



GENERAL INFORMATION

Lab-scale microwave pyrolysis system for the conversion of biogenic feedstocks (e.g. microalgae, sewage sludge) into bio-oil, syngas, and biochar. Enables rapid, volumetric heating under controlled atmospheres (e.g. inert gas) with operating temperatures up to ~1000 °C and adjustable process parameters. Integrated product separation for solid, liquid, and gaseous fractions with options for condensation and gas analysis. Designed for flexible operation and process optimization, supporting scale-up towards industrial applications.

FEATURES

- Water-cooled
- High efficiency magnetron system
- Low noise SMPS with low ripple anode current for high reliability
- Hot air system
- Sensors for process monitoring (H₂ gas detector, IR camera for process control, inert gas control, temperature monitoring air in and out)

SPECIFICATION

Electrical and Technical Data

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|-------------------------|----------------------------|
| Output power, frequency | 3 kW, 2.45 GHz |
| Supply voltage | 3 x 400 V AC, +N+PE, 50 Hz |
| Total connected load | ca. 11 kVA |
| Current consumption | 17 A |

Cooling

Water cooling

| | |
|-------------------------|--------------------|
| Water flow | min. 35 l/min |
| Inlet water temperature | 20 °C - 25 °C |
| Inlet pressure | min. 5 bar - 6 bar |

Mechanical Data

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|-------------------------------|-----------------------------|
| Dimensions of housing (WxHxD) | 2108 mm x 1971 mm x 1148 mm |
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