

BTC161E/162E Series

High Throughput TE Cooled CCD Spectrometer



The BTC161 series spectrometers combine both high throughput and high resolution in a small package ever available in its class. Low light applications, particularly Raman or Fluorescence can benefit from the BTC161's high photometric sensitivity. With a throughput that is 4 to 5 times higher than conventional crossed Czerny-Turner spectrographs and an excellent imaging quality, a low cost, high performance 2-d imaging spectrograph is easily and affordably assembled.

Highlights

- Unique folded dual-pass optical system
- 70 mm focal length - in half the size
- NA = 0.18 without beam stops*
- Compact design: 191 x 94 x 90 mm
- 770 - 1050 nm wavelength range standard, custom ranges available

Typical Applications

- 2D Imaging Spectrograph
- Raman and fluorescence spectroscopy
- OEM building blocks
- 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 μm and custom diameters
Fiber sampling probes:	Reflectance, absorbance, Raman and other probes
Fiber sample holders:	2 port transmission and 3 port fluorescence cuvette holders

* For high throughput configuration, NA = 0.22



19 Shea Way, Newark, DE 19713, USA · Web: www.bwtek.com
Tel: (302) 368-7824 · Fax: (302) 368-7830 · E-mail: info@bwtek.com

BTC161E/162E Series

High Throughput TE Cooled CCD Spectrometer

Typical Specifications

Power Input	5V DC @ < 1.2A for TE cooled option through external power supply
Operating Temperature	15°C to 35°C
Detector	TE cooled 2048-element linear silicon CCD array
Size of Pixel	14 µm x 200 µm
Wavelength Range	770 - 1050 nm for Raman spectrum 175cm ⁻¹ to 3100 cm ⁻¹ , OR custom configured
Cooling Temperature	10°C - 15°C factory default
Focal Length	70 mm
Numerical Aperture NA	0.18 / 0.22 *
Spectrograph f#	2.8 / 2.2 *
Spectrograph Optical Layout	Dual pass transmission
Grating	1000 lines/mm
Slit	25/50 µm standard, custom sizes available
Optical Resolution	0.4 nm, 6.5 cm ⁻¹ , custom configurations available
Stray Light	0.07% at 800nm
Digitizer Resolution	16 bit for 65,535 to 1
Digitizer Speed	BTC161E 250kHz BTC162E 500 kHz
External Trigger	Aux external triggering port optional
Integration Time	BTC161E 5 to 65,535 ms without multiplier, multiplier of 1, 2, to 16 available BTC162E 9 to 65,535 ms without multiplier, multiplier of 1, 2, to 16 available
Data Transfer Speed	50 to > 100 spectra per second
Computer Interface	BTC161E USB 1.1/2.0 BTC162E USB 2.0
Operating Software	Windows ME, 2000, and XP compatible
Weight	1.8 kg
Dimensions	191 (width) x 94 (depth) x 90 (height) mm

* 0.18 NA and 2.8 f/# are for high resolution configuration
0.22 NA and 2.2 f/# are for high throughput configuration

BTC161E/162E Series

High Throughput TE Cooled CCD Spectrometer

Dimensional Drawings

