

HySpex

HySpex MJOLNIR V-1240

The **HySpex Mjolnir V-1240** hyperspectral imaging system for UAVs provides a unique combination of small form factor and low mass, combined with high performance specifications and **scientific grade** data quality.

HySpex Mjolnir V-1240 covers the VNIR spectral range, **400 - 1000 nm**, and is built with an optical architecture based on the high-end HySpex ODIN system.

With a weight of **less than 4 kg** and less than **50 W** power consumption, **HySpex Mjolnir V-1240** is very well suited for a wide range of UAVs.

The UAV bundle offered by NEO integrates a hyperspectral camera with a powerful **PicoITX i7** computer and an **Applanix APX-15 UAV** navigation system, all fitted into a self-contained module mounted on a passive damping platform. The system is also compatible with several off-the-shelf gimbals.

NEO offers a high-performance unmanned aerial vehicle which is fully integrated with the **HySpex Mjolnir V-1240**. The UAV is fitted with a standard battery package allowing up to 30 minutes flight time. **All HySpex Mjolnir** systems can also be mounted on a **tripod and rotation stage for ground use**.



HySpex Mjolnir V-1240.



False color RGB image from HySpex Mjolnir data acquired at 120 m altitude.

Main specifications

Spectral range	400 – 1000 nm
Spatial pixels	1240
Spectral channels and sampling	200 bands @ 3 nm
F-number	F1.8
FOV	20°
Pixel FOV across/along	0.27/0.27 mrad
Bit resolution	12 bit
Noise floor	2.37 e ⁻
Dynamic range	4400
Peak SNR (at full resolution)	> 180
Max speed (at full resolution)	285 fps
Power consumption*	50 W
Dimensions (l-w-h)*	250 – 175 – 170 mm
Weight*	< 4 kg

**Includes IMU/GPS and DAU – <4.5 kg including standard battery*



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HySpex

Gremsy gStabi H16

The advanced 3-axis digital stabilizer, **gStabi H16**, weighs only 2.2 kg (4.85 lbs). NEO delivers the gStabi H16 with a circular quick release, allowing it to be seamlessly fit on a wide range of multirotors. Capable of handling payloads up to 7 kg (15.43 lbs), the gimbal can support **all HySpex Mjolnir models**.

- Gimbal and Mjolnir payload powered by same battery
- Encoder with resolution up to 0.005°
- Ultra accurate IMU sensor with temperature compensation
- Simple 5 minutes setup & balance with Auto Tuning Feature
- gMotion Controller based on a 32 bit ARM high speed microprocessor providing super fast response and accurate calculation



HySpex Mjolnir and Gremsy gStabi H16.



Camflight FX8HL.

Camflight FX8HL Robot

- 8S 44 000 mAh batteries providing ~30 min. flight endurance for coverage of large areas, with Mjolnir payload
- Lockheed Martin Autopilot for high precision flights
- Virtual cockpit ground control SW for advanced flight plans
- High stability in wind

Applanix APX-15 UAV

- Advanced Applanix IN-Fusion™ GNSS-Inertial integration technology
- 100 Hz real-time position, roll, pitch and heading output for direct georeferencing of sensor data
- IMU data rate 200 Hz
- 336 Channels (GPS, GLONASS, BeiDou, Galileo, QZSS, SBAS)
- Solid-state MEMS inertial sensors w/Applanix SmartCal™ compensation technology
- Unfiltered, unsmoothed pseudo range measurements data for low noise, low multipath error, low time domain correlation and high dynamic response



Applanix APX-15 UAV.



HySpex Mjolnir field solution

Field applications

All Mjolnir systems can easily be deployed for field work by mounting it on a tripod with a rotation stage.

- Light weight, robust, compact and self contained design
- Working distances: 20 m – ∞
- Fully LiPo battery operated for long endurance
- Quick mounting and easy operation with scan speed fully synchronized with camera frame rate
- Easy wireless operation from tablet or laptop

