

R407c Refrigerant



**DUNNAIR**  
(Aust) Pty Ltd

**PHE180**

*Economy Cycle Rooftop Package*

Performance Data

INDOOR COIL ENTERING AIR TEMP °C		OUTDOOR COIL ENTERING AIR 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	173.4	106.6	11.2	164.4	102.9	11.5	154.9	98.8	12.0	148.4	98.8	12.2
	18	179.5	96.2	11.8	170.2	92.3	12.7	160.3	87.9	13.0	154.0	85.3	13.3
	19	186.0	85.3	13.6	176.2	81.4	13.9	166.1	77.0	14.3	159.8	74.6	14.5
	20	192.6	73.9	14.5	182.8	69.7	14.9	171.8	65.4	15.4	165.8	62.7	15.7
23	17	174.1	127.4	11.1	165.0	123.8	11.5	155.7	119.7	11.8	149.1	117.0	12.2
	18	179.5	116.8	12.3	170.2	112.9	12.6	160.3	108.5	13.0	154.0	105.8	13.3
	19	183.0	105.8	13.4	176.3	102.0	13.8	166.2	97.9	14.2	159.8	95.2	14.5
	20	192.8	94.5	14.5	182.8	90.3	14.9	171.8	86.0	15.4	165.9	83.3	15.6
	21	199.8	83.1	15.6	189.6	79.0	16.0	178.5	74.4	16.4	172.1	71.7	16.7
25	17	175.8	146.5	11.0	166.8	142.4	11.3	157.4	138.1	11.8	151.3	135.2	12.1
	18	179.9	141.7	12.4	170.7	134.4	12.7	160.8	130.1	13.1	154.5	127.4	13.4
	19	186.5	134.9	13.4	176.3	122.6	13.8	166.2	118.5	14.2	159.9	115.8	14.4
	20	192.8	127.2	14.5	182.9	111.2	14.9	171.9	106.5	15.4	165.9	104.2	15.6
	21	199.9	118.7	15.6	189.6	92.6	16.0	178.5	94.9	16.4	172.1	92.6	16.6
27	17	178.6	162.5	10.9	170.5	157.7	11.2	161.2	152.2	11.6	155.4	148.7	12.0
	18	182.1	158.9	12.2	172.4	155.0	12.5	162.5	150.7	12.9	157.9	148.0	13.1
	19	187.7	147.4	13.2	176.8	143.6	13.6	166.3	139.2	14.0	160.3	136.6	14.2
	20	193.0	137.1	14.4	182.9	133.0	14.7	171.9	128.7	15.1	165.9	126.2	15.4
	21	199.9	124.3	15.6	189.7	120.1	16.0	178.5	115.5	16.4	172.2	113.1	16.6
29	17	183.4	168.0	10.8	175.1	170.3	11.2	165.9	163.5	11.6	159.1	159.1	11.8
	18	185.1	165.1	12.1	176.1	167.6	12.5	166.3	162.5	12.9	160.3	155.1	13.1
	19	187.7	162.3	13.3	178.2	165.7	13.6	167.8	161.3	14.0	160.9	152.2	14.3
	20	193.0	157.2	14.4	183.1	153.0	14.7	172.2	148.3	15.2	166.1	146.1	15.5
	21	199.9	144.8	15.6	189.7	140.7	16.0	178.5	136.1	16.4	172.2	133.7	16.6
31	17	189.2	187.7	10.5	181.2	180.5	10.8	171.5	171.5	11.2	166.2	166.2	11.4
	18	190.1	185.5	11.8	181.4	179.7	12.2	172.2	171.4	12.6	167.1	166.2	12.9
	19	191.1	183.6	13.1	182.1	179.0	13.5	172.2	170.9	13.9	167.1	166.1	14.1
	20	194.3	178.8	14.3	184.6	174.9	14.7	173.6	168.7	15.1	167.5	165.7	15.5
	21	200.1	166.9	15.6	189.9	162.8	16.0	178.5	165.1	16.4	172.4	155.8	16.7



## Technical Specification PHE180 Economy Cycle Rooftop Package

Total Cooling Capacity (kW)	176.8	Number of Compressors	2
Sensible Cooling Capacity (kW)	143.6	Power V / Ph	415 / 3
Heating Capacity (kW)	169.4	Nominal Max. Current (A)	177.3
Nominal Evaporator Air Flow (l/s)	9500	Power Input (kW)	75.4
*Cooling cap entering air 27°/19°C (DB/WB) Ambient 35°C		** Heating cap entering air 21°C Outdoor ambient 7°C	

### Cooling Performance Correction

Capacity	% Rated Air Flow				
	80	90	100	110	120
Total	0.95	0.98	1.00	1.02	1.04
Sensible	0.89	0.95	1.00	1.05	1.09

### Heating Capacity

Amb. °C DB	0	4	8	12	18
Cap kW	132.4	146.0	169.4	186.0	223.8
Heating cap is based on 21°C DB. Frost formation will have greatest effect at amb 4 to 6°C. Above 8°C defrost is unlikely and a factor of 1 may be used.					

