Legacy Lab Supplies

PRODUCT BROCHURE · YAMATO SCIENTIFIC

Fine Oven Programmable 91 L, 360 °C

SKU DH-412 · Thermal Processing · Ovens

QUICK VIEW

The Yamato DH-412 is a 91 L forced-air-circulation "fine oven" with high-accuracy temperature control to 360 °C and ±0.2 °C adjustment accuracy. 15% below MSRP.

SHIP WEIGHT
247 lb

SOURCING
Authorized U.S. distributor

Fine Oven

High accuracy temperature control

DF412/612 DH412/612

Operating temp. range	Temp. distribution accuracy	Internal capacity
Room temp. +15~260°C(DF) Room temp. +15~360°C(DH)	±1.5°C(at 260°C) (DF) / ±2.5°C (at 360°C) (DH)	91L (412 model) 216L (612 model)

Circulates uniformed heated air in a horizontal air flow pattern

Highly reliable and accurate oven with improved visibility and operability of control panel

Operation and functions

- Precise temperature stability & uniformity
- Standard equipped with adjustable air speed function and displays of power consumption, CO_2 emission and heat timer
- Enhanced program operation function (maximum 99 steps, 99 patterns, repetitive operation function)
- Improved safety with fan motor error detection
- Exhaust damper allows quick exhaust and cooling of inside chamber
- Equipped with exhaust and cable ports

Safety features

- Self-diagnosis circuit (abnormal temp. sensing, heater disconnection, auto overheat prevention, SSR short circuit), overheat protector, earth leakage breaker, key lock, etc.

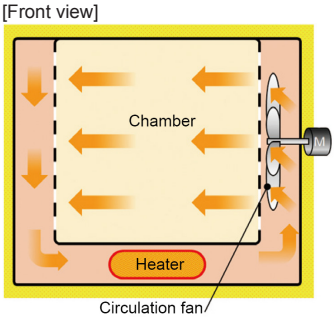
Specifications

Model	DF412	DF612	DH412	DH612
Circulation method	Forced air circulation and ventilation			
Operating temp. range *1	Room temp.+15°C~260°C		Room temp.+15°C~360°C	
Temp. adjustment accuracy *1	±0.1°C (at 260°C)		±0.2°C (at 360°C)	
Temp. distribution accuracy *1	±1.5°C (at 260°C)		±2.5°C (at 360°C)	
Max temp. reaching time *1	~40 min. (reaches 260°C when setting at 270°C)		~50 min. (reaches 360°C when setting at 370°C)	
Temp. control / setting	PID Z control / Digital setting with ▲/▼ keys			
Temp. 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 display range	Fixed value operation for 1 min. to 99 hrs. 59 mins. 24 hr time system: clock operation			
Operation functions	Fixed temperature, auto start, auto stop, program (max. 99 steps or 99 patterns with repeat operation)			
Additional functions	Variable air flow function, power on time and timer accumulation monitor (up to 65535 hrs), calibration offset, power consumption display, total CO_2 emissions and heat operation output, power failure recovery mode, setting data backup and recovery			
Sensor	Double K-thermocouple			
Heater / heater control	Stainless pipe heater with fan / Triac with zero-cross control			
Heater capacity	2.1kW	3.0kW	2.7kW	3.75 kW
Blower fan (motor)	Axial flow fan (capacitor motor: 20W)			
Cable port	I.D. 33 mm X 1 pc. (rear)			
Interior / Exterior / Insulation	Stainless steel / Chrome-free electro-galvanized steel sheet metal, chemical-proof baked-on finish / Glass wool			
Door	Single swing (left side)			
Exhaust port	Automatic exhaust damper I.D. 80 mm (rear panel)			
Safety device	Self-diagnostic functions (temp. sensor error, TRIAC short circuit, heater disconnection, SSR short-circuit, fan motor failure, main relay contact damage and overheating), key lock function, door switch (door open, fan motor and heater circuit OFF / door close: fan motor and heater circuit ON), independent overheat prevention (temp. setting range: 0~300°C for DF and 0~400°C for DH)			
Earth leakage breaker	15A	20A	20A	30A
	Leak current/short circuit / Over-current protection, rated current sensitivity 30mA			
Internal dimensions (mm)(WxDxH) *2	450×450×450	600×600×600	450×450×450	600×600×600
External dimensions (mm)(WxDxH) *2	1050×630×850	1,200×780×1000	1050×630×850	1200×780×1000
Internal capacity	91L	216L	91L	216L
Shelf max. load	~30kg / pc			
Shelf support qty. / pitch	9 steps / 45mm	9 steps / 60mm	9 steps / 45mm	9 steps / 60mm
Power source (single phase)	AC 220V 12.5A *no plug, round terminal*	AC 220V 17.5A *no plug, round terminal*	AC 220V 15.5A *no plug, round terminal*	AC220V 17.5A *no plug, round terminal*
Weight	~112kg	~156kg	~112kg	~156kg
Shelf / bracket	2 pcs. / 4 pcs.	3 pcs. / 6 pcs.	2 pcs. / 4 pcs.	3 pcs / 6 pcs

*1. Performance data above based on rated source voltage, single phase 220V AC ±5%, supplied power, 23°C±5°C (room temperature), 65%RH ±20% humidity, 86kPa atomospheric pressure, exhaust damper closed, and no sample load.
*2. Protrusions excluded.

