Brief information on gas burners

WG40N/2-A ZM-PLN 60–600 kW
WG40N/3-A ZM-PLN 60–700 kW

WG40F/2-A ZM-PLN 70–600 kW
WG40F/3-A ZM-PLN 70–700 kW

Ultra-Low NO_x in compact form.

Efficiency and low emissions.

Key advantages

- **Low emissions**
  Meets NO_x emission limits all around the world
- **High efficiency**
  Permanent magnet synchronous motor, complete with VSD (meets IE5 standards)
- **Powerful**
  60 to 600 kW / 60 to 700 kW
  Turndown 10:1 / 11:1
- **Flexible**
  Mounting and air inlet options to suit various applications
- **Safe**
  Premix operation with dual flame monitoring, integrated insulator, and twofold air filter
- **Robust and reliable**
  Construction, operation, and control are all of proven Weishaupt quality
- **Digital**
  Precise and reproducible setting, monitoring, and remote diagnosis
- **Quiet**
  Optimised laminal air and gas flow, speed controlled
- **Tried and tested**
  Premix technology successfully operating at larger capacities
- **Easy to install and maintain**
  Coded plug connections, single electrode for ignition and monitoring

The Weishaupt WG40 PLN gas burner is suitable for use with natural gas or LPG. The burner offers sliding-two-stage or modulating load control over a range of 60–700 kW.

The WG40 PLN is equipped with an extremely efficient permanent magnet synchronous motor and variable speed drive (VSD) as standard. Its efficiency exceeds all efficiency classes currently in place for electric motors. Burner operation is also extremely quiet.

PLN stands for Premix Low NO_x – a system that combines pre-mixing with surface-stabilised combustion. That guarantees an homogeneous gas-air mixture and relaible ignition behaviour.

NO_x optimisation over the entire capacity range is made possible by adjusting the O_2 content.

One of the main advantages of this combustion system is that, in addition to more typical boilers, heat generators with significantly smaller combustion chamber geometries can also be fired. In doing so, NO_x emission values below 30 mg/kWh are achieved.

Like all Weishaupt burners, the WG40 PLN is equipped with a digital combustion manager. All essential functions, such as the supply of fuel and air, as well as flame monitoring and VSD, are measured and controlled with digital precision.

The aim is to optimise operational processes, maximise efficiency, and minimise emissions.

The homogeneous mixture of gas and air combusts on the surface of the woven metal mesh at temperatures < 1200 °C. This combustion technology effectively inhibits the formation of thermal NO_x.

1 Premix chamber

2 Thermal insulator

3 Burner tube

4 2-stage air filtration
(metal gauze with pre-filter)

5 Air pressure switch
(filter monitoring)

6 Air pressure switch
(fan monitoring)

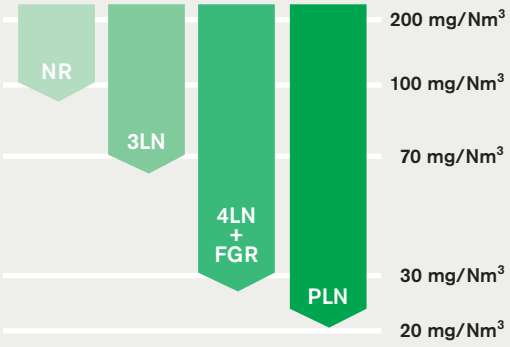
7 Flame sensor 1
(ionisation electrode)

