

Agisoft Metashape

Processing Report
29 October 2019



Survey Data

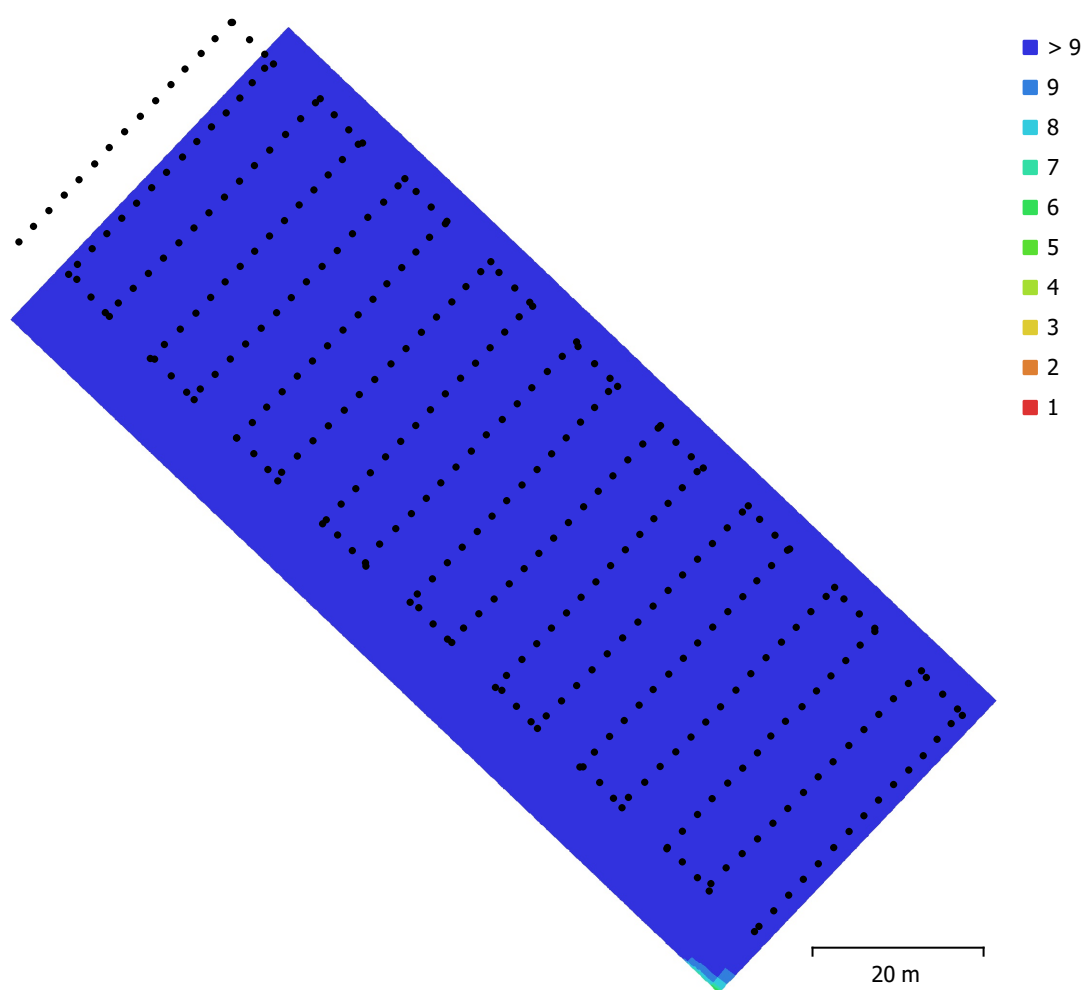


Fig. 1. Camera locations and image overlap.

Number of images:	332	Camera stations:	332
Flying altitude:	25.6 m	Tie points:	311,250
Ground resolution:	6.77 mm/pix	Projections:	925,002
Coverage area:	5.39e+003 m²	Reprojection error:	0.495 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310S (8.8mm)	5472 x 3648	8.8 mm	2.41 x 2.41 µm	No

Table 1. Cameras.

