

Bramor ppX UAS

Sensor Options

4.3MP RGB Sensor



BRAMOR ppX RGB Sensor with 24,3 MP with high quality lens

The RGB 24,3 megapixel sensor enables precise visible light survey grade mapping, aerophotogrammetry and dense point cloud data acquisition for digital terrain models, digital surface models, volume and stockpile calculations. With 30 mm and optional 19 mm optics, sub-centimeter GSD acquisition is enabled.



LAND SURVEY WITH THE HELP OF AN UNMANNED AERIAL VEHICLE (UAV) WITH 3DSURVEY. Whitepaper by Vid Petrman, Modri Planet d.o.o., Bramor ppX accuracy assessment resulted in the mean error for X/Y = 6 mm and for Z = 24 mm.

Bramor ppX UAS

Sensor Options

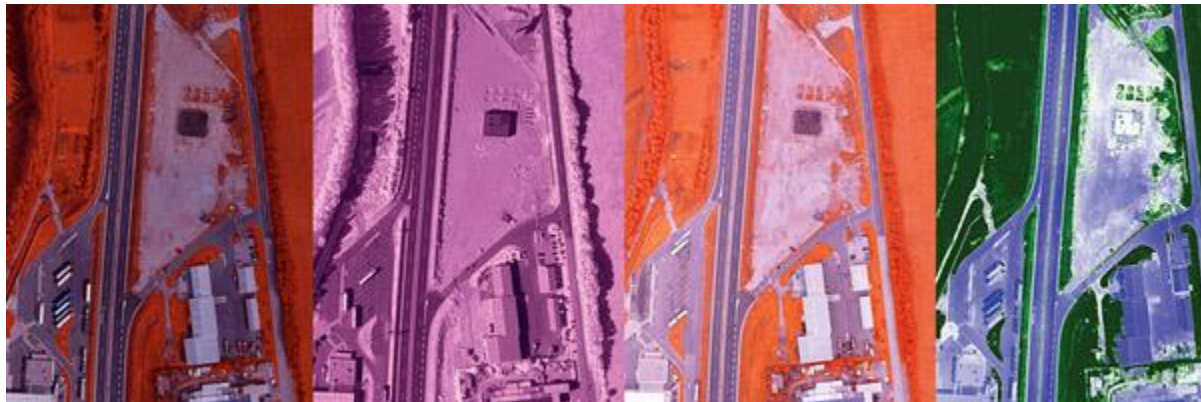
24.3MP APS-C NDVI Sensor



BRAMOR ppX RGB Sensor with 24,3 MP with high quality lens

NIR,NIR Total Spectra, ideal for Vegetation Monitoring and Vegetation Health activities.

The 24,3 CIR/NDVI sensor is suitable for data acquisition in the NIR spectra, which can be processed into NDVI and eNDVI products. With the sub-centimeter GSD, single plant and micro-area focus is enabled, resulting in decision making support for precision agriculture, forestry, plant deconvolution and similar.



LAND SURVEY WITH THE HELP OF AN UNMANNED AERIAL VEHICLE (UAV) WITH 3DSURVEY. Whitepaper by Vid Petrman, Modri Planet d.o.o., Bramor ppX accuracy assessment resulted in the mean error for X/Y = 6 mm and for Z = 24 mm.

- Sub centimeter GSD in the near infra-red and infra-red spectra
- Data acquisition for precise vegetation surveying, models and plant deconvolution
- Completely exchangeable with the RGB sensor
- Change detection on a sub cm GSD level
- Multiple NIR and IR band filters

AFGEN (PTY) LTD
15 Kyalami Boulevard, Kyalami Business Park, Midrand, South Africa
Phone 011 466 2055 email info@afgen.co.za www.afgen.co.za

Bramor ppX UAS

Sensor Options

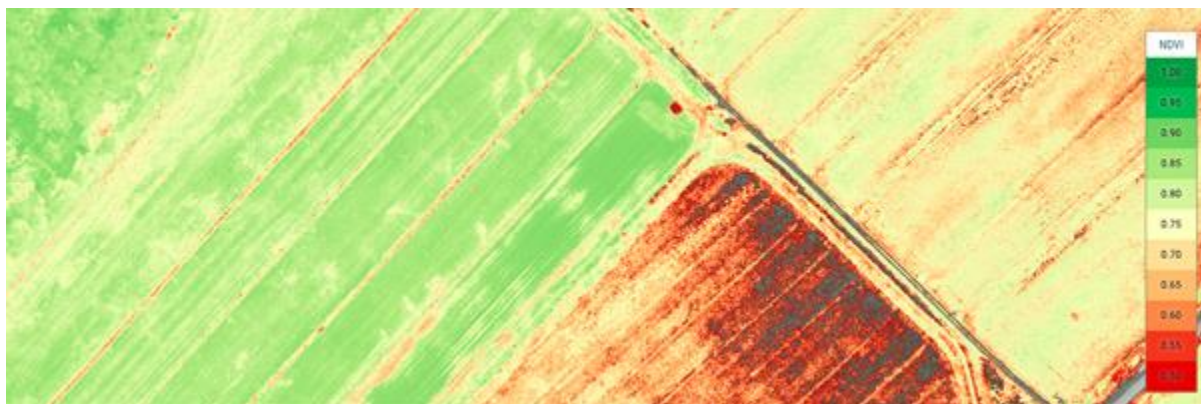
MS-SQ Multispectral Camera



MS-SQ ultralight multispectral camera, self-calibrated using Sunshine sensor.

