台灣超微光學
OtO Photonics

SmartEngine™ Series

The Best Choice for

Raman System, Biomedical Detection, & Environmental Monitoring Analysis

Excellent, Innovative & Unprecedented

SmartEngine™ Series

- Excellent Thermal, Humidity, Vibration and Shock Stability
- Support Continuous High-Speed & Multiple Exposures Mode
- Proprietary Stray Light Calibration Algorithm (Stray Light Can be Eliminated to 0.01%)
- An Extremely Low(Near-zero) Coefficient of Thermal Expansion of Gratings, Dual Blazed Wavelength Gratings for Selection
- On-board CPU Supports Optical and Color Parameters Calculation
- More than 13 Different Sensors and 20 Different Gratings for Your Options
- Option for Wireless Spectrometer with Built-in Wifi Module
- World's Broadest Wavelength Range Model: 180~1100 nm
- High SNR Model: SNR=500
- Short Exposure Time Model: 0.2ms
- High Resolution Model: 0.2nm
- High Pixel Resolution Model: 0.06nm/pixel

SmartEngine Series Lineup

Model Name	Detector Type	Characteristic	Model Name	Detector Type	Characteristic
SmartEngine-2	Front-illuminated CCD with UV-enhancement	Good Choice for Full Wavelength Range	SmartEngine-6	Back-thinned CCD with UV-enhancement	The Best Performance on UV Range & Full Wavelength Range with High SNR
SmartEngine-3	CMOS with Fast Exposure	The Best Choice for Shortest Exposure Time (0.2ms)	SmartEngine-7	High Pixel-Resolution CCD	High Pixel-Resolution Choice
SmartEngine-4	Front-illuminated CCD	Excellent Cost Performance Value	SmartEngine-8	CMOS with Fast Exposure	Short Exposure Time (0.4ms) & High Pixel-Resolution Choice
SmartEngine-5	Back-thinned CCD with NIR-enhancement	The Best Performance on NIR Range with High SNR	SmartEngine-9	Back-thinned CCD with Fast Exposure	The Best Choice for Full Wavelength Range with Fast Exposure Time (1.5ms)

Recommended Models

Application	Model Name	Wavelength Range	Resolution	SNR	Exposure Time	Dynamic Range	Thermal Stability
LED Test	SmartEngine-3	350-1020 nm	1.9 nm	330	0.2 ms	1600	0.027 nm/℃
Water Quality Analysis	SmartEngine-2	180-850 nm	1.9 nm	250	1 ms	1300	0.027 nm/℃
Blood Analysis	SmartEngine-3	300-850 nm	6 nm	330	0.2 ms	1600	0.027 nm/℃
DNA Analysis	SmartEngine-2	180-850 nm	1.9 nm	250	1 ms	1300	0.027 nm/℃
Raman Detection	SmartEngine-5	350-1020 nm	1.2 nm	500	5 ms	5000	0.027 nm/℃
Air Analysis	SmartEngine-3	200-400 nm	0.5 nm	330	0.2 ms	1600	0.015 nm/℃
Educational Requirement	SmartEngine-4	350-1020 nm	1.2 nm	200	1 ms	1000	0.027 nm/℃
Film Thickness Measurement	SmartEngine-6	180-1100 nm	2.3 nm	500	5 ms	5000	0.039 nm/℃
Solar Panel Measurement	SmartEngine-6	180-1100 nm	2.3 nm	500	5 ms	5000	0.039 nm/℃
Fluorescence Detection	SmartEngine-2	340-850 nm	6 nm	250	1 ms	1300	0.027 nm/℃
Gem Stone Examination	SmartEngine-2	400-500 nm	0.25 nm	250	1 ms	1300	0.027 nm/℃
Food Analysis	SmartEngine-2	180-1100 nm	2.3 nm	250	1 ms	1300	0.039 nm/℃
OCT Application	SmartEngine-3	790-1010 nm	0.5 nm	330	0.2 ms	1600	0.027 nm/℃

Specially Selected Models

Types	Model Name	Wavelength Range	Resolution	SNR	Exposure Time	Dynamic Range	Thermal Stability
Best-Sold Model	SmartEngine-2	350-1020 nm	1.9 nm	250	1 ms	1300	0.027 nm / ℃
Best CP Value Model	SmartEngine-4	350-1020 nm	1.2 nm	200	1 ms	1000	0.027 nm / ℃
Full Wavelength Range Model	SmartEngine-2	180-1100 nm	2.3 nm	250	1 ms	1300	0.039 nm / ℃
	SmartEngine-6	180-1100 nm	2.3 nm	500	5 ms	5000	0.039 nm / ℃
High SNR Model	SmartEngine-5	180-1100 nm	2.3 nm	500	5 ms	5000	0.039 nm / ℃
	SmartEngine-6	180-1100 nm	2.3 nm	500	5 ms	5000	0.039 nm / ℃
Shortest Exposure Model	SmartEngine-3	350-1020 nm	1.9 nm	330	0.2 ms	1600	0.027 nm / ℃
Highest Resolution Model	SmartEngine-2	400-500 nm	0.25 nm	250	1 ms	1300	0.007 nm / ℃

Make A Spectrometer for Your Own Special Need

OtO-SE Series with Selection of Grating & Resolution

Groove Density (g/mm)	Best Efficiency Wavelength(nm)	Bandwidth	Selectable Band	Resolutions (nm) Under Different Slit Sizes						
				10 um	25 um	50 um	100 um	200 um	250 um	300 um
2400	400	100nm	200~600 nm	0.2	0.25	0.4	0.7	1.2	1.5	1.8
1800	250	150nm	190~800 nm	0.3	0.40	0.6	1.0	1.8	2.2	2.6
1200	200/300/600/850/900	220nm	180~1010 nm	0.4	0.5	0.8	1.3	2.3	2.8	3.3
1000	250/900	300nm	180~1100 nm	0.5	0.7	1.1	1.9	4.0	5.2	6.5
900	500	400nm	180~1100 nm	0.6	0.8	1.3	2.3	4.6	5.8	7.1
600	300/400/500/800	670nm	180~1100 nm	0.9	1.2	1.9	3.2	6.0	7.4	8.7
500	300/565	825nm	180~1100 nm	1.0	1.3	2.0	3.5	6.5	8.0	9.5
300	250/300/580/ dual wavelength	920nm	180~1100 nm	1.5	2.0	3.0	5.3	10.5	-	-

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