

Economical Forced Convection Oven

Basic non-programmable forced convection oven



DKL301C/311C/401C/411C/601C/611C

Operating temp. range	Room temp. +10°C to 260°C	Temp. distribution accuracy	±2.5°C (at 260°C)	Internal capacity	27L DKL301C/311C	90L DKL401C/411C	150L DKL601C/611C
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Fixed temperature operation

Performance and functions

- Fixed temperature, Quick auto stop, Auto stop, and Auto start operation modes with easy control capabilities
- Settings can be made digitally using the dedicated operation menu keys or the up and down keys
- Calibration offset function as an auxiliary function

Safety features

- Self-diagnostic functions, MCB with over current protector, hydraulic standalone overheat prevention device



27L
DKL301C/311C

90L
DKL401C/411C

Specifications

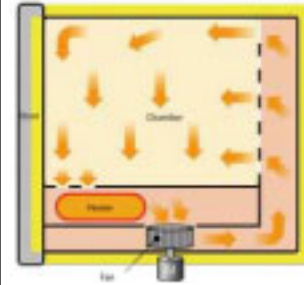
Model	DKL301C/311C	DKL401C/411C	DKL601C/611C
Circulation method	Forced air circulation		
Operating temperature range	Room temp. +10~260°C		
Temp. control accuracy	±1°C (at 260°C)		
Temp. distribution accuracy	±2.5°C (at 260°C)		
Temperature rise time	~90 min (at room temp. ~260°C)		
Interior material	Stainless steel (SUS430)		
Exterior material	Steel plate SPCC (powder coating)		
Heat insulating material	Glass wool		
Heater	SUS304 pipe heater		
	0.8kW	1.2kW	1.5kW
Fan motor	Sirocco fan 10W		
Cable port	30 mm I.D. x1 pc. (right side)		
Exhaust port	30 mm I.D. x2 pcs. (top)		
Temp. controller	PID control by microprocessor		
Temp. setting method	Digital setting by ▲/▼ keys		
Operation functions	Fixed temperature, Quick auto-stop, Auto stop, Auto start		
Additional functions	Calibration offset function		
Heater circuit control	SSR control		
Sensor	K-thermocouple		
Safety device	Self diagnostic functions (temperature sensor error, memory error, auto overheat prevention, measured temperature error), MCB with an over current protector, hydraulic standalone overheat prevention device		
Internal dimensions (W×D×H)	310×310×310 mm	450×450×450 mm	610×500×500 mm
External dimensions (W×D×H)	410×450×680 mm	560×600×820 mm	710×650×880 mm
Internal capacity	27L	90L	150L
Shelf plate with standard load	15kg/piece		
Shelf rest step number	6 steps	9 steps	12 steps
Shelf rest pitch	35mm		
Power source 50/60Hz	AC115V 7.5A / AC220V 4A	AC115V 11A / AC220V 6A	AC115V 13.5A / AC220V 7.5A
Weight	~35kg	~50kg	~65kg
Shelf plate	Stainless steel		
	2 pcs.		
Shelf bracket	4 pcs.		

Performance under the power supply condition of AC 115V and 220V are shown here.
Operating environmental temperature range for this device is 5~35°C



Method

[Side view]



Control Panel



Exhaust Ports (Standard)



Cable Port (Standard)



Optional Items

Description	Product Code
Stand	
For DKL301C/311C ON30C	Q020101001
For DKL401C/411C/601C/611C ON61C	Q020101002
Stacking kit	
For DKL301C/411C OD40C	Q010101001
For DKL601C/611C OD60C	Q010101002
Shelf (1 pc. shelf and 2 pcs. brackets)	
For DKL301C/311C	Q110101001
For DKL401C/411C	Q110101002
For DKL601C/611C	Q110101003
*Cable port	
Ø 25mm	Q110101007
Ø 50mm	Q110101008
Seismic mat	296902

* Please specify when ordering main unit.

