BTC161E/162E Series

High Throughput TE Cooled CCD Spectrometer

The BTC161 series spectrometers combine both high throughput and high resolution in the smallest 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
- 750 - 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

B&WTEK INC.
19 Shea Way, Newark, DE 19713, USA · Web: www.bwtek.com
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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	**750 - 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**
Numberical 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 availible BTC162E 9 to 65,535 ms without multiplier, multiplier of 1, 2, to 16 availible**
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

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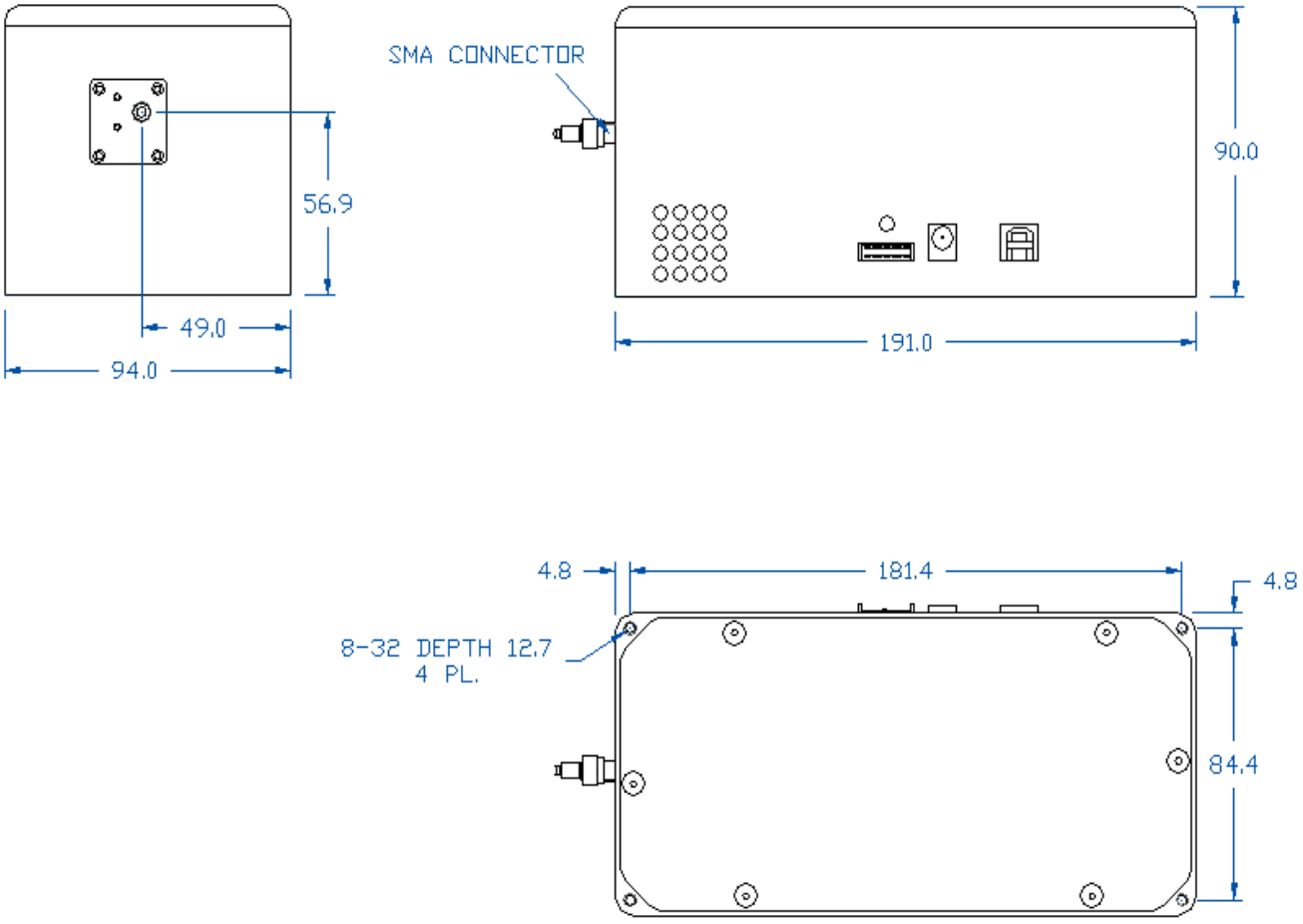
Dimensional Drawings



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