

GENERAL INFORMATION

PC-LDS is a functional 3D printing filament designed for integrating antennas and circuit traces directly into parts. It's ideal for compact medical and electronic devices — including endoscopes, camera modules, medical wearable devices, smartwatches, and laptops — where space and miniaturization are critical.

Optimized for 0.2–0.25 mm nozzles, and manufactured with a tight diameter tolerance (± 0.03 mm), the filament delivers smooth surfaces — a key requirement for reliable laser activation and metallization. This combination, along with its low-warp formulation, ensures consistent FDM printing for both prototypes and production-grade parts.

PC-LDS is compatible with infrared (IR) laser structuring systems, including LPKF platforms, and supports standard LDS plating processes. This allows teams to iterate quickly, avoid tooling costs, and produce 1 to 8,000 functional units — aligning with fast development cycles in electronics and medtech.

IMPORTANT KEY FEATURES

- Full compatibility with LPKF and IR laser systems
- Copper-based LDS Additive
- Flame retardant (halogen-free) UL94 V-1
- Low warp formulation

**MATERIAL PROPERTIES**

	Test Method [#]	PC LDS
	ISO 75-2/B	
HDT (°C)	1.82 MPa	105
	ISO 306	
Vicat softening (°C)	B50	110
	ISO 11359-1/-2	
Coeff. Of linear therm. Expansion (1/°C)	parallel	1.0E-4
Coeff. Of linear therm. Expansion (1/°C)	normal	1.0E-4
	ASTM D2520	
Dielectric Constant	1.0 GHz	2.9
Dielectric Constant	2.5 GHz	2.9
Dielectric Constant	6.0 GHz	2.9
Dielectric Constant	20 GHz	2.8
Dielectric Constant	40 GHz	2.8
Dielectric Constant	60 GHz	2.8
	ASTM D2520	
Dissipation factor	1.0 GHz	0.007
Dissipation factor	2.5 GHz	0.007
Dissipation factor	6.0 GHz	0.007
Dissipation factor	20 GHz	0.007
Dissipation factor	40 GHz	0.007
Dissipation factor	60 GHz	0.007
	IEC 60695-11-10,-20	
Flammability rating	0.600 mm	V-1
	1.50 mm	V-1

MATERIAL PROPERTIES

	ISO 527-2	XY	YZ	ZX
Tensile strength (MPa)	50 mm/min	56.1	52.9	20.0
Elongation (%)	50 mm/min	3.6	3.4	0.9
Tensile modulus (MPa)	1 mm/min	3090	2950	2400
ISO 178:2019				
Flexural strength (MPa)	2 mm/min	98.5	—	—
Flexural modulus (MPa)	2 mm/min	2426	—	—
ISO 180:2019				
Izod impact strength (kJ/m ²)	notched	38.4	—	—
ASTM D6110				
Charpy impact strength (J/m ²)	notched	51.9	—	—

#: 3rd party testing by: 

FILAMENT SPECIFICATION

Diameter (mm)	1.75 ± 0.03
Color	Black
Net filament weight (g)	200 & 1,000

PRINTING PROPERTIES

Nozzle sizes (mm)	0.2 - 0.25	Recommend stainless steel or hardened steel
Nozzle temperature (°C)	265 - 285	Recommended settings may differ according to printer and object
Bed temperature (°C)	80 - 110	
Speed (mm/s)	50 - 70	For 1 st layer and walls
	70 - 140	For infill or draft prototypes
Part cooling fan (%)	0 - 30	May use higher cooling speed for bridges
Retraction speed (mm/s)	30 - 55	2 - 7 mm for DD
Retraction length (mm)	2 - 7	
Bed adhesive	glue stick or PVP	
Storage	vacuum with desiccant	Long term storage
	dry-box (RH <20%)	During use and printing
Drying	60 - 65 °C for 2 - 4 hours	If excessive stringing or surface defects
Support material	PA	

NOTES

*1 The values reported in TDS represent the average from a batch of 10 test specimens. For tensile, flexural, and impact properties of the 3D printed test specimens were produced using a 0.2 mm nozzle, 100% infill, print speed of 60mm/s, a nozzle temperature of 274°C and a build plate temperature of 110°C. FLXR Engineering is continuously working on expanding the TDS data.

DISCLAIMER

This information sheet has been prepared with the highest level of care. Unless otherwise stated, it is intended solely for general informational purposes. It should not be relied upon for any specific purpose, and no representations or warranties are made regarding its accuracy or completeness.

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