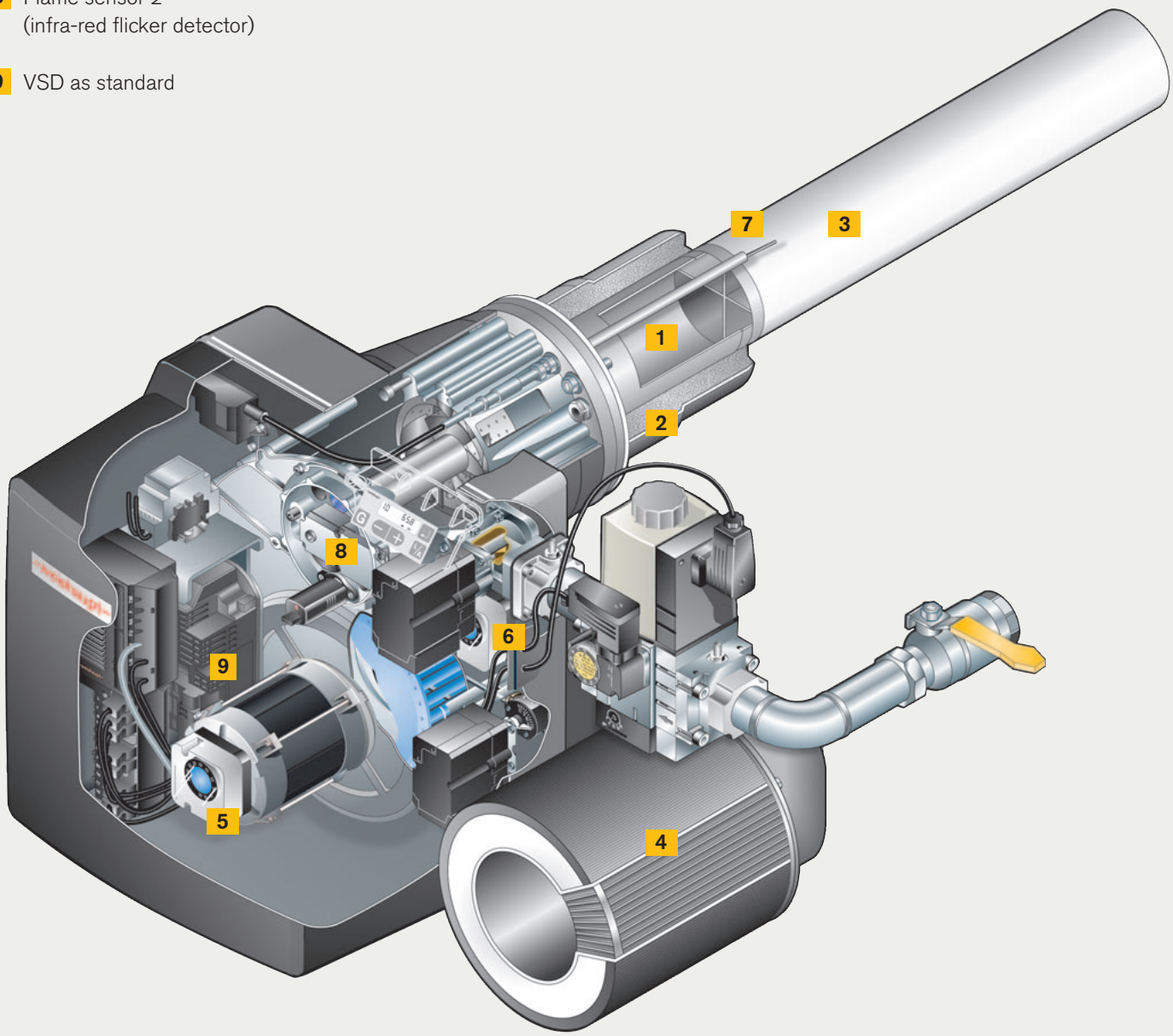
8 Flame sensor 2
(infra-red flicker detector)

9 VSD as standard

Ultra-Low NO_x

NO_x comparison of
different burner versions





The WG40 PLN burner is the answer to increasing calls for compact burners with minimal emissions.

Safe and reliable.

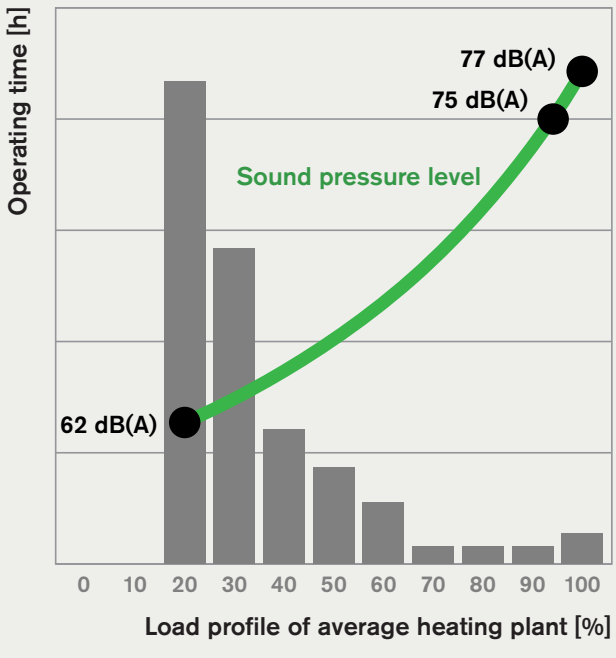
A particular emphasis was placed on safety and reliability during the development of this burner range.

