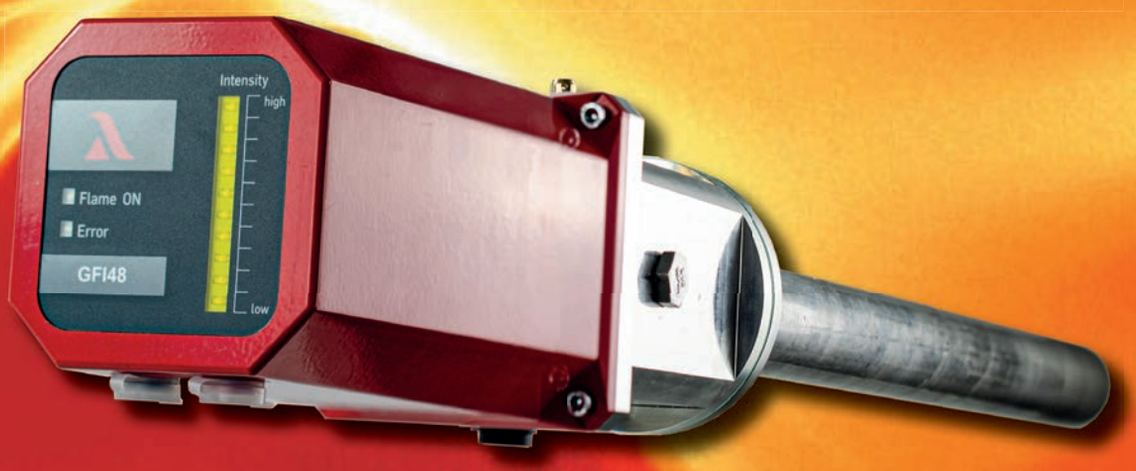


System Overview

LAMTEC Ignition and Pilot Burner GFI.

LAMTEC

Sensors and systems for combustion engineering

www.lamtec.de

SIL 3 Flame Monitoring Device F120I.

DVGW CERT CE 0085

2016/426 Gas Appliance Regulations (GAR)

Pressure Equipment Directive 2014/68/EU, CE0036

SIL 3 Confirmation, DIN EN 61508 Parts 1-7

Safety Protection Ex ec IIB+ H2 T4 Gc
Certificate No. IECEx KIWA 20.0005X

PESO

LAMTEC Ignition Burners GFI Series
Next-generation of ignition systems.

Pilot burners are required for use on industrial furnaces and firing systems, for the safe ignition of main burners. The standard version of the GFI series is equipped with an integrated ignition transformer, ionization electrode and SIL3 certified, EC Type approeved ionization flame detector.

Advantages:

- Fuel: natural gas, LPG (liquid propane gas), coke gas, refinery gas, hydrogen
- Thermal power up to 3 MW | 10 MBtu/h in special design up to 6 MW | 20 MBtu/h
- Flame length up to 3 m | 10 ft
- Intermittent- or continuous operation
- SIL 3 certified
- Protection class IP 65
- Avaliable for hazardous areas

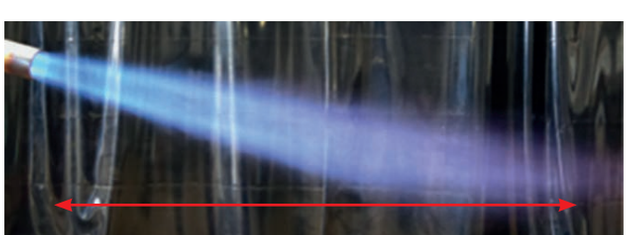
Example GFI 35 / GFI 48:

Type	Flame length with LPG
GFI 35	ca. 320 - 600 mm | 12.6 - 23.6 in
GFI 48	ca. 1.300 mm | 51 in

Type	Flame length with natural gas
GFI 48	ca. 750 mm | 29.5 in

Example GFI 70:

