oilon®

Oilon Low NOx Gas Burners

< 80 mg/nm³

Group
3 - 4
Capacity range
0,35 - 11,0 MW

Oilon Low NOx Gas Burners <80 mg/nm^3

Oilon Low-NOx natural gas burners for 80 mg/nm^3 fulfill the requirements of emission class 3 (EN 676).
Low NOx emissions are achieved by new and innovative gas and air distribution and staging in the combustion head.

NOx emissions are also reduced by creating back flows to combustion head in order to reduce flame peak temperatures and flame reaction speed. Low emission values depend on the furnace geometry, the furnace load and the medium temperature in the boiler. Low NOx-levels are mainly achieved on 3-pass boilers.

Technical Data

There are 2-3 combustion head length options (C1, C2, C3) for each burner model. Choose correct combustion head lenght according to the boiler front wall thickness (L1).
The front wall thicknesses are labeled in ranges with corresponding combustion head lengths (L2) in the table below.

BURNER	GP-140 M LN80	GP-250 M LN80	GP-280 M LN80	GP-350 M-XS LN80	GP-350 M LN80	GP-450 M LN80	GP-600 M LN80	GP-700 M-II LN80	GP-700 M-III LN80	GP-1000 M LN80
Capacity MW	0,38 - 1,7	0,35 - 2,1	0,45 - 2,5	0,53 - 3,2	0,91 - 4,0	0,93 - 5,2	0,95 - 6,7	1,2 - 7,6	1,5 - 8,8	1,8 - 11,0
Burner motor 3~ 400 V 50 Hz Output kW	4,0	7,5	7,5	7,5	7,5	15,0	15,0	22,0	30,0	37,0
Turn-down ratio	1:4,5	1:6	1:5,5	1:6	1:6	1:5,5	1:7	1:6	1:6	1:6
D5 minimum*	680	750	800	890	950	980	1150	1200	1260	1370
D5 minimum**	720	800	850	940	1000	1040	1220	1270	1340	1460
L5 minimum***	2500	2900	3200	3500	3800	4500	5000	5200	5500	5900
D1	240	256	276	302	324	324	384	406	406	454
D4	270	290	310	360	380	380	440	455	455	510
Front wall thickness range L1										
C1		240 - 365	240 - 365							
C2	240 - 380	365 - 495	365 - 495	260 - 440	260 - 420	260 - 420	260 - 460	260 - 460	290 - 535	290 - 570
C3	380 - 520	495 - 615	495 - 615	440 - 620	420 - 620	420 - 620	460 - 640	460 - 640	535 - 725	570 - 740
Combustion head length L2****										
C1		420	420							
C2	430	550	550	500	480	480	530	530	610	650
C3	570	670	670	680	680	680	710	710	800	820
Mounting plate dimensions										
S (See figure 3.)	275	365	365	400	400	465	465	465	465	See figure 4.
D (See figure 3.)	270	310	330	380	380	440	455	455	455	See figure 4.
M (See figure 3.)	4xM16	4xM16	4xM16	4xM20	4xM20	4xM20	4xM20	4xM20	4xM20	See figure 4.

L1 is an overall boiler front wall thickness, including refractory, steel front wall and a possible burner mounting plate.
Ratio D6/D5 ≥ 0,7.

See figures 1-4 on the next page.

* For hot water boiler (medium temperature max. +130°).
** For steam boiler (medium temperature max +210°C).
*** Applies to burner nominal capacity. Running the burner at its part-load point allows minimum furnace length to be smaller – value of which may be evaluated from the flame dimension graph at page 4.
**** Gasket 10 mm included.

Fuels: Natural gas, 2nd family gases, groups H and E (equipment category I_{2R}).

We reserve the right to make technical alterations.

