

Barrio Jardines De Las Torres

Processing Report
27 September 2021



Survey Data

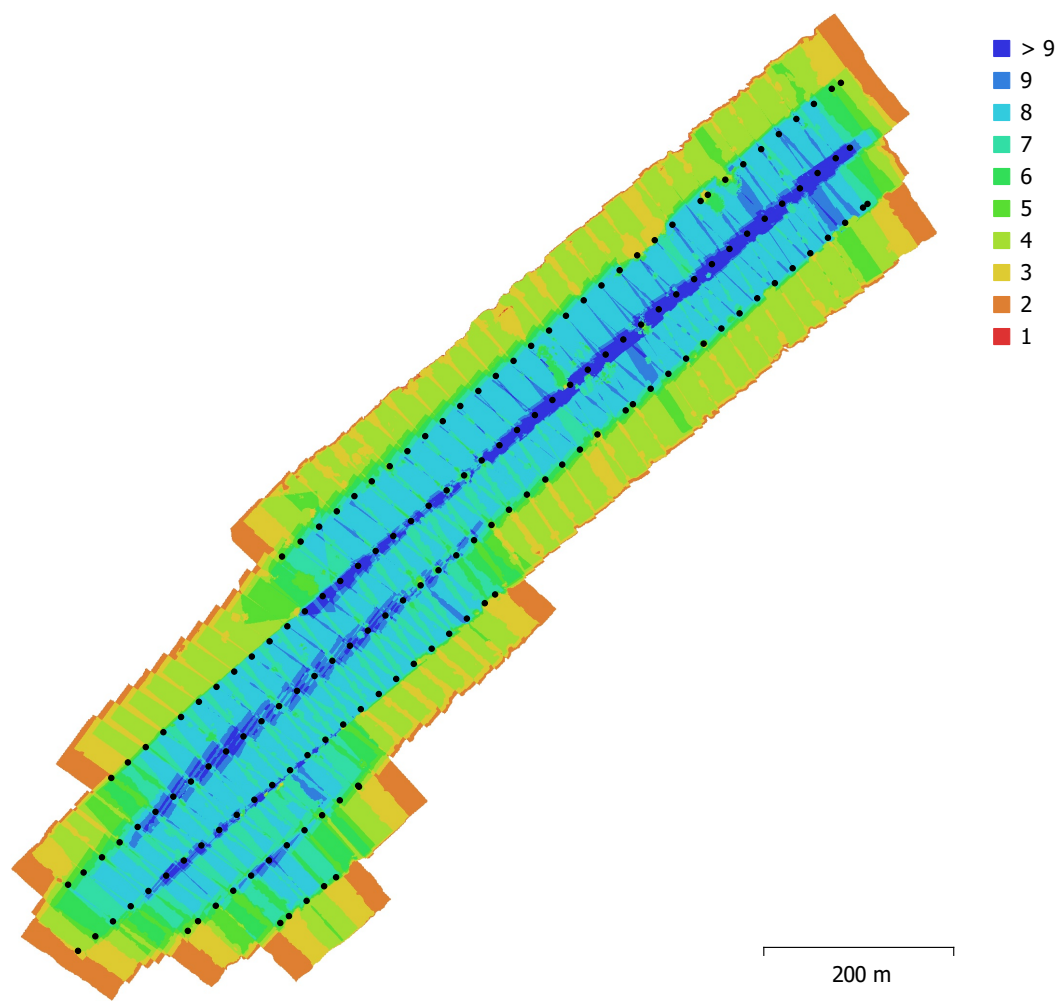


Fig. 1. Camera locations and image overlap.

