

Industrial Constant Temperature Ovens Power Save, Forced Convection

DNE650/650V/670/670V/850/850V

Operating temp. range	Temp. distribution accuracy	Internal capacity
Room temp. +10 deg.C to 260 deg.C	+/-2 deg.C (at 260 deg.C)	150L(DNE650/670)/300L(DNE850)

Eco oven with power consumption cut by 50%, ultra-law power consumption type that supports multi power sources and of a silicon-free is added in the product lineup.



- An ultra energy saving eco oven with power consumption cut by 50% compared to the conventional model (DN).
- Time required to attain the highest temperature has been shortened by up to 15 minutes (with no -load, our DN ratio). Shortened wait time and recovery time minimizes down time and makes work effective.
- Highly hermetic bath construction prevents dusts or foreign matters from entering inside.
- A silicon-free eco oven with its door packing of Viton (R) fluoroelastomer.
(DNE650V/670V/850V)
- This product supports multi power sources. It can be operated simply by connecting to either 100 to 120V(DNE650) or 200 to 240V (DNE670/850) power source.
- Four-fold overheat preventive functions (automatic overheat prevention, heater room overheat prevention, overheat prevention in the bath, and temperature fuse) assure the optimal safety. The product also facilitates the self diagnostic function, the alarm history monitoring function, the key lock function and an over-current electric leakage breaker.
- Abundant functions (external communication that supports RS485/FORWARD, external alarm, time-up, output on the logger) allow upgrading of the system according to the specific application.

■ Specifications

Product code	212857	212881	212858	212882	212859	212883
Model	DNE650	DNE650V	DNE670	DNE670V	DNE850	DNE850V
System	Forced convection					
Performance^{*1}						
Operating temp. range	Room temp. +10 deg.C to 260 deg.C					
Temp. adjustment accuracy	+/-0.2 deg.C (at 260 deg.C)					
Temp. distribution accuracy	+/-2.0 deg.C (at 260 deg.C)					
Time to attain max. temp.	Approx. 65 min.			Approx. 55 min.		
Configuration						
Interior/external material	Stainless steel plate/electrogalvanized steel (epoxy/melamine coated)					
Heater/heat insulator	SUS pipe heater, glass wool					
Heater capacity	100 to 120V 1.56 to 2.16 kW	200 to 240V 1.56 to 2.16 kW		200 to 240V 2.7 to 3.88 kW		
Fan	Sirocco fan					
Fan motor	Condenser 10W			30W		
Source voltage switching	With the multi power source selector switch on the rear panel 30W					
Cable port	One port at the right side: I.D.30 mm					
Door packing	Silicon rubber	Fluoroelastomer	Silicon rubber	Fluoroelastomer	Silicon rubber	Fluoroelastomer
Air supply port	One on the side (heater room side)					
Exhaust port	I.D. 30 mm (with damper) One on the top					
Controller	CR5 Multi functional program controller					
Heater control	SSR control					
Sensor	K-thermocouple (in the bath and heater kiln)					
Functions						
Safety functions	Self diagnostic function (temp. sensor error, heater disconnection, SSR short-circuit, automatic overheat prevention, and other functions of CR5), key lock, program lock, independent overheat protection within the bath, independent heater overheat prevention, over-current electric leakage breaker, temp. fuse					
Other functions	Standard functions: RS485 external communication (supports FORWARD), external alarm, time-up, and output on the logger					
Standards						
Power supply (50/60 Hz)	Single phase: AC100 to 120V, 14 to 16.5A	Single phase: AC200 to 240V, 7 to 8.5A		Single phase: AC200 to 240V, 12.5 to 15A		
Internal capacity	150L			300L		
External dimensions ^{*2}	770 x 696 x 995 mm (W x D x H)			770 x 696 x 1,760 mm (W x D x H)		
Internal dimensions	600 x 500 x 500 mm (W x D x H)			600 x 500 x 1,000 mm (W x D x H)		
Equipment weight	Approx. 90 kg			Approx. 130 kg		
Number of shelves	Stainless steel punching metal x 2			Stainless steel punching metal x 4		
Shelf loading	Approx. 15 kg/each					
Number of shelf steps/shelf pitch	13 steps/30 mm			29 steps/30 mm		

*1 Conditions: temperature and humidity: 23 deg.C+/-5 deg.C, 65%RH+/-20% (no load)

*2 External dimensions do not include protrusions.

■ Control panel CR5



Major functions

Operation modes

1. Fixed operation
2. Fixed auto stop operation
3. Fixed quick auto stop operation
4. Fixed auto start operation
5. Program operation
6. Program auto start operation

Useful functions

- Display switching during operation
- Heater output operation amount display
- Program name setting
- Operation guide function, etc.

