

CytoViva HSI System

Specifications - Standard

CytoViva Hyperspectral Imaging System (400 nm – 1,000 nm)

CytoViva's Hyperspectral Imaging technology was specifically designed to provide quantitative spectral analysis of nanoscale materials imaged with the patented CytoViva Enhanced Darkfield Microscopy or with other microscopy modalities. This can include spectral analysis of both biological and materials-based nanoscale samples, which may be isolated or integrated in cells, tissue or other materials-based matrices.

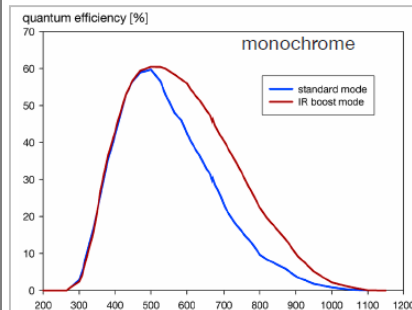
Specifications

SPECTROPHOTOMETER	
Type	Transmission Grating
Spectral Range	400 nm – 1,000 nm
Spectral Resolution	1.5 nm (with 30µm Slit)
Maximum Spatial Scan Width	896µm @ 10X Magnification
SPECTROPHOTOMETER INTEGRATED CCD	
Type	CCD
Pixel Size	6.45µm x 6.45µm
Resolution	1,392 x 1,040
Exposure Time Range	5µs – 60 sec.
Frame Rate (Full Resolution)	7.3 fps @ Full Binning, 13.5 fps @ 2 x 2 Binning
Dynamic Range	14 bit
Camera Control	USB
COMPUTING	
Computer	Dell Precision Tower, 16GB RAM
Operating System	Windows 7
LIGHT SOURCE	
Lamp Type	Quartz Halogen Aluminum Reflector
Wavelength	400 nm - 2,500 nm
Power	150 watts
IMAGE ANALYSIS	
Image Analysis Software	ENVI 4.8 (IDL Available)
Spectral Image Display	Real Time Recreated RGB Image of Spectral Data
Mapping Methods	Spectral Angle Mapper
Spectral Library Data Capture	Single/Multiple Pixel Spectral Libraries
Regions of Interest	Created Using up to Five Different Techniques
Spectral Statistical Data	Mean, Min, Max (+) and (-) Standard Deviation
AUTOMATED STAGE	
Scan Resolution	10 nm Step Size
Repeatability	Worst Case 0.30µm
Travel Range	114 mm x 75 mm

Application Examples

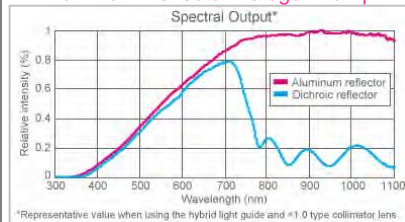
- Nanotoxicology
- Cancer Research
- Nanoparticle Characterization
- Drug Delivery

CCD Detector Quantum Efficiency



Illumination Spectral Output

Aluminum Reflector Halogen Lamp



*Representative values when using the hybrid light guide and #1.0 type collimator lens.

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