**TEST REPORT FOR 3-PHASE VARIABLE REFRIGERANT FLOW (VRF)**

**AIR-CONDITIONER MODELS**

**(AIR-ENTHALPY METHOD)**

**[COVER PAGE TO BE PRINTED ON TESTING LABORATORY’S COMPANY LETTERHEAD]**

**Test Report for 3-Phase VRF Air-Conditioner [Model Number for outdoor unit]**

**[Test report reference number]**

**Section 1: Testing Laboratory**

| 1. Date of test (dd/mm/yy) |  |
| --- | --- |
| 1. Name of testing laboratory |  |
| 1. Location of testing laboratory |  |
| 1. Name and designation of testing officer |  |
| 1. Name and designation of approving officer |  |

**Section 2: Product Specification**

| **Outdoor unit** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Brand | | |  | | | | |
| 1. Type | | | Variable refrigerant flow (VRF) air-conditioner | | | | |
| 1. Phase | | | 3-Phase | | | | |
| 1. Climate Type | | | T1 | | | | |
| 1. Country of origin | | |  | | | | |
| 1. Year of manufacture | | |  | | | | |
| 1. Type of refrigerant | | |  | | | | |
| 1. Total refrigerant charge (kg) | | |  | | | | |
| 1. Model number | | |  | | | | |
| 1. Voltage (V) | | |  | | | | |
| 1. Frequency (Hz) | | | 50 Hz | | | | |
| 1. Current (A) | | |  | | | | |
| 1. Weight (kg) | | |  | | | | |
| 1. Overall dimensions (h x w x d) (mm) | | |  | | | | |
|  | | | **100% load** | | | **50% load** | |
| 1. Rated cooling capacity (kW) | | |  | | |  | |
| 1. Rated power input (kW) | | |  | | |  | |
|  | | | | | | | |
| **Indoor Units**[[1]](#footnote-1)**,**[[2]](#footnote-2) | | | | | | | |
| 1. Phase | | Single | | | | | |
| 1. Voltage (V) | |  | | | | | |
| 1. Frequency (Hz) | | 50 Hz | | | | | |
| S/N | Model Number | Cassette Type  (1/2/3/4-way) | | Rated cooling capacity (kW) | Rated power input (kW) | | Number of Units |
| 1 |  |  | |  |  | |  |
| 2 |  |  | |  |  | |  |
| 3 |  |  | |  |  | |  |
| 4 |  |  | |  |  | |  |

**Section 3: Cooling Capacity Test**

| 1. Test standard and method | ISO 15042:2017 (Air enthalpy Method) | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | |  | |  |
|  | **100% load** | **75% load** | **50% load** | | **25% load** | |
| 1. Applied voltage(s) (V) 396~404V |  |  |  | |  | |
| 1. Frequency (Hz) |  |  |  | |  | |
| 1. Total current input to equipment (A) |  |  |  | |  | |
| 1. Duration of test (hr) (30min or more) |  |  |  | |  | |
| 1. Total cooling capacity (kW) |  |  |  | |  | |
| 1. Sensible cooling capacity (kW) |  |  |  | |  | |
| 1. Latent cooling capacity (kW) |  |  |  | |  | |
| 1. Effective power input[[3]](#footnote-3) (kW) |  |  |  | |  | |
| 1. Coefficient of Performance (W/W)[[4]](#footnote-4) |  |  |  | |  | |
| 1. Integrated Energy Efficiency Ratio[[5]](#footnote-5) |  | | | | | |
| 1. Barometric pressure (kPa) |  |  |  | |  | |
| 1. Fan speed setting (RPM) for each indoor and outdoor unit |  |  |  | |  | |
| 1. Indoor-side air-flow   (m3/s of standard air) |  |  |  | |  | |
| 1. External resistance to air-flow for each indoor unit (Pa) |  |  |  | |  | |
| 1. Volume flow rate of air and all relevant measurements for its calculation (m3/s) |  |  |  | |  | |
| 1. Dry-bulb temperature of air entering equipment (ºC) |  |  |  | |  | |
| 1. Wet-bulb temperature of air entering equipment (ºC) |  |  |  | |  | |
| 1. Dry-bulb temperature of air leaving measuring device (ºC) |  |  |  | |  | |
| 1. Wet-bulb temperature of air leaving measuring device (ºC) |  |  |  | |  | |
| 1. Outdoor dry-bulb and wet-bulb temperatures (ºC) |  |  |  | |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **100% load** | **75% load** | **50% load** | **25% load** | | 1. Setting of variable capacity compressor at respective loading |  |  |  |  | | 1. Refrigerant charge added by the test house, in kg |  |  |  |  | | 1. Factory charge, in kg |  |  |  |  |   **Section 4: Energy consumption test (Standby mode)**   | a) Test standard | IEC 62301 2005 and 2011 | | --- | --- |  |  |  | | --- | --- | |  | Measured value | | b) Voltage (V) |  | | c) Frequency (Hz) |  | | d) Current (A) |  | | e) Ambient temperature (ºC) |  | | f) Passive Standby Power (W) |  | | g) Procedure of testing (5.3.1 or 5.3.2 of IEC 62301:2005 and 5.3.2 or 5.3.3 or 5.3.4 of IEC 62301:2011) |  | | h) Active Standby Power - High (W) (Put N/A if there is no such function) | N/A if there is no such function | |

**Section 5: Signature**

| Name of testing officer |  | Name of approving officer |  |
| --- | --- | --- | --- |
| Designation of testing officer |  | Designation of approving officer |  |
| Signature of testing officer |  | Signature of approving officer |  |
| Date | DD/MM/YYYY | Date | DD/MM/YYYY |

**Appendix A – Photos & supporting document**

* Color photos showing the exterior and interior of the registered model in the available finishing and colors
* Color photo of the nameplate

**Appendix B – Schematic Drawing**

* Schematic drawing clearly indicating the model’s key internal components

**Appendix C – Component List**

* Technical specification and description of the model’s key internal components

**Appendix D – Table Showing the Ratio of the Total Cooling Capacity of the Indoor Units (IDUs) to the Cooling Capacity of the Outdoor Unit**

**(To include additional columns if more than 5 IDUs are used)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Cooling capacity (kW)** | | | | | | | **Ratio** |
| **Model no.** | **Full/Part load** | **Outdoor unit** | **Indoor unit** | | | | | |
| **1** | **2** | **3** | **4** | **5** | **Total** |
|  |  |  |  |  |  |  |  |  | 1±5% (FL) |
|  |  |  |  |  |  |  |  |  | 1±5% (75% loading) |
|  |  |  |  |  |  |  |  |  | 1±5% (50% loading) |
|  |  |  |  |  |  |  |  |  | 1±5% (25% loading) |

1. To provide data on indoor units that are used during testing [↑](#footnote-ref-1)
2. Minimum 2 number of 1/2/3/4-way cassette type indoor units to be used [↑](#footnote-ref-2)
3. Effective Power input is the average power input to the equipment obtained from operation of compressor(s), electric heating devices used only for defrosting, all control and safety devices and operations of all fans, whether provided with equipment or not [↑](#footnote-ref-3)
4. Coefficient of Performance (COP) is ratio of cooling capacity to effective power consumption at a given set of conditions. [↑](#footnote-ref-4)
5. Integrated Energy Efficiency Ratio (IEER) = 0.125\*COP at 25% + 0.238\*COP at 50% + 0.617\*COP at 75% + 0.020\*COP at 100% [↑](#footnote-ref-5)