Two flame monitoring methods ensure the safe operation of the burner. The ionisation electrode monitors the combustion surface, while the infra-red flicker detector secures the premix chamber and the burner tube.

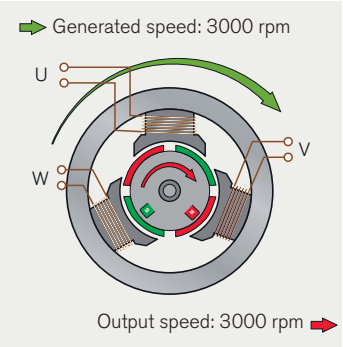
The air volume, and thus indirectly the cleanliness of the air filter, is continuously monitored during burner operation by an additional air pressure switch. The necessary volume of air is thereby always guaranteed.

Thermal protection of the premix chamber, in which the ignitable fuel-air mixture is situated, is a crucial safety aspect of this burner technology. To this end, Weishaupt has developed precisely fitting insulators that are tailored to the thermal conditions. They provide optimal protection to this sensitive area from uncontrolled heat.

The standard-design insulators for temperatures up to 850 °C are suitable for steam and hot-water boilers with through-pass or three-pass combustion chambers. Optionally, there are also high-temperature insulators that are suitable for temperatures up to 1200 °C. They provide optimal protection with other combustion chamber arrangements and for burners on thermal fluid heaters and air heaters.



VSD does more than save electricity. It also makes the burner considerably quieter.



In a synchronous motor, the rotor rotates at the same rate as the stator field per the electrical frequency.

An optional analogue or bus expansion module makes the remote operation, diagnosis, and monitoring of the burner possible.

Benefits at a glance:

- **High energy efficiency**
- **Extreme reliability**
- **Reduced surface temperature**
- **No rotor losses**
- **Compact design**
- **Efficiency meets IE5 standard**

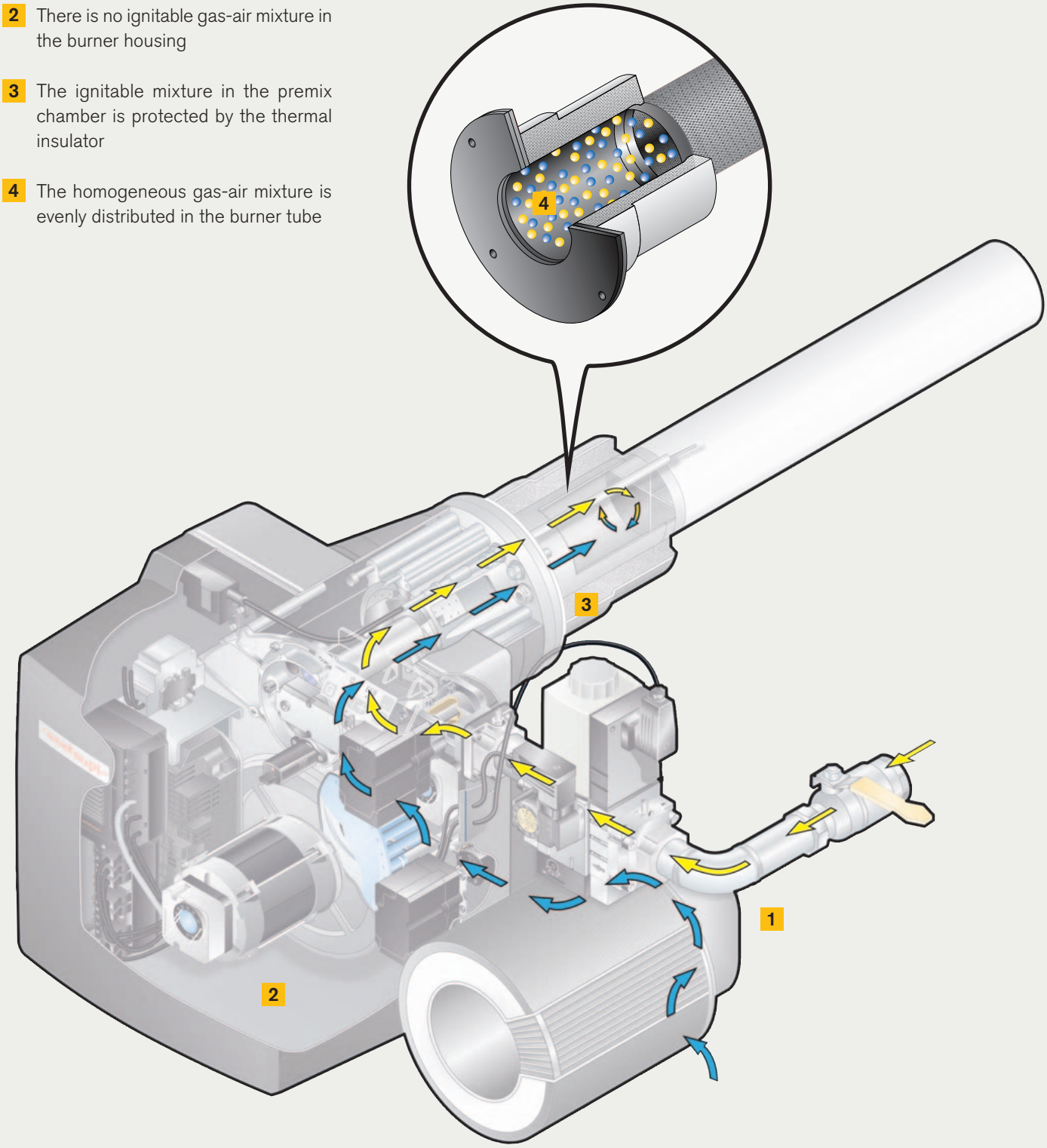
Safety is the highest priority:

