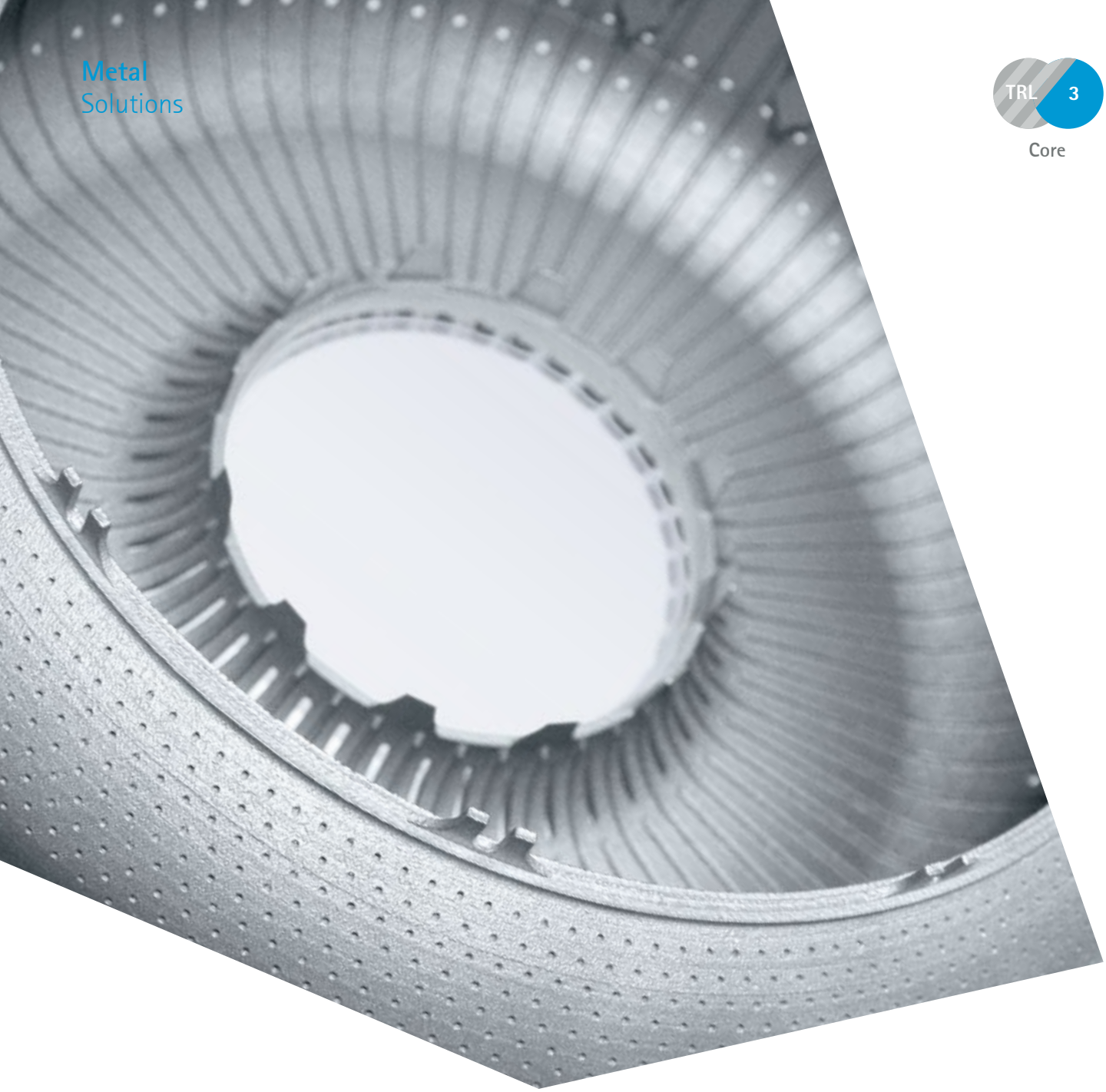
Metal
Solutions



TRL 3
Core

EOS NickelAlloy IN625
for EOS M 300-4

EOS NickelAlloy IN625
EOS M 300-4 | 40 µm

EOS NickelAlloy IN625 is a heat and corrosion resistant nickel alloy powder which has been optimized especially for processing on DMLS systems.

Project Partner Materials Solutions, EOS

Main Characteristics

- → High tensile, creep and rupture strength
- → Heat and corrosion resistant
- → Chemical composition corresponding to UNS N06625, AMS 5666F, AMS 5599G, W.Nr 2.4856, DIN NiCr22Mo9Nb.

Typical Applications

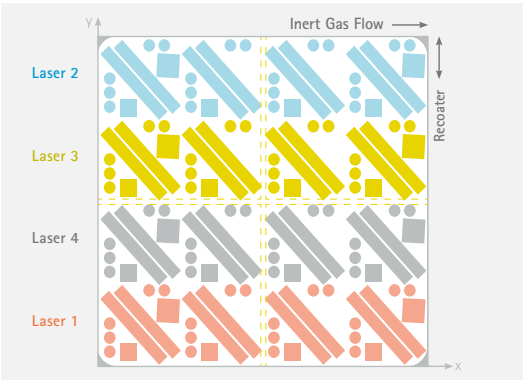
- → Racing applications
- → Gas turbines in aerospace and energy
- → Ship building industry

Product Information

DMLS System	EOS M 300-4
Material	EOS NickelAlloy IN625
Process	40 µm layer thickness
Inert Gas	Argon
Recoater blade	HSS, two-sided recoating
Volume rate	up to 4 x 4.2 mm³/s

Layout of test job

Part properties based on 2 test jobs each for as manufactured and heat treated data.



Typical part properties	Yield strength $R_{p0.2}$ [MPa]	Tensile strength R_m [MPa]	Elongation at break A [%]	Number of samples
As manufactured vertical	611	852	48.2	160
As manufactured horizontal	750	1030	32.9	64
Heat treated vertical	606	862	52.1	160
Heat treated horizontal	692	1 041	35.6	64
Max. pore size	50 µm			64
Porosity	0.006 %			64

Mechanical properties tested according to EN ISO 6892-1 B10. The values in the table are average values and dependent on the thermal load of the job layout as well as the position on the build plate.
Heat treatment procedure: anneal at 870 °C (1 600 °F) for 1 hour, rapid cooling

Status 02/2022

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