



FURNACES & OVENS TECHNOLOGY

LABORATORY DIVISION

MUFFLE FURNACES

COMPREHENSIVE STANDARD RANGE · 1000°C – 1300°C

LF - series

SCO Engineering GmbH
Auf der Heide 15
D-37351 Dingelstädt
Federal Republic of Germany

www.sco-engineering.com





FURNACES & OVENS TECHNOLOGY

LABORATORY DIVISION

MUFFLE FURNACES

COMPREHENSIVE RANGE · 1000°C – 1300°C

- **MF Series: High Quality 24/7 Continuous-T° Muffle Furnaces**
 - 1000°C – 1200°C – 1300°C
 - vertical parallel lift door · refined design · ceramic fiber insulation
- **PR Series: High Quality 24/7 Continuous-T° Muffle Furnaces**
 - 1000°C – 1200°C – 1300°C
 - pantograph side door · sturdy design · brick insulation
- **HD Series: Flex Muffle Furnaces**
 - 1000°C – 1200°C
 - drop down & side swing door · brick insulation
- **JB & HK series + HD200: Flex Muffle Furnaces**
 - 1000°C – 1100°C
 - drop down & side swing door · ceramic fiber insulation



MF SERIES

VERTICAL PARALLEL LIFT DOOR · REFINED DESIGN · CERAMIC FIBER INSULATION (1200/1400, 300/400)

High Quality 24/7 Continuous-T° Muffle Furnaces · 1000°C - 1200°C - 1300°C

STANDARD FEATURES

- CE manufactured
- Maximum operating temperature:
1000°C - 1200°C - 1300°C
- Rapid heating
- Compact and lightweight
- 24/7 continuous work capability
- 4 heating plates with KANTHAL AF
- Low thermal mass insulation
- Built with low density ceramic bricks and ceramic fiber
- Double insulation includes air chamber
- Outer case in painted metal sheet (inox optional)
- Rear ventilation via ceramic chimney
- Ceramic tray included
- Thermocouple type K or S
- Spare parts easily replaceable by end user

FURNACE CONTROLS

- Lower front control panel
- Solid state relay
- General safety switch
- General safety contactor
- **PAD Digital control**
 - PID parameters
 - Non-volatile memory
 - Microprocessor-based temperature controls
 - Alarm

CONTROL OPTIONS

- 1 program / 8 segments programmer
- 4 program / 15 segments programmer
- Programmers up to 64 segments
- Data logger and programmer communication by Ethernet/ RS232

SAFETY SHUT-OFF

- Thermocouple break shut-off
- Turns off upon door opening

ACCESSORIES

- Interchangeable temperature-uniform trays with rim
- Refractory ceramic tray
- Incoloy stainless steel tray
- Smoke chimney
- Forced smoke chimney
- Safety alarm Class II. Over-temperature protection
- Inlet gas entry
- Flow meter box
- and more, ask for our full assortment!



MF SERIES

VERTICAL PARALLEL LIFT DOOR · REFINED DESIGN · CERAMIC FIBER INSULATION (1200/1400, 300/400)

High Quality 24/7 Continuous-T° Muffle Furnaces • 1000°C - 1200°C - 1300°C

CHARACTERISTICS

- Modern design metal case with chrome-phosphatizing base protection and external finish with heat-resistant metal paint.
- Refractory parts engineered to resist extreme temperature changes, and specific ceramic paste types applied according to temperature and work fatigue of each part.
- Heat resistance in refractory insulation of very low thermal conductivity coefficient.
- Door system adjusted on the furnace frame by pressure, allowing for complete sealing. Electrically and thermally insulated door handle.

ACCESSORIES

- Extraction Chimney: Self-extraction design to eliminate smoke in processes that produce smoke in a considerable amount or when smoke extraction is advisable due to the nature of the process. Chimney outlet connection to a smoke bell or to the exterior by end user.
- Forced air extraction chimney: Specially designed for a forced self-extraction to evacuate smoke fast at resistance in refractory insulation of very low thermal conductivity coefficient.
- Bottom trays: Interchangeable, temperature uniform, with rim to protect against spilling, fusion or adherence of materials.

