, FX, OV, HP, BY Технические характеристики

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Furnaces

Compact Muffle Furnaces

Nabertherm

MORE THAN HEAT 30-3000 °C

- Maximum temperature 1100°C, (working temperature 1050°C)
- Quartz sheathed, tubular elements housed in ceramic fibre plates
- Multilayered insulation with dual-walled housing giving low external temperatures
- Stainless steel outer housing
- Compact, sturdy, stove-enamelled steel housing
- "Hinge-down" door which can also be used as a work platform
- Exhaust air outlet at rear of chamber
- With R7 digital controller: 1 programme, 1 segment, time and temperature setting

Safety Note

Please check before ordering that the supply current is suitable for the power rating of the furnace.

Catalogue No.	FX118-05	FX118-10	FX118-20	FX118-40
Model, LE-	1/11/R7	2/11/R7	6/11/R7	14/11/R7
Temp. Max./Continuous °	C 1100/1050 —	all models		
Heating time minute	s 10	25	35	40
Volume litre	s 1	2	6	14
Dimensions Internal (external)				
height, mn	n 110 (340)	110 (350)	170 (510)	220 (370)
width, mn	90 (250)	110 (275)	170 (320)	220 (555)
depth , mn	115 (265)	180 (380)	200 (400)	300 (500)
Weight k	y 10	10	18	25
Rating, max. kV	/ 1.5	1.8	1.8	2.9

As described. Maximum temperature 1100 $^\circ C$. With Silica sheathed, tubular elements. For 230V 50Hz single phase supplies.

FX118-05	LE1/11/R7
FX118-10	LE2/11/R7
FX118-20	LE611/R7
FX118-40	LE14/11/R7



Chamber Furnaces

Nabertherm

MORE THAN HEAT 30-3000*

- Choice of maximum temperature 1100°C or 1200°C
- Ceramic heating plates with integral heating elements protected against fumes and splashes
- Durable, vacuum cured, ceramic fibre lining with dual-walled housing giving low external temperatures
- Stainless steel outer housing

Maximum temperature 1100°C

Catalogue No		FX120-15	FX120-25	FX120-35	FX120-45
Model		LT3/11	LT5/11	LT9/11	LT15/11
Temp. Max./Co	ntinuous °C	1100/1050	— all mode	els	
Heating time	minutes	60	60	75	90
Volume	litres	3	5	9	15
Dimensions Int	ernal (external)				
	height, mm	100 (420)	130 (520)	170 (570)	170 (570)
	width, mm	160 (380)	200 (445)	230 (480)	230 (480)
	depth , mm	140 (370)	170 (470)	240 (550)	340 (650)
Weight	kg	20	35	45	55
Rating, max.	kW	1.2	2.4	3.0	3.6

As described. Maximum temperature as indicated. With ceramic heating plates with integral heating elements. For 230V 50Hz single phase supplies.

FX120-15	LT3/11/B510
FX120-25	LT5/11/B510
FX120-35	LT9/11/B510
FX120-45	LT15/11/510

Safety Note

Please check before ordering that the supply current is suitable for the power rating of the furnace.



- Parallel hinge, lift door keeps hot face away from operator
- Adjustable air inlet integrated into door with exhaust air outlet at rear of chamber
- Overtemperature safety cut-out
- B510 controller: 5 programme, 4 segments, time and temperature setting with status alarm, delayed start function, autotune and data output

Maximum temperature 1200°C

Catalogue No		FX124-15	FX124-25	FX124-35	FX124-45
Model		LT3/12	LT5/12	LT9/12	LT15/12
Temp. Max./Co.	ntinuous °C	1200/1150	— all mode	ls	
Heating time	minutes	75	75	90	105
Volume	litres	3	5	9	15
Dimensions Inte	ernal (external) height, mm width, mm depth , mm	100 (420) 160 (380) 140 (370)	130 (520) 200 (445) 170 (470)	170 (570) 230 (480) 240 (550)	170 (570) 230 (480) 340 (650)
Weight	kg	20	35	45	55
Rating, max.	kW	1.2	2.4	3.0	3.6

As described. Maximum temperature as indicated. With ceramic heating plates with integral heating elements. For 230V 50Hz single phase supplies.

FX124-15	LT3/12/B510
FX124-25	LT5/12/B510
FX124-35	LT9/12/B510
FX124-45	LT15/12/510



Construction and Controllers

CARBOLITE

Leading Heat Technology

- Double skin construction in chamber furnaces reduces outer case temperature
- Only high grade fibre, brick and slab insulation materials used
- No asbestos used in construction
- Automatic cut-out isolates the mains supply to the heating elements when chamber door is opened
- Safety mesh guards or double skin casing fitted to tube furnaces
- Fitted with ceramic chimney
- Counterweighted chamber doors open upwards with the hot face away from the operator (Models ELF have drop down door)
- Outer cases finished in a durable stoved epoxy/polyester powder coating

Eurotherm 301 PID Controller

Economical, general purpose temperature controller with a 4-digit display for setting and indicating actual measured temperatures. Ideal for applications where optimal control performance, product integrity and reliability are required.

Eurotherm 3216P1 Programmer

Compact, microprocessor based programmer incorporating 8 control segments and dual 4-digit display showing set point and actual measured temperature in the furnace.

Economy Furnaces 1100°C

CARBOLITE

Leading Heat Technology

Catalogue No.		FX150-28	FX150-38
Model		ELF11/6	ELF11/14
Temperature			
Maximum	°C	1100	1100
Continuous	°C	1000	1000
Heating time	minutes	35 (1000°C)	40 (1000°C)
Volume	litres	6	14
Controller		301 PID digital –	– both models
Chimney		Yes	Yes
Dimensions	mm		
Internal	Н	165 (580)	210 (630)
(External)	W	180 (410)	220 (450)
	D	210 (420)	310 (520)
Weight	kg	24	31
Rating, maximum	kW	2	3

Chamber Furnaces, ELF

Maximum temperature 1100°C. With one-piece moulded ceramic fibre chamber with integral heating elements, built-in hearth, ceramic chimney, drop down door and vent. Fitted with Model 301 digital controller. For 230V 50Hz single phase supplies.

