

## INNOVATIVE PLASMA TECHNOLOGY

efficient and reliable

### piezo brush<sup>®</sup> PZ3

#### The world's smallest handheld plasma device with PDD technology

The PiezoBrush PZ3 has been developed as a compact plasma hand-held device for use in laboratories, pre-development and the assembly of small series. With a maximum power consumption of 18 W, the Piezoelectric Direct Discharge (PDD) technology generates cold-active plasma at a temperature of less than 50°C. The PiezoBrush PZ3 is the perfect device for getting started with plasma technology, as it does not require an external high-voltage or gas supply and is ready for immediate use thanks to plug-and-play technology.

#### Fields of application

- ◇ Joining technology
- ◇ Development and optimization of production processes
- ◇ Research facilities and laboratories
- ◇ Microbiology, microfluidics and food technology
- ◇ Medical and dental technology
- ◇ Prototype and architectural model making
- ◇ Small-scale production

#### Possible use cases

- ◇ Activation and functionalization of surfaces of various materials
- ◇ Optimization of bonding, painting, printing and coating processes
- ◇ Ultra-fine cleaning
- ◇ Surface pre-treatment of plastics, glass, ceramics, metals, semiconductors, natural fibres and composite materials

#### Technical details

Electrical connection: 110-240 V / 50-60 Hz

Power consumption: max. 18 W

Weight: 110 g

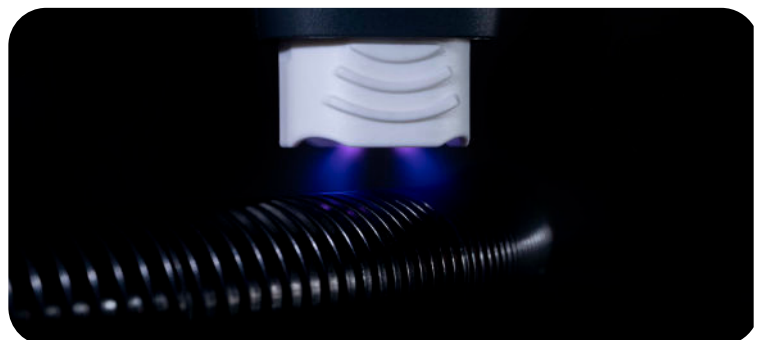
Plasma temperature: < 50 °C \*

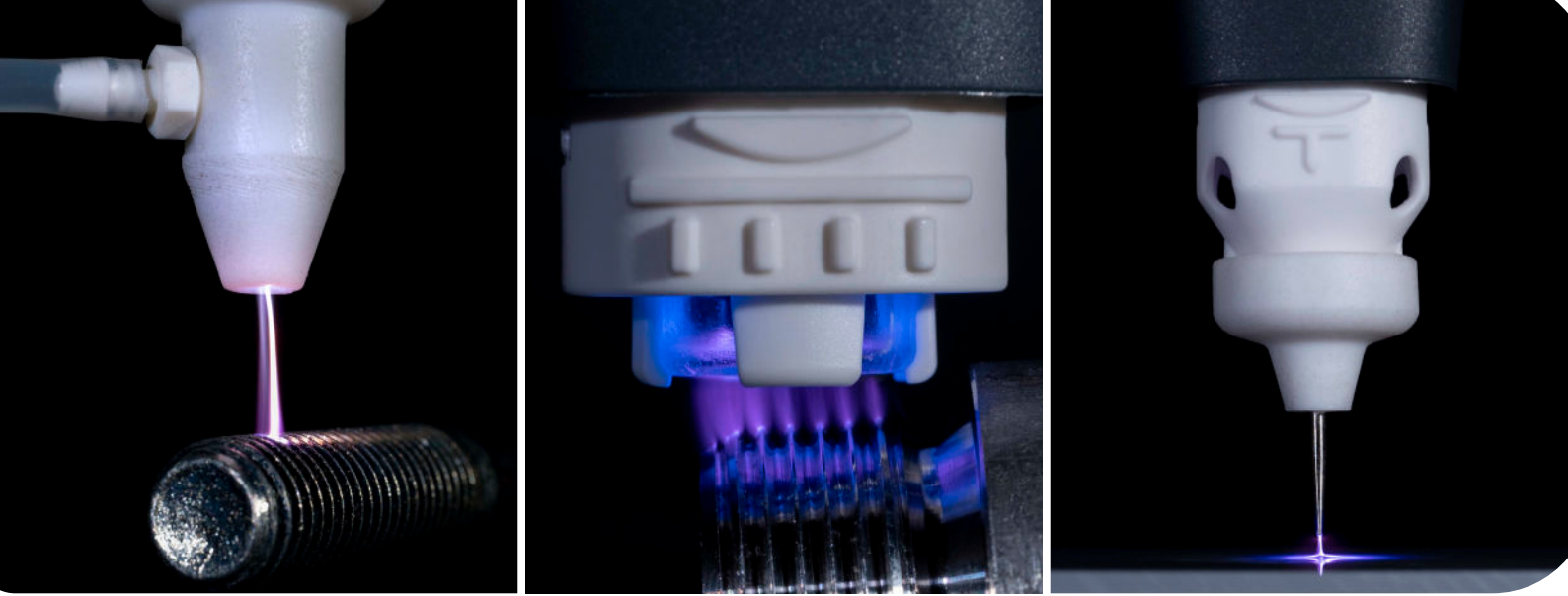
Treatment speed: 5 cm<sup>2</sup>/s

Typical treatment distance: 2 – 10 mm

Typical treatment width: 5 – 29 mm

\* when using Module Standard





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### Application examples – plasma activation with PiezoBrush PZ3

#### Printing on plastics

Many plastics such as polyethylene (PE) or polypropylene (PP) are difficult to print on. Plasma treatment in digital UV-LED flatbed printing and pad printing achieves ultra-fine cleaning of the printing surface, removing even the smallest dust particles and impurities. This results in a significant improvement in adhesion, which considerably increases print quality.



#### Surface preparation before bonding

To achieve the best possible bond strength, suitable surface preparation of the bonding surfaces is essential. In lightweight construction, in aerospace technology or in the automotive industry, for example, carbon fiber-reinforced plastics are treated before bonding, which often only achieve weak bonded joints without pre-treatment.



#### Plasma treatment of 3D objects

The compact and easy-to-use handheld plasma device PiezoBrush PZ3 is ideal for treating the surfaces of complex 3D objects. This means that complex structures can be treated with plasma over their entire surface or in certain areas prior to printing, gluing or joining, without the need for a complex infrastructure.



Different surfaces require the appropriate accessories for activation to achieve a high-quality result. Therefore, there are five different modules for the PiezoBrush PZ3.

Once the plasma application has been validated, the transfer to serial production is very easy with the PiezoBrush PZ3-i integration unit. This is based on the same technology and uses the same modules, so that the PiezoBrush PZ3-i delivers analogous results.



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