



# PRODUCT DATA SHEET

## BLACKINDUSTRY SWIR 1.7 PRO MAX



HAIP Solutions BlackIndustry SWIR 1.7 Pro Max 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 210 Hz at full frame and up to 1300 Hz with ROI, BlackIndustry SWIR 1.7 Pro Max 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: 2560 px
- Framerate: 210/1300 Hz (Full Frame/ROI)
- Internal GPU for on-camera classification

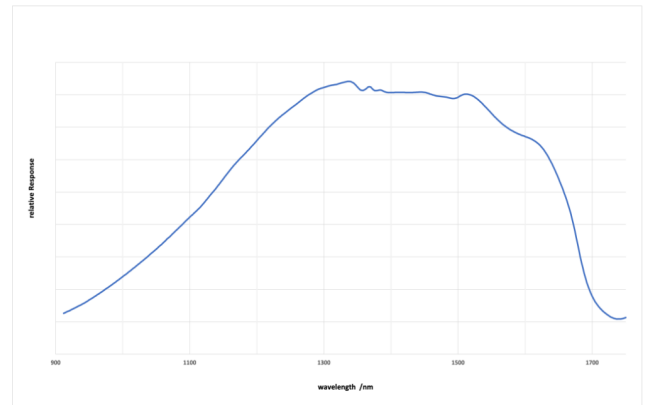
# BlackIndustry SWIR 1.7 Pro Max

## Hyperspectral Machine Vision Camera

Optics	
Spectral range	900-1730 nm
Spatial resolution	2560 px
Dispersion	283 nm/mm
Pixel resolution	1 nm/pixel
FWHM (spectral res.)	< 3 nm (5 $\mu$ m slit)
Image size	7 (spectral) x 8.9 (spatial) mm
Smile	< 3.45 $\mu$ m; software corrected
Keystone	< 3.45 $\mu$ m; software corrected
Aperture	F/1.4
Slit width (default)	5 $\mu$ m (10/15 $\mu$ m on request)
Electronics	
Sensor type	InGaAs (SenSWIR)
Pixels in full frame	2592 (H) x 2056 (V)
Pixel size	3.45 x 3.45 $\mu$ m
Radiometric resolution	10 bit
Framerate Full Frame/ROI	50/2230 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 lower 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 Pro Max  
- 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.

On-camera classification 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 Pro Max camera is an ideal tool for demanding environments.

The hyperspectral sensor provides a spatial resolution of 2560 pixels with up to 420 spectral channels to be read in, within the wavelength range from 900 nm to 1730 nm.

