

2. GENERAL DATA

2.1 General Data for Indoor Units

In-the-Ceiling Type

| | | |
|---|--------------------------------------|--|
| Indoor Unit Type | | In-the-Ceiling Type |
| Model | | RPI-7.0FSN1SQ |
| Indoor Unit Power Supply | | AC 1 ϕ , 240V/50Hz |
| Combined Outdoor Unit Model | | RAS-7HVRN |
| Nominal Cooling Capacity | kW | 18.3 |
| Nominal Heating Capacity | kW | 19.6 |
| Sound Pressure Level (Overall A Scale) | dB (A) | 51/47/42 |
| Outer Dimensions | | |
| Height | mm | 440 |
| Width | mm | 1,430 |
| Depth | mm | 550 |
| Net Weight | kg | 75 |
| Refrigerant | | R410A |
| Flow Control | | Micro-Computer Control Expansion Valve |
| Indoor Fan | | Multi-Blade Centrifugal Fan |
| Air Flow Rate (Hi/Me/Lo) 140Pa Setting | m ³ /min. (ℓ /s) | 65/57/46 (1,084/950/767) |
| External Pressure | Pa | 140 |
| Motor Output | W | 650 |
| Connections | | Flare-Nut Connection (with Flare Nuts) |
| Refrigerant Piping | | |
| Liquid Line | mm (in.) | ϕ 9.53 (3/8) |
| Gas Line | mm (in.) | ϕ 19.05 (3/4) |
| Condensate Drain | | VP25 |
| Approximate Packing Measurement | m ³ | 0.536 |

NOTES:

- The nominal cooling capacity is the combined capacity of the HITACHI standard split system, and is based on the JIS standard B8616.

Cooling Operation Conditions

Indoor Air Inlet Temperature: 27°C DB (80°F DB)
19.0°C WB (66.2°F WB)

Outdoor Air Inlet Temperature: 35°C DB (95°F DB)

Heating Operation Conditions

Indoor Air Inlet Temperature: 20°C DB (68°F DB)

Outdoor Air Inlet Temperature: 7°C DB (45°F DB)
6°C WB (43°F WB)

Piping Length: 7.5 Meters Piping Lift: 0 Meter

- The sound pressure level is based on following conditions.

1.5 Meters Beneath the Unit.

With Discharge Duct (2.0m) and Return Duct (1.0m).

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

GENERAL DATA

2.2 General Data for Outdoor Units

| | | |
|--------------------------|----------------------------|--|
| Model | | RAS-7HVRN |
| Power Supply | | AC 1φ, 240V/50Hz |
| Nominal Cooling Capacity | kW | 18.3 (8.6-20) |
| COP, Cooling | | 3.85 (*1) / 3.30 (*2) |
| Nominal Heating Capacity | kW | 19.6 (6.6-21.7) |
| COP, Heating | | 3.73 (*1) / 3.60 (*2) |
| COP, Coolig & Heating | | 3.79 (*1) / 3.45 (*2) |
| Sound Pressure Level | | |
| Cool (Night Shift)/Heat | dB (A) | 53(50)/54 |
| Outer Dimensions | | |
| Height | mm (in.) | 1,650 (64-15/16) |
| Width | mm (in.) | 1,100 (43-5/16) |
| Depth | mm (in.) | 390 (15-3/8) |
| Net Weight | kg (lbs.) | 167 (367) |
| Refrigerant | | R410A |
| Flow Control | | Micro-Computer Control Expansion Valve |
| Compressor | | Hermetic (Scroll) |
| Model | | E405AHD |
| Quantity | | 1 |
| Motor Output (Pole) | kW | 3.0 (4) |
| Heat Exchanger | | Multi-Pass Cross-Finned Tube |
| Condenser Fan | | |
| Quantity | | 2 |
| Air Flow Rate | m ³ /min. (ℓ/s) | 138 (2,300) |
| Motor Output (Pole) | kW | 0.17(8) x 1 + 0.15 (6) x1 |
| Refrigerant Piping | | Flare-Nut Connection (with Flare Nuts) |
| Liquid Line | mm (in.) | φ9.53 (3/8) |
| Gas Line | mm (in.) | φ19.05 (3/4) |
| Refrigerant Charge | kg | 6.0 |

(*1): Max. COP (at approx. 60% of rated capacity), (*2): Nominal COP (at 100% of rated capacity)

NOTES:

- The above cooling and heating capacities show the maximum capacities when the outdoor and indoor temperature are below condition.