 FX150-28
 Model ELF 11/6 301 PID

 FX150-38
 Model ELF 11/14 301 PID



Safety Note

Please check before ordering that the supply current is suitable for the power rating of the furnace.



Furnaces

Chamber Furnaces 1100°C, 1200°C, 1300°C

CARBOLITE

Leading Heat Technology

- Upward action parallel link door keeps hot face away from the operator
- Heating elements are spirally wound nickel chrome wire, held in grooves within the insulated wall. These free-radiating, exposed heating elements provide a faster heat up rate than other conventional muffle furnaces
- Door linked, power cut-off switch for total operator safety
- Double skin, asbestos-free design provides natural air cooling for a cool outer case and the latest insulation materials ensure maximum thermal efficiency
- Solid state power switching for smooth reliable control
- Fitted chimney to remove fumes
- Zinc coated sheet steel outer case with hard wearing finish

Chamber Furnaces CWF

As described. With controller and chimney. For 230V 50Hz single phase supplies.

With 301PID controller

FX165-09	CWF11/5, 301PID
FX165-13	CWF11/13, 301PID
FX165-19	CWF11/23, 301PID
FX165-23	CWF12/5, 301PID
FX165-28	CWF12/13, 301PID
FX165-34	CWF12/23, 301PID
FX165-49	CWF13/5, 301PID
FX165-52	CWF13/13, 301PID
FX165-55	CWF13/23, 301PID

With 3216P1 Programmer

WIGI 5210111	rogrammer
FX167-06	CWF11/5, 3216P1
FX167-11	CWF11/13, 3216P1
FX167-16	CWF11/23, 3216P1
FX167-21	CWF12/5, 3216P1
FX167-26	CWF12/13, 3216P1
FX167-33	CWF12/23, 3216P1
FX167-41	CWF13/5, 3216P1
FX167-46	CWF13/13, 3216P1
FX167-51	CWF13/23, 3216P1



Maximum temperature 1100°C

Catalogue No.		FX165-09 FX167-06	FX165-13 FX167-11	FX165-19 FX167-16
Model		CWF11/5	CWF11/13	CWF11/23
Temperature Maximum/Continuous	°C	1100/1000	1100/1000	1100/1000
Heating time minut	es	30 (1000°C)	35 (1000°C)	40 (1000°C)
Volume litr	es	5	13	23
Dimensions mm Internal (External)*	H W D	135 (585) 140 (375) 250 (485)	200 (655) 200 (435) 325 (610)	235 (705) 240 (505) 400 (675)
Weight k	kg	30	47	68
Rating, maximum k	W	2.4	3.1	7

Maximum temperature 1200°C

Catalogue No.		FX165-23 FX167-21	FX165-28 FX167-26	FX165-34 FX167-33
Model		CWF12/5	CWF12/13	CWF12/23
Temperature Maximum/Conti	nuous °C	1200/1100	1200/1100	1200/1100
Heating time	minutes	55 (1100°C)	65 (1100°C)	80 (1100°C)
Volume	litres	5	13	23
Dimensions mm Internal (External)*	H W D	135 (585) 140 (375) 250 (485)	200 (655) 200 (435) 325 (610)	235 (705) 245 (505) 400 (675)
Weight	kg	30	47	68
Rating, maximum	kW	2.4	3.1	7

Maximum temperature 1300°C

Catalogue No.		FX165-49 FX167-41	FX165-52 FX167-46	FX165-55 FX167-51
Model		CWF13/5	CWF13/13	CWF13/23
Temperature Maximum/Contin	nuous °C	1300/1200	1300/1200	1300/1200
Heating time	minutes	40 (1200°C)	45 (1200°C)	55 (1200°C)
Volume	litres	5	13	23
Dimensions mm Internal (External)*	H W D	135 (585) 140 (375) 250 (485)	200 (655) 200 (435) 325 (610)	230 (705) 245 (505) 400 (675)
Weight	kg	30	47	68
Rating, maximum	kW	2.4	3.1	7

*External dimensions are with the door closed.

Safety Note

Please check before ordering that the supply current is suitable for the power rating of the furnace.

High Temperature Furnaces

An extensive range of high temperature furnaces are available with maximum temperature capabilities of 1800°C. Standard designs include chamber furnaces with a maximum capacity of 25 litres and tube furnaces with up to 150mm diameter work tubes – *details on request.*

FX165, FX167 are similar

Furnaces

Ashing Furnaces, 1100°C

CARBOLITE

Leading Heat Technology

- Upward action parallel link door keeps hot face away from the operator
- Preheated, high-rate airflow is held close over the samples by the low chamber roof to promote burning
- Fitted chimney to remove fumes
- FX358-14 complies with BS1016 part 4, ISO344, ISO1171, ASTM D2361, ASTM D2795 and ASTM D3174

Catalogue No.			FX358-09	FX358-14
Model			AAF11/3	AAF11/7
Temperature Max/Contin	uous	°C	1100/1000 — both	models
Heating time	minute	es	140 (1000°C)	155 (1000°C)
Volume	litre	es	3	7
Controller			301PID — both mo	dels
Dimensions, mm Internal (External)*	I	H N D	90 (585) 150 (375) 250 (485)	90 (650) 170 (430) 455 (740)
Weight	k	g	22	63
Rating maximum	k	N	2.1	4

*External dimensions are with the door closed.

Ashing Furnaces, AAF

As described. Maximum temperature 1100°C. With 301PID controller, chimney and preheated airflow through the chamber. Supplied with inconel sample tray, perforated sample tray and removable handle. For 230V 50Hz single phase supplies.

FX358-09 AAF11/3, 301PID control **FX358-14** AAF11/7, 301PID control

Coal/Coke Test Products

We are able to supply a full range of test furnaces and ovens for coal and coke evaluation to meet international standards and specifically national standards including DIN, ASTM and BS. These include ashing, volatile matter, moisture and ash fusibility – details on request.