Type	FFlame length with propane
GFI 70	ca. 2.000 mm | 79 in

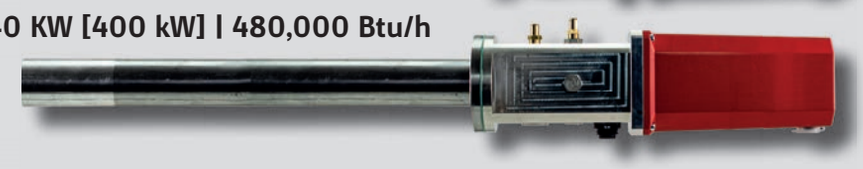


Type	Flame length with natural gas
GFI 70	ca. 1.200 mm | 47 in

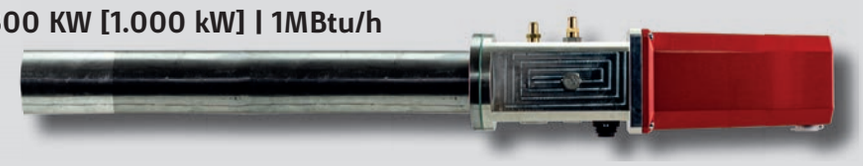
Illustration of GFI Versions.

GFI 35, 25 KW - 57 KW | 190,000 Btu/h

GFI 48, 70 KW - 140 KW [400 kW] | 480,000 Btu/h

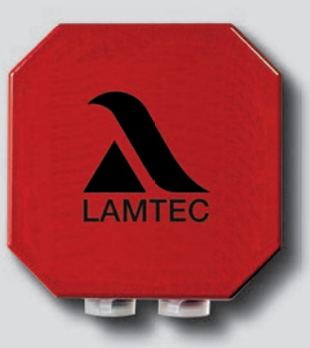


GFI 70, 150 KW - 300 KW [1.000 kW] | 1MBtu/h



GFI Serie.

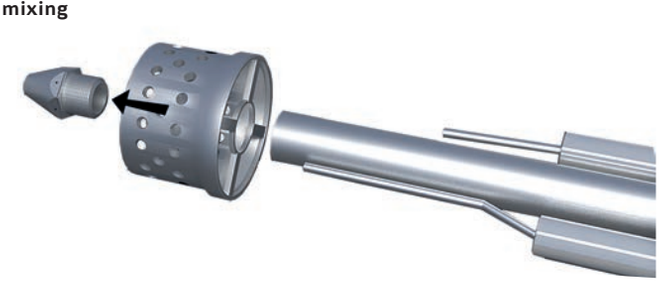
GFI with display



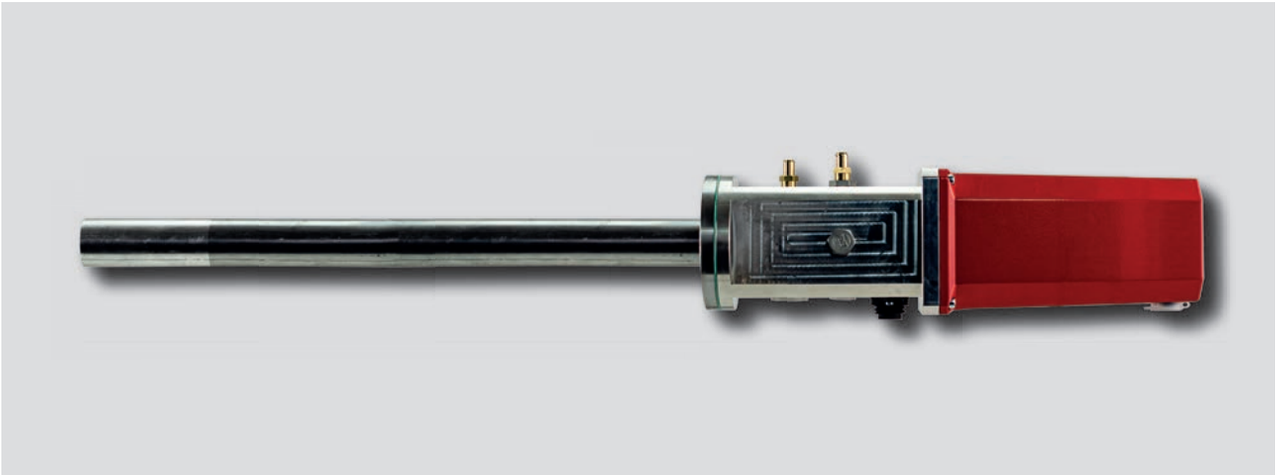
GFI without display

Operating principle of GFI Igniters:

