

## BTC111 Fiber Coupled TE Cooled 16 Bit USB 2.0/1.1 CCD Spectrometer



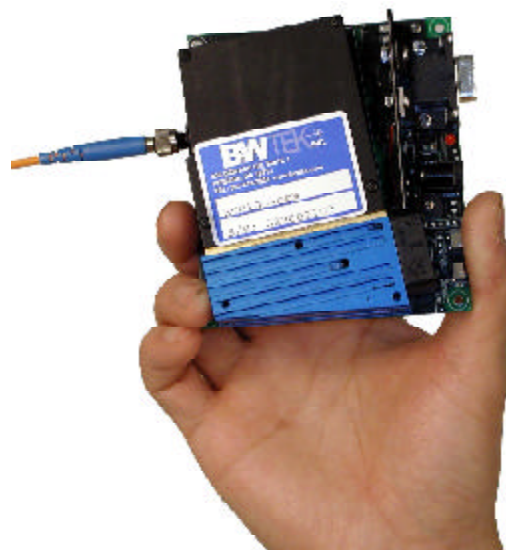
BTC111 series products are low cost and high performance TE cooled linear CCD spectrometers. They are equipped with 2048 elements thermoelectric cooled (TEC) linear CCD arrays, built-in 16 bit digitizers with high speed USB 2.0/1.1 interfaces and optimized high throughput spectrographs. Compared with non-cooled CCD spectrometers the BTC111 products offer much higher dynamic range, greatly reduced dark counts and superior long term operation stability, thus are ideal for low light level detections and long term monitoring applications. They 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
- TEC cooled high stability and low dark counts
- 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 2.0/1.1 interface
- Up to over 100 complete spectra/s transferring speed
- 9 - 65535 ms integration time range
- 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



## Specifications

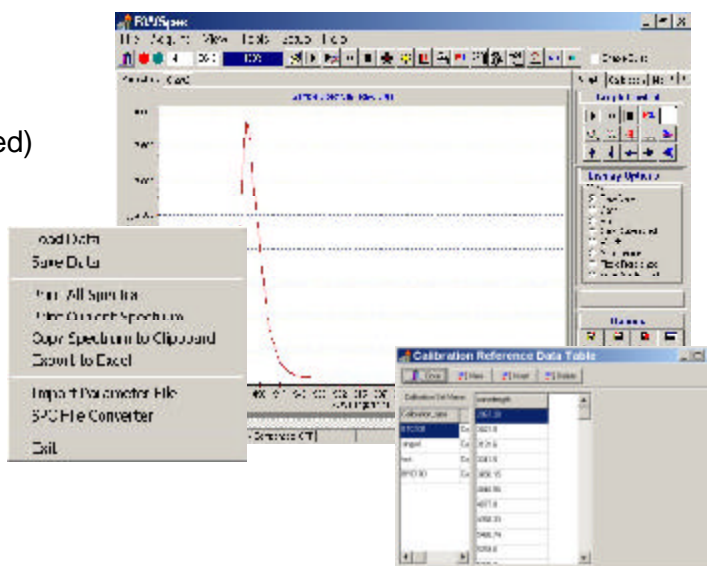
### *BTC111E End User Spectrometer (OEM version available)*

Power input:	5 V DC @ < 1.2 A for TE cooled option through external power supply 5 V DC @ < 0.35 A drawn from USB port when operating without TE cooling
Operating temperature:	0° to 40° C for TE cooled versions
Detector:	TE cooled 2048-element linear silicon CCD array
CCD 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, and Custom Configurations
Cooling temperature:	10° C factory default
Spectrograph #:	3.0
Spectrograph optical layout:	Crossed Czerny-Turner
Spectrograph optics:	Aspherical optics with sensitivity enhancement option
Grating:	600-1800 lines/mm available with different blaze wavelengths
Slit:	10-800 µm width dependent on resolution requirements (slit height : 1000 µm)
Optical resolution:	0.3 to >10 nm FWHM
Stray light:	0.05% at 600 nm for Vis
Digitizer resolution:	16 bit or 65,535 to 1
External trigger:	Aux external triggering port option available
Integration time:	9 to 65,535 milliseconds
Data transfer speed:	50 to > 100 spectra per second
Computer interface:	USB 2.0 and 1.1 compatible
Operating software:	Windows 98SE, Me, 2000 and XP compatible
Weight:	1.2 Lb.
Dimensions:	4.24 (Width) x 3.75 (Depth) x 1.65 (Height) inches

## BW-Spec Operating Software

### *Minimum Hardware Requirements*

- IBM PC compatible
- 486 CPU (Pentium recommended)
- One free USB 2.0 or 1.1 port
- One CD ROM drive
- One 3.5" floppy disk drive
- 16 MB RAM
- 10 MB free hard drive space



### *Available Accessories:*

Light source:	Deuterium for UV and tungsten for Vis and NIR
Fiber patch cord:	50, 100, 200, 400, 600, 1000 µm and custom diameters
Fiber sampling probes:	Reflectance, absorbance, Raman and other probes
Fiber sample holders:	2 port transmission and 4 port fluorescence cuvette holders