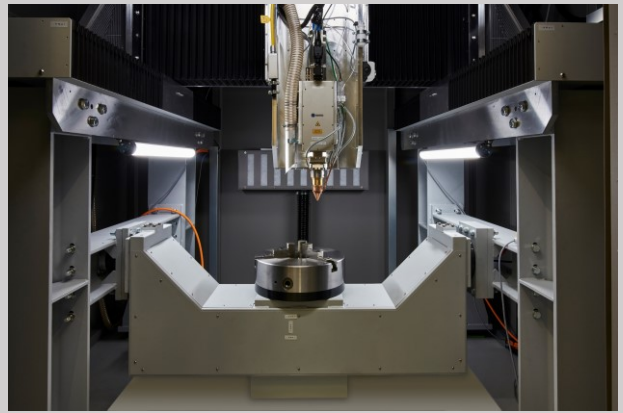


LUNOVU pLMD



LUNOVU pLMD overview

LUNOVU pLMD machines are production systems with medium to large size working volumes. They are designed for maximum productivity. Used for coating applications, tool and mold making or for repair applications, users appreciate the robust design and its economical operation due to the unique scan/toolpath generation technology. All pLMD systems are prepared to utilize the full range of the LunoSUITE software modules.



pLMD machines are designed as gantry systems. The XYZ system moves the processing head with optics, while the workpiece is positioned by a turn/tilt table in 5 axes operation. This setup has been chosen as it offers best LMD performance; furthermore, it allows using a large variety of powder nozzles, including annular gap nozzles. The mechanical design is based on LUNOVU's multi-decade laser machine competence as well as on state-of-the-art finite element calculations, resulting in a robust low vibration main frame.

Kinematic system & working envelope

- Standard travel:
 - X 1000 mm
 - Y 1000 mm
 - Z 500 to 1000 mm
- Optional:
 - X 2000 mm
 - Y 2000 mm (4000 mm to be released soon)
- Turn/tilt unit
 - Standard: 100kg/200 kg load
 - Optional 500 kg and more
- Linear velocity X, Y, Z:
 - Standard: 0 ... 20 m/min
 - LMD optimized for 0...5 m/min
- Acceleration X, Y, Z:
 - Standard: 0... 5 m/s²
 - LMD optimized for 0...0.25 m/s²
- Absolute accuracy of linear axes X, Y, Z:
 - $\leq 50 \mu\text{m}$

Laser & optics

- Standard: Diode laser 2000W to 6000W
- Beam quality 44 mm* mrad,
66 mm*mrad or 110 mm*mrad
- Options:
 - Disk laser (better beam quality)
 - Fiber laser (better beam quality)
 - Power range > 6000 W
- Optical fiber 400 μm to 1500 μm (Standard)
- <400 μm optional
- Optic: Fixed or zoom optic

Powder supply

- Standard: Disk feeder
 - Oerlikon Metco or BLC
 - 2x or 4x lines with individual hoppers
- Options:
 - Vibration feeder (Medicoat)
 - Gravimetry
 - Powder heating
 - Powder switches
 - Powder mixer
- Nozzles:
 - ILT annular gap or multi jet
 - HighNO or conventional
 - ILT EHLA nozzles
 - IWS multi jet nozzles
 - BLC multi jet nozzles

Housing & safety

- Standard:
 - Single wall steel housing
 - Front door with laser safety window
 - Laser class 1 outside
- Options:
 - Automatic sliding doors
 - Double wall/active housing
 - Manual sliding doors
 - L shaped doors for front/top loading
- Safety installations, interlocks
- Powder trap and exhaust/filter unit
 - Spark extinguisher
 - Fire alarm/extinguishing device optional

Controls

- Standard: Bosch Rexroth MTX
- Optional: Siemens SINUMERIK 840 D
- Optional: Automatic scan/toolpath generation
LunoSUITE