



**DUNNAIR**  
(Aust) Pty Ltd

**SH80**

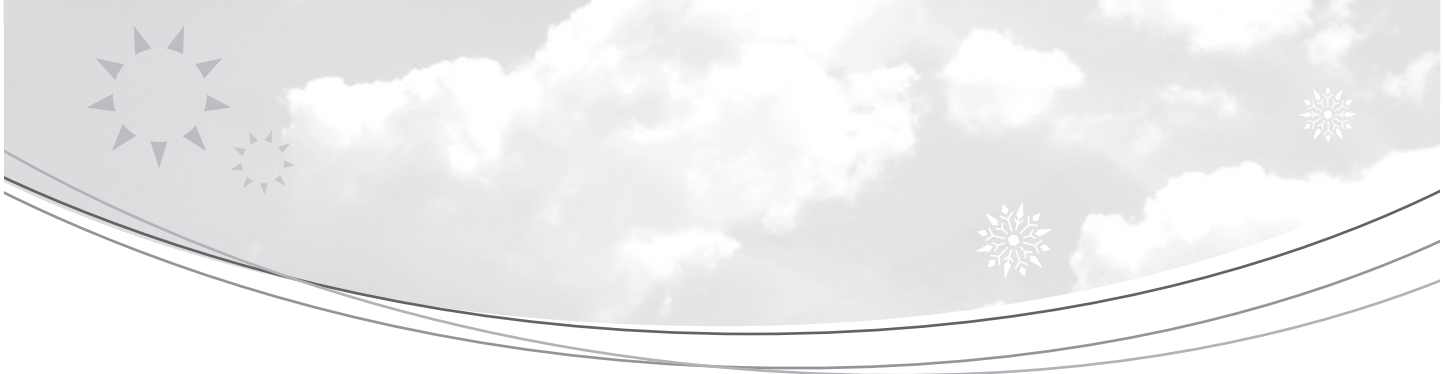
**Split Ducted Model**

R407c Refrigerant

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    | 78.9                                     | 48.6        | 10.9   | 74.8       | 46.9        | 11.2   | 70.5       | 45.1        | 11.6   | 67.5       | 45.1        | 11.8   |
|                                  | 18    | 81.6                                     | 43.7        | 11.5   | 77.4       | 42.1        | 12.3   | 72.9       | 40.1        | 12.6   | 67.0       | 38.9        | 12.9   |
|                                  | 19    | 84.6                                     | 38.9        | 13.2   | 80.3       | 37.1        | 13.5   | 75.5       | 35.1        | 13.9   | 72.6       | 34.0        | 14.1   |
|                                  | 20    | 87.8                                     | 33.7        | 14.1   | 83.2       | 31.8        | 14.5   | 78.3       | 29.8        | 14.9   | 75.5       | 28.6        | 15.2   |
| 23                               | 17    | 79.2                                     | 58.1        | 10.8   | 75.1       | 56.4        | 11.2   | 70.8       | 54.5        | 11.5   | 67.8       | 53.3        | 11.8   |
|                                  | 18    | 81.6                                     | 53.2        | 11.9   | 77.4       | 51.4        | 12.2   | 72.9       | 49.6        | 12.6   | 70.0       | 48.2        | 12.9   |
|                                  | 19    | 84.6                                     | 48.2        | 13.1   | 80.2       | 46.5        | 13.5   | 75.4       | 44.6        | 13.9   | 72.6       | 43.2        | 14.2   |
|                                  | 20    | 87.6                                     | 43.1        | 14.2   | 83.2       | 41.2        | 14.6   | 78.3       | 39.2        | 15.0   | 75.4       | 38.0        | 15.2   |
|                                  | 21    | 91.1                                     | 37.9        | 15.1   | 86.3       | 36.0        | 15.6   | 81.1       | 33.9        | 16.0   | 78.4       | 32.7        | 16.3   |
| 25                               | 17    | 79.9                                     | 66.8        | 10.8   | 75.8       | 64.9        | 11.1   | 71.5       | 62.9        | 11.5   | 68.8       | 61.6        | 11.8   |
|                                  | 18    | 81.8                                     | 64.6        | 12.1   | 77.6       | 61.3        | 12.4   | 73.1       | 59.3        | 12.8   | 70.2       | 58.1        | 13.2   |
|                                  | 19    | 84.5                                     | 61.5        | 13.1   | 80.2       | 55.9        | 13.5   | 75.4       | 54.0        | 13.9   | 72.5       | 52.8        | 14.1   |
|                                  | 20    | 87.7                                     | 58.0        | 14.2   | 83.1       | 50.7        | 14.6   | 78.2       | 48.6        | 15.0   | 75.4       | 47.5        | 15.2   |
|                                  | 21    | 91.0                                     | 54.1        | 15.2   | 86.3       | 45.4        | 15.6   | 81.1       | 43.3        | 16.0   | 78.4       | 42.2        | 16.2   |
