



VNIR SERIES

High-Performance Visible and Near Infrared (400-1000nm)

Hyperspectral Imaging Camera Series



ClydeHSI VNIR Series Hyperspectral Cameras are **high sensitivity, high-frame rate** Hyperspectral Cameras operating in the visible and near-infrared spectral range from 400 to 1000nm.

All VNIR series cameras are **fully compatible** with all ClydeHSI hyperspectral scanning solutions and software packages, and are provided with a universally compatible mounting plate to ensure efficient and safe operation on all ClydeHSI system configurations.

User-interchangeable fore-optics to accommodate wide range of standoff distance and spatial resolution requirements. The ClydeHSI VNIR Series is suitable for a wide range of laboratory and industrial machine vision applications.

Key Applications:

Colour Measurement

Heritage Science

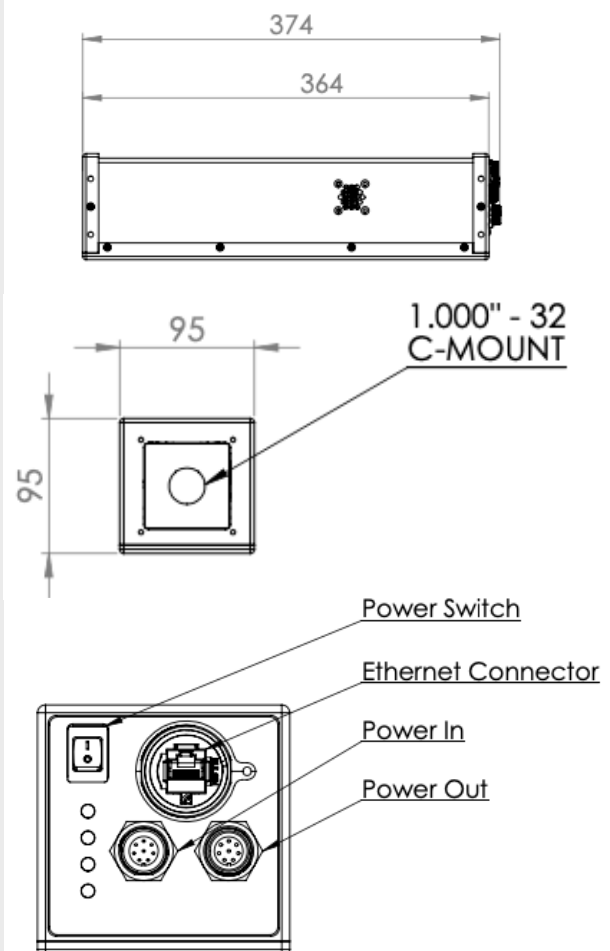
Phenotyping

Food Quality and Security

Forensic Trace Evidence Detection

Crop Health and Yield Prediction

Thin Film Inspection



Technical Specifications

Parameter	Value		Units
Model	VNIR-S	VNIR-HR	
Spectral Range	400-1000		nm
Spectral Resolution	8	≤3	nm FWHM
Spectral Sampling/pixel	0.3		nm/pix
Pixels (Spatial Line)	1936		pix
Spectral Pixels	1216		pix
SNR @ Max Signal	562:1		
Pixel Size	5.86		μm
Gain	0 to 58, 0.1 increments		
Dark Current	3		e-
Readout Noise (typical)	7.36		e-
Dynamic Range (typical)	71.7		dB
Full Well Capacity	30.5		ke-
Sensor Material	CMOS		
Sensor Cooling	Passive		
Smile and Keystone	Sub-pixel across output field		
Effective Slit Width	30		μm
Effective Slit Length	11.34		mm
Objective Lens Options	17 23 35 50		mm
Lens mount	C-mount		
Bit Depth	8, 10, 12, or 14		bit
Camera Interface	USB-3 or GigE		
Frame Rate (full frame) ^a	155		lfps
Integration time ^b	19 to 30,000,000		μs
Shutter ^c	N/A	Integrated	
Flexible Binning	1 (default), 2, 4, 8 independent spectral and spatial axes		
ROI	Freely selectable multiple bands of interest, spectral and/or spatial		
Input Voltage	24		V DC
Operating Temperature	-20 to +65		degC
Humidity	5% - 95%		
Weight	2.5		kg
Dimensions	374 x 95 x 95		mm

