

# MULTIPLE SCROLL COMPRESSORS TYPE WATER COOLED PACKAGE CHILLERS







Smartwise Innovations...

Towards Green. Quality & Reliability Solutions

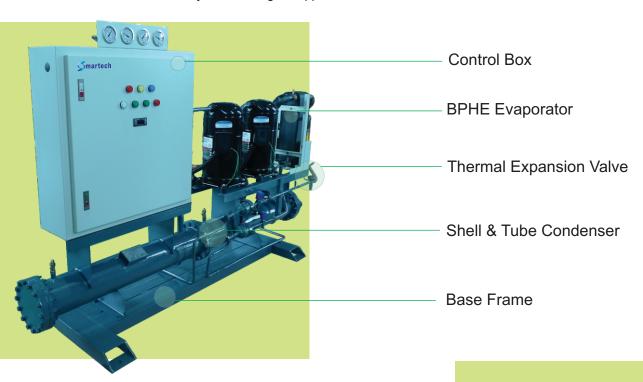
SCOD W SERIES



# INTRODUCTION

This series of Multiple Scroll Compressors Type Water Cooled Package Chillers were developed by a group of industry engineers, each of them with over 20 years of experience in the design, manufacturing, installation and service of electric chillers, packaged air-conditioners, split air-conditioners, fancoils, air handling units, and related products.

- The Group is fully committed to innovative design, new and advanced technologies, value engineering and to provide expert personalized service to architects, consulting engineers, developers, building owners and contractors.
- The company's ability and courage to utilize and adopt latest technologies, combined with fullest personalized assistance, has enabled the company to provide architects, consultants and developers various customized solutions to their various demanding application requirements.
- The company has the unique expertise and experience to custom design and fabricate equipment for installations in marine and corrosive environments, explosive and hazardous environments, low noise environments and any other stringent application needs!



Hermetic Scroll Compressor



# MULTIPLE SCROLL TYPE COMPRESSORS WATER COOLED PACKAGE CHILLERS

#### **GENERAL DESCRIPTION**

The Water Cooled Scroll Chillers are designed and manufactured to ensure efficient and reliable performance and to provide an economical system of air conditioning for residential, commercial and industrial buildings. The water-cooled scroll chillers can also be suitably piped and connected to provide chilled water or cold brine solution for process cooling purposes.

Each water-cooled scroll chiller consists of a heavy gauge galvanized steel coated control box with oven-baked epoxy polyester paint; two or multiple scroll compressors with minimum of two independent refrigerant circuits, a compact Brazed Plate Heat Exchanger evaporator; shell & tube condenser; factory packaged and prewired power and control panel; and a microprocessor based controller for capacity step modulationand safety protection.

# MECHANICAL SPECIFICATIONS AND FEATURES

## **RANGE**

The Chiller has 11 cooling capacity sizes from 07 to 55 tons and available with HCFC-22 and HFC-407C refrigerants.

#### HERMETIC SCROLL COMPRESSOR

- Hermetic Scroll type operating at 2950 RPM (50Hz)
- Proven high efficiency, low noise and high reliability compressor design to ensure long life operation
- No-contact scroll design and 100% motor cooled by suction gas
- With internal line break motor protection or solid state motor protection
- Minimum two compressors with two to four steps unloading

# Nomenclature





#### **CONDENSER**

- Removable heads and interchangeable end-for-end for job flexibility.
- 3/4" OD seamless, extended surface copper tubes.
- Vessels constructed, in accordance to ASME CODES Sections VIII Division I for unfired pressure vessels.
- 300 psig on refrigerant side design pressure
- 150 psig on water side design pressure

#### **ELECTRICAL CONTROL**

Reliable microprocessor based controller with electromechanical system is standard for all models.



#### CAPACITY CONTROL

The standard system capacity control operates as follows:

- As the chiller load initially drops, compressor(s) suction starts dropping proportionally, thus balancing minor load variations.
- Variation of unit capacity in response to system load requirements is controlled by an operating thermostat, which
  monitors the return water temperature.
- On multiple compressor units, capacity is controlled by compressor staging.

#### **BPHE EVAPORATOR**

The compact Brazed Plate Exchanger (BPHE) acts as an evaporator, a secondary gas or liquid is cooled as it loses heat to the liquid refrigerant. The refrigerant boils and is converted into gas, absorbing more energy.

BPHE evaporator provides a good, stable boiling process with a small temperature difference between the refrigerant and the secondary fluid. A low temperature difference means that a higher evaporation temperature is possible, which reduces the pressure difference in the system and increases the density of the refrigerant gas. These two factors increase the refrigeration capacity and reduce the power consumption of the compressor, which together increases the total system efficiency.

