

# Direct Metal Printers

Metal Additive Manufacturing with the DMP printer series



DMP Flex 100



ProX® DMP 200



ProX® DMP 300

SPECIFICATIONS			
Laser Power Type	100 W/Fiber laser	300 W/Fiber laser	500 W/Fiber laser <sup>1</sup>
Laser Wavelength	1070 nm	1070 nm	1070 nm
Build Volume (X x Y x Z) Height inclusive of build plate	100 x 100 x 90 mm (3.94 x 3.94 x 3.54 in)	140 x 140 x 115 mm (5.51 x 5.51 x 4.53 in)	250 x 250 x 330 mm (9.84 x 9.84 x 12.99 in)
Layer Thickness	10µm - 100µm		
		Preset: 30	Preset: 40 µm
LaserForm® metal alloy choices with developed print parameters:	LaserForm CoCr (B) LaserForm 17-4PH (B) LaserForm 316L (B) LaserForm CoCr (C)	LaserForm CoCr (B) LaserForm 17-4PH (B) LaserForm Maraging Steel (B) LaserForm 316L (B) LaserForm AlSi12 (B)	LaserForm CoCr (B) LaserForm 17-4PH (B) LaserForm Maraging Steel (B) LaserForm AlSi12 (B)
Material Deposition	Roller	Roller	Roller
Repeatability	x=20 µm, y=20 µm, z=20 µm		
Minimum Feature Size	x=100 µm, y=100 µm, z=20 µm		
Typical Accuracy	± 0.1-0.2% with ± 50 µm minimum	± 0.1-0.2% with ± 50 µm minimum	± 0.1-0.2% with ± 50 µm minimum
SPACE REQUIREMENTS			
Dimensions, uncrated (WxDxH) <sup>4</sup>	121 x 172 x 210 cm (48 x 68 x 83 in)	120 x 150 x 195 cm (48 x 59 x 77 in)	240 x 220 x 240 cm (95 x 87 x 95 in)
Weight, uncrated	1300 kg (2870 lbs)	Approx. 1500 kg (3300 lbs)	Approx. 5000 kg (11000 lbs)
FACILITY REQUIREMENTS			
Electrical Requirements	230 V / 2.7 KVA / single phase	400 V / 8 KVA / 3 phase	400 V / 15 KVA / 3 phase
Compressed Air Requirements	6-8 bar	6-8 bar	6-8 bar
Gas Requirements	Nitrogen or Argon, 6-8 bar	Nitrogen or Argon, 6-8 bar	Nitrogen or Argon, 6-8 bar
Water Cooling	Not required, air cooling included	Chiller included in printer	Chiller included in printer
QUALITY CONTROL			
DMP Monitoring	na	na	na
DMP Inspection	na	na	na
CONTROL SYSTEM AND SOFTWARE			
Software Tools	3DXpert® all-in-one software solution for metal additive manufacturing - DMP Dental for dental applications		
Control Software	PX Control V3	PX Control V2	PX Control V2
Operating System	Windows 7	Windows 7	Windows 7
Input Data File Formats	All CAD formats, e.g. IGES, STEP, STL, native read formats incl PMI data, all Mesh formats		
Network Type and Protocol	Ethernet 1 Gbps, RJ-45 Plug		
ACCESSORIES			
Interchangeable Build Modules	na	na	na
POWDER MANAGEMENT			
Powder Management	Optional external	Optional external	Automatic
Material Loading	Manual	Semiautomatic	Automatic
CERTIFICATION			
	CE marked	CE marked, TUV	CE marked, TUV

<sup>1</sup> Maximum laser power at powder layer is typical 450W for 500W lasers    <sup>2</sup> Set up A    <sup>3</sup> Set up B    <sup>4</sup> Height exclusive of signal tower