Tube Furnaces, TF1-series, 1200°C **CARBOLITE**

Leading Heat Technology

Detachable tube furnace and separate control box module with 2m connecting cable to allow remote horizontal use. Alternatively the furnace can be mounted directly onto the control box.

- Fully protected thermocouple
- EPC3016P1 controller/programmer with up to 12 ramp and 12 dwell times, ethernet output
- Energy efficient, utilising low thermal mass insulation
- Choice of accessory worktubes

Catalogue No.		FX520-38	FX520-60
Model		TF1 12/60/300	TF1 12/125/600
Temperature Maximum/Continuou	ıs °C	1200/1100 - both models	
Heat-up time, minutes		35	90
Maximum work tube c Diameter (max.) Heated length Uniform zone*	limension mm mm mm	s 60 300 6177	125 600 456
Overall H x W x D, mm Furnace module Controller		575 x 495 x 480 230 x 485 x 480	665 x 865 x 575 230 x 855 x 480
Weight	kg	37	89
Rating maximum	kW	1.5	2.51

* Uniform zone is ±5°C.

Tube Furnaces TF1

As described. Maximum temperature 1200°C. With EPC3016P1 24 element programmer, 2 metre connecting cable and ethernet output port. For 230V 50Hz single phase supplies. **Requires accessory furnace tubes for operation**.

FX520-38 TF1 12/60/300 **FX520-60** TF1 12/125/600

Accessory work tubes

Mullite and impervious aluminous porcelain. Maximum temperature 1550°C (vertical use), 1450°C (horizontal use), 1350°C (vacuum use in any orientation). Heating and cooling rate should be 5°C per minute. Dimensions stated are i.d. x o.d. x length.

FX522-15	25 x 32 x 580mm
FX522-20	38 x 46 x 580mm
FX522-48	75 x 86 x 950mm

Other work tube sizes are available - details on request.



FX520 with tube module mounted on control box

FX358-14

Drying Cabinets



Drying Cabinets

For general warming and drying purposes, including drying of drained glassware. OV100-11, OV100-21, OV105-12 and OV105-17 are additionally fitted with fibre insulation which reduces energy requirements giving a performance saving of more than 30% against the non insulated models.

٠ Maximum temperature is approximately ambient +50°C

- ٠ Choice of:
 - Sliding toughened glass door with or without insulation
 - Hinged toughened glass door (2 on 885 litre and 1000 litre models) with or without insulation

Sliding door models

Catalogue No.		OV100-11	OV100-14	OV100-21	OV100-25		
Capacity	litres	100	125	200	250		
Internal	H, mm W, mm D, mm	400 670 370	430 720 400	490 930 450	520 980 480		
Overall	H, mm W, mm D, mm	600 750 420	600 740 420	660 1000 500	660 1000 500		
Weight		45	40	60	55		
Shelves		3	3	3	3		
Power rating	W	500	1000	1000	1000		
Voltage		For 220-240V 50Hz single phase supplies.					

OV100-11 100 litres, sliding door, insulated OV100-14 125 litres, sliding door OV100-21 200 litres, sliding door, insulated OV100-25 250 litres, sliding door

Glassware Dryer

For drying flasks, cylinders by hot air blowing - see DY150 in the Drying section.

- Stoved enamel paint interior and exterior
- ٠ Chromium plated wire mesh shelves
- ٠ Simmerstat heat control
- Hinged door models have fan circulation

Hinged door models

Catalogue No.		OV105-09	OV105-12	OV105-16	OV105-17		
Capacity	litres	425	500	885	1000		
Internal	H, mm	1350	1380	1350	1380		
	W, mm	530	580	1110	1160		
	D, mm	590	620	590	620		
Overall	H, mm	1680	1680	1680	1680		
	W, mm	600	600	1180	1180		
	D, mm	600	650	650	650		
Weight	kg	80	75	140	130		
Shelves		3, adjustab	le for height	: — all mode	els		
Power rating	W	1000	1000	1750	1750		
Voltage		For 220-240V 50Hz single phase supplies					

OV105-09 425 litres, hinged door, insulated OV105-12 500 litres, hinged door OV105-16 885 litres, hinged door, insulated

OV105-17 1000 litres, hinged door



OV100



OV Range 250°C



- Wide bodied profile with controls to the side
- Temperature range 40 to 250°C
- Fluctuation ±0.75°C
- Choice of:
 - Aluminium coated mild steel or stainless steel interiors
 - Natural or fan convection
- Top vent with clip for thermometer

OV Models, wide-bodied profile

Fan mounted at side

- Touchscreen digital control incorporating an integral overheat system with two Pt100 sensors
- Fitted with fixed shelf runners and removable chrome-plated wire grid shelves
- Steel outer case with stoved powder paint finish

Catalogue No.		OV155	-03	-09	-14	_	_	—
			-07	-11	-16	-21	-26	—
		OV158*	-03	-09	-14	—	_	—
			-07	-11	-16	-21	-26	-31
Usable vo	lume	litres	50	75	100	125	150	200
External H	mm	580	580	580	690	690	890	
	W	mm	730	850	850	850	850	850
	D	mm	480	480	590	590	670	670
Internal	Н*	mm	420	420	420	520	520	750
	W*	mm	360	530	530	530	530	490
	D	mm	350	350	460	460	540	540
Power rat	ing	W	750	1250	1250	1500	1750	2000
Shelves supplied		1	2	2	3	3	3	4
Shelf posi	tions		3	3	4	5	5	7
Weight		kg	31	39	48	57	66	85

Ovens, wide-bodied profile, OV, 250°C

As described. With aluminium coated steel (CLAD) or stainless steel interior as indicated, shelves, control and safety thermostats, mains on/off switch and indicator lamps. For 220-240V 50Hz single phase supplies.

