

# BRC111A/112E Series

## BRC111A/112E Series Fiber Coupled 16 Bit USB CCD Spectrometer



BRC111/112 Series products are low cost and high performance CCD spectrometers. They are equipped with 2048 elements linear CCD arrays, built-in 16 bit digitizers with high speed USB 2.0/1.1 interfaces on **BRC111 Series** (USB 2.0 on **BRC112 Series**) and optimized high throughput spectrographs. They are also equipped with a unique integration time multiplier function which supports for 17 minutes or longer integration period to take the advantage of low dark counts in light starving applications. The series come in standard wavelength ranges of UV, Vis, NIR or custom specified. Resolution of 0.3 - 20 nm may be supplied depending on system configurations. Flexible custom configurations and custom application support are provided.

### Highlights

- OEM and end user versions available
- UV, Visible and NIR versions and custom configured ranges
- Built-in 16 bit digitizer and PC interface
- High performance to cost ratio
- 0.3 to 20 nm resolution versions available
- Plug and play high speed USB 1.1/2.0 (USB 2.0 for **BRC112 Series**) interface
- Up to over 100 complete spectra/s transferring speed
- **BRC111 Series** with 9 - >65,535 ms integration time range
- **BRC112 Series** with 5 - >65,535 ms integration time range
- Integration time and time multiplier (extended integration time) support
- Custom configurations and application support

### Applications

- UV, Vis and NIR spectroscopy
- Raman and fluorescence spectroscopy
- OEM building blocks
- Color measurement and monitoring
- On-line optical inspection and monitoring

### Available Accessories:

Light source:	Deuterium for UV and tungsten for Vis and NIR
Fiber patch cord:	50, 100, 200, 400, 600, 1000 $\mu$ m and custom diameters
Fiber sampling probes:	Reflectance, absorbance, Raman and other probes
Fiber sample holders:	2 port transmission and 3 port fluorescence cuvette holders

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### Typical Specifications

Power Input	Internal through USB
Operating Temperature	15°C to 35°C
Detector	2048 element linear silicon CCD array
CCE Elements	2048 elements @ 14 µm x 200 µm per element
Effective Range	UV 200-400 nm, Vis 390-760 nm, NIR 750-1050 nm, UV/Vis 200-720 nm, UV/Vis/NIR 300-850 nm, Vis/NIR 350-1050 nm, or custom configurations
Spectrograph f#	3.0
Spectrograph Optical Layout	Crossed Czerny-Turner
Spectrograph Optics	Aspherical optics with sensitivity enhancement option
Grating	600-3600 lines/mm available with different blaze wavelengths
Slit	10-400 µm width depends on resolution requirements (slit height 1000 µm)
Optical Resolution	0.3 to > 10 nm FWHM
Stray Light	0.05% at 600nm for Vis
Digitizer Resolution	16 bit for 65,535 to 1
Digitizer Speed	<b>BRC111 Series:</b> 250 kHz; <b>BRC112 Series:</b> 500 kHz
External Trigger	Aux external triggering port optional
Integration Time	<b>BRC111 Series:</b> 9 to 65,535 ms without multiplier, multiplier of 1, 2, to 16 available <b>BRC112 Series:</b> 5 to 65,535 ms without multiplier, multiplier of 1, 2, to 16 available
Data Transfer Speed	50 to > 100 spectra per second
Computer Interface	USB 1.1/2.0 for <b>BRC111 Series</b> , USB 2.0 for <b>BRC112 Series</b>
Operating Software	Windows 98 (2nd Edition), ME, 2000, and XP compatible
Weight	0.5 lb
Dimensions	4.00(width)x2.50(depth)x1.60(height) inches

