AgEagle

MicaSense Series

RedEdge-P™

Precision multispectral imaging for smart farming all the way from seedling to harvest

High-resolution multispectral and RGB drone sensors for plant classification, weed identification, environmental research and conservation, and digital plant phenotyping.

Benefits

- ⊘ **Obtain imagery comparable to Landsat and Sentinel satellite data** at an enhanced resolution.

- ⊘ **Perform detailed analysis on chlorophyll efficiency** and identify weeds.

- ⊘ **Conduct reliable time-series analysis** even in varying light conditions.

- ⊘ **Perform machine learning and AI applications** such as early stage crop counting.

- ⊘ **Generate insights from the invisible spectrum** with multiple outputs and indices such as RGB, NDVI, NDRE, OSAVI, CIR and DSM.

- ⊘ **Work with the equipment you already have** - Can be used with most in-use professional drones and a wide range of flight planning software.

- ⊘ **Monitor shallow water environments** with the coastal blue band.

- ⊘ **Perform detailed analysis on carotenes and anthocyanin** by using indices like PRI.

RedEdge-P cameras comparison with Landsat 8 and Sentinel 2A satellites
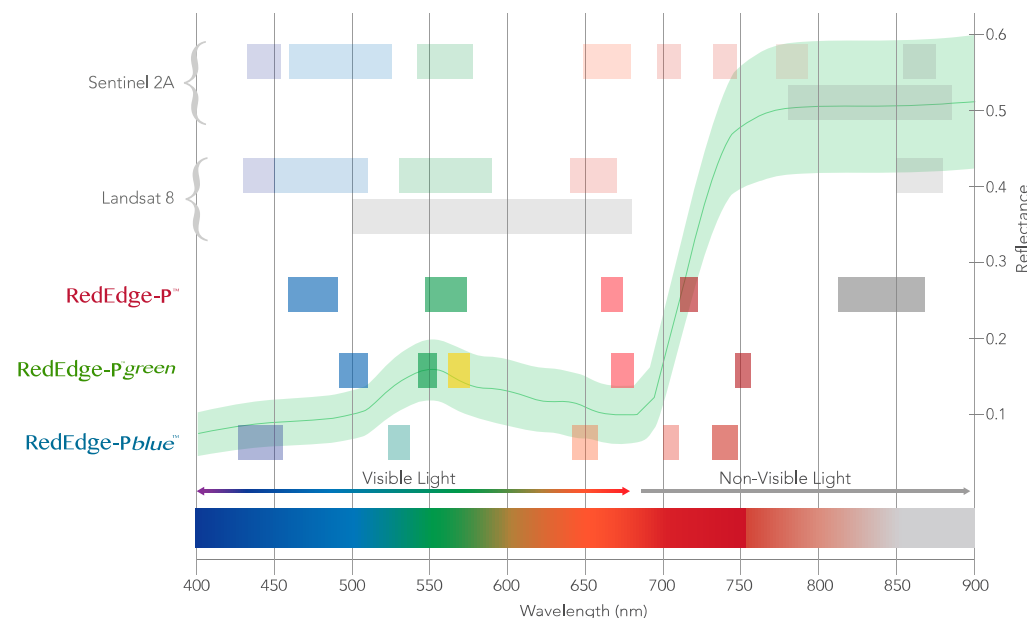
You can pair any two of the RedEdge-P, RedEdge-P blue, or the new RedEdge-P green sensors to create a dual-camera solution with up to 10 spectral bands.

MicaSense Series
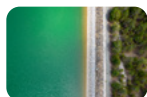# RedEdge-P ™

Applications

Vegetation analysis of water bodies
Surveys over water for chlorophyll efficiency examination, vegetation analysis and identification of algae or floating, submerged and emergent plants.

Environmental monitoring
Coastal and near-shore mapping for water resources management, tidal zones, swamps and glacier monitoring.

Water management
Public water supply surveillance, water resources management.

