



# G a s / O i l - b u r n e r s

# LN series

### Thermeta Service BV

Thermeta is an international operating company, specialized in the design, manufacturing and installation of high quality combustion equipment. Thermeta is one of the largest manufacturers of burners of The Netherlands. Thermeta products are installed all over the world and used by satisfied customers in different applications.

Over 55 years of experience in industrial combustion, we provide the highest levels of product performance and customer care available on the market today.

With increasing strict legislations being introduced throughout the world, Thermeta has developed an advanced range of industrial burners and control systems which significantly reduce the emission of atmospheric pollutants such as NOx, CO and unburnt particles.

Typical Thermeta quality and reliability is found in the THERMETA LN™ Low NOx Burners, which provide very low levels of NOx and CO. NOx is typically < 50 mg/m3 while CO is maintained < 2 ppm in most applications. The THERMETA LN™ low NOx burner is a.o. suitable for three pass boilers for hot water and steam production, (industrial) air heating for ovens and dryers for paint finishing, paper making, food baking, textile production, grain drying, and make-up air heating.

Besides the application of fuel oil and high calorific gasses, the THERMETA LN™ series can also be applied for all kinds of Low Calorific Gasses, Bio fuels, Waste streams like for instance animal fat and landfill gas.

Fuels or combinations	
Gas	Natural gas
	Refinery gas
	Hydrogen gas
	Process gas
	Blast furnace gas
	Tail
	Vent gas
	Landfill gas
Oil	Light oil
	Heavy gas
	Residualgas
	Animal fat
	Bio oil

The THERMETA LN™ dual fuel series are available for diverse combinations of fuels to be combusted simultaneously or separate. Unique are the THERMETA LN™ shaver series burners which operates on gas up to a preset capacity. Above this preset capacity modulating oil operation starts. This is mostly used where gas supply is limited (financially / technical).

The THERMETA LN™ series burners are particular flexible in different fuel applications, flexible to be implemented in a wide range of applications and flexible in assembly position (fan, rotation etc.)

THERMETA LN™ series burners are engineered by practical technicians which has resulted in a robust, effective design which makes installation, commissioning and maintenance easier than ever. The burners excel in a minimum of moving / rotation parts, therefore THERMETA LN™ series burners are appreciated because of their reliability, easy maintenance and efficient needed service level.

The Thermeta engineering department with High Tech 3D CAD system assures well engineered and documented projects. The standard electrical control panels of the THERMETA LN™ series burners can be easily extended / modified to the specific needs of the application. In case of applications demanding a NON standard burner, the project will be fully engineered by the Thermeta engineering department to achieve the most effective design.

Quality of THERMETA LN™ series burners is assured and all burners fulfil the requirements of the CE machinery Directive (MD) 89/392/EEC, Low Voltage Directive (LVD) 73/23/EEC, Electromagnetic Compatibility (EMC) 89/336 and comply with NEN-EN 746-2 and Visa B.

Fuels or combinations	
The following emissions can be achieved	
Fuel	NO <sub>x</sub> level [mg/Nm <sup>3</sup> ]
Natural gas	30
Light oil	120
Heavy oil	400 depends on oil quality
Bio oil	120
Combinations	30 - 400

### THERMETA LN™ series product information

Model E / T / F - G / O  
 (options: I / Z / O2 / L / S / C)  
 Burner sizes: 5 - 160

THERMETA LN™ series forced draft burners utilize an advanced air/gas system, resulting in efficient combustion, Low NOX/CO emissions and significant lower noise levels.

THERMETA LN™ series burners burn gas under a controlled rate gas/air pressure mix. The balanced system provides a turbulent mixture which burns quietly and efficient.

THERMETA LN™ series burners for heavy and bio oil feature Thermeta 's low pressure air atomizing design. A positive displacement oil metering unit, rotary

vane remote air compressor and air atomizing nozzle are integral parts of this system. Burner mounted, the metering system is not effected by changes in oil temperature or viscosity. The light oil versions are equipped with high pressure atomizing systems.

