

Technology_MWO-I Powder Optics for laser cladding



Laser cladding with powder materials can be used for maintenance, repair and anti-wear coating, and for manufacture of 3D components (additive manufacturing). The most important applications comprise mechanical engineering, tooling, engine and motor construction.

The filler material is fed as powder into the interaction area of the laser beam with the material to be processed, molten, and fused with the basic material. Due to the low thermal input, a low degree of material fusion (<5 %) and very low distortion of the component can be achieved. More often, laser cladding is also used for the manufacture of 3D components.

The **MWO-I Powder** optics with powder nozzles of the Fraunhofer ILT and manual or optionally motor-driven collimation setting allows various track widths with different lens.

Advantages

- Compact and robust
- Developed for toughest process conditions in industrial use
- Modular design
- Manual or motor-driven setting of the collimation for variation of track width
- Design available as coaxial nozzle or 3-jet nozzle
- Very high powder efficiency (up to 95 %)
- Compatible with different handling systems (robots, gantry kinematics etc.)
- Optionally with camera, hair cross generator and internal lighting for support during programming

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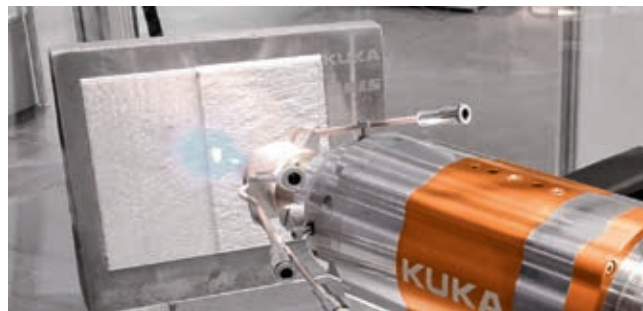
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Technical data

Weight: ~7,0 kg
Dimension: ~320 mm × 180 mm × 160 mm
Focal depth: ~200 mm
Input aperture: maximum 30 mm
Laser capacity: maximum 4 kW
Suitable for beam sources from 900 nm to 1,080 nm
Variably adjustable spot diameter of 0.5 mm – 4.5 mm (The variation range depends on the laser type)



Powder coating in highest precision

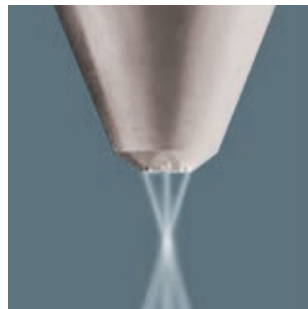


Coating also possible in forced position



Coaxial nozzle

Continuous-feed powder injection
Cladding with highest precision (the powder focus ≥ 0.4 mm)



3-jet nozzle

Discrete 3-jet powder injection
Cladding of thick coats and 3D contours



For further information please contact us at
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