

PUNTA DE RIELES

Processing Report

27 May 2024



Survey Data

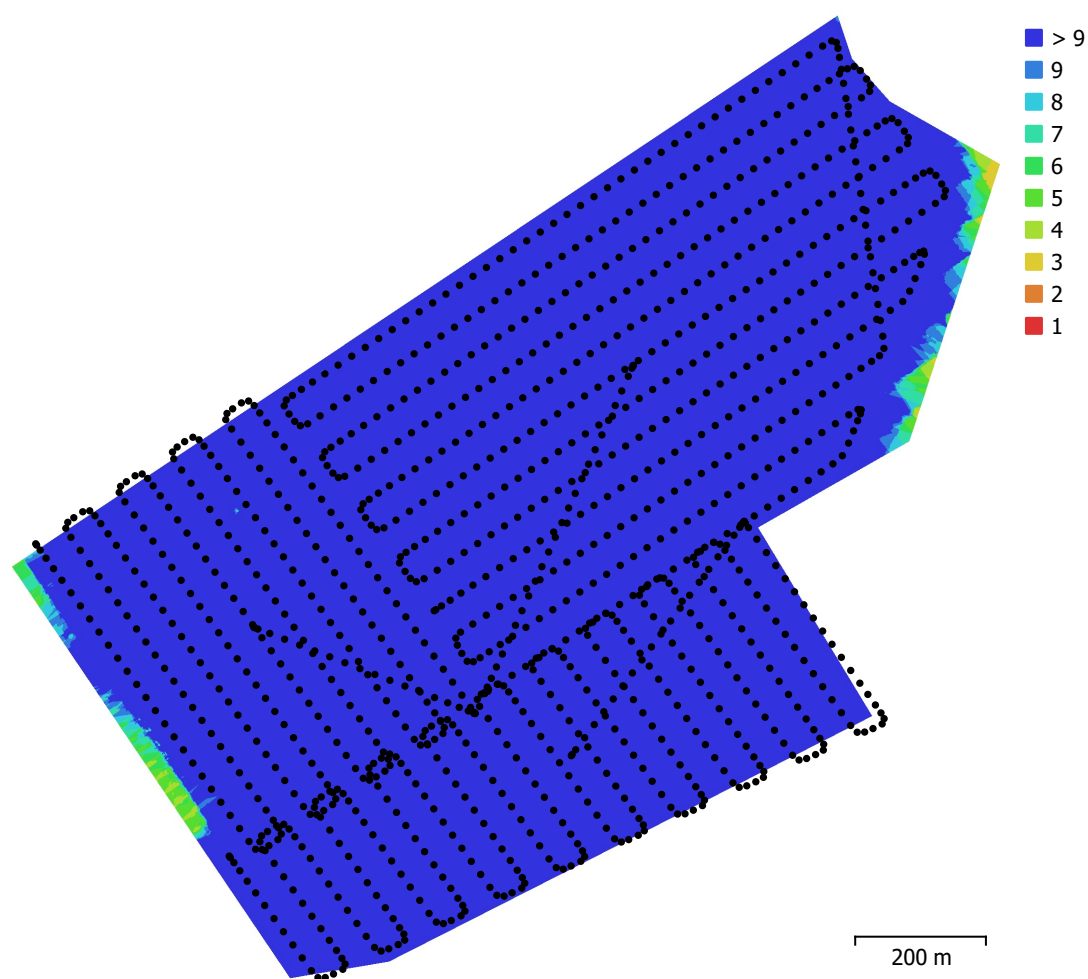


Fig. 1. Camera locations and image overlap.

Number of images:	1,223	Camera stations:	1,223
Flying altitude:	122 m	Tie points:	669,675
Ground resolution:	3.21 cm/pix	Projections:	4,537,003
Coverage area:	1.14 km ²	Reprojection error:	0.926 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
M3E (12.29mm)	5280 x 3956	12.29 mm	3.36 x 3.36 μm	Yes

Table 1. Cameras.

