Trinity™ Pro Cameras

Fully integrated, easy to swap and well protected

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TRINITY PRO P5

Phase One P5

Medium Format RGB Camera

The Phase One P5 is the revolutionary flagship 128MP Medium Format camera that transcends its role as a mere camera – it's a survey-grade instrument set to redefine the way you capture.

ⓘ

Achieve exceptional results, down to 0.3/0.8 cm RMS XY/Z* absolute accuracy, making your data impeccably trustworthy. When paired with the Trinity Pro, the P5 swiftly covers large areas with survey-grade precision, significantly reducing time and costs compared to conventional methods. The electronic global shutter, combined with metrically calibrated lense and sensor, reduces the necessity for extensive software corrections caused by pixel distortion, ensuring the preservation of high-quality data.

**Using high precision PPK and accurate ground control points.*

Phase One P5
Technical Specifications

Sensor Resolution	128 MP
Sensor Type	CMOS
Sensor Size	Medium Format
Shutter Type	Electronic Global Shutter
Dynamic Range	80 dB
Max Frame Rate	4 fps
Storage	CF Express Card up to 2TB
Lens Options	80 mm (HFOV: 32° VFOV: 23) 35 mm (HFOV: 66° VFOV: 49)

80 mm Option	**GSD @60m**	0.26 cm/px
	GSD @120m	0.52 cm/px
	Coverage @60m AGL	67 ha (0.26cm/px GSD, 70% overlap)
	Coverage @120m AGL	135 ha (0.51cm/px GSD, 70% overlap)
35 mm Option	**GSD @60m**	0.59 cm/px
	GSD @120m	1.18 cm/px
	Coverage @60m AGL	154 ha (0.59cm/px GSD, 70% overlap)
	Coverage @120m AG	309 ha (1.18cm/px GSD, 70% overlap)