| 27                               | 17    | 81.4                                     | 74.1        | 10.8   | 77.5       | 71.9        | 11.1   | 73.3       | 69.3        | 11.5   | 70.7       | 67.8        | 11.8   |
|                                  | 18    | 82.6                                     | 72.4        | 12.0   | 78.4       | 70.7        | 12.3   | 73.8       | 68.7        | 12.7   | 71.8       | 67.2        | 12.9   |
|                                  | 19    | 84.7                                     | 67.2        | 13.0   | 80.4       | 65.5        | 13.4   | 75.6       | 63.5        | 13.8   | 72.9       | 62.3        | 14.0   |
|                                  | 20    | 87.6                                     | 62.5        | 14.2   | 83.1       | 60.6        | 14.5   | 78.2       | 58.6        | 14.9   | 75.4       | 57.5        | 15.1   |
|                                  | 21    | 90.8                                     | 56.6        | 15.3   | 86.2       | 54.8        | 15.7   | 84.3       | 52.7        | 16.1   | 78.27      | 51.6        | 16.3   |
| 29                               | 17    | 83.4                                     | 80.3        | 10.6   | 79.6       | 77.6        | 11.0   | 75.4       | 74.5        | 11.4   | 72.9       | 72.9        | 11.6   |
|                                  | 18    | 84.1                                     | 78.6        | 11.8   | 80.1       | 76.4        | 12.2   | 75.6       | 74.1        | 12.6   | 72.9       | 72.8        | 12.8   |
|                                  | 19    | 85.3                                     | 77.3        | 13.0   | 81.0       | 75.5        | 13.3   | 76.3       | 73.5        | 13.7   | 72.9       | 72.8        | 13.9   |
|                                  | 20    | 87.8                                     | 71.6        | 14.1   | 83.2       | 69.8        | 14.4   | 78.3       | 67.7        | 14.9   | 75.5       | 66.6        | 15.1   |
|                                  | 21    | 90.9                                     | 66.0        | 15.2   | 86.2       | 64.1        | 15.6   | 81.0       | 62.0        | 16.0   | 78.3       | 60.9        | 16.2   |
| 31                               | 17    | 86.0                                     | 85.6        | 10.4   | 82.4       | 82.2        | 10.7   | 78.3       | 78.3        | 11.1   | 76.0       | 76.0        | 11.3   |
|                                  | 18    | 86.4                                     | 84.6        | 11.7   | 82.5       | 81.9        | 12.0   | 78.2       | 78.2        | 12.2   | 76.0       | 76.0        | 12.6   |
|                                  | 19    | 86.9                                     | 83.7        | 12.9   | 82.7       | 81.6        | 13.2   | 78.2       | 78.2        | 13.6   | 76.0       | 76.0        | 13.8   |
|                                  | 20    | 88.3                                     | 81.6        | 14.0   | 83.9       | 79.7        | 19.5   | 78.9       | 77.6        | 14.8   | 76.2       | 76.0        | 15.1   |
|                                  | 21    | 91.0                                     | 76.1        | 15.2   | 86.3       | 74.2        | 15.6   | 81.1       | 72.1        | 16.0   | 78.4       | 71.0        | 16.4   |

