

## DMLS Material

### Direct Metal Laser Sintering (DMLS)

We can convert your CAD files into 3D objects, dimensionally accurate very fast, using Direct Metal Laser Sintering (DMLS). Aluminum AISi 10Mg models can be built up to 10" x 10" x 8" (250mm x 250mm x 200mm). Parts can be machined, micro-blasted, polished, and coated.

Accuracy is  $\pm 0.00492$ " for the first 0.98425 inches (0.125mm – 25mm) and  $\pm 0.00197$  - 0.98425" inch per inch (0.05mm – 25mm) thereafter.

### Process Direct Metal Laser Sintering

<b>Product:</b>	Aluminum AISi 10Mg
<b>Recommended minimum layer thickness:</b>	30 $\mu$ m - 1.2mil
<b>Smallest wall thickness:</b>	0.3-0.4 mm - 11.8-15.8 mil
<b>Surface roughness, as built:</b>	Ra- $\mu$ m, Rz- $\mu$ m - Ra-Rz-mil
<b>Heat treated:</b>	T-6
<b>Yield Point (Rp 0.2 %) in horizontal direction (XY):</b>	250 $\pm$ 15 MPa - 260 $\pm$ 15 MPa
<b>Elongation at tear in vertical direction (Z):</b>	1.5 % $\pm$ 0.5 % - 1.2 $\pm$ 0.5 %
<b>Hardness :</b>	120 $\pm$ 5 HBW - 112 $\pm$ 5 HBW
<b>Fatigue strength in vertical direction (Z) :</b>	97 $\pm$ 7 MPa - 93 $\pm$ 3 MPa
<b>Applications:</b>	Low Weight Applications, Automotive or Racing Applications, Thermal Parts.

**Material composition:** Si (9.0-11.0 %), Fe max 0.55 %, Cu max 0.05 %, Mn max .45 %, Mg (0.2-0.45 %), Ni max 0.05 %, Zn max 0.10%, Pb max 0.05 %, Sn max 0.05 %, Ti max 0.15 %.

Disclaimer: All tolerance specifications reflect the approximate range of a process's capabilities and should be viewed only as a guide. Actual capabilities are dependent upon manufacturing, equipment, material, and part requirements.