Combustion chamber dimensions

Case 1

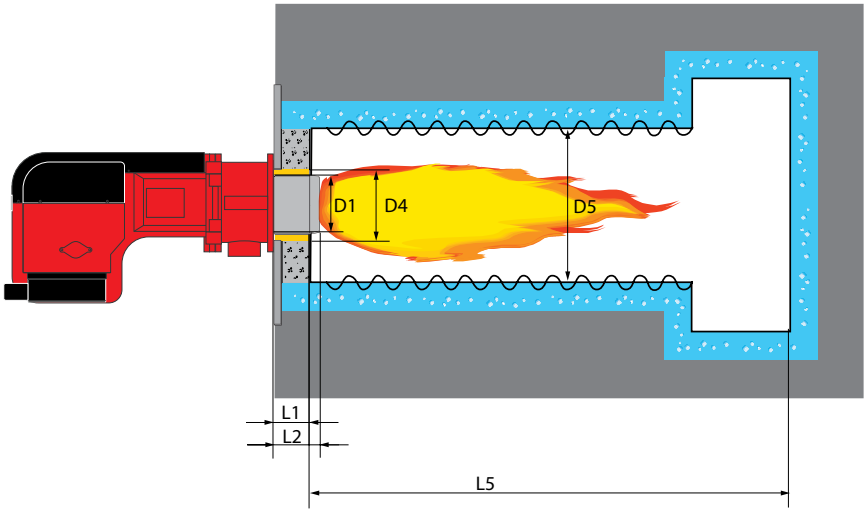


Figure 1.

Case 2

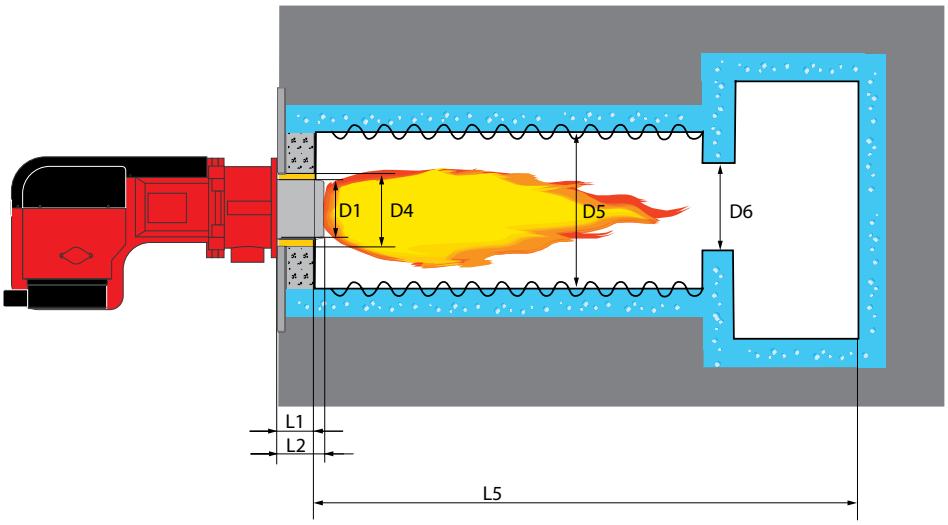


Figure 2.

Mounting plate

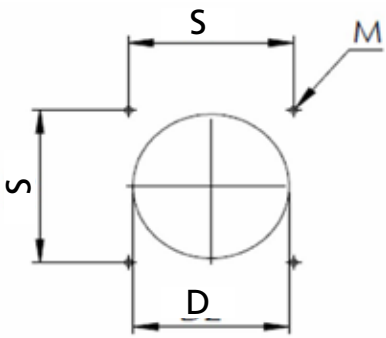


Figure 3.