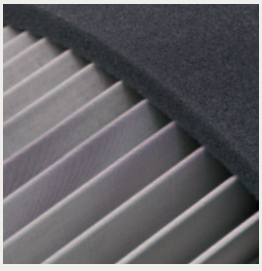
1 Gas and air are fed separately to the mixing assembly

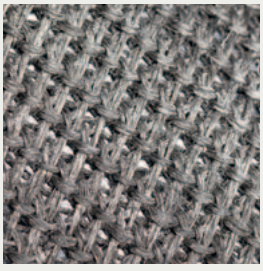
2 There is no ignitable gas-air mixture in the burner housing

3 The ignitable mixture in the premix chamber is protected by the thermal insulator

4 The homogeneous gas-air mixture is evenly distributed in the burner tube







Left: The metal gauze air filter is protected from dust by an additional prefilter sleeve.

Right: A microweave mat made from a high-quality alloy permits the right amount of gas-air mixture to pass.

Weishaupt gas burners

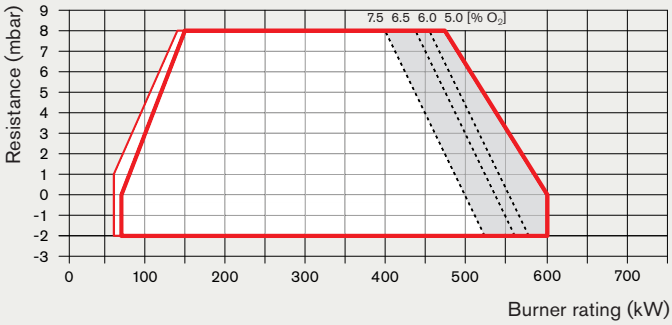
WG40../2-A ZM-PLN and WG40../3-A ZM-PLN

Desired NO_x values and corresponding O_2 values to be set

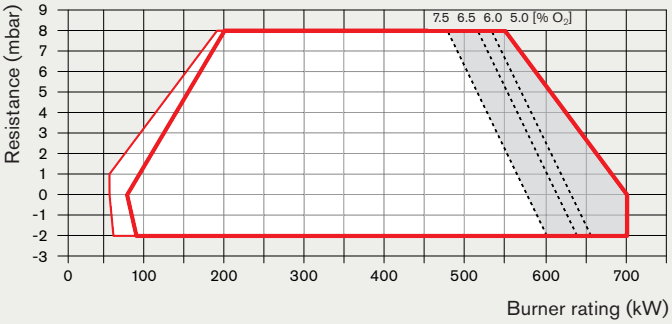
NO_x [mg/Nm³] on natural gas	O_2 [%] dry
20	7.5
30	6.5
50	6.0
80	5.0

Please refer to the planning documents for the combustion chamber resistance and installation altitude correction factors.