BPHEs are the most efficient way of transferring heat. BPHEs offer considerably better performance and overall economy compared with other, traditional heat transfer technologies such as shell and tube evaporators.

Some of the advantages are:

- Compact size and 85-90% lighter by weight and volume than a shell and tube evaporator of the same capacity.
- Superior heat transfer performance
- Less refrigerant charge required compared with shell & tube evaporators
- Little maintenance required. Very little fouling occur even after long period of operation due to the high internal turbulence which creates a self cleaning effect on the internal channels.



#### Caution.

A water strainer should be field installed at the return chilled water inlet pipe, prior to the brazed plate heat exchanger, to prevent entry of any particles larger than 1mm, which could block the internal channels, causing poor performance, increased waterside pressure drop and risk of freezing.

# POWER AND CONTROL PANEL

Each chiller is packaged with a power and control panel which is ready to accept rated 3 phase 50Hz electrical supply from a remote mounted isolator.

The power panel is furnished with factory pre-wired and mounted DOL starters for compressors, DOL starters for condenser fan motors. MCBs for compressors and fan motors, external overload protectors for compressors and/or fan motors. Power, alarm and compressor run lights to indicate unit operation status.

The Heart of the control panel is the highly reliable **Smart-Advance SA600** microprocessor based controller with advance compressor management logic for scroll compressors in response to required chilled water inlet set-point temperature.

The Smart-Advance SA600 controller provides the following safety-protection controls and features:-

- A 4-digit LED display with 18 icons offers clear readability with dedicated units of measures for each value displayed.
- Monitors in/out temperature, high / low refrigerant pressure.
- High discharge pressure cut-out protection
- Low suction pressure cut-out protection
- Chilled water anti- freeze protection
- Staggered starting of compressors to reduce current inrush.
- Compressors short cycling (on and off repeatedly) prevention which can cause overheating of compressors and premature failures or burnt-out of compressors.
- Lead-lag control of compressors operation and auto-balancing of compressors run-hours
- Large historical alarms memory
- Equipped with TTL serial connection which enables easy integration with plant supervision, monitoring and management systems through MODBUS communication protocol.
- Can be furnished with optional RS485 to form LAN with suitable adaptor for local / remote plant management.

# OTHER SAFETY CONTROLS COMPRESSOR MOTOR PROTECTION

Each compressor is either provided with internal line break protection device against high motor winding temperature; or solid state motor protection (mounted inside compressor terminal box) to protect against high motor winding temperature.

# OPTIONAL ACCESSORIES UNDER VOLTAGE AND PHASE PROTECTION RELAY

It protects against low incoming voltage conditions as well as single phase reversal and phase unbalance by opening the control circuit.

#### HEAT RECOVERY / DESUPERHEATERS

This can be factory supplied and installed to get free hot water up to as high as 55°C.

### OTHER OPTIONAL ACCESSORIES

- Suction and discharge pressure gauges.
- Discharge or suction stop valves for each compressor.
- Water flow switches to be shipped loose.
- Spring isolators to be shipped loose.
- Rubber-in-shear isolators to be shipped loose.
- Remote keyboard (up to 100m)



