

Barrio La Santa

Processing Report
07 July 2023



Survey Data

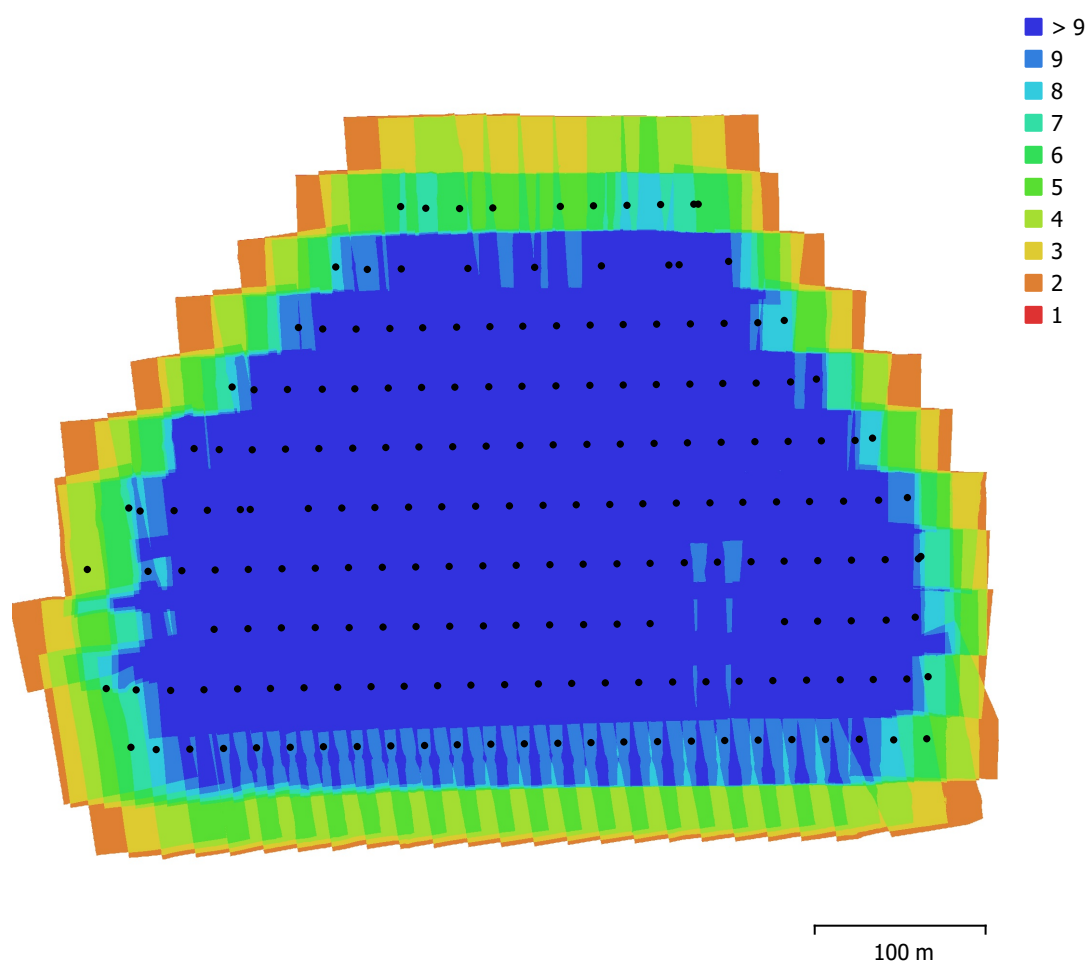


Fig. 1. Camera locations and image overlap.

Number of images:	206	Camera stations:	197
Flying altitude:	93.5 m	Tie points:	208,039
Ground resolution:	2.32 cm/pix	Projections:	702,672
Coverage area:	0.197 km ²	Reprojection error:	0.859 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310 (8.8mm)	4864 x 3648	8.8 mm	2.61 x 2.61 μm	No

Table 1. Cameras.