Camera Calibration

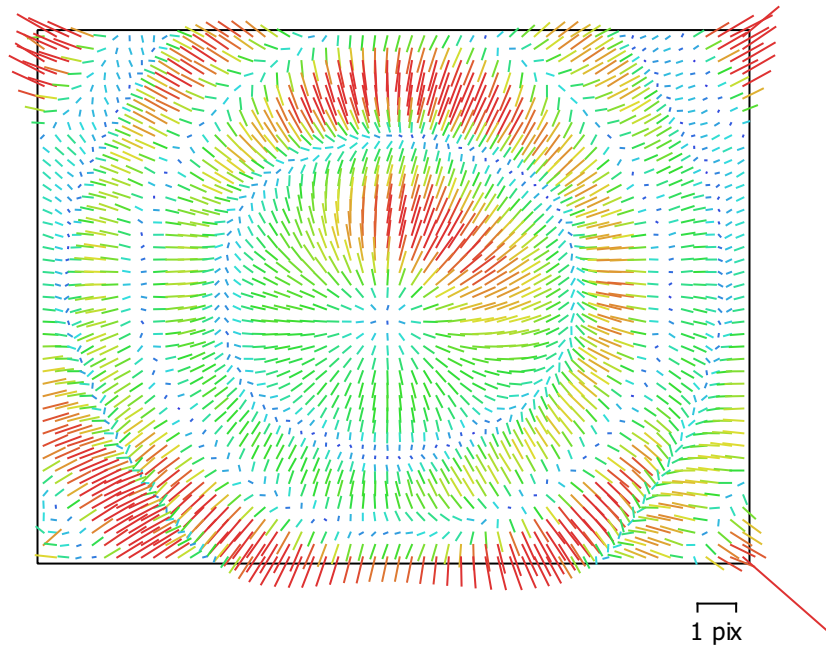


Fig. 2. Image residuals for M3E (12.29mm).

M3E (12.29mm)

1223 images, precalibrated

Type	Resolution	Focal Length	Pixel Size
Frame	5280 x 3956	12.29 mm	3.36 x 3.36 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	3707.54	0.019	1.00	-0.02	-0.03	-0.28	0.15	-0.17	0.01	0.03
Cx	22.9529	0.0074		1.00	0.04	-0.00	-0.00	0.01	0.26	-0.02
Cy	-62.6065	0.0069			1.00	-0.01	0.02	-0.03	-0.03	0.15
K1	-0.105195	8.6e-06				1.00	-0.97	0.92	-0.01	-0.04
K2	-0.000313955	2.2e-05					1.00	-0.98	0.01	0.04
K3	-0.0178573	1.6e-05						1.00	-0.01	-0.05
P1	-2.5624e-05	3.6e-07							1.00	0.01
P2	-0.000221417	3.5e-07								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