# **PHYSICAL SPECIFICATIONS**



| MODEL SCOD-             | w          | 07 W5R2       | 09 W5R2       | 11 W5R2       | 14 W5R2       | 19 W5R2       | 23 W5R2        | 28 W5R2        | 32 W5R2        | 37 W5R2        | 46 W5R2        | 55 W5R2        |  |
|-------------------------|------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|--|
| Nominal Capacity        | Ton        | 6.6           | 8.8           | 10.7          | 14.0          | 18.5          | 23.1           | 27.5           | 31.7           | 37.1           | 46.2           | 55.0           |  |
| Nominal Power Input     | kWi        | 4.5           | 6.2           | 7.1           | 9.4           | 12.4          | 16.0           | 19.3           | 21.2           | 24.8           | 32.0           | 38.6           |  |
| COMPRESSOR              |            |               |               |               |               |               |                |                |                |                |                |                |  |
| Type (Qty)              |            | Tandem (1)     | Tandem (1)     | Tandem (2)     | Tandem (2)     | Tandem (2)     | Tandem (2)     |  |
| Oil Charge (each)       | Ltr        | 2.2           | 3.2           | 3.4           | 4.4           | 6.3           | 6.3            | 6.3            | 12.5           | 12.5           | 12.5           | 12.5           |  |
| % Step Capacity Reducti | on         | 100,50        | 100,50        | 100,50        | 100,50        | 100,50        | 100,50         | 100,50         | 100,75,50,25   | 100,75,50,25   | 100,75,50,25   | 100,75,50,25   |  |
| EVAPORATOR              |            |               |               |               |               |               |                |                |                |                |                |                |  |
| Model                   |            | VE1           | VE2           | VE3           | VE4           | VE5           | VE6            | VE7            | VE8            | VE5 (2)        | VE6 (2)        | VE7 (2)        |  |
| Water Connection Size   | inch [mm]  | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     |  |
| Nominal Water Flow      | GPM [m³/h] | 15.8 [3.6]    | 21 [4.8]      | 26 [5.9]      | 34.0 [7.7]    | 44.4 [10.1]   | 55.4 [12.6]    | 66 [15]        | 76.1 [17.3]    | 89 [20.2]      | 110.9 [25.2]   | 132 [30]       |  |
| Pressure Drop           | Psi        | 1.7           | 1.9           | 2.0           | 2.0           | 2.1           | 1.2            | 1.2            | 1.3            | 1.4            | 1.5            | 1.6            |  |
|                         |            |               |               |               |               | CONDENSER     |                |                |                |                |                |                |  |
| Model                   |            | CD1           | CD2           | CD3           | CD4           | CD5           | CD6            | CD7            | CD8            | CD9            | CD10           | CD11           |  |
| Water Connection Size   | inch [mm]  | 1 [25]        | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     |  |
| Nominal Water Flow      | GPM [m³/h] | 18.2 [4.1]    | 24.3 [5.5]    | 29.4 [6.7]    | 38.5 [8.8]    | 51.0 [11.6]   | 64.3 [14.6]    | 76.2 [17.3]    | 87.2 [19.8]    | 102.2 [23.2]   | 128.1 [29.1]   | 152.8 [34.7]   |  |
| Pressure Drop           | Psi        | 5.4           | 3.7           | 4.1           | 4.6           | 7.2           | 8.8            | 8.4            | 9.2            | 9.2            | 9.7            | 9.2            |  |
|                         |            |               |               |               |               | ELECTRICAL    |                |                |                |                |                |                |  |
| Compressor (Each)       | RLA        | 4.8           | 6.4           | 6.7           | 9.5           | 12.2          | 15.6           | 20.4           | 10.6           | 12.2           | 15.6           | 20.4           |  |
|                         | LRA        | 48            | 65.5          | 74            | 95            | 118           | 140            | 174            | 111            | 118            | 140            | 174            |  |
| Unit Data               | RLA        | 9.6           | 12.8          | 13.4          | 19            | 24.4          | 31.2           | 40.8           | 42.4           | 48.8           | 62.4           | 81.6           |  |
|                         | MCA        | 10.8          | 14.4          | 15.075        | 21.375        | 27.45         | 35.1           | 45.9           | 45.05          | 51.85          | 66.3           | 86.7           |  |
|                         | MFS        | 16            | 20            | 20            | 32            | 40            | 50             | 63             | 63             | 63             | 80             | 100            |  |
|                         |            |               |               |               |               | GENERAL       |                |                |                |                |                |                |  |
| Unit Length             | inch [mm]  | 93 3/8 [2372] | 93 3/8 [2372] | 93 3/8 [2372] | 95 3/8 [2423] | 109 [2769]    | 130 3/8 [3312] | 130 3/8 [3312] | 130 3/8 [3312] | 130 3/8 [3312] | 130 3/8 [3312] | 130 3/8 [3312] |  |
| Unit Width              | inch [mm]  | 20 [508]      | 20 [508]      | 20 [508]      | 20 [508]      | 20 [508]      | 20 [508]       | 20 [508]       | 34 [864]       | 34 [864]       | 34 [864]       | 34 [864]       |  |
| Unit Height             | inch [mm]  | 52 1/2 [1334] | 53 5/8 [1362] | 53 5/8 [1362] | 53 5/8 [1362] | 53 5/8 [1362] | 54 5/8 [1387]  | 54 5/8 [1387]  | 75 [1905]      | 75 [1905]      | 75 [1905]      | 75 [1905]      |  |
| Unit Shipping Weight    | lbs [kg]   | 719 [327]     | 838 [381]     | 865 [393]     | 981 [446]     | 1027 [467]    | 1274 [579]     | 1331 [605]     | 1751 [796]     | 1954 [888]     | 2053 [933]     | 2222 [1010]    |  |
| U nit Operating Weight  | lbs [kg]   | 744 [338]     | 871 [396]     | 911 [414]     | 1030 [468]    | 1085 [493]    | 1349 [613]     | 1417 [644]     | 1848 [840]     | 2066 [939]     | 2193 [997]     | 2389 [1086]    |  |
| Charge R22              | lbs [kg]   | 13.8 [6.3]    | 18.5 [8.4]    | 22.4 [10.2]   | 29.5 [13.4]   | 38.7 [17.6]   | 48.4 [22]      | 58.5 [26.6]    | 66.4 [30.2]    | 77.9 [35.4]    | 96.8 [44]      | 115.3 [52.4]   |  |