Camera Calibration

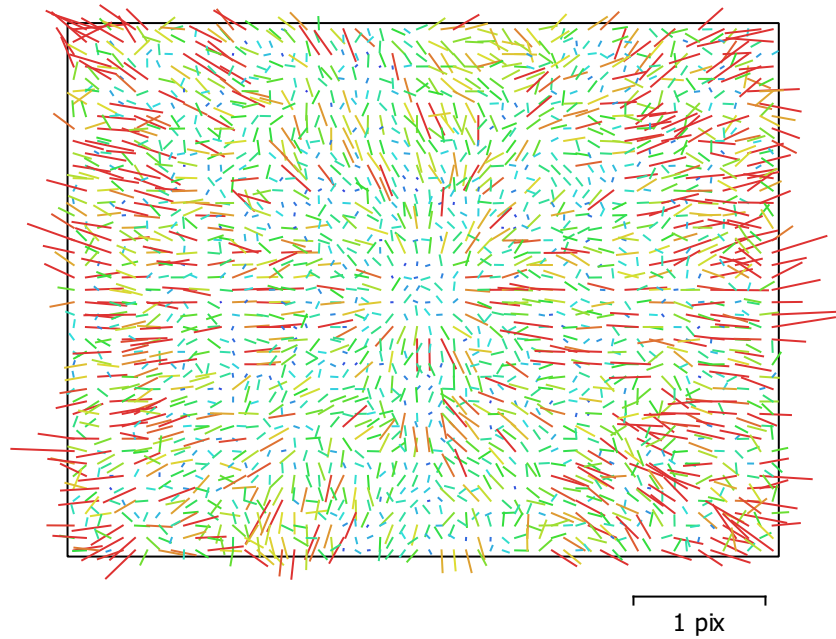


Fig. 2. Image residuals for FC6310 (8.8mm).

FC6310 (8.8mm)

206 images

Type
Frame

Resolution
4864 x 3648

Focal Length
8.8 mm

Pixel Size
2.61 x 2.61 μm

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2
F	3685.64	1.8	1.00	0.49	0.69	-0.13	0.02	0.26	-0.44	0.53	-0.57	-0.03	-0.11
Cx	-5.00157	0.066		1.00	0.31	-0.11	-0.00	0.13	-0.22	0.26	-0.29	0.28	-0.10
Cy	16.3655	0.069			1.00	-0.10	0.03	0.19	-0.31	0.37	-0.40	-0.06	0.21
B1	-1.19492	0.023				1.00	-0.04	-0.03	0.05	-0.06	0.07	-0.04	0.02
B2	-1.12844	0.026					1.00	0.01	-0.01	0.01	-0.01	-0.02	0.00
K1	0.0186759	8.1e-05						1.00	-0.96	0.90	-0.85	-0.00	-0.03
K2	-0.106889	0.00051							1.00	-0.99	0.96	0.01	0.04
K3	0.212639	0.0012								1.00	-0.99	-0.01	-0.05
K4	-0.14373	0.00099									1.00	0.02	0.06
P1	-0.000191355	2.4e-06										1.00	-0.07
P2	-0.000403456	2.3e-06											1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

