

EOS Copper Cu

EOS M 290 | 20 µm

High purity copper for EOS M 290 platform to reach good electrical and thermal conductivity. Suitable for a wide variety of applications.



Main Characteristics

- High purity copper
- Good electrical and heat conductivity
- Process developed to achieve best possible conductivity using the EOS M 290

Typical Applications

- Heat exchangers
- Electronics
- Variety of industry applications requiring good conductivity

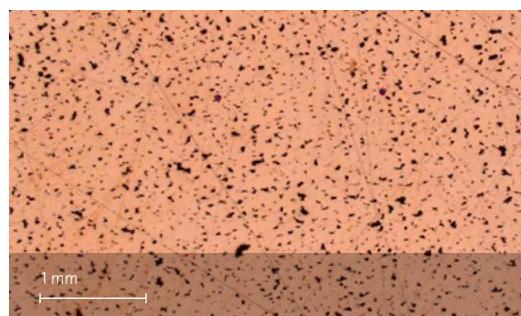
Product Information

Current TRL	3
DMLS System	EOS M 290
Material	EOS Copper Cu
Process	Cu_020_CoreM291_100

Layer thickness 20 µm

Volume rate 1.7 mm³/s

Porosity < 5 %*



* depending on job load and part geometry

Typical part properties

	Yield strength $R_{p_0.2}$ [MPa]	Tensile strength R_m [MPa]	Elongation at break A [%]
Mechanical properties as manufactured	180	200	5
Mechanical properties heat treated	140	190	20
Conductivity as manufactured	> 80 % IACS (tested acc. ASTM E1004-17)		
Conductivity heat treated	> 90 % IACS (tested acc. ASTM E1004-17)		

Copper can be heat treated to reach different mechanical properties and conductivity values. Properties in the table have been achieved with following heat-treatment:

Hold 1 h at ~ 1,000 °C in argon atmosphere, slow cooling with argon

Copper and its alloys have high conductivity; hence high power is required for processing. The achieved density, which influences the mechanical properties, is typical for a 400 W laser. Please refer to the application notes for EOS Copper products for further information.

Status 11/2019

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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.

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