

EOS Titanium Ti64  
for EOS M 300-4

# EOS Titanium Ti64

## EOS M 300-4 | 60 $\mu\text{m}$

EOS Titanium Ti64 is a Ti6Al4V alloy, which is well-known for having excellent mechanical properties: low density with high strength and excellent corrosion resistance. The alloy has low weight compared to superalloys and steels and higher fatigue resistance compared to other lightweight alloys.



### Main Characteristics

- Low weight combined with high strength
- Excellent corrosion resistance
- Parts can be machined, shot-peened and polished in as-built and heat treated states
- Chemical and part properties corresponding to Ti6Al4V, ISO5832-3, ASTM F1472, ASTM F2924 and ASTM F3302

### Typical Applications

- Aerospace components
- Automotive components
- Other industrial applications where low weight in combination with high strength are required

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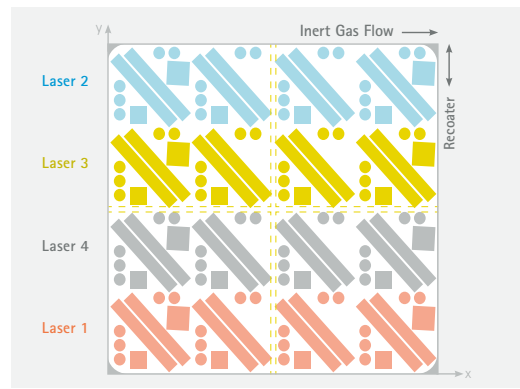
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### Product Information

DMLS System	EOS M 300-4
Material	EOS Titanium Ti64
Process	60 $\mu\text{m}$ layer thickness
Build Platform Temperature	35 $^{\circ}\text{C}$
Inert Gas	Argon
Recoater blade	HSS, two-sided recoating
Volume rate	up to 4 x 9.0 mm <sup>3</sup> /s

### Layout of test job

Part properties based on two test jobs each for the as manufactured and heat treated data.



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Typical part properties	Yield strength Rp <sub>0.2</sub> [MPa]	Tensile strength Rm [MPa]	Elongation at break A [%]	Number of samples
As manufactured vertical	1169	1287	10	159
As manufactured horizontal	1147	1311	6.6	64
Heat treated vertical	1032	1120	14.6	160
Heat treated horizontal	1017	1125	12.7	63
Max. pore size	< 110 $\mu\text{m}$			64
Porosity	0.007 %			64

Mechanical properties tested according to EN ISO 6892-1 A1.

The values in the table are average values and dependent on the build platform temperature, on the thermal load of the job layout as well as the position on the build plate.

Heat treatment procedure: 120 min (+/-30 min) at 800  $^{\circ}\text{C}$  (+/-10  $^{\circ}\text{C}$ ) measured from the part in vacuum ( $1.3 \times 10^{-3}$  -  $1.3 \times 10^{-5}$  mbar) followed by cooling under vacuum.

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The quoted values refer to the use of this material with above specified type of EOS DMLS system, EOSYSTEM and EOSPRINT software version, parameter set and operation in compliance with parameter sheet and operating instructions. Part properties are measured with specified measurement methods using defined test geometries and procedures. Further details of the test procedures used by EOS are available on request. Any deviation from these standard settings may affect the measured properties. The data correspond to EOS knowledge and experience at the time of publication and they are subject to change without notice as part of EOS' continuous development and improvement processes. EOS does not warrant any properties or fitness for a specific purpose, unless explicitly agreed upon. This also applies regarding any rights of protection as well as laws and regulations.