# **PHYSICAL SPECIFICATIONS**



| MODEL SCOD-W            |            | 07 W5R7       | 09 W5R7       | 11 W5R7       | 14 W5R7       | 19 W5R7       | 23 W5R7        | 28 W5R7        | 32 W5R7        | 37 W5R7        | 46 W5R7        | 55 W5R7        |  |
|-------------------------|------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|--|
| Nominal Capacity        | Ton        | 6.1           | 8.3           | 9.9           | 13.7          | 17.9          | 22.5           | 26.3           | 30.7           | 35.9           | 45.0           | 52.5           |  |
| Nominal Power Input     | kWi        | 5.2           | 7.2           | 8.3           | 11.1          | 14.4          | 18.5           | 22.1           | 24.6           | 28.7           | 36.9           | 44.2           |  |
| COMPRESSOR              |            |               |               |               |               |               |                |                |                |                |                |                |  |
| Type (Qty)              |            | Tandem (1)     | Tandem (1)     | Tandem (2)     | Tandem (2)     | Tandem (2)     | Tandem (2)     |  |
| Oil Charge (each)       | Ltr        | 2.2           | 3.2           | 3.4           | 4.4           | 6.3           | 6.3            | 6.3            | 12.5           | 12.5           | 12.5           | 12.5           |  |
| % Step Capacity Reducti | on         | 100,50        | 100,50        | 100,50        | 100,50        | 100,50        | 100,50         | 100,50         | 100,75,50,25   | 100,75,50,25   | 100,75,50,25   | 100,75,50,25   |  |
| EVAPORATOR              |            |               |               |               |               |               |                |                |                |                |                |                |  |
| Model                   |            | VE1           | VE2           | VE3           | VE4           | VE5           | VE6            | VE7            | VE8            | VE5 (2)        | VE6 (2)        | VE7 (2)        |  |
| Water Connection Size   | inch [mm]  | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 3 [76]         |  |
| Nominal Water Flow      | GPM [m³/h] | 14.6 [3.3]    | 20 [4.5]      | 23.8 [5.4]    | 32.9 [7.5]    | 43.0 [9.8]    | 54.0 [12.3]    | 63.1 [14.3]    | 73.7 [16.8]    | 86.1 [19.6]    | 108 [24.5]     | 132 [30]       |  |
| Pressure Drop           | Psi        | 5.8           | 1.7           | 1.7           | 1.9           | 2.0           | 1.1            | 1.1            | 1.2            | 1.3            | 1.4            | 1.4            |  |
|                         |            |               |               |               |               | CONDENSER     |                |                |                |                |                |                |  |
| Model                   |            | CD1           | CD2           | CD3           | CD4           | CD5           | CD6            | CD7            | CD8            | CD9            | CD 10          | CD11           |  |
| Water Connection Size   | inch [mm]  | 1 [25]        | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 1 1/2 [38]    | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     | 2 1/2 [64]     |  |
| Nominal Water Flow      | GPM [m³/h] | 17.7 [4.0]    | 24 [5.5]      | 28.4 [6.5]    | 39.0 [8.9]    | 51.0 [11.6]   | 66.6 [15.1]    | 78.2 [17.8]    | 90.5 [20.6]    | 105.7 [24.0]   | 133.2 [30.3]   | 156.2 [4.4]    |  |
| Pressure Drop           | Psi        | 5.1           | 3.6           | 3.8           | 4.6           | 7.2           | 9.0            | 8.5            | 8.5            | 9.3            | 9.8            | 9.3            |  |
|                         |            |               |               |               |               | ELECTRICAL    |                |                |                |                |                |                |  |
| Compressor (Each)       | RLA        | 5.2           | 7.1           | 7.4           | 11.2          | 13.7          | 17.7           | 23.4           | 12.1           | 13.7           | 17.7           | 23.4           |  |
|                         | LRA        | 48            | 65.5          | 74            | 95            | 118           | 140            | 174            | 111            | 118            | 140            | 174            |  |
| Unit Data               | RLA        | 10.4          | 14.2          | 14.8          | 22.4          | 27.4          | 35.4           | 46.8           | 48.4           | 54.8           | 70.8           | 93.6           |  |
|                         | MCA        | 12            | 16            | 17            | 25            | 31            | 40             | 53             | 51             | 58             | 75             | 99             |  |
|                         | MFS        | 16            | 20            | 20            | 32            | 40            | 50             | 80             | 63             | 80             | 100            | 125            |  |
|                         |            |               |               |               |               | GENERAL       |                |                |                |                |                |                |  |
| Unit Length             | Inch [mm]  | 93 3/8 [2372] | 93 3/8 [2372] | 93 3/8 [2372] | 95 3/8 [2423] | 109 [2769]    | 130 3/8 [3312] | 130 3/8 [3312] | 130 3/8 [3312] | 130 3/8 [3312] | 130 3/8 [3312] | 130 3/8 [3312] |  |
| Unit Width              | Inch [mm]  | 20 [508]      | 20 [508]      | 20 [508]      | 20 [508]      | 20 [508]      | 20 [508]       | 20 [508]       | 34 [864]       | 34 [864]       | 34 [864]       | 34 [864]       |  |
| Unit Height             | Inch [mm]  | 52 1/2 [1334] | 53 5/8 [1362] | 53 5/8 [1362] | 53 5/8 [1362] | 53 5/8 [1362] | 54 5/8 [1387]  | 54 5/8 [1387]  | 75 [1905]      | 75 [1905]      | 75 [1905]      | 75 [1905]      |  |
| Unit Shipping Weight    | lbs [kg]   | 719 [327]     | 838 [381]     | 865 [393]     | 981 [446]     | 1027 [467]    | 1274 [579]     | 1331 [605]     | 1751 [796]     | 1954 [888]     | 2053 [933]     | 2222 [1010]    |  |
| U nit Operating Weight  | lbs [kg]   | 744 [338]     | 871 [396]     | 909 [413]     | 1030 [468]    | 1083 [492]    | 1347 [612]     | 1413 [642]     | 1846 [839]     | 2063 [938]     | 2191 [996]     | 2384 [1084]    |  |
| Charge R407C            | lbs [kg]   | 13.0 [5.9]    | 17.4 [7.9]    | 20.7 [9.4]    | 28.7 [13.1]   | 37.5 [17.0]   | 47.1 [21.4]    | 55.1 [25.0]    | 64.3 [29.2]    | 75.2 [34.2]    | 94.2 [42.8]    | 110.0 [50.0]   |  |