Notes:

a. Frame rate depends also upon the computer performance and operating system. It also depends upon the interface chosen, the bit resolution, and the binning conditions.

b. Integration time is independent of frame rate in the case that Integration time < 1/frame-rate

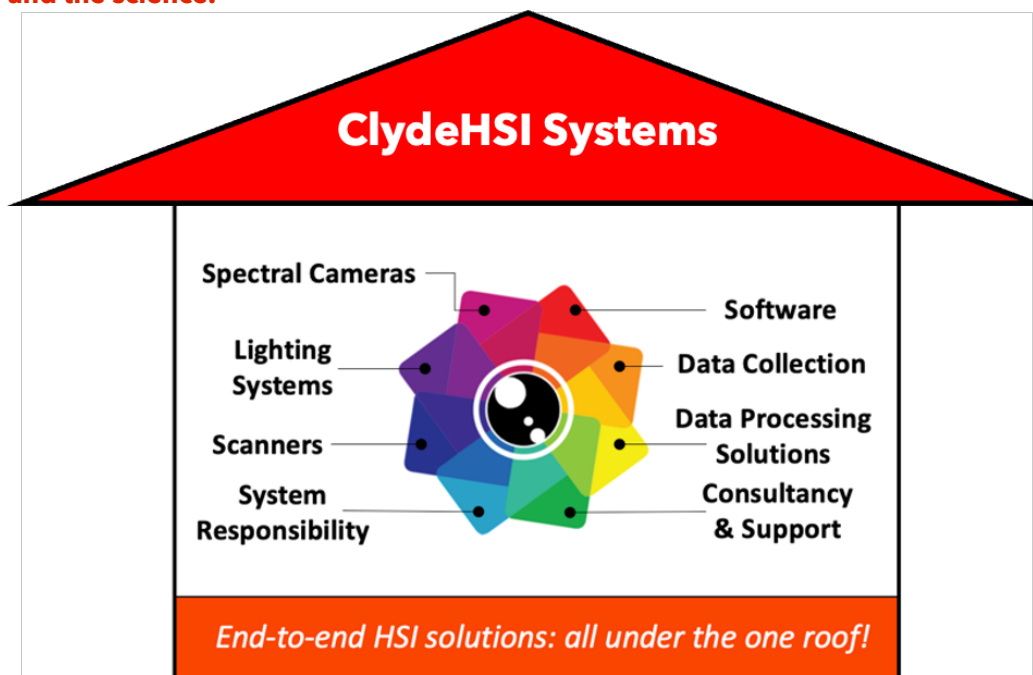
c. Shutter operation controlled by software for dark signal and bad pixel mapping

About Us

We make and measure rainbows.

ClydeHSI are specialists in optical spectroscopy and provide a wide range of both hyper-spectral and conventional spectroscopy instruments and full systems. All our products are supported by leading software for data acquisition, analysis and display.

We take care of the technology, so you can focus on what matters to you: the spectroscopy, the imaging and the science.



Our mission is to provide each and every one of our clients with a complete, end-to-end hyperspectral imaging solution, designed and rigorously tested to ensure **robust, reliable, accurate and repeatable** hyperspectral imaging measurements across a range of academic and industrial applications. Our ultimate goal for all of our systems is to **make hyperspectral imaging easy** for any and all end users.

We believe in **high quality engineering and design**, allowing us to develop market leading products and services. Within our Photonics Research Facility, we have the capability to rapidly develop new products and systems, and welcome the opportunity to partner with our customers on new developments - both within the scientific research community and for equipment for industrial applications

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