

Industrial & Laboratory Constant Temperature Ovens
DNF301/401/411/601/611/811/911



DNF301/401/411/601/611

- Model: DNF301/401/411/601/611
Digital variable wind velocity. Forced and Natural convection "2 in 1" type.
- Model: DNF811/911
Digital variable wind velocity. Forced convection type.
- Incorporates with maximum 99 steps, 99 patterns program controller with repeat function.
- Loaded with Total Operation Hours Timer.
- Exhaust damper enable fast exhaust and cooling of inside.
- Cable port useful for a monitor for temperature during testing is equipped as standard.

Digital variable wind velocity from 0 - 10 steps. Forced and Natural convection "2 in 1" functioned ovens. (Model: DNF301/401/411/601/611) High-performance, energy-saving, programmable constant temperature with air velocity control and manual exhaust dampers.

Type	2 in 1 type: Forced and Natural convection			Forced convection	
	301	401 411	601 611	811	911
Forced convection (Wind velocity setting:1-10)	Operating Temperature Range				
	Room temp. +15 to 260deg.C				
	Temp. Distribution Accuracy ±2.5deg.C(at 260deg.C)				
Natural convection (Wind velocity setting:0)	Operating Temperature Range				
	±0.5deg.C(at 120deg.C)	±0.3deg.C(at 120deg.C)		Not functioned	
	Temp. Distribution Accuracy				
	±5deg.C(at 260deg.C)	±3deg.C(at 120deg.C)		Not functioned	
Internal Capacity (L)	27	90	150	300	540

■ Specifications

Model		DNF301	DNF401	DNF411	DNF601	DNF611	DNF811	DNF911	
Performance									
Circulation method		2 in 1 type: Forced and Natural convection, with manual exhaust damper				Forced convection with manual exhaust damper			
Forced convection (Wind velocity setting:1-10)	Operating temperature range	Room temp. +15 to 260deg.C							
	Temp. control accuracy (JTM K05)	±0.3deg.C(at 260deg.C)							
	Temp. fluctuation (JIS)	±0.5deg.C(at 260deg.C)							
	Temp. distribution accuracy (JTM K05)	±2.5deg.C(at 260deg.C)							
	Temp. gradient (JIS)	5deg.C (at 260deg.C)	7deg.C (at 260deg.C)	8deg.C (at 260deg.C)	12deg.C (at 260deg.C)	6deg.C (at 260deg.C)			
	Max. temp. reaching time	Approx. 70 min.	Approx. 105 min.	Approx. 100 min.	Approx. 60 min.	Approx. 100 min.			
Natural convection (Wind velocity setting:0)	Operating temperature range	Room temp. +25 to 120deg.C							
	Temp. control accuracy (JTM K05)	±0.5deg.C (at 120deg.C)	±0.3deg.C(at 120deg.C)						
	Temp. fluctuation (JIS)	±1deg.C (at 120deg.C)	±0.8deg.C (at 120deg.C)	±0.6deg.C (at 120deg.C)					
	Temp. distribution accuracy (JTM K05)	±5deg.C (at 120deg.C)	±3deg.C(at 120deg.C)						
	Temp. gradient (JIS)	15deg.C (at 120deg.C)	13deg.C(at 120deg.C)						
	Max. temp. reaching time	Approx. 20 min.	Approx. 25 min.					Not functioned	
Components									
Interior/Exterior material		Stainless steel /Electro-galvanized steel sheet with epoxy and melamine resin baking finish							
Heat insulating material		Glass wool							
Heater		0.8 kW	0.6 kW×2	0.83 kW×2	1.35 kW×2	1.65 kW×2			
Cable hole		33mm I.D. (Right) x 1pc.							
Air in-take hole		33mm I.D. (Right) x 1pc.					33mm I.D. (Right and Left) x1pc. each		
Exhaust port		50mm I.D. (Back) x 1pc.					50mm I.D. (Back) x 2pc.		
Controller									
Temp. controller		PID control by microprocessor							
Temp. setting method		Digital setting by UP/DOWN key							
Timer display range		Fixed value operation for 1 min. to 99 hr 59 min. and 24hr. setting							
Operation function		Fixed temp., Auto-start, Auto-stop, Quick auto stop, program (Max.99 steps, 99 patterns, repeat)							
Additional functions		Calendar timer (max. 24 Hrs.), Integration time (max. 65535Hrs.), Clock, Calibration off-set, Display the amount of Power consumption/CO2 discharge/Heater operation amount, Power failure recovery mode, User setting information save and recall, Wind velocity changeable function							
Sensor		K-thermocouple x 2pcs.							
Safe Device									
Safety countermeasures		Self diagnosis functions(Sensor, Fan, Heater, Relay, Triac, Automatic overheat prevention), Independent overheat prevention, Key lock function, Electric leakage breaker, Door switch							
Standard									
Internal dimensions (W×D×Hmm)	300	450	600	600	1,090				
	×300	×450	×500	×500	×500				
	×300	×450	×500	×1,000	×1,000				
External dimensions (W×D×Hmm)	430	580	730	730	1,220				
	×495	×645	×695	×695	×695				
	×740	×890	×940	×1,685	×1,685				
Internal capacity	27 liters	90 liters	150 liters	300 liters	540 liters				
Shelf plate with standard load	Approx. 15kg/piece								
Shelf rest step number	6 steps	11 steps	13 steps	29 steps	29 steps x2				
Shelf rest pitch	30 mm								
Power source 50/60Hz	AC 100V	AC 100V	AC200V	AC 100V	AC200V	AC200V	AC200V		
	single phase	single phase	single phase	single phase	single phase	single phase	single phase		
	9A	13A	6.5A	17.5A	9A	14.5A	17.5A		
Weight	Approx. 50 kg	Approx. 75 kg	Approx. 90 kg	Approx. 135 kg	Approx. 210 kg				
Accessories									
Shelf (Stainless punching metal)		2 pcs.				4 pcs.	8 pcs.		
Shelf support		4 pcs.				8 pcs.	16 pcs.		