Natural convection

OV155-03	50 litres, CLAD			
OV155-07	50 litres, stainless steel			
OV155-09	75 litres, CLAD			
OV155-11	75 litres, stainless steel			
OV155-14	100 litres, CLAD			
OV155-16	100 litres, stainless steel			
OV155-21	125 litres, stainless steel			
OV155-26	150 litres, stainless steel			
Fan convection				

OV158-03	50 litres, CLAD
OV158-07	50 litres, stainless steel
OV158-09	75 litres, CLAD
OV158-11	75 litres, stainless steel
OV158-14	100 litres, CLAD
OV158-16	100 litres, stainless steel
OV158-21	125 litres, stainless steel
OV158-26	150 litres, stainless steel
OV158-31	200 litres, stainless steel

*Fan convection models have internal chamber height increased by 30mm and width reduced by 40mm.



Mino Range 250°C



- Standard profile with controls at base
- Temperature range 40 to 250°C
- Fluctuation ±0.75°C
- Choice of:
 - Aluminium coated mild steel or stainless steel interiors
 - Natural or fan convection (30 litre models and above)
- Hydraulic thermostat with locking device

Adjustable safety thermostat with indicator lamp and locking device Top vent with clip for thermometer

- Fan mounted at rear
- Fitted with fixed shelf runners and removable chrome-plated wire grid shelves
- Steel outer case with stoved powder paint finish

MINO range, standard profile

Catalogue No.	OV160 OV164	-05 —	-07 —	-20 -20	-22 -22	-30 -30	-32 -32	-40 -40	-42 -42
Usable volume	litres	6	18	30	30	50	50	75	75
External H W D*	mm mm mm	390 320 330	520 380 410	500 480 490	500 480 490	580 610 470	580 610 470	590 610 600	590 610 600
Internal H W D	mm mm mm	150 230 190	260 260 270	240 360 350	240 360 350	330 490 330	330 490 330	330 490 450	330 490 450
Power rating	W	300	500	750	750	1000	1000	1250	1250
Shelves supplied	d	1	2	2	2	2	2	2	2
Shelf positions		1	2	2	2	3	3	3	3
Weight	kg	7	14	20	20	26	26	34	34

*Fan convection models have external depth increased by 120mm.

Ovens, standard profile, MINO 250°C

As described. With aluminium coated steel (CLAD) or stainless steel interior as indicated, shelves, control and safety thermostats, mains on/off switch and indicator lamps. For 220-240V 50Hz single phase supplies.

Natural convection

 OV160-05
 6 litres, CLAD

 OV160-07
 18 litres, CLAD

 OV160-20
 30 litres, CLAD

 OV160-22
 30 litres, stainless steel

 OV160-30
 50 litres, CLAD

 OV160-32
 50 litres, stainless steel

 OV160-40
 75 litres, CLAD

 OV160-42
 75 litres, stainless steel

Fan convection

OV164-20	30 litres, CLAD
OV164-22	30 litres, stainless steel
OV164-30	50 litres, CLAD
OV164-32	50 litres, stainless steel
OV164-40	75 litres, CLAD
OV164-42	75 litres, stainless steel



OV160/OV164

Apex Series, 250°C

CARBOLITE

Leading Heat Technology

- Choice of capacities, 30 litres or 60 litres
- Digital PID temperature controller using Pt100 sensor
- Maximum temperature 250°C
- Fan assisted air circulation
- Stainless steel interior
- Thermally efficient insulation
- Adjustable chamber ventilation and exhaust vent

Model			AX30	AX60
Capacity		litres	30	60
Temp. ur @ 200°C	hiformity	±°С	1.9	2.1
Temp. sta at all ten	ability* perature	±°C s	0.2	0.2
Shelves s	upplied (p	oositions)	2 (4)	2 (6)
Internal	Н	mm	295	396
	W	mm	300	400
	D	mm	320	420
External	Н	mm	440	540
	W	mm	590	690
	D	mm	465	565

*With vent fully closed.

Apex Series Ovens 250°C

With stainless steel interior and nickel wire-plated shelves as indicated. For 220-240V 50Hz single phase supplies.

OV185-10 30 litres **OV185-20** 60 litres

Peak Series, 300°C

CARBOLITE Leading Heat Technology

- Capacities up to 230 litres
- Natural or forced air circulation models
- Choice of controllers
 - PID controller without timer, ramp or programming functions
 - PID controller incorporating a single ramp to set point facility and process timer
- Maximum temperature 300°C
- Stainless steel interior
- Efficient insulation using totally encased, low thermal mass fibre material
- Chamber ventilation and exhaust vent adjustable from the front control panel

Model			PN/PF30	PN/PF60	PN/PF120	PN/PF200
Capacity		litres	27/28	58/66	115/128	215/230
Internal	H W D	mm mm mm	255/300 330/292 320	350/400 490 420	450/500 390 520	700/750 590 520
External	H W D	mm mm mm	470 665 470	570 765 670	670 865 570	920 965 670
Shelves su	oplied (j	positions)	2 (3)	2 (5)	2 (9)	2 (15)
Power		kW	0.75/1.0	1.0/1.5	1.5/2.0	2.5/2.7

Peak Series Ovens 300°C

With stainless steel interior and adjustable ventilation. For 230V 50Hz single phase supplies. Controller and air circulation as indicated.

With single PID controller, without timer, ramp or programming functions

	5 5
OV190-10	PN30, 27 litres, natural
OV190-14	PF30, 28 litres, forced air
OV190-20	PN60, 58 litres, natural
OV190-24	PF60, 66 litres, forced air
OV190-30	PN120, 115 litres, natural
OV190-30 OV190-34	PN120, 115 litres, natural PF120, 128 litres, forced air
OV190-34	PF120, 128 litres, forced air

With PID controller incorporating a single ramp to set point facility and process timer

OV195-10	PN30, 27 litres, natural
OV195-14	PF30, 28 litres, forced air
OV195-20	PN60, 58 litres, natural
OV195-24	PF60, 66 litres, forced air
OV195-30	PN120, 115 litres, natural
OV195-34	PF120, 128 litres, forced air
OV195-40	PN200, 215 litres, natural
OV195-44	PF200, 230 litres, forced air





OV185

OV190/OV195 in use

UN/UF Series 300°C

memmert

- Wide range of capacities up to 256 litres*
- Temperature range +20°C to +300°C
- Choice of natural (UN-series) or or forced air, fan (UF-series) convection models
- With choice of SingleDISPLAY or TwinDISPLAY (plus-series) colour TFT, multi-touchscreen controlCOCKPIT controller
- Stainless steel interior and exterior sides (external rear panel-zinc coated steel)

*Larger capacity models are available - details on request.

