



# NIR SERIES

High-Performance Near Infrared (950-1700nm)

## Hyperspectral Imaging Camera Series



### Key Applications:

**Chemical Composition Analysis**

**Heritage Science**

**Foreign Body Detection**

**Food Quality Grading**

**Package Seal Inspection**

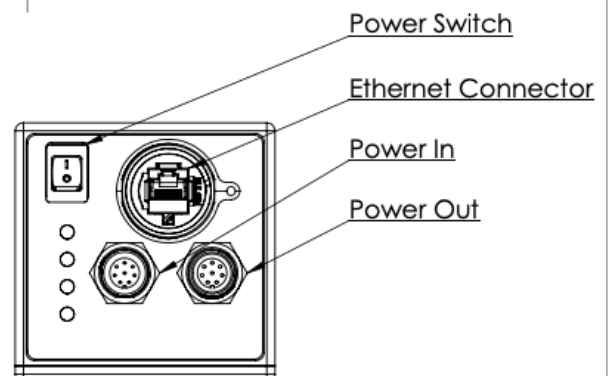
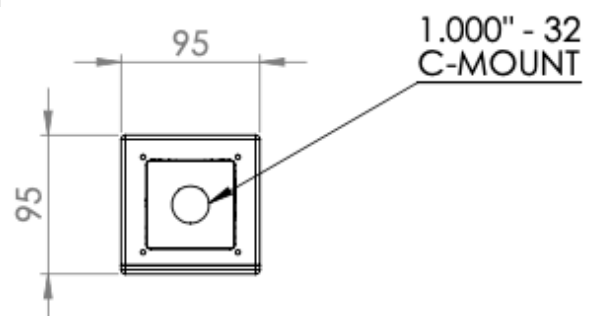
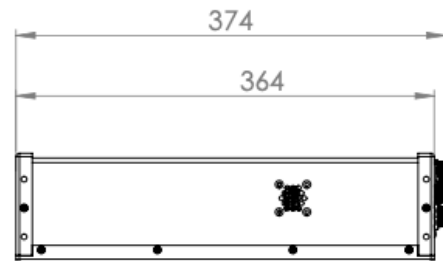
**Waste Sorting and Recycling**

**Moisture Measurement**

ClydeHsi NIR Series Hyperspectral Cameras are **high sensitivity, high-stability** hyperspectral cameras operating in the near-infrared spectral range from 950 to 1700nm. TEC cooled for outstanding noise performance and high-repeatability across all operating conditions.

All NIR 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 NIR Series is suitable for a wide range of laboratory and industrial machine vision applications.



## Technical Specifications

Parameter	Value		Units
	NIR-HR	NIR-HR+	
Model			
Spectral Range	950-1700		nm
Spectral Resolution	≤5		nm FWHM
Spectral Sampling/pixel	3	1.5	nm/pix
Pixels (Spatial Line)	320	640	Nm
Spectral Pixels	256	512	pix
SNR @ Max Signal	1400:1		
Pixel Size	30	15	μm
Gain	Gain0, Gain1, Gain2		
Dark Current	49 (at +20degC FPA temperature)		ke <sup>-</sup> /s
Readout Noise (typical)	30		e <sup>-</sup>
Dynamic Range	69 (Gain0), 64 (Gain1) 59 (Gain2)		dB
Full Well Capacity	1200 (Gain0), 84.8 (Gain1), 25 (Gain2)		ke <sup>-</sup>
Sensor Material	InGaAs		
Sensor Cooling	TEC with temperature status indicator		
Smile and Keystone	Sub-pixel across output field		-
Effective Slit Width	30		μm
Effective Slit Length	9.6		mm
Objective Lens Options	15 22.5 30 56 1:1 Macro		mm
Lens Mount	C-Mount		
Bit Depth	8 to 14		bit
Frame Rate <sup>a</sup>	Up to 344	Up to 303	lfps
Integration Time <sup>b</sup>	<1 to 200,000		μs
Shutter <sup>c</sup>	Integrated		-
Flexible Binning	1 (default), 2 independent spectral and spatial axes		
ROI	Freely selectable multiple bands of interest, spectral and/or spatial		
Camera Interface	USB-3 or GigE		
Input Voltage	24		V DC
Operating Temperature	-20 to +55		degC
Humidity	5% - 95%		-
Weight	4		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

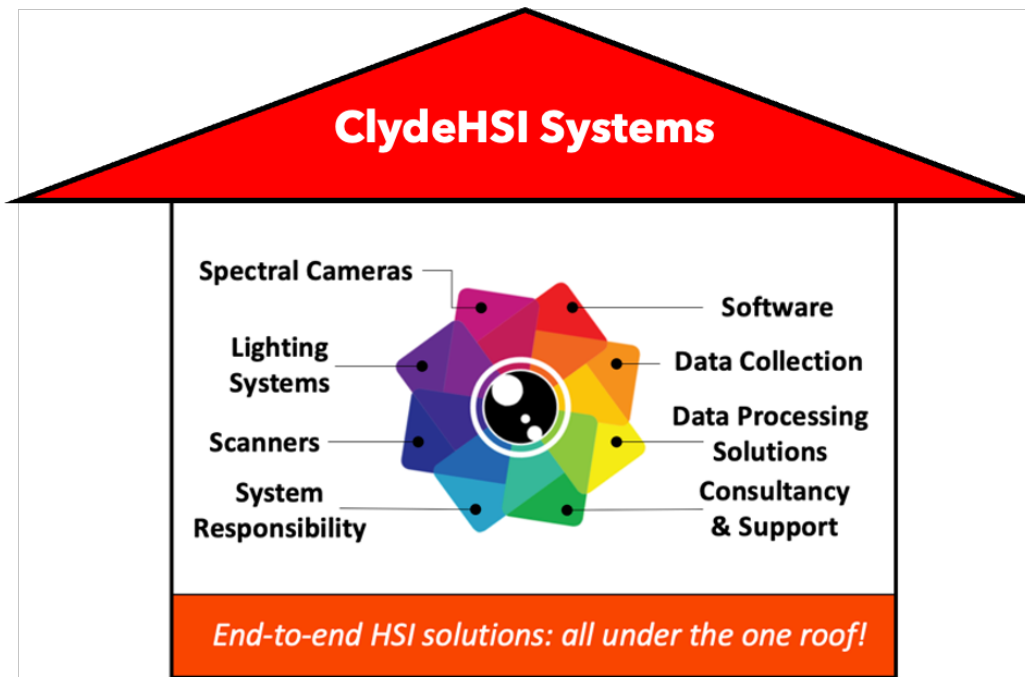
*c.* Shutter operation controlled by software for dark signal and bad pixel mapping

## 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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