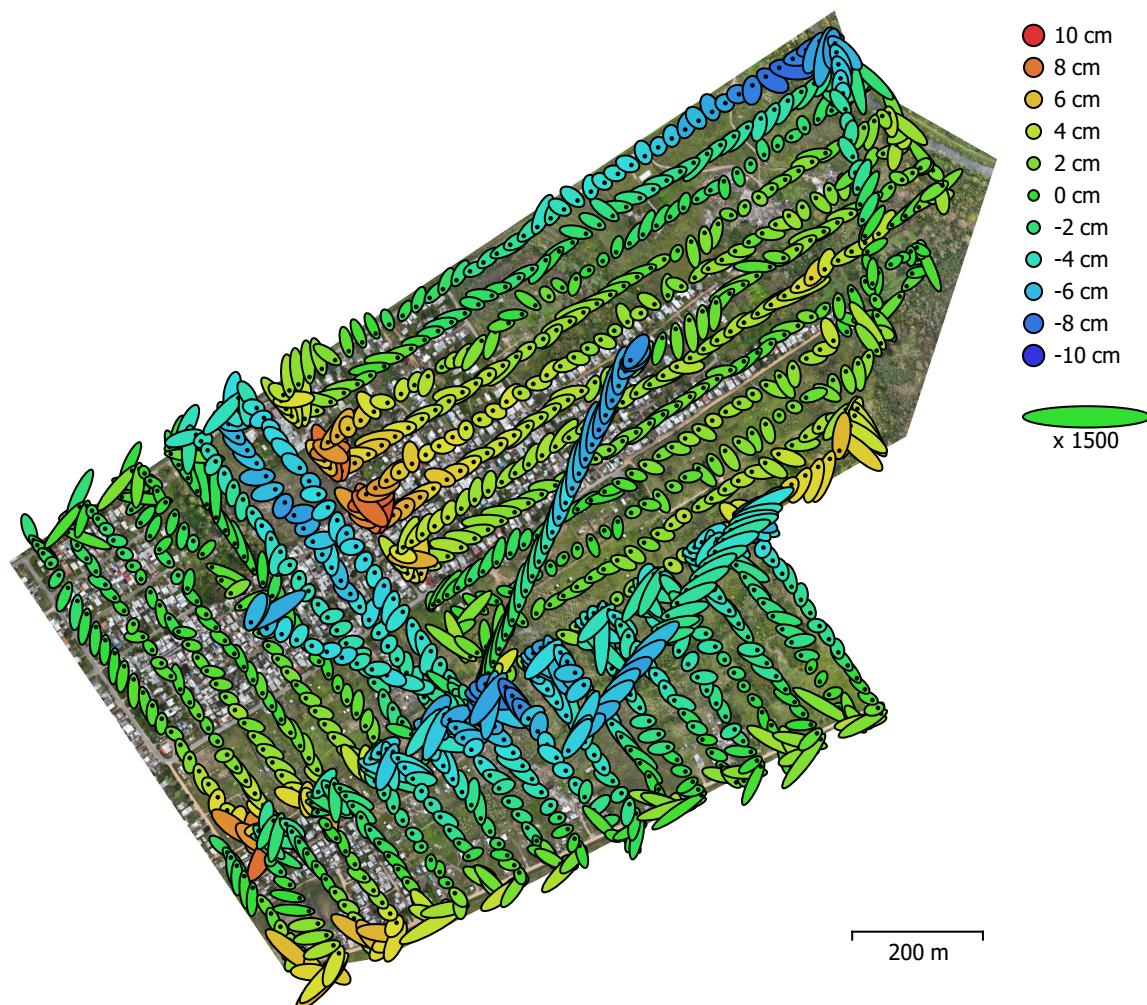


Fig. 3. Camera locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated camera locations are marked with a black dot.

X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
1.59048	1.6199	3.45259	2.27018	4.13208

Table 3. Average camera location error.

X - Easting, Y - Northing, Z - Altitude.

