

# Inert Oven

Suitable for Low Oxidation Environment

## DN411I/611I

Operating temp. range

Room temp. +15°C~360°C

Temp. gradient

12°C (at 360°C)  
DN411I

20°C (at 360°C)  
DN611I

Internal capacity

95L  
DN411I

223L  
DN611I

## Suitable for Curing Process in a low oxygen atmosphere

- Suitable for heat insulation test and curing process up to 360°C.
- Simple operation by interactive key input.
- Operation monitor visualizes controller status, temp and temp. changing.
- Incorporates with maximum 99 steps, 99 patterns program controller with repeat function.
- Loaded with total operation hours timer.
- N<sub>2</sub> gas flow amount controllable.



95L  
DN411I

223L  
DN611I

### Specifications

|                                       |                                                                                                                                                                                                                                                                                                   |                                                                 |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Product code                          | 212903                                                                                                                                                                                                                                                                                            | 212904                                                          |
| <b>Model</b>                          | <b>DN411I</b>                                                                                                                                                                                                                                                                                     | <b>DN611I</b>                                                   |
| System                                | Forced Convection                                                                                                                                                                                                                                                                                 |                                                                 |
| Operating temp. range                 | Room Temp. +15 to 360°C                                                                                                                                                                                                                                                                           |                                                                 |
| Temp. adjustment accuracy*1           | ±0.2°C (at 360°C) JTM K05                                                                                                                                                                                                                                                                         |                                                                 |
| Temp. fluctuation*1                   | 1.2°C (at 360°C) JIS                                                                                                                                                                                                                                                                              |                                                                 |
| Temp. uniformity*1                    | ±3°C (at 360°C) JTM K05                                                                                                                                                                                                                                                                           |                                                                 |
| Temp. gradient*1                      | 12°C (at 360°C) JIS                                                                                                                                                                                                                                                                               | 20°C (at 360°C) JIS                                             |
| Max. temp. reaching time*1            | Approx. 60 min.                                                                                                                                                                                                                                                                                   |                                                                 |
| Nitrogen substitution time required*2 | Approx. 30 min. (ordinary temp with oxygen concentration of 2%)                                                                                                                                                                                                                                   | Approx. 70 min. (ordinary temp with oxygen concentration of 2%) |
| Interior                              | Stainless steel plate                                                                                                                                                                                                                                                                             |                                                                 |
| Exterior                              | Cold rolled steel plate with baked melamine resin coating                                                                                                                                                                                                                                         |                                                                 |
| Heat insulator                        | Glass wool + Ceramic fiber                                                                                                                                                                                                                                                                        |                                                                 |
| Heater                                | Stainless pipe heater 3.0kW                                                                                                                                                                                                                                                                       | Stainless pipe heater 4.0kW                                     |
| Sensor                                | K thermocouple for temperature control and independent overload prevention device                                                                                                                                                                                                                 |                                                                 |
| Fan type / Motor                      | Sirocco Fan / Condenser type                                                                                                                                                                                                                                                                      |                                                                 |
| Flow meter, Gas carrier               | Max. flow 30L/min, O.D. 9mm hose nipple                                                                                                                                                                                                                                                           |                                                                 |
| Temp. controller                      | PID control by microcomputer                                                                                                                                                                                                                                                                      |                                                                 |
| Temp. display type                    | Temp. display: Digital display by green LED (resolution:1°C)<br>Setting temp. display: Digital display by orange LED (resolution:1°C)                                                                                                                                                             |                                                                 |
| Timer / Timer resolution              | 1min. ~ 99hrs. 59mins. / 1min.                                                                                                                                                                                                                                                                    |                                                                 |
| Operation function                    | Fixed temp. operation, Auto-start, Auto-stop, Quick auto-stop, Program operation                                                                                                                                                                                                                  |                                                                 |
| Program mode                          | Repeatable operation function up to max 99 steps or 99 patterns.                                                                                                                                                                                                                                  |                                                                 |
| Additional functions                  | Power on and operation time integrating function (up to 65535 hours), Calendar time (24 hours), Calibration offset, Monitor display of integrated power consumption, Total CO <sub>2</sub> emissions and heater operating output, Power failure recovery mode, Save and read out of user settings |                                                                 |
| Heater circuit control                | Triac with Zero-cross                                                                                                                                                                                                                                                                             |                                                                 |
| Safety device                         | Self diagnostic functions (Sensor failure, SSR short circuit, Heater line disconnection, Main relay contact damaged, Automatic overheat prevention), Key lock function, Independent overheating prevention, Electric leakage breaker, Door switch                                                 |                                                                 |
| Internal dimensions                   | W470×D450×H450mm                                                                                                                                                                                                                                                                                  | W620×D600×H600mm                                                |
| External dimensions*3                 | W640×D695×H915mm                                                                                                                                                                                                                                                                                  | W790×D845×H1065mm                                               |
| Internal capacity                     | 95L                                                                                                                                                                                                                                                                                               | 223L                                                            |
| Shelf max. load                       | Approx. 30kg / shelf                                                                                                                                                                                                                                                                              |                                                                 |
| Shelf support qty. / Pitch            | 12pcs. / 30mm                                                                                                                                                                                                                                                                                     | 17pcs. / 30mm                                                   |
| Power source                          | Single phase 220V 15A                                                                                                                                                                                                                                                                             | Single phase 220V 20A                                           |
| Weight                                | Approx. 90kg                                                                                                                                                                                                                                                                                      | Approx. 130kg                                                   |
| Shelf plate / bracket                 | Stainless wire, 2 pcs. / 4 pcs.                                                                                                                                                                                                                                                                   |                                                                 |

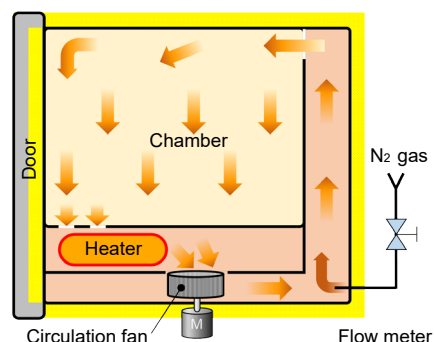
The length of the power cord is about 2 meters outside the unit

\*1 Conditions: temperature and humidity : 23°C±5°C, 65%RH±20%, damper fully closed, no load.  
The environmental temp. range is 5 to 35°C.