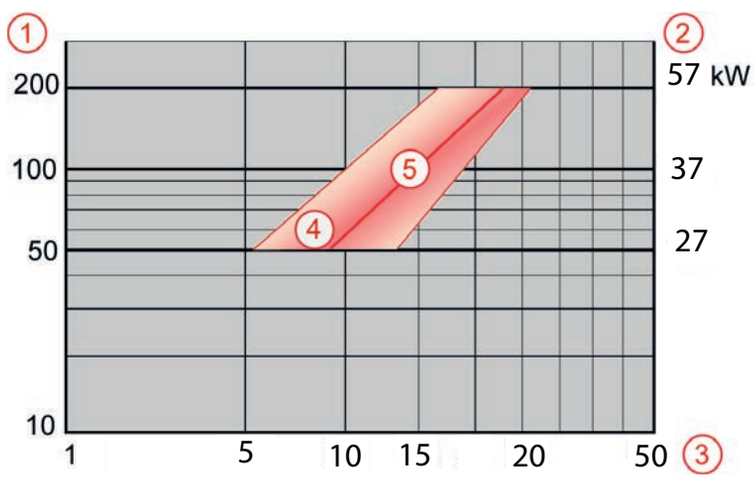
Forced air operated and muzzle mixing



GFI 35.



GFI 35 Adjustment of the flame quality and flame stability



1 Gas pre-pressure [mbar]

2 Thermal output [kW]

3 Airflow [m³/h]

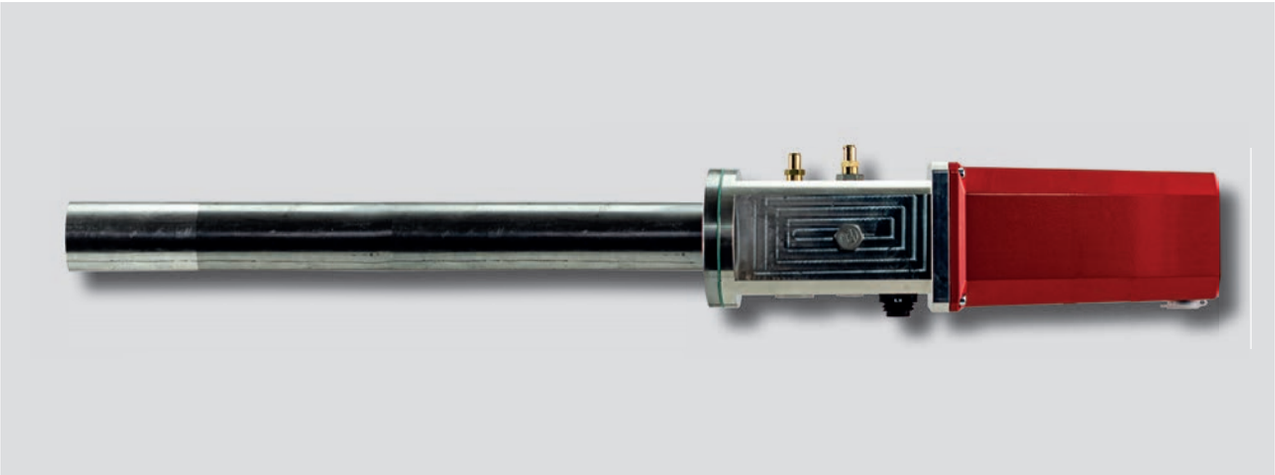
4 Stable field of combustion

5 Ideal fuel/air ratio setting

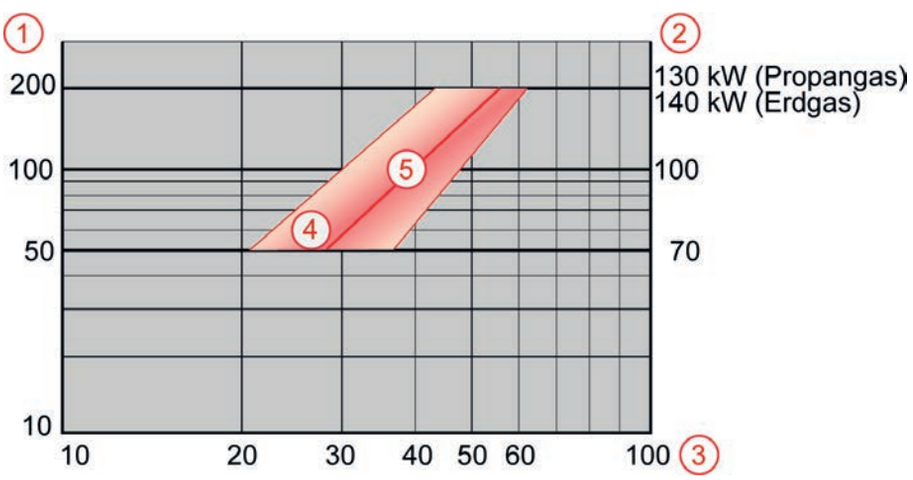
	Standard
Tube diameter	35 mm x 2 mm | 1.38 in × 0.08 in
Mountingflange	Side flange (e.g. DN 50, PN 6)
Thermal power*	27 kW - 57 kW | 92,100 – 194,500 BTU/h
Flame length	Up to 320 - 600 mm | 12.6 – 23.6 in
Gas connection	G⅜“
Fuel gas volume flow	2.6 - 5.8 Nm³/h | 92 - 205 ft³/h
Air connection	G¾“
Air volume flow	7.2 - 12.6 Nm³/h | 254 – 445 ft³/h (@ 15 mbar | 6 in w.c.) for a maximum heat capacity; if reduced heat capacity, lower air volume flow is needed; additional required air for over stoichiometric combustion shall be available on side.

* At International Standard Atmosphere, ISA: 15 °C, 1013.25 hPa

GFI 48.



