

Downstream Plasma Device 2400..2500 MHz, 6 kW



Features



- Compact plasma source device
- Frequency band 2400..2500 MHz
- Maximum 6 kW output power
- Suitable for methane pyrolysis
- Max. gas temp.: approx. 3000 °C - 5000 °C
- 99% energy coupling in the microwave plasma reactor (incl. 3-Stub-Tuner)
- Included:
 - Switch Mode Power Supply 6 kW, controllable via touch panel
 - Magnetron head 6 kW

Specification

Electrical and Technical Data

Fixed Frequency	2450 +/-10 MHz
HF power	6 kW
Igniter	Igniter pressurized cylinder
Igniter compressed air input	Compressed air 6 bar, 6 mm tube connection
Process gas flow radial typical	max. 300 l/min.
Process gas flow axial typical	10 – 20 % of process gas flow radial
Energy coupling in the microwave plasma reactor (incl. 3-Stub-Tuner)	99 %

Cooling

Cooling water	Min. 15 l/min, 3.5 bar at 20 °C
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Mechanical Data

Dimensions (WxHxD)	1600 x 1280 x 630 mm
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Application



Plasma can be considered as energy-enriched gas and is often referred to as the fourth state of matter. In fact, parts of the gas are ionized and molecules are split into atoms, ions and electrons in a plasma. Also, a plasma is really hot, approx. 3000 °C - 5000 °C (surface of the sun 6000 °C). All this turns a plasma into the chemical reaction zone you have ever dreamt of.

In a microwave plasma reactor natural gas is directly converted to pure carbon and hydrogen. This is also the main benefit of the dry methane reforming reaction in a microwave plasma reactor over for example conventional steam methane reforming: no carbon dioxide is

formed in the process. While steam methane reforming comes with the disadvantage of carbon dioxide emissions and needs expensive carbon capture and storage technologies, this extra step can be spared with a microwave plasma reactor. Additionally, the pure carbon adds value to the process as an extra revenue, since this chemical is desired for e.g. tire manufacturing, gaskets or simply for shoe soles.

