

# Sol™ 2.6

## 1550 nm - 2550 nm NIR TE-Cooled InGaAs Array Spectrometer

Spectrometer



The Sol™ 2.6 (BTC263E) is a high performance linear InGaAs array spectrometer featuring 256 pixels, high throughput, and large dynamic range, with TE-cooling down to -15° C via a built-in 3-stage cooler.

Each spectrometer features an SMA 905 fiber optic input, built-in 16-bit digitizer, and is USB 2.0 plug-and-play compatible. The built-in autozero function automatically reduces dark current and dark non-uniformity, resulting in an increased signal-to-noise ratio.

Software control allows the user to choose from four types of operation modes: Maximum Dynamic, High Dynamic, High Sensitivity, and Maximum Sensitivity. Customized spectral resolution and application support are also available.

### Applications:

- ★ Process monitoring
- ★ NIR spectroscopy
- ★ Quality control
- ★ On-line analyzer
- ★ Biological applications

### Accessories:

- ★ Light sources
- ★ Fiber patch cords
- ★ Fiber sampling probes
- ★ Fiber sample holders

### Features:

- ★ 1550 nm - 2550 nm spectral range
- ★ Built-in autozero (noise level reduction)
- ★ Built-in 16-bit digitizer
- ★ Low dark noise and high sensitivity
- ★ Four sensitivity & dynamic range modes for specific application needs



## Thermoelectric Cooler

Cooling an array detector with a built-in thermoelectric cooler (TEC) is an effective way to reduce dark current and noise, as well as to enhance the dynamic range and detection limit.

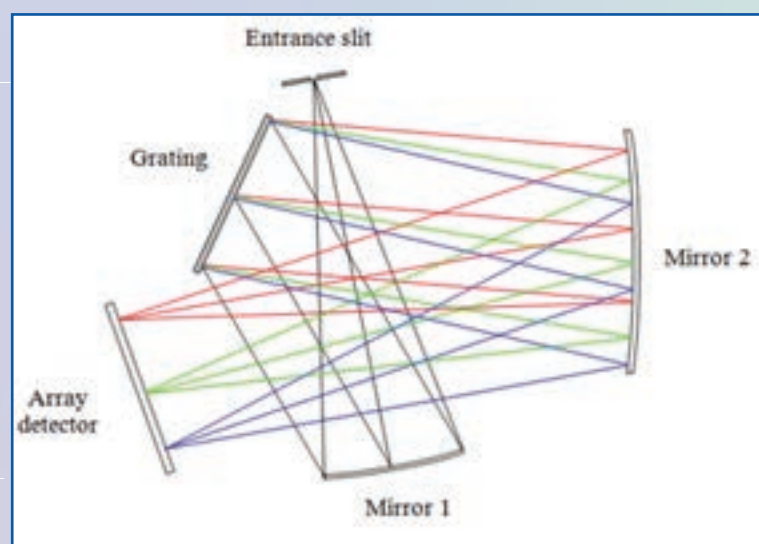
When the InGaAs array detector is cooled from a room temperature of 25° C down to -15° C by the TEC, the dark current is reduced by ~32 times and the dark noise is reduced by ~5.7 times. This allows the spectrometer to operate at longer exposure times and to detect weaker optical signals.

# More about our Sol™ 2.6

## Specifications:

Model No.	BTC263E
DC Power Input	5V DC @ 5 amps
AC Power Input	100 - 240 VAC 50/60 Hz, 1.0 A @ 120 VAC
Detector Type	Linear InGaAs Array
Pixels	256 x 1 @ 50 µm x 250 µm per element
Spectrograph f/#	3.5
Spectrograph Optical Layout	Crossed Czerny-Turner
Dynamic Range	Maximum Dynamic mode: 25,000:1 High Dynamic mode: 12,500:1 High Sensitivity mode: 12,500:1 Maximum Sensitivity mode: 1,700:1
Digitizer Resolution	16-bit or 65,535:1
Readout Speed	500 kHz
Data Transfer Speed	>300 spectra per second via USB 2.0
Integration Time	250 µs to >= 64 seconds
External Trigger	Aux port
Operating Temperature	0° C - 35° C
TE-Cooling	Three-Stage: -15° C
Weight	~ 3.1 lbs (1.4 kg)
Dimensions	7.8 in x 4.3 in x 2.7 in (197 mm x 109 mm x 68 mm)
Computer Interface	USB 2.0 / 1.1
Operating Systems	Windows: 7, 8, 10, 11

## Spectrograph:



## Entrance Slit

Slit Option	Dimensions	Approximate Resolution 900 -1700 nm
75 mm	75 mm wide x 1 mm high	~15.0 nm
Custom slit widths available		

## Diffraction Grating

Spectral Coverage (nm)	Grating	Approximate Resolution 25 µm Slit
1550 - 2550	100 / 2500	15.0 nm
Custom configurations available		

## Software:

BWSpec® is a spectral data acquisition software with a wide range of tools that are designed to perform complex measurements and calculations at the click of a button. It allows the user to choose between multiple data formats and offers optimization of scanning parameters, such as integration time. In addition to powerful data acquisition and data processing, other features include automatic dark removal, spectrum smoothing, and manual/auto baseline correction. SDK with demo code is available as additional option.