Cooling Air Inlet Temperature

Indoor Air Inlet Temperature: 27°C DB (80°F DB) 19.0°C WB (66.2°F WB)

Outdoor Air Inlet Temperature: 35°C DB (95°F DB)

Heating Operation Conditions

Indoor Air Inlet Temperature: 20°C DB (68°F DB)

Outdoor Air Inlet Temperature: 7°C DB (45°F DB) 6°C WB (43°F WB)

Piping Length: 7.5 Meters

Piping Lift: 0 Meter

- The sound pressure is based on the following conditions.

1 Meter from the unit service cover surface, and 1.5 Meters from floor level.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

- Temperature Range

The temperature range are given in the following table.

| | | Cooling Operation | Heating Operation |
|----------------------|---------|-------------------|-------------------|
| Indoor Temperature: | Minimum | 21°C DB/15°C WB | 15°C DB |
| | Maximum | 32°C DB/23.0°C WB | 27°C DB |
| Outdoor Temperature: | Minimum | 0°C DB | -8°C WB |
| | Maximum | 46°C DB | 15°C WB |

- Indoor Air Outlet Temperature (Heating)

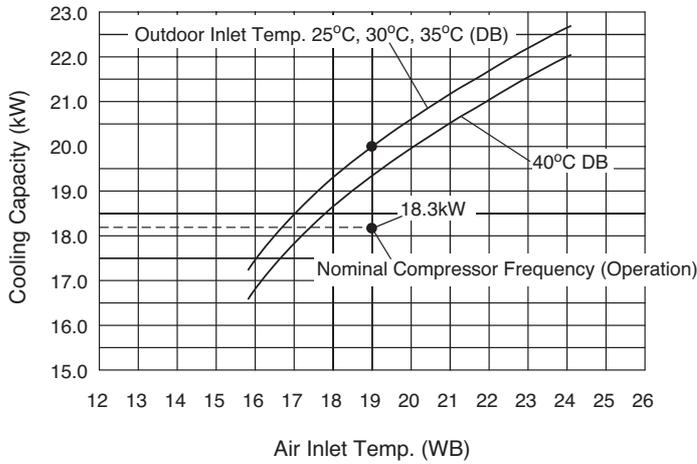
Max. Indoor Air Outlet Temperature (Heating)

| Outdoor Air Inlet (°C DB/°C WB) | Air Flow Rate (Indoor Unit) | Indoor Air Inlet Dry Bulb (°C DB) |
|------------------------------------|--------------------------------|-----------------------------------|
| | | 20.0°C |
| 7.0/6.0 | Hi | More than 34.0 (Including 34.0) |
| | Mi | More than 35.0 (Including 35.0) |
| | Lo | More than 39.0 (Including 39.0) |

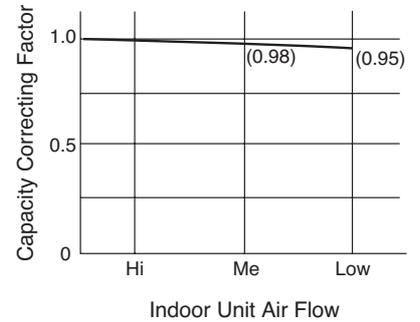
The above table is based on 7.5m equivalent length and 0m piping lift, when the outdoor unit is operated with the 100% (The defrosting operation is excepted on this table.).