GFI 48 Adjustment of the flame quality and flame stability



1 **Gas pre-pressure [mbar]**

2 **Thermal output [kW]**

3 **Airflow [m³/h]**

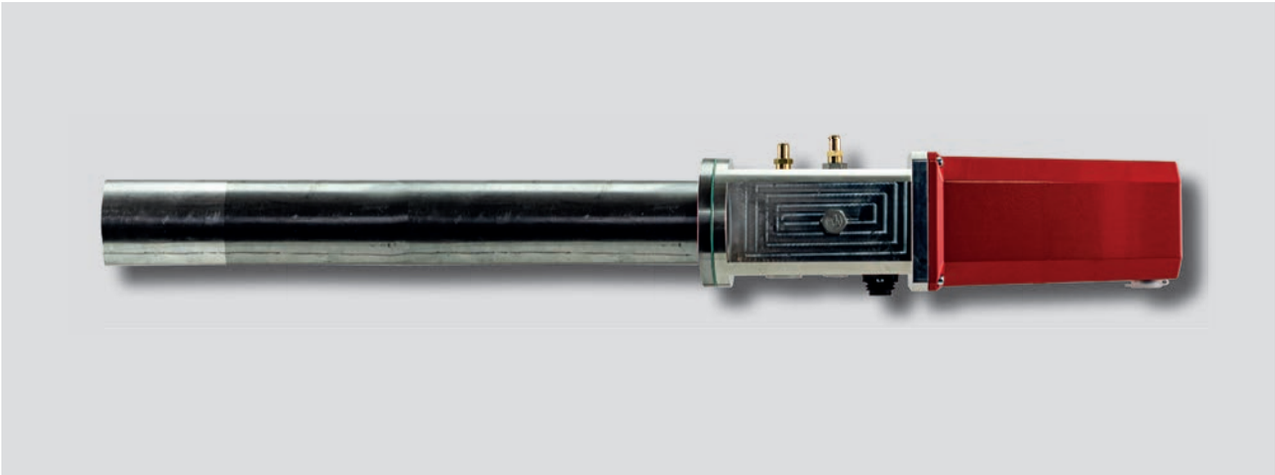
4 **Stable field of combustion**

5 **Ideal fuel/air ratio setting**

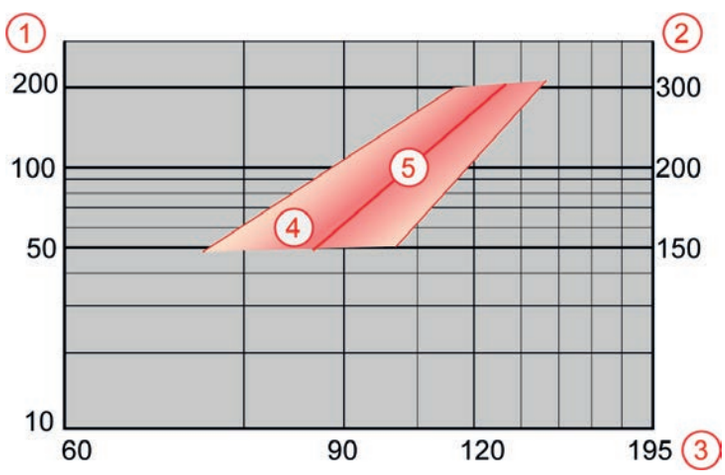
	Standard
Tube diameter	48.3 mm x 2 mm | 1.90 in × 0.08 in
Mounting flange	Slide flange (e.g. DN 50, PN 6)
Thermal power*	70 kW - 130 kW (Propane gas) | 238,900 – 443,600 BTU/h 70 kW - 140 kW (Natural gas) | 238,900 – 477,700 BTU/h
Flame length	Up to 800 mm | 31.5 in
Gas connection	1/2“ BSPP internal thread
Fuel gas volume flow	15 Nm³/h Natural gas (@ 200 mbar) | 530 ft³/h (@ 80.37 in WC) 6 Nm³/h Propane (@ 200 mbar) | 212 ft³/h (@ 80.37 in WC)
Air connection	1“ BSPP internal thread
Air volume flow	60 Nm³/h (@15 mbar) | 2118 ft³/h (@ 6 inWC) for a maximum heat capacity; if reduced heat capacity, lower air volume flow is needed; additional required air for over stoichiometric combustion shall be available on side.

* At International Standard Atmosphere, ISA: 15 °C, 1013.25 hPa

