



1 GENERAL SYSTEM DESCRIPTION

Dentas Arrow LMP 100v3 is an advanced metal 3D printing system designed specifically for dental laboratories and the dental industry, where biocompatibility and premium precision are key. It is based on proven Laser Powder Bed Fusion (LPBF) technology and enables the production of complex dental structures directly from a digital CAD model, eliminating the need for traditional casting processes.

2 DENTAL APPLICATIONS

The system is specially optimized for the fast and precise production of:

- crowns and bridges
- removable partial dentures (frameworks)
- implant-supported structures and bars
- custom abutments

Key advantages for laboratories:

- perfect marginal fit and high dimensional accuracy
- digitization of the workflow and reduction of costs
- high process repeatability and fast production of small or large batches

3 PROCESS & SYSTEM SPECIFICATIONS

Parameter	Description
Technology	Laser Powder Bed Fusion (LPBF)
Laser	Yb Fiber laser
Power	200 W
Beam diameter	~50 µm
Scanning speed	up to 7 m/s
Dimensions	650 (w) x 750 (d) x 1590 mm (h)
Weight	~250 kg
Power supply	230 V, 50-60 Hz, ~2 kW

4 PROCESS FLEXIBILITY AND OPEN SYSTEM

Dentas Arrow LMP 100v3 is designed as an open industrial system, positioning it in the segment of advanced AM solutions.

Software compatibility

- compatible with most industrial slicer programs on the market and support standard CAD/CAM formats (STL, 3MF).

Multi-level workflow:

- Laboratory (Production) Mode: pre-set materials and parameters for stable and repeatable production.
- R&D Mode (Open Parameter Access): full access to process settings for the development of new materials and processes.

5 MATERIALS

Supported and optimized materials for dental prosthetics:

- CoCr (Cobalt-Chromium alloys) - for standard prosthetics and frameworks
- Titanium alloys - for implant structures and solutions requiring maximum biocompatibility.

6 POWDER SYSTEM (LABORATORY SAFETY)

Parameter	Description
Type	closed system
Atmosphere	internal
Gases	argon / nitrogen
O ₂ level	≤ 100 ppm*
Material utilization	up to 95 %

*Optional installation of a laboratory sensor ≤10 ppm

Features an integrated powder recycling system under protective gas, ensuring excellent powder quality and efficiency.

7 PRODUCTIVITY AND QUALITY

Layer thickness:

- 15 - 100 µm (ideal for achieving smooth surfaces and precise dental margins.)
- High material density.
- Fine surface quality.
- High dimensional accuracy.

8 SYSTEM AND CONTROL

- HMI (touch screen)
- Integrated camera and real-time monitoring.
- Remote access and remote diagnostics.
- Compact design allows for easy integration into a laboratory or workshop, ensuring fast system setup.