



BLACKINDUSTRY SWIR 1.7



HAIP Solutions BlackIndustry SWIR Spectral Imaging System is a smart line scanning (push-broom) near-infrared hyperspectral imaging camera that allows the acquisition of real-time spectral data with very high spatial resolution.

The outstanding sensitivity in the NIR range from 900 nm to 1730 nm is perfect for the use in industrial in-line applications. With a frame rate of 450 Hz at full frame and up to 1300 Hz with ROI, BlackIndustry SWIR is a high performance spectral imaging system designed for applications that require high light throughput, fast data acquisition and good imaging performance.

Features

- Smart Hyperspectral Line-Scanner
- Designed for industrial in-line applications
- SWIR (900-1730 nm)
- Up to 420 spectral bands (selectable)
- Spatial resolution: 640 px
- Framerate: 450/1300 Hz (Full Frame/ROI)
- Internal GPU for pre-processing

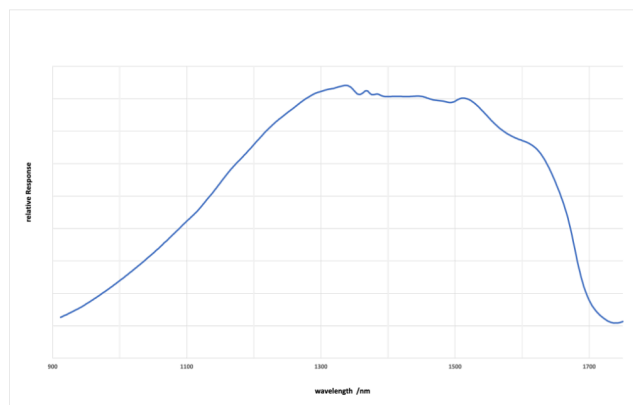
BlackIndustry SWIR 1.7

Hyperspectral Machine Vision Camera

Optics	
Spectral range	900-1730 nm
Spatial resolution	640 px
Dispersion	320 nm/mm
Pixel resolution	1.6 nm/pixel
FWHM (spectral res.)	< 6 nm (15 µm slit)
Image size	2.6 (spectral) x 3.2 (spatial) mm
Smile	< 5 µm; software corrected
Keystone	< 5 µm; software corrected
Aperture	F/1.4
Slit width (default)	15 µm (10/25 µm on request)
Electronics	
Sensor type	InGaAs (SenSWIR)
Pixels in full frame	640 (H) x 512 (V)
Pixel size	5 x 5 µm
Radiometric resolution	10 bit
Framerate Full Frame/ROI	450/1300 Hz
Internal data processing	NVIDIA Jetson Nano, 16 GB
Connection	GigE (GenICam compatible)
Temperature stabilization	active
Power input	24 V DC
Power consumption	< 15 W
Mechanics	
Lens mount	Standard C-Mount
Housing	Anodised aluminum
Temperature (Operation)	-10 - +50°C
Temperature (Storage)	-15 - +60°C
Size	60 * 80 * 210 mm
Weight	2 kg

BlackIndustry SWIR 1.7 Max is also available in a high spatial resolution version of 1280 px.

If your application requires dedicated optics, wavelength ranges or software tools, customization - our very true strength - can be done without large NRE costs.



BlackIndustry SWIR 1.7 - Spectral response

Ideal for food industry & recycling

The sensor is suitable for high conveyor belt speeds or chute systems, ideal for sorting applications in Food Industry or Recycling.

Data pre-processing on camera is possible, as the camera has an integrated GPU (Nvidia Jetson). All BlackIndustry series cameras are controllable via HAIP BlackStudio software, GenICam or a dedicated C++/Python API.

Combining superior optical design with advanced holographic transmission grating technology, highend electronics and a sensitive InGaAs detector, BlackIndustry SWIR 1.7 camera is an ideal tool for demanding environments.

The hyperspectral sensor provides a spatial resolution of 640 pixels with up to 420 spectral channels to be read in, within the wavelength range from 900 nm to 1730 nm.

