



SATURN DIGISIZER

Technical Specifications

The full technical specifications for the Saturn Digisizer are detailed in the tables below. The technical specification categories include General, Laser, Sample Circuit, Lens, Detector, Measurement, Minimum Computer Requirements, Deconvolution, Output, and Performance

General				
Power Requirements	Power	Voltage		Frequency
Analyzer	450 VA	100/115/220/240 VAC		47 to 63 Hz
Sample Handling Unit	100 VA	85 to 264 VAC		47 to 63 Hz
Physical	Weight (kg)	Width (mm)	Height (mm)	Depth (mm)
Analyzer	45	470	500	650
Sample Handling Unit	29	275	500	650
Temperature	Ambient +10 to 35°C			
Humidity	Up to 90% (non-condensing)			

Laser	
Type	Solid State; Diode
Wavelength	658 nm
Power Output	5 to 7.5 mw
Beam Type	Parallel
Beam Width in sample	16 mm
Certified under IEC825 as a class 1 laser product/Class 1 laser Product (CDRH).	

Sample Circuit	
Liquid Recirculation Pump Rate	6 to 15 liters/minute
*Sonication Power	60 watts max
Recirculation System Volume	600 cm ³
Materials in Contact with Sample	Borosilicate Glass, Stainless Steel, Fuel Grade Tygon Tubing, Titanium, Buna-n, Kel-F (CTFE), Anodized Aluminum, Epoxy, and UHMWPE (ultra high molecular weight polyethylene)

Lens	
Focal Length	200mm fixed

Detector	
Number of Elements	1,310,720
Geometry	Rectangular Array with 1280x1024 pixels used at 10 different angles
Alignment	Automatic

Measurement	
Typical Time Between Measurements	less than 5 minutes sample to sample

Computer Requirements (minimum)	
<ul style="list-style-type: none"> •Pentium 333MHz or Equivalent •64 MB RAM •Windows NT •Ethernet Card •CD Rom drive •1 gigabyte hard drive 	

Deconvolution	
Type of theoretical model applied	Mie Theory for 0.1 through 1000µm (Fraunhofer is available if required)

Output	
Measurement Range	0.1 to 1000 µm Equivalent Spherical Diameter
Size Class Range	40 Per Decade for 4 Decades

Performance		
Accuracy	Diameter (µm)	Spec
	0.1 to 1	10%
	1 to 100	3%
	100 to 1000	3%
Resolution	The Saturn DigiSizer can resolve peaks to baseline for Monosized particles separated by 30% in size. (N/A from 0.1 to 1µm)	
Repeatability (mean diameter for multiple analyses on the same instrument)	Diameter (µm)	Spec
	0.1 to 1	5%
	1 to 100	2%
	100 to 1000	5%