



## HIGHNO 4.0 – COAXIAL POWDER NOZZLE

**Precise, efficient and suitable for series production**

With the coaxial powder nozzles, the powder is injected into the molten bath through a conical annular gap. A fine powder gas jet focus can be achieved through the conical powder feed. As a result, high powder efficiency is achieved even with narrow coating traces of less than one millimeter.

The monolithic design of the nozzle tip module, consisting of an inner and an outer cone, is pre-assembled using appropriate shape and position tolerances and replaced without the need for manual adjustment.

- **Plug-and-Play-Solution** for the industry
- **Conversion on site** in a short time (replacement of the nozzle tips in less than 2 minutes)
- **Reproducible changing** of the nozzle tips (qualification of the nozzle tip modules possible)
- **High wear resistance** thanks to special coatings
- **Different gap dimensions** for high variability

### Contact

#### **HD Special Optics for Laser Technology**

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### Technical Specifications

Design	monolithic
Laser beam source	solid state, diode, gas
Laser power	Up to 5 kW  (This information depends on the source and application.)
Weight	max. 1 kg
Stand-Off	9 - 12 mm
Powder particle size	20 - 50 µm, 50 - 100 µm  (recommended)
Powder gas jet focus	0.7 mm at 3 g/min
Possible track widths	0.5 - 3 mm
Max. powder mass flow	100 g/min
Cooling	indirect water cooling  1-3 l/min at 18 - 20 °C
Surface	<ul style="list-style-type: none"> <li>• uncoated</li> <li>• special coatings for high wear resistance</li> </ul>
Max. powder efficiency	up to 90% with track widths of 1.0 mm and a grain size of 20 - 50 µm
Connection	customer specification