



PRODUCT DATA SHEET

BLACKBOX

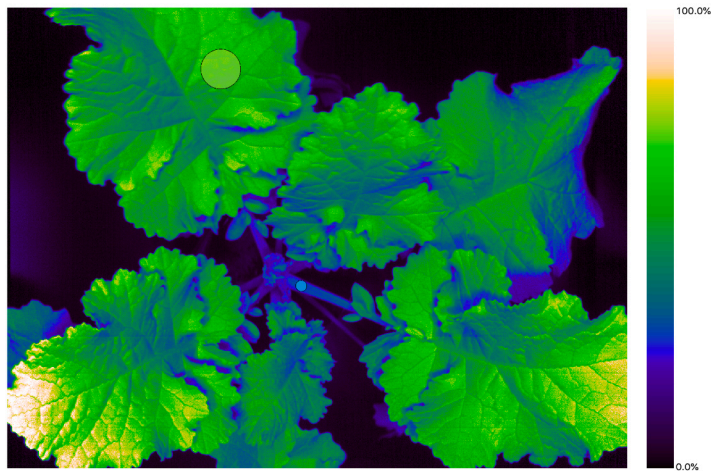


HAIP Solutions BlackBox is the easiest way to obtain samples and detect traits with combined high-quality hyperspectral and RGB imaging sensors under controlled lighting conditions. Detect properties that cannot be seen with the human eye.

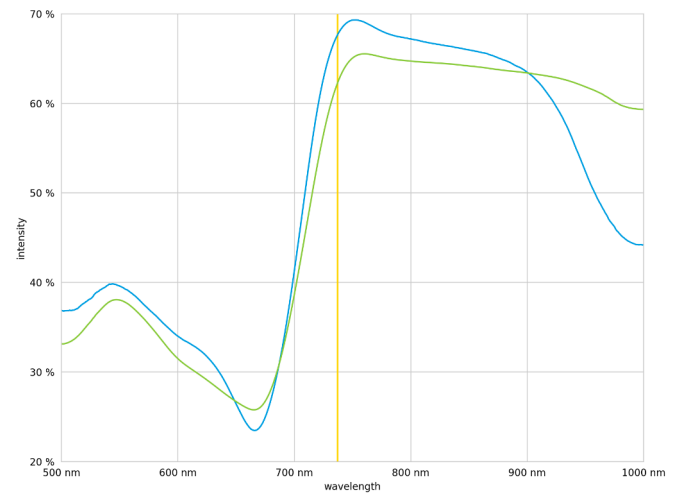
BlackBox is an intelligent imaging system for laboratories, research, and industry and offers a flexible setup and is configurable for many applications and sample types. The multisensor-system is based on reliable hardware components technology and advanced machine-learningbased analytical software.

Features

- Spectral camera VNIR 500-1000 nm (CMOS)
- Spectral resolution 1nm, 500 bands
- High resolution industrial RGB-camera
- Defined light source, defined background
- 15" touch screen display
- Intuitive graphical user interface
- Advanced image processing algorithms
- Internal CPU for pre-processing



BlackBox True Color, native resolution, with halogen lighting unit. The corresponding spectra inside the circles are given on the right.



High spectral quality with low noise. The diagram above shows the standard deviation of all averaged pixels inside each drawn circle.

Spectral Properties	
Wavelength range	500-1000 nm
Number of bands	500
Spectral resolution	5 nm
Spectral sampling	1 nm
Spatial Properties	
Resolution RGB	2064 * 1544 px
Resolution Spectral	640 * 480 px
HSI Sensor Properties	
Detector	CMOS
Sensor size	1,2 Megapixel
Radiometric resolution	10 bit
Integration time (cube)	4 seconds
Data size (raw)	600 MB/ Data cube
HSI Camera Properties	
Connection	GigE
Operation temperature	0 - 30°C
Protection class	IP 40
Power consumption	5V DC / 15 W
Size	130 * 90 * 95 mm
Weight	< 400g

Intelligent Imaging

BlackBox enables standardized and repeatable data acquisition, as well as automated trait extraction. It is easy to use for everyone, you can save time and effort in documentation tasks. With our non-invasive measurement setup you can analyse a wide range of different sample types. Through its imaging and AI-based analysis, BlackBox creates reproducible and standardizable data formats.

The hyperspectral sensor provides a native image resolution of 640x480 pixels with 500 spectral channels, continuously covering the wavelength range from 500 nm to 1000 nm.

If you demand BlackBox tailored to your application, contact us and we explore possible solutions. Our experienced team develops the entire hyperspectral analysis-system for a broad range of applications. In addition to customizing the system, we provide full service for hardware and software. This also includes user training or consultation for the exploration of further use-cases.