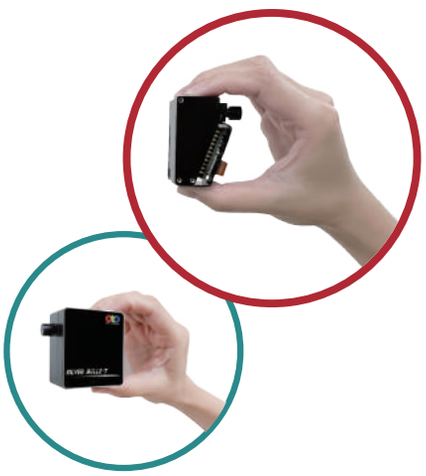
Ultra Micro Spectrometer
SilverBullet™ / RedBullet™ Series

Ultra Micro UV-VIS / NIR Spectrometer
The ideal choice for portable and handheld systems



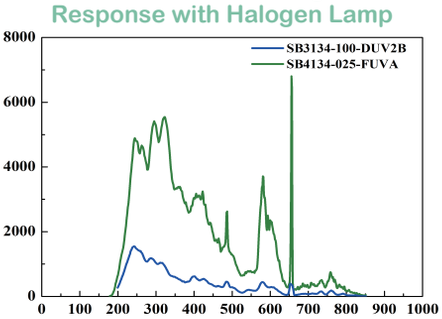
SilverBullet Series:

- Wavelength Range: 200-850 nm.
- Resolution < 7 nm (Slit: 50 µm).
- New concave mirror Czerny-Turner optical design.
- Dimensions: 40 x 36.3 x 25.1 mm.
- CMOS 1024-pixel sensor. High-speed FX2 CPU.

RedBullet Series:

- Wavelength range: 900-1700 nm.
- Resolution < 13.5 nm (Slit: 50 µm).
- New concave mirror Czerny-Turner optical design.
- Dimensions: 51.4 x 36.4 x 29 mm.
- InGaAs 128-pixel sensor. High-speed FX2 CPU.

SB series Wavelength Response with Halogen Lamp



Groove Density (line/mm)	Wavelength Range (nm)	Resolution(nm) (slit 25 µm)	Resolution(nm) (slit 50 µm)
300	300-1100	<6.5	<10.8
500	180-850	<4.2	<6.2
600	180-700	NA	<6.5
900	180-470	<2.3	<3.9
1000	180-430	NA	<3.5
1200	180-350	NA	<2.9

Bullet Series Spectrometer

Model	SilverBullet	RedBullet	
	SB3134/SB4134	RB4524	RB4564
Sensor	1024-pixel CMOS	128-pixel InGaAs	256-pixel InGaAs
Spectral range (nm)	200-850	900-1700	
Slit width (µm)	25/50	50	25
Resolution (FWHM)	3 / 5.5 nm	13.5 nm	8.5 nm
	(*Typical value, Small deviations are possible.)		
SNR	350	2000 (High gain) 6000 (Low gain)	3000 (High gain) 6000 (Low gain)
Dynamic Range	4000	6250 (High gain) 7200 (Low gain)	7000 (High gain) 9000 (Low gain)
Dark Noise	< 19	< 14 (High gain) < 10 (Low gain)	< 12 (High gain) < 10 (Low gain)
Shortest Integration time	6 µs (Sensor Clock rate 10 MHz) 21 µs (Sensor Clock rate 2.5 MHz)	6 µs	
Dimensions (mm)	40(W) x 36.3(D) x 25.1(H)	51.4(W) x 36.4(D) x 29(H)	
Connector	Micro USB / UART		
Interface	SMA905		

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