Number of images:	165	Camera stations:	165
Flying altitude:	102 m	Tie points:	226,133
Ground resolution:	2.58 cm/pix	Projections:	628,967
Coverage area:	0.324 km ²	Reprojection error:	0.739 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

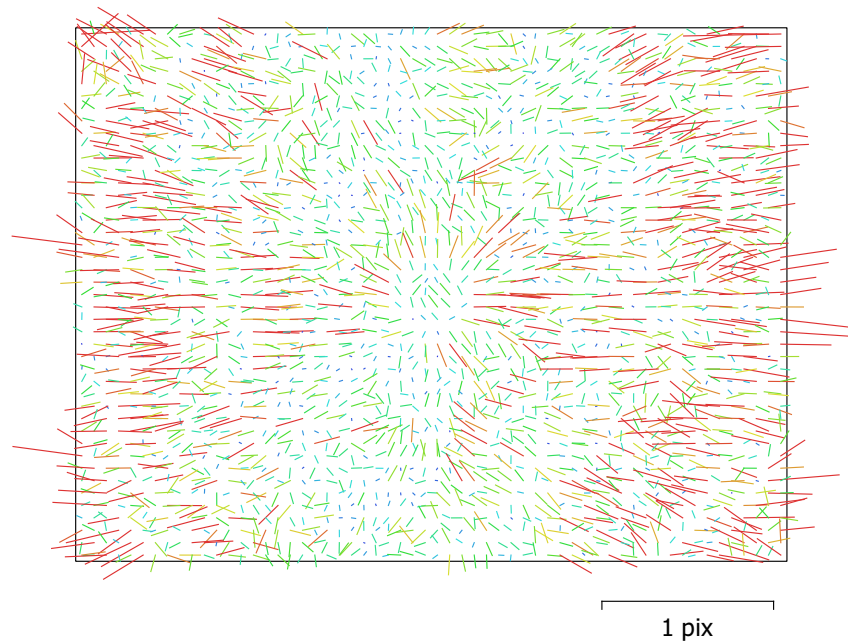


Fig. 2. Image residuals for FC6310 (8.8mm).

FC6310 (8.8mm)

165 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	3588.4	3	1.00	0.51	0.59	0.00	0.02	0.33	-0.58	0.68	-0.72	-0.09	-0.11
Cx	-7.63271	0.13		1.00	0.34	-0.01	-0.08	0.18	-0.31	0.36	-0.38	0.10	-0.07
Cy	13.7919	0.093			1.00	0.14	0.02	0.20	-0.35	0.40	-0.43	-0.10	0.23
B1	-0.656083	0.023				1.00	-0.00	0.01	-0.01	0.01	-0.01	0.00	-0.02
B2	-0.205709	0.026					1.00	0.01	-0.02	0.02	-0.02	0.03	0.02
K1	0.0161058	7.9e-05						1.00	-0.94	0.87	-0.81	-0.03	-0.04
K2	-0.0883714	0.00051							1.00	-0.98	0.96	0.05	0.07
K3	0.165536	0.0012								1.00	-0.99	-0.06	-0.08
K4	-0.104623	0.00097									1.00	0.06	0.08
P1	-0.000185719	2.4e-06										1.00	-0.07
P2	-0.000447092	3.3e-06											1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