Optional Items



Stand

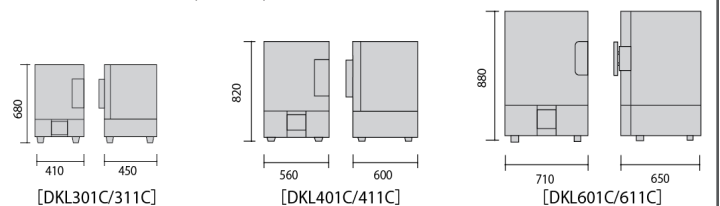


Seismic mat



Shelf (with 2 brackets)

Dimensions (Unit:mm)



⚠ Attention

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

Forced Convection Oven

Programmable Forced Air Convection Ovens

**BEST
SELLER**

**MADE
IN
JP**

**MADE
IN
CH**

DKN302C/312C/402C/412C/602C/612C/812C/912C

Operating temp. range	RT+10°C~260°C DKN300-600 Series	RT+10°C~210°C DKN912C	Temp. distribution accuracy	±2.5°C (at 210°C)	Internal capacity	27L (DKN302C/312C)	90L (DKN402C/412C)	150L (DKN602C/612C)	300L (DKN812C)	535L (DKN912C)
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Standard "Bestseller" ovens - Fully programmable

Standard forced air convection ovens are programmable and come with extended functions and safety features.

Operation and functions

- Bestseller based on excellent performance & affordability
- Superior temperature accuracy
- DKN302C/312C/402C/412C/602C/612C come with observation windows
- Programmable PID controller for easy program settings
- 30-step, 3-pattern program controller with repeat functions
- Fixed setting, programmed, Quick Auto stop, Auto stop, and Auto start operating modes with easy control capabilities
- Increased safety and self-diagnostic function
- Overheating prevention and calibration off-set are possible with auxiliary functions
- Easy to use and maintain
- Built in exhaust ports

Safety features

- Self diagnosis functions (Temperature sensor abnormal, Heater disconnection, SSR-short) Automatic overheating prevention, Electric leakage breaker with over current protection, Key lock function



(Stand optional)

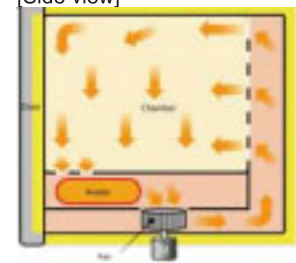
Specifications

Model	DKN302C	DKN312C	DKN402C	DKN412C	DKN602C	DKN612C	DKN812C	DKN912C	
Circulation method	Forced air circulation								
Operating temp. range	Room temp. +10°C to 260°C							RT +10°C to 210°C	
Temp. adjustment accuracy	±1°C (at 210°C)								
Temp. distribution accuracy	±2.5°C (at 210°C)								
Max. temp. reaching time	~90 min.						~60 min.		
Interior/Exterior material	Stainless steel / Cold rolled steel plate with melamine resin baking finish								
Heat insulating material	Glass wool								
Heater	Stainless pipe heater								
	0.8kW		1.2kW		1.5kW		1.5kW x 2		1.8kW x 2
Fan Type / Fan Motor	Sirocco fan, Condenser type motor 10W						1pc / 30W		2pc / 10W
Cable hole	30mm I.D. (on the right side) 1pc.								
Exhaust port	30mm I.D. x 2 (on top)						30mm I.D. x 2 (the back)		
Observation window	180x180mm Chemical strengthening glass x 3		250 x 280mm Chemical strengthening glass x 3				None		
Temp. controller	3 patterns program controller, PID control by microprocessor								
Temp. setting method	Digital setting by UP/DOWN key								
Temp. display	Measurement temp. : Digital display by green LED Setting temp. : Digital display by red LED								
Timer	1 min. to 99 Hrs. 59 min. and 100 Hrs. to 999 Hrs. 50 min. with timer wait function								
Operation function	Fixed temperature operation, Program operation, Auto start, Quick Auto-stop								
Program mode	Program operation : 3 patterns, 30 steps(30 steps×1, 15 steps×2, 10 steps×3) Pattern repeat function								
Additional functions	Calibration off-set function, Key lock, Uninterruptible power for memory								
Heater circuit control	SSR control								
Sensor	K-thermocouple								
Safety device	Self diagnosis functions (temp. sensor abnormal, Heater disconnection, SSR- short, Automatic overheating prevention), Key lock function, Overheat prevention, Electric leakage breaker with over current protection								
Internal dimensions (W×D×H)	300×300×300 mm		450×450×450 mm		600×500×500 mm		600×500×1000mm		1070×500×1000 mm
External dimensions (W×D×H)	410×451×670 mm		560×601×820 mm		710×651×870 mm		710×651×1608mm		1180×651×1616 mm
Internal capacity	27L		90L		150L		300L		535L
Shelf plate with standard load	~15kg/piece								
Shelf rest step number / Shelf rest pitch	9 steps / 30mm		11 steps / 30mm		13 steps / 30mm		29 steps / 30mm		29 steps x 2 / 30mm
Power source 50/60Hz	115V, 7.5A with plug	220V, 4.5A no plug, round terminal	115V, 11A with plug	220V, 6.5A no plug, round terminal	115V, 12.5A with plug	220V, 7A no plug, round terminal	220V, 15A no plug, round terminal	220V, 18A no plug, round terminal	
Weight	~35kg		~50kg		~65kg		~110kg		~190kg
Shelf plate	Stainless steel, 1pc. on the bottom screwed (DKN912C, 2 pcs)								
Included shelf plate / bracket	2 pcs. / 4 pcs.						4 pcs. / 8 pcs.		8 pcs. / 16 pcs.