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



### Technical Specification SH80 Split Ducted Model

|                                 |       |                                    |         |
|---------------------------------|-------|------------------------------------|---------|
| Indoor Unit Model Number        | SH80N | Nominal Evaporator Air Flow (l/s)  | 4300    |
| Outdoor Unit Model Number       | SH80W | Number of Compressors              | 2       |
| Total Cooling Capacity (kW)*    | 80.4  | Power Requirements (Volt / Phase)  | 415 / 3 |
| Sensible Cooling Capacity (kW)* | 65.5  | Normal Max. Current (Amps / Phase) | 61.4    |
| Heating Capacity (kW)**         | 80.7  |                                    |         |

\*Entering air @ 27/19°C and ambient 35°C      \*\* Entering air @ 21°C DB and 7°C ambient

### Air Quantity Multiplying Factors

| % Rated Air Quantity-Nominal 4300 l/s |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|
| Capacity                              | 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 Performance Data

| Outdoor Coil Entering DB temp |      |      |      |      |      |
|-------------------------------|------|------|------|------|------|
|                               | 0    | 4    | 8    | 12   | 18   |
| Heating Capacity kW           | 49.1 | 54.2 | 62.8 | 69.0 | 83.0 |

### Heating Performance Correction

| % Rated Air Quality | 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 × 24.4 |
| Locked Rotor Current (Amps / Phase) | 2 × 145  |
| Displacement (m³/h)                 | 2 × 37.7 |

### Electrical Controls and Safeties

|                                    |          |                                  |    |
|------------------------------------|----------|----------------------------------|----|
| High Pressure Switch (Setting kPa) | 2800     | Defrost                          |    |
| Low Pressure Switch (Setting kPa)  | 100      | 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

|  |                                 |
|--|---------------------------------|
| Manual 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 |

### Indoor Coil

|                    |                              |
|--------------------|------------------------------|
| Type               | Copper Tube / Aluminium Fins |
| Face Area (m)      | 1.8                          |
| Air Quantity (l/s) | 4300                         |

### Indoor Fan

|                                   |              |
|-----------------------------------|--------------|
| Number of Fans                    | 1            |
| Type                              | Centrifugal  |
| Drive                             | Belt         |
| Motor Voltage / Phase / Frequency | 415 / 3 / 50 |
| Motor (kW) Standard               | 5.5          |
| Max. Fan Speed (rpm)              | 800          |

### Electrical

|                                    |                       |
|------------------------------------|-----------------------|
| Power Requirements                 | 3 Phase / 415V / 50Hz |
| Normal Max. Current (Amps / Phase) | 61.4                  |

