VariQuest Visual Learning Tools

TECHNICAL DATA SHEET

Trifecta™ 800 3D Printer

MACHINE SPECIFICATIONS

Print	Build Volume: *8.7 x 6.5 x 8.7 in (22 x 16.5 x 22 cm)* Filament Diameter: *1.75 mm* Layer Resolution: *50, 100, 200, and 300 microns (.05-.3 mm)* Material: *PLA (polylactic acid)* Nozzle Diameter: *.35 mm* Technology: *Fused Filament Fabrication (FFF)*
Physical	Dimensions: *14.6 x 15.4 x 17.2 in (37 x 39 x 43.6 cm)* Weight: *22 lbs (10 kg)*
Mechanical	Body: *Aluminum composite* Build Platform: *Glass* Linear Motion: *Linear bearings, bronze bushings* Motor: *1.8° step angle, 1/16 micro-stepping*
Electrical	Connectivity: *SD card (printing), USB (firmware)* Consumption: *~15W (idle), ~70W (operational)* Electronics: *RAMPS 1.4, AT mega 2560, A4988 Stepper Drivers, DRV8825 Stepper Drivers* Power Input: *AC 110-220V, 50-60 Hz* Power Output: *DC 12V, 15A*
Software	File Type: *STL, OBJ* OS Compatibility: *Windows 7, Mac* Software: *VariQuest Trifecta Software*
Other	Operating Temperature: 200-230°C (392-446°F)

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Trifecta™ PLA Filament

FILAMENT SPECIFICATIONS

Physical

Diameter: *1.75 mm*
Weight: *750 g (1.65 lbs)*

Other

Plastic Type: *Ingeo™ Biopolymer 4032D*
Print Temperature: 200-230°C
Typical Material & Application Properties table:

Film Properties		Ingeo 4032D	ASTM Method
Density		1.24 g/cc	D1505
Tensile Strength	MD	15 kpsi	D882
	TD	21 kpsi	D882
Tensile Modulus	MD	500 kpsi	D882
	TD	550 kpsi	D882
Elongation at Break	MD	180%	D882
	TD	100%	D882
Elmendorf Tear	MD	17 g/mil	D1922
	TD	14 g/mil	D1922
Spencer Impact		2.5 joules	
Transmission Rates	Oxygen	675 cc-mil/m^2-24hr-atm	D1434
	Carbon Dioxide	2,850 cc-mil/m^2-24hr-atm	Internal
	Water Vapor	375 g-mil/m^2-24hr-atm	F1249
Optical Characteristics	Haze	2.1%	D1003
	Gloss, 20°	90	D1003
Thermal Characteristics	Melting Point	155-170°C	D3418