Method

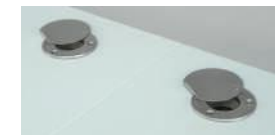
[Side view]



Cable Port (Standard)



Exhaust port (Standard)



Interior



DKN602C



DKN912C

Optional Items

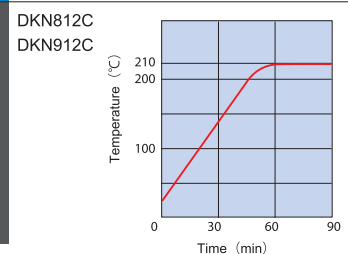
Description	Product code	
ON30 Stand for DKN302C/312C	211180	
ON61 Stand for DKN402C/412C/602C/612C	211856	
Stacking support OD40 for DKN402C/412C	212822	
OD60 for DKN602C/612C	212823	
Shelf (with support 2 pcs)	DKN302C/312C	212068
	DKN402C/412C	212246
	DKN602C/612C/812C	212266
	DKN912C	212490
*Cable port		
25mm Ø	281121	
50mm Ø	281122	
*Temperature output terminal (4-20 mA)	281123	
*External alarm terminal/ time-up output terminal (choose either)	281124	
Seismic mat for DKN 300 to 400 models	296902	

* Please specify when ordering main unit.

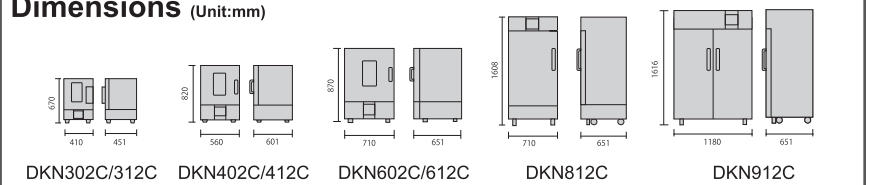
Control Panel



Temp. Rising Curve



Dimensions (Unit:mm)



Attention

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

Forced Convection Oven

Energy Saving Programmable Forced Convection Ovens



DNE401/411/601/611/811/911

Operating temp. range RT +20°C~210°C (DNE401/411/601/611)
RT +15°C~210°C (DNE811/911)

Temp. distribution accuracy ±2.0°C (at 210°C)

Operation Energy saving
Environment friendly

High performance environment friendly eco-oven that reduces power consumption significantly

Operation and functions

- High precision controller allows high performance temperature control and display of CO₂ and power discharge
- Heat tightness and insulation design of the chamber achieves an energy saving rate of about 40% at constant temperature compared to previous models
- Maximum temperature reaching time reduced by 15 minutes (no-load) compared to previous models.
- Program operation with a maximum of 99 steps, 99 patterns repeatable
- Standard equipped with various support functions such as calibration offset, power failure recovery mode, save and access of user setting information, as well as other operation modes
- Data acquisition from internal test device possible because of cable holes
- Easy system upgrade with various option settings

Safety features

- Standard equipped with various self-diagnostic functions, independent overheat prevention device, overcurrent circuit breaker, and key lock function

