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 Emission Measurements
 SePhys-Burner Systems
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**SePhys-Burner
 for
 extra light (# 2)/light (# 3) heating oil and liquid biomass fuels
 (rape seed oil, waste animal fat etc. – fuel preheating necessary in some cases)**

| | |
|---|-----------------------|
| Maximum throughput (design value for standard air-duct) | 150 l/h |
| Maximum thermal power output P_{max} (design value for standard air-duct) | 1,5 MW |
| Load-range ratio (P_{max}/P_{min}) | 3 : 1 |
| Load control | fuel-flow valve |
| Fuel fed into burner by | gravity |
| Atomizing medium | air or steam |
| Working pressure (constant over whole load range) | 1,8 bar |
| Air consumption (minimum compressor intake) | 630 l/min |
| Position | vertical |
| Height | 170 mm |
| Maximum diameter | 48 mm |
| Material | 100% stainless steel |
| Price* | 6000,00 EURO plus VAT |
| Holder* | 750,00 EURO plus VAT |
| Standard air-duct* | 6000,00 EURO plus VAT |

* quantity rebates upon request

Emissions (# 2 heating oil)

| | |
|---------------------------------|---|
| Test boiler | 2-10-0 steam locomotive # 52 8055 |
| Use as | pilot burner (atomizing medium: steam) |
| Draught | natural draught (blower turned off) |
| Throughput | maximum throughput without smoke |
| Boiler pressure gain rate | from 14.0 to 14.5 bar in 240 s |
| CO | 36 mg/m ³ (at 3 % O ₂) |
| NO ₂ | 163 mg/m ³ (at 3 % O ₂) |
| HC _{propane} | ≤ 13 mg/m ³ (at 3 % O ₂) |

(HC-emissions only during load changes, otherwise below the detection threshold)

Certain firebox geometries preclude the use of the standard air-duct. Development and manufacture of special air-ducts available at extra charge.

System advantages

- For both heating oil (# 2, # 3) and liquid biofuels.
- Low fuel consumption due to excellent combustion.
- No fuel pump.
- Simple controls.
- No external steam necessary for boiler start-up – pilot burner uses compressed air until boiler is in steam.
- Identical constant working pressure for air and steam.
- No moving parts.
- 100% stainless steel.
- Maintenance-free.
- No brick lining in firebox necessary.
- Very low emission values.
- Very good price/performance ratio.

Engineering support is available to offer a complete solution to any application problem (at extra charge). For a 1000 hp steam locomotive, five such burners would be required; an array of nine is the practical maximum, which would suffice for a steam locomotive of approx. 1800 hp.

Burners for horizontal positioning and higher power outputs are in preparation.