### Outdoor Coil

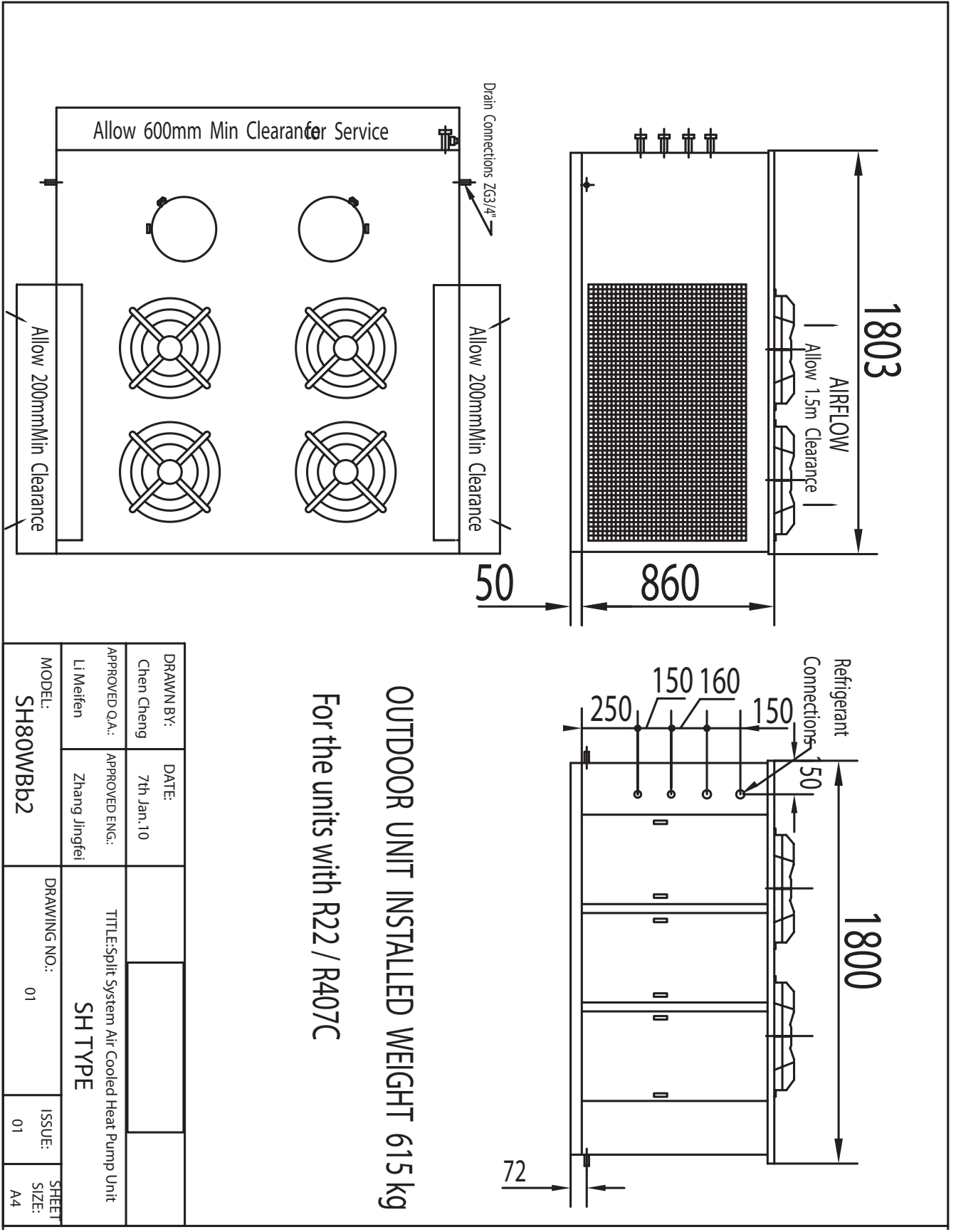
|           |                              |
|-----------|------------------------------|
| Type      | Copper Tube / Aluminium Fins |
| Face Area | 2 × 1.20                     |

### Outdoor Fan

|                                   |               |
|-----------------------------------|---------------|
| Number of Fans                    | 4             |
| Type                              | Axial         |
| Drive                             | Direct        |
| Motor Watts / rpm                 | 4 × 300 / 950 |
| Motor Voltage / Phase / Frequency | 415 / 3 / 50  |

