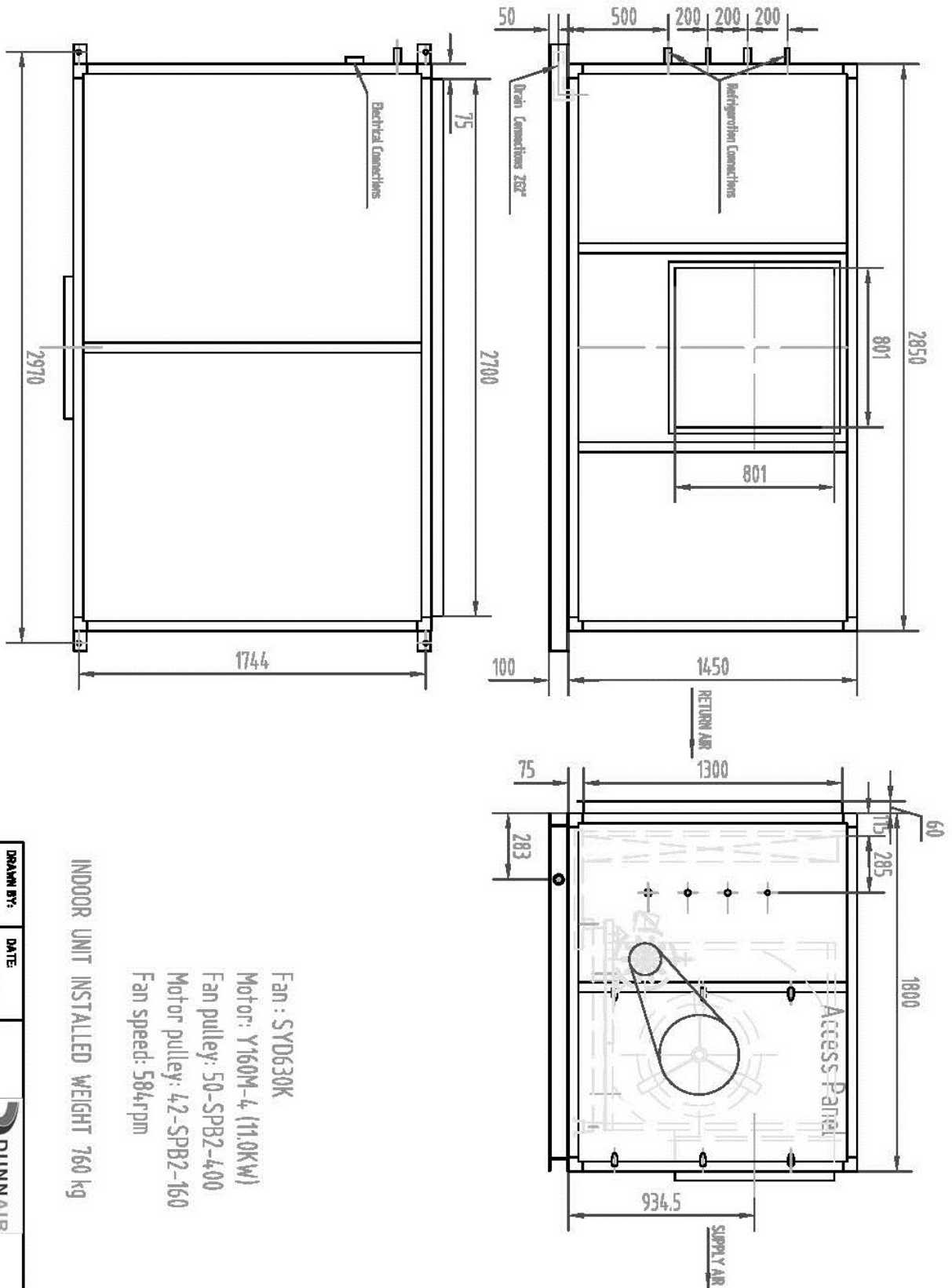
Number of Fans	4
Type	Axial
Drive	Direct
Motor Output Power (kW)	4 x 0.75
Motor Voltage /Phase /Frequency	415 / 3 / 50