Specifications

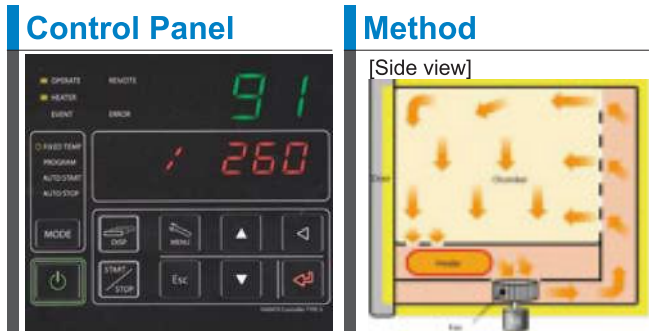


Model	DNE401	DNE411	DNE601	DNE611	DNE811	DNE911
Circulation method	Forced air circulation					
External temp. range	5~35°C					
Temperature control range	Room temperature +20~210°C			Room temperature +15~210°C		
Temp. control accuracy *1	±0.5°C (at 210°C)					
Temp. fluctuation *1	±0.6°C (at 210°C)					
Temp. distribution accuracy *1	±2.0°C (at 210°C)					
Temp. gradient*1	6°C (at 210°C)		8°C (at 210°C)		8°C (at 210°C)	10°C (at 210°C)
Temp. rise time *1	~60 min.		~70 min.		~45 min.	~60 min.
Chamber / Exterior / Insulation	Stainless steel / Chrome-free electro-galvanized steel plate, chemical-proof baked-on finish / Glass wool					
Door	Single swing (left side)					Double doors (from center)
Insulating material	Glass wool					
Heater (Stainless steel pipe)	1.1kW		1.2kW		1.2kW x 2	1.5kW x 2
Fan Type	Fan	Scirocco fan, capacitor motor				Motor
	Motor	10W				30W
						30W x 2
Cable hole (lower right side)	33mm I.D. 1pc.					
Exhaust port	33mm I.D. 2pcs (top)				33mm I.D. 2pcs (rear)	
Caster wheels	--				Free swivel caster wheels (w/o stopper)	
Adjuster	--				Level adjusters (2 at the front)	
Controller	Model V type					
Temp. control / setting system	PID Z control / Digital setting with ▲/▼ keys					
Temp. display	Top screen (Chamber): Green 4 digit LED digital display (1°C resolution) / Bottom screen: Orange 5 digit LED digital display (1°C resolution)					
Other indications	LED indicates temperature patterns for heating/stable/cooling					
Timer	1 min. and 99 Hrs. 59 mins: duration operation, 24 hour setting: time operation					
Operation functions	Fixed temperature, Program operation (max.99 steps, up to 99 patterns repeat operation function), Duration/time select timer operation function (fixed temperature operation, auto-start, auto-stop, quick auto stop, program operation auto start)					
Additional functions	Power on and Integration time function (up to 65,535 hours), Calibration offset, Time display, Display of power consumption, CO ₂ discharge and heater operation, Power failure return mode, User configuration information					
Temperature sensor	K type Thermocouple double sensor (for temperature control and independent overheat prevention device)					
Heater control	Triac with Zero-cross Control					
Control board	Self diagnostic functions (temp. sensor failure detection, TRIAC short circuit, heater line disconnection, fan failure detection, main relay abnormal, automatic overheating prevention, key lock function)					
Earth leakage breaker	Leak Current/Short Circuit/Overcurrent Protection, Rated Current Sensitivity 30mA					
Independent overheat prevention	Set temperature range: 0~250°C					
Internal dimensions (W×D×H)*2	450×450×450 mm		600×500×500 mm		600×500×1000 mm	1090×500×1000 mm
External dimensions (W×D×H)*2	580×645×860 mm		730×695×910 mm		730×695×1660 mm	1220 ×695×1660 mm
Capacity	90L		150L		300L	540L
Weight	~63kg		~77kg		~92kg	~185kg
Included accessories: shelf plate/bracket	2 pcs. / 4 pcs.				4 pcs. / 8 pcs.	8 pcs. / 16 pcs.
Shelf rest step number / Shelf rest pitch	11 steps / 30mm		13 steps / 30mm		29 steps / 30mm	29 steps / 30mm x 2
Withstand load of shelf	~15kg / shelf					
Power supply V±10% 50/60Hz single phase	AC115V 10A with plug	AC220V 5.5A no plug, round terminal	AC115V 11A with plug	AC220V 6A no plug, round terminal	AC220V 11.5A no plug, round terminal	AC220V 14A no plug, round terminal

*1 Temperature Accuracy / Rise time Standard: Testing Machinery Association of Japan. Temperature Fluctuation/Gradient Standard: Japanese Industrial Standard

Performance data above based on 115V or 220V AC supplied power, 23°C±5°C (room temperature), 65%RH ±20% humidity, maximum air speed (FAN setting 10), damper closed, and no process load.