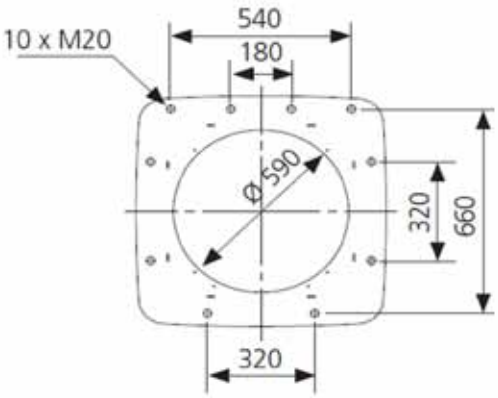
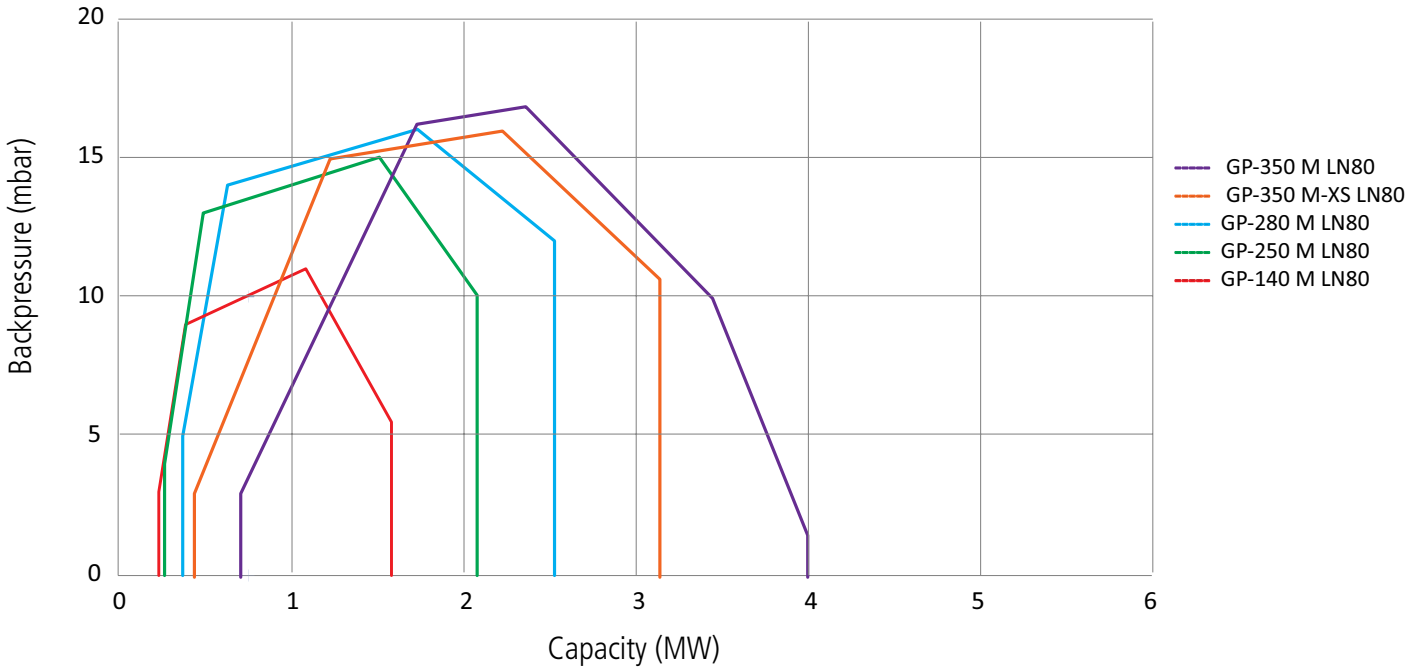
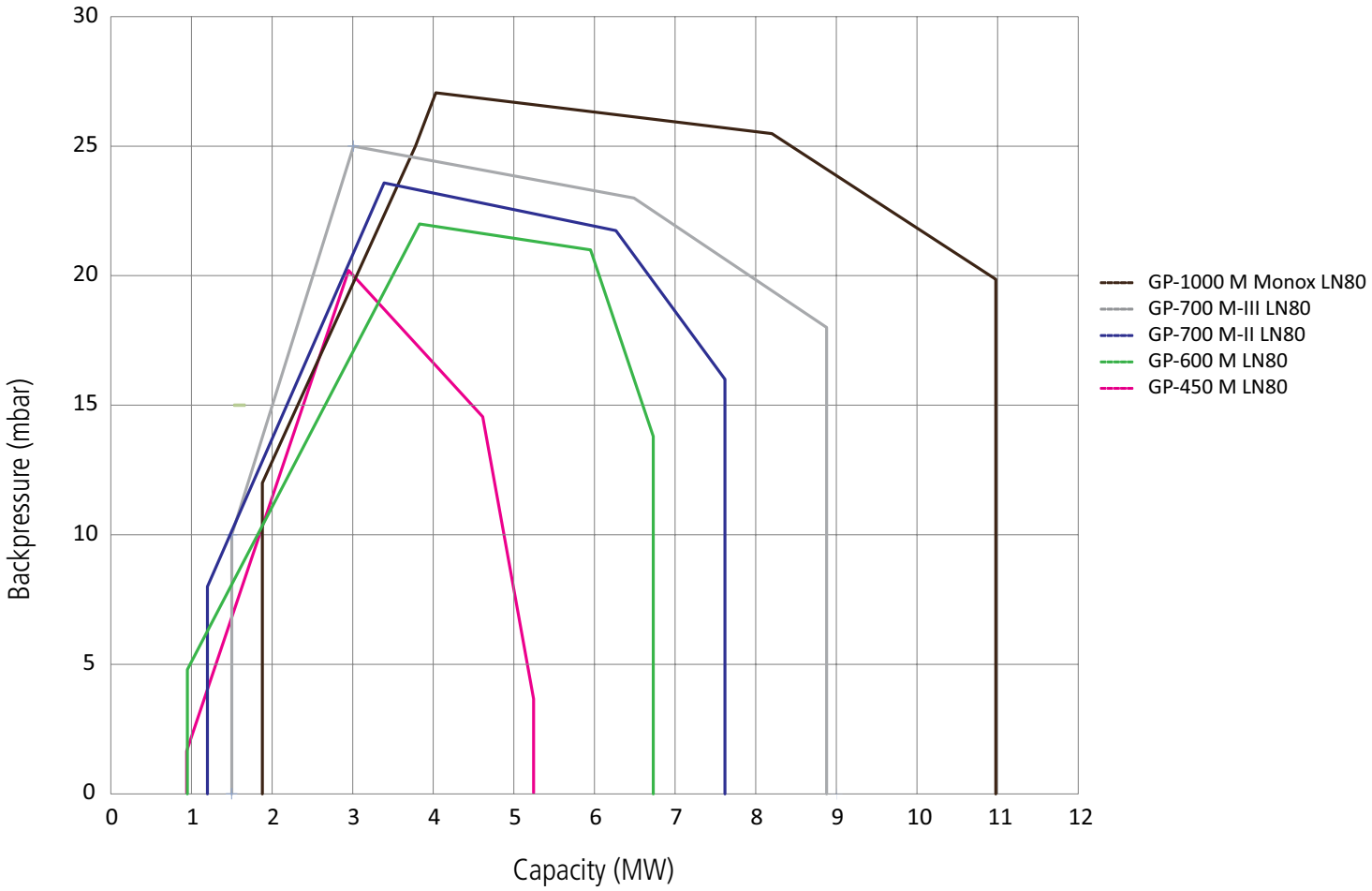