WG40N/2-A ZM-PLN Natural gas 60–600 kW
WG40F/2-A ZM-PLN LPG 70–600 kW



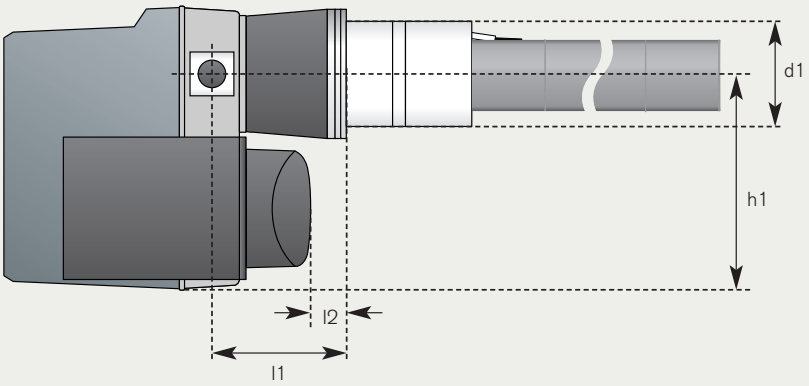
WG40N/3-A ZM-PLN Natural gas 60–700 kW
WG40F/3-A ZM-PLN LPG 70–700 kW

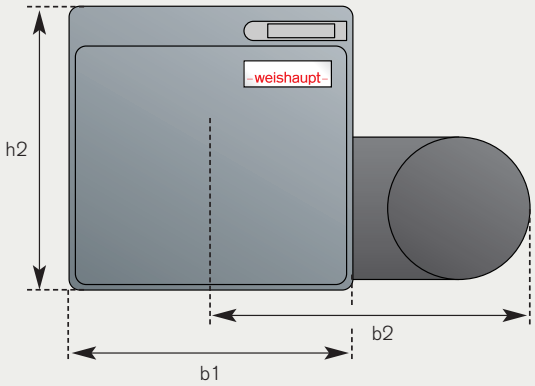


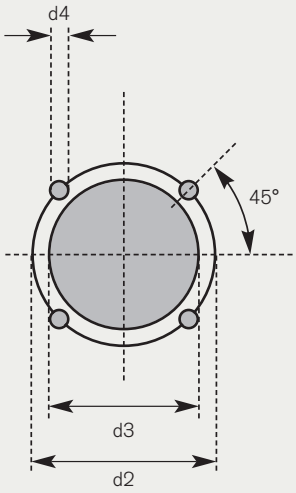
Technical data	WG40.../2-A ZM-PLN	WG40.../3-A ZM-PLN
Max. turndown	10:1	11:1
NO_x range	20–80 mg/Nm³	
Combustion manager	W-FM 25	
Protection	IP 21	
Electrical power	1.1 kW	
Efficiency class	meets IE5	
Min. gas connection pressure before ball valve	17 mbar	
Available valve train sizes	¾″ 1″ 1½″ 2″ DN65	

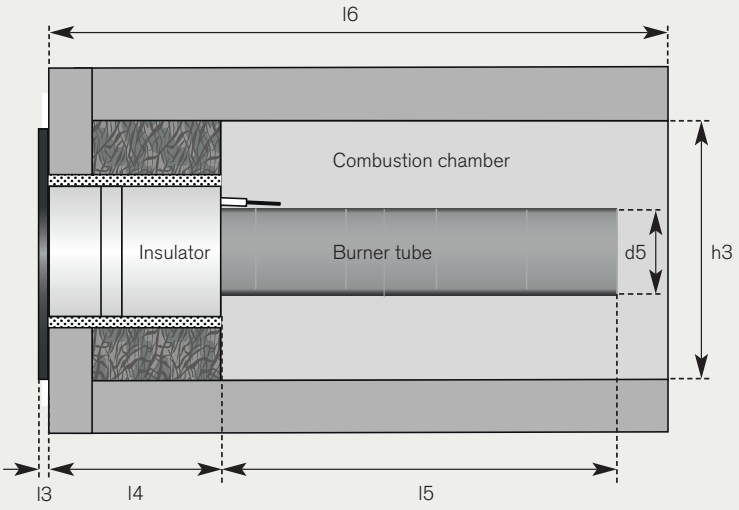
We reserve the right to make changes as a result of further developments.