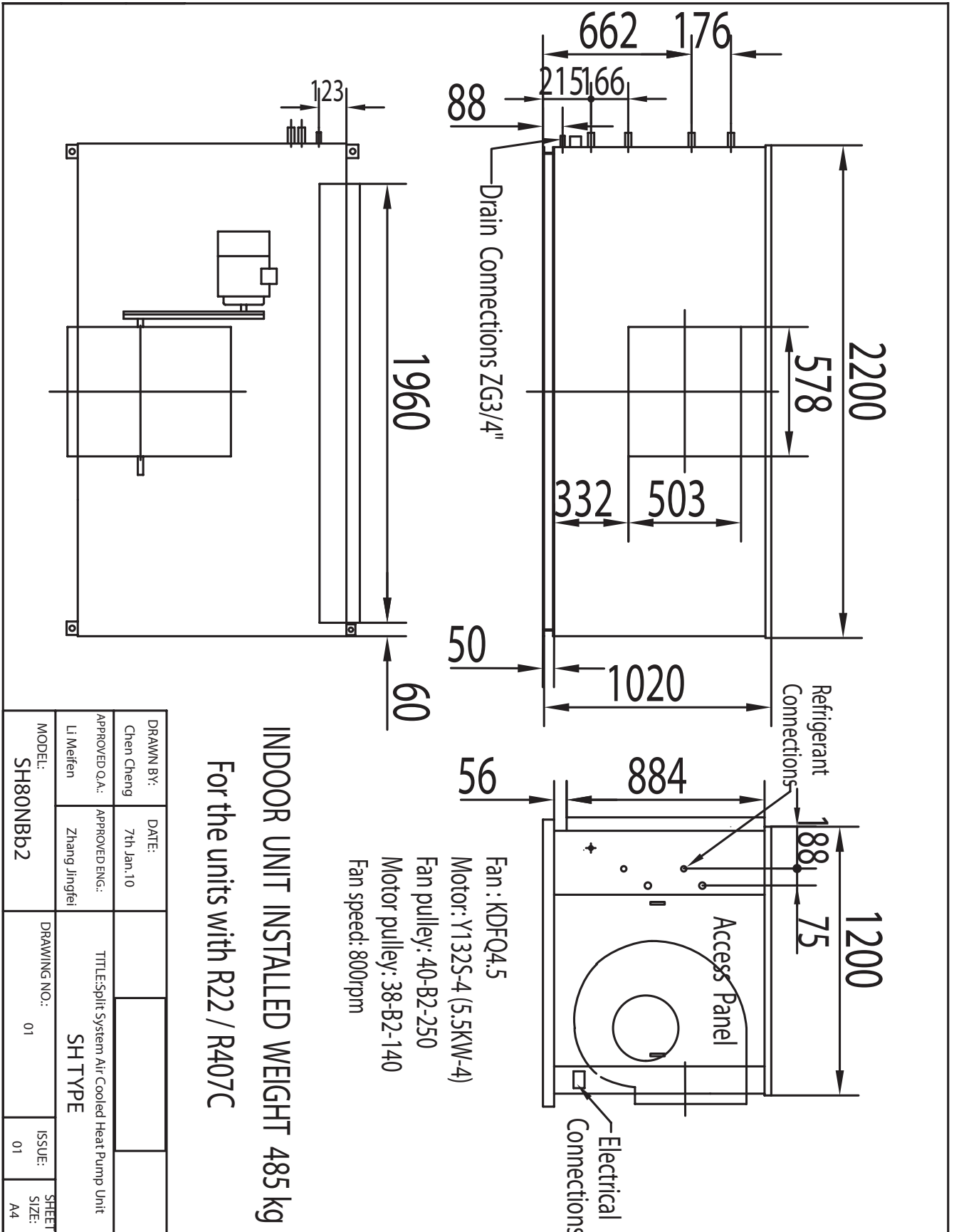
### Refrigerant System

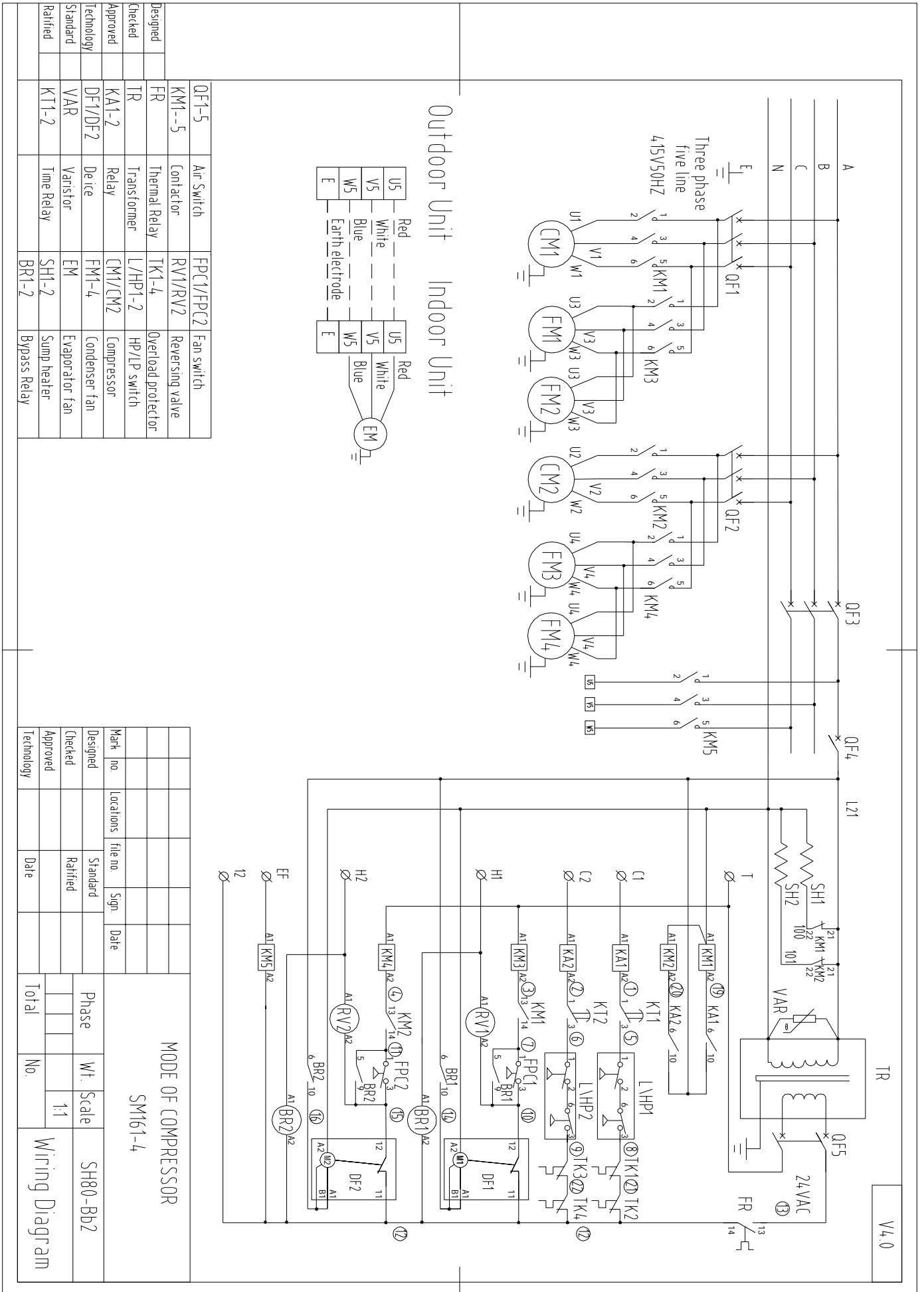
|                                     |                  |
|-------------------------------------|------------------|
| Refrigerant Type                    | R407c            |
| Charge (kg)                         | 2 × 9.8          |
| Line Size (mm)                      |                  |
| Liquid 0–15 metres                  | 22               |
| Gas 0–15 metres                     | 28               |
| Liquid 15–30 metres                 | 28               |
| Gas 15–30 metres                    | 32               |
| Service Connections                 | Rotor Lock Valve |
| Expansion Control – in outdoor unit | TX Valve         |



**OUTDOOR UNIT INSTALLED WEIGHT 615 kg**  
**For the units with R22 / R407C**

|                             |                                 |   |                      |
|-----------------------------|---------------------------------|---|----------------------|
| DRAWN BY:<br>Chen Cheng     | DATE:<br>7th Jan.10             | TITLE: Split System Air Cooled Heat Pump Unit |                      |
| APPROVED Q.A.:<br>Li Meifen | APPROVED ENG.:<br>Zhang Jingfei | SH TYPE                                       |                      |
| MODEL:<br>SH80WBb2          | DRAWING NO.:<br>01              | ISSUE:<br>01                                  | SHEET<br>SIZE:<br>A4 |