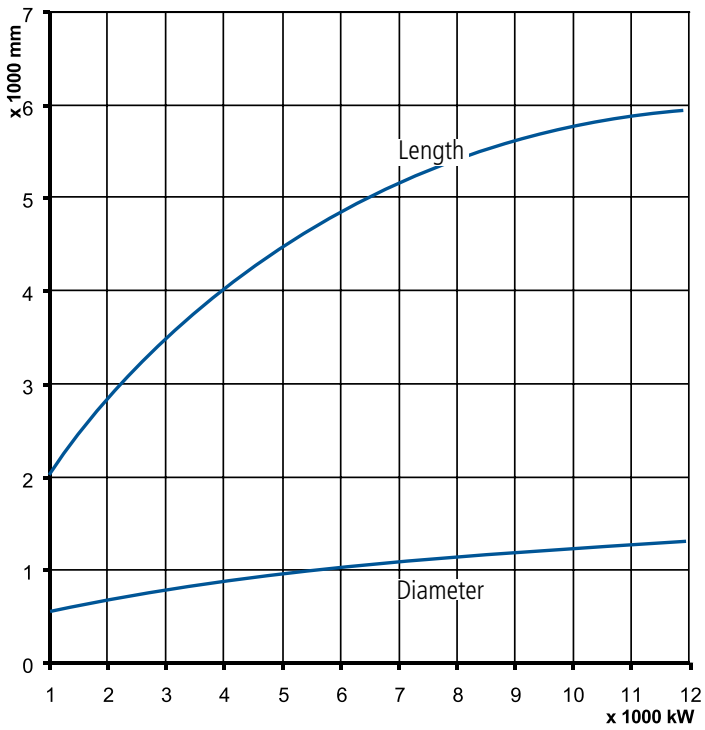
Figure 4.