Sample Data

FLIGHT ALTITUDE
60 m

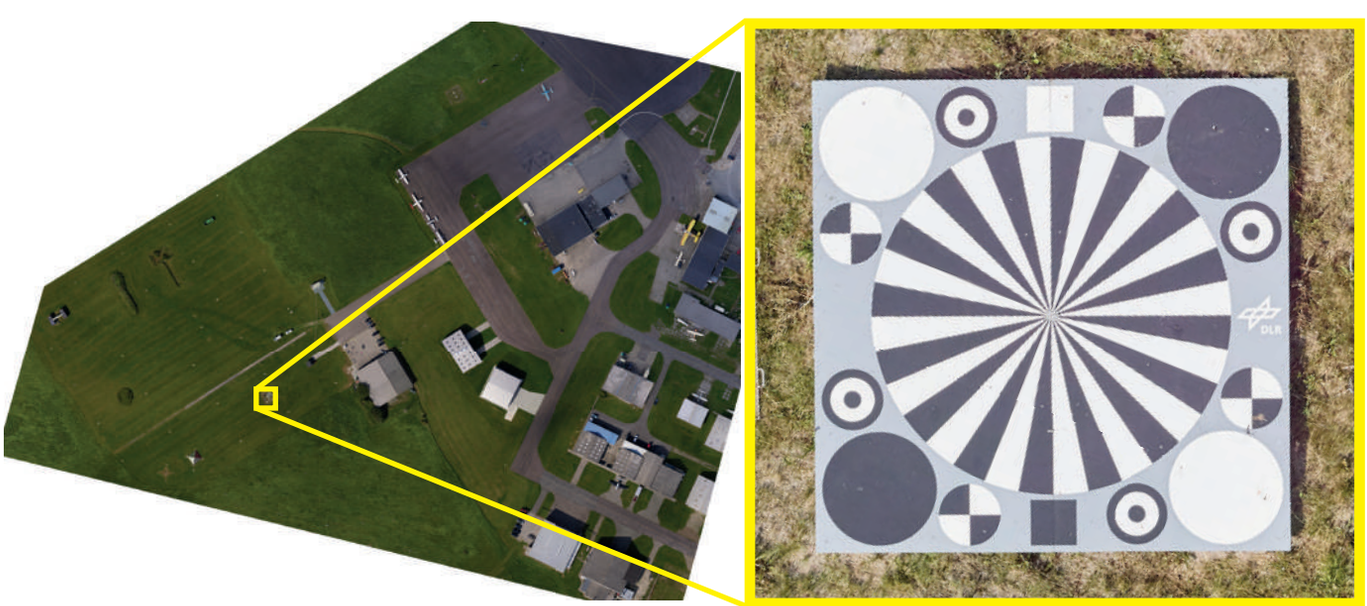
GSD
0.26 cm/px

AREA
14 ha

FLIGHT SPEED
18 m/s

IMAGES
1804

FLIGHT TIME
12.40 min



TRINITY PRO SONY ILX-LR1

Sony ILX-LR1
RGB Camera

The SONY ILX-LR1 camera, with its cutting-edge high-accuracy capabilities and expansive coverage, seamlessly integrates into Quantum Systems drones and allows direct camera control, while delivering exceptional image quality.

ⓘ

The camera harnesses advanced sensor technology and processing power, resulting in a compact and lightweight solution that elevates project efficiency. Additionally, users have the flexibility to customize settings to suit any mission, reducing data load and streamlining workflows, while maintaining image quality. This makes it an ideal choice for commercial mapping missions.

Sony ILX-LR1
Technical Specifications

Sensor Resolution	61.0 MP (9504 x 6336 px)
GSD @100m AGL	1.57cm/px
GSD @120m AGL	1.88cm/px
Coverage @120m AGL	491 ha (1.88cm/px GSD, 70% overlap)
Coverage with 0.7cm/px GSD	184 ha (@45m AGL, 70% overlap)
Sensor type	Exmor R CMOS
Sensor format	35mm full frame
Sensor size	35.7 x 23.8 mm
Lens	f=24mm, F2.8
Payload weight (ready to fly)	600g

Sample Data

FLIGHT ALTITUDE
100m

GSD
1.57 cm/px

AREA
60 ha

OVERLAP
79%

FLIGHT SPEED
17 m/s

IMAGES
973

FLIGHT TIME
17 min

TRINITY PRO SONY RX1 R II

Sony RX1 RII
RGB Camera

The Sony RX1 RII meets the highest demands for RGB image quality and resolution in everyday surveying and monitoring applications, especially in the mining, civil survey, and agricultural sector.

ⓘ

With its resolution of 42.4 megapixels, the Sony RX1RII is ideal for all applications where the highest requirements are placed on the images. The output possibilities vary from precise data sets like digital ortho photos (DOP), digital terrain models (DTM), digital surface models (DSM), high-resolution point clouds and detailed 3D models.

Sony RX1 RII
Technical Specifications

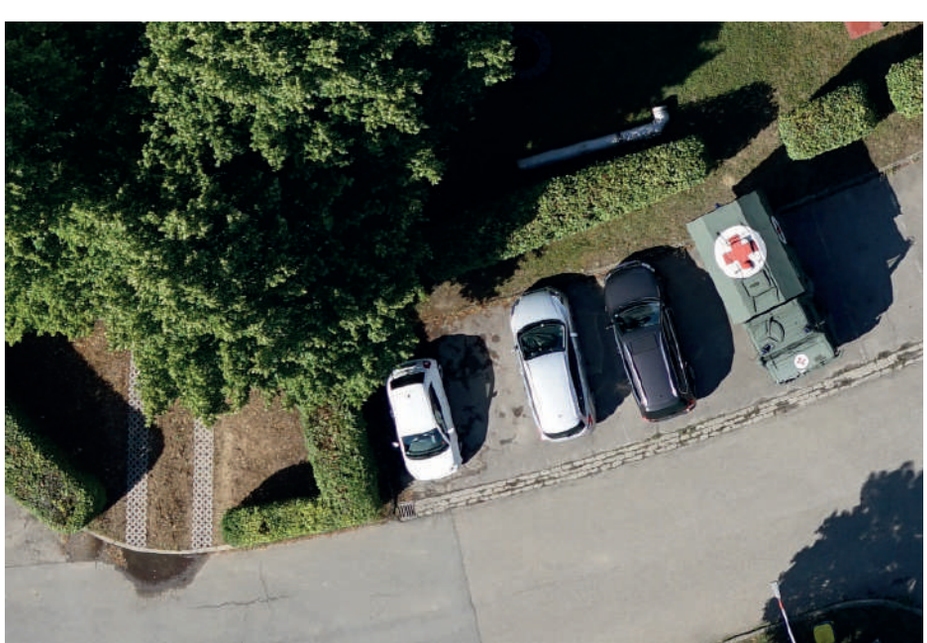
Sensor Resolution	42.4 MP (7952 × 5304 px)
GSD	1.29 cm @100m AGL
Trigger Interval	1.4 seconds
Sensor Type	CMOS
Sensor Format	Full frame
Sensor Size	35.9 mm × 24.0 mm
Lens	f=35 mm, F2.0
Payload Weight RTF	693,7 g
Storage	SD-Card (internal slot)