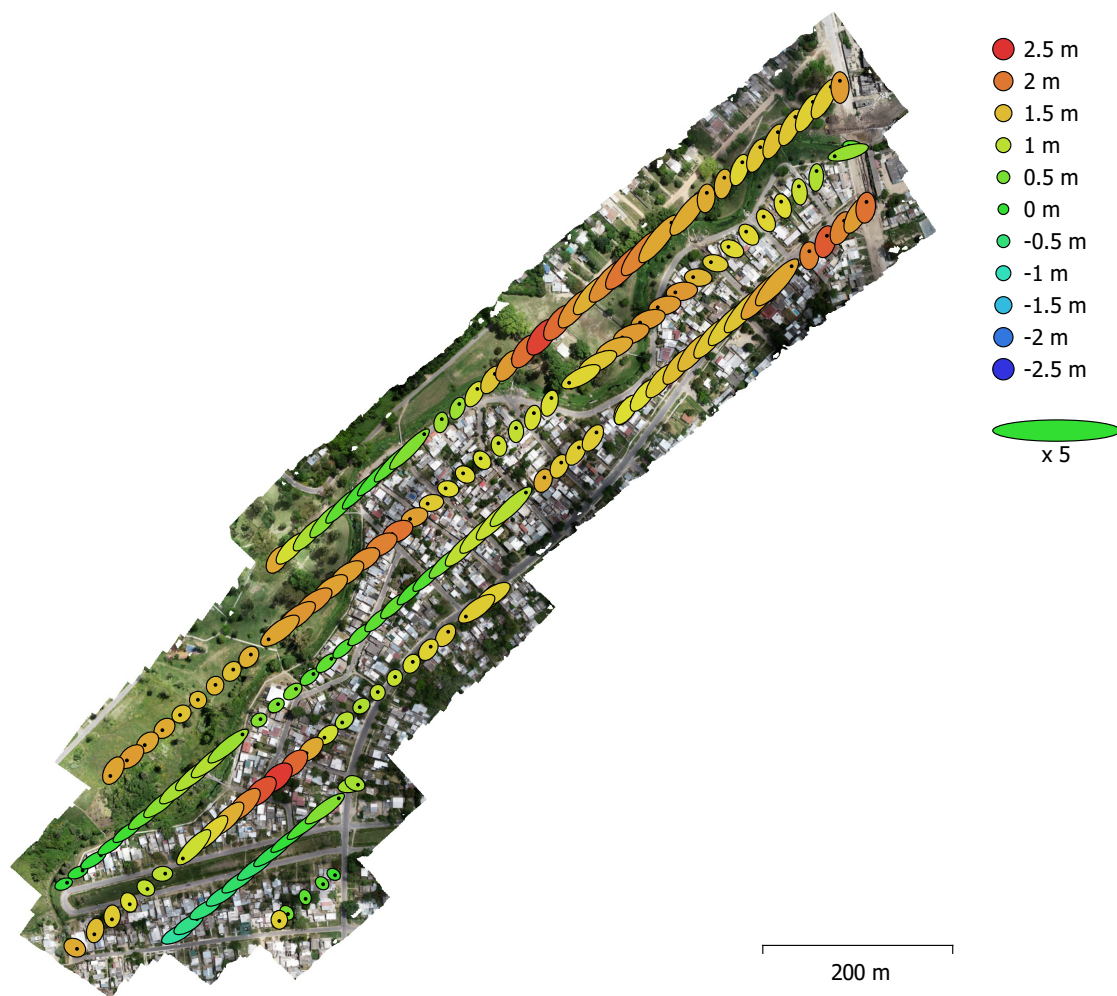


Fig. 3. Camera locations and error estimates.

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)
3.21633	3.16035	1.31654	4.50917	4.69743

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 (mm)	Y error (mm)	Z error (mm)	XY error (mm)	Total (mm)
8	1.47543	2.06651	1.28567	2.53917	2.8461

Table 4. Control points RMSE.

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

Label	X error (mm)	Y error (mm)	Z error (mm)	Total (mm)	Image (pix)
100	-1.37202	-3.47681	2.13217	4.30311	0.346 (9)
101	0.754412	3.81325	-2.05475	4.39682	0.337 (8)
102	-1.48184	0.333089	-0.973627	1.80409	0.386 (4)
103	3.0937	1.15443	1.70417	3.71589	0.374 (8)
104	0.709742	-2.30042	-0.672903	2.49969	0.194 (5)
106	-1.54238	0.0426504	-0.200744	1.55597	0.218 (3)
107	-0.486873	-0.421997	0.243816	0.688893	0.274 (6)
108	0.277609	0.786967	-0.225099	0.864323	0.238 (4)
Total	1.47543	2.06651	1.28567	2.8461	0.317