### Heating Performance Correction

% Air Flow	×	Return Air Temp °C	×	O/door 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

### Compressors

Number Per Unit	2
Type	Hermetic Scroll
Nominal RPM	2900
Nominal Max. Amps	49.3 / 57.7
Locked Rotor Amps	2 × 270
Displacement (m <sup>3</sup> /h)	2 × 76.1

### Electrical Controls and Safeties

Indoor Fan Overload	Internal	Defrost Cycle Start °C	-4
Outdoor Fan Overload	Internal	Defrost Cycle End °C	10
Compressor Delay Timer	300 sec	Min. Defrost Cycle	33 mins
High Pressure Switch (kPa)	2800	Max. Defrost Period	4 mins
Low Pressure Switch (kPa)	100		

### Standard Features

HP/LP Cutouts	Thermal Overload Protection
Crankcase Heater	Limit Start Timer
Automatic De-Ice	Indoor 25mm Insulation
Gas Separator	240 Volt Control

### Evaporator Coil

Type	Copper tube alum. fins
Face Area (m <sup>2</sup> )	2 × 1.68

### Condenser Coil

Type	Copper tube alum. fins
Face Area (m <sup>2</sup> )	2 × 1.73

### Evaporator Fan

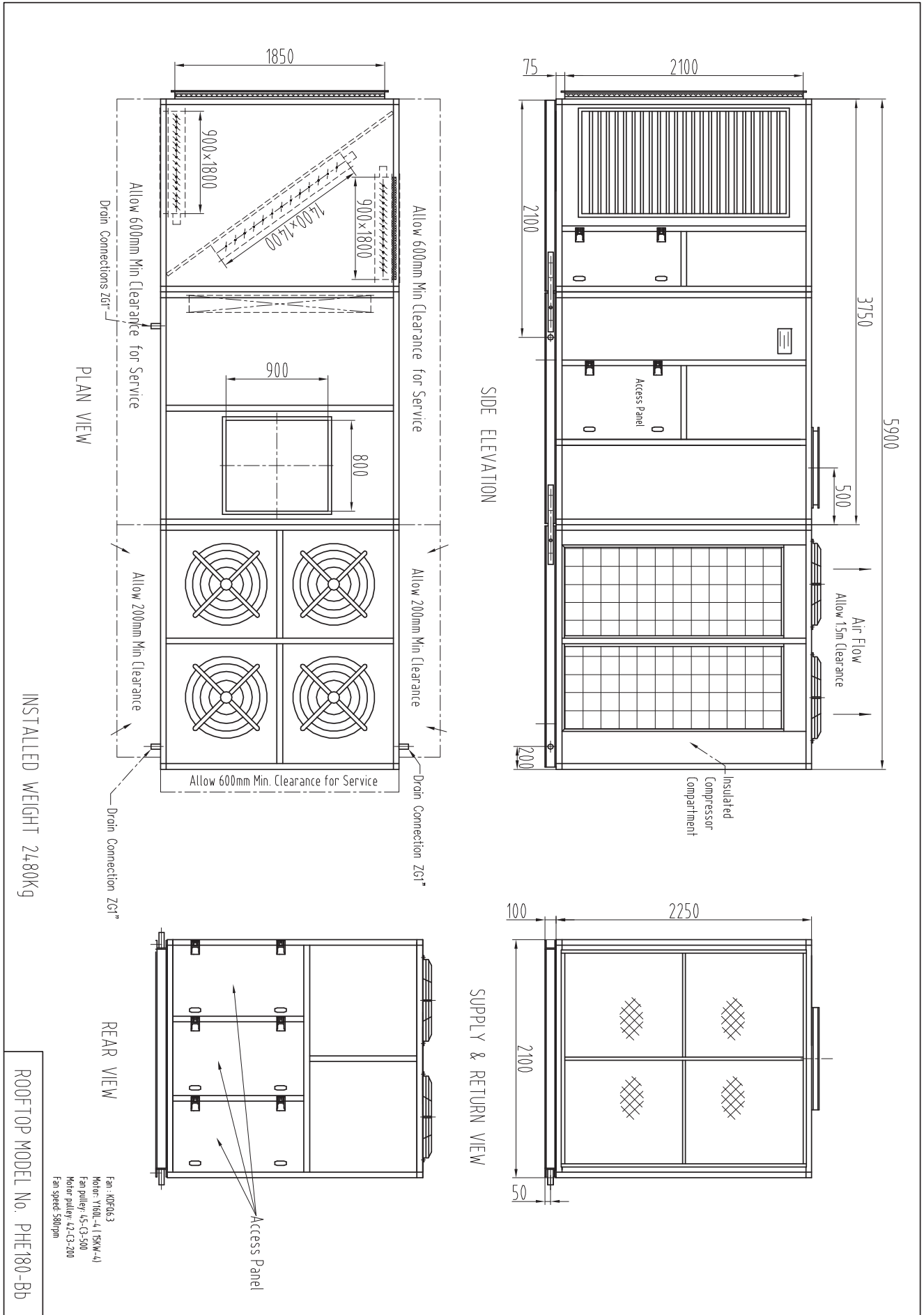
Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor V / Ph / Hz	415 / 3 / 50
Motor Output Power (kW)	15
Max. Fan Speed (rpm)	580