SPECIFICATIONS

Fully customized solutions by request
We reserve the right to change technical specifications

MUFFLE FURNACES LABORATORY AND INDUSTRY MAX. TEMPERATURE 1000° C - 1200° C - 1300° C

Code	Reference	Internal dimensions mm			External dimensions mm			Volume Liters	Power Kw	Voltage V	Maximum Temperature ° C	Maximum Temperature ° C on work limited	Maximum Temperature ° C Continuous	Net Weight Kgr	Termo- couple	Control Type	Heating Elements	Heating Zones
		High	Wide	Deep	High	Wide	Deep											
300200310	LF-MF-3-104	100	150	200	600	430	425	3	2,2	220	1000	950	900	60	K	Digital	Wire Kanthal	4
300200910	LF-MF-9-102	150	200	300	660	480	525	9	2,5	220	1000	900	-----	65	K	Digital	Wire Kanthal	2
300400910	LF-MF-9-104	150	200	300	660	480	525	9	3,3	220	1000	950	900	70	K	Digital	Wire Kanthal	4
300401210	LF-MF-12-104	150	200	400	660	480	625	12	3,3	220	1000	950	900	80	K	Digital	Wire Kanthal	4
300201210	LF-MF-12-102	150	200	400	660	480	625	12	3	220	1000	900	-----	75	K	Digital	Wire Kanthal	2
300202210	LF-MF-22-102	200	280	390	750	580	625	22	3,5	220	1000	900	-----	95	K	Digital	Wire Kanthal	2
300402210	LF-MF-22-104	200	280	390	750	580	625	22	5,5	220	1000	950	900	100	K	Digital	Wire Kanthal	4
300400312	LF-MF-3-124	100	150	200	600	430	425	3	3,3	220	1200	1150	1100	60	K	Digital	Wire Kanthal	4
300200912	LF-MF-9-122	150	200	300	660	480	525	9	3	220	1200	1100	-----	65	K	Digital	Wire Kanthal	2
300400912	LF-MF-9-124	150	200	300	660	480	525	9	5,5	220 220 III 380 III	1200	1150	1100	70	K	Digital	Wire Kanthal	4

Code	Reference	Internal dimensions mm			External dimensions mm			Volume Liters	Power Kw	Voltage V	Maximum Temperature ° C	Maximum Temperature ° C on work limited	Maximum Temperature ° C Continuous	Net Weight Kgr	Termo- couple	Control Type	Heating Elements	Heating Zones
		High	Wide	Deep	High	Wide	Deep											
300401212	LF-MF-12-124	150	200	400	660	480	625	12	5,5	220 220 III 380 III	1200	1150	1100	80	K	Digital	Wire Kanthal	4
300201212	LF-MF-12-122	150	200	400	660	480	625	12	4	220	1200	1100	-----	75	K	Digital	Wire Kanthal	2
300202212	LF-MF-22-122	200	280	390	750	580	625	22	4,5	220	1200	1100	-----	95	K	Digital	Wire Kanthal	2
300402212	LF-MF-22-124	200	280	390	750	580	625	22	8	220 220 III 380 III	1200	1150	1100	100	K	Digital	Wire Kanthal	4
300400313	LF-MF-3-134	100	150	200	600	430	425	3	3,3	220	1300	1250	1100	60	S	Digital	Wire Kanthal	4
300200913	LF-MF-9-132	150	200	300	660	480	525	9	3	220	1300	1250	-----	65	S	Digital	Wire Kanthal	2
300400913	LF-MF-9-134	150	200	300	660	480	525	9	5,5	220 220 III 380 III	1300	1250	1100	70	S	Digital	Wire Kanthal	4
300401213	LF-MF-12-134	150	200	400	660	480	625	12	5,5	220 220 III 380 III	1300	1250	1100	80	S	Digital	Wire Kanthal	4
300201213	LF-MF-12-132	150	200	400	660	480	625	12	4	220	1300	1250	-----	75	S	Digital	Wire Kanthal	2
300202213	LF-MF-22-132	200	280	390	750	580	625	22	4,5	220	1300	1250	-----	95	S	Digital	Wire Kanthal	2
300402213	LF-MF-22-134	200	280	390	750	580	625	22	8	220 220 III 380 III	1300	1250	1100	100	S	Digital	Wire Kanthal	4
	LF-MF-30-104	250	280	390	800	580	625	30	8	220 220 III 380 III	1000	950	900		K	Digital	Wire Kanthal	4
	LF-MF-30-124	250	280	390	800	580	625	30	8	220 220 III 380 III	1200	1150	1100		K	Digital	Wire Kanthal	4
	LF-MF-30-134	250	280	390	800	580	625	30	8	220 220 III 380 III	1300	1250	1100		S	Digital	Wire Kanthal	4