\* Conditions are based on:

Evaporator water temperature inlet/outlet: 54 °F/44 °F Condenser water temperature inlet/outlet: 85 °F/95 °F

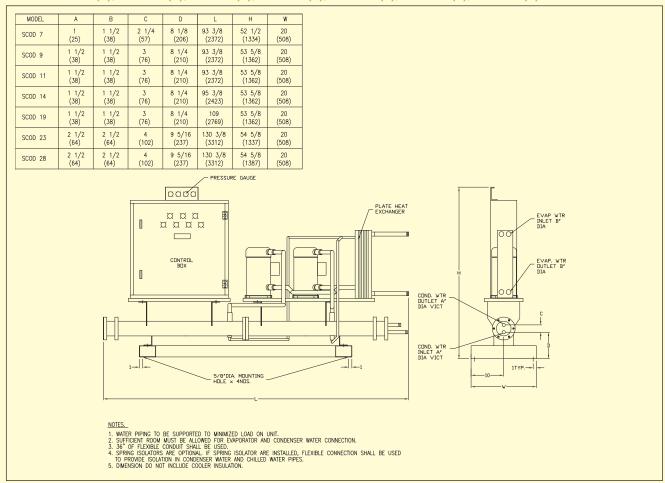
# **PERFORMANCE TABLE**

|               | R22           |                                   |            |            |            |            |            |               | R407C                                     |            |            |            |            |   |            |  |
|---------------|---------------|-----------------------------------|------------|------------|------------|------------|------------|---------------|---|------------|------------|------------|------------|---|------------|--|
| Model<br>SCOD | Leaving       | Condenser Water Entering Temp. °F |            |            |            |            |            |               | Leaving Condenser Water Entering Temp. °F |            |            |            |            |   |            |  |
|               | Chilled Water |                                   | 75         |            | 5          | 95         |            | Model<br>SCOD | Water                                     | 75         |            |            | 35         | 95  |            |  |
|               | Temp. °F      | Ton                               | kWi        | Ton        | kWi        | Ton        | kWi        |               | Temp. °F                                  | Ton        | kWi        | Ton        | kWi        | Ton   | kWi        |  |
| 07 W5R2       | 42            | 6.7                               | 4.0        | 6.3        | 4.5        | 6.0        | 5.2        | -             | 42  | 6.2        | 4.5        | 5.8        | 5.2        |   | 6.0        |  |
|               | 44            | 6.9                               | 4.0        | 6.6        | 4.5        | 6.3        | 5.2        | 07 W5R7       | 44  | 6.6        | 4.5        | 6.1        | 5.2        |   | 6.0        |  |
| U/ WSKZ       | 46            | 7.2                               | 4.0        | 6.9<br>7.2 | 4.6        | 6.5<br>6.8 | 5.2<br>5.2 | U/ W5K/       | 46<br>48                                  | 6.9<br>7.2 | 4.6<br>4.6 | 6.5        | 5.2<br>5.3 |   | 6.0        |  |
|               | 48<br>50      | 7.5<br>7.8                        | 4.0<br>4.1 | 7.4        | 4.6<br>4.6 | 7.1        | 5.2        |               | 50  | 7.6        | 4.6        | 6.8<br>7.1 | 5.3        |   | 6.0<br>6.1 |  |
|               | 42            | 8.8                               | 5.5        | 8.4        | 6.2        | 8.0        | 6.9        |               | 42  | 8.5        | 6.3        | 7.1        | 7.2        |   | 8.1        |  |
| 09 W5R2       | 44            | 9.2                               | 5.6        | 8.8        | 6.2        | 8.3        | 7.0        |               | 44  | 8.8        | 6.4        | 8.3        | 7.2        |   | 8.2        |  |
|               | 46            | 9.5                               | 5.6        | 9.1        | 6.3        | 8.6        | 7.0        | 09 W5R7       | 46  | 9.3        | 6.4        | 8.7        | 7.2        |   | 8.2        |  |
| OS WSINE      | 48            | 10.0                              | 5.7        | 9.5        | 6.3        | 9.0        | 7.0        | 05 115117     | 48  | 9.7        | 6.4        | 9.1        | 7.2        |   | 8.2        |  |
|               | 50            | 10.3                              | 5.7        | 9.9        | 6.4        | 9.4        | 7.1        | -             | 50  | 10.1       | 6.4        | 9.5        | 7.2        |   | 8.2        |  |
|               | 42            | 10.8                              | 6.3        | 10.2       | 7.1        | 9.7        | 8.0        |               | 42  | 10.1       | 7.3        | 9.5        | 8.3        |   | 9.4        |  |
|               | 44            | 11.2                              | 6.3        | 10.7       | 7.1        | 10.1       | 8.0        | -             | 44  | 10.5       | 7.3        | 9.9        | 8.3        |   | 9.4        |  |
| 11 W5R2       | 46            | 11.6                              | 6.3        | 11.1       | 7.1        | 10.5       | 8.1        | 11 W5R7       | 46  | 11.0       | 7.3        | 10.3       | 8.3        |   | 9.4        |  |
|               | 48            | 12.1                              | 6.4        | 11.6       | 7.2        | 10.9       | 8.1        | 1             | 48  | 11.5       | 7.3        | 10.8       | 8.3        |   | 9.4        |  |
|               | 50            | 12.6                              | 6.4        | 12.0       | 7.2        | 11.4       | 8.1        |               | 50  | 12.0       | 7.3        | 11.2       | 8.3        | 10.4  | 9.4        |  |