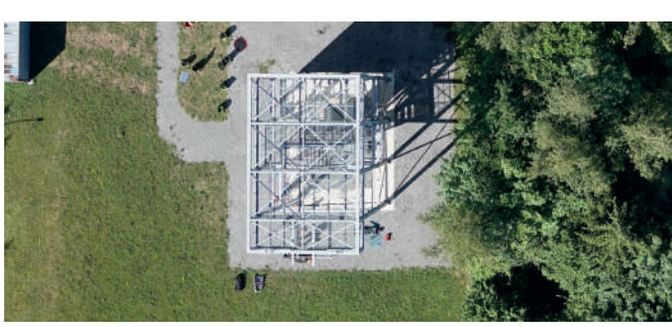
Sample Data

FLIGHT ALTITUDE
120 m | 393 ft AGL

FLIGHT SPEED
17 m/s

GSD
1.55 cm/px





Qube 640

LiDAR Scanner

The Qube 640 is a LiDAR sensor with a 176° FOV, integrated colorization through an 8MP camera, enhanced vegetation penetration and vertical scanning.

ⓘ

The Qube 640 is co-developed with YellowScan for Trinity Pro and Tactical drones. It features a selectable FOV (field of view) of up to 176°. Combined with Trinity's capabilities, it enables 32 km corridor scanning with one single flight. At 120° FOV, it improves productivity by 50% compared to its predecessor, the Qube 240.

The sensor ensures improved vegetation penetration, detailing foliage and trunks, and facilitates vertical scanning applications with reduced outer edge mismatches, thanks to the new IMU. An integrated 8MP RGB camera enables LiDAR capture and colorization in the same flight.

Qube 640
Technical Specifications

Scanner	Hesai XT32M2X
GNSS Inertial Solution	SBG Quanta Micro
Integrated Camera	8 MP (for colorization purposes)
Laser Range	300 m
Precision [1, 3]	3 cm
Accuracy [2, 3]	2.5 cm
Scanner FOV	176° x 40.3°
Shots per Second	640 000 points/sec
Echoes per Shot	Up to 3
Center Point Density @100m	34 -100 points/sqm
Max. Data Points generated [4]	1 920 000 points/sec

[1] Precision, also called reproducibility or repeatability, accounts for the variation in successive measurements taken on the same target.
[2] Accuracy is the degree of conformity of a measured position to its actual (true) value.
[3] 1 sigma @ 50 m, Nadir.
[4] Triple Echo.

