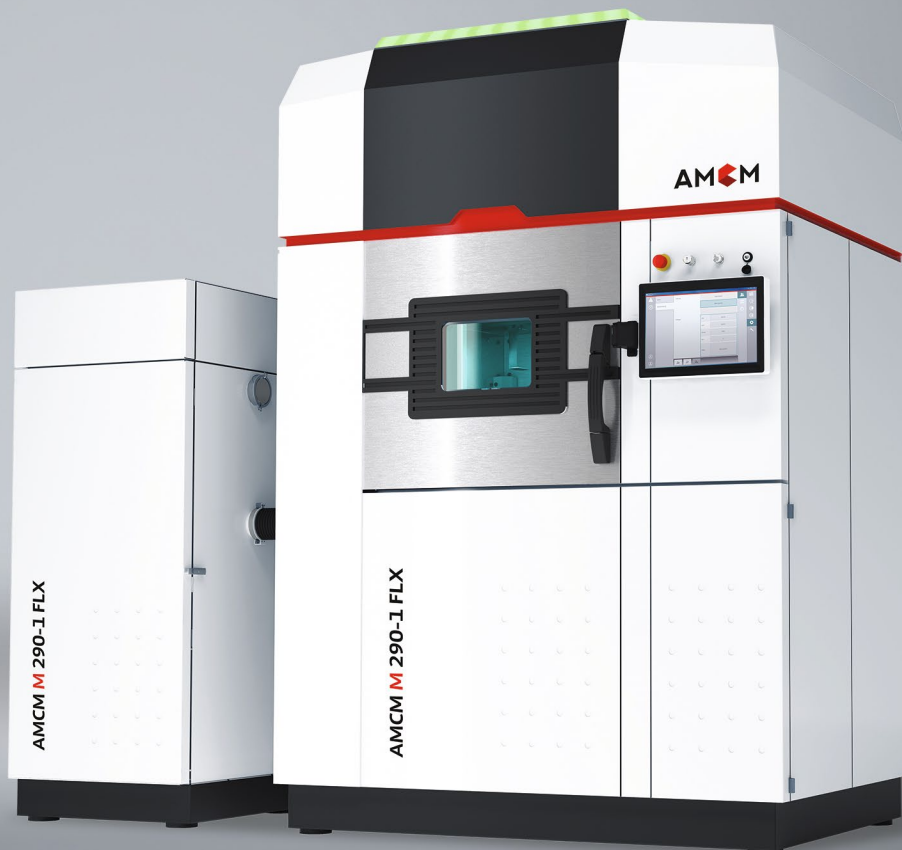




Additive Manufacturing
Customized Machines

AMCM M 290 FLX

With single or dual laser setup.
From Gaussian to ring-shaped beams.
Also with FDR – fine detail resolution.
For highest productivity.



AMCM M 290 FLX

Benefits

AMCM M 290-1 FLX, AMCM M 290-2 FLX
configuration with up to 2 x nLIGHT AFX-1000 lasers:

- Compatible with legacy EOS M 290 (400 W) process for 85 µm spot process parameter sets (same focus, beam quality, etc.) ⁽¹⁾
- Up to 3x higher productivity with 316L steel and aluminum (compared to standard 400 W process)
- Excellent part properties (e.g. Cu density, electrical conductivity)
- Process gas cooling for constant process conditions
- Machine design e.g., gas flow or thermal management adapted to the higher laser power
- Single or dual laser setup
- Full field overlap possible with the AMCM M 290-2 FLX (85 µm spot)

AMCM M 290-1 FLX (FDR), AMCM M 290-2 FLX (FDR)
configuration with up to 2 x nLIGHT AFX-1000 and FDR (fine detail resolution):

- For demanding applications with focus down to 55 µm
- Open software for process optimization
- High productivity due to dual laser setup

Technical Data

	AMCM M 290-1 FLX	AMCM M 290-1 FLX (FDR)	AMCM M 290-2 FLX	AMCM M 290-2 FLX (FDR)
Building volume (height inclusive build plate)	250 x 250 x 325 mm 9.85 x 9.85 x 12.8 in	220 x 220 x 325 mm 8.66 x 8.66 x 12.8 in	250 x 250 x 325 mm 9.85 x 9.85 x 12.8 in	220 x 250 x 325 mm 8.66 x 9.85 x 12.8 in
Laser type	Yb Fiber laser			
Nominal power	1 x 1000-1200 W		2 x 1000-1200 W	
Wave length	1070 nm			
Precision optics	F-theta-lens			
Scanner	standard scanner with active cooling			
Scanning speed	up to 7.0 m/s 23 ft./sec			
Focus diameter	85 - 210 μm 0.003 - 0.008 in	55 - 140 μm 0.002 - 0.006 in	85 - 210 μm 0.003 - 0.008 in	55 - 140 μm 0.002 - 0.006 in
Process gas cooling	x	x	x	x
Power supply	32 A / 400 V			
Power consumption	15 kW		17 kW	
Inert gas supply	7,000 hPa; 20 m³/h 102 psi; 706 ft³/h			
Dimensions (W x D x H)	2,680 x 2,120 x 2,400 mm 105.5 x 83.5 x 94.5 in			
Recommended installation space	min. 4,800 x 3,600 x 3,500 mm 189 x 142 x 138 in			
Weight	approx. 1,250 kg 2,756 lb		approx. 1,350 kg 2,976 lb	

