



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

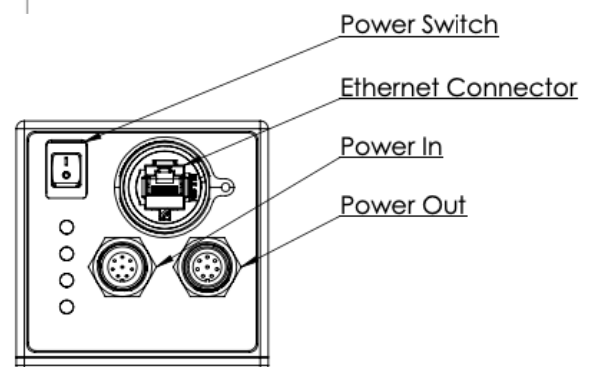
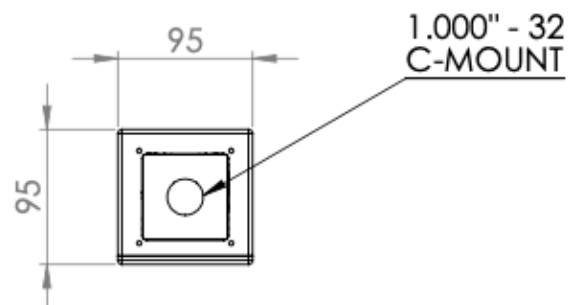
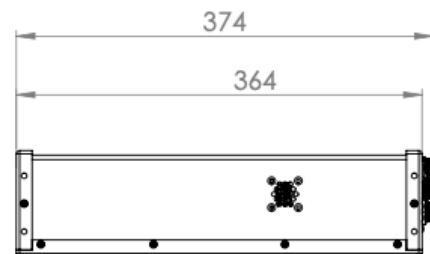
Phenotyping

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	≤5	≤3	nm FWHM
Spectral Sampling/pixel	0.6	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 36, 0.1 increments	0 to 58, 0.1 increments	dB
Dark Current	6.6	3	e-
Dynamic Range (typical)	74		dB
Full Well Capacity	33		ke-
Sensor Material	CMOS		
Sensor Cooling	Passive		
Smile and Keystone	Sub-pixel across output field		
Effective Slit Width	25	30	μm
Effective Slit Length	11.34		mm
Objective Lens Options	17, 23, 35, 50		mm
Lens mount	C-mount		
Bit Depth	8, 10 or 12	8, 10, 12, or 14	bit
Camera Interface	USB-3	USB-3 or GigE	
Frame Rate (full frame) ^a	128	155	lfps
Integration time ^b	19 to 30,000,000		μs
Shutter ^c	Integrated		
Flexible Binning	1 (default), 2, and 4 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	1.25	2.5	kg
Dimensions	228 x 70 x 86	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