Sample Data

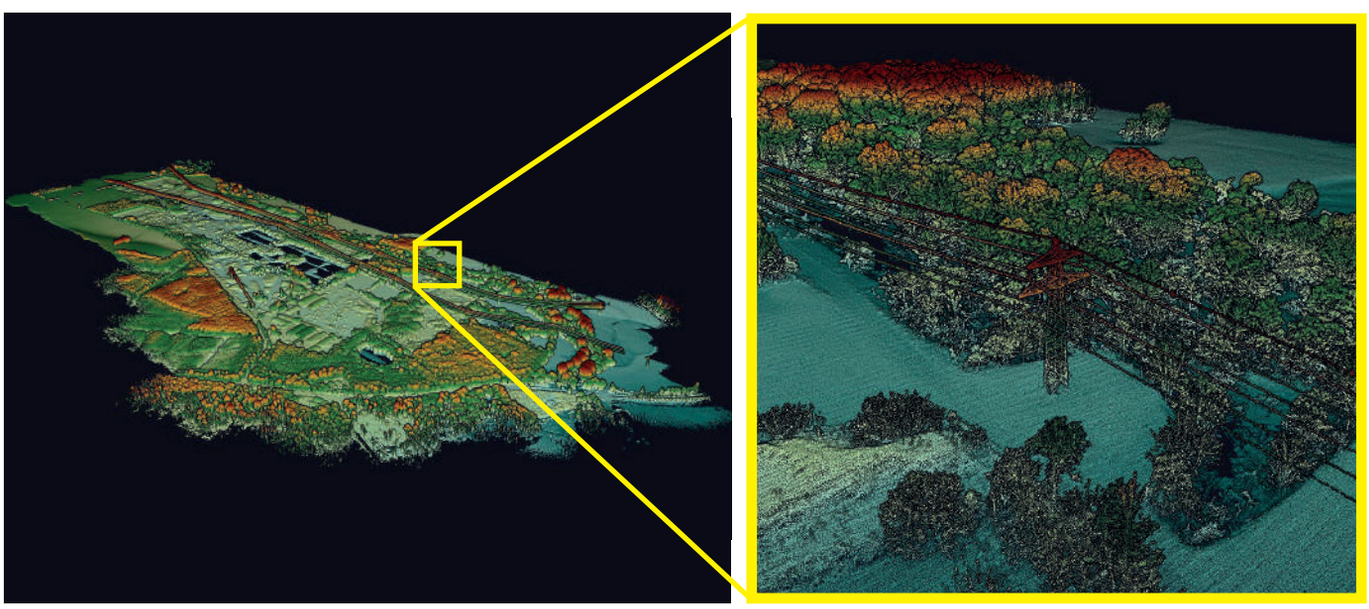
FLIGHT ALTITUDE
75 m

FOV
120°

FLIGHT TIME
42 min

FLIGHT SPEED
18 m/s

AREA
170 ha



TRINITY PRO QUBE 240

Qube 240

LiDAR Scanner

The Qube 240 is a geomatics grade LiDAR scanner providing essential information by generating an accurate point cloud of the processed environment through 240,000 distance measurements per second.

ⓘ

The Qube 240 produces images with an unmatched level of accuracy that is achieved with the help of the integrated Applanix APX15 INS. It generates precise, three-dimensional information using the shape of the earth and its surface characteristics. This information can then be used in applications, such as calculating stock volumes in mines, inspecting power lines, gathering elevation models of ground under dense vegetation, or for calculating biomass feedstocks. LiDAR technology can also be used for mapping infrastructure and for surveying large areas, even at night.

Qube 240
Technical Specifications

Wavelength	905 nm
Maximum Altitude	140 m AGL
Suggested Altitude	100 m AGL
Precision	1.8 - 2.5 cm*
Accuracy	< 3 cm**
Scanner Field of View	70°
Shots per Second	240,000
Point Density @100 m	50 -100 points/m²
Multi-echo Technology	up to 3 echoes per shot
Payload Weight RTF	948.7 g
Flight Time	60 minutes

- Class 1 (Eye Safe)
- Applanix POSPacTM UAV, GNSS and INS software for PPK (license for one year included)
- YellowScan Cloudstation Software to generate survey grade LAS files (license must be bought separately)

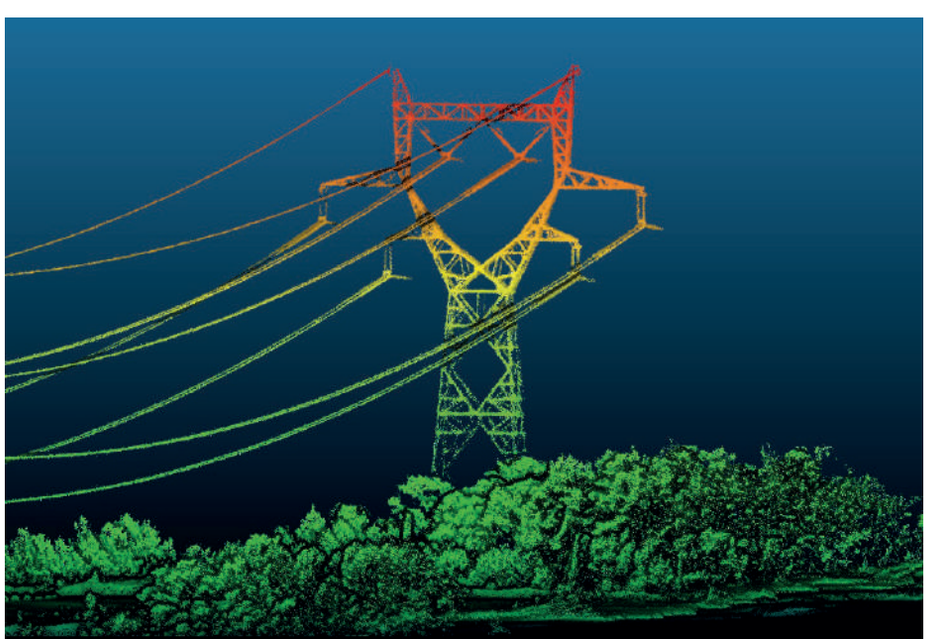
* Precision, also called reproducibility or repeatability, accounts for the variation in successive measurements taken on the same target. Depends on altitude AGL
**Accuracy is the degree of conformity of a measured position to its actual (true) value.

