

# Inert Oven

Suitable for No Oxidation Environment

## DN411IE/611IE

Operating temp. range Room temp. +15°C~360°C

Temp. gradient 12°C (at 360°C) (411IE) / 20°C (at 360°C) (611IE)

Internal capacity 95L (DN411IE) / 223L (DN611IE)

### Suitable for Curing Process in No Oxidation Environment



Inert oven suitable for temperature test and heat treatment in a non-oxidizing environment, by introducing N<sub>2</sub> gas into chamber.

#### ■ Operation and functions

- Heat resistance test and heat treatment of up to 360°C
- Simple operation by interactive key input
- Standard equipped with various operation modes such as program operation and calibration offset function, power failure recovery mode selection, and user configuration information saving
- Repeatable operation function up to maximum 99 steps, 99 patterns controller with repeat function
- N<sub>2</sub> gas flow amount controllable

#### ■ Safety features

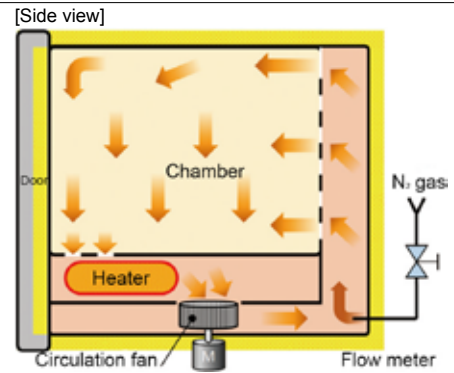
- Enhanced safety countermeasure, including self-diagnostic functions, digital setting independent overheat prevention device and electric leakage breaker
- In case of door opening during operation, fan and heater turn off by door switch

#### ■ Specifications

Model	DN411IE	DN611IE
System	Forced Convection	
Operating temp. range	Room Temp. +15 to 360°C	
Temp. adjustment accuracy	±0.2°C (at 360°C)	
Temp. fluctuation	±0.6°C (at 360°C)	
Temp. uniformity	±3°C (at 360°C)	
Temp. gradient	12°C (at 360°C)	20°C (at 360°C)
Max. temp. reaching time	~60 min.	
Nitrogen substitution time required	~30 min. (ordinary temp with oxygen concentration of 2%)	~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	SUS Pipe Heater 3.0kW	SUS 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 4 digit green LED (resolution:1°C) Setting temp. display: Digital display by 5 digit orange LED (resolution:1°C)	
Timer / Timer resolution	1min. ~ 99hrs. 59mins. or 100hrs. ~ 999hrs. / 1min. or 1hr.	
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 x D450 x H450 mm	W620 x D600 x H600 mm
External Dimensions	W640 x D695 x H915 mm	W790 x D845 x H1065 mm
Internal Capacity	95L	223L
Shelf max. load	~30kg / shelf	
Shelf support qty. / Pitch	12pcs. / 30mm	17pcs. / 30mm
Power source	Single phase 220V 13.5A (no plug, round terminal)	Single phase 220V 19A (no plug, round terminal)
Weight	~90kg	~130kg
Included accessories	Stainless wire shelf plate / bracket: 2 pcs. / 4 pcs.	

\* N<sub>2</sub> introduction rate 20L/min.

#### Method



#### Control Panel



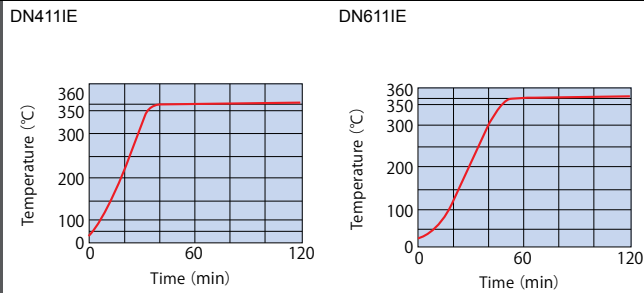
#### Overheat Prevention Device



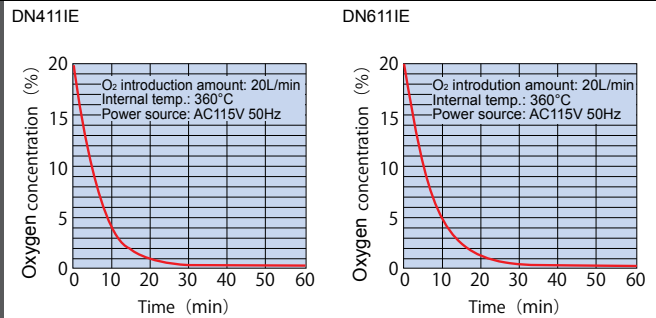
#### N<sub>2</sub> Gas Entrance Port (ø9mm)



## Temp. Rising Curve (AC220V 50Hz Room temp.23°C)



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



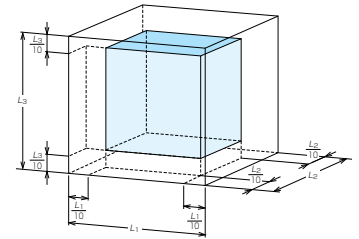
## 9 Points Distribution Reference Data

	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
DN411IE	359	358	363	361	359	359	359	356	359
DN611IE	361	357	362	357	359	355	350	350	357

(°C)

### 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, AC220V, 50Hz, Setting at 360°C, Average temp. during stable state.
3. No load, 2 shelf plates installed.



## Optional Items

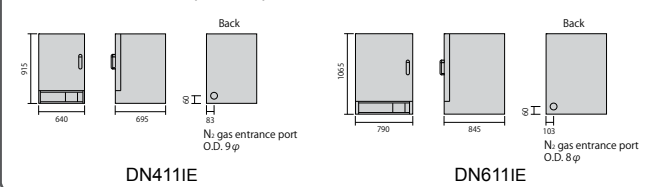
Description	Product code
Stand OH41(for DN411IE)	212477
OH61(for DN611IE)	212478
Shelf (with brackets 2 pcs.)	
Stainless wire (loading up to 30 kg/shelf)	
ODQ10 for DN411IE	211063
ODQ20 for DN611IE	211064
Stainless punching metal shelf (loading up to 15kg/shelf)	
ODQ30 for DN411IE	211098
ODQ40 for DN611IE	211099
*Temperature output terminal ODH18	212976
*External alarm output terminal ODH22	212977
*Time up output terminal ODH24	212978
*Operation signal output terminal ODH26	212979
*Event output terminal ODH28	212980

\* Customized from factory. Please specify when ordering main unit.

## Interior



## Dimensions (Unit:mm)



## ⚠ Attention

- Never use in flammable or explosive gas atmosphere
- Never use explosive or flammable materials
- Caution: High temperature components

## Stand (Optional Item)



DN611IE+ Stand (Optional Item)