

BLACK EYE

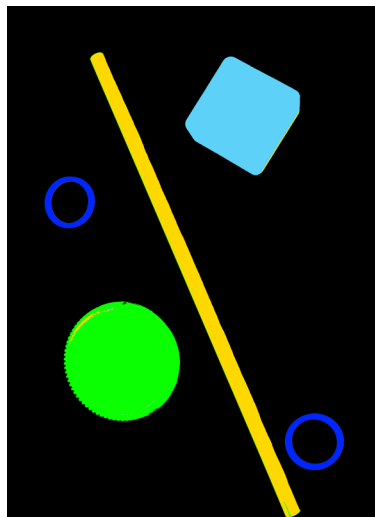
Hyperspectral Imaging Camera for challenging inspection in the MWIR range

The next-generation **BlackEye** hyperspectral imaging system combines a superior design and upgraded electronics in a rugged enclosure. With advanced sensor technology, this system delivers high performance over a wavelength range suitable for a variety of challenging applications such as properly sorting different types of black plastics.

High spectral resolution in the optimized 2.9 – 4.2 μm (5 μm capable) range lets the BlackEye detect minute differences that other sensors cannot. Compatible with industry-leading **perClass Mira®**, the BlackEye can be deployed on the benchtop as well as in the factory. Perform real-time inspection and sorting at high speed.

APPLICATIONS:

- Plastics Sorting for Manufacturing and Recycling
- Mineral Analysis for Mining Operations and Processing
- Contamination Detection
- Chemical Analysis



Left: The naked eye and conventional color (RGB) cameras cannot distinguish between different types of black plastic. **Right:** the inno-spec BlackEye hyperspectral sensor can spectrally classify black plastics on the benchtop and in real time along your conveyor.



BlackEye (Gen. 1 shown)

FEATURES:

- 640 Spatial Pixels, 200 Spectral Bands
- Optimized 2.9 – 4.2 μm (5 μm capable) range
- Robust Design for Industrial Environments
- GigE Vision Interface



Website



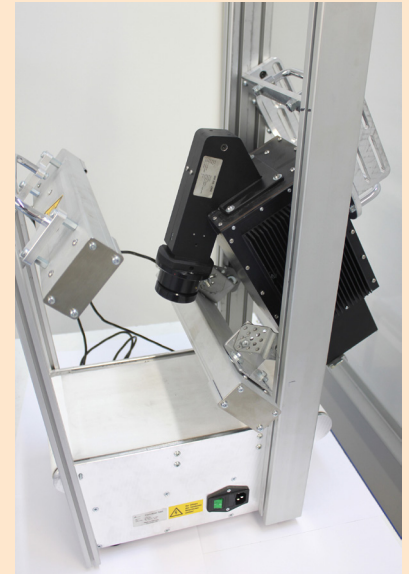
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PRELIMINARY TECHNICAL SPECIFICATIONS

Spectral range	2.9 - 4.2 μm (5 μm capable)
Spectral bands	200
Spectral resolution (FWHM)	< 18 nm est.
Spectral sampling/pixel	6.5 nm
Aperture f/#	f/1.5
Optics magnification	0.65x
Effective pixel size	23 μm
Effective slit width	50 μm
Effective slit length	14.8 mm
Spatial samples	640
Bit depth	13, 14, 15
Maximum frame rate	642 fps (200 bands)
On camera binning	No
On system ROI	Single
Pixel operability	>99.5%, 99.8 (typical)
System image corrections	On camera NUC
Built in shutter	Yes
Sensor material	InSb
Stirling cooler MTBF	25,700 hr
Full well capacity	5.8 Me-
Read-out modes	IWR / ITR
Optics temperature stabilization	Not required, implement drift tolerant algorithm in Mira & 100% cold-shield efficiency optical design
Lens mount	Bayonet mount
Fore lens options	13mm, 25mm
Field of view	28°, 52°
Camera digital data output/ control interface	GigE Vision
Camera control protocols	GenICam + GigEVision
Power input	12 - 32 VDC
Power consumption	Typical 38W
IP	IP40
Storage temperature	-10 ... +60 °C
Operating temperature	-5 ... +40 °C
Compliance	CE, RoHS

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BlackEye Gen. 2

ACCESSORIES:

- MIR Lighting Kit
- Different fore optics: 7 mm, 13 mm, 25 mm, 50 mm, 100 mm
- Various mounting accessories
- perClass Mira acquisition and analysis software with run-time option

As a well-established manufacturer of spectroscopic measurement equipment, **INNO-SPEC** provides optimized solutions for your individual applications; for example, customized OEM cameras for machine builders and system suppliers.