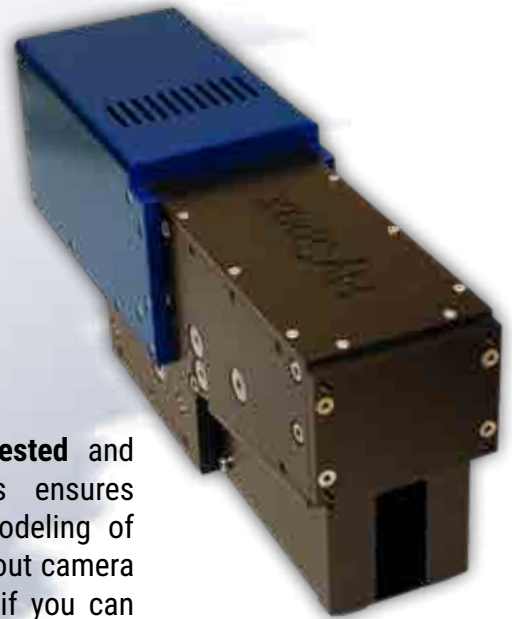


## HySpex VNIR-1024

The HySpex VNIR-1024 **hyperspectral camera**, is developed for **field, laboratory, airborne and industrial** applications.

HySpex VNIR-1024 combines **extreme acquisition speeds** with no compromise on the data quality. The high frame rate makes VNIR-1024 an ideal camera for **industrial applications, low altitude flights** or other applications where high frame rates and **high radiometric accuracy** is required.

Like **all HySpex cameras**, HySpex VNIR-1024 is **rigorously tested and calibrated to traceable standards** during production. This ensures consistency in results between different cameras, allowing modeling of algorithms for deployment at e.g. different production points without camera specific adjustments. Inspired by Sinatra, NEO guarantees that if you can detect it "there", you can detect it anywhere.



HySpex VNIR-1024.

A wide range of **close-up lenses** allows the use of the camera at working distances ranging from a few cm **with a spatial resolution of 24  $\mu\text{m}$** , to infinity for e.g. **airborne remote sensing**.



Close range scanning of rucola seeds.

### Main specifications

Spectral range	400 – 1000 nm
Spatial pixels	1024
Spectral channels	108
Spectral sampling	5.4 nm
FOV*	16.1°
Pixel FOV across/along*	0.28/0.56 mrad
Bit resolution	14 bit
Noise floor	11 e <sup>-</sup>
Dynamic range	3400
Peak SNR (at full resolution)	> 330
Max speed (at full resolution)	690 fps
Power consumption	6 W
Dimensions (l-w-h)	30.5 – 9.9 – 15 cm
Weight	4.2 kg

*\*Can be doubled with FOV expander*

## Airborne Applications

**High resolution** and **high speed**, combined with **low weight** and **power** consumption, make NEO's HySpex cameras very well suited for airborne data acquisition.

A typical airborne installation consists of the **HySpex cameras** coupled with an **airborne data acquisition unit**, a navigation system (**IMU/GPS**) and a **mounting platform**.

Both **actively stabilized** and **passively damped** mounting platforms can be supplied, as well as standard mounting plates with no damping.

**IMU/GPS solutions** from **leading manufacturers** can be supplied and integrated with the cameras. Alternatively, HySpex systems can be interfaced with the customer's existing navigational hardware.



## Laboratory Setup

For lab and field use, a scanning stage is needed to scan the cameras and build the hyperspectral data cube of the scene. A **user friendly table-top lab setup** with translation stage, VNIR-SWIR light sources and close-up lenses can also be supplied for scanning of samples of varying sizes.

The scanning speed is **automatically controlled** by the data acquisition unit, based on the selected lens option. The lab rack includes a camera adjustment platform, to facilitate camera **focus adjustment** when using different close-up lenses.



## Field Setup

For **field operations**, NEO supplies a range of high precision rotation stages tailored to fit the number of cameras and the operational scheme. Long-life Li-ion **battery powered** solutions are available for increased **portability**

For **fast and precise scanning** of larger areas, such as a **mine face**, **outcrop** or **building**, NEO can supply an **automatic pan-tilt scanner**. By inputting the number of degrees and scan lines to scan in both the horizontal and vertical direction, the stage will automatically scan the **pre-programmed area**, ensuring the desired overlap between scan lines.

To ensure **stable and reliable acquisitions** in challenging field conditions, a **rugged, yet portable, tripod** is supplied. NEO supplies a variety of tripods with pan/tilt-heads that will accommodate the payload of the cameras and rotation stage used.