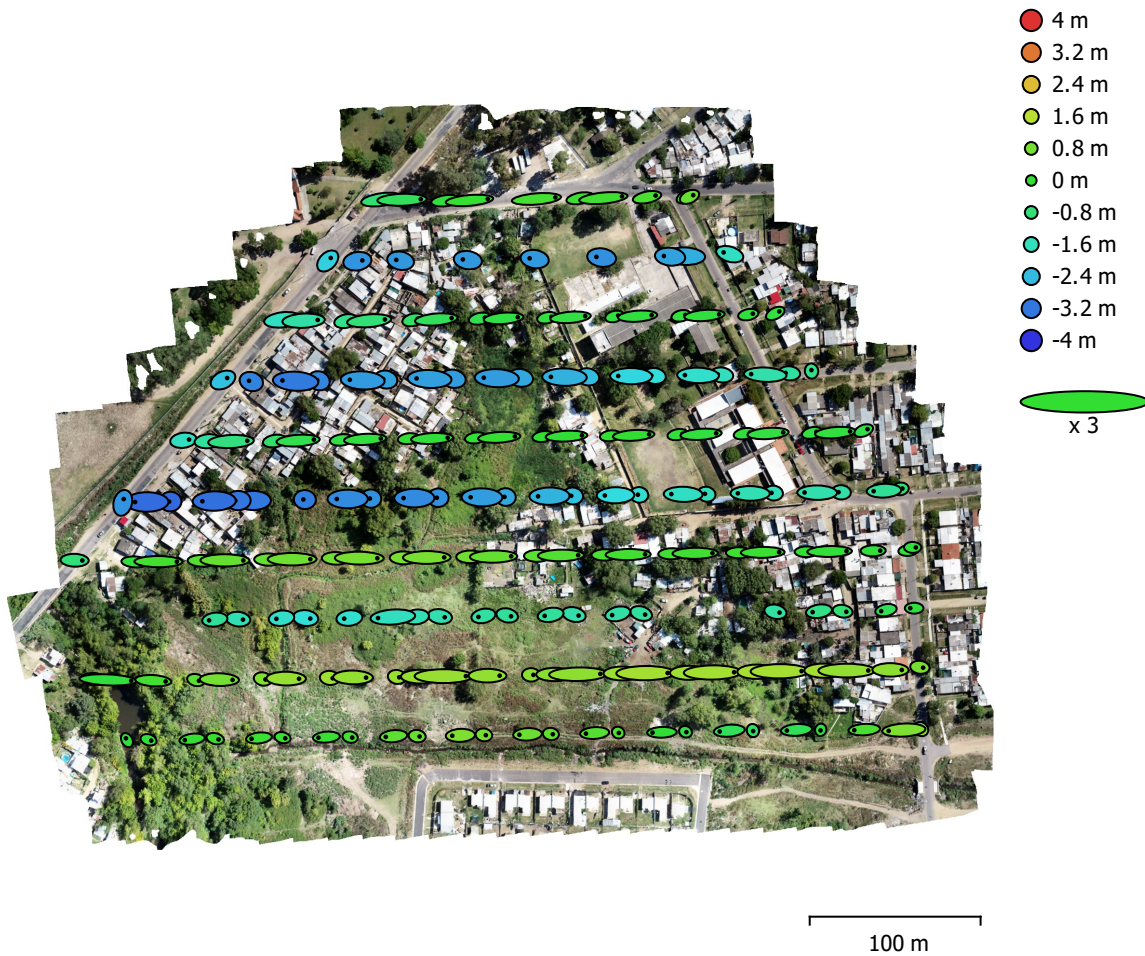


Fig. 3. Camera locations and error estimates.

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 (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
4.02155	0.324244	1.45392	4.0346	4.28857

Table 3. Average camera location error.

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

Ground Control Points



Fig. 4. GCP locations and error estimates.

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

Estimated GCP locations are marked with a dot or crossing.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
6	1.71699	0.711216	0.36794	1.85846	1.89453

Table 4. Control points RMSE.

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

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
1	-2.33317	-1.28543	0.662867	2.74507	0.831 (10)
2	1.87887	0.125011	-0.133102	1.88773	0.305 (8)
3	0.267171	0.0689619	-0.014477	0.276307	0.454 (14)
4	1.2036	-0.254169	0.243274	1.25397	0.269 (6)
5	1.31481	1.11582	-0.450018	1.78222	0.219 (6)
6	-2.33787	0.229325	-0.30539	2.36886	0.483 (12)
Total	1.71699	0.711216	0.36794	1.89453	0.501

Table 5. Control points.
X - Easting, Y - Northing, Z - Altitude.