Camera Calibration

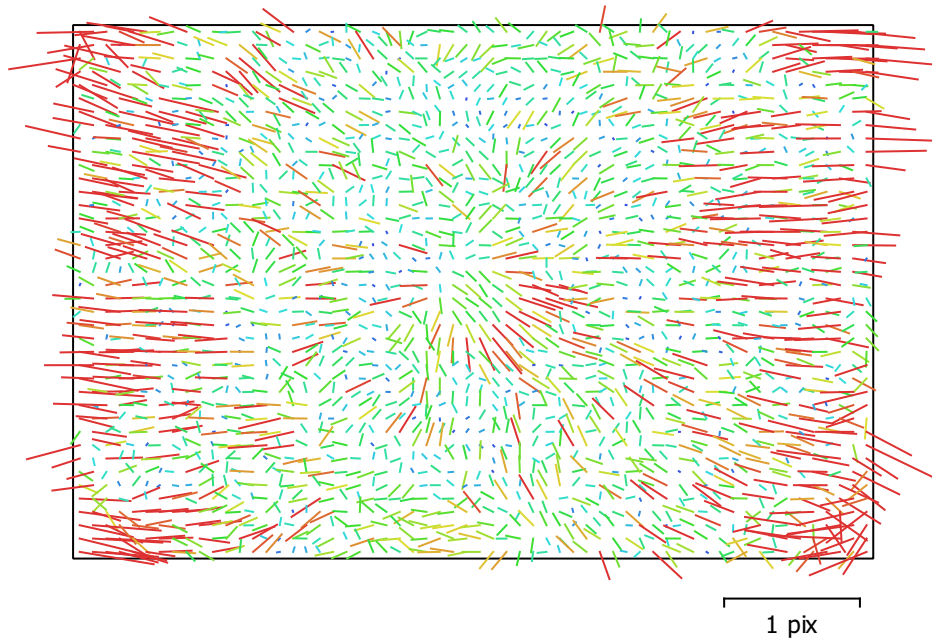


Fig. 2. Image residuals for FC6310S (8.8mm).

FC6310S (8.8mm)

332 images

Type
Frame

Resolution
5472 x 3648

Focal Length
8.8 mm

Pixel Size
2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2	P3	P4
F	3326.51	8.4	1.00	0.75	0.07	0.05	0.25	0.42	-0.89	0.94	-0.96	0.44	0.76	0.57	-0.55
Cx	8.88545	0.16		1.00	0.11	-0.08	0.33	0.33	-0.68	0.71	-0.72	0.45	0.59	0.42	-0.41
Cy	8.1803	0.11			1.00	-0.24	-0.08	0.03	-0.06	0.06	-0.06	0.06	0.18	-0.04	0.01
B1	0.245496	0.0052				1.00	-0.00	0.05	-0.06	0.06	-0.05	0.00	0.00	0.05	-0.04
B2	-0.0966292	0.0055					1.00	0.10	-0.22	0.23	-0.24	0.12	0.19	0.13	-0.12
K1	0.0161849	0.00023						1.00	-0.56	0.54	-0.52	0.69	0.35	0.31	-0.23
K2	-0.0435309	0.0005							1.00	-0.99	0.98	-0.45	-0.67	-0.53	0.51
K3	0.0652324	0.0011								1.00	-1.00	0.46	0.71	0.56	-0.54
K4	-0.0326018	0.00069									1.00	-0.46	-0.72	-0.57	0.54
P1	0.000271175	2e-006										1.00	0.54	0.08	-0.06
P2	0.00226254	7.4e-006											1.00	-0.05	0.01
P3	1.07194	0.0096												1.00	-0.96
P4	-0.411	0.0076													1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

