



EOS CopperAlloy CuCrZr  
for AMCM M 290 1 kW

# EOS CopperAlloy CuCrZr

## AMCM M 290 1kW | 80 μm

Copper alloy CuCrZr has a favorable combination of electrical and thermal conductivity accompanied with good mechanical properties. This alloy reaches its good properties during heat treatment.



### Main Characteristics

- High productivity 15.4 mm<sup>3</sup>/s with 80 μm layer thickness
- Moderate to high conductivity in heat treated condition together with good mechanical properties
- Designed for an EOS M 290 with a 1 kW laser which is the AMCM M 290 1 kW sold by AMCM GmbH

### Typical Applications

- Rocket engine parts
- Heat exchangers
- Induction coils

### Headquarters

EOS GmbH  
Electro Optical Systems  
Robert-Stirling-Ring 1  
D-82152 Krailling/Munich  
Germany  
Phone +49 89 893 36-0  
info@eos.info

www.eos.info

**in** EOS  
 EOSGmbH  
 EOS.global  
 EOSGmbH  
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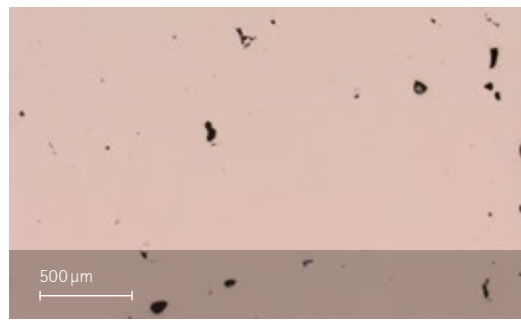
### Product Information

DMLS System	EOS M 290 with 1kW laser
Recoater type	HSS blade
Protective gas	Argon
Material	EOS CopperAlloy CuCrZr
Process	CuCrZr_080_CoreM291_1kW_100

### Layer thickness 80 μm

Volume rate 15.4 mm<sup>3</sup>/s

Porosity < 0.5 %



### Further Offices

EOS France  
Phone +33 437 497 676

EOS Greater China  
Phone +86 21 602 307 00

EOS India  
Phone +91 443 964 8000

EOS Italy  
Phone +39 023 340 1659

EOS Japan  
Phone +81 45 670 0250

EOS Korea  
Phone +82 2 6330 5800

EOS Nordic Et Baltic  
Phone +46 31 760 4640

EOS of North America  
Phone +1 877 388 7916

EOS Singapore  
Phone +65 6430 0463

EOS UK  
Phone +44 1926 675 110

### Typical part properties

	Yield strength Rp <sub>0.2</sub> [MPa]	Tensile strength Rm [MPa]	Elongation at break A [%]
Mechanical properties as manufactured	160	210	40
Mechanical properties heat treated	210	340	25
Conductivity as manufactured	> 20 % IACS (tested acc. ASTM E1004-17)		
Conductivity heat treated	> 80 % IACS (tested acc. ASTM E1004-17)		

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

1. Hold 30 min at ~ 980 °C in argon atmosphere, water cooling to room temperature.
2. Hold 3 h at ~ 430 °C in argon atmosphere, slow cooling in argon by taking the samples out of the furnace and rest in air.

Please refer to the application notes for EOS Copper products for further information.

