

Job Name: \_\_\_\_\_  
Purchaser: \_\_\_\_\_  
Submitted to: \_\_\_\_\_  
Unit designation: \_\_\_\_\_

Location: \_\_\_\_\_  
Engineer: \_\_\_\_\_  
Reference: \_\_\_\_\_ Approval \_\_\_\_\_ Construction \_\_\_\_\_  
Schedule #: \_\_\_\_\_



**100% Heating capacity at -22°F outside temperature (refer to capacity tables in outdoor unit technical data book for full capacity details).**

#### Compatibility

- R-32 VRF indoor units, R-32 Mode Selection Box (MSB).

#### Construction

- The outdoor unit shall be galvanized steel with a baked-on powder-coated finish.

#### Refrigerant System

- The Heat Recovery system shall allow simultaneous heating and cooling (conditions apply, refer to the technical data book for more information).
- Mode Selection Box (MSB) are required for proper operation. Indoor units that will only operate in cooling mode year-round (cooling-only) may be piped directly to the liquid and suction pipes bypassing the MSB connection. Please consult Technical Data Books and supporting technical documents for compatible MSB models and details.
- The compressor shall be hermetically sealed, inverter-driven, direct flash injected, DC scroll type with soft-start capability manufactured by Samsung. Flash-injected compressors provide advanced low ambient heating performance. The compressor shall feature an asymmetrical scroll design.
- The system shall have subcooling devices to maintain capacity at extreme system refrigerant pipe lengths and to minimize refrigerant noise.
- The system shall allow a reduction of the main liquid refrigerant pipe (outdoor unit to first unit or Y-joint) by one diameter reducing total system refrigerant volume and pipe and insulation costs if line lengths and vertical separation are within the reduced pipe diameter guidelines. Available for 10 ton and above. Refer to supporting documents for complete guideline details.

#### Heat Exchanger

- The heat exchanger shall be mechanically bonded fin to copper tube. The aluminum fins of the heat exchanger shall have a protective coating.
- Salt spray test method: ASTM-B117-18 - The heat exchanger showed no unusual rust or corrosion development to 3,000 hours.

- The heat exchanger shall consist of two separate circuits to enhance the heat pump defrost cycle.
- The unit shall use the entire coil initially for the defrost cycle. To resume heating faster in extreme conditions, the upper section shall return to heating operation while the lower section continues to defrost.

#### Active Artificial Intelligence

- The outdoor unit shall feature Active Artificial Intelligence (AI) and shall monitor environmental and system operational data and use Deep Neural Network algorithms to provide optimal system performance and reliability. The VRF system shall incorporate an on-device AI control module capable of performing localized data processing.
- Active Artificial Intelligence (AI) shall be used to optimize high-pressure control, low-pressure control, defrost cycle activation and operation, and low refrigerant detection.
- The outdoor unit shall use Active Artificial Intelligence (AI) to monitor system refrigerant volume in real-time while in cooling mode to detect possible leaks or low refrigerant charge and provide an error code before system shutdown (conditions apply).

#### Controls

- The outdoor unit shall have a removable EEPROM that stores the unit serial number, startup information, system settings, system tag/name, and other information.
- Control wiring shall be 16 AWG X 2 shielded wire.