|               | 42            | 14.2                              | 8.4        | 13.5       | 9.4        | 12.8       | 10.6       |               | 42  | 14.0       | 9.8        | 13.1       | 11.1       | 12.2  | 12.7       |  |
|               | 44            | 14.7                              | 8.4        | 14.0       | 9.4        | 13.3       | 10.6       | 14 W5R7       | 44  | 14.5       | 9.8        | 13.7       | 11.1       | 12.8  | 12.7       |  |
| 14 W5R2       | 46            | 15.3                              | 8.5        | 14.6       | 9.5        | 13.8       | 10.6       |               | 46  | 15.1       | 9.8        | 14.3       | 11.1       | 13.3  | 12.7       |  |
|               | 48            | 15.9                              | 8.5        | 15.1       | 9.5        | 14.4       | 10.6       |               | 48  | 15.8       | 9.8        | 14.9       | 11.1       | 13.9  | 12.7       |  |
|               | 50            | 16.5                              | 8.5        | 15.8       | 9.5        | 15.0       | 10.7       | 1             | 50  | 16.4       | 9.8        | 15.5       | 11.1       | 14.5  | 12.6       |  |
|               | 42            | 18.7                              | 10.9       | 17.9       | 12.3       | 17.0       | 13.9       | 19 W5R7       | 42  | 18.3       | 12.7       | 17.2       | 14.3       | 16.0  | 16.3       |  |
|               | 44            | 19.6                              | 11.0       | 18.5       | 12.4       | 17.7       | 14.0       |               | 44  | 19.1       | 12.7       | 17.9       | 14.4       | 16.7  | 16.3       |  |
| 19 W5R2       | 46            | 20.3                              | 11.0       | 19.3       | 12.4       | 18.4       | 14.0       |               | 46  | 19.9       | 12.7       | 18.7       | 14.4       | 17.4  | 16.3       |  |
|               | 48            | 21.0                              | 11.1       | 20.0       | 12.5       | 19.1       | 14.1       |               | 48  | 20.7       | 12.8       | 19.5       | 14.4       | 18.2  | 16.3       |  |
|               | 50            | 21.9                              | 11.2       | 20.8       | 12.5       | 19.8       | 14.1       | 1             | 50  | 21.6       | 12.8       | 20.3       | 14.4       | 19.0  | 16.4       |  |
|               | 42            | 23.3                              | 14.2       | 22.2       | 16.0       | 21.0       | 17.8       | 23 W5R7       | 42  | 23.1       | 16.3       | 21.4       | 18.4       | 19.7  | 20.9       |  |
|               | 44            | 24.3                              | 14.2       | 23.1       | 16.0       | 21.9       | 17.9       |               | 44  | 24.2       | 16.4       | 22.5       | 18.5       | 20.7  | 20.9       |  |
| 23 W5R2       | 46            | 25.2                              | 14.2       | 24.0       | 16.1       | 22.8       | 17.9       |               | 46  | 25.4       | 16.4       | 23.5       | 18.5       | 21.7  | 20.9       |  |
|               | 48            | 26.1                              | 14.2       | 24.9       | 16.1       | 23.6       | 18.0       |               | 48  | 26.5       | 16.5       | 24.7       | 18.5       | 22.8  | 20.9       |  |
|               | 50            | 27.1                              | 14.1       | 25.9       | 16.1       | 24.5       | 18.0       |               | 50  | 27.7       | 16.5       | 25.8       | 18.5       | 23.9  | 20.9       |  |
|               | 42            | 27.8                              | 17.3       | 26.4       | 19.2       | 25.0       | 21.4       |               | 42  | 26.8       | 19.6       | 25.1       | 22.0       | 23.3  | 24.9       |  |
|               | 44            | 28.9                              | 17.3       | 27.5       | 19.3       | 25.9       | 21.6       |               | 44  | 27.9       | 19.6       | 26.3       | 22.1       | 24.3  | 24.9       |  |
| 28 W5R2       | 46            | 29.9                              | 17.4       | 28.5       | 19.4       | 27.1       | 21.6       | 28 W5R7       | 46  | 29.1       | 19.7       | 27.4       | 22.1       | 24.5  | 25.0       |  |
|               | 48            | 31.2                              | 17.5       | 29.8       | 19.4       | 28.2       | 21.6       |               | 48  | 30.4       | 19.8       | 28.5       | 22.1       | 12.2 12.8 13.3 13.9 14.5 16.0 16.7 17.4 18.2 19.0 19.7 20.7 21.7 22.8 23.9 23.3 24.3 24.5 26.6 27.7 27.3 28.5 29.8 31.1 32.4 32.0 33.4 34.9 36.4 38.0 39.4 41.3 43.4 45.5 47.8 46.6 48.7 50.9 | 25.0       |  |