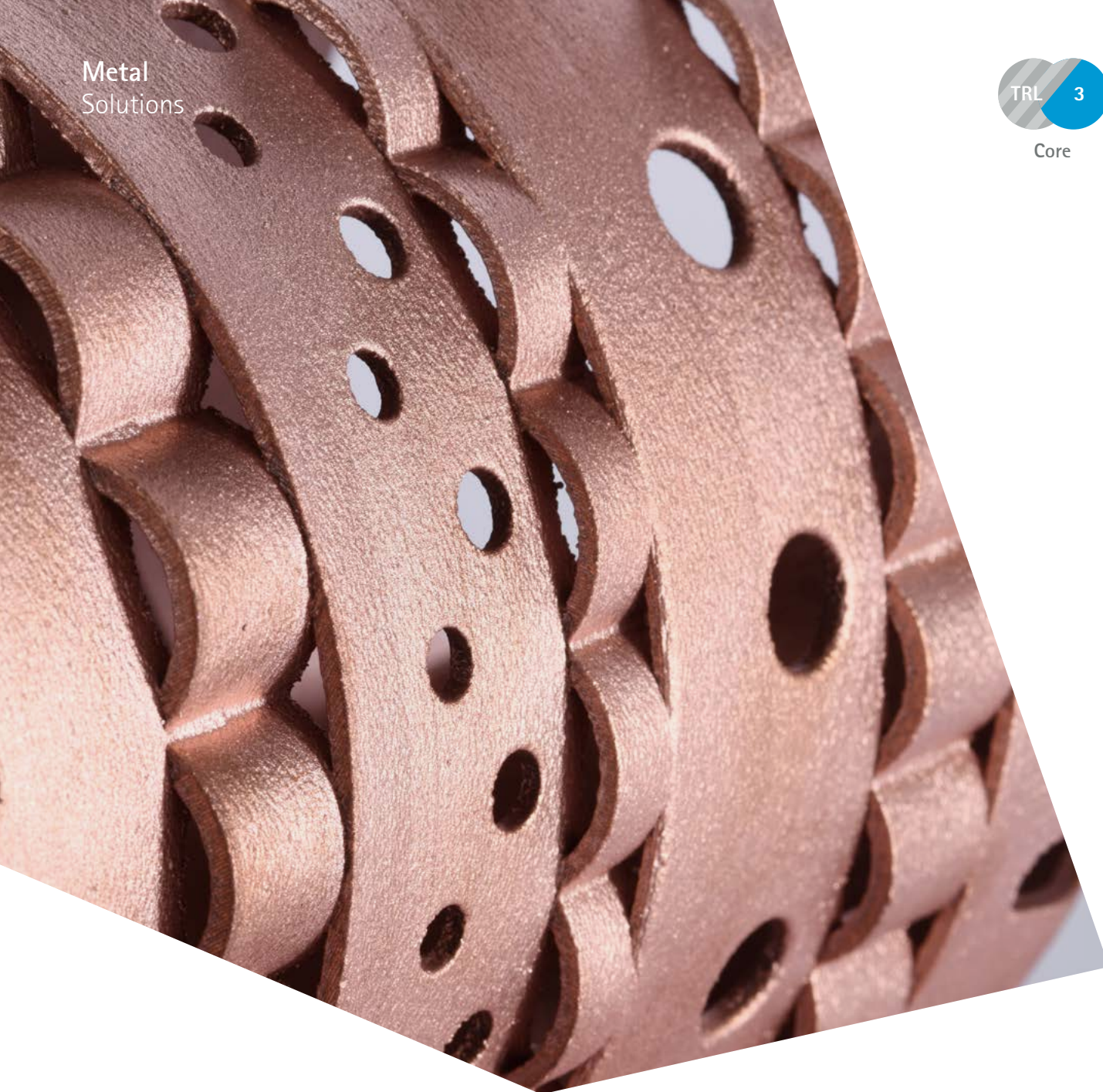
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EOS CopperAlloy CuCrZr  
for EOS M 400

# EOS CopperAlloy CuCrZr

## EOS M 400 | 80 μm

Copper alloy CuCrZr has a favorable combination of electrical and thermal conductivity accompanied with good mechanical properties. This alloy reaches its good properties during heat treatment.



### Main Characteristics

- High productivity 12 mm<sup>3</sup>/s with 80 μm layer thickness
- Moderate to high conductivity in heat treated condition together with good mechanical properties
- Chemical composition corresponds to C18150 and CW106C

### Typical Applications

- Rocket engine parts
- Heat exchangers
- Induction coils

### Headquarters

EOS GmbH  
Electro Optical Systems  
Robert-Stirling-Ring 1  
D-82152 Krailling/Munich  
Germany  
Phone +49 89 893 36-0  
info@eos.info

www.eos.info

**in** EOS  
 EOSGmbH  
 EOS.global  
 EOSGmbH  
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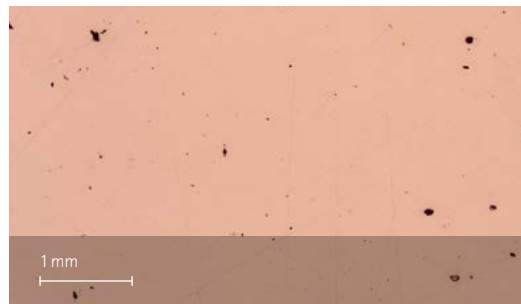
### Product Information

Current TRL	3
DMLS System	EOS M 400
Material	EOS CopperAlloy CuCrZr
Process	CuCrZr_080_CoreM400_100

### Layer thickness 80 μm

Volume rate 12 mm<sup>3</sup>/s

Porosity < 0.5 %



### Further Offices

EOS France  
Phone +33 437 497 676

EOS Greater China  
Phone +86 21 602 307 00

EOS India  
Phone +91 443 964 8000

EOS Italy  
Phone +39 023 340 1659

EOS Japan  
Phone +81 45 670 0250

EOS Korea  
Phone +82 2 6330 5800

EOS Nordic Et Baltic  
Phone +46 31 760 4640

EOS of North America  
Phone +1 877 388 7916

EOS Singapore  
Phone +65 6430 0463

EOS UK  
Phone +44 1926 675 110

### Typical part properties

Typical part properties	Yield strength Rp <sub>0.2</sub> [MPa]	Tensile strength Rm [MPa]	Elongation at break A [%]
Mechanical properties as manufactured	160	210	40
Mechanical properties heat treated	200	300	30
Conductivity as manufactured	> 20 % IACS (tested acc. ASTM E1004-17)		
Conductivity Heat-treated	> 85 % IACS (tested acc. ASTM E1004-17)		

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

1. Hold 30 min at ~ 980 °C in argon atmosphere, water cooling to room temperature.
2. Hold 3 h at ~ 430 °C in argon atmosphere, slow cooling in argon by taking the samples out of the furnace and rest in air.

Please refer to the application notes for EOS Copper products for further information.

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