\*2 The N<sub>2</sub> flow rate when substituting is about 20L/min. \*3 Do not include protrusions.

### Method

[Side view]



### Control Panel



### Overheat Prevention Device



### N<sub>2</sub> Gas Entrance Port (9mm O.D.)



Forced convection  
circulation

Auto overheat  
prevention

Independent  
overheat protector

Self-diagnosis

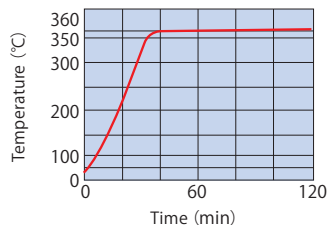
Key lock

Power outage  
compensation

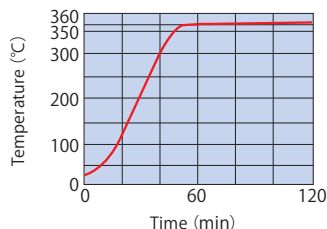
Overcurrent  
ELB

## Temp. Rising Curve (AC200V 50Hz Room temp.23°C)

DN411I

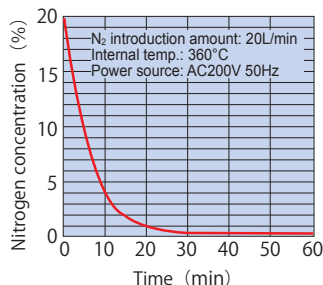


DN611I

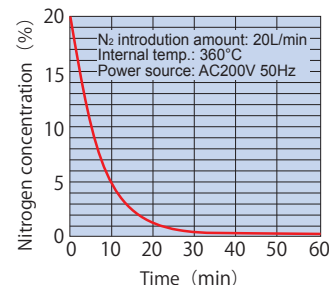


## N<sub>2</sub> Gas Substitution Performance Curve

DN411I



DN611I

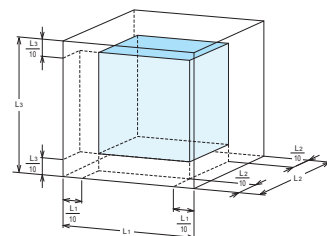


## 9 Points Distribution Reference Data (no load)

|        | Top right back | Top left back | Top right front | Top left front | Bottom right back | Bottom left back | Bottom right front | Bottom left front | Center |
|--------|----------------|---------------|-----------------|----------------|-------------------|------------------|--------------------|-------------------|--------|
| DN411I | 359            | 358           | 363             | 361            | 359               | 359              | 359                | 356               | 359    |
| DN611I | 361            | 357           | 362             | 357            | 359               | 355              | 350                | 350               | 357    |

### Conditions

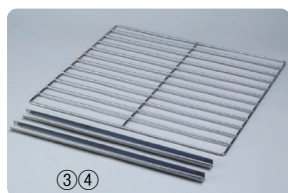
1. Measured by 9 points including 1/10 distance to the the opposite wall and center measuring point according to internal dimensions.
2. Room temperature 23°C, AC200V, 50Hz, Setting at 360°C, Average temp. during stable state.
3. No load, 2 shelf plates installed.



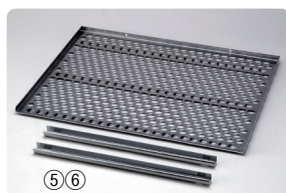
## Optional Items

| No. | Product name                                       |                   | Product code |
|-----|----------------------------------------------------|-------------------|--------------|
| ①   | Stand                                              | OH41 for DN411I   | 212477       |
| ②   |                                                    | OH61 for DN611I   | 212478       |
| ③   | Stainless wire shelf (with bracket 2pcs)           | ODQ 10 for DN411I | 211063       |
| ④   | (loading up to 30 kg/shelf)                        | ODQ 20 for DN611I | 211064       |
| ⑤   | Stainless punching metal shelf (with bracket 2pcs) | ODQ 30 for DN411I | 211098       |
| ⑥   | (loading up to 15kg/shelf)                         | ODQ 40 for DN611I | 211099       |
| ⑦   | *External Communication Adapter set                | OIN90             | 211880       |
| ⑧   | *External Communication terminal                   | ODH16 (RS485)     | 212975       |
| ⑨   | *Temperature output terminal                       | ODH18 (4-20mA)    | 212976       |
| ⑩   | *External alarm output terminal                    | ODH22             | 212977       |
| ⑪   | *Time up output terminal                           | ODH24             | 212978       |
| ⑫   | *Operation signal output terminal                  | ODH26             | 212979       |
| ⑬   | *Event output terminal                             | ODH28             | 212980       |

\* Please specify when ordering main unit.



Stainless wire shelf  
(Weight tolerance 30kg/pc)



Stainless punching metal shelf  
(Weight tolerance 15kg/pc)

## Interior



## Stand (Optional Item)



DN611I+ Stand (Optional Item)

## Dimensions (Unit:mm)

