

# LWIR hyperspectral camera FX120



## COMPACT AND FAST WITH FULL LWIR RANGE

Specim FX120 is an advanced long-wave infrared (LWIR) hyperspectral camera with a full spectral range of 7.7 to 12.3  $\mu\text{m}$ .

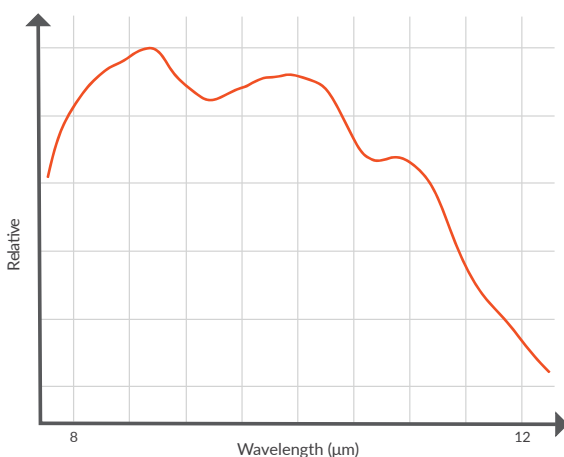
With its excellent spectral and spatial imaging performance, this thermal push-broom HSI camera is well-suited to mineral exploration, environmental analysis, thermal anomaly detection, and safety and security applications.

With the SisuRock workstation, Specim FX120 enables fast and accurate drill core scanning.

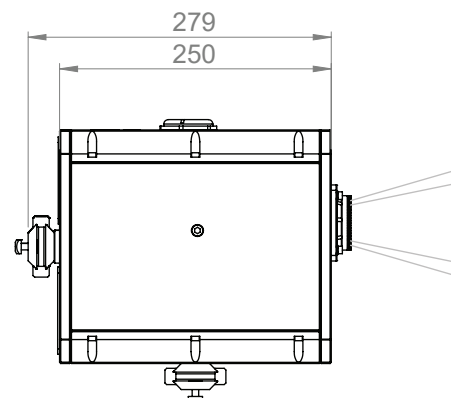
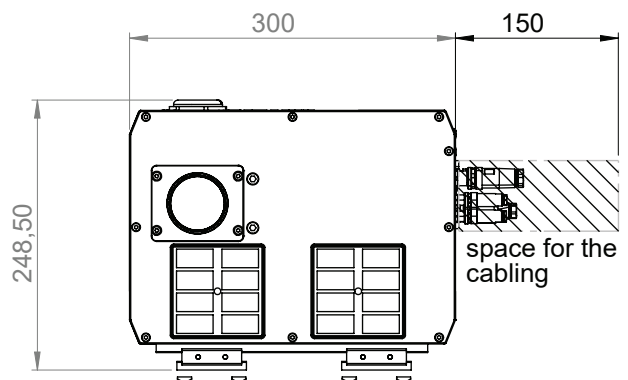
## FEATURES

- 7.7 to 12.3  $\mu\text{m}$  spectral range
- 160 spectral bands
- 616 spatial pixels
- High image speed of 240 FPS (with 1ms integration time)
- High signal-to-noise ratio
- GigE Vision standard interface
- Freely selectable multiple regions of interest (MROI)
- Compact, transferable and robust

## SPECTRAL RESPONSE



## DIMENSIONS



# LWIR hyperspectral camera FX120

Spectral Range	7.7 - 12.3 $\mu\text{m}$	
Spectral resolution (FWHM)	100 nm	
Spectral sampling/pixel	30 nm	Without binning
Spectral bands	160	
Numerical aperture	2.0	
Optics magnification	0.5	
Effective pixel size	30 $\mu\text{m}$	At fore lens image plane
Effective slit width	104 $\mu\text{m}$	At fore lens image plane
Effective slit length	18.5 mm	At fore lens image plane
Dynamic Range - Reflectance measurement	4000:1 (1.5ms); 6000:1 (0.2ms)	Maximum true signal / dark noise
Max SNR - Reflectance measurement	2500:1 (1.5ms) ; 3000:1 (0.2ms)	Maximum true signal / signal noise
Max SNR - Emission measurement	500	300 K target; Averaged over spot size
Spatial pixels	616	
Bit depth	16	
Maximum frame rate	240 FPS	Full image with default binning and 1ms integration time
Binning	1,2,4 spectral and spatial	Default: 2 spectral x 1 spatial
ROI	Freely selectable multiple regions of interest	Minimum height of ROI is two 1-binned rows. Maximum frame rate is determined by total number of rows between first row of first MROI and last row of last MROI – not the total number of rows included in the MROI's.
Pixel operability	$\geq 96\%$	
Image corrections	Non uniformity correction Bad pixel replacement Automatic Image Enhancement (AIE)	One point NUC  AIE: Unified spectral calibration + corrected smile and keystone aberrations
Sensor material	MCT	
Integrated cooler	Stirling	
Full well capacity	20 Me-	
Read-out modes	ITR	
Optics temperature	TEC-stabilized	Default is 20 degrees Celsius
Lens mount	Custom mount	
Fore lens options	OLEL43, OLEL32	
Field of view	24 deg., 32 deg.	
Camera digital data output/control interface	GigE Vision, Custom ethernet	
Camera control protocols	GenICam, JSON-RPC	
Power input	24 V DC	
Power consumption	150 W	During simultaneous cool-down of optics and detector
Connectors	Ethernet Aux Power Trig In Trig Out	
IP	IP40	
Dimensions (L x W x H)	250 mm x 300 mm x 220 mm	Mounting surface option on two sides. The mounting kit adds a 24 mm distance on the mounting side.
Weight	15 kg	
Storage temperature	-20 ... +50 $^{\circ}\text{C}$	
Operating temperature	+5 ... +40 $^{\circ}\text{C}$	
Relative humidity	5% – 95% (non-condensing)	