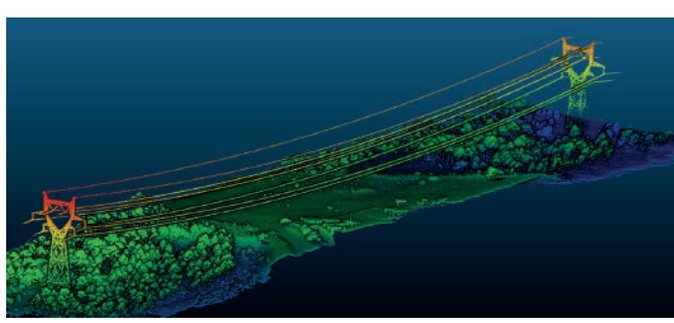
Sample Data

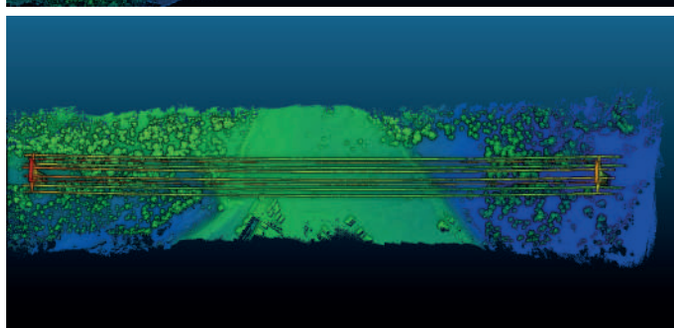
FLIGHT ALTITUDE
80 m | 262 ft AGL

FLIGHT SPEED
18 m/s

GSD
118 pts/sqm







TRINITY PRO OBLIQUE D2M

Oblique D2M

Five-lens RGB Camera

The Oblique D2M is a powerful oblique imaging system consisting of five high-resolution multidirectional cameras, making it the ideal tool for large scale 3D photogrammetry.

ⓘ

A fast trigger interval along with custom high-speed storage provides class-leading time efficiency without compromising data quality. The payload combines four oblique and one NADIR camera to capture complex geometries with ease. This ensures remarkable detail even on slanted surfaces and makes Oblique D2M destined for 3D mesh generation of high-rise areas, industrial environments, archaeological sites and alike.

Oblique D2M Technical Specifications

GSD	1.50 cm @100m AGL
Cameras	1 x NADIR, 4 x oblique
Sensor Resolution	26 MP (6252 x 4168 px)
Total Resolution	130 MP
Trigger Interval	≥ 0.8 seconds
Sensor Type	CMOS
Sensor Format	APS-C
Sensor Size	23.5 x 15.6 mm
Focal Length	25 mm NADIR, 35 mm (oblique)
Payload Weight RTF	833.7 g
Flight Time	60 minutes
Storage	High speed data storage device (640 GB)

Sample Data

FLIGHT ALTITUDE
120 m | 393 ft AGL

FLIGHT SPEED
17 m/s

GSD
1.8 cm/px

TRINITY PRO MicaSense Altum-PT

MicaSense Altum-PT

RGB, Multispectral and Thermal Camera

The Altum-PT is the best-in-class multispectral camera with synchronized thermal images ideal for production agriculture, phenotyping, and environmental monitoring.

ⓘ

The MicaSense Altum-PT captures synchronized multispectral, thermal, and panchromatic data for pixel-aligned outputs at high resolutions for advanced vegetation research applications. This includes plant health monitoring from early emergence on, with thermal data for water stress and irrigation system monitoring.