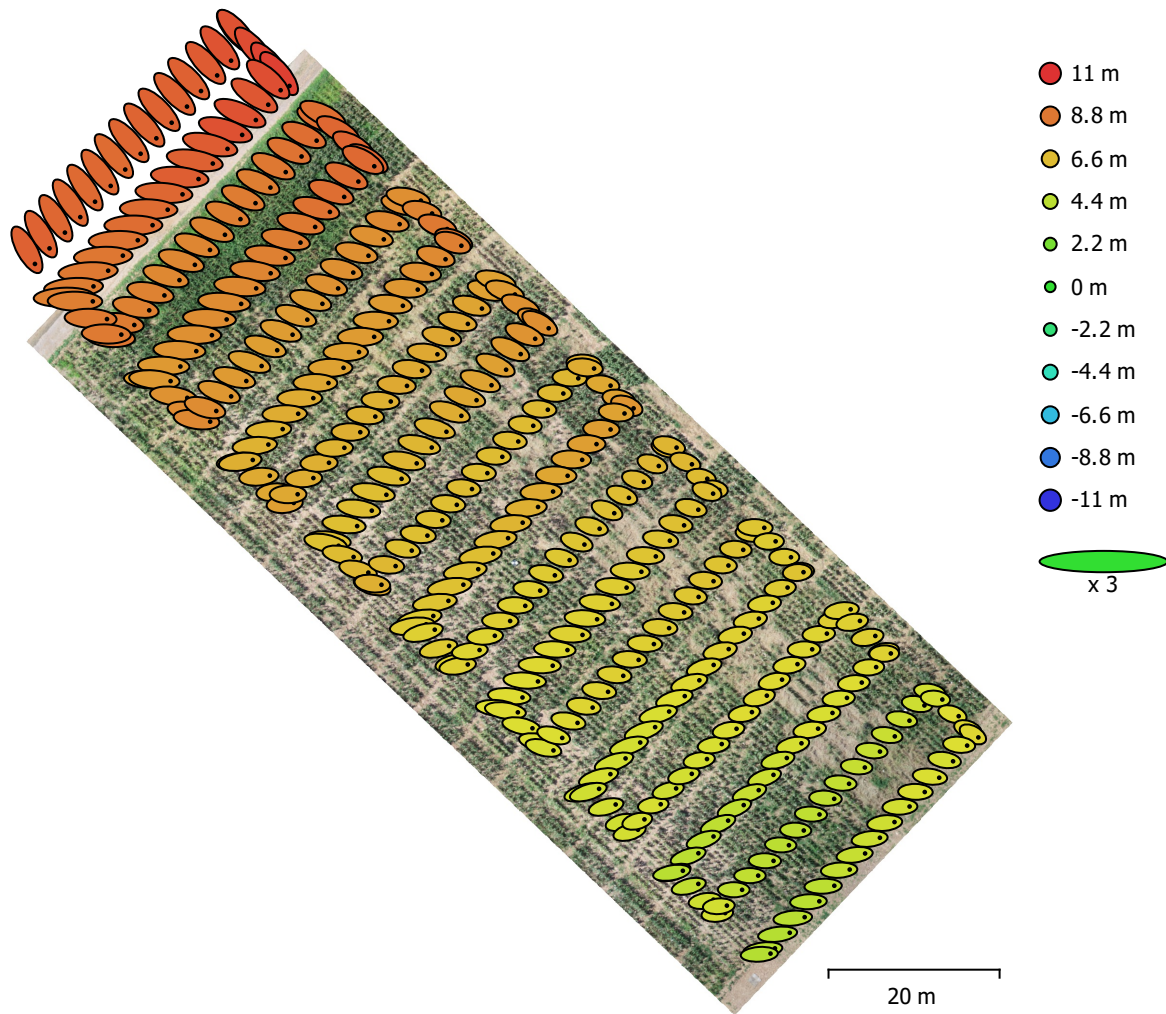


Fig. 3. Camera locations and error estimates.

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)
0.86888	0.31352	7.02652	0.923714	7.08697

Table 3. Average camera location error.

X - Longitude, Y - Latitude, 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)
3	1.34657	3.24956	0.118739	3.51751	3.51951

Table 4. Control points RMSE.

X - Longitude, Y - Latitude, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
1	1.20491	0.681538	-0.0295172	1.38462	0.319 (5)
2	0.672854	-4.31575	-0.200119	4.37247	0.587 (5)
5	-1.88021	3.54804	0.0371182	4.01562	0.222 (7)
Total	1.34657	3.24956	0.118739	3.51951	0.390