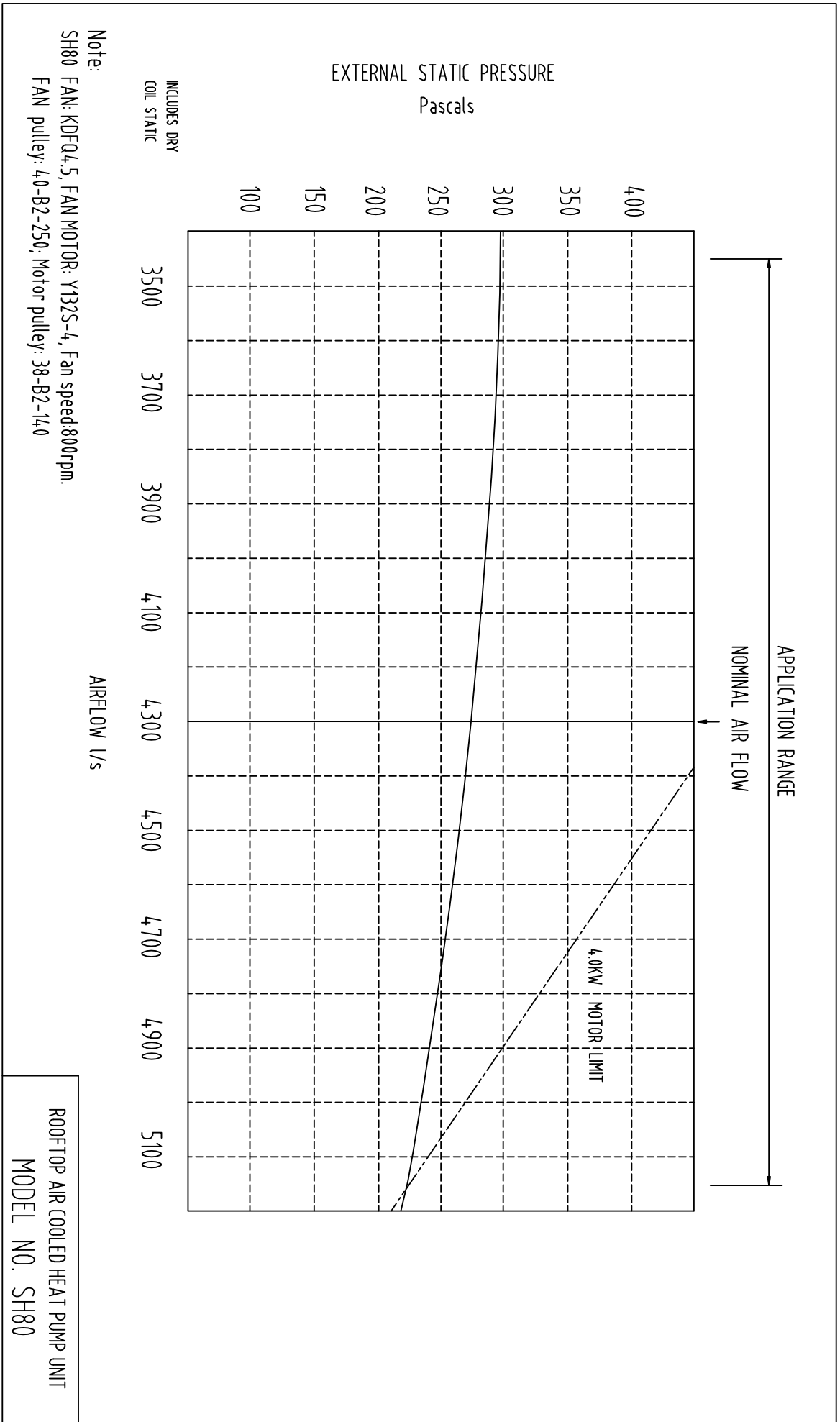


|         |               |             |                    |
|---------|---------------|-------------|--------------------|
| QF1-5   | Air Switch    | FP/C1/FP/C2 | Fan switch         |
| KM1--5  | Contactors    | RV1/RV2     | Reversing valve    |
| FR      | Thermal Relay | TK1-4       | Overload protector |
| TR      | Transformer   | L/HP1-2     | HP/LP switch       |
| KA1-2   | Relay         | CM1/CM2     | Compressor         |
| DF1/DF2 | Device        | FM1-4       | Condenser fan      |
| VAR     | Varistor      | EM          | Evaporator fan     |
| KT1-2   | Time Relay    | SH1-2       | Sump heater        |
|         |               | BR1-2       | Bypass Relay       |

|            |           |          |       |      |
|------------|-----------|----------|-------|------|
| Mark no.   | Locations | file no. | Sign. | Date |
| Designed   |           | Standard |       |      |
| Checked    |           | Ratified |       |      |
| Approved   |           |          |       |      |
| Technology |           |          |       |      |