### Refrigeration System

Refrigerant Type	R410A
Charge (kg)	2 x 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> "



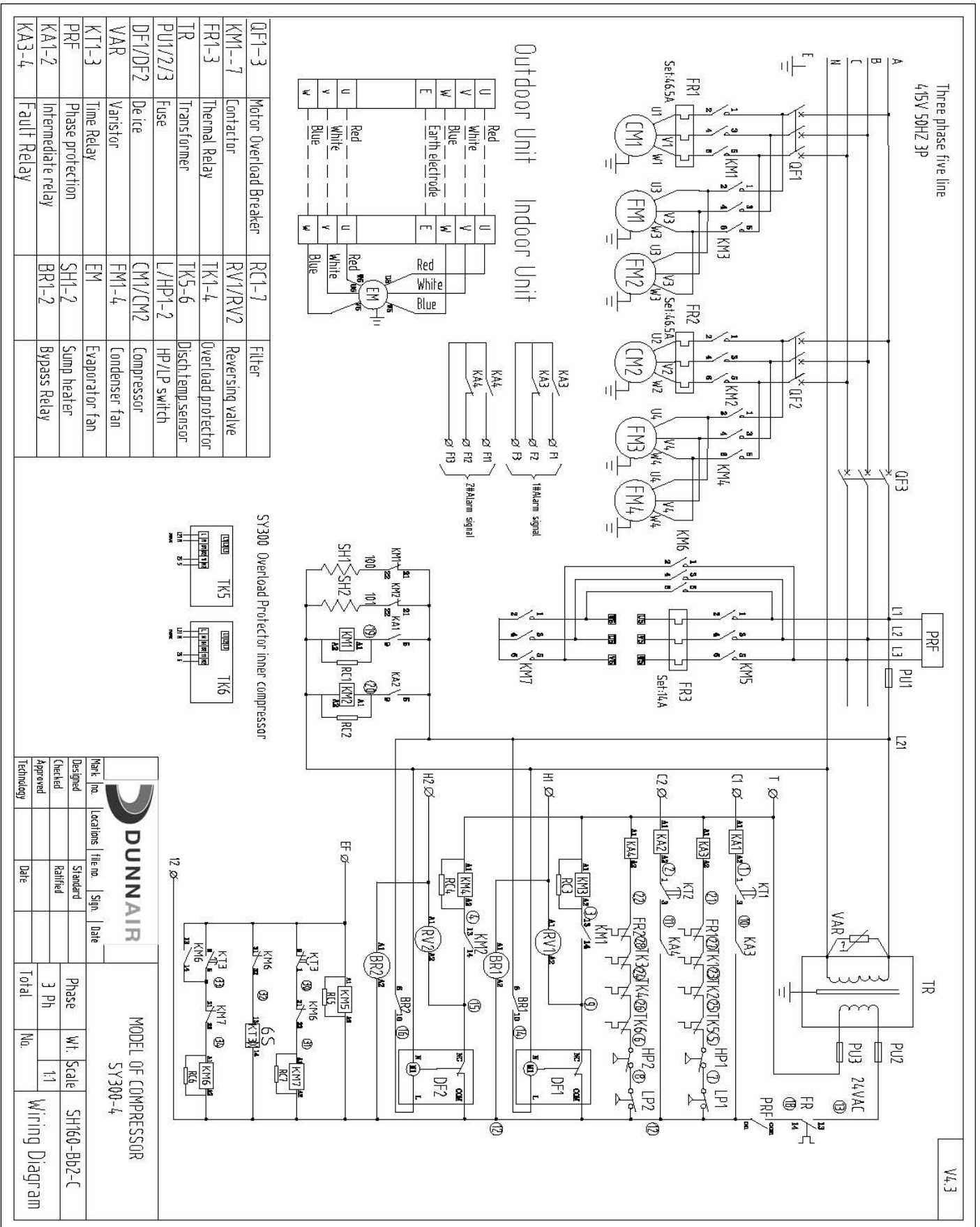
MODEL: <b>SH160W/B2-R</b>	DRAWN BY: Chen Cheng	DATE: 23th Jan,14	TITLE:Split System Air Cooled Heat Pump Unit <b>SH TYPE</b>	DUNNAIR
	APPROVED D.A.: Zhu Junqun	APPROVED D.M.: LI Mal'ien		
	DRAWING NO.: 01			
	ISSUE: 01			SHEET SIZE: A4