Habitat monitoring, protection and restoration
Erosion and biodiversity inspections, reef surveys over shallow waters, inaccessible to vessels and sensitive to human interaction.
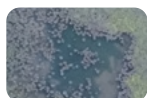
Vegetation species and weeds identification
Vegetation health management and species identification, including the ability to differentiate and count plants, trees, invasive species, and weeds.

Key features

- **Ten multispectral bands** with any combination of two of the three RedEdge-P cameras.
- **Pan-sharpening technology for spatial resolution of 2 cm / 0.8 in per pixel** compared to satellites at ~10 m / 32 ft.
- **Coastal blue band** for water vegetation analysis and weeds identification.
- **Double radiometric calibration** with light sensor and calibration reflectance panel for reliable data in varying light conditions.
- **Configurable solutions:** select 10 bands out of 15 available options.
- **Narrow bands** for enhanced data accuracy.
- **Fast capture rate**: 3 raw DNG images per second.
- **Synchronized capture** of all 10-bands, **automatic triggering** and **geotagging of images** for efficient flight times easy post-processing.
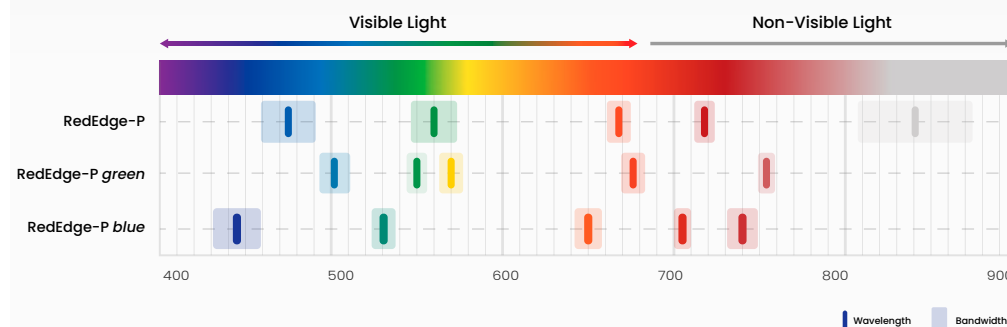
Specifications

Weight	745 g / 26.2 oz (two sensors, mounting hardware, DLS2, and cable)
Dimensions	13.2 cm x 8.8 cm x 9.67 cm / 5.1 in x 3.1 in x 3.5 in
RGB output	5.1 MP* (global shutter, aligned with all bands)
Sensor resolution	1456 x 1088 (1.6 MP per multispectral band) 2464 x 2056 (5.1 MP panchromatic band)
Ground sample distance	7.7 cm / 3 in per pixel (per multispectral band) at 120 m / ~400 ft AGL 3.98 cm / 1.5 in per pixel (panchromatic band) at 120 m / ~400 ft AGL
Field of view	50º HFOV x 38º VFOV (multispectral), 44º HFOV x 38º VFOV (panchromatic)
Capture rate	Up to 3 images per second raw DNG
Storage	CFexpress card
Interfaces	Three configurable GPIO: select from trigger input, PPS input, PPS output, and top of frame signals. Host virtual button. USB 2.0 port for WiFi. Serial. 10/100/1000 Ethernet.
External power	7.0 V – 25.2 V
Power input	11/14.0/20W (standby, average, peak)
Heat	Ambient without airflow: 0–40 ºC / 0–104 ºF Ambient with airflow >0.5 meter per second / >1.1 mph: 0–50 ºC / 0–122 ºF
IP rating	IP4X

Spectral bands

RedEdge-P	Blue 475(32), Green 560(27), Red 668(14), Red Edge 717(12), Near-IR 842(57)
RedEdge-P *green*	Cyan 502(18), Green 550(12), Yellow 570(14), Red 678(14), Near-IR 754(10)
RedEdge-P *blue*	Ocean blue 444(28), Green 531(14), Red 650(16), Red Edge 705(10), Red Edge 740(18)

Visible Light　　　Non-Visible Light

RedEdge-P
RedEdge-P *green*
RedEdge-P *blue*

400　　500　　600　　700　　800　　900

Wavelength　　Bandwidth

*With appropriate post-processing.　　Note: Specifications are subject to change without notice.