*2 Protrusions excluded



Optional Items

Description	Product code	Model	Applicable units
Stand	211856	ON61	DNE401/411/601/611
	212348	OT42	DNE401/411
	212349	OT62	DNE601/611
Stacking support	212806	ODN26	DNE401/411
	212807	ODN28	DNE601/611
Shelf and bracket set	212246	ODN20	DNE401/411
	212266	ODN22	DNE601/611/811
	212490	--	DNE911
	212946	ODT48	All models
Silicon plug (with one hole)	212947	ODT52	All models
*Cable port, 25mm diameter	281454	ODM36	All models
50mm diameter	281455	ODM38	All models
*Observation window for DNE401/411	281456	ODM40	DNE401/411
*Observation window for DNE601/611	281457	ODM42	DNE601/611
*External communication adapter set	211880	OIN90	All models
*External alarm output terminal	281446	ODM20	DNE401/411/601/611/811
	281447	ODM22	DNE911
*Time-up output terminal / Operation signal output terminal	281448	ODM24	DNE401/411/601/611/811
	281449	ODM26	DNE911
*Event output terminal / Time-up output terminal	281450	ODM28	DNE401/411/601/611/811
	281451	ODM30	DNE911
*Operation signal output terminal	281452	ODM32	DNE401/411/601/611/811
	281453	ODM34	DNE911

* Please specify when ordering main unit.

Interior

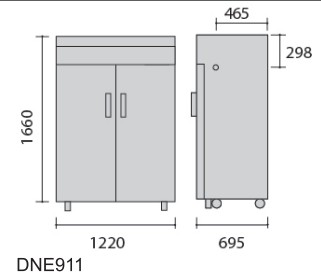
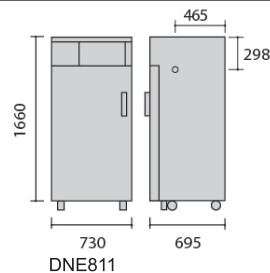
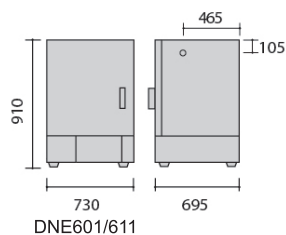
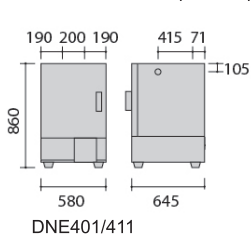


DNE401



DNE911

Dimensions (Unit:mm)



- Attention**
- Never use in flammable or explosive gas atmosphere
 - Never use explosive or flammable material
 - Caution: High temperature components

Forced Convection Oven



MADE



Energy Saving Programmable Forced Convection Ovens with Variable Flow Rate

DNF301-115V/301-220V/401/411/601/611/811/911

Operating temp. range Room temp. +15°C~260°C

Method DNF301/401/411/601/611 Forced convection+Natural convection DNF811/911 Forced convection

Capacity 27L DNF301 90L DNF401/411 150L DNF601/611 300L DNF811 540L DNF911

The first 2 in 1 system in the industry

- Two types of circulation, forced and natural convection, in one unit (compatible with model 300/400/600)
- Eco-oven with improved air velocity control system and adjustable damper
- Program featured to reduce power consumption significantly
- Superior heat tightness and insulation of chamber
- Excellent dust tightness, dust can hardly enter the chamber
- Air velocity changeable in 10 stages using digital setting of controller
- Standard with 99 step program operation with repeat operation, auto start, auto stop and quick auto stop functions
- Adjustable damper position at chamber front to optimize operation
- Fluorescent display, interactive input method, calibration off-set function



