

PDR·PDL

5 to 98%rh • -20 to +100°C / -40 to +100°C

LOW HUMIDITY TYPE (LOW) TEMPERATURE & HUMIDITY CHAMBER

| Model | PDR-3J | PDR-4J | PDL-3J | PDL-4J | |
|-------------------------------|--|---|---|---|---------------------------|
| System | Balanced Temperature and Humidity Control system (BTHC system) | | | | |
| Performance*1 | Temp. & humidity range *2 | -20 to +100°C/5 to 98%rh Refer to diagram of temperature & humidity controllable range on this page. | | -40 to +100°C/5 to 98%rh Refer to diagram of temperature & humidity controllable range on this page. | |
| | Temp. & humidity fluctuation | ±0.3°C/±2.5%rh | | | |
| | Temperature variation in space | 1.5°C | | | |
| | Temperature rate of change | Heat up rate: 3.0°C/min. Pull down rate: 2.0°C/min. | Heat up rate: 3.0°C/min. Pull down rate: 1.0°C/min. | Heat up rate: 3.0°C/min. Pull down rate: 2.0°C/min. | |
| | Temperature extremes achievement time | Heat up time: from +20 to +100°C 30 min. Pull down time: from +20 to -20°C 40 min. | | Heat up time: from +20 to +100°C 30 min. Pull down time: from +20 to -40°C 50 min. | |
| | Allowable heat load *3 | 1100 W | 1250 W | 1500 W | 2850 W |
| Allowable ambient conditions | Standard temperature and humidity region running: 0 to +40°C/up to 75% Low temperature and humidity region running: +5 to +32°C Absolute humidity no greater than 23g/kg | | | | |
| Construction | Exterior material | Stainless steel plate: 18 Cr stainless steel plate, hairline finish | | | |
| | Test area material | Stainless steel plate: 18-8 Cr-Ni stainless steel plate, 2B polish | | | |
| | Heater | Nichrome strip wire heater | | | |
| | Humidifier | 18-12-2.5 Cr-Ni-Mo stainless steel sheathed heater (surface evaporating system) | | | |
| | Cooler | Plate fin cooler (Doubles as dehumidifier) | Plate fin cooler (Doubles as dehumidifier), stainless steel tube cooler | | |
| | Air circulator | Sirocco fan | | | |
| | System | Mechanical type single-stage compression cooling | | | |
| | Refrigerant | R404A | | | |
| | Dehumidifier | System | Rotary recovery (adsorption) dehumidification | | |
| | | Refrigerator system | Mechanical single-stage refrigeration system | | |
| Compressor | | Rotary compressor (R404A), Reciprocating compressor (R134a) | | | |
| Expansion mechanism | | Temperature regulated automatic expansion valve | | | |
| Capacity | 408 L | 800 L | 408 L | 800 L | |
| Chamber total load resistance | 100 kg | | | | |
| Dimensions *4 | Inside dimensions (W x H x D mm) | 600 x 850 x 800 | 1000 x 1000 x 800 | 600 x 850 x 800 | 1000 x 1000 x 800 |
| | Outside dimensions (W x H x D mm) | 1885 x 1690 (1820) x 1273 | 2285 x 1840(1970) x 1273 | 1885 x 1690 (1820) x 1273 | 2285 x 1840 (1970) x 1273 |
| Weight *5 | 680 kg | 800 kg | 735 kg | 930 kg | |

*1 The performance values are based on IEC60068-3-5:2001 and IEC60068-3-6:2001;

Performance figures are given for a +23°C ambient temperature, relative humidity of 65±20%rh, rated voltage, and no specimen inside the test area.

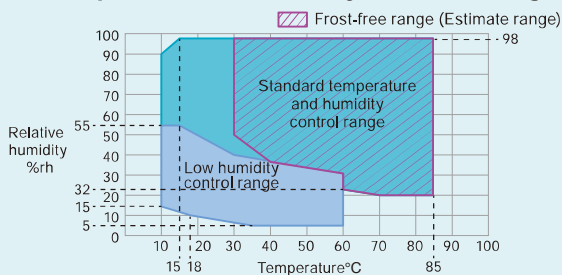
*2 Lowest attainable temperature in an ambient temperature of 0 to +30°C

*3 When temperature in chamber is +20°C

*4 Excluding protrusions. Dimension indicated in () includes protrusion.

*5 Total weight (temperature & humidity chamber and dehumidifier)

● Temperature & Humidity Control Range



* With no specimen and under ambient temperature at +23°C.