GFI 70.



GFI 70 Adjustment of the flame quality and flame stability



1 **Gas pre-pressure [mbar]**

2 **Thermal output [kW]**

3 **Airflow [m³/h]**

4 **Stable field of combustion**

5 **Ideal fuel/air ratio setting**

	Standard
Tube diameter	70 mm x 2 mm | 2.76 in × 0.08 in
Mounting flange	Schiebeflansch (z.B. DN 65, PN 6)
Thermal power*	150 kW - 300 kW | 511,900 – 1,023,800 BTU/h
Flame length	Bis zu 1.200 mm | 47.2 in
Gas connection	3/4“ BSPP internal thread
Fuel gas volume flow	30 Nm³/h Erdgas (@ 200 mbar) | 1059 ft³/h (@ 80.37 in WC) 12 Nm³/h Propan (@ 200 mbar) | 424 ft³/h (@ 80.37 in WC)
Air connection	1 1/2“ BSPP internal thread
Air volume flow	125 Nm³/h (@ 12 mbar) | 4413 ft³/h (@ 4.82 inWC) for a maximum heat capacity; if reduced heat capacity, lower air volume flow is needed; additional required air for over stoichiometric combustion shall be available on side.

* At International Standard Atmosphere, ISA: 15 °C, 1013.25 hPa

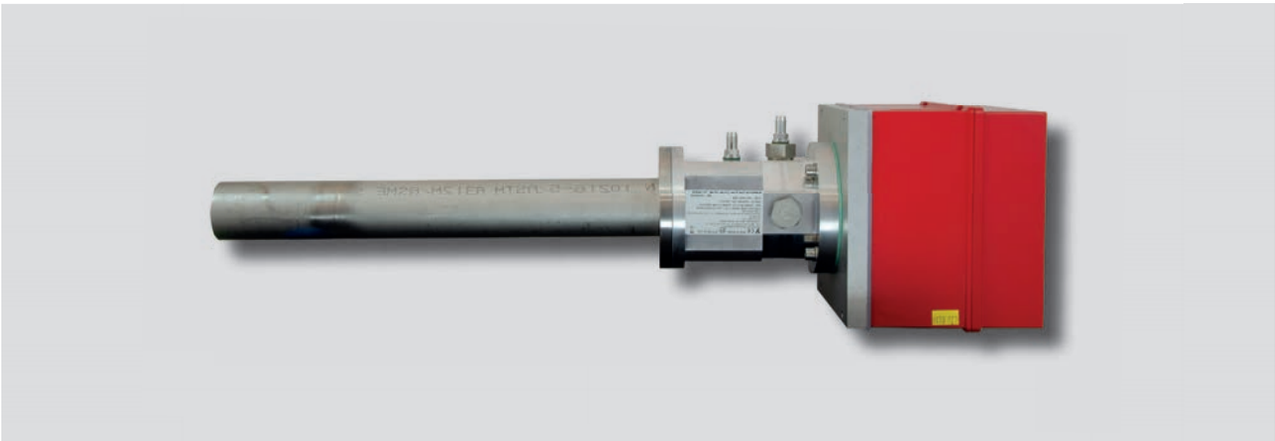
Safe Zone Power Unit for GFI.

