



NIR SERIES

High-Performance Near Infrared (950-1700nm)

Hyperspectral Imaging Camera Series



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.

Key Applications:

Chemical Composition Analysis

Heritage Science

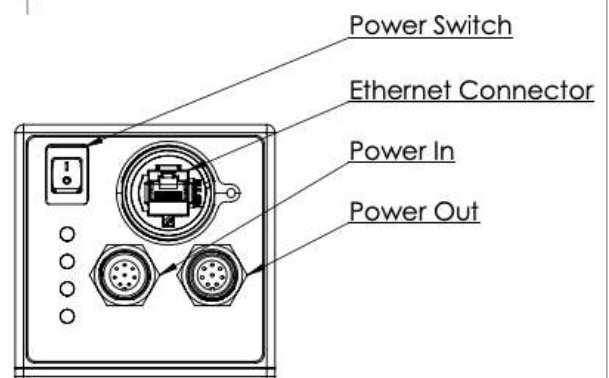
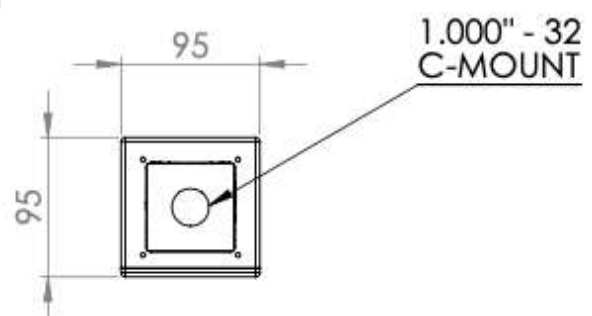
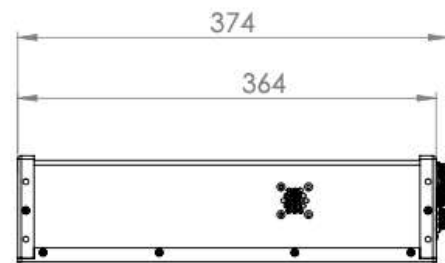
Foreign Body Detection

Food Quality Grading

Package Seal Inspection

Waste Sorting and Recycling

Moisture Measurement



Technical Specifications

| Parameter | Value | | | Units |
|-------------------------------|---|---------------|----------------|--------------------|
| | NIR-S | NIR-HR | NIR-HR+ | |
| Model | NIR-S | NIR-HR | NIR-HR+ | |
| Spectral Range | 950-1700 | | | nm |
| Spectral Resolution | ≤8 | ≤5 | | nm FWHM |
| Spectral Sampling/pixel | 1.5 | 3 | 1.5 | nm/pix |
| Pixels (Spatial Line) | 640 | 320 | 640 | pix |
| Spectral Pixels | 512 | 256 | 512 | pix |
| SNR @ Max Signal | 600:1 | 1400:1 | | |
| Pixel Size | 15 | 30 | 15 | μm |
| Gain | Gain0, Gain1, Gain2 | | | |
| Dark Current | 49 (at +20degC FPA temperature) | | | ke ⁻ /s |
| Dynamic Range | 69 (Gain0), 64 (Gain1) 59 (Gain2) | | | dB |
| Full Well Capacity | 1200 (Gain0), 84.8 (Gain1), 25 (Gain2) | | | ke ⁻ |
| 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 | 8, 12, 16, 25, 35, 50, 1:1 Macro | | | mm |
| Lens Mount | C-Mount | | | |
| Bit Depth | 8 to 14 | | | bit |
| Frame Rate ^a | 579 | 344 | 303 | lfps |
| Integration Time ^b | <1 to 200,000 | | | μs |
| Shutter ^c | 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 | USB-3 or GigE | | |
| Input Voltage | 24 | | | V DC |
| Operating Temperature | -20 to +55 | | | degC |
| Humidity | 5% - 95% | | | |
| Weight | 2.7 | 4 | | kg |
| Dimensions | 345 x 122 x 136 | 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