



DFO-Series, 36 Liter, 80 Liter, 150 Liter, 240 Liter Ovens

DFO Series units are primarily used in applications needing rapid drying and sterilization. Totally homogenous temperature distribution and/or rapid dynamic response. This modern range of ovens is available in 4 sizes.

DFO Series offers excellent uniformity and stability & are used for many applications as Glassware drying, warming, sterilizing, ageing, curing, softening, annealing, preheating and testing, drying slides. The inner case is constructed from polished stainless steel.

All units are provided with wire plated shelves with multi-position settings.

All models are with fan assisted air circulation, the chamber ventilation and exhaust vent are easily adjustable.

Wide choice of control options is available, PID controller & timer is fitted as standard with dual display of measured value and setpoint.

Options:

- 38 mm cable port
- Gas inlet
- 5 programs of 8 segments model: 3216CP
- 4 programs of 16 segments model: 2416P4
- RS-232 / 485 communication model: 3216E



DFO-36

Specifications:

Model	DFO-36	DFO-80	DFO-150	DFO-240
Temp. range	Room temperature - 250°C			
Temp. constancy	±0.1°C			
Temp. uniformity	±2%			
Temp. control	PID			
Temp. sensor	Thermocouple K			
Heater: Oven	1100W	1500W	1800W	2200W
Inside Material	S.S-430			
Timer	99hr 59min			
Window (mm)	W200xH300			W200xH500
Safety devices	Short circuit breaker, over heat protector, sensor abnormality			
Inside dimensions (mm)	W400xD300xH300	W500xD400xH400	W600xD500xH500	W600xD500xH800
Outside dimensions (mm)	W525xD420xH595	W620xD520xH620	W720xD620xH720	W720xD620xH1020
Capacity (Liters)	36	80	150	240
Shelves	2			3
Weight	34kg	47kg	60kg	76kg



DFO-N Series, 50 Liter, 70 Liter, 140 Liter, 240 Liter Ovens

Precise hot-air drying ovens, sterilizing in one unit. Micro-processor based temperature controller and zero hysteresis infrared wire heater for stability up to $\pm 0.1^\circ\text{C}$. Silent hot conditioned axial fan and the unique design of air circulation for uniformity. Patented ventilator featured with safe & easy access for exhausting of damp and fume, fast cool-down and ultra-low intrinsic temperature close to ambient. Available with power-on modes of standby and auto restart after power failure for additional reliable and uninterrupted operation. Bright cool white temperature screen, easy access symbolic key icon and status display. Hair-style polished stainless steel interior and rounded corner bottom for easy cleaning and long service life. Adjustable shelves for more space & different heights.

Applications:

Applicable to drying, burning, sterilizing and aging in fields of medical Is & pharmaceuticals, life science, agriculture, food industries and, electric and electronics



Specifications:

Model	DFO-50N	DFO-70N	DFO-140N	DFO-240N
Temp. range	Room temperature 5°C ~ 260°C			
Temp. constancy	$\pm 0.1^\circ\text{C}$ ~ 0.3°C			
Temp. uniformity	± 1.5 ~ 2.0%			
Temp. control	PID			
Heater: Oven	950W		1500W	2100W
Inside Material	SUS-304, hair style polishing			
Timer	Auto start-up, Auto shut-up			
Safety devices	Protection and warning against short-open-circuit of temperature sensor High-temperature cutout and low-temperature alarm Independent over temperature cutout (STB), RCD ATC (Absolute Temperature Calibration), Auto start-up or standby after power fail ure			
Inside dimensions (mm)	W400xD400xH320	W440xD400xH400	W550xD550xH460	W640xD610xH610
Outside dimensions (mm)	W510xD550xH698	W550xD550xH778	W660xD705xH858	W750xD765xH1008
Capacity (Liters)	50	70	140	240
Shelves/Maximum	2/3	2/4	2/5	3/7
Power input	220-240V~, 50/60Hz, 100V- 50/60Hz, 120V-160Hz			
Net Weight	58kg	65kg	83kg	116kg



AX60

AX-Series, APEX Ovens 250°C

An uncomplicated economical range of ovens, built to MRC's high standards, with safe external surface temperatures that conform to BSEN61010.