Digital Elevation Model

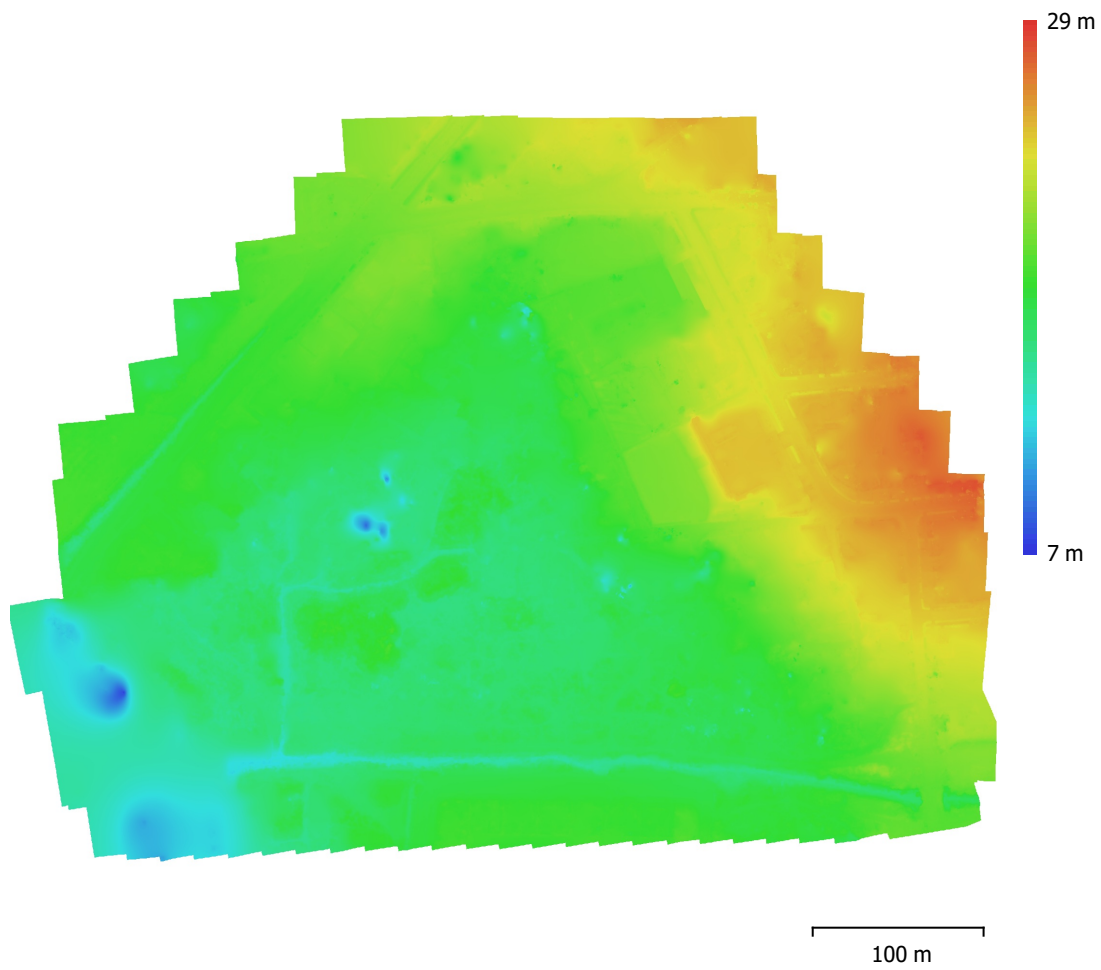


Fig. 5. Reconstructed digital elevation model.

Resolution: 4.64 cm/pix
Point density: 464 points/m²

Processing Parameters

General

Cameras	206
Aligned cameras	197
Markers	6
Shapes	
LineString	170
Polygon	14469
Coordinate system	WGS 84 / UTM zone 21S EGM08
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	208,039 of 224,710
RMS reprojection error	0.161307 (0.85934 pix)
Max reprojection error	1.14798 (40.1225 pix)
Mean key point size	4.49421 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.56463

Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	Yes
Matching time	7 minutes 54 seconds
Alignment time	46 seconds

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1, p2
Adaptive camera model fitting	No
Optimization time	2 seconds
File size	17.65 MB

Dense Point Cloud

Points	143,850,063
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	22 minutes 36 seconds

Dense cloud generation parameters

Processing time	26 minutes 42 seconds
File size	1.83 GB

DEM

Size	14,173 x 11,429
Coordinate system	WGS 84 / UTM zone 21S EGM08

Reconstruction parameters

Source data	Dense cloud
Interpolation	Enabled
Processing time	2 minutes 20 seconds
File size	402.54 MB

Orthomosaic

Size	24,871 x 18,779
Coordinate system	WGS 84 / UTM zone 21S EGM08
Colors	3 bands, uint8

Reconstruction parameters

Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	6 minutes 17 seconds
File size	3.47 GB

System

Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12070
OS	Windows 64 bit
RAM	63.93 GB
CPU	Intel(R) Core(TM) i7-9700F CPU @ 3.00GHz
GPU(s)	Radeon(TM) RX 460 Graphics (Baffin)