THERMETA LN™ series dual fuel burners for different types of fuel separately or simultaneously mostly are modified specific for the fuels and implementation and tuned on site to achieve an optimal result. Still these burners include all the advantages of the THERMETA LN™ series burners.

Models / Code	Description
G	Gas
O	Oil
I	Bio oil
ZO	Heavy oil
G+O	Gas / oil simultaneously (shaver model)
G+O2	Gas / oil simultaneously (shaver model) + separate oil
L	Low pressure atomizing
E	Single speed fan
T	Two speed fan
F	Frequency controlled fan
S	Silent (low noise) model
C	CO2 gun

THERMETA LN™ series burners can be assembled to the following types: EG / EO / EGO / TG / TO / TGO / FG / FO / FGO

The basic gas models can be equipped to model: G+O / G+O2 / GC

The basic oil models can be equipped to model: ZO / ZIO / LO

All models can be delivered as: Silent (Low Noise) model S

### Capacities and specifications

	Capacity [kW] Gas	Max. gas [m <sup>3</sup> /h] 1)	Min. gas [m <sup>3</sup> /h] 1)	Oil [kg/h] 2)	Boiler capacity kW [kg/h] 3)	Max. capacity steam [kg/h] 4)	Fan motor [kW]	Standard gas/steam size [DN] 5)	Standard gas pressure [mbar] 6)	Design furnace pressure [mbar]	Approx. shipping weight [kg]
LN 5	616	70	23	54	582	855	1.5	25	100	8	391
LN 7.5	924	105	26	80	872	1283	2.2	25	100	8	411
LN 10	1231	140	35	106	1163	1710	2.2	40	100	8	429
LN 12.5	1539	175	44	132	1453	2138	3	40	100	12	468
LN 15	1847	210	53	159	1745	2565	3	50	100	12	486
LN 17.5	2155	245	50	185	2035	2993	4	50	100	12	521
LN 20	2463	280	48	212	2326	3420	5.5	50	100	12	589
LN 25	3079	350	60	266	2908	4275	5.5	50	100	12	607
LN 30	3694	420	70	319	3489	5130	7.5	50	100	12	641
LN 35	4310	490	82	370	4071	5986	7.5	65	100	12	664
LN 40	4926	560	94	425	4652	6841	11	80	100	12	740
LN 50	6157	700	118	531	5815	8551	15	80	200	12	774
LN 60	7388	840	140	638	6978	10261	18.5	100	200	12	844
LN 70	8620	980	140	744	8141	11971	18.5	100	200	14	871
LN 80	9851	1120	140	850	9304	13681	22	100	200	14	966
LN 90	11083	1260	158	956	10467	15391	30	125	200	14	1091
LN 100	12314	1400	275	1130	11630	17102	37	100	300	14	1240
LN 110	13546	1540	193	1169	12793	18812	37	100	300	14	1250
LN 120	14777	1680	210	1275	13956	20522	45	100	300	14	1265
LN 140	17240	1960	245	1488	16282	23942	55	125	300	14	1469
LN 160	19703	2240	280	1700	18608	27362	75	125	300	14	1709

- Natural gas 31,65 MJ/m3(0)
- Oil 38.49 MJ/ltr
- Based on 94,4 % efficiency (Hi)
- Based on LD steam / boiler overall efficiency 90% (Hi) / T (water in) 200 °C / Thermeta does not guarantee overall boiler efficiency.
- Gastrain Safety Valves: Dimension based on standard gas pressure. Burners can be equipped for different gas. Pressures (size of gas train will be different).
- Gas pressure required measured on gas input flange of gas train is based on design furnace pressure. For total gas pressure required, add additional furnace pressure.
- Each burner has recommended combustion chamber dimensions (diameter / length, ask Thermeta Service BV)

Control panel dimensions (b x h x d): 1000 x 1000 x 300 (standard size). Standard power supply: 400 V / 3 ph + N + E / 50 Hz (other voltages / cycle on request). All standard gas burners are designed for a maximum gas pressure of 350 mbar. Gas pressure may not exceed this pressure. On request the burners can be equipped for higher allowable gas pressures.