- SingleDISPLAY controlCOCKPIT

Display of temperature (°C or °F), fan speed (UF-models only) and programme time. Includes one Pt100 DIN Class A temperature sensor in a 4 wire circuit and ethernet interface. Dual overtemperature protection with freely adjustable monitoring of temperature and mechanical temperature limiter (TB Class 1) to DIN 12 880. With AtmoCONTROL logging software for online monitoring of up to 32 connected appliances, optical alarms when set alarm limits are exceeded and automatic alarm email notifications.

- Heaters located in ribs on all four sides provide uniform heating
- Digital process timer, adjustable between 1 minute and 99 days, 23 hours
 10 year datalogger
 - Saturation answer that the
- SetpointWAIT function ensures that the process time is not initiated until the set temperature is reached at all measuring points
- Temperature accuracy: up to 99°C: ±0.1°C from 100°C: ±0.5°C
- Supplied with 1 or 2 stainless steel wire grid shelves

- TwinDISPLAY controlCOCKPIT

Display of temperature (°C or °F), fan speed (UF-models only) and programme time. Includes two Pt100 DIN Class A temperature sensors in a 4 wire circuit, ethernet and USB interfaces and heatBALANCE function for adjustment of heating power distribution of the upper and lower heating groups in an adjustment range between -50% and +50%. Multiple overtemperature protection monitoring TWW/TWB (protection Class 3.1/3.2, respectively) and mechanical temperature limiter (TB Class 1) to DIN 12 880, with settings for individual maximum/minimum values for over/undertemperature alarms. Also includes AUTOSAFETY function which allows automatic adjustment to the set value within a freely adjustable tolerance range. With AtmoCONTROL logging software as SingleDISPLAY controller, but additionally includes display of the programme sequence created by the user, repeat functions which can be inserted anywhere within the control sequence and creation of repeating weekly programmes which can be transferred via ethernet or USB interfaces provided.





Model	Natural convectior Forced convection Natural convection Forced convection	UF30 UN30plus	UN55 UF55 UN55plus UF55plus	UN75 UF75 UN75plus UF75plus	UN110 UF110 UN110plus UF110plus	UN160 UF160 UN160plus UF160plus	UN260 UF260 UN260plus UF260plus
Volume	litre	32	53	74	108	161	256
Internal (external)	H mm W mm D mm	400 (585)	400 (787) 400 (585) 330 (514)	560 (947) 400 (585) 330 (514)	480 (867) 560 (745) 400 (584)	720 (1107) 560 (745) 400 (584)	800 (1186) 640 (824) 500 (684)
Shelves sup	plied	1	1	2	2	2	2
Max. no. of	f shelves held	3	4	6	5	8	9
Max. loadin	ng per shelf grid kg	30 — all models	;				
Max. loadin	ng of chamber kg	60	80	120	175	210	300
Power load	ling kW	′ 1.6	2.0	2.5	2.8	3.2	3.4
Power supp	bly	230V 50/60Hz si	230V 50/60Hz single phase — all models				
Net Weight	t kg	44	55	64	72	80	96

UN/UF Series Ovens, 300°C, Memmert

continued on next page

UN/UF Series 300°C continued

memmer

As described. With choice of SingleDISPLAY or TwinDISPLAY controller, integral process timer adjustable from 1 minute to 99 days, 23 hours, dual or multiple overload protection (plus-models only), temperature and time TFT display, chamber ventilation slide adjustment and stainless steel grid shelves. For 230V 50/60Hz single phase supplies.

UN Natural convection, SingleDISPLAY Controller Models

OV204-60	UN30, 32 litres
OV204-65	UN55, 53 litres
OV204-70	UN75, 74 litres
OV204-75	UN110 108 litres

 OV204-75
 UN110, 108 litres

 OV204-80
 UN160, 161 litres

 OV204-85
 UN260, 256 litres

UF Forced Air convection, SingleDISPLAY Controller Models

OV234-60	UF30, 32 litres
OV234-65	UF55, 53 litres
OV234-70	UF75, 74 litres

 OV234-75
 UF110, 108 litres

 OV234-80
 UF160, 161 litres

 OV234-85
 UF260, 256 litres

UNplus Natural convection, TwinDISPLAY Controller Models

OV265-60	UN30plus, 32 litres
OV265-65	UN55plus, 53 litres
OV265-70	UN75plus, 74 litres
OV265-75	UN110plus, 108 litres
OV265-80	UN160plus, 161 litres
OV265-85	UN260plus, 256 litres

UFplus Forced Air convection, TwinDISPLAY Controller Models

 OV270-60
 UF30plus, 32 litres

 OV270-65
 UF55plus, 53 litres

 OV270-70
 UF75plus, 74 litres

OV270-75	UF110plus, 108 litres
OV270-80	UF160plus, 161 litres
OV270-85	UF260plus, 256 litres

Accessory Shelves

Stainless steel wire grid.IN473-04For 32 litre ovenIN473-06For 53 and 74 litre ovensIN473-08For 108 and 161 litre ovensIN473-10For 256 litre oven

Note:

Factory-fitted options such as glass-panelled doors and interior lighting are available to special order - please contact us for details.



OV270-75

Sterilising Ovens SN/SF Series

memmert

For rapid hot air sterilising of glassware, instruments and media.

