

## High Resolution Spectrometer – Aurora4000

### Features:

- Up to 0.02nm (FWHM) optical resolution
- Customized wavelength range and resolution
- Fit various applications

### Applications:

- Laser spectral analysis
- Fluorescence spectral analysis
- Raman spectral analysis
- Film thickness measurement
- Reflectivity/transmittance measurement
- Biological cell analysis
- LED analysis



Model	Spectral range
Aurora4000 General series	GE 350-1100nm
	GE 200-1100nm
	GE Raman
Aurora4000 External Triggering series	TG 350-1100nm
	TG 200-1100nm

Wavelength range (nm)	Slit width (µm)					
	5	10	25	50	100	200
	Optical resolution (nm)					
200 – 1100	0.49	0.91	1.09	1.83	3.45	6.61
350 – 1100	0.41	0.76	0.90	1.52	2.88	5.51
300 – 515	0.12	0.22	0.26	0.44	0.83	1.58
400 – 837	0.24	0.44	0.53	0.89	1.68	3.21
785 – 1100	0.17	0.32	0.38	0.64	1.21	2.31

<b>Detector</b>	
Detector	Toshiba TCD1304DG linear CCD array
Wavelength range	200-1100nm
Pixels	3648 pixels
Pixel size	8um*200um
Sensitivity	<u>130 photons/count at 400nm, 60 photons/count at 600nm</u>
<b>Spectrometer</b>	
Dimensions (mm)	149*105*46
Weight (g)	840
Optical resolution	<0.75nm FWHM
Signal-to-noise ratio	300:1 (at full signal)
Dark noise	12RMS counts
Dynamic range	2*10 <sup>9</sup> (system);1300:1 for single acquisitic
Integration time	4ms-10s
Stray light	<0.05%@600nm; <0.10%@435nm
Corrected linearity	>99.8%
<b>Optical Bench</b>	
Design	f/4, Symmetrical crossed Czerny-Turner
Focal length	101.6mm input and output
Entrance aperture (um)	5,10,25,50,100 or 200
Grating	A variety of different grating, ultraviolet and infrared
Fiber optic connector	SMA905 to 0.22 numerical aperture single-strand fiber
<b>Electronics</b>	
Power consumption	450mA@5VDC
Trigger mode	4 species
Data transfer speed	Full scans into memory every 4 milliseconds with USB 2.0; every 18 milliseconds with USB 1.1
Inputs/outputs	5 inputs and 5 outputs (opto-isolator inputs/outputs)
Analog channels	One 12 analog input one 12 analog output
Connector	30-pin connector