* Restrictions on continuous humidity operation at +40°C or lower because of frost on the cooler.

Low Humidity Region Operation Precautions

- Operation in the low humidity region is not possible from a high temperature above +60°C. Perform transition from temperatures below +60°C.
- Gradient programs cannot be used in the low humidity region.
- Programs that require humidifier switching cannot be used.
- Programs that transition from outside the low humidity region to the low humidity region cannot be used. However, transitioning from the low humidity region to another region is allowed.

| Model | | PCR-3J |
|-------------------------------|---------------------------------------|--|
| System | | Balanced Temperature and Humidity Control system (BTHC system) |
| Performance ^{*1} | Temp. & humidity range ^{*2} | -20 to +100°C/30 to 90%rh Refer to diagram of temperature & humidity controllable range on this page. |
| | Temp. & humidity fluctuation | ±0.5°C/±2.5%rh |
| | Temperature variation in space | 5.0°C |
| | Temperature rate of change | Heat up rate: 1.5°C/min. Pull down rate: 1.0°C/min. |
| | Temperature extremes achievement time | Heat up time: from +20 to +100°C 55 min. Pull down time: from +20 to -20°C 45 min. |
| | Cleanliness ^{*3} | Class5 (Particle diameter: 0.5µm) |
| Allowable ambient conditions | | +5 to +35°C/up to 75%rh |
| Construction | Exterior material | Stainless steel plate: 18 Cr stainless steel plate, hairline finish |
| | Test area material | Stainless steel plate: 18-8 Cr-Ni stainless steel plate, 2B polish |
| | Heater | Nichrome strip wire heater |
| | Humidifier | 18-12-2.5 Cr-Ni-Mo stainless steel sheathed heater (surface evaporating system) |
| | Cooler (dehumidifier) | Plate fin cooler (Doubles as dehumidifier) |
| | Air circulator | Sirocco fan |
| | System | Mechanical type single-stage compression cooling |
| | Refrigerant | R404A |
| Required exhaust equipment | | Exhaust flow rate: 16m ³ / min. (50Hz);18m ³ /min. (60Hz); Chamber connection port: ø123mm |
| Capacity | | 312 L |
| Chamber total load resistance | | 100 kg |
| Dimensions ^{*4} | Inside dimensions (W x H x D mm) | 600 x 650 x 800 |
| | Outside dimensions (W x H x D mm) | 1010 x 1880 x 1273 |
| Weight | | 445 kg |

*1 The performance values are based on IEC60068-3-5:2001 and IEC60068-3-6:2001; Performance figures are given for a +23°C ambient temperature, relative humidity of 65±20%rh, rated voltage, and no specimen inside the test area.

*2 Lowest attainable temperature in an ambient temperature of 0 to +30°C

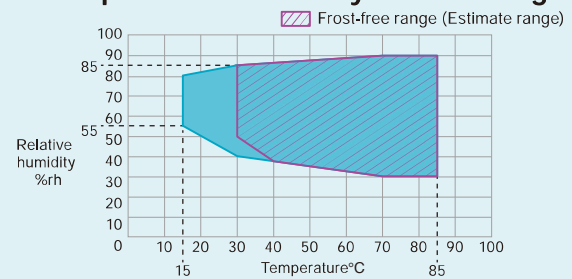
*3 When temperature is stable, the cleanliness is according to JIS B9920:2002 (equivalent to FED-STD-209D Class 100).

The Class 5 cleanliness cannot be maintained when the door is open.

Do not open the door when operating at temperatures below 0°C

*4 Excluding protrusions.

● Temperature & Humidity Control Range



* With no specimen and under ambient temperature at +23°C.

* Restrictions on continuous humidity operation at +40°C or lower because of frost on the cooler.