|               | 50            | 32.4                              | 17.5       | 30.8       | 19.5       | 29.2       | 21.6       |               | 50  | 31.6       | 19.8       | 29.8       | 22.2       | 27.7  | 25.0       |  |
|               | 42            | 31.9                              | 18.8       | 30.5       | 21.0       | 28.9       | 23.6       |               | 42  | 31.3       | 21.8       | 29.4       | 24.6       | 27.3  | 27.8       |  |
|               | 44            | 33.1                              | 18.9       | 31.7       | 21.2       | 30.1       | 23.6       |               | 44  | 32.7       | 21.8       | 30.7       | 24.6       | 28.5  | 27.8       |  |
| 32 W5R2       | 46            | 34.5                              | 19.0       | 32.9       | 21.2       | 31.2       | 23.8       | 32 W5R7       | 46  | 34.1       | 21.9       | 32.0       | 24.6       | 29.8  | 27.8       |  |
|               | 48            | 35.7                              | 19.1       | 34.1       | 21.4       | 32.4       | 23.8       |               | 48  | 35.5       | 22.0       | 33.4       | 24.6       |   | 27.8       |  |
|               | 50            | 37.1                              | 19.2       | 35.4       | 21.4       | 33.8       | 23.8       |               | 50  | 36.9       | 22.0       | 34.8       | 24.7       | 32.4  | 27.8       |  |
|               | 42            | 37.5                              | 21.8       | 35.7       | 24.6       | 34.0       | 27.8       |               | 42  | 36.6       | 25.4       | 34.4       | 28.7       |   | 32.6       |  |
|               | 44            | 39.2                              | 22.0       | 37.1       | 24.8       | 35.4       | 28.0       |               | 44  | 38.2       | 25.4       | 35.9       | 28.7       |   | 32.6       |  |
| 37 W5R2       | 46            | 40.6                              | 22.0       | 38.5       | 24.8       | 36.8       | 28.0       | 37 W5R7       | 46  | 39.7       | 25.5       | 37.5       | 28.8       |   | 32.6       |  |
|               | 48            | 42.0                              | 22.2       | 39.9       | 25.0       | 38.2       | 28.2       |               | 48  | 41.5       | 25.5       | 39.0       | 28.8       |   | 32.7       |  |
|               | 50            | 43.8                              | 22.4       | 41.7       | 25.0       | 39.6       | 28.2       |               | 50  | 43.2       | 25.6       | 40.6       | 28.8       |   | 32.7       |  |
| 46 W5R2       | 42            | 46.6                              | 28.4       | 44.5       | 32.0       | 42.0       | 35.6       | 46 W5R7       | 42  | 46.2       | 32.7       | 42.9       | 36.9       |   | 41.8       |  |
|               | 44            | 48.7                              | 28.4       | 46.2       | 32.0       | 43.8       | 35.8       |               | 44  | 48.5       | 32.8       | 45.0       | 36.9       |   | 41.8       |  |
|               | 46            | 50.4                              | 28.4       | 48.0       | 32.2       | 45.5       | 35.8       |               | 46  | 50.8       | 32.8       | 47.1       | 37.0       |   | 41.8       |  |
|               | 48            | 52.2                              | 28.4       | 49.7       | 32.2       | 47.3       | 36.0       |               | 48  | 53.0       | 32.9       | 49.4       | 37.0       |   | 41.8       |  |
|               | 50            | 54.3                              | 28.2       | 51.8       | 32.2       | 49.0       | 36.0       |               | 50  | 55.3       | 33.0       | 51.6       | 37.1       |   | 41.8       |  |
|               | 42            | 55.7                              | 34.6       | 52.9       | 38.4       | 50.1       | 42.8       | -             | 42  | 53.6       | 39.1       | 50.2       | 44.0       |   | 49.8       |  |
| EE MEDO       | 44            | 57.8                              | 34.6       | 55.0       | 38.6       | 51.8       | 43.2       | EE WEDE       | 44  | 55.8       | 39.2       | 52.5       | 44.2       |   | 49.8       |  |
| 55 W5R2       | 46            | 59.9                              | 34.8       | 57.1       | 38.8       | 54.3       | 43.2       | 55 W5R7       | 46  | 58.3       | 39.4       | 54.8       | 44.2       |   | 50.0       |  |
|               | 48            | 62.3                              | 35.0       | 59.5       | 38.8       | 56.4       | 43.2       | -             | 48  | 60.7       | 39.5       | 57.1       | 44.2       | 53.2  | 50.0       |  |
|               | 50            | 64.8                              | 35.0       | 61.6       | 39.0       | 58.5       | 43.2       |               | 50  | 63.2       | 39.7       | 59.5       | 44.4       | 55.5  | 50.0       |  |