Digital Elevation Model

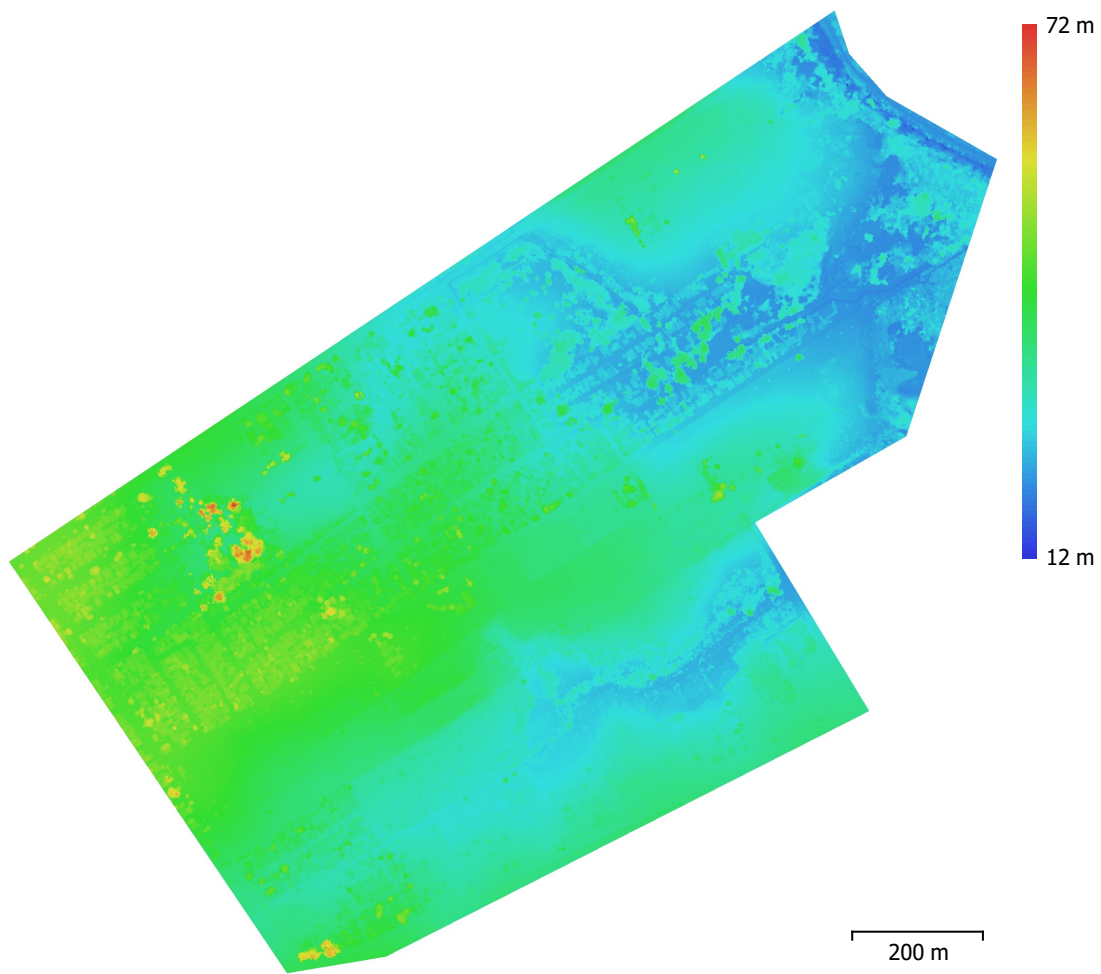


Fig. 4. Reconstructed digital elevation model.

Resolution: 6.41 cm/pix
Point density: 243 points/m²

Processing Parameters

General

Cameras 1223

Aligned cameras 1223

Shapes

Polygon 1

Coordinate system WGS_1984_UTM_Zone_21S

Coordinate system WGS 84 / UTM zone 21S (EPSG::32721)

Rotation angles Yaw, Pitch, Roll

Tie Points

Points 669,675 of 744,910

RMS reprojection error 0.266858 (0.925571 pix)

Max reprojection error 0.801822 (68.3869 pix)

Mean key point size 3.12174 pix

Point colors 3 bands, uint8

Key points No

Average tie point multiplicity 7.20088

Alignment parameters

Accuracy High

Generic preselection No

Reference preselection Source

Key point limit 40,000

Key point limit per Mpx 1,000

Tie point limit 4,000

Exclude stationary tie points Yes

Guided image matching No

Adaptive camera model fitting Yes

Matching time 4 hours 5 minutes

Matching memory usage 6.07 GB

Alignment time 12 minutes 6 seconds

Alignment memory usage 497.69 MB

Date created 2024:05:24 17:31:31

Software version 2.1.0.17532

File size 263.00 MB

Depth Maps

Count 1223

Depth maps generation parameters

Quality High

Filtering mode Aggressive

Max neighbors 16

Processing time 15 hours 55 minutes

Memory usage 7.12 GB

Date created 2024:05:25 09:39:26

Software version 2.1.0.17532

File size 9.49 GB

Point Cloud

Points 503,225,692

Point attributes

Color 3 bands, uint8

Normal

Confidence 1 - 47

Point classes	
Created (never classified)	503,225,692
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Max neighbors	16
Processing time	15 hours 55 minutes
Memory usage	7.12 GB
Point cloud generation parameters	
Processing time	5 hours 56 minutes
Memory usage	13.02 GB
Date created	2024:05:25 15:36:11
Software version	2.1.0.17532
File size	7.08 GB
DEM	
Size	24,534 x 25,386
Coordinate system	WGS 84 (EPSG::4326)
Reconstruction parameters	
Source data	Point cloud
Interpolation	Enabled
Processing time	3 minutes 33 seconds
Memory usage	321.61 MB
Date created	2024:05:25 15:39:46
Software version	2.1.0.17532
File size	1.56 GB
Orthomosaic	
Size	49,066 x 50,772
Coordinate system	WGS 84 (EPSG::4326)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Enable ghosting filter	No
Processing time	2 hours 4 minutes
Memory usage	2.52 GB
Date created	2024:05:27 09:27:55
Software version	2.1.0.17532
File size	34.24 GB
System	
Software name	Agisoft Metashape Professional
Software version	2.1.0 build 17532
OS	Windows 64 bit
RAM	63.93 GB
CPU	Intel(R) Core(TM) i7-9700F CPU @ 3.00GHz
GPU(s)	Intel(R) FPGA Emulation Device Radeon(TM) RX 460 Graphics (Baffin)