* The performance shown here is the value under the condition of the Damper fully closed, the Ambient temperature 23deg.C±5deg.C and the Humidity 65%RH±20%.

* The projection is not included for Internal dimensions and External dimensions.

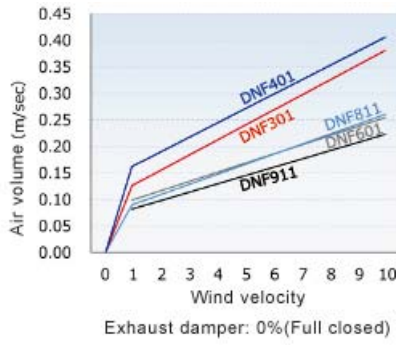
■ Control Panel



■ Interior

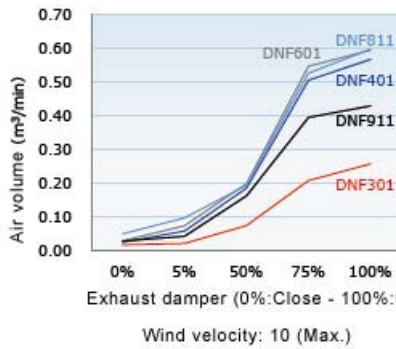


■ Variable wind velocity (Average)



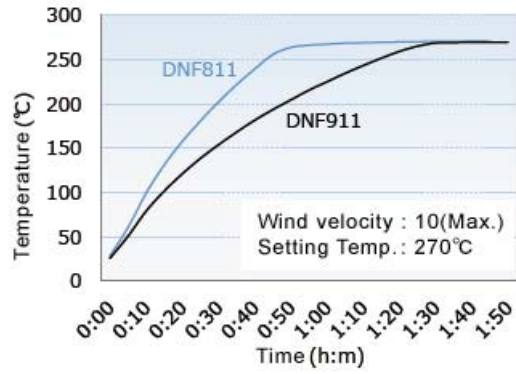
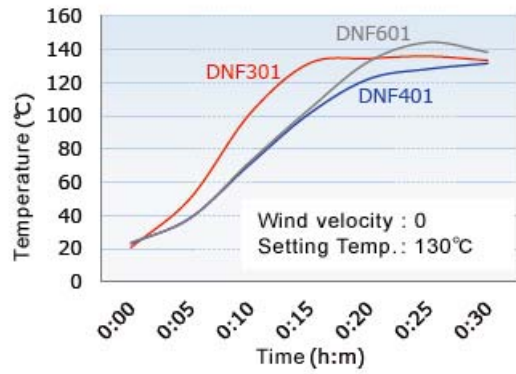
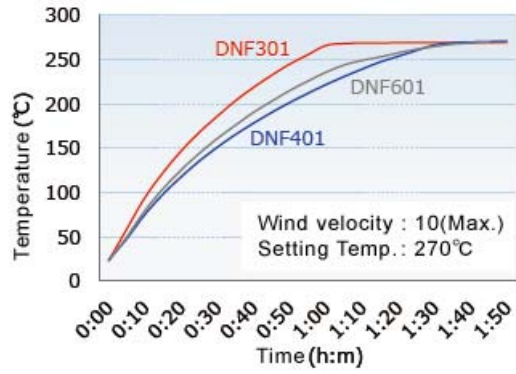
Wind velocity setting
 2in1 type : 0 ~ 10
 DNF811/911 : 1 ~ 10

■ Exhaust damper opening (Air volume)

