

BWS *i*-Spec™ Series

Fiber Coupled Diffuse Transmittance/Reflectance Spectrometer



BWS *i*-Spec series products are transmittance/reflectance spectrophotometers with various accessory options for bench-top and portable uses. The UV-NIR and NIR models employ TE cooled CCD array detectors and InGaAs array (920-1700 nm), extended InGaAs array (1100-2200 nm) detection systems, respectively for optimal UV and NIR measurement sensitivity and dynamic range to be achieved. The products include flexible fiber optic coupling versions, and integrating sphere based models for addressing various application needs. The BWS *i*-Spec Series products use high intensity and long lifetime illumination sources and high speed detection systems, enabling fast spectral capturing of 20 to >100 spectra per second thus are ideal for spectrophotometric studies where high spectrum

Highlights

- 190-1700 nm UV/Vis/NIR transmission or reflection model (BWS004)
- 400-2200 nm UV/Vis/NIR transmission model (BWS005)
- 400-1700 nm Vis/NIR fiber optic based model (BWS015)
- 920-1700 nm NIR fiber optic based model (BWS025)
- 1200-2400 nm NIR transmission or reflection model (BWS045)
- 400-2400 nm Vis/NIR transmission or reflection model (BWS055)
- USB 2.0/1.1 plug-and-play interface
- Flexible fiber coupling for fiber optic versions with SMA 905 couplings
- Variety of fiber optic sampling accessories
- No moving parts
- TE cooled and temperature regulated for long term stability
- Built-in diffuse transmittance and reflectance sample holders

Typical Applications

- Agricultural, pharmaceutical, and petrochemical
- Material spectral diffuse property characterizations
- Chemical solution analysis
- Bench-top and field spectrophotometric measurement



BWS *i*-Spec™ Series

Fiber Coupled Diffuse Transmittance/Reflectance Spectrometer

Typical Specifications

	BWS004	BWS005	BWS015
Principle	Single beam fiber optically coupled spectrometer with stabilized light source	Single beam fiber optically coupled spectrometer with stabilized light source	Single beam fiber optically coupled spectrometer with stabilized light source
Optical System	Crossed Czerny-Turner monochromator with high throughput optics and array detector.	Crossed Czerny-Turner monochromator with high throughput optics and array detector.	Crossed Czerny-Turner monochromator with high throughput optics and array detector.
Wavelength Range	190 - 1700 nm	400 - 2200 nm	400 - 1700 nm
Light Coupling	SMA 905 for both illumination and collection	SMA 905 for both illumination and collection	SMA 905 for both illumination and collection
Light Source	Deuterium & 5 W stabilized tungsten halogen.	5 W stabilized tungsten halogen.	5 W stabilized tungsten halogen.
Detector	Si/InGaAs array	Si/PbS array	Si/InGaAs array
Spectral Resolution	~ 4 nm FWHM	4 nm FWHM in 400 - 1100 nm; 15 nm FWHM in 1100 - 1200 nm	4 nm FWHM
Computer Interface	USB 2.0/1.1	USB 2.0/1.1	USB 2.0/1.1
Software Interface	My Instrument OCX Control for GRAMS/AI	My Instrument OCX Control for GRAMS/AI	My Instrument OCX Control for GRAMS/AI
Dimensions	approx. 170 X 340 X 235 mm	approx. 170 X 340 X 235 mm	approx. 170 X 340 X 235 mm
Weight	approx 6 lbs	approx 6 lbs	approx 6 lbs
Temperature Range	0 to 45 C	0 to 45 C	0 to 45 C
Humidity	10 - 90%, RH, non-condensing	10 - 90%, RH, non-condensing	10 - 90%, RH, non-condensing
Power	100 - 240 VAC, 50/60 Hz with 20 VA	100 - 240 VAC, 50/60 Hz with 20 VA	100 - 240 VAC, 50/60 Hz with 20 VA

(Cont.)

BWS *i*-Spec™ Series

Fiber Coupled Diffuse Transmittance/Reflectance Spectrometer

Typical Specifications (Cont.)

	BWS025	BWS045	BWS055
Principle	Single beam fiber optically coupled spectrometer with stabilized light source	Single beam fiber optically coupled spectrometer with stabilized light source	Single beam fiber optically coupled spectrometer with stabilized light source
Optical System	Crossed Czerny-Turner monochromator with high throughput optics and array detector.	Crossed Czerny-Turner monochromator with high throughput optics and array detector.	Crossed Czerny-Turner monochromator with high throughput optics and array detector.
Wavelength Range	920 - 1700 nm	1200 - 2400 nm	400 - 2400 nm
Light Coupling	SMA 905 for both illumination and collection	SMA 905 for both illumination and collection	SMA 905 for both illumination and collection
Light Source	Deuterium & 5 W stabilized tungsten halogen.	5 W stabilized tungsten halogen.	5 W stabilized tungsten halogen.
Detector	InGaAs array	PbS array	Si/PbS array
Spectral Resolution	4 nm FWHM	15 nm FWHM	4 nm FWHM in 400 - 1100 nm; 15 nm FWHM in 1100 - 1200 nm
Computer Interface	USB 2.0/1.1	USB 2.0/1.1	USB 2.0/1.1
Software Interface	My Instrument OCX Control for GRAMS/AI	My Instrument OCX Control for GRAMS/AI	My Instrument OCX Control for GRAMS/AI
Dimensions	approx. 170 X 340 X 235 mm	approx. 170 X 340 X 235 mm	approx. 170 X 340 X 235 mm
Weight	approx 6 lbs	approx 6 lbs	approx 6 lbs
Temperature Range	0 to 45 C	0 to 45 C	0 to 45 C
Humidity	10 - 90%, RH, non-condensing	10 - 90%, RH, non-condensing	10 - 90%, RH, non-condensing
Power	100 - 240 VAC, 50/60 Hz with 20 VA	100 - 240 VAC, 50/60 Hz with 20 VA	100 - 240 VAC, 50/60 Hz with 20 VA