The compact MS-SQ sensor can be carried simultaneously with one of C-ASTRAL's high resolution sensors and features four narrowband filters optimized for analyzing crop health and a 16 MP RGB imager for easy digital scouting. Its irradiance sensor and integrated GPS make it an accurate, compact and calibrated tool for precision agriculture.

- 4 spectral bands, 10 bits Global shutter
- Self-calibrated using the Sunshine sensor
- Ground Sample Distance 12,4 cm Monoband, 2,7 cm RGB
- Capture Rate: 1 per second
- RGB Camera 16MP Rolling shutter
- 64GB Memory / IMU + Magnetometer + GPS
- Configuration over Wi-Fi



NDVI - Normalized Difference Vegetation Index is an index for visualizing vegetation health. Areas with NDVI values greater than 0,5 are colored using a red/yellow/green color scale. The NDVI reveals variability in plant vigor and biomass, often times not visible in standard RGB color imagery.

Bramor ppX UAS

Sensor Options



NDRE - Normalized Difference Red Edge Index can be a valuable index when collecting data and monitoring stress /health over mature plants. The advanced vegetation indices like NDRE are more sensitive to changes in leaf chlorophyll content and provide information about plant nutrient status.

MS-RE Multispectral Sensor



Advanced, lightweight, provides accurate multi-band data for agricultural remote sensing applications.

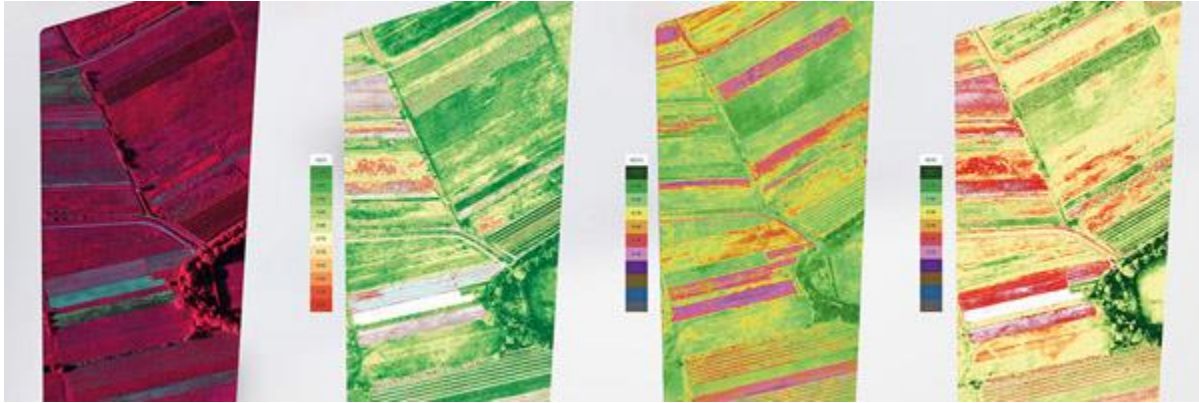
The BRAMOR ppX mounted MS-RE sensor simultaneously captures five discrete spectral bands, enabling the creation of tailored indices for high end vegetation mapping. Its irradiance sensor and integrated GPS make it an accurate, compact and calibrated tool for precision agriculture.

- 5 spectral bands: Blue, green, red, red edge, near IR
- Calibrated for precise, repeatable measurements
- Ground Sample Distance: 8,0 cm per pixel at 120 m AGL
- Capture Rate: 1 per second

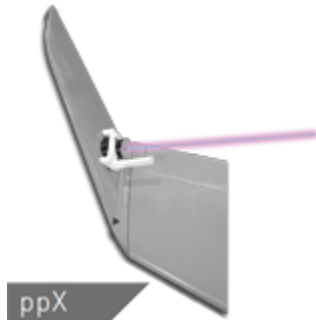
Bramor ppX UAS

Sensor Options

- Narrowband optical filters provide full imager resolution for each band
- 32GB Memory: Single SD card stores all images with geotags
- Wi-Fi capable device web-based interface



gAS Sensor – GasFinder



Advanced laser mass spectrometer for pipeline and environmental monitoring.

Methane detection down to 0.5 ppm, detection of +7cm pipeline subsidence, tunable laser for detection of other greenhouse gases, such as CO₂.