Capacity/backpressure graphs





Flame dimensions



Scope of delivery

Burner flange gasket	•
WD33 (electronic ratio control) combustion manager and display & operating unit	•
Gas nozzle	•
Max. gas pressure switch	•
Differential air pressure switch	•
Ignition transformer	•
Ignition cables and electrodes	•
Ionisation rod for flame detection	•
Air dampers with servomotor	•
Operating switches	•
Gas damper with servomotor	•
Elbow 90°	•
Double solenoid valve for gas incl.: - gas pressure switch, min. - 2 gas valves - automatic valve leak tester - ball valve, blow-off (delivered unassembled)	• o
Manual	•
Capacity controller	•
Inbuilt combustion air fan with direct-driven electric motor	•
Other optional components (delivered unassembled): - main gas valve - gas filter - gas pressure regulator - pressure gauges - bellow compensator - O_2 control system - O_2/CO control system - variable speed drive (VSD)	o

• standard delivery
o option

Gas valve selection table

BURNER	GAS VALVE		Burner max output, kW*				
			Gas inlet pressure, mbar				
	size	type**	50	100	150	250	350
GP-140 M LN80	DN40/R1 1/2"	VGD 20	900	1600	1600	1600	1600
	DN50/R2"	VGD 40	1000	1600	1600	1600	1600
	DN50	VGD 40	1100	1600	1600	1600	1600
	DN65	VGD 40	1200	1600	1600	1600	1600
	DN80	VDG 40	1300	1600	1600	1600	1600
GP-250 M LN80	DN40/R1 1/2"	VGD 20	1400	2100	2100	2100	2100
	DN50/R2"	VGD 40	1500	2100	2100	2100	2100
	DN65	VGD 40	1600	2100	2100	2100	2100
	DN80	VGD 40	1700	2100	2100	2100	2100
GP-280 M LN80	DN40/R1 1/2"	VGD 20	1500	2500	2500	2500	2500
	DN50/R2"	VGD 40	1900	2500	2500	2500	2500
	DN65	VGD 40	2000	2500	2500	2500	2500
	DN80	VGD 40	2100	2500	2500	2500	2500
GP-350 M-XS LN80	DN50/R2"	VGD 20	1750	2700	3200	3200	3200
	DN65	VGD 40	2000	3000	3200	3200	3200
	DN80	VGD 40	2250	3200	3200	3200	3200
	DN100	VGD 40	2500	3200	3200	3200	3200
GP-350 M LN80	DN50/R2"	VGD 20	2250	3500	4000	4000	4000
	DN65	VGD 40	3000	4000	4000	4000	4000
	DN80	VGD 40	3500	4000	4000	4000	4000
	DN100	VGD 40	3750	4000	4000	4000	4000
GP-450 M LN80	DN50/R2"	VGD 20	2000	3500	4250	5200	5200
	DN65	VGD 40	3000	4750	5200	5200	5200
	DN80	VGD 40	3100	5100	5200	5200	5200
	DN100	VGD 40	3600	5200	5200	5200	5200
	DN125	VGD 40	3750	5200	5200	5200	5200
GP-600 M LN80	DN50/R2"	VGD 40	2200	3500	4500	6000	6700
	DN65	VGD 40	3400	5250	6600	6700	6700
	DN80	VGD 40	4000	6000	6700	6700	6700
	DN100	VGD 40	4500	6700	6700	6700	6700
	DN125	VDG 40	4750	6700	6700	6700	6700
GP-700 M II LN80	DN50/R2"	VGD 40	2350	3600	4600	6100	7300
	DN65	VGD 40	3250	5100	6600	7300	7300
	DN80	VGD 40	4250	6500	7300	7300	7300
	DN100	VDG 40	5000	7300	7300	7300	7300
	DN125	VDG 40	5250	7300	7300	7300	7300
GP-700 M III LN80	DN65	VGD 40	3600	6000	7600	8800	8800
	DN80	VGD 40	4750	7750	8800	8800	8800
	DN100	VGD 40	6250	8800	8800	8800	8800
	DN125	VDG 40	7250	8800	8800	8800	8800
GP-1000 M LN80	DN80	VDG 40	4750	7250	9200	11000	11000
	DN100	VDG 40	6000	9000	11000	11000	11000
	DN125	VDG 40	6500	10000	11000	11000	11000

NOTE! If the gas inlet pressure is less than 50 mbar or if the gas used is not among those mentioned, evalution must be made case-specifically.
*) The max. capacities shown by the table are achieved when the boiler back pressure is 0 mbar.
Natural gas1 $m^3n/h \cong 10$ kW
**) Or corresponding type
Gas inlet pressure (Pmax) at burner
- max. 500 mbar when using VGD valve.