Dimensions









Burner / Dimension		l1	l2	l3	l4	l5	l6	b1	b2	h1	h2	h3	d1	d2	d3	d4	d5
WG40.../2-A ZM-PLN	mm	235	60	8	213	621	≥ 1050	450	524	360	480	320	182	200	185	M10	117
WG40.../3-A ZM-PLN	mm	235	60	8	213	621	≥ 1050	450	524	360	480	350	253	298	260	M12	147

We reserve the right to make changes as a result of further developments.

If you need us, we're there.

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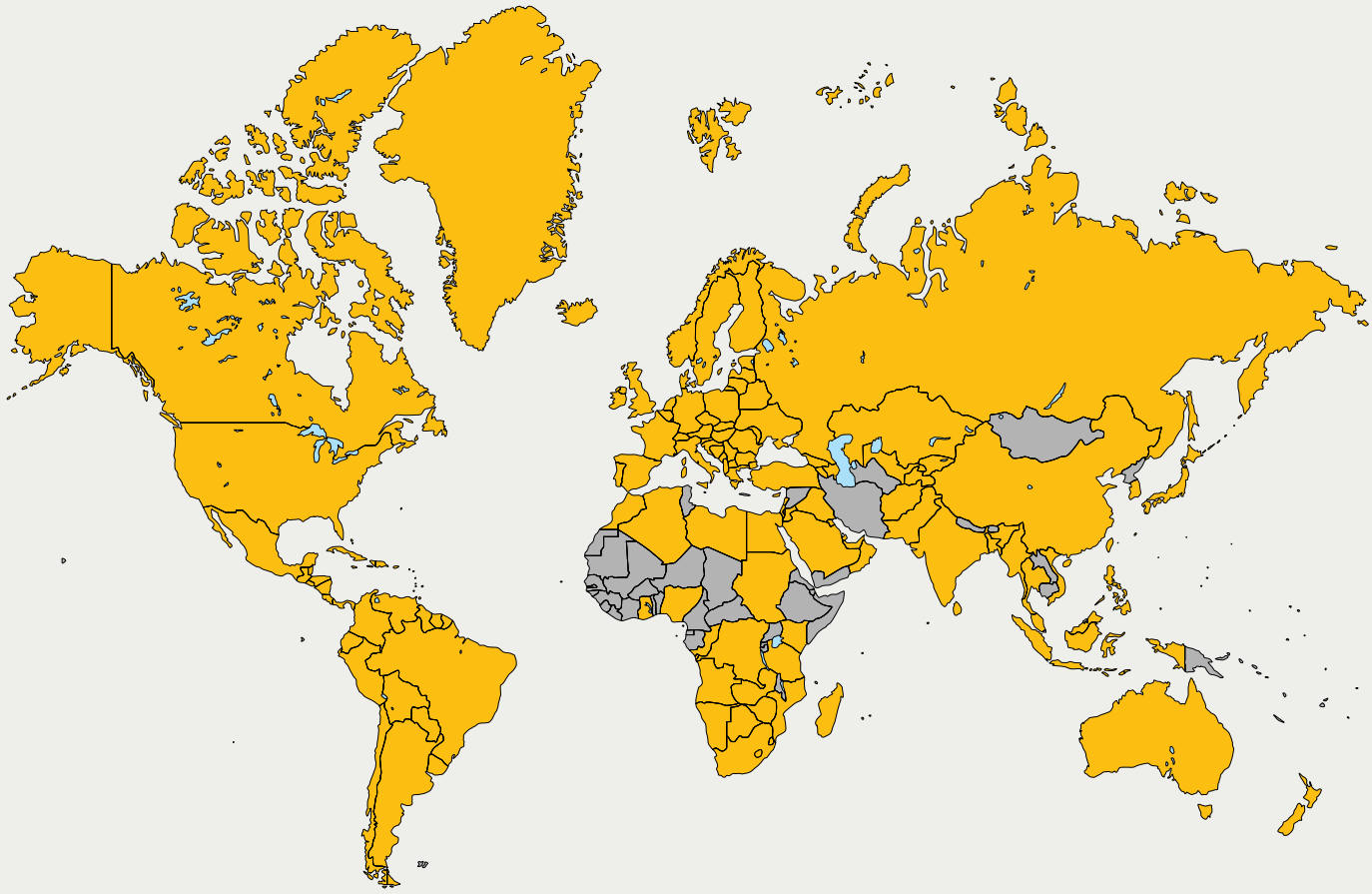

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