PR SERIES

VERTICAL PANTOGRAPH SIDE DOOR · STURDY DESIGN · BRICK INSULATION (23/26)

High Quality 24/7 Continuous-T° Muffle Furnaces · 1000°C - 1200°C - 1300°C

STANDARD FEATURES

- CE manufactured
- Maximum operating temperature:
1000°C - 1200°C - 1300°C
- Compact and lightweight
- 24/7 continuous work capability
- 4 heating plates with KANTHAL AF
- Low thermal mass insulation
- Built with low density ceramic bricks and ceramic fiber
- Double insulation includes air chamber
- Outer case in painted metal sheet (inox optional)
- Rear ventilation via ceramic chimney
- Ceramic tray included
- Thermocouple type K or S
- Spare parts easily replaceable by end user

FURNACE CONTROLS

- Lower front control panel
- Solid state relay
- General safety switch
- General safety contactor
- **PAD Digital control**
 - PID parameters
 - Non-volatile memory
 - Microprocessor-based temperature controls
 - Alarm

CONTROL OPTIONS

- 1 program / 8 segments programmer
- 4 program / 15 segments programmer
- Programmers up to 64 segments
- Data logger and programmer communication by Ethernet/ RS232

SAFETY SHUT-OFF

- Thermocouple break shut-off
- Turns off upon door opening

ACCESSORIES

- Interchangeable temperature-uniform trays with rim
- Refractory ceramic tray
- Incoloy stainless steel tray
- Smoke chimney
- Forced smoke chimney
- Safety alarm Class II. Over-temperature protection
- Inlet gas entry
- Flow meter box
- and more, ask for our full assortment!



PR SERIES

VERTICAL PANTOGRAPH SIDE DOOR · STURDY DESIGN · BRICK INSULATION (23/26)

High Quality 24/7 Continuous-T° Muffle Furnaces · 1000°C - 1200°C - 1300°C

CHARACTERISTICS

- Reinforced construction, metal case with chrome-phosphatizing base protection and external finish with heat-resistant metal paint.
- Refractory parts engineered to resist extreme temperature changes, and specific ceramic paste types applied according to temperature and work fatigue of each part.
- Heat resistance in refractory insulation of very low thermal conductivity coefficient.
- Pantograph side door allows for a complete clear opening, protecting workers from ceramic block heat radiation. Pressure-adjusted door system, allowing for complete sealing. Half-opened door mode for a quick smoke evacuation. Electrically and thermally isolated door handle.

BASIC ACCESSORIES

- Extraction Chimney: Self-extraction design to eliminate smoke in processes that produce smoke in a considerable amount or when smoke extraction is advisable due to the nature of the process. Chimney outlet connection to a smoke bell or to the exterior by end user.
- Forced air extraction chimney: Specially designed for a forced self-extraction to evacuate smoke fast at resistance in refractory insulation of very low thermal conductivity coefficient.
- Bottom trays: Interchangeable, temperature uniform, with rim to protect against spilling, fusion or adherence of materials.