■ Internal bath



■ Multi power source selector switch

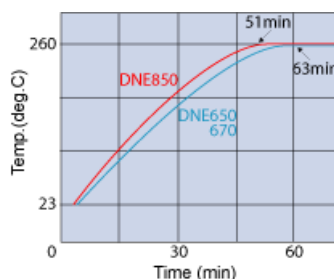


DNE650: 100 to 110V/115 to 120V
DNE670/850: 200 to 220V/230 to 240V

■ Cable port



■ Temp. rise curve (AC 200V at 23 deg.C)



■ Temp. decrease time

Air supply/exhaust ports full open: at 23 deg.C, AC200V
260 deg.C to 40 deg.C

DNE650/670	235 min.
DNE850	217 min.

■ Comparison of maintenance power of DNE650/670/850 with conventional products

Source voltage: AC100V, 200V/ 50Hz Room temp.: 23 deg.C

Unit: Wh

		Conventional products	DNE650/670	Reduced amount (%)	Conventional products	DNE850	Reduced amount (%)
Room temp. to 50 deg.C	Heating (1h)	268	135.9	-49.3	353	258	-26.9
	Heating (3h)	573.8	280.5	-51.1	721	478.9	-33.6
	Stable	150.7	72.8	-51.7	180	110.7	-38.5
Room temp. to 100 deg.C	Heating (1h)	658.4	430.2	-34.7	823	591.1	-28.2
	Heating (3h)	1456.2	793.6	-45.5	1870	1204.6	-35.6
	Stable	398.8	181	-54.6	527	255.7	-51.5
Room temp. to 150 deg.C	Heating (1h)	1008.1	692.4	-31.3	1372	965	-29.7
	Heating (3h)	2291	1307.9	-42.9	3089	2038.4	-34.0
	Stable	638.7	303.3	-52.5	858	385.2	-55.1
Room temp. to 210 deg.C	Heating (1h)	1202.1	899.7	-25.2	1887	1552.9	-17.7
	Heating (3h)	3242.4	1926	-40.6	4459	2866.2	-35.7
	Stable	991.2	470.6	-52.5	1280	632.9	-50.6
Room temp. to 260 deg.C	Heating (1h)	-	934.2	-	-	1901.4	-
	Heating (3h)	-	2455.6	-	-	37050	-
	Stable	-	651.9	-	-	892.6	-

■ Optional items

Remark	Description	Model No.	Product Code
●	RS485-232C conversion adaptor	DNE650/650V/670/670V/850/850V	281126
	Application software FORWARD	DNE650/650V/670/670V/850/850V	281501
	Punching shelf/shelf peg	DNE650/650V/670/670V/850/850V	212266
●	Cable port of I.D. 25mm	DNE650/650V/670/670V/850/850V	281502
●	Cable port of I.D. 50mm	DNE650/650V/670/670V/850/850V	281503
	RM hybrid recorder	DNE650/650V/670/670V/850/850V	281017
	PHR video chart recorder	DNE650/650V/670/670V/850/850V	281019
	T-thermocouple sensor for recorder 2m	DNE650/650V/670/670V/850/850V	281554
	T-thermocouple sensor for recorder 2m (with calibration certificate)	DNE650/650V/670/670V/850/850V	281555
○	ON62 Stand for DNE650/650V/670/670V	DNE650/650V/670/670V	281540
	Stacking support for ODN12 DNE650/670	DNE650/670	281541
	Shelf (with support 2 pcs.) for DNE600/610/650/650V/670/670V/810/850/850V	DNE650/650V/670/670V/850/850V	212266
●	External communication function (RS485)	DNE650/650V/670/670V/850/850V	281027
●	External communication adapter (changeable to RS232C)	DNE650/650V/670/670V/850/850V	281028
●	Temperature output terminal	DNE650/650V/670/670V/850/850V	281029
●	External alarm terminal	DNE650/650V/670/670V/850/850V	281030
●	Time-up output terminal	DNE650/650V/670/670V/850/850V	281031
●	Individual alarm output terminal (4 points output)	DNE650/650V/670/670V/850/850V	281032
●	Sample temperature monitoring terminal (max 3 terminals)	DNE650/650V/670/670V/850/850V	281033
●	Sheath sensor for sample monitoring (K-thermocouple)	DNE650/650V/670/670V/850/850V	281034
●	Wind velocity changeable function	DNE650/650V/670/670V/850/850V	281036

Note:

1. The item marked "●" in the column of "Remark" shall be ordered together with the main unit.
2. The transportation cost will not be required if the order is together with main unit except the item marked "○". In case you order the item marked "○" together with the main unit, please ask Yamato to obtain the correct transportation cost.

■ Dimensional drawing (mm)