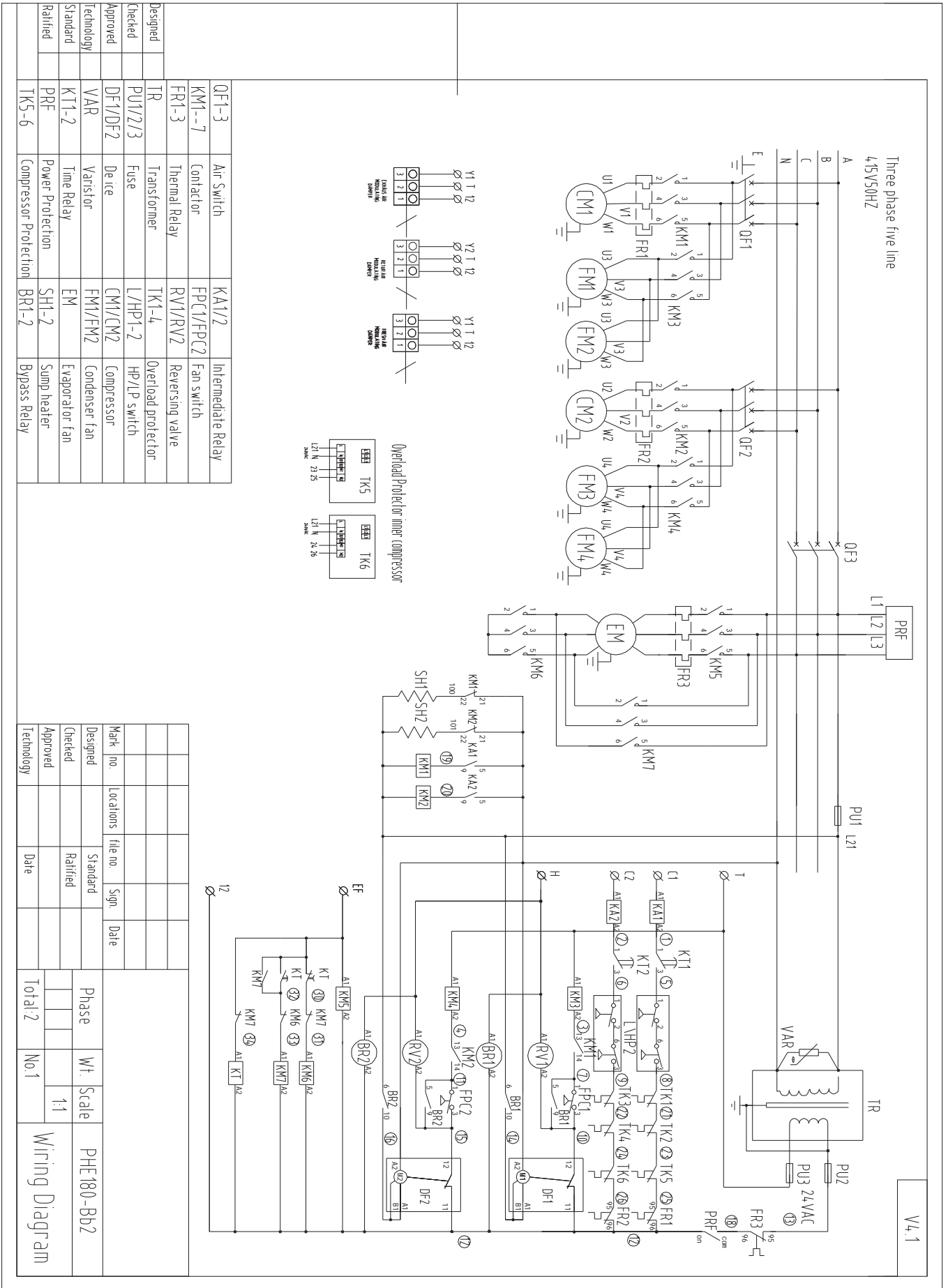
### Condenser Fan

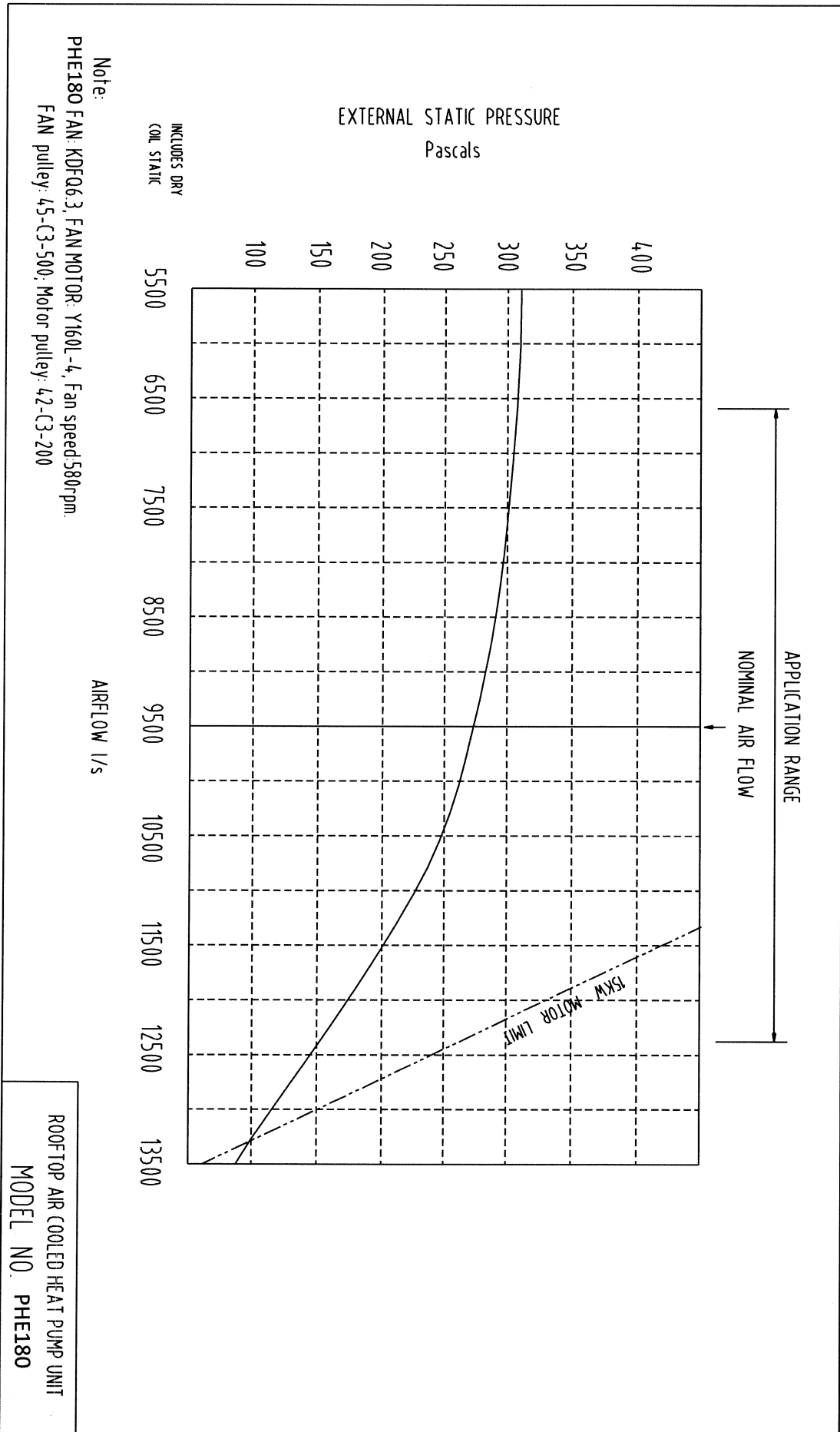
Number of Fans	4
Type	Axial
Drive	Direct
Motor Output Power (kW)	4 × 1.5
Motor V / Ph / Hz	415 / 3 / 50

### Refrigerant System

Refrigerant Type	R407C
Nominal Charge Required	18.8 / 25.4kg
Service Connection	Rotor Lock Valve
Expansion Control	TX Valve







PHE180 Noise rate analysing chart

A Class: 87.4dB

Hz	dB
64Hz	92.4
125Hz	89.5
250Hz	87.2
500Hz	83.8
1000Hz	82.3
2000Hz	78.9
4000Hz	76.8
8000Hz	72.1

Noise rate analysing chart ( A Class: 87.4dB) dB