	Standard
Material	Varnished steel RAL7035
Degree of protection	IP 66
Temperature operating range	-20 °C bis +60 °C | -4 ... +140 °F

Ex- Zone I power unit for GFI.

	Standard
Explosion protection	II 2 G Ex db IIB + H2 T6/T5 GbII 2 D Ex tb IIIC T80 °C...T95 °C Db
Material	Copper-free aluminium, stainless steel 1.4404/316
Certificates/Test certificates	ITS 15 ATEX 18302X, IECEx ITS 15.0041X, Fa. Rose Systemtechnik
Electrical safety	IP 66 according to EN 60529
Impact resistance	7 Joule according to EN 60079-0
Temperature range	-20 ... +60 °C | -4 ... +140 °F

GFI with integrated power unit EX zone II.



	Standard
Degree of protection	IP 65 / NEMA 4 / NEMA 4X
Type	No display possible
Device marking	Ex ec nC IIB+H2 T4 Gc (with flame scanner)
	Ex ec IIB+H2 T4 Gc (without flame scanner certificate no.: IECEx KIWA 20.0005X

EX zone I as well as variant GFI for external power unit

Type	For Ex zone I & variant with external power unit
With standard screw connection	-20 °C ... + 80 °C I -4 °F ... + 176 °F
With Ex-I conduit screw	-40 °C ... + 80 °C I -40 °F ... + 176 °F

Technical data.

	Standard
Technical data and features	Gas fired ignitor/pilot burner with integrated high tension transformer, ionisation rod, SIL 3 certified, EU type approved, ionisation flame monitor (IFM)
IFM approved for	Continous operation
Flame response time	≤ 1 s or ≤ 3 s
SIL classification	SIL 3, flame monitor F130I
Flame signal output	Switching contact additional 0-300 mV on measuring sockets for commissioning support intensity display (optional)
Ambient temperature Safe Area (permissible temperature range)	-20... + 60 °C	-4... + 140 °F (standard, without display) -40... + 60 °C	-40... + 140 °F (special, without display) 0... + 60 °C	32... + 140 °F (with display)
Ambient temperature Ex zone II (permissible temperature range)	-20... + 60 °C	-4... +140 °F
Amplifyer	1 potential free NO contact, 230 VAC, 0.5 A
Supply voltage	120 - 127 VAC, 220 - 230 VAC (-15 % / +10 %), 50/60 Hz
Ignition voltage	8 kV (at U_N = 230 V), 7 kV (at U_N = 120 V)
Power input	U_N = 230 V, 230 VA spark igniter ≤ 10 VA flame monitor U_N = 120 V, 192 VA spark igniter ≤ 10 VA flame monitor
Electrical connection	Plug connection with pre-assembled cable
Cable length	2 - 100 m	6 - 330 ft
IP protection	IP65
Housing material (electric)	Aluminium, seawater resistant aluminium (optional)
Tube length	300 - 6,000 mm	12 - 235 inches
Tube material	Stainless steel 1,4301 or 1,4571 optional Heat resistant end tube 1,4841
Fuel gas	Natural gas, butane/propane Coke oven gas and special gases (optional)
Fuel gas supply pressure	50 - 200 mbar	0,73 - 2,9 psi (effective)
Air supply pressure	Depending on size
Cooling air flow	Depending on size, at least 50 % combustion air flow

Valid for all versions

Notizen.

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