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

Digital Elevation Model

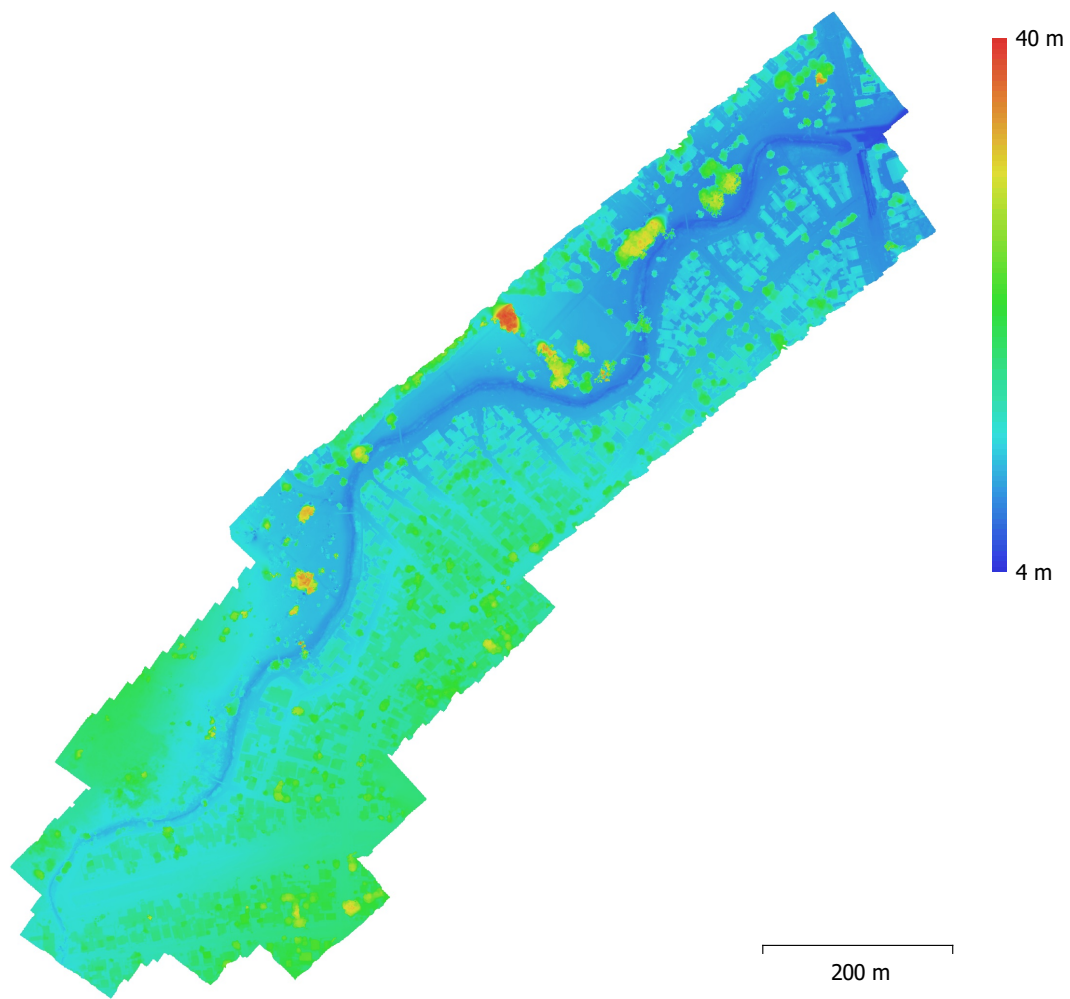


Fig. 5. Reconstructed digital elevation model.

Resolution: 5.16 cm/pix
Point density: 376 points/m²

Processing Parameters

General

Cameras	165
Aligned cameras	165
Markers	8
Coordinate system	WGS 84 / UTM zone 21S EGM08
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	226,133 of 238,054
RMS reprojection error	0.126858 (0.73869 pix)
Max reprojection error	0.653299 (30.3844 pix)
Mean key point size	4.85342 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.83334

Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Source
Key point limit	40,000
Tie point limit	4,000
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	9 minutes 54 seconds
Matching memory usage	1.30 GB
Alignment time	1 minutes 31 seconds
Alignment memory usage	112.12 MB

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1, p2
Adaptive camera model fitting	No
Optimization time	3 seconds
Software version	1.6.4.10928
File size	16.17 MB

Dense Point Cloud

Points	172,953,077
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	10 minutes 23 seconds
Memory usage	1.31 GB

Dense cloud generation parameters

Processing time	13 minutes 18 seconds
Memory usage	4.00 GB
Software version	1.6.4.10928
File size	2.20 GB

DEM

Size	27,387 x 29,181
Coordinate system	WGS 84 / UTM zone 21S EGM08

Reconstruction parameters

Source data	Dense cloud
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Interpolation	Enabled
Processing time	3 minutes 48 seconds
Memory usage	293.97 MB
Software version	1.6.4.10928
File size	556.41 MB
Orthomosaic	
Size	37,794 x 40,278
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	8 minutes 10 seconds
Memory usage	2.99 GB
Software version	1.6.4.10928
File size	2.96 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)