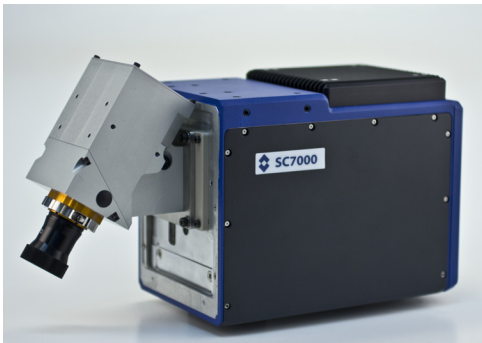


spectral camera **MWIR**

SPECIM is offering a basic spectral camera for MWIR applications. It consists of high-speed or high-resolution cooled InSb sensor and SPECIM M-series imaging spectrograph optimised for this wavelength range. The system is optimal for high-speed industrial or high-resolution research applications. The main applications for MWIR range spectral imaging are sorting of black polymers and detection of minerals in geology.



Spectral Camera MWIR

SPECIM's Spectral Camera is an integrated combination of an ImSpector imaging spectrograph and an area monochrome camera. It works as a push-broom type line scan camera providing full, contiguous spectral information for each pixel in the line.

SPECIM is offering a new Spectral Camera model for the 3 - 5 μ m Thermal range to enable new hyperspectral imaging applications.

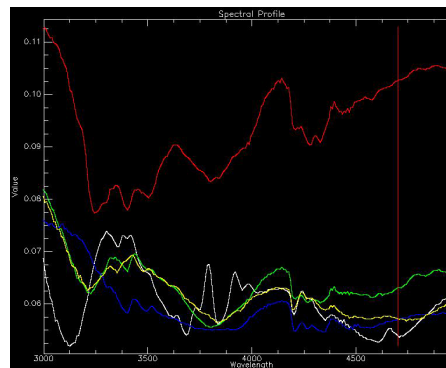
The camera utilizing ImSpector M50M imaging spectrograph is available with two

InSb sensors; 320 x 256 pixels version, providing the extremely high framerate required in the industrial process control applications and 640 x 512 pixels version providing higher resolution for research applications. The combination is usable in the laboratory and industrial conditions. The lifetime of the used sensors cooling is approximately 10 000 h.

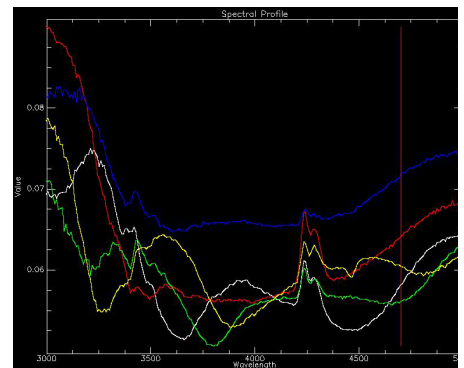
SPECIM offers also two possibilities for the fore objective to fully match the optical performance of the used imaging spectrograph.

Applications

- Black polymer sorting
- Geology
- Gas detection



Spectral signatures of the five clear different plastic types (White: PC, Red: PS, Green: HIPS, Blue: ABS, Yellow: PC-ABS)



Spectral signatures of the five dark different plastic types (White: PC, Red: PS, Green: HIPS, Blue: ABS, Yellow: PC-ABS)

Performance Specifications

SPECTRAL CAMERA		
Optical characteristics	MWIRF-CL-380-M50M-OEM	MWIRF-CL-120-M50M-OEM
Spectrograph	ImSpector M50M	
Spectral range	3.0 - 5.0 μm	
Spectral resolution	35 nm	
Spectral sampling/pixel	16.67 nm	8.33 nm
Aberrations	Smile < 2 μm Keystone < 4 μm	
Numerical aperture	F/2.0	
Slit width	120 μm	
Effective slit length	19.2 mm	
Electrical characteristics		
Sensor	InSb	
Pixels in image frame	320 x 256	640 x 515
Active pixels	320 x 120	640 x 240
Pixel size	30 μm	15 μm
Cooling	Stirling	
Camera output	CL / GigE	
Frame rate	380 / 800 fps	120 / 240 fps
Exposure time range	1 μs – 20 ms	
Power consumption	30 W	
Input voltage	12 Vdc	
Environmental characteristics		
Storage	- 20 ... +85 $^{\circ}\text{C}$	
Operating	+ 5 ... +40 $^{\circ}\text{C}$, non-condensing	
Mechanical characteristics		
	OEM	
Size (L x W x H)	250 x 275 x 87 mm	
Weight	5.0 kg appr.	
Body	Anodized aluminium and painted steel with mounting screw holes	
Lens mount	Custom mount	
User adjustments	None	
Shutter	Optional	
Fore lenses	OLEM43	OLEM23
Field of view	24 $^{\circ}$	45 $^{\circ}$
Dimensions (length x lens tube diameter)	50 mm x 33 mm	30 mm x 28 mm
Weight	100 g	70 g
Optomechanical output interface	Custom to camera	