#### Other Features

- The system shall include an automatic refrigerant leak mitigation function that performs pump-down upon leak detection, activates forced fan and ventilation control, and supports connection to a mode selection box (MSB) with integrated shut-off valves. All indoor units shall be equipped with Refrigerant Detection Sensors (RDS) to continuously monitor and respond to potential refrigerant leaks.
- Inverter PCB cooling shall be done with liquid refrigerant and air to maintain optimal and safe operating temperatures.
- The system shall feature advanced oil recovery cycle logic (maximum duration in cool mode: 3 minutes, maximum duration in heat mode: 6 minutes, and defrost cycles lasting over 3 minutes are considered oil recovery cycles). Oil recovery operation shall not interrupt heating or cooling operation.
- The outdoor unit shall feature optional night quiet modes to reduce outdoor unit sound (4 levels) with automatic activation or manual activation (with VSTAT10P-1 accessory).
- The outdoor unit shall feature advanced intelligent defrost logic to significantly reduce defrost cycle frequency by monitoring air resistance across the condenser coil during heating operation to determine defrost operation initiation to prevent unnecessary defrost cycles.
- The outdoor unit shall feature optional snow-blowing logic to prevent snow accumulation on idle outdoor units.
- The outdoor unit shall feature maximum current control settings to limit current (50% - 100% of design current) adjustable at the outdoor unit, supported central controls, and supported indoor unit wired controllers.
- The outdoor unit shall feature energy savings options to reduce system energy consumption when average indoor room temperatures are greater than average indoor set temperatures in heating mode or when average indoor room temperatures are lower than average indoor set temperatures in cooling mode.

# SPECIFICATIONS VRD120L6M-5Y

|                           |                                     |                                                                                                                                                                                                                                                              |               |
|---------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Outdoor Unit Model Number |                                     |                                                                                                                                                                                                                                                              | VRD120L6M-5Y  |
| Mode                      |                                     | -                                                                                                                                                                                                                                                            | Heat Recovery |
| Performance               | Ton                                 |                                                                                                                                                                                                                                                              | TON           |
|                           | Rated Capacity *                    | Cooling                                                                                                                                                                                                                                                      | Btu/h         |
|                           |                                     | Heating                                                                                                                                                                                                                                                      | Btu/h         |
|                           | EER (Ducted / Non-Ducted)           |                                                                                                                                                                                                                                                              | 12.25 / 11.40 |
|                           | IEER (Ducted / Non-Ducted)          |                                                                                                                                                                                                                                                              | 24.98 / 26.60 |
|                           | High Heat COP (Ducted / Non-Ducted) |                                                                                                                                                                                                                                                              | 3.95 / 3.88   |
|                           | SCHE (Ducted / Non-Ducted)          |                                                                                                                                                                                                                                                              | 24.32 / 27.93 |
| Power                     | Power Supply                        |                                                                                                                                                                                                                                                              | Φ/ #/ V/ Hz   |
|                           | MCA / MOP                           |                                                                                                                                                                                                                                                              | A             |
| Dimension                 | Dimensions (WxHxD)                  |                                                                                                                                                                                                                                                              | inch          |
|                           | Weight                              |                                                                                                                                                                                                                                                              | lbs.          |
| Sound                     | Pressure                            | Cooling/ Heating                                                                                                                                                                                                                                             | dB(A)         |
| Operating Temp. Range     | Cooling**                           |                                                                                                                                                                                                                                                              | °F            |
|                           | Heating                             |                                                                                                                                                                                                                                                              | °F            |
| Pipe                      | Liquid, Gas, Discharge Gas Pipe     |                                                                                                                                                                                                                                                              | Φ, inch       |
|                           | Max Length - ODU to Farthest IDU    |                                                                                                                                                                                                                                                              | ft            |
|                           | Max Piping Length (1st Branch-IDU)  |                                                                                                                                                                                                                                                              | ft            |
|                           | Max. Total Refrigerant Pipe Length  |                                                                                                                                                                                                                                                              | ft            |
|                           | Max Vertical Separation             | ODU to IDU***                                                                                                                                                                                                                                                | ft            |
|                           |                                     | Highest/Lowest IDU                                                                                                                                                                                                                                           | ft            |
| Refrigerant               | R-32 Factory Charge                 |                                                                                                                                                                                                                                                              | lbs.          |
| Compressor                | Type                                |                                                                                                                                                                                                                                                              | -             |
|                           | Rated Load Amps (RLA)               |                                                                                                                                                                                                                                                              | A             |
| Fan                       | Type                                |                                                                                                                                                                                                                                                              | -             |
|                           | FLA / Motor Output / Airflow        |                                                                                                                                                                                                                                                              | A/ W/ CFM     |
| Safety                    | Certifications                      |                                                                                                                                                                                                                                                              | ETL & ETLc    |
|                           | Devices                             | High pressure sensor, low pressure sensor, over-voltage protection, compressor over-current protection, current transformer, fan motor voltage protection, fan motor thermal protection, overheat protection, phase detection protection, high voltage fuses |               |

\*Certified in accordance with the AHRI Variable Refrigerant Flow Multi-Split Air-Conditioners and Heat Pump (VRF) Certification Program which is based on the latest edition of AHRI Standard 1230.

