

## HySpex MJOLNIR VS-620

Combining HySpex Mjolnir V-1240 and HySpex Mjolnir S-620 into a common housing, **HySpex Mjolnir VS-620** provides **620 coregistered pixels** in the VNIR and SWIR spectral range, 400 - 2500 nm.

For applications requiring low mass, combined with high performance specifications and **scientific grade** data quality on the full VNIR-SWIR range, HySpex Mjolnir VS-620 is an ideal solution. Sharing the on-board data acquisition unit and navigation system, HySpex Mjolnir VS-620 is both space efficient and cost effective.



*HySpex Mjolnir VS-620*

In addition to the high quality hyperspectral data cube, covering the spectral range from 400 - 2500 nm, with 490 bands, **double resolution** data in the VNIR range is always readily available. With smile and keystone less than 0.1 pixel for each spectral range, the merged Mjolnir VS-620 data product will have co-registration/keystone **better than 0.2 pixel** for the full VNIR-SWIR range.

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. All HySpex Mjolnir systems can also be mounted on a tripod and rotation stage for ground use.

### Main specifications

### HySpex Mjolnir VS-620

	V-1240	S-620
Spectral range	400 – 1000 nm	970 – 2500 nm
Combined spectral range	400 – 2500	
Spatial pixels	1240	620
Combined spatial pixels	620	
Spectral channels and sampling	200 bands @ 3.0 nm	300 bands @ 5.1 nm
Combined spectral channels	490	
F-number	F1.8	F1.9
FOV	20°	20°
Combined FOV	20°	
Pixel FOV across/along	0.27/0.54 mrad	0.54/0.54 mrad
Combined pixel FOV across/along	0.54/0.54 mrad	
Bit resolution (raw data)	12 bit	16 bit
Noise floor	2.3 e <sup>-</sup>	80 e <sup>-</sup>
Dynamic range	4400	10000
Peak SNR (at full resolution)	> 180	> 900
Max speed (at full resolution)	285 fps	100 fps
Power consumption*	50 W	
Dimensions (l-w-h)*	374 – 202 – 178 mm	
Weight*	~ 6 kg	

*\*Includes IMU/GPS and DAU – <6.5 kg including standard battery*

## 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