# Direct Metal Printers

Metal Additive Manufacturing with the DMP printer series



DMP Flex 350



DMP Factory 350

SPECIFICATIONS			
Laser Power Type	500 W/Fiber laser <sup>1</sup>		500 W/Fiber laser <sup>1</sup>
Laser Wavelength	1070 nm		1070 nm
Build Volume (X x Y x Z) Height inclusive of build plate	275 x 275 x 420 mm (10.82 x 10.82 x 16.54 in)		275 x 275 x 420 mm (10.82 x 10.82 x 16.54 in)
Layer Thickness	Adjustable, minimum 5 µm, typical values: 30, 60, 90 µm		Adjustable, minimum 5 µm, typical values: 30, 60, 90 µm
LaserForm® metal alloy choices with developed print parameters:	LaserForm Ti Gr1 (A) <sup>2</sup> LaserForm Ti Gr5 (A) <sup>2</sup> LaserForm Ti Gr23 (A) <sup>2</sup> LaserForm AlSi10Mg (A) <sup>3</sup> LaserForm AlSi7Mg0.6 (A) <sup>3</sup> LaserForm Ni625 (A) <sup>3</sup>	LaserForm Ni718 (A) <sup>3</sup> LaserForm 17-4PH (A) <sup>3</sup> LaserForm 316L (A) <sup>3</sup> LaserForm CoCrF75 (A) <sup>3</sup> LaserForm Maraging Steel (A) <sup>3</sup>	LaserForm Ti Gr1 (A) <sup>2</sup> LaserForm Ti Gr5 (A) <sup>2</sup> LaserForm Ti Gr23 (A) <sup>2</sup> LaserForm AlSi10Mg (A) <sup>3</sup> LaserForm AlSi7Mg0.6 (A) <sup>3</sup> LaserForm Ni625 (A) <sup>3</sup>  LaserForm Ni718 (A) <sup>3</sup> LaserForm 17-4PH (A) <sup>3</sup> LaserForm 316L (A) <sup>3</sup> LaserForm CoCrF75 (A) <sup>3</sup> LaserForm Maraging Steel (A) <sup>3</sup>
Material Deposition	Soft blade recoater		Soft blade recoater
Repeatability	x=20 µm, y=20 µm, z=20 µm		
Minimum Feature Size	100 µm		100 µm
Typical Accuracy	± 0.1-0.2% with ± 50 µm minimum		± 0.1-0.2% with ± 50 µm minimum
SPACE REQUIREMENTS			
Dimensions, uncrated (WxDxH) <sup>4</sup>	236 x 240 x 260 cm (93 x 95 x 103 in)		358 x 243 x 323 cm (141 x 96 x 127 in)
Weight, uncrated	Approx. 4200 kg (9240 lbs)		Approx. 4900 kg (10800 lbs)
FACILITY REQUIREMENTS			
Electrical Requirements	400 V/15 KVA/50-60Hz/3 phase		400 V/20 KVA/50-60Hz/3 phase
Compressed Air Requirements	6-10 bar		6-10 bar
Gas Requirements	Argon, 4-6 bar		Argon, 4-6 bar
Water Cooling	Chiller supplied with printer		Chiller supplied with printer
QUALITY CONTROL			
DMP Monitoring	Optional		Included
DMP Inspection	Optional		Optional
CONTROL SYSTEM AND SOFTWARE			
Software Tools	3DXpert® all-in-one software solution for metal additive manufacturing		
Control Software	DMP Software suite		DMP Software suite
Operating System	Windows 10 IoT Enterprise		Windows 10 IoT Enterprise
Input Data File Formats	All CAD formats, e.g. IGES, STEP, STL, native read formats incl PMI data, all Mesh formats		
Network Type and Protocol	Ethernet 1 Gbps, RJ-45 plug		Ethernet 1 Gbps, RJ-45 plug
ACCESSORIES			
Interchangeable Build Modules	Optional secondary RPMs (Removable Print Modules) for fast material changeover		Not applicable, targeted at volume production with one single material
POWDER MANAGEMENT			
Powder Management	Optional external		Integrated
Material Loading	Manual		Manual, Semiautomatic
CERTIFICATION			
	CE, NRTL		CE, NRTL

<sup>1</sup> Maximum laser power at powder layer is typical 450W for 500W lasers    <sup>2</sup> Set up A    <sup>3</sup> Set up B    <sup>4</sup> Height exclusive of signal tower