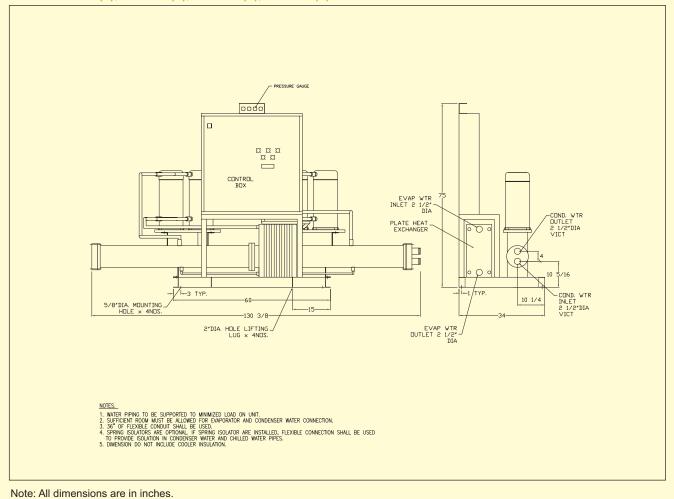
Note: 1) Based on SST 37°F / SCT 100°F 2) Subcool: 10°F; Compressor Superheat: 8°F; Evaporator Superheat: 12°F

# **DIMENSIONAL DATA**

## SCOD 07 WR2(7), 09 WR2(7), 11WR2(7), 14 WR2(7), 19 WR2(7), 23 WR2(7), 28 WR2(7)



#### SCOD 32 WR2(7), 37 WR2(7), 46 WR2(7), 55 WR2(7)





Smartech Sales & Services Sdn. Bhd. (829707-K)

No.15, Jalan PJS 1/27, (Jalan Petaling Utama 6), Petaling Utama, Batu 7, Off Jalan Klang Lama, 46000 Petaling Jaya, Selangor. T: 603-7782 2788 / 7783 7288 F: 603-7782 3788
W: www.smart-hvac.com.my

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