\*\*Cooling operation range is 23-122°F (-5 - 50°C) as standard. When in Main Heating, cooling operation down to 5°F (-15°C) outdoor temperature is possible with modified pipe design for indoor units that require cooling. Cooling or Main cooling is possible down to -13°F (-25°C) when using a low ambient cooling kit. Consult technical documents or Lennox HVAC for details.

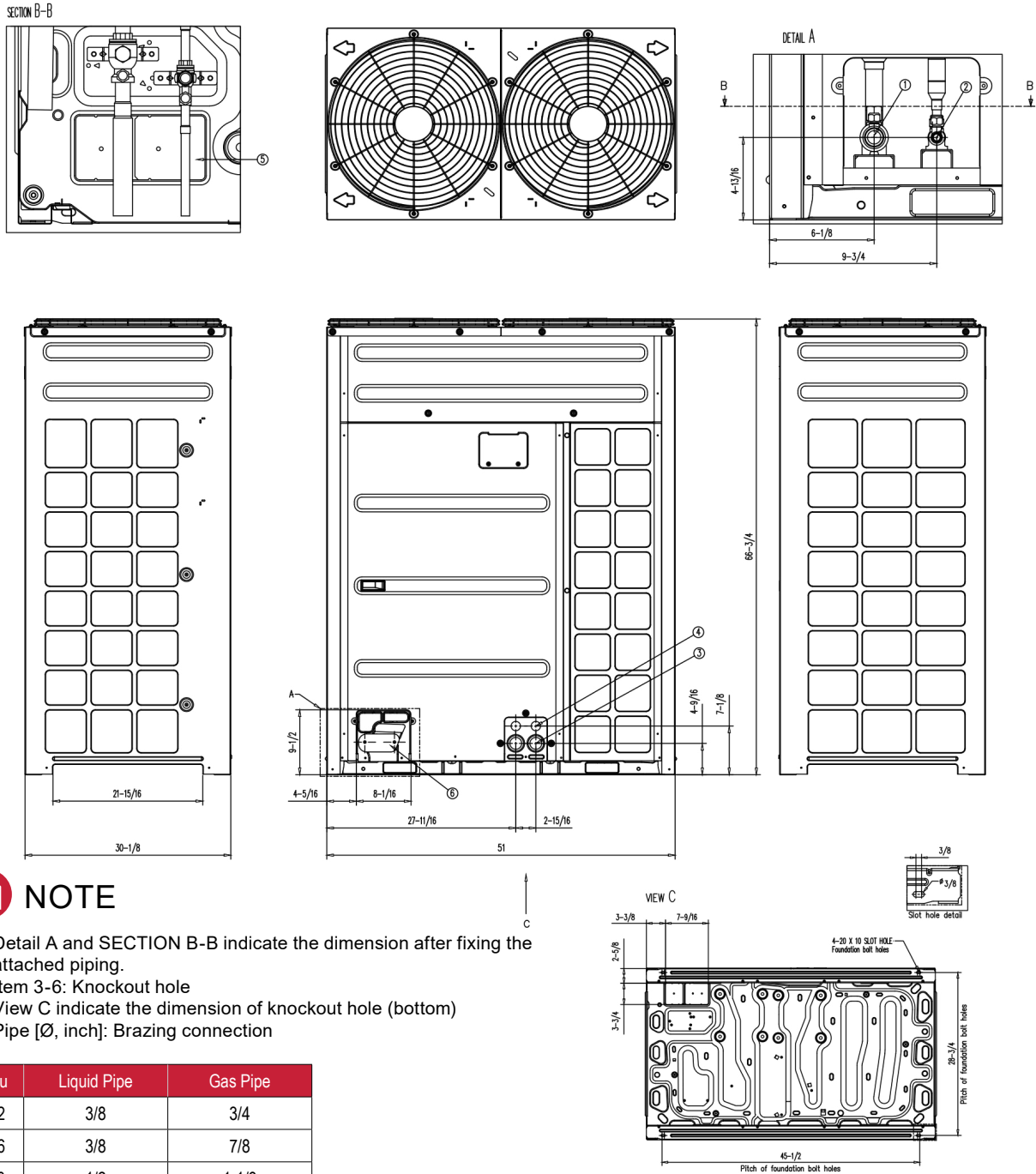
\*\*\*When the outdoor unit is lower than indoor units, and vertical separation is greater than 131 feet, additional conditions apply. When the outdoor unit is higher than the indoor units, and vertical separation is greater than 163 feet, additional conditions apply. Please refer to supporting documents at [www.lennox.com/commercial](http://www.lennox.com/commercial).