|                    |     |                |          |
|--------------------|-----|----------------|----------|
| MODE OF COMPRESSOR |     | SM161-4        |          |
| Phase              | Wt. | Scale          | SH80-Bb2 |
|                    |     | 1:1            |          |
| Total              | No. | Wiring Diagram |          |



Note:

SH80 FAN: KDFQ4.5, FAN MOTOR: Y132S-4, Fan speed: 800rpm.  
 FAN pulley: 40-B2-250; Motor pulley: 38-B2-140

INCLUDES DRY  
 COIL STATIC

AIRFLOW l/s

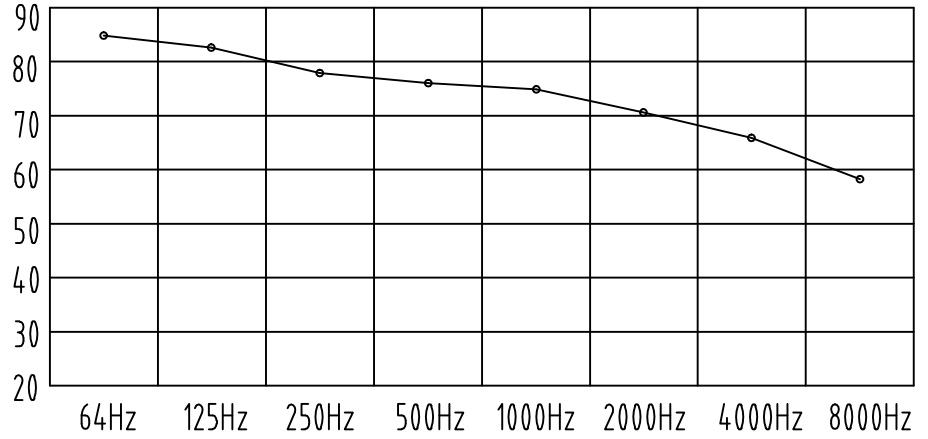
ROOFTOP AIR COOLED HEAT PUMP UNIT  
 MODEL NO. SH80

SH80W Noise rate analysing chart

A Class: 79.0dB

| Hz     | dB   |
|--------|------|
| 64Hz   | 84.6 |
| 125Hz  | 82.2 |
| 250Hz  | 77.6 |
| 500Hz  | 76.2 |
| 1000Hz | 74.4 |
| 2000Hz | 70.2 |
| 4000Hz | 66.0 |
| 8000Hz | 58.5 |

Noise rate analysing chart ( A Class: 79.0dB) dB



SH80N Noise rate analysing chart

A Class: 74.6dB

| Hz     | dB   |
|--------|------|
| 64Hz   | 82.2 |
| 125Hz  | 78.5 |
| 250Hz  | 75.0 |
| 500Hz  | 72.0 |
| 1000Hz | 70.2 |
| 2000Hz | 64.3 |
| 4000Hz | 58.5 |
| 8000Hz | 54.6 |

Noise rate analysing chart ( A Class: 74.6dB) dB

