

Industrial & Laboratory Fine Ovens

(With high accuracy temperature control and exhaust damper)

DF412/612 & DH412/612



Highly reliable accuracy oven with simple settings for various temperature characteristics test that require complicated programming.

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|---|
| Operating temp. range |
| Room temp. + 15 to 260deg.C(DF) /Room temp. + 15 to 360deg.C(DH) |
| Temp. distribution accuracy |
| ±1.5deg.C (at 260deg.C) (DF) /±2.5deg.C (at 360deg.C) (DH) |
| Internal capacity |
| 91L / 216L |

- Simple Operation by Interactive Key Input.
- Operation Monitor visualizes Controller Status, Temp and Temp. Changing.
- Incorporates with maximum 99 steps, 99 patterns program controller with repeat function.
- Loaded with Total Operation Hours Timer.
- Exhaust damper allows quick exhaust and cooling of inside.
- Accumulated timer function useful for maintenance and management is equipped as standard.
- Cable port useful for a monitor for temperature during testing is equipped as standard.

■ Specifications

| Product code | | 211780 | 211781 | 211782 | 211783 |
|----------------------------|---------------------------------------|---|-------------------------------|-------------------------------|-------------------------------|
| Model | | DF412 | DF612 | DH412 | DH612 |
| System | | Forced convection and ventilation | | | |
| Performance | Operating temp. range | Room temp. + 15 to 260deg.C | | Room temp. + 15 to 360deg.C | |
| | Temp. control accuracy (JTM K05) | ±0.1deg.C (at 260deg.C) | | ±0.2deg.C (at 360deg.C) | |
| | Temp. fluctuation (JIS) | ±0.5deg.C (at 260deg.C) | | ±1.0deg.C (at 360deg.C) | |
| | Temp. distribution accuracy (JTM K05) | ±1.5deg.C (at 260deg.C) | | ±2.5deg.C (at 360deg.C) | |
| | Temp. gradient (JIS) | ±10deg.C (at 260deg.C) | | ±12deg.C (at 360deg.C) | |
| | Time to attain max. temp. | Approx. 50 min. (to 260deg.C) | | Approx. 60 min. (to 360deg.C) | |
| Configuration /Functions | Temp. control system | PID control with a micro computer | | | |
| | Temp. and time setting system | Digital Setting by UP/DOWN Key | | | |
| | Timer display range | Fixed value operation for 1 min. to 99 hr 59 min. and 24hr. setting | | | |
| | Operation and manipulation functions | 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 | Double K-thermocouple | | | |
| | Heater | Stainless pipe heater with a fan | | | |
| | Nominal heater capacity | 2.1kW | 3.0kW | 2.7kW | 3.75kW |
| | Blower fan (motor) | Axial flow fan (capacitor motor: 20W) | | | |
| | Cable port | I.D. 33 mm (rear) | | | |
| | Heat insulator | Glass wool | | | |
| Other additional mechanism | Exhaust damper (manual) | | | | |
| Safety device | | Self diagnosis functions(Sensor, Fan, Heater, Relay, Triac, Automatic overheat prevention), Independent overheat prevention, Key lock function, Electric leakage breaker, Door switch | | | |
| Standards | Internal dimensions (mm)(WxDxH) | 450×450×450 | 600×600×600 | 450×450×450 | 600×600×600 |
| | External dimensions (mm) (WxDxH) | 1,050×630×850 | 1,200×780×1000 | 1,050×630×850 | 1,200×780×1000 |
| | Internal volume | 91L | 216L | 91L | 216L |
| | Withstand load of shelf board | 30 kg/unit | | | |
| | No.of shelf stages/peg pitch | 9 stages/45 mm | 9 stages/60 mm | 9 stages/45 mm | 9 stages/60 mm |
| | PS (50/60) Hz rated current | Single phase AC200V 11A (15A) | Single phase AC200V 16A (20A) | Single phase AC200V 14A (20A) | Single phase AC200V 20A (30A) |
| | Weight | Approx. 112 kg | Approx. 156 kg | Approx. 112 kg | Approx. 156 kg |
| Accessories | Shelf | Stainless wire | | | |
| | Shelf support | 2 | 3 | 2 | 3 |
| | Shelf support | 4 | 6 | 4 | 6 |