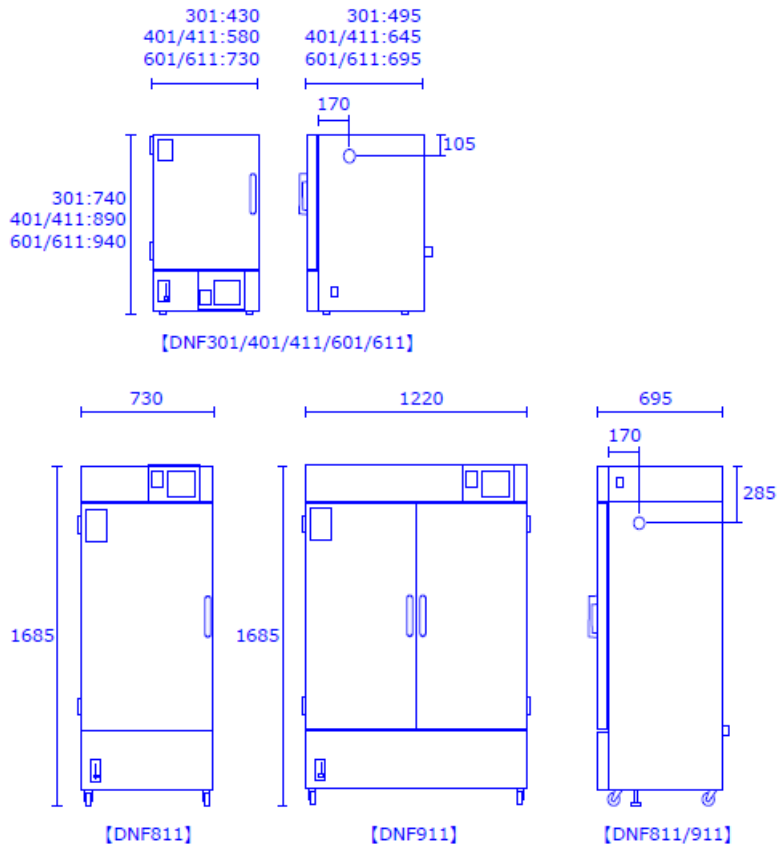


Exhaust damper (0%:Close - 100%:Open)
 Wind velocity: 10 (Max.)

■ Temp.Rising Curve



■ Dimensions (mm)



■ Optional items

Remark	Description	Option Model	Main Unit Model No.	Item Code
○	Stand	ON30	DNF301	211180
○	Stand	ON61	DNF401/411/601/611	211856
○	Stand	OT42	DNF401/411	212348
○	Stand	OT62	DNF601/611	212349
	Stacking support	ODM44	DNF301	281458
	Stacking support	ODN26	DNF401/411	212806
	Stacking support	ODN28	DNF601/611	212807
	Stainless punching metal shelf (loading up to 15kg/shelf)	-	DNF301	212068
	Stainless punching metal shelf (loading up to 15kg/shelf)	-	DNF401/411	212246
	Stainless punching metal shelf (loading up to 15kg/shelf)	-	DNF601/611/811	212266
	Stainless punching metal shelf (loading up to 15kg/shelf)	-	DNF911	212490
●	Cable port 25mm dia	ODM36	DNF601/611/811/911	281454
●	Cable port 50mm dia	ODM38	DNF601/611/811/911	281455
●	External communication terminal (RS485)	ODM56	DNF401/411/811	281464
●	External communication terminal (RS485)	ODM58	DNF301/601/611/911	281465
●	External communication adapter set	OIN90	DNF Series	211880
●	External Alarm Output Terminal	ODM60	DNF401/411/811	281466
●	External Alarm Output Terminal	ODM62	DNF301/601/611/911	281467
●	Timeup Output Terminal	ODM64	DNF401/411/811	281468
●	Timeup Output Terminal	ODM66	DNF301/601/611/911	281469
●	Operation Signal Output Terminal	ODM68	DNF401/411/811	281470
●	Operation Signal Output Terminal	ODM70	DNF301/601/611/911	281471
●	Event Output Terminal	ODM72	DNF401/411/811	281472
●	Event Output Terminal	ODM74	DNF301/601/611/911	281473
	Additional sensor (sheath sensor)	ODT48	DNF Series	212946
	Silicon plug (with one hole)	ODT52	DNF Series	212947
●	Digital recorder, 6 points, sensors are not included	YHR150	DNF Series	281571
●	Digital recorder, 6 points, sensors are not included	YHR250	DNF Series	281570
	Cable for Recorder (YHR150/250) and External communication function	ODM76	DNF Series	281474
●	Exhaust duct (50mm dia with exhaust flange)	ODM46	DNF301	281459
●	Exhaust duct (50mm dia with exhaust flange)	ODM48	DNF401/411	281460
●	Exhaust duct (50mm dia with exhaust flange)	ODM50	DNF601/611	281461
●	Exhaust duct (50mm dia with exhaust flange)	ODM52	DNF811	281462
●	Exhaust duct (50mm dia with exhaust flange)	ODM54	DNF911	281463

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.

Stand



ON Model



OT Model

Stacking support



Exhaust duct (50mm dia with exhaust flange)



Shelf (with 2 support)



Stainless Punching Metal (Weight Tolerance 15kg/pc)