Features:

- 250°C maximum operating temperature.
- 30, 60 or 120 Liters chamber volumes.
- Fan convected for rapid heating & excellent uniformity.
- Chemically resistant stainless steel liner.
- Two adjustable nickel-chrome plated wire shelves.
- Lever latch door & airtight silicone seal.
- Built to comply with BS EN 61010-2-010-1995 & BS EN 50014:1993.
- Meets "Electrically Heated Drying Oven" performance standard BS 2648.

Options:

- Over-temperature protection to DIN 12-880 class 2 (recommended to protect valuable contents and for unattended operation).
- Digital countdown timer to switch oven off.
- Additional sets of shelves & runners.
- Key-lock door.
- Low voltage options for use below 220V.
- Routine spares kit.



Model	Max. Temp. (°C)	Heat-up time to Max. (mins)	Temp. uniformity 250°C (±°C)	Recovery time to Max. (mins)	Dimensions		Shelves Fitted/ Accepted	Vol. (Liters)	Air changes /hr	Max. Power (W) Holding Power max W	Weight (kg)	Power Supply
					Internal HxWxD(mm)	External HxWxD(mm)						
AX30	250	23	±5.0	3	295x300x320	440x590x465	2/4	28	65	1000 320	24	230V single phase
AX60	250	25	±5.0	3	395x400x420	540x690x565	2/6	66	28	1500 475	37	
AX120	250	26	±5.0	3	495x500x520	640x790x665	2/8	128	14	2000 650	55	

Minimum operating temperature approximately ambient plus 10°C. Uniformity is measured in an empty chamber with vents closed, after a stabilization period. Shelf loadings are based on evenly distributed weight.



LHT 58/350

LHT 58/350, Chamber Ovens up to 350°C

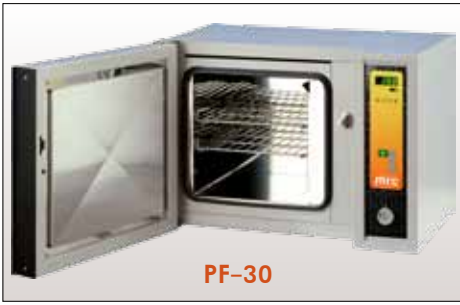
Economical low temperature electric ovens that are intended for the thermal processing of various materials and parts up to a temperature of 350°C. The products can be used in scientific laboratories, educational institutions, medicine, and industry, Forced air circulation assures an even temperature distribution throughout the chamber, and high quality thermal processing occurs quickly.

Basic model:

- Forced air circulation
- Regulated air intake and extraction
- Chamber made of regular or stainless steel
- Hermetically closed doors
- Microprocessor-controlled thermoregulator
- Includes standard shelves
- High-quality, ecological thermal insulation material
- Low electric power usage
- Short heating up/Cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- Up to a 24 month guaranty period.

Model	Vol. l	T max. °C	Chamber DIM. (mm)			Overall DIM. (mm)			Power (kW)	Voltage (V)	Weight (Kg)	Air Flow	Number of shelves		Chamber Material	
			Width	Length	Height	Width	Length	Height					Sets	Max.	Stainless steel	Mild steel
LHT 58/350	58	350	390	380	360	685	675	615	2	230	40	•	3	7	•	○

PF-Series, 300°C Ovens



This modern range of ovens provides a combination of excellent performance & reliability. Increased power and low thermal mass encased fibre insulation ensure both fast heat up times & reduced recovery times. Reduced holding power once at set temp., together with the insulation, makes the range economical & outer case temperatures have been significantly reduced. Both gravity & forced air circulation models are available with a wide choice of control options allowing the most critical performance criteria to be met. Where processes involve the liberation of flammable VAPORS, a stoving & curing option is available. Also, where processes involve large amounts of water, a moisture extraction option is available.

Features: The outer cases are fabricated from corrosion resistant zinc coated mild steel & finished in two tone hard wearing stoved epoxy/polyester coating. The inner case is constructed from polished stainless steel. All units are provided with non-tilt bright nickel wire plated shelves with multi-position settings for convenient loading & unloading.

Adjustable air ventilation

The chamber ventilation and exhaust vent are easily adjustable from the front control panel, on all bench top models.

Digital temperature control

The control module is able to house many variations of digital instrumentation with simultaneous display of measured and set temperature. Microprocessor based PID controllers are fitted as standard.

Economy and efficiency

Insulation around the oven chamber utilizes totally encased fibre material. This material has a very low thermal mass and thermal conductivity, ensuring very efficient insulation. This also ensures reduced holding power, making the units economical to operate once set temperature has been reached.