Altum-PT
Technical Specifications

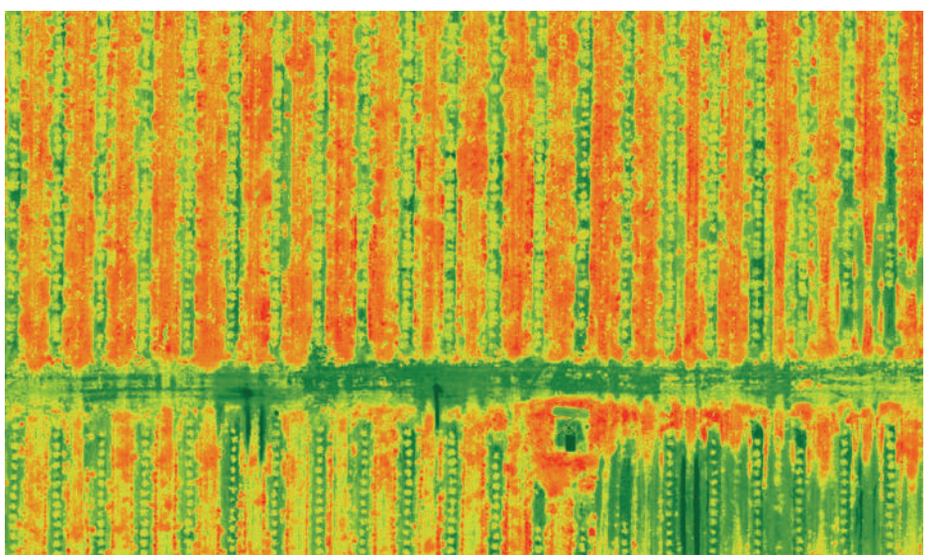
Sensor Resolution	2064 x 1544 (3.2MP per MS band), 4112 x 3008 (12MP per PAN band) 320 × 256 thermal infrared
Spectral Bands	Blue (475 nm center, 32 nm bandwidth), Green (560 nm center, 27 nm bandwidth), Red (668 nm center, 14 nm bandwidth), Red Edge (717 nm center, 12 nm bandwidth), NIR 842 nm center, 57 nm bandwidth)
RGB Color Output	12.4 MP (global shutter, aligned with all bands)
Thermal	FLIR LWIR thermal infrared 7.5-13.5um radiometrically calibrated
Multispectral GSD	5.28 cm per pixel at 120 m (per multispectral band)
Thermal GSD	33.5 cm per pixel at 120 m
Panchromatic GSD	2.49 cm per pixel at 120 m
Trigger Interval	1.0 seconds
Interfaces	3 configurable GPI /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.
Field of View	50° HFOV x 38° VFOV (multispectral) 46° HFOV x 35° VFOV (panchromatic) 48° x 39° (thermal)
Storage	CFexpress Card
Payload Weight RTF	733.7 g
Flight Time	60 min
Dimensions	11.0 x 8.0 x 6.9 cm (4.3 in x 3.1 in x 2.7 in)
External Power	7.0 V - 25.2 V
Power Input	5.5/7.0/10W (standby, average, peak)

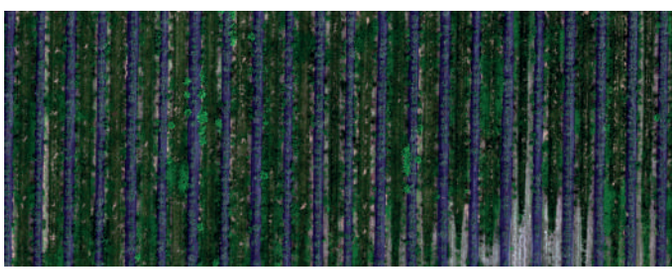
Sample Data

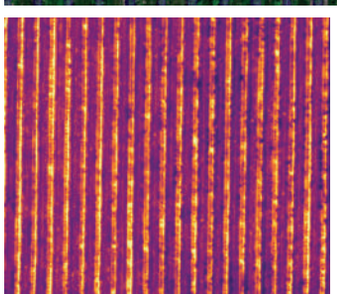
FLIGHT ALTITUDE
60 m | 197 ft AGL

FLIGHT SPEED
17 m/s

GSD
1.27 cm/px







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