Table 5. Control points.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

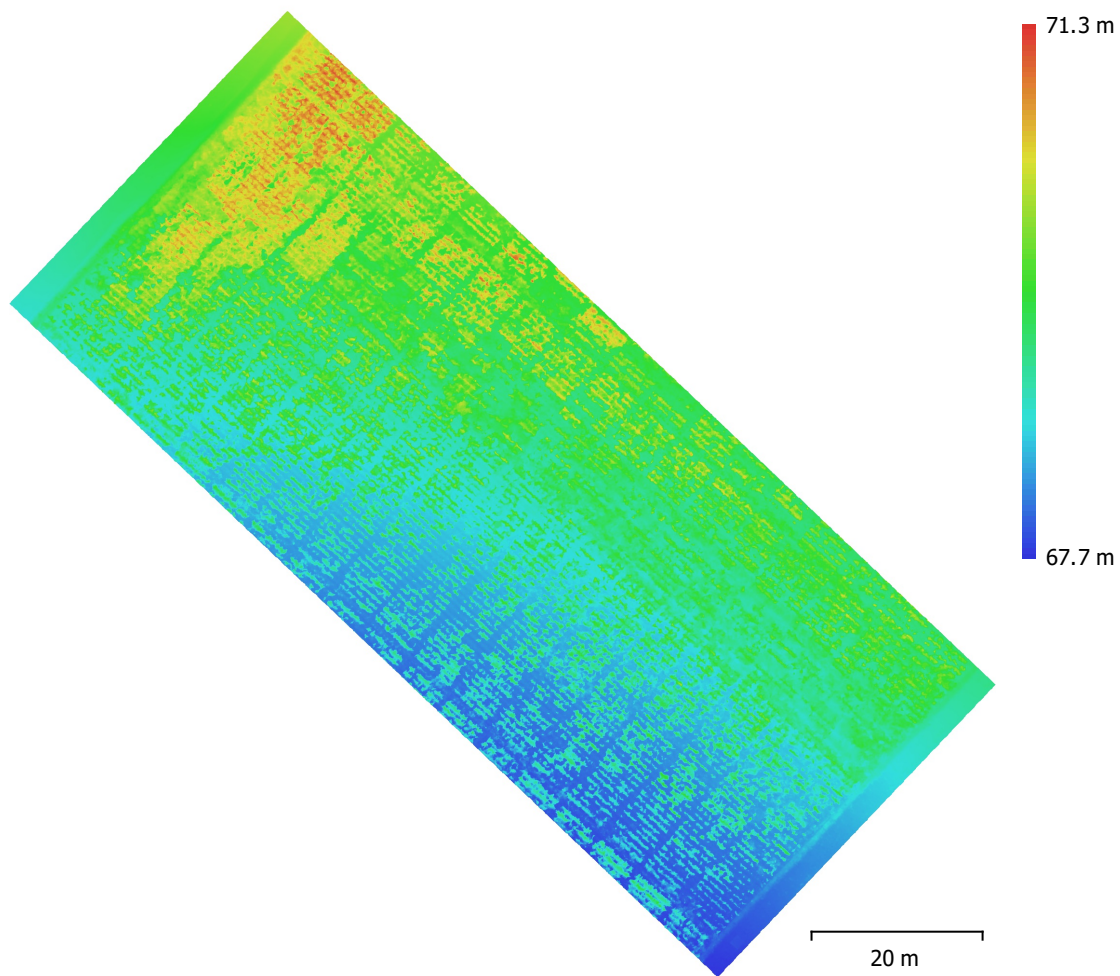


Fig. 5. Reconstructed digital elevation model.

Resolution: 1.35 cm/pix
Point density: 0.545 points/cm²

Processing Parameters

General

Cameras	332
Aligned cameras	332
Markers	7
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	311,250 of 331,855
RMS reprojection error	0.16145 (0.495315 pix)
Max reprojection error	1.05632 (18.5916 pix)
Mean key point size	3.05297 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.26022

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	Yes
Matching time	7 minutes 42 seconds
Alignment time	4 minutes 3 seconds

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1-p4
Adaptive camera model fitting	No
Optimization time	54 seconds
Software version	1.5.3.8469

Dense Point Cloud

Points	95,075,550
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Processing time	1 hours 28 minutes

Dense cloud generation parameters

Processing time	3 hours 7 minutes
Software version	1.5.3.8469

DEM

Size	8,541 x 8,429
Coordinate system	WGS 84 (EPSG::4326)

Reconstruction parameters

Source data	Dense cloud
Interpolation	Enabled
Processing time	46 seconds
Software version	1.5.3.8469

Orthomosaic

Size	17,149 x 16,787
Coordinate system	WGS 84 (EPSG::4326)
Colors	3 bands, uint8

General

Reconstruction parameters

Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	11 minutes 56 seconds
Software version	1.5.3.8469

Software

Version	1.5.3 build 8469
Platform	Windows 64