

Technical Data Lambda Probe LS2 ECO



Fig. 1 Lambda Probe LS2 ECO

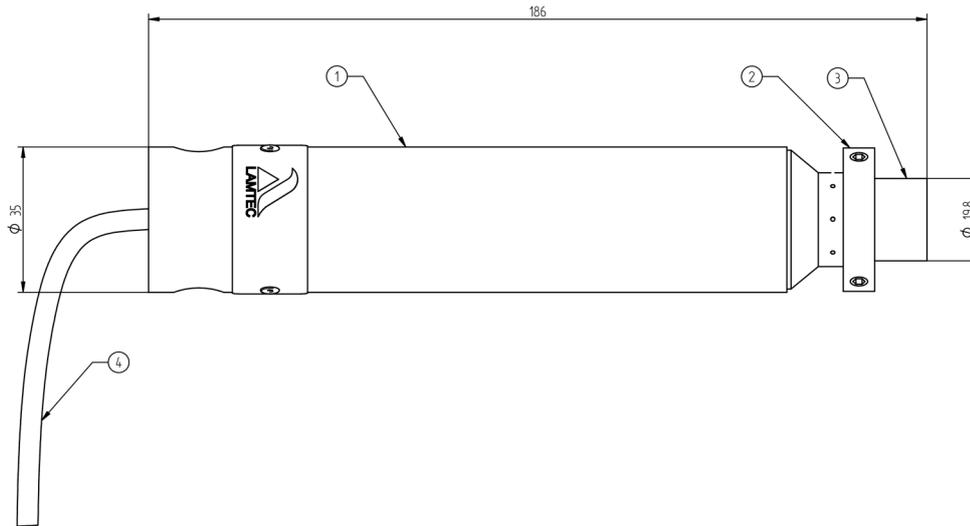
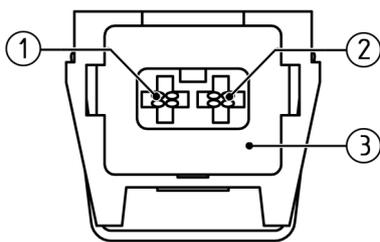


Fig. 2 Lambda Probe LS2 ECO (dimensions in mm)

1	Lambda Probe LS2 ECO
2	Locking ring for GED ECO
3	Probe head



- 1 (+) Probe signal (black) (PCB/LT2 term. 34)
- 2 (-) Probe signal (grey) (PCB/LT2 term. 33)
- 3 Socket sensor signal
- 4 Probe heater (white) (PCB/LT2 term. 35)
- 5 Plug probe heater
- 6 Probe heater (white) (PCB/LT2 term. 36)

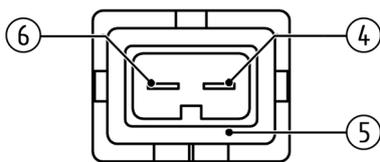


Fig. 3 Terminal assignment probe connection plug

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Technical data*	
Measuring range	O ₂ : 0 ... 21 % O ₂
Measuring precision	O ₂ : ± 5 % of measured value - not better than ± 0.3 vol. %
Sensor signal	O ₂ : -30 ... +150 mV
Response time	O ₂ : t ₆₀ : < 3 s t ₉₀ : < 9 s
Relaxation time (measurement readiness after overload)	O ₂ : t ₉₀ : < 8 s
Offset in ambient air	O ₂ : < 0.3 vol. %
Repeat accuracy	O ₂ : < 0.1 % deviation from measured value
Drift	O ₂ : < 1.7 % from measured value (after 1000 h of operation in EL light fuel oil and 1004 switching cycles ON/OFF)
Cross sensitivity**	O ₂ : to CO ₂ (15 vol. %) < 0.1 vol. % O ₂ : to CO (874 ppm) < 0.1 vol. % O ₂ : to CH ₄ (76 ppm) < 0.1 vol. % O ₂ : to SO ₂ (76 ppm) < 0.1 vol. % O ₂ : to NO (245 ppm) < 0.1 vol. %
Heating consumption	10 ... 25 W (according to design, measuring gas temperature, and measuring speed)
Lifetime	> 3 years (in case of light fuel oil and natural gas)
Weight	560 g 1.23 lb
Material of probe housing	1.4571/1.4301
Material of connecting line	Nickel-plated copper strand FEP insulation
Operating temperature of the measuring cell (sensor) at 13 V heating voltage in the air (20 °C 68 °F)	650 °C 1,202 °F
Measuring principle	Zirconium dioxide cell (ZrO ₂) potentiometric (voltage probe)
Heating time	10 minutes until operating temperature is reached

* Information according to EN 16340:2014 D

** O₂: Information assumes an operating gas composition of 5 vol. % O₂, rest is N₂

Conditions for use	
Mounting / measuring gas extraction device	Directly in exhaust gas channel / in situ
Seal tightness	q _L ≤ 100 cm ³ /h / 6.10 in ³ /h *
Mounting position	Horizontal to vertical
Permissible fuels	Residue-free, gaseous hydrocarbons, light fuel oil
Ideal measuring gas speed	Without GED: 1 m/s ≤ X ≤ 4 m/s with GED ECO: 1 m/s ≤ X ≤ 6 m/s (Higher measuring gas speed increases the measurement error. Measured at measuring gas temperature 25 °C 77 °F. In case of smaller measuring gas temperatures it might be necessary to protect the probe from the incident flow.)
Reference air supply	Not required
Flange adapter	Male coupling G1¼"

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Environmental Conditions

Probe head	permissible flue gas temperature	≤ 300 °C 572 °F
Operation	permissible temperature	≤ 260 °C 500 °F at connecting cable
Transport	permissible temperature	-20 ... +70 °C -4 °F ... +158 °F
Storage	permissible temperature	-20 ... +70 °C -4 °F ... +158 °F
Degree of protection	DIN EN 40050	IP42

* According to DIN V 18160-1:2006-01, seal tightness towards environment through housing and fastening.

NOTICE

The limits of the technical data must be strictly adhered to.

Order Information

Lambda Probe LS2 for measurement of oxygen (O₂), for flue gas temperatures up to 300 °C | 572 °F with connecting cable

Description / Type	Order no.
Lambda Probe LS2 ECO (in standard housing), cable length 2 m 6.6 ft, IP42*	650R1000
Lambda Probe LS2 ECO (in standard housing), cable length 5 m 16.4 ft, IP42*	650R1007

* Additional required:
Lambda Transmitter LT3, conf. for LS2 in type
Order no. 657R51 / ... / LS2 / ...
Gas extraction device GED ECO, order no. 655R1001 / R1002 / R1003
Probe installation fitting (PIF), order no. 655R1010 or R1016

The information in this publication is subject to technical changes.



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