Specifications

Model	DNF301-115V / DNF301-220V	DNF401/411	DNF601/611	DNF811	DNF911
Circulation method	Forced convection + Natural convection			Forced convection	
External temp. range	5~35°C				
Temperature set range	0~130°C (Wind velocity: 0), 0~270°C (Wind velocity: 1~10)			0~270°C (Wind velocity: 1~10)	
Temperature control range	RT +25~120°C (Wind velocity: 0), RT +15~260°C (Wind velocity: 1~10)			RT +15~260°C (Wind velocity: 1~10)	
Temp. control accuracy *1	Forced convection	±0.3°C (at 260°C)		Not applicable	
	Natural convection	±0.5°C (at 120°C)	±0.3°C (at 120°C)		
Temp. fluctuation *1	Forced convection	±0.5°C (at 260°C)		Not applicable	
	Natural convection	±1.0°C (at 120°C)	±0.8°C (at 120°C)	±0.6°C (at 120°C)	Not applicable
Temp. distribution precision *1	Forced convection	±2.5°C (at 260°C)		Not applicable	
	Natural convection	±5°C (at 120°C)	±3°C (at 120°C)	Not applicable	
Temp. gradient *1	Forced convection	5°C (at 260°C)	7°C (at 260°C)	8°C (at 260°C)	12°C (at 260°C)
	Natural convection	15°C (at 120°C)	13°C (at 120°C)	Not applicable	
Temp. rise time *1	Forced convection	~70min.	~105min.	~100min.	~60min.
	Natural convection	~20min.	~25min.	Not applicable	
Chamber / Exterior / Insulation	Stainless steel / Cold rolled steel paneling, chemical-proof baked-on finish / Glass wool				
Door	Single swing (left side)				Double doors (opening from center)
Heater (stainless steel tube)	0.8kW	0.6kWx2	0.83kWx2	1.35kWx2	1.65kWx2
Wind velocity adjusting system	10 steps (600~1500rpm) + Wind velocity (0)			10 steps (600~1500rpm)	
Damper	Circulation-Ventilation Manual switching: Interlocked intake and exhaust system (Complete exhaust applicable / Unable to reach 260°C with damper fully open)				
Cable port	Inner diameter: 33mm×1 (right side)				
Exhaust port	Outer diameter: 50mm×1 (back side)				Outer dia.: 50mm×2 (back)
Inlet port	Inner diameter: 33mm×1 (right side)				Inner dia: 33mm×2 (both)
Controller	Model V type				
Temperature control / setting system	PID Z control / Digital setting with ▲/▼ keys				
Temperature display system	Temperature reading display: green 4-digit digital LED / Temperature setting display: orange 5-digit digital LED				
Other indications	LED indicates temperature patterns for heating/stabilizing/cooling				
Timer	1 minute and 99 hours 59 minutes: duration operation, 24 hour setting: time operation				
Operation functions	Fixed temperature operation, Program operation (maximum 99 steps or 99 patterns, with repeat operation function), Timer or clock operation function (Fixed temperature operation w/ auto start/auto stop/quick auto stop, program operation auto start)				
Additional functions	Variable Air Flow Function, Power-on Time and Operation Time Accumulation Monitor (up to 65,535 hours); Calibration Offset; Monitoring Display for Accumulated Power Consumption, Total CO ₂ Emissions, and Heater Operation Output; Power Recovery Mode; Setting Data Backup and Recovery				
Temperature sensor	K type Thermocouple double sensor (for temperature control and independent overheat prevention device)				
Heater control	Triac with Zero-cross Control				
Control board	Self-diagnostic Functions (Detection for Temp. Sensor Failure, TRIAC Short Circuit, Automatic overheating prevention, Heater Line Disconnect, Main Relay Contact Damage), Earth leakage breaker, Fan Motor Failure, Key Lock Function, Independent overheating prevention device				
Earth leakage breaker	Leak Current/Short Circuit/Over-current Protection, Rated Current Sensitivity 30mA				
Door switch	Door open: fan motor and heater circuit OFF, Door close: fan motor and heater circuit ON				
Internal dimensions (W×D×H mm)*2	300×300×300	450×450×450	600×500×500	600×500×1000	1090×500×1000
External dimensions (W×D×H mm)*2	430×495×740	580×645×890	730×695×940	730×695×1685	1220×695×1685
Capacity	27L	90L	150L	300L	540L
Weight	~50kg	~75kg	~90kg	~135kg	~210kg
Number of shelf bracket step / pitch	6 steps/30mm	11 steps/30mm	13 steps/30mm	29 steps/30mm	
Included accessories: shelf plate/bracket	2 pcs. / 4 pcs.			4 pcs. / 8 pcs.	8 pcs. / 16 pcs.
Withstand load of shelf	15kg/shelf				
Power supply V±10% 50/60Hz Single phase	115V 7.5A (with plug) / 220V (no plug) with external transformer	115V 11A (with plug) / 220V 6A (no plug, round terminal)	115V 15A / 220V 8A (no plug, round terminal)	220V 15.5A (no plug, round terminal)	220V 18.5A (no plug, round terminal)