4.3 Cooling Capacity

RAS-7HVRN
Cooling Capacity Curve

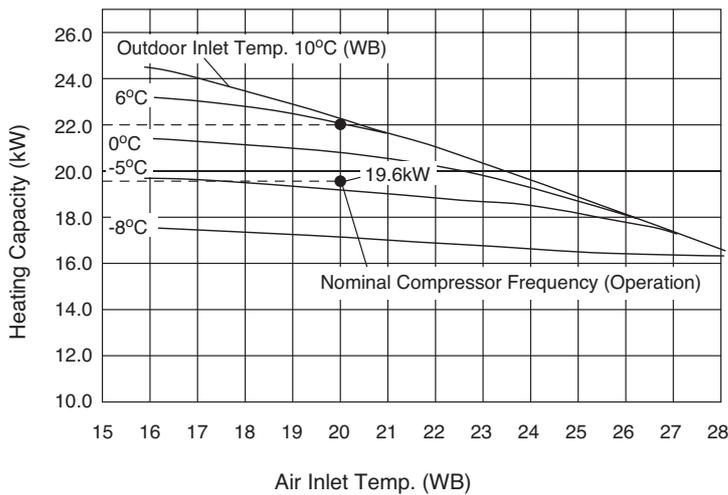


Correcting Curve

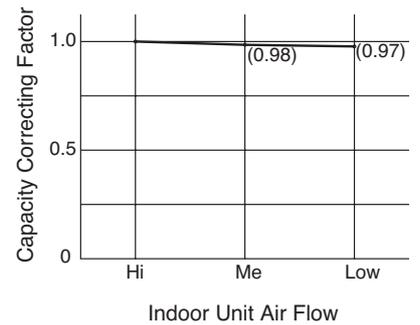


4.4 Heating Capacity

RAS-7HVRN
Heating Capacity Curve



Correcting Curve



4.5 Correction Factor According to Piping Length

Correction Factor for Cooling Capacity According to Piping Length

The cooling capacity should be corrected according to the following formula:

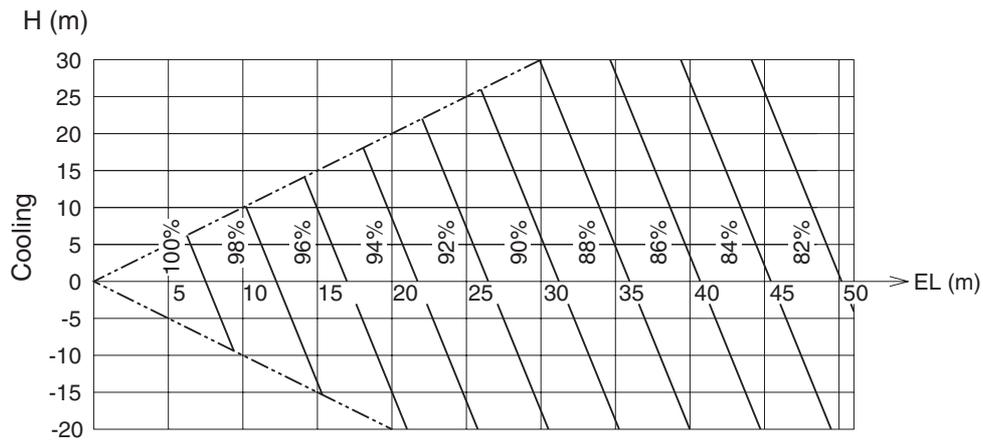
The correction factors are shown in the following figure.

$$CCA = CC \times F$$

CCA: Actual Corrected Cooling Capacity (kW)

CC: Cooling Capacity in the Performance Table (kW)

F: Correction Factor Based on the Equivalent Piping Length



Correction Factor for Heating Capacity According to Piping Length

The heating capacity should be corrected according to the following formula:

The correction factors are shown in the following figure.

$$HCA = HC \times F$$

HCA: Actual Corrected Heating Capacity (kW)

HC: Heating Capacity in the Performance Table (kW)

F: Correction Factor Based on the Equivalent Piping Length