⁽¹⁾ Processes must all be re-qualified by customer.
Consulting for parameter set transfer from EOS M 290 (400 W) to AMCM systems on request.

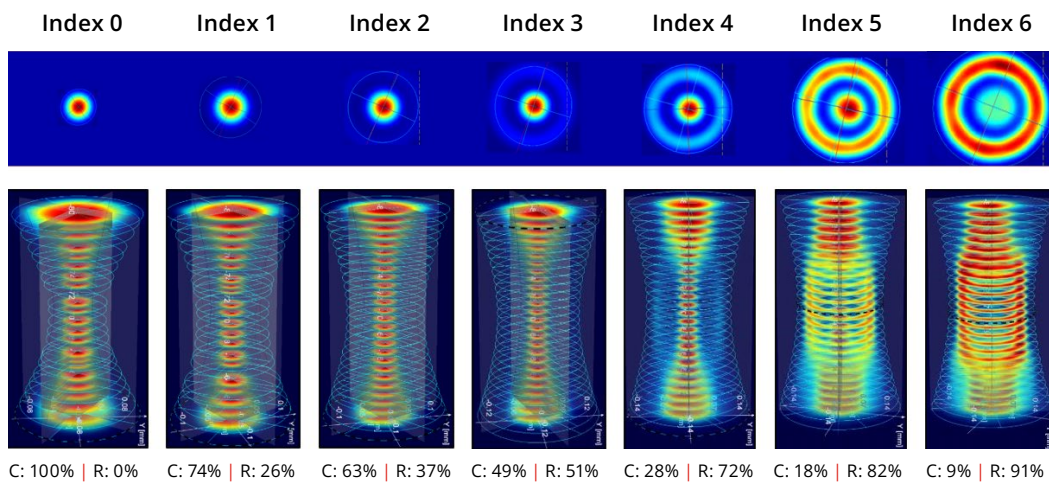


Fig 1: nLIGHT laser index properties.

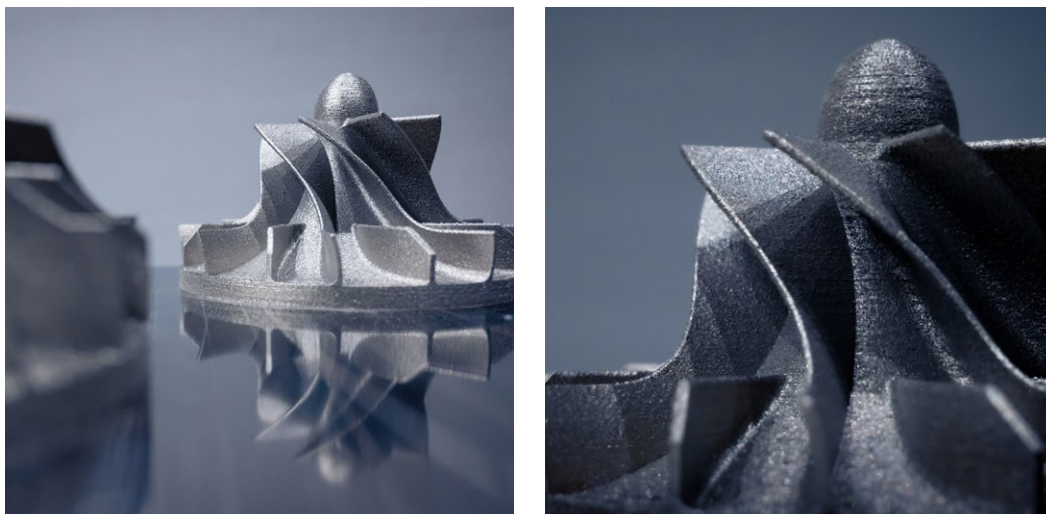


Fig 2: 316L impeller made on an AMCM M 290-1 FLX system with the nLIGHT AFX-1000.
Spot size: 85 μm
Volume rate: 17 mm^3/sec