*1. Temperature Accuracy / Rise time Standard: Testing Machinery Association of Japan. Temperature Fluctuation/Gradient Standard: Japanese Industrial Standard
 Performance data above based on 115V or 220V AC supplied power, 23°C±5°C (room temperature), 65%RH ±20% humidity, maximum air speed (FAN setting 10), damper closed, and no process load.
 *2. Protrusions excluded.



Control Panel & Fan Setting



Method

[Side view]

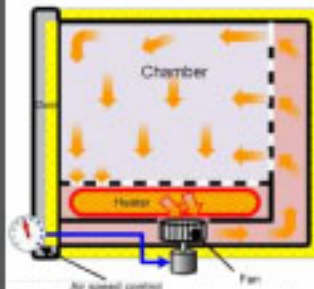


Diagram A: Forced convection

[Side view]

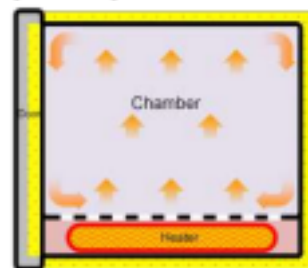
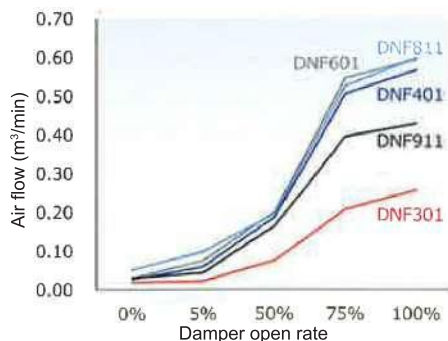


Diagram B: Natural convection

Model	Method
DNF301/401/411/601/611	Diagram A + B
DNF811/911	Diagram A

Damper Switch



Optional Items

Product name	Product code
ON30 Stand for DNF301	211180
ON61 Stand for DNF401/411/601/611	211856
OT42 Stand for DNF401/411	212348
OT62 Stand for DNF601/611	212349
Stacking support for DNF301 ODM44	281458
for DNF401/411 ODN26	212806
for DNF601/611 ODN28	212807
Shelf (with brackets 2 pcs.) for DNF301	212068
for DNF401/411	212246
for DNF601/611/811	212266
for DNF911	212490
*Cable port 25mm Ø	281454
50mm Ø	281455
*External alarm terminal for DNF401/411/811	281466
for DNF301/601/611/911	281467
*Time-up output terminal for DNF401/411/811	281468
for DNF301/601/611/911	281469
*Operation information output terminal for DNF401/411/811	281470
for DNF301/601/611/911	281471
*Event output terminal for DNF401/411/811	281472
for DNF301/601/611/911	281473
*Heat sensor for sample monitoring (K-thermocouple)	212946
*Exhaust duct (50mm Ø with exhaust flange)	
for DNF301	281459
for DNF401/411	281460
for DNF601/611	281461
for DNF811	281462
for DNF911 (50mm Ø with exhaust flange x 2 points)	281463
Seismic mat for DNF401/411/601/611	296902

* Please specify when ordering main unit.

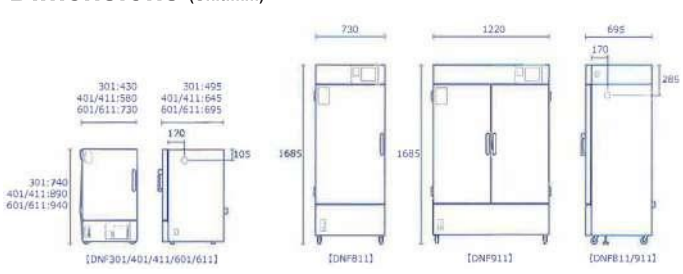
Exhaust Duct (optional)



Interior



Dimensions (Unit:mm)



⚠ Attention

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