Method

[Front view]

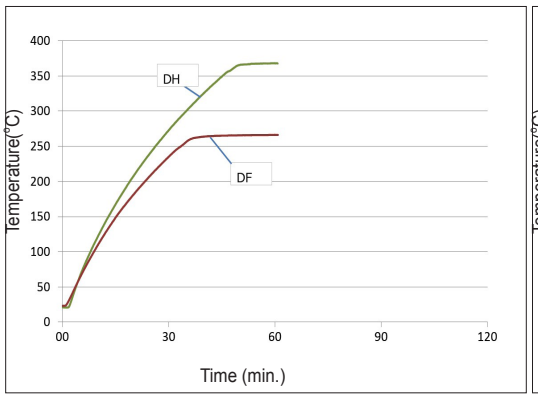


Control Panel

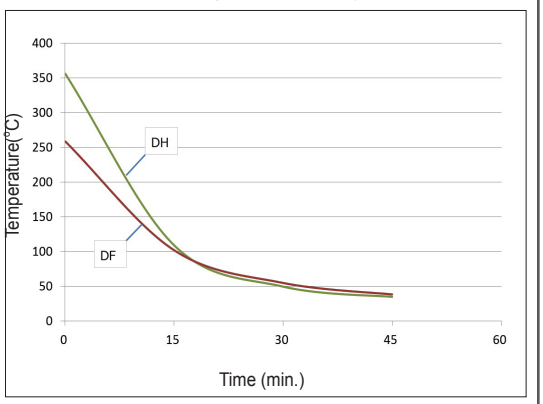
Interior

Performance

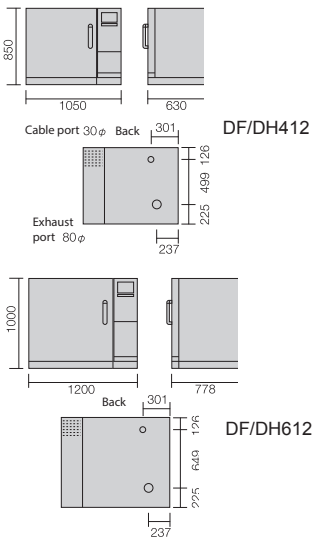
DH temp. rising time



DH temp. declining time (damper fully open)



Dimensions (Unit:mm)



Optional Items

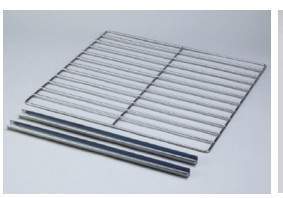
(1) Exhaust duct (213704)
(2) Emergency stop switch (213709)
(3) Paperless recorder (Built-in) (213707)
(4) Stand (with casters) (415467)

Description	Product code	Model	Applicable units
Stand			
without caster	415464	OP43	DF/DH412
	415465	OP63	DF/DH612
with caster wheels and caster stopper in front	415466	OP46	DF/DH412
	415467	OP66	DF/DH612
Stacking support	213700	ODF48	All models
Shelf with brackets - Stainless steel wire (loading up to 30kg/shelf)	211063	ODQ10	DF/DH412
	211064	ODQ20	DF/DH612
Shelf with brackets - Stainless steel punching (loading up to 15 kg/shelf)	211098	ODQ30	DF/DH412
	211099	ODQ40	DF/DH612
Shelf with brackets - Stainless steel mesh (loading up to 15 kg/shelf, 30 mm deep / designed to be stacked on std stainless steel wire shelves)	212924	ODT12	DF/DH412
	212925	ODT14	DF/DH612
Sheath sensor (K thermocouple)	212946	ODT48	All models
Silicon stopper (for 1 opening)	212947	ODT52	DF models only
*External communication adapter	211880	OIN90	All models
*External communication terminal (RS485)	213712	ODF72	All models
*Temp. output terminal (4-20mA)	213713	ODF74	All models
*External alarm output terminal	213714	ODF76	All models
*Time-up output terminal	213715	ODF78	All models
*Operation signal output terminal	213716	ODF80	All models
*Event output terminal	213717	ODF82	All models
*Emergency stop switch	213708	ODF64	DF/DH412
*Emergency stop switch	213709	ODF66	DF/DH612
*Auto damper	213706	ODF60	All models
*Paperless recorder (built-in)	213707	ODF62	All models
*Exhaust duct (80mm dia)	213703	ODF54	DF/DH412
*Exhaust duct (80mm dia)	213704	ODF56	DF/DH612
*Exhaust port flange	281069	ODF46	All models
*Observation window	213701	ODF50	DF412
*Observation window	213702	ODF52	DF612
*Power cord ~8m.	213710	ODF68	DF/DH412
*Power cord ~8m.	213711	ODF70	DF/DH612
*Cable port			
25mm diameter (for top)	213718	ODF84	All models
50mm diameter (for top)	213719	ODF86	All models
25mm diameter (for rear)	213720	ODF88	All models
50mm diameter (for rear)	213721	ODF90	All models

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

Shelf / Bracket

Stainless steel punching shelf



Stainless steel wire shelf

Stainless steel mesh shelf
(Placed on top of standard shelves)

⚠ Attention

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