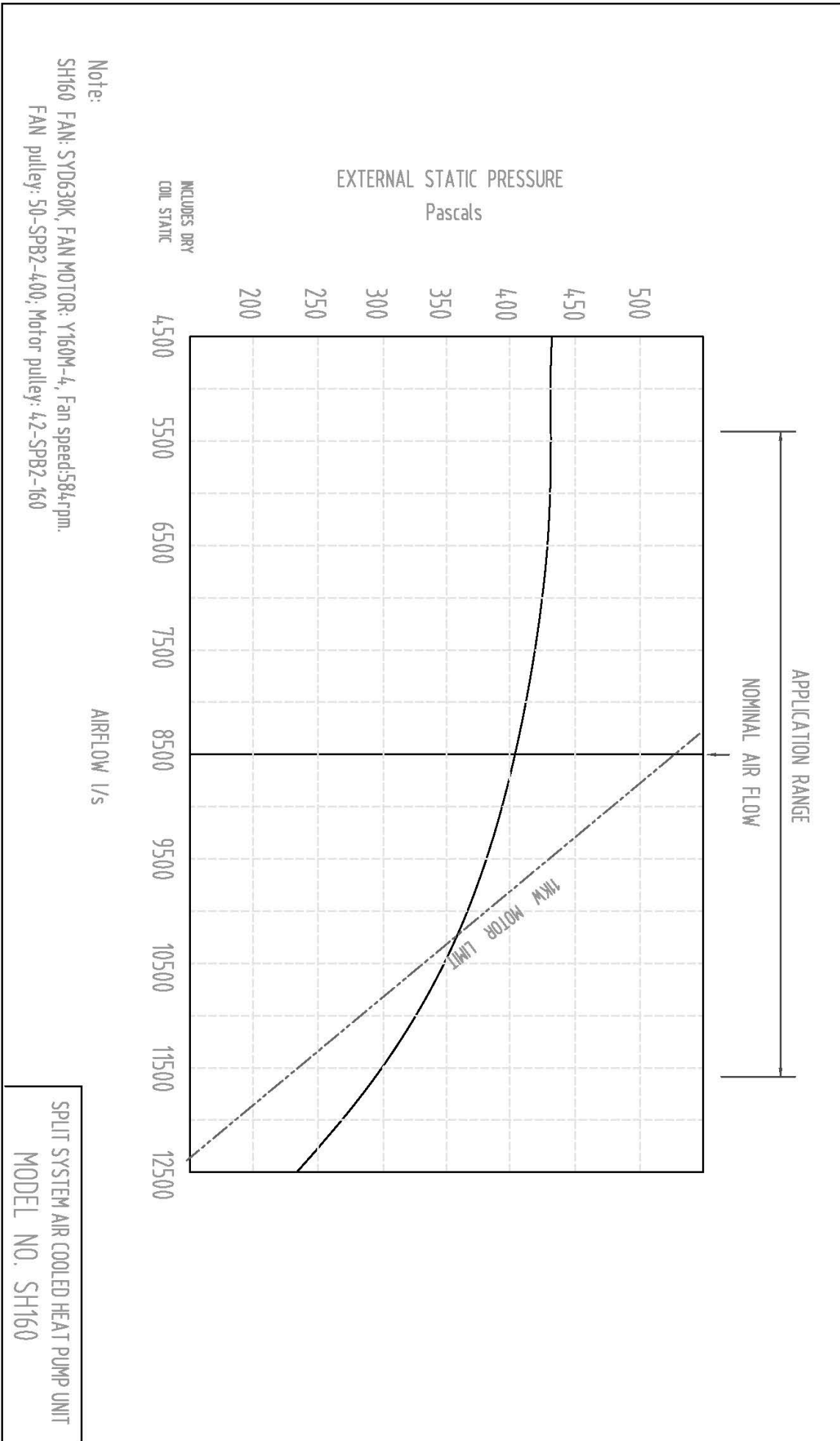
INDOOR UNIT INSTALLED WEIGHT 760 kg

- Fan : SYD630K
- Motor: Y160M-4 (11.0KW)
- Fan pulley: 50-SPB2-400
- Motor pulley: 42-SPB2-160
- Fan speed: 584rpm