SPECIFICATIONS

Fully customized solutions by request
We reserve the right to change technical specifications

MUFFLE FURNACES LABORATORY AND INDUSTRY MAX. TEMPERATURE 1000° C - 1200° C - 1300° C

Code	Reference	Internal dimensions mm			External dimensions mm			Volume Liters	Power Kw	Voltage V	Maximum Temperature °C	Maximum Temperature °C on work limited	Maximum Temperature °C Continuous	Net Weight Kg	Termo-couple	Control Type	Heating Elements	Heating Zones
		High	Wide	Deep	High	Wide	Deep											
990000310	LF-10PR/200	100	150	200	505	460	560	3	2.2	220	1000	950	900	90	K	Digital	Wire Kanthal	4
990000910	LF-10PR/300	150	200	300	700	550	800	9	3.3	220	1000	950	900	98	K	Digital	Wire Kanthal	4
990002210	LF-10PR/400	200	280	390	750	600	900	22	5.5	220	1000	950	900	180	K	Digital	Wire Kanthal	4
990000312	LF-12PR/200	100	150	200	505	460	560	3	3.3	220	1200	1150	1100	90	K	Digital	Wire Kanthal	4
990000912	LF-12PR/300	150	200	300	700	550	800	9	5.5	220 220 III 380 III	1200	1150	1100	98	K	Digital	Wire Kanthal	4
990002212	LF-12PR/400	200	280	390	750	600	900	22	8	220 220 III 380 III	1200	1150	1100	180	K	Digital	Wire Kanthal	4
990003012	LF-12PR/450	250	280	390	750	600	600	30	8	220 220 III 380 III	1200	1150	1100	200	K	Digital	Wire Kanthal	4
990004312	LF-12PR/500	250	350	500	820	700	1000	43	8	220 220 III 380 III	1200	1100	1000	250	K	Digital	Wire Kanthal	4
990005212	LF-12PR/600	250	350	600	820	700	1100	52	8	220 220 III 380 III	1200	1100	1000	300	K	Digital	Wire Kanthal	4
990000313	LF-13PR/200	100	150	200	505	460	560	3	3.3	220	1300	1250	1100	90	S	Digital	Wire Kanthal	4
990000913	LF-13PR/300	150	200	300	700	550	800	9	5.5	220 220 III 380 III	1300	1250	1100	98	S	Digital	Wire Kanthal	4
990002213	LF-13PR/400	200	280	390	750	600	900	22	8	220 220 III 380 III	1300	1250	1100	180	S	Digital	Wire Kanthal	4
990003013	LF-13PR/450	250	280	390	750	600	600	30	8	220 220 III 380 III	1300	1250	1100	200	S	Digital	Wire Kanthal	4



HD SERIES

DROP DOWN & SIDE SWING DOOR · BRICK INSULATION (23)

Flex Muffle Furnaces · 1000°C - 1200°C

STANDARD FEATURES

- CE manufactured
- Affordable basic line
- Maximum temperature 1200°C
- Compact and lightweight
- Designed for occasional intermittent work
- 2 or 3 heating plates with KANTHAL AF
- Double low thermal mass insulation
- Built with low density ceramic 23/26 bricks and ceramic fiber
- Outer case in painted metal sheet (inox optional)
- Ceramic chimney
- Thermocouple type K
- Spare parts easily replaceable by end user

CHAMBER OPTIONS

- Fiber insulation by request

FURNACE CONTROLS

- Lower front or lateral control panel
- Solid state relay
- **PA Analogical control**

OR

- **PAD Digital control**
 - PID parameters
 - Non-volatile memory
 - Microprocessor
 - Alarm

DIGITAL CONTROL OPTIONS

- 1 program / 8 segments programmer
- 4 program / 15 segments programmer
- Programmers up to 64 segments
- Data logger and programmer communication by Ethernet/ RS232

SAFETY SHUT-OFF

- Thermocouple break shut-off

ACCESSORIES

- Interchangeable temperature-uniform trays with rim
- Refractory ceramic tray
- Incoloy stainless steel tray
- Smoke chimney
- Forced smoke chimney
- Safety alarm Class II. Over-temperature protection
- Inlet gas entry
- Flow meter box
- and more, ask for our full assortment!