Door action

A flush fitting door latch with a concealed mechanism is both simple to use & provides a handle when unlatched. The lever action ensures gentle closure. The door seal design includes a newly formulated silicone compound, providing longer life & durability at maximum temp. The design also allows convenient replacement if necessary.

Control panel

The side mounted control panel avoids damage from accidental spillage.

Safety standards

All units meet the relevant European health and safety at work legislation & the performance criteria of BS 2648 & DIN 50-011. They are manufactured to comply with BS EN 61010: safety standard & also the low voltage & EMC European Directives.

Options:

- Range of over temp. protection systems in accordance with DIN12-880 Part 2.
- Stoving & curing option available for processes involving liberation of flammable vapors.
- Timers: Process timers-manual or automatic. Mechanical or electronic time switches.
- Top access port for independent probe.
- Lockable door latch.
- Exhaust fan *
- Variable speed fan *
- Inert gas connection *
- Flow meter & needle valve.
- Viewing window in door *
- Interior light.
- Air inlet filter.
- Cable entry port *
- Door switch.
- Stands & trolleys.
- Chart recorders.

Model	PF30	PF60	PF120	PF200
Max. Temp (°C)	300	300	300	300
Chamber Dimensions (mm)	(H) 300 (W) 292 (D) 320	400 392 420	500 492 520	750 592 520
Outside Dimensions (mm)	(H) 470 (W) 665 (D) 470	570 765 570	670 865 670	920 965 670
Chamber Capacity (Liters)	28	66	128	230
Weight (kg)	30	45	60	75
Shelves				
Number Supplied	2	2	2	2
Max. Possible	3	5	9	15
Max. Dist load/shelf kg	10	10	10	10
Max load kg	20	30	40	50
Performance				
Power Rating at 240V (watts)	1000	1500	2000	2700
Holding Power* at Max. temp. (watts)	350	600	800	1250
Temp. Uniformity* (at Max. temp. as a%)	±1.0	±1.0	±1.0	±1.0
Temp. Stability on/off control (°C)	±1.0	±1.0	±1.0	±1.0
Temp. Stability PID control (°C)	±2.0	±2.0	±2.0	±2.0
Heat up Times* 100°C (Mins)	4.5	4.5	4.5	5.5
200°C	12	12	12	14
240V 300°C	25	25	25	30
Recovery Times* 100°C (Mins)	1	1	1	1.5
200°C	2.5	2.5	2.5	3
Door Open 60sec 300°C	4	4	4	5
Air Exchanges vol (l/h) @ 100°C	1400	1400	1400	1400
Air Exchanges	50	21	11	6

* These options may affect Chamber Uniformity

Note: A uniformity of ±1%=±1°C at 100°C

*With vents closed.

HF4-2, Horizontal Air Flow Ovens 300°C



HF4-2

MRC High Performance Ovens are engineered to meet the most critical temperature requirements. They are designed for continuous drying operations at temperatures up to 300°C. Factory-set over temperature protection prevents control failure from damaging contents and guards against burnout. The Watlow controller provides a 24-step ramp and soak, 0.1°C control, multiple levels of operator access and automatic resumption of program following a power failure. Time and temperature are displayed in a three-digit LED readout for fast and accurate setting. In addition, the sealed membrane touch-pad control panel is water and acid resistant. Horizontal air flow provides fast heat-up and recovery & ensures rapid drying. Heated air is continuously circulated by twin turbo blowers.

Blowers also circulate air to motor bearings to prolong motor life. Punched stainless steel shelves are adjustable on 1/2 inch centers. Adjustable three air intake and exhaust ports can be opened for fast drying of high-moisture content samples. The 3.5 inch thick wrap-around fiberglass insulation on all sides minimizes heat loss.

A high temperature gasket door seal eliminates air leakage and ensures longer gasket life while being subjected to extreme operational temperatures. This unit includes long-lasting, low-watt density heating elements. It also has adjustable heavy-duty hinges & a door latch that are designed for lifetime service.

The HF4 has rugged, welded construction with a double-walled, corrosion-resistant type 304 stainless steel interior and a powder-coated exterior.