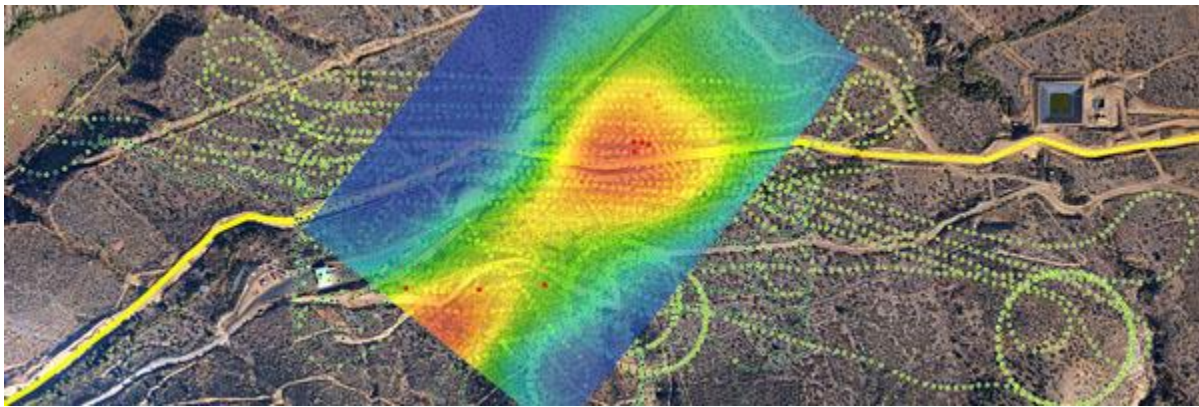
The gAS sensor option on the ppX aircraft is a unique and extremely capable high resolution, excellent selectivity long range methane leak detection system, based on a proven DFB tunable diode laser absorption spectroscopy system adapted to UAS use from larger manned platforms. Developed in collaboration with gas detection industry leaders Boreal Laser and C-ASTRAL partners Ventus Geospatial, this system revolutionizes pipeline, oil and gas well and other methane and noxious gases detection and compliance operations.

- Remote molecular level gas detection down to 0,05 ppm CH₄

Bramor ppX UAS

Sensor Options

- 2-hour flight time
- 110km operational range
- Plume estimation and mapping
- 1 reading per second, default alarm 10ppm
- No consumables, minimum sensor maintenance
- Additional multispectral and 16MP RGB sensor option
- ADS-B transponder option
- Long range solar power extended range option



gHY Hyperspectral sensor



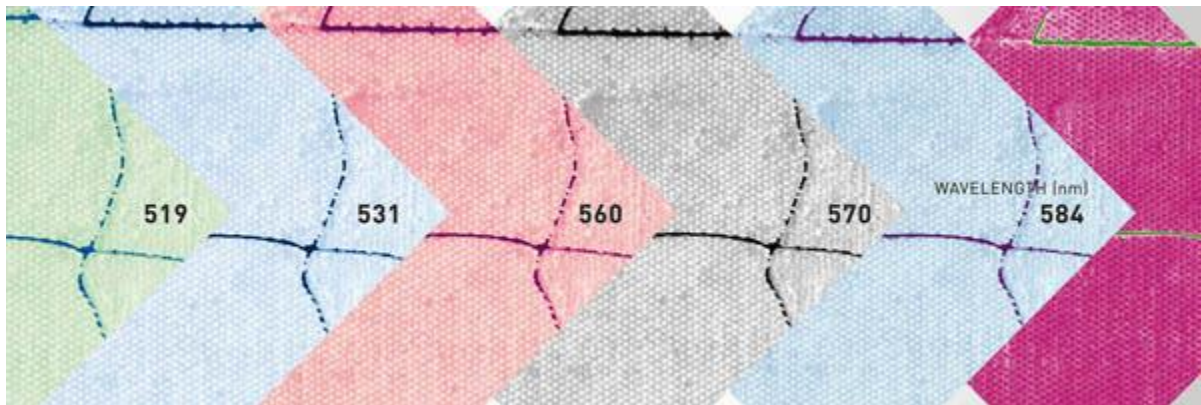
Enhance your system with a 500-900 nm range state of the art hyperspectral imager.

The world's smallest and most lightweight hyperspectral camera for UAVs. This novel, innovative gHY sensor creates 2D spectral information in VIS-VNIR spectral range with single exposure and enables mosaicking with photogrammetric software. The sensor provides real response in each pixel without interpolation. This high end sensor is, due to its spectral range, especially suitable for uses in agriculture, forestry and water research for unrivaled results and precision.

Bramor ppX UAS

Sensor Options

- Default spectral range: 500-900nm
- Spectral resolution: >10 nm, FWHM
- Spectral step: 1 nm
- Dynamic range: 12 bits
- VIS-VNIR snapshot
- F-number: ~ 2,8
- Focal length: 9 mm
- FOV: 37 degrees
- Other ranges: 400-700, 450-800, 550-950 nm
- Ground pixel: 6,5 cm at 100 m altitude
- Spectral bands: ~ 380 max
- Exposure time: 0,06-3000 ms
- Frame rate: 30 frames/s
- Max Image dim: 1010 x 1010 pix
- CMOS, 5,5 * 5,5 microns / pixel
- 30 bands /s (1010*648 pixels)



Location: Indonesia / Area: 2 km² / Flight time: 60 min / Flight altitude AGL: 100 m