## ACCESSORIES VRD120L6M-5Y

| Qty | Model Number | Description                                                                                                                   |
|-----|--------------|-------------------------------------------------------------------------------------------------------------------------------|
|     | V1GARD07-4P  | VP/VR Top Hood Side Wind/Hail Guard - MD                                                                                      |
|     | V1GARD04-4P  | VP/VR Left Side Wind/Hail Guard                                                                                               |
|     | V1GARD05-4P  | VP/VR Right Side Wind/Hail Guard                                                                                              |
|     | V1GARD03-4P  | VP/VR Rear Side Wind/Hail Guard - MD                                                                                          |
|     | V1GARD01-4P  | VP/VR Front Wind/Hail Guard - MD                                                                                              |
|     | V1LACB04-4P  | VP/VR072-240 Left LA Cooling Baffle (1 required)                                                                              |
|     | V1LACB05-4P  | VP/VR072-240 Right LA Cooling Baffle (1 required)                                                                             |
|     | V1LACB03-4P  | VP/R072L VP/VR096-168 Rear LA Clg Bfl MD (1 required)                                                                         |
|     | V1LACH02-4P  | VP/VR072L 096-168 LA Cooling Hood - MD (1 required)                                                                           |
|     | V1LACB01-4P  | VP/VR072-168 Front LA Cooling Baffle MD (1 required)                                                                          |
|     | V1BPNH04     | V1BPNH04 Base Pan Heater MD (1 required)                                                                                      |
|     | V1BPNC01     | VRF Base Heater Control Box 230V (1 required)                                                                                 |
|     | VSTAT10P-1   | External contact control interface module for operation and error output and night silent mode manual activation (1 required) |

# DIMENSIONAL DRAWING VRD120L6M-5Y

Unit: Inches



## NOTE

- Detail A and SECTION B-B indicate the dimension after fixing the attached piping.
- Item 3-6: Knockout hole
- View C indicate the dimension of knockout hole (bottom)
- Pipe [Ø, inch]: Brazing connection

| kBtu | Liquid Pipe | Gas Pipe |
|------|-------------|----------|
| 072  | 3/8         | 3/4      |
| 096  | 3/8         | 7/8      |
| 120  | 1/2         | 1-1/8    |

| No. | Description                 | Remark   | No. | Description                          | Remark |
|-----|-----------------------------|----------|-----|--------------------------------------|--------|
| 1   | Gas refrigerant pipe        | See NOTE | 5   | Knockout hole for refrigerant piping | Bottom |
| 2   | Liquid refrigerant pipe     | See NOTE | 6   | Knockout hole for refrigerant piping | Front  |
| 3   | Power conduit knockout      | Ø44      |     |                                      |        |
| 4   | Communication wire knockout | Ø34      |     |                                      |        |