HD SERIES

DROP DOWN & SIDE SWING DOOR · BRICK INSULATION (23)

Flex Muffle Furnaces · 1000°C - 1200°C

CHARACTERISTICS

- Metal case with chrome-phosphatizing base protection and external finish with heat-resistant metal paint.
- Easy loading drop down or side swing door closes hermetically, brick on brick.

CONTROLS OPTIONS

- **"PA" CONTROL:** analog temperature adjustment.

OR

- **"PAD" CONTROL:** Allows for automatic temperature control and adjustment through an automatic digital adjusting pyrometer, such that temperature and temperature rise speed and inertia can be monitored at any time.

BASIC ACCESSORIES

- Extraction Chimney: Self-extraction design to eliminate smoke in processes that produce smoke in a considerable amount or when smoke extraction is advisable due to the nature of the process. Chimney outlet connection to a smoke bell or to the exterior by end user.
- Forced air extraction chimney: Specially designed for a forced self-extraction to evacuate smoke fast at resistance in refractory insulation of very low thermal conductivity coefficient.
- Bottom trays: Interchangeable, temperature uniform, with rim to protect against spilling, fusion or adherence of materials.

SPECIFICATIONS

Fully customized solutions by request
We reserve the right to change technical specifications

MUFFLE FURNACES ECONOMY SERIE LABORATORY MAX. TEMPERATURE 1000° C - 1100° C - 1200° C

Code	Reference	Internal dimensions mm			External dimensions mm			Volume Liters	Power kW	Voltage V	Maximum Temperature °C	Maximum Temperature °C on work limited	Maximum Temperature °C Continuous	Net Weight Kg	Termo-couple	Control Type	Heating Elements	Heating Zones
		High	Wide	Deep	High	Wide	Deep											
960020212	LF-HD150 PAD	80	130	150	430	300	330	1.6	1.7	220	1200	1100	—	30	K	Digital	Wire Kanthal	3
960010212	LF-HD150 PA	80	130	150	430	300	330	1.6	1.7	220	1200	1100	—	30	K	Analog	Wire Kanthal	3
940020411	LF-HD-230 PAD	160	200	240	490	430	450	7.6	3.8	220	1200	1100	—	45	K	Digital	Wire Kanthal	3
940010411	LF-HD-230 PA	160	200	240	490	430	450	7.6	3.8	220	1200	1100	—	45	K	Analog	Wire Kanthal	3
500021812	LF-HD-330 PAD	230	260	300	600	600	600	18	4.5	220	1200	1100	—	60	K	Digital	Wire Kanthal	2
500011812	LF-HD-330 PA	230	260	300	600	600	600	18	4.5	220	1200	1100	—	60	K	Analog	Wire Kanthal	2
490022112	LF-HD-430 PAD	260	310	300	650	650	600	24	4.5	220	1200	1100	—	75	K	Digital	Wire Kanthal	3
490012112	LF-HD-430 PA	260	310	300	650	650	600	24	4.5	220	1200	1100	—	75	K	Analog	Wire Kanthal	3
	LF-HD-530 PAD	300	310	300	700	750	600	30	4.5	220	1200	1100	—	100	K	Digital	Wire Kanthal	3
	LF-HD-530 PA	300	310	300	700	750	600	30	4.5	220	1200	1100	—	100	K	Analog	Wire Kanthal	3





JB & HK SERIES + HD200

DROP DOWN & SIDE SWING DOOR · CERAMIC FIBER INSULATION (1200/300)

Flex Muffle Furnaces · 1000°C - 1100°C

STANDARD FEATURES

- CE manufactured
- Affordable basic line
- Maximum temperature 1100°C
- Compact and lightweight
- Designed for occasional intermittent work
- 1 or 2 heating plates with KANTHAL AF
- Double Low thermal mass insulation
- Built with ceramic fiber
- Outer case in painted metal sheet (inox optional)
- Ceramic chimney
- Thermocouple type K
- Spare parts easily replaceable by end user