- Temperature range ambient +5°C (SN-series) or +10°C (SF-series) to +250°C
- Choice of natural (SN-series) or forced air, fan (SF-series) convection models
- With SingleDISPLAY controlCOCKPIT: display of temperature (°C or °F), fan speed (SF-models only) and programme time. Includes one Pt100 DIN Class A temperature sensor in a 4 wire circuit and ethernet interface. Dual overtemperature protection with freely adjustable monitoring of temperature and mechanical temperature limiter (TB Class 1) to DIN 12 880. With AtmoCONTROL logging software for online monitoring of up to 32 connected appliances, optical alarms when set alarm limits are exceeded and automatic alarm email notifications
- Stainless steel interior and exterior sides (External rear panel-zinc coated steel)
- Heaters located in ribs on all four sides provide uniform heating
- SetpointWait function ensures that timed sterilisation does not start until the sterilisation temperature has been attained/maintained stably
- Digital process timer, adjustable between 1 minute and 99 days, 23 hours
- 10 year datalogger
- Temperature accuracy: up to 99°C: ±0.1°C from 100°C: ±0.5°C
- Supplied with 1 or 2 stainless steel wire grid shelves

Model		Natural Forced	SN30 SF30	SN55 SF55	SN75 SF75	SN110 SF110	SN160 SF160	SN260 SF260
Volume		litres	32	53	74	108	161	256
Internal (external)	H W D	mm mm mm	320 (707) 400 (585) 250 (434)	400 (787) 400 (585) 330 (514)	560 (947) 400 (585) 330 (514)	480 (867) 560 (745) 400 (584)	720 (1107) 560 (745) 400 (584)	800 (1186) 640 (824) 500 (684)
Shelves sup	plied		1	1	2	2	2	2
Shelf positi	ions		3	4	6	5	8	9
Power load	ling	kW	1.6	2.0	2.5	2.8	3.2	3.4
Net weight	:	kg	44	55	64	72	80	96

Sterilising Ovens, SN/SF Series, Memmert

As described. With SingleDISPLAY controller, integral process timer adjustable from 1 minute to 99 days, 23 hours, dual overload protection, TFT display of temperature and time, chamber ventilation slide adjustment and stainless steel grid shelves. For 230V 50/60Hz single phase supplies.

SN Natural convection, SingleDISPLAY Controller Models

 OV330-20
 SN30, 32 litres

 OV330-22
 SN55, 53 litres

 OV330-24
 SN75, 74 litres

 OV330-26
 SN110, 108 litres

 OV330-28
 SN160, 161 litres

 OV330-30
 SN260, 256 litres

SF Forced air convection, SingleDISPLAY Controller Models

OV330-40	SF30, 32 litres
OV330-42	SF55, 53 litres
OV330-44	SF75, 74 litres
OV330-46	SF110, 108 litres
OV330-48	SF160, 161 litres
OV330-50	SF260, 256 litres

Accessory Shelves

Stainless steel wire grid.			
IN473-04	73-04 For 32 litre oven		
IN473-06	For 53 and 74 litre ovens		
IN473-08	For 108 and 161 litre ovens		
IN473-10	For 256 litre oven		

Alternative sizes and controller configurations are available - details on request.



Vacuum Oven

FISTREEM

- Rectangular light alloy chamber, capacity 31 litres
- Temperature range +30 to +200°C
- PID controller with overtemperature alarm indicator
- Large door window with polycarbonate safety shield allows unobstructed viewing of the chamber
- Two valves provided, for vacuum connection and inert/dry air gassing, respectively
- Analogue vacuum gauge included, range 0 to 1000mbar
- Independent over-temperature safety protection in the event of controller failure

Catalogue No.		OV930-40
Usable volume	litres	31
Temperature range	°C	+30 to +200
Internal, W x D x H	mm	375 x 310 x 260
External W x D x H	mm	650 x 425 x 420
Shelves supplied		2
Shelf positions		3
Inlet/Outlet connections		for 10 to 12mm i.d tubing
Power rating	W	1000
Weight, net	kg	43

Vacuum Oven, +30 to +200°C

As described. With rectangular light alloy chamber, PID controller, vacuum and exhaust valves and gauge. For 220-240V 50Hz supplies. **0V930-40** Capacity 31 litres

Diaphragm Vacuum Pump

(vacuubrand)

A two stage, oil-free diaphragm pump with excellent performance and low leak rate, ideal for use with vacuum ovens.

- For general applications with pumped material in contact with aluminum and Viton[®] (FPM)
- Compact drive gives very quiet operation with ultra-low vibration levels
- IP42 protection rating

Catalogue No.		PX440-32
Model		MZ2NT
Stages		2
Max. pumping	@ 50Hz m³/h	2.2
speed	@ 60Hz m³/h	2.4
Ultimate vacuum	mbar	7
Inlet/outlet nozzles	s mm	10 (fitted with silencer)
Overall H	mm	198
W	mm	242
D	mm	255
Weight	kg	11.1

Diaphragm Pump, Vacuubrand

As described. With fabric-reinforced Viton diaphragm. For 230V 50/60Hz single phase supplies.

PX440-32 Model MZ2NT

Tubing, Heavy Wall, to BS2775

Natural red rubber. Dimensions given are bore \boldsymbol{x} wall. Supplied in a coil of 10 metres.

TY230-32 Size H10, 10 x 7mm





OV930

PX440-32

Hotplates

Circular and Rectangular, Metal plate

Hotplates, 325°C

Energy regulator control. With aluminium top plate in diameter as indicated. A metal grille surround protects the user from inadvertently touching the hotplates and stops flasks/vessels from toppling off the plate.

Model		ECH90	ECH230
Top plate	mm	90	220
Overall	W, mm D, mm H. mm	125 125 125	250 250 100
Power		500	2000

As described. For 230V 50/60Hz single phase supplies. HP185-10 ECH90

HP185-60 ECH230

Accessories for HP185-10 only

Aluminium bowl to fit 90mm diameter hotplates and round bottom flasks as indicated.

HP185-95 For 500ml flasks

Hotplate, 325°C, Undergrad US150, Stuart

Microprocessor tcontrol with direct temperature setting using dial switch with back illuminationwhich progressively lights as the plate temperature increases to set-point. Maximum capacity 15 litres. Cast aluminium/silicon alloy top plate with thin ceramic coating for additional chemical resistance, 150 x 150mm W x D. Overall 172 x 248 x 120mm W x D x H. With illuminated power and "hot plate" indicators, retort rod mount behind the top plate. For 230V 50Hz single phase supplies, 700W.