Model	HF4-2
Capacity (Liters)	139
Interior dimension (cm)	W52xD52.7xH50.8
Exterior dimension (cm)	W88.9xD77.5xH95.3
Temperature range	15°C above ambient to 300°C
Temperature uniformity	±1.0°C at 110°C
Electrical specifications	Volts: 220V Hz:50/60 Watts: 2200 Amps: 12
Temperature recovery time	4 min to reach 110°C
Heat-up (min)	10 min to 110°C (20 min to 180°C)
Shelves	2 Supplied (8 maximum)

CE3F-2 & CE5F-2, Horizontal Air Flow Ovens 300°C

The CE Oven Series incorporates the Sure Load shelf system, triple wall construction, and easy-to-read microprocessor controls. Users can adjust the air exhaust from the chamber without being near the the heat source. Even at operating temperatures of 225°C, the outer skin of this unit meets all CE requirements, so workspace remain cool.



CE3F-2

The 99 hr 59 min digital timer has an independent control, so its use is optional. Once the timer expires, the heating elements turn off while the blower continues running to cool the samples inside the oven. Whatever the application, these forced air ovens deliver precise uniformity, air distribution and the peace of mind expected from the MRC brand. All of the MRC CE Series ovens are CE approved. The CE family is our latest installment of a product of Constant.

Model	CE3F-2	CE5F-2
Capacity (Liters)	86	139
Inside DIM.(mm)	W419xD489xH419	W533xD489xH534
Outside DIM.(mm)	W660xD686xH90.2	W775xD699xH1016
Temperature Range	15°C above ambient to 230°C	15°C above ambient to 225°C
Temp. Uniformity	±2.0°C at 150°C	±2.5°C at 150°C
Electrical Spec.	Volts: 220V Hertz: 50/60 Hz Watts: 1100 Amps: 5	Volts: 220V Hertz: 50/60 Hz Watts: 1500 Amps: 6.5
Temp. Recovery Time	5 minutes at 150°C	8 minutes at 150°C
Heat-up (min)	36 minutes at 150°C	30 minutes at 150°C
Shelving	2 Supplied (8 Maximum)	

Features:

- Microprocessor Controls
- Horizontal Air Flow
- Cool Touch Damper
- Digital Timer to 99 hr and 59 min.



FD 200/200



FD 20/300

FD 420/300

FD 200/200, Chamber Ovens up to 200°C

Economical low temperature electric ovens that are intended for the thermal processing of various materials and parts up to a temperature of 200°C. The products can be used in scientific laboratories, educational institutions, medicine, and industry. Optional forced air circulation assures an even temperature distribution throughout the chamber, and high quality thermal processing occurs quickly.

Basic model:

- Chamber made of mild steel or stainless steel
- Forced air circulation
- Hermetically sealed doors
- Microprocessor temperature controller
- Includes standard shelves
- High-quality, ecological thermal insulation material
- Low electric power usage for increased energy efficiency
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guaranty on furnace, 2 years controller.

FD 420/300, Chamber Ovens up to 300°C

A new range of laboratory ovens that are intended for the thermal processing of materials up to a temperature of 300°C. Used for such processes as drying, heating, thermal testing, and aging in an air environment. Forced air circulation allows a homogenous temperature distribution to be achieved during all processes, which ensures optimal results.

Basic model:

- Forced horizontal air circulation
- Valve control of air extraction (operated via front panel)
- Chamber made of stainless steel
- Hermetically closed doors
- Microprocessor-controlled thermoregulator
- End of programme audible signal
- Protection against overheating
- Fan revolution controller
- Includes standard shelves
- High-quality, ecological thermal insulation material
- Low electric power usage
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 1015 & RAL 1017)
- Up to a 24 month guaranty period.

Model	Vol. l	T max. °C	Chamber DIM. (mm)			Overall DIM. (mm)			Power (kW)	Voltage (V)	Weight (Kg)	Air Flow	Number of shelves		Chamber Material	
			Width	Length	Height	Width	Length	Height					Sets	Max.	Stainless steel	Mild steel
FD200/200	200	200	710	610	460	1040	780	775	2	230	77	•	2	5	•	○
FD20/300	20	300	240	280	340	460	680	640	1	230	34	•	2	5	•	○
FD60/300	60	300	380	380	420	600	760	720	2	230	50	•	3	7	•	○
FD120/300	120	300	550	400	580	750	780	880	2.2	230	70	•	3	7	•	○
FD220/300	220	300	730	500	620	930	880	915	4	230	102	•	3	7	•	○
FD420/300	420	300	1000	500	860	1200	930	1200	6.2	400	155	•	3	7	•	○