DRAWN BY: Chen Cheng		DATE: 23th Jun,14		 TITLE: Split System Air Cooled Heat Pump Unit SH TYPE	
APPROVED D.A. Zhu Junqian		APPROVED ENG: LI Weifan			
MODEL: SH160NBb2-R		DRAWING NO.: 01		ISSUE: 01	
				SHEET SIZE: A4	



V4.3



SH160W Sound Pressure Curve  
A Class: 83.7dB

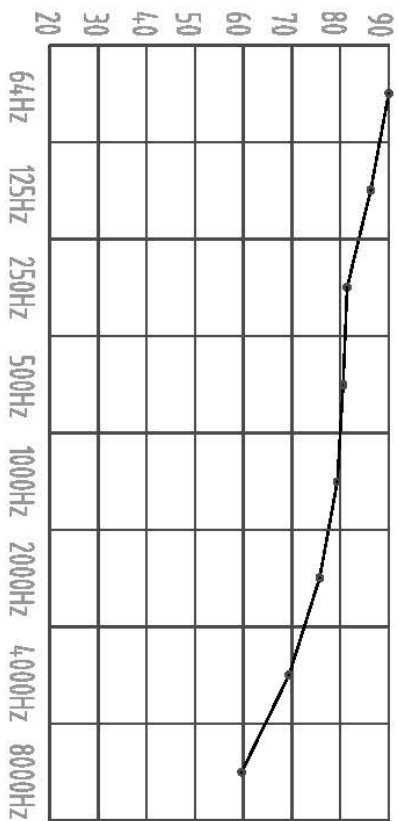
Hz	dB
64Hz	90.0
125Hz	86.5
250Hz	82.2
500Hz	80.4
1000Hz	79.2
2000Hz	76.2
4000Hz	69.3
8000Hz	59.8

SH160N Sound Pressure Curve  
A Class: 77.6dB

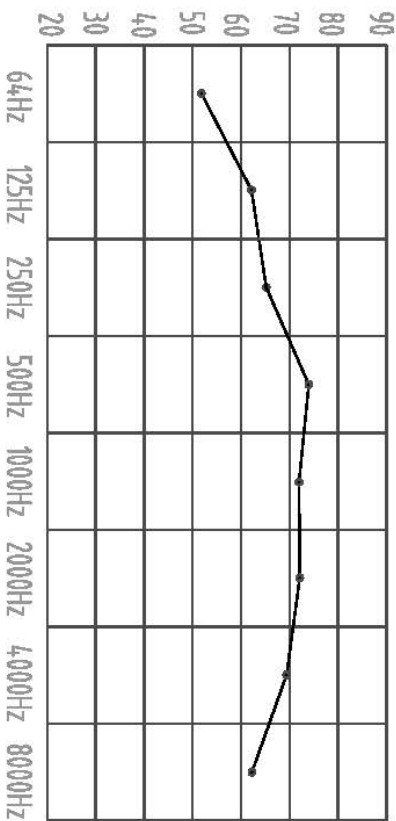
Hz	dB
64Hz	51
125Hz	62
250Hz	64
500Hz	74
1000Hz	71
2000Hz	72
4000Hz	69
8000Hz	62


Note: Occupant at least 1.0m from sound source.

Sound Pressure Curve (A Class: 83.7dB) dB



Sound Pressure Curve (A Class: 77.6dB) dB



<b>DRAWN BY:</b> Chen Cheng	<b>DATE:</b> 2014-3-5	
<b>APPROVED A.A.:</b> Zhu Junquan	<b>APPROVED ENG.:</b> Li Meifen	
<b>MODEL:</b> SH160		<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