■ Internal chamber

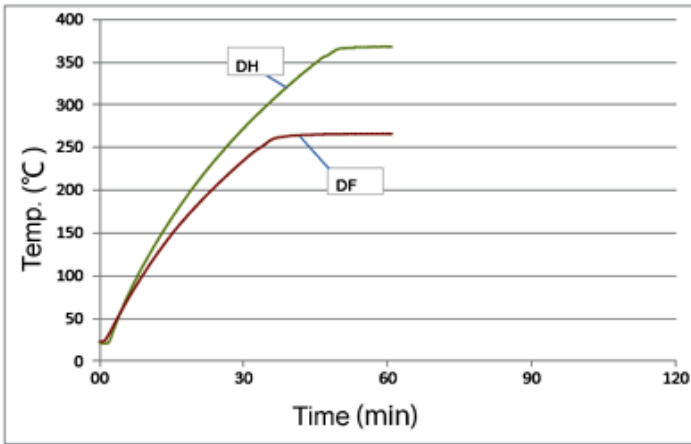


■ Control panel

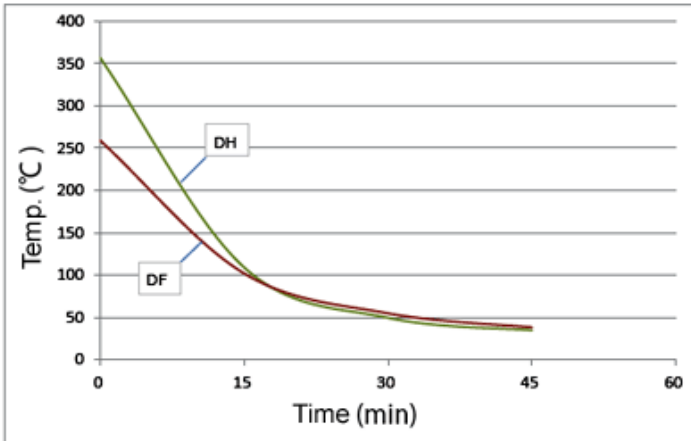


■ Temperature rising curve

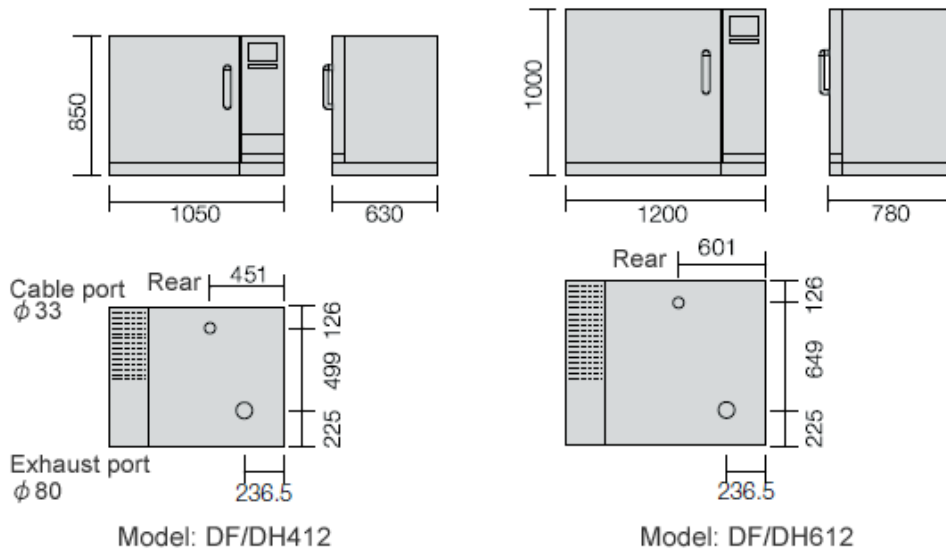
Temperature rising curve



Temperature falling curve (Damper fully opened)



■ Dimensional drawing (unit: mm)



■ Optional items

| Remark | Description | Model No. | Product Code |
|--------|---|--------------|--------------|
| | Stand OP43 (without caster) | DF/DH 412 | 415464 |
| | Stand OP63 (without caster) | DF/DH 612 | 415465 |
| | Stand OP46 (with front side caster with stopper) | DF/DH 412 | 415466 |
| | Stand OP66 (with front side caster with stopper) | DF/DH 612 | 415467 |
| | Stacking support | DF/DH Series | 213700 |
| | Stainless wire shelf (loading up to 30 kg/shelf) | DF/DH 412 | 211063 |
| | Stainless wire shelf (loading up to 30 kg/shelf) | DF/DH 612 | 211064 |
| | Stainless punching metal shelf (loading up to 15kg/shelf) | DF/DH 412 | 211098 |
| | Stainless punching metal shelf (loading up to 15kg/shelf) | DF/DH 612 | 211099 |
| | Stainless mesh basket shelf (loading up to 15 kg/shelf) | DF/DH 412 | 212924 |
| | Stainless mesh basket shelf (loading up to 15 kg/shelf) | DF/DH 612 | 212925 |
| ● | Observation window (for DF Type only) | DF 412 | 213701 |
| ● | Observation window (for DF Type only) | DF 612 | 213702 |
| ● | Automatic damper : 5 steps : 5%-25%-50%-75%-100% | DF/DH Series | 213706 |
| ● | Exhaust duct (80mm dia) | DF/DH 412 | 213703 |
| ● | Exhaust duct (80mm dia) | DF/DH 612 | 213704 |
| ● | Flange for exhaust port | DF/DH Series | 281069 |
| ● | Emergency stop switch | DF/DH 412 | 213708 |
| ● | Emergency stop switch | DF/DH 612 | 213709 |
| ● | Recorder (6 points type) | DF/DH Series | 213707 |
| ● | Power cord, 8m. | DF/DH 412 | 213710 |
| ● | Power cord, 8m. | DF/DH 612 | 213711 |
| ● | External communication terminal (RS485) | DF/DH Series | 213712 |
| ● | External communication adapter set | DF/DH Series | 211880 |
| ● | Temperature output terminal (4-20mA) | DF/DH Series | 213713 |
| ● | Abnormal alarm display | DF/DH Series | 213714 |
| ● | Timeup Output Terminal | DF/DH Series | 213715 |
| ● | Operation Signal Output Terminal | DF/DH Series | 213716 |
| ● | Event Output Terminal | DF/DH Series | 213717 |
| | Additional sensor (sheath sensor) | DF/DH Series | 212946 |
| | Silicon plug (with one hole, for DF Type only) | DF Series | 212947 |
| ● | Cable port, 25mm dia (Top) | DF/DH Series | 213718 |
| ● | Cable port, 50mm dia (Top) | DF/DH Series | 213719 |
| ● | Cable port, 25mm dia (Rear) | DF/DH Series | 213720 |
| ● | Cable port, 50mm dia (Rear) | DF/DH Series | 213721 |

Note:

The item marked " ● " in the column of "Remark" shall be ordered together with the main unit.

Shelf (with 2 support)



Stainless Wire (Weight Tolerance 30kg/pc)



Stainless Punching Metal (Weight Tolerance 15kg/pc)



Stainless mesh basket shelf (loading up to 15kg/shelf)