FURNACE CONTROLS

- Lower front or lateral control panel
- Solid state relay
- **PA Analogical control**

OR

- **PAD Digital control**

- PID parameters
- Non-volatile memory
- Microprocessor
- Alarm

DIGITAL CONTROL OPTIONS

- 1 program / 8 segments programmer
- 4 program / 15 segments programmer
- Programmers up to 64 segments
- Data logger and programmer communication by Ethernet/ RS232

SAFETY SHUT-OFF

- Thermocouple break shut-off

ACCESSORIES

- Interchangeable temperature-uniform trays with rim
- Refractory ceramic tray
- Incoloy stainless steel tray
- Smoke chimney
- Forced smoke chimney
- Safety alarm Class II. Over-temperature protection
- Inlet gas entry
- Flow meter box
- and more, ask for our full assortment!



JB & HK SERIES + HD200

DROP DOWN & SIDE SWING DOOR · CERAMIC FIBER INSULATION (1200/300)

Flex Muffle Furnaces · 1000°C - 1100°C

CHARACTERISTICS

- Metal case with chrome-phosphatizing base protection and external finish with heat-resistant metal paint.
- Built with insulating ceramic fiber.

CONTROLS OPTIONS

- **"PA" CONTROL:** analog temperature adjustment.

OR

- **"PAD" CONTROL:** Allows for automatic temperature control and adjustment through an automatic digital adjusting pyrometer, such that temperature and temperature rise speed and inertia can be monitored at any time.

BASIC ACCESSORIES

- Extraction Chimney: Self-extraction design to eliminate smoke in processes that produce smoke in a considerable amount or when smoke extraction is advisable due to the nature of the process. Chimney outlet connection to a smoke bell or to the exterior by end user.
- Forced air extraction chimney: Specially designed for a forced self-extraction to evacuate smoke fast at resistance in refractory insulation of very low thermal conductivity coefficient.

SPECIFICATIONS

Fully customized solutions by request
We reserve the right to change technical specifications

Code	Reference	Internal dimensions mm			External dimensions mm			Volume Liters	Power kW	Voltage V	Maximum Temperature °C	Maximum Temperature °C on work limited	Maximum Temperature °C Continuous	Net Weight Kg	Termo-couple	Control Type	Heating Elements	Heating Zones
		High	Wide	Deep	High	Wide	Deep											

930020810	LF-HK-11 PAD	100	260	300	385	500	440	8	15	220	1000	950	—	35	K	Digital	Wire Kanthal	1
930010810	LF-HK-11 PA	100	260	300	385	500	440	8	15	220	1000	950	—	35	K	Analog	Wire Kanthal	1

950020812	LF-JB-20 PAD	120	150	200	340	450	430	36	12	220	1100	1000	—	29	K	Digital	Wire Kanthal	2
950010812	LF-JB-20 PA	120	150	200	340	450	430	36	12	220	1100	1000	—	29	K	Analog	Wire Kanthal	2
	LF-JB-15 PAD	120	120	120	330	250	280	2	12	220	1100	1000	—	27	K	Digital	Wire Kanthal	2
	LF-JB-15 PA	120	120	120	330	250	280	2	12	220	1100	1000	—	27	K	Analog	Wire Kanthal	2

970010411	LF-HD-200 PAD	120	150	200	450	350	430	36	12	220	1100	1000	—	30	K	Digital	Wire Kanthal	2
970010411	LF-HD200 PA	120	150	200	450	350	430	36	12	220	1100	1000	—	30	K	Analog	Wire Kanthal	2

SCO Tech

Auf der Heide 15
D- 37351 Dingelstädt
Federal Republic of Germany
P: +49 (36075) 439340
F: +49 (36075) 439308
<http://www.sco-tech.com>

