
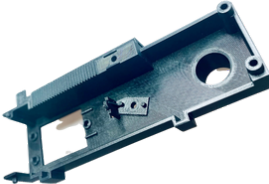


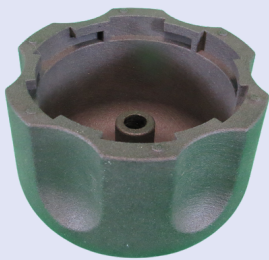


# 3D Printing Spec Sheet

	BEST USES	BENEFITS	AVAILABLE MATERIALS	MINIMUM FEATURE SIZE	MINIMUM WALL THICKNESS	TOLERANCE	LAYER RESOLUTION
<b>CARBON DLS</b> 	High resolution High heat Biocompatible Fit and function models Master patterns End-use production parts	Fast builds Isotropic parts Fully dense parts Economy of scale Molded-like surface finish Engineered materials – rigid and elastic	UMA 90, CE 221, EPU 40, EPU 41, EPX 82, FPU 50 IND 405 Clear, MPU 100, RPU 70, RPU 130, SIL 30	Material-dependent between 0.01 and 0.02"	Unsupported walls 0.1". Supported walls 0.04 - 0.06" depending up the material.	+/- .010" for first inch then +/- 0.002" per inch thereafter	0.003"
<b>FDM</b> 	Fit & function models Show models Master patterns Jigs & fixtures End-Use production parts ESD safe	Ease of use Low cost Quick turnaround Real thermoplastic materials Testing same as production materials	ABS PC/ABS ASA PC Ultem™ Nylon	Determined by nozzle diameter. The standard minimum is 0.08"	2x the nozzle diameter size. The industry standard nozzle size is 0.015"	+/- .005" for the first inch, then +/- 0.002 per inch after that	0.005" - 0.013"
<b>MJF</b> 	Fit & function models Show models Master patterns Jigs & fixtures End-use production parts	Watertight and airtight Fully dense Economy of scale No supports Testing with same materials Complex parts Print full assemblies	Nylon PA 12 Nylon Glassbead TPU PP	0.02"	Wall thickness is determined by the wall direction. 0.01" for XY orientation and 0.02" for Z orientation	+/- .010" for first inch then +/- 0.002" per inch thereafter	0.003"
<b>SLA</b> 	Fit & function prototypes Design models Master patterns Clear High temp ESD safe	Economy of scale Easy to finish and paint Low cost Quick turnaround Wide range of materials	Rigid 10K, Rigid 4000 Tough 2000, Tough 1500 Durable Flexible 80A Elastic 50A	0.03"	Supported walls 0.015". Unsupported walls 0.02"	+/- .005" for the first inch, then +/- 0.002 per inch after that	0.002" - 0.006"
<b>SLS</b> 	Testing Jigs & fixtures Durable prototypes Large prototypes End use production Master patterns	Economy of scale No supports Thermoplastic powders Testing with same materials Complex parts Print full assemblies	Nylon PA Nylon GF (glass-filled) TPU	0.03"	Material dependent. Between 0.027" and 0.078"	+/- .010" for the first inch, then +/- 0.002 per inch after that	0.004"