PU

-40 to +100°C(+150°C/+180°C)

LOW TEMPERATURE CHAMBER

| Model | PU-1J | PU-2J | PU-3J | PU-4J | |
|-----------------------------------|--|---|---|--------------------|---------------------------|
| System | Balanced Temperature Control system (BTC system) | | | | |
| Performance ^{*1} | Temperature range ^{*2} | -40 to +100°C | | | |
| | Temperature fluctuation | ±0.3°C | | | |
| | Temperature variation in space | 1.5°C | | | |
| | Temperature rate of change | Heat up rate: 3.0°C/min. Pull down rate: 2.0°C/min. | | | |
| | Temperature extremes achievement time | Heat up time: from +20 to +100°C 30 min. Pull down time: from +20 to -40°C 45 min. | | | |
| Allowable heat load ^{*3} | 850 W | 1400 W | 1500 W | 2850 W | |
| Allowable ambient conditions | 0 to +40°C/up to 75%rh | | | | |
| Construction | Exterior material | Stainless steel plate: 18 Cr stainless steel plate, hairline finish | | | |
| | Test area material | Stainless steel plate: 18-8 Cr-Ni stainless steel plate, 2B polish | | | |
| | Heater | Nichrome strip wire heater | | | |
| | Cooler (dehumidifier) | Plate fin cooler | Plate fin cooler, stainless steel tube cooler | | |
| | Air circulator | Cross flow fan | | Sirocco fan | |
| | System | Mechanical type single-stage compression cooling | | | |
| | Refrigerant | R404A [R-449A is available on request] | | | |
| Capacity | 120 L | 225 L | 408 L | 800 L | |
| Chamber total load resistance | 100 kg | | | | |
| Dimensions ^{*4} | Inside dimensions (W x H x D mm) | 500 x 600 x 400 | 500 x 750 x 600 | 600 x 850 x 800 | 1000 x 1000 x 800 |
| | Outside dimensions (W x H x D mm) | 910 x 1440 x 873 | 910 x 1590 x 1073 | 1010 x 1690 x 1273 | 1410 x 1840 (1970) x 1273 |
| Weight | 260 kg | 330 kg | 410 kg | 600 kg | |

*1 The performance values are based on IEC60068-3-5:2001 under the conditions of a +23°C ambient temperature, relative humidity of 65±20%rh, rated voltage, and no specimen inside the test area.

*2 Lowest attainable temperature in an ambient temperature of 0 to +30°C

*3 When temperature in chamber is +20°C

*4 Excluding protrusions. Dimension indicated in () includes protrusion.

Low GWP Refrigerant



R-449A is available on request.
(PR/PL/PSL/PU/PG only)

PG

-70 to +100°C(+150°C/+180°C)

ULTRA LOW TEMPERATURE CHAMBER

| Model | PG-2J | PG-4J | |
|-------------------------------|--|---|--|
| System | Balanced Temperature Control system (BTC system) | | |
| Performance ^{*1} | Temperature range ^{*2} | -70 to +100°C | |
| | Temperature fluctuation | ±0.3°C | |
| | Temperature variation in space | 1.5°C | |
| | Temperature rate of change | Heat up rate: 5.0°C/min. Pull down rate: 2.0°C/min. | Heat up rate: 5.0°C/min. Pull down rate: 1.0°C/min. |
| | Temperature extremes achievement time | Heat up time: from +20 to +100°C 30 min. Pull down time: from +20 to -70°C 65 min. | |
| | Allowable heat load ^{*3} | 700 W | 2200 W |
| Allowable ambient conditions | 0 to +40°C/up to 75%rh | | |
| Construction | Exterior material | Stainless steel plate: 18 Cr stainless steel plate, hairline finish | |
| | Test area material | Stainless steel plate: 18-8 Cr-Ni stainless steel plate, 2B polish | |
| | Heater | Nichrome strip wire heater | |
| | Cooler (dehumidifier) | Plate fin cooler, stainless steel tube cooler | |
| | Air circulator | Cross flow fan | Sirocco fan |
| | System | Mechanical cascade refrigerator system | |
| | Refrigerant | R404A [R-449A is available on request], R508A | |
| Capacity | 306 L | 800 L | |
| Chamber total load resistance | 100 kg | | |
| Dimensions ^{*4} | Inside dimensions (W x H x D mm) | 600 x 850 x 600 | 1000 x 1000 x 800 |
| | Outside dimensions (W x H x D mm) | 1010 x 1690 x 1273 | 1410 x 1853 (1983) x 1593 |
| Weight | 460 kg | 695 kg | |

*1 The performance values are based on IEC60068-3-5:2001 under the conditions of a +23°C ambient temperature, relative humidity of 65±20%rh, rated voltage, and no specimen inside the test area.

*2 Lowest attainable temperature in an ambient temperature of 0 to +30°C

*3 When temperature in chamber is +20°C

*4 Excluding protrusions. Dimension indicated in () includes protrusion.

Low GWP Refrigerant



R-449A is available on request.
(PR/PL/PSL/PU/PG only)