

Accurate results at leaf-level resolutions

MicaSense Series ALTUM-PT™

Synchronized higher-res RGB, thermal, and multispectral



Key Benefits

- Simultaneous capture of up to six discrete spectral bands, enabling outputs such as RGB color, crop vigor, and high-resolution panchromatic.
- Obtain the most accurate radiometric results at resolutions that enable entirely new remote sensing workflows - 1.2 cm (0.47in) pan-sharpened ground resolution when flying at 60m (200ft).
- Discern issues at the plant level, even in the early growth stages, including early-stage stand counting.
- Optimized for tasks that require ultra-high resolution and compatible with rapid in-field workflows for on-the-spot decision making.
- The integrated thermal model features patented technologies that enable the more accurate thermal maps - with better than 2-degree repeatability across measurements - twice the resolution of the current Altum.
- The thermal imagery provides twice the ground resolution of Altum - as high as 17cm from 60m flight altitude, which means that the thermal imager captures an area as big as 17cm when flown at 60m. The higher the resolution, the smaller object size can be detected. Altum-PT gives you better detail and image quality, enabling the most challenging irrigation system, soil moisture, and inspection tasks.
- Synchronized multispectral and thermal imagers for pixel-aligned outputs across multiple bands and at incredibly high resolutions

Key Features

- Removable, professional-grade CFexpress storage up to 2TB allowing for 2 captures/second
- Ultra-high-resolution panchromatic imager for data outputs at 2.49cm resolution from 120m—more than 2 times the resolution of today's comparable multispectral cameras
- Built-in 320 x 256 radiometric thermal imager for two times the ground resolution of the current Altum

Use Cases and Applications

The surface temperature of plants changes rapidly under stress conditions. Uses and applications are included but not limited to:

- Irrigation scheduling
- Plant disease detection
- Plant phenotyping
- Fruit yield estimations
- Fruit maturity evaluation and bruise detection
- Water stress prediction
- Pressure issues and clogs detection in irrigation systems

Altum-PT Sensor Sheet

	Altum-PT
Weight	577 g (20.35 oz.) Altum-PT + WI-Fi + CF Express Card + DLS2 & Cables
Dimensions	11.0 x 8.0 x 6.9 cm (4.3in x 3.1in x 2.7in)
External Power	7.0 V - 25.2 V
Power Input	5.5/7.0/10W (standby, average, peak)
Spectral Bands	Blue (475 nm center, 32 nm bandwidth), Green (560 nm center, 27 nm bandwidth), Red (668 nm center, 14 nm bandwidth), Red Edge (717 nm center, 12 nm bandwidth), Near-IR (842 nm center, 57 nm bandwidth)
Thermal	FLIR LWIR thermal infrared 7.5 -13.5um radiometrically calibrated
Sensor Resolution	2064 x 1544 (3.2MP per MS band) 4112 x 3008 (12MP panchromatic band) 320 x 256 thermal infrared
Multispec GSD @120m (per multispec band)	5.28 cm per pixel
Panchro & Pansharpened GSD @120m	2.49 cm per pixel
Thermal GSD @120m	33.5 cm per pixel
Capture Rate (All bands, RAW, DNG format)	2 capture per second raw DNG
Field of View	50° HFOV x 38° VFOV (MS) 46° HFOV x 35° VFOV (PAN) 48° x 40° (thermal)
Storage	CFexpress Card
IP Rating	IP4X
Interfaces	3 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. CF Express for storage.