HP200-17 150 x 150mm

Hotplate Temperatures

The maximum surface temperature achieved by a hotplate is influenced by the material being heated and the siting of the plate. Therefore the temperatures stated are nominal.



HP185-10 in use

HP185-60 in use

Hotplates

Rectangular, Metal plate continued

Hotplates, 350°C

Energy regulator control. Solid aluminium plate. A bracket is provided to take threaded M10 retort rods. Overall height 200mm. With illuminated on/off switch and indicator lamp. For 230V a.c. 50/60Hz single phase supplies. Dimensions given are for the top plate.

HP305-10 305 x 240mm, 1kW HP330-10 457 x 305mm, 2kW

Hotplates, 300°C, SB300/SB500, Stuart

Maximum temperature 300°C. Energy regulator control with cast aluminium/silicon alloy top plate and 'hot' warning lamp which illuminates when the plate temperature exceeds 70°C. The 300 x 300 top plate model has a retort rod mounting at the rear of the housing.

As described. For 230V 50/60Hz single phase supplies.

HP320-65 SB300 HP320-85 SB500

......

Model		SB300	SB200
Top plate	mm	300 x 300	500 x 300
Overall	W mm D mm H mm	300 365 105	520 360 130
Weight	kg	6	12
Power	W	600	1500

Hotplates, 320°C

Thermostat control. PTFE coated cast aluminium plate 455 x 255mm. Overall height 152mm. With illuminated on/off switch and indicator lamp. For 220-240V 50Hz single phase supplies, 2.3kW.

HP325-10 455 x 255mm

Hotplates, 350°C

Energy regulator control. Aluminium sprayed steel plate 686 x 305mm. Overall height 200mm. With illuminated on/off switch and indicator lamp. For 220-240V 50/60Hz single phase supplies, 3kW.

HP330-25 686 x 305mm

Microscope slide drying hotplates - see HG310.

Hotplates, 300°C, SD300/SD500, Stuart

Maximum temperature 300°C. Digital setting and control of plate temperature with 1°C resolution and cast aluminium/silicon alloy top plate. The 300 x 300 top plate model has a retort rod mounting at the rear of the housing.

Model		SD300	SD500	
Top plate	mm	300 x 300	500 x 300	
Overall	W mm D mm H mm	300 365 105	520 360 130	
Weight	kg	6	12	
Power	W	600	1500	

As described. For 230V 50/60Hz single phase supplies. HP347-70 SD300

HP347-85 SD500

Hotplate Temperatures

The maximum surface temperature achieved by a hotplate is influenced by the material being heated and the siting of the plate. Therefore the temperatures stated are nominal.



HP305 in use, HP330 is similar





HP347-85 in use

Hotplates

Ceramic plate

Hotplate, 450°C, Undergrad, Stuart

Microprocessor control with direct temperature setting using a dial switch with back illumination which progressively lights as the plate temperature increases to set point and power and 'heater on' indicators (the heater lamp flashes when the plate temperature exceeds 50°C). Glass ceramic plate 150 x 150mm. Overall 172 x 248 x 122mm W x D x H. Weight 2.2kg. For 230V 50Hz single phase supplies, 500W. HP405-23 UC150

Hotplates, CB300/CB500, Stuart

Maximum temperature as indicated. Energy regulator control with glass ceramic top plate and 'hot' warning lamp which illuminates when the plate temperature exceeds 70°C. The 300 x 300 top plate model has a retort rod mounting at the rear of the housing.

Model		CB300	CB500
Max. temp.	°C	450	375
Top plate	mm	300 x 300	500 x 300
Overall W x D x H	mm	300 x 365 x 105	520 x 360 x 130
Weight	kg	6	12
Power	W	1200	2250

As described. For 230V 50/60Hz single phase supplies.

HP405-40	CB300
HP405-45	CB500

Hotplate, 500°C, HSMNHP4CAL, Ohaus

Maximum temperature 500°C and capacity 1 litre (water). With powerful, microprocessor-controlled heating, dial setting with arbitrary scale, bright white, moulded ceramic, 102 x 102mm top plate which is acid and alkali resistant and with support rod clamp within the rear housing. Overall W x D x H 152 x 201 x 127mm, weight 1.8kg. For 230V 50/60Hz single phase supplies. *HP408-10* HSMNHP4CAL

SL400-15 Accessory retort rod, 600mm

Infra-red

Hotplate, Infra-red, CR300, Stuart

Nominal maximum temperature 400°C. With black glass ceramic top plate 300 x 300mm (heated area 140mm diameter) and very efficient 900W infra-red heater which will boil 1 litre of water over 30% faster than a conventional 1200W hotplate. A safety 'hot' warning illuminates when the plate temperature exceeds 70°C. Overall 300 x 365 x 105mm W x D x H. Weight 4kg. For 230V 50/60Hz single phase supplies.

HP420-35 CR300

Hotplate Temperatures

The maximum surface temperature achieved by a hotplate is influenced by the material being heated and the siting of the plate. Therefore the temperatures stated are nominal.



HP405-23 in use



HP405-40, HP405-45 is similar



HP408-10 in use



HP420-35

Burners

Bunsen Burner, Universal

Overall height 160mm.

BY160-10 Universal

TY280-15

TY280-20

TY280-25

Tubing, for gas burners

Gauzes – see Gauzes section. Tripod Stands – see Stands section.

Tubing - see Tubing section.

Can be used with coal and natural gases, LPG and mixtures of these. With air

regulator, needle valve and an adjustable baffle in the 13mm o.d. burner tube.

Neoprene rubber with 8mm i.d. reinforced ends. Supplied singly.

Length, mm

450

600

900

Bunsen Burners

All burners have a heavy, pressure diecast base with integral inlet tube for 8mm bore flexible gas tubing. Bases are finished in chemically resistant, blue acrylic paint. For operation with gas types as indicated.