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## LN series

### Capacities and specifications

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Diameter Firechamber			Length Firechamber	
															O	P	Q	R	S
												Inch			Minimal	Normal	Maximal	Minimal	Normal
LN 5	500	450	360	1145	700	297	997	210	386	636	362	1.5	223	533	424	600	700-900	1500	1500-1600
LN 7.5	500	450	360	1199	700	297	997	210	452	702	356	1.5	223	593	424	600	700-900	1800	1900-2000
LN 10	570	520	410	1262	785	297	1082	258	452	737	384	2	272	593	520	700	800-1000	2000	2100-2200
LN 12.5	570	520	410	1323	785	297	1082	258	464	749	378	2	272	660	520	700	800-1000	2300	2400-2500
LN 15	620	560	510	1405	910	297	1207	318	464	774	435	3	332	660	640	800	800-1200	2500	2600-2700
LN 17.5	620	560	510	1405	910	297	1207	318	484	794	435	3	332	660	640	800	800-1200	2700	2800-3000
LN 20	620	560	510	1528	910	297	1207	318	538	848	478	3	332	740	640	900	900-1300	2900	3000-3200
LN 25	660	620	560	1576	960	297	1257	383	538	868	506	3	397	740	770	900	1000-1400	3200	3400-3500
LN 30	660	620	560	1576	960	297	1257	383	538	868	506	3	397	740	770	1000	1000-1500	3500	3700-3900
LN 35	825	755	585	1673	1010	350	1360	463	538	950	520	3	477	740	930	1100	1200-1600	3800	4000-4200
LN 40	825	755	585	1796	1010	350	1360	463	638	1051	562	3	477	821	930	1200	1200-1600	4000	4200-4400
LN 50	940	870	660	1924	1110	373	1483	538	691	1161	584	3	552	870	1080	1200	1300-1700	4500	4700-5000
LN 60	940	870	660	1924	1110	373	1483	538	691	1161	584	3	552	870	1080	1400	1500-1800	4900	5200-5400
LN 70	1040	970	760	2032	1110	466	1576	638	720	1240	642	4	652	870	1280	1400	1600-1900	5300	5600-5900
LN 80	1040	970	760	2032	1110	466	1576	638	752	1272	642	4	652	870	1280	1400	1700-2000	5700	6000-6300
LN 90	1040	970	760	na	1360	466	1826	638	911	1431	687	5	652	1127	1280	1500	1800-2100	6100	6400-6700
LN 100	1040	970	760	na	1360	466	1826	638	911	1536	687	5	652	1127	1280	1600	1900-2200	6400	6700-7000
LN 110	1160	1090	860	na	1360	518	1878	758	911	1536	753	5	772	1127	1520	1700	2000-2200	6700	7000-7300
LN 120	1160	1090	860	na	1360	518	1878	758	956	1536	753	6	772	1127	1520	1800	2000-2300	7000	7300-7700
LN 140	1160	1090	860	na	1610	518	2128	758	1244	1824	753	6	772	1379	1520	1800	2000-2300	7400	8500-9000
LN 160	1160	1090	860	na	1610	518	2128	758	1304	1824	753	6	772	1379	1520	1800	2300-2700	8000	8500-9000

Specifications and dimensions are subject to change without notice. All dimensions are for reference only. Optional equipment may affect dimensions.

na = not applicable

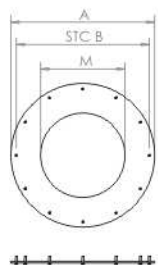
All dimensions in millimetres unless otherwise mentioned.

Integrated fan: Size 7.5 - 80 standard are delivered with

integrated fan. Separate fan: Size 90 - 160 standard are delivered with separate fan connected to the burner with a flexible below or with a prefab air pipe. Air pipe design based on local situation.

### Flexible

Thermeta Service BV is well known for their flexibility in applications, problem solving and delivery times. All information within this document is based on standard equipment. A reasonable amount of burners are supplied off-standard, please contact Thermeta Service BV for your specific application so that we can select and quote the best fitting burner system for your application.



KETELFLENS  
LN 05 T/M 60 12X M12X45  
LN 70 T/M 160 16X M12X45