Bunsen Burners

Overall height approximately 124mm. Dimension given is the outside diameter of the burner tube.

	o.d. mm	For gas type	
With air reg	ulator		
BY100-10	11	Natural	
BY100-12	13	Natural	
BY100-20	11	LPG	
BY100-22	13	LPG	
With control	stopcock an	d pilot flame	
BY100-30	13	- Natural	
BY100-32	13	LPG	

Cartridge Burner, Bunsen pattern

Portable burner for use with accessory "Primus" 220g LPG gas cartridges. Constructed in brass with 13mm diameter, Bunsen pattern, nozzle, gas control valve and air regulator. Each 220g gas cartridge provides a continuous burning time of approximately 2.75 hours. Overall height when mounted on cartridge, 190mm. Without gas cartridge.

BY125-10 Cartridge burner, Bunsen pattern, 13mm, LPG

Note: Local purchase of gas cartridges is recommended. Gas cartridges can be exported only as seafreight – deck cargo.





BY100-10





BY125 on cartridge

BY160



TY280 in use

Burners

Micro Burners

Bunsen Burners, Micro

With air regulator. Overall height approximately 90mm. Burner tube 10mm o.d.

	For gas type	
BY170-10	Natural	
BY170-12	LPG	

Bunsen Burner, Micro, Portable

Self-contained. With built-in LPG gas tank, which requires charging from readily available (cigarette lighter) containers, manual piezo ignition button, gas control valve and air regulator. Burner tube 9mm diameter. Overall height 92mm. Gas consumption 56g/hour. Without gas charge. BY175-12 Self contained micro burner

Note: Gas cartridges can be exported only as seafreight - deck cargo. Local purchase is recommended.

Teclu Burners

Teclu Burners

With air regulator and gas control needle valve. Overall height approximately 127mm. Burner tube 13mm o.d.

	For gas type	
BY250-10 BY250-12	Natural I PG	
D1230-12	LFG	

Meker Burners

Meker pattern

With metal grid to ensure an evenly distributed flame. Overall height approximately 140mm. Dimension is the grid diameter.

	o.d. mm	For gas type	
BY280-12	30	Natural	
BY280-16	43	Natural*	
BY280-22	20	LPG	
BY280-38	43	LPG*	

*BY280-16 and -38 are 180mm high.

Cartridge Burner, Meker pattern

Portable burner for use with conventional "Primus" 220g LPG gas cartridges. Constructed in brass with 17mm diameter plated steel grid at the nozzle, gas control valve and air regulator. A220g gas cartridge will provide a continuous burning time of approximately 2.75 hours. Overall height when mounted on cartridge, 190mm. Without gas cartridge.

BY284-10 Cartridge burner, 17mm LPG

Note: Local purchase of gas cartridges is recommended. Gas cartridges can be exported only as seafreight - deck cargo.



BY170







BY250





BY280-16, BY280-38 is similar



BY284-10 on cartridge

Meker Burners, AMAL Major

With ceramic grid 43mm diameter, alternative jets and insulated handle. Overall height 180mm. Natural gas jets Nos. 160/150/170/180. LPG jets Nos. 40/30/50/60.

	For gas type	
BY300-10 BY300-12	Natural LPG	



Burners

Laboratory Burners, Fuego SCS

For occasional or intermittent use, or serial flame sterilisation.

- Automatic gas ignition
- Low-profile easily cleaned stainless steel casing ٠
- Gas and air regulators for fine control ٠
- Visual alarm of burner head clogging and "burner hot" residual heat indicator
- Smooth sculpted design channels spillages away ٠
- Can be tilted to avoid nozzle contamination ٠
- Overheat protection system cuts off gas supply if overheating occurs or ٠ the electrical supply interrupted

Burner, Fuego SCS basic

With push-button ignition. The flame is maintained as long as the button is pressed and extinguishes on release. Alternatively, a foot pedal provided allows hands-free operation if required. Supplied with foot pedal, tilt mechanism, nozzles for natural gas or LPG, rack for up to 3 wire loop holders, tubing connector, wrench for gas connection and screwdriver for burner head. Overall 103 x 130 x 49mm L x W x H. Weight 0.7kg. Requires a 230V 50/60Hz single phase supply for the ignition circuit. Without gas supply. BY340-30 Fuego SCS basic

Burner, Fuego SCS

Generally as BY340-30 but without foot pedal and with Infra-red sensor, range 5 to 50mm, requiring two hand movements to activate the flame which is maintained for a timed period adjustable within two ranges: start-stop from 1 second to 2 hours or Auto-off from 1 second to 2 hours. An LCD readout with heat resistant glass face indicates time remaining and burner functions/ adjustment. An accessory foot pedal is available, if preferred. Requires a 230V 50/60Hz single phase supply for the ignition circuit. Without gas supply.

BY340-40 Fuego SCS

Accessories

BY344-06	Foot pedal. Accessory for BY340-40
BY344-12	Glass safety shield. For added safety when
	handling pathogenic material
BY344-24	Gas cartridge, CV270, 250g
BY344-26	Adapter for connecting BY344-24 to BY340-burners

Note: Gas cartridges BY344-24 can be exported only as sea freight - deck cargo. Local purchase is recommended.

Lighters

Gas Lighter, Flint

Comprising spring holder, adjustable shielded flint and striking plate. BY380-40 Gas lighter, flint BY382-10 Spare flints, pack of 10

Gas Lighter, Piezo

Suitable for igniting the common fuel gases. Sparks produced by squeezing the handle. No battery required. BY385-10 Gas lighter, piezo

Liquid Fuel Burner, Safety Pattern

For use with methylated spirit. Glass reservoir. With virtually leakproof, screw-on metal wick support, wick and metal screw cap cover. **BY400-16** 100ml

Electric Heaters for test tubes, crucibles, instruments, etc. - see HE760 in the Heating section.

Wood splints - see GE350-10.





BY400-16



BY385-10

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