

# Agisoft Metashape

Processing Report

14 November 2025



# Survey Data

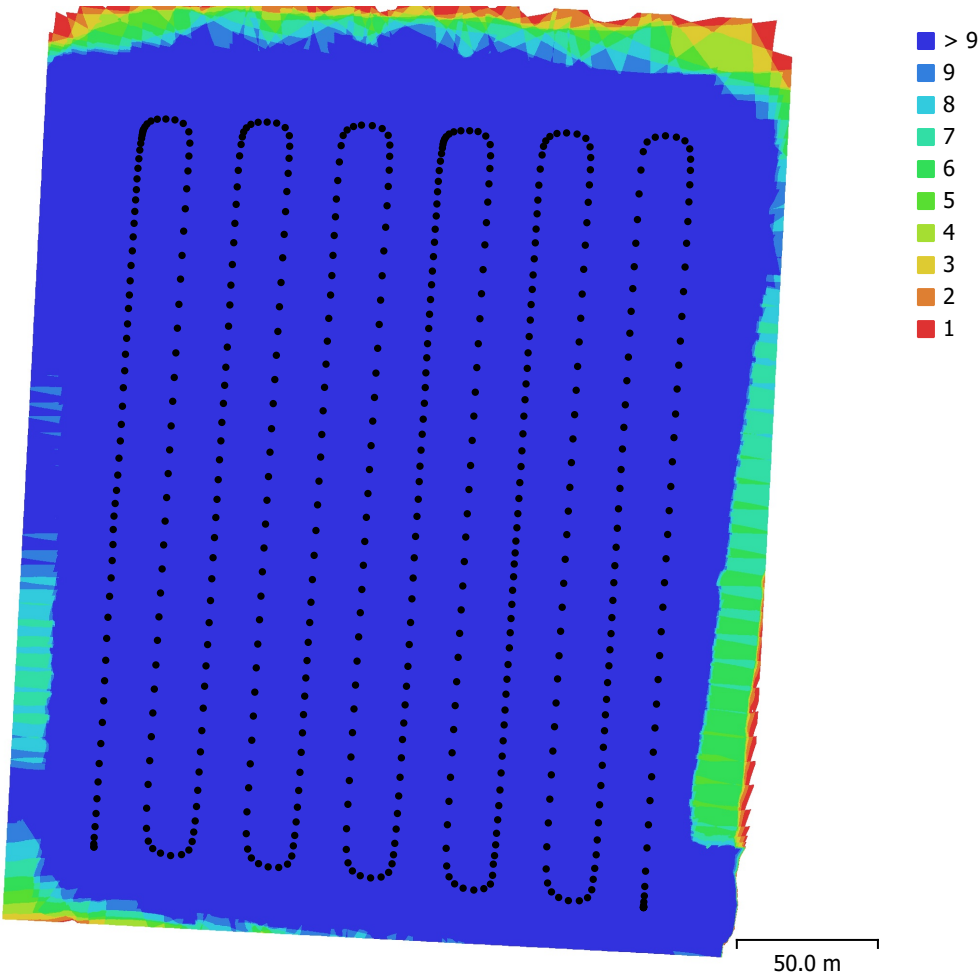


Fig. 1. Camera locations and image overlap.

Number of images:	545	Camera stations:	545
Flying altitude:	52.6 m	Tie points:	779,360
Ground resolution:	1.41 cm/pix	Projections:	4,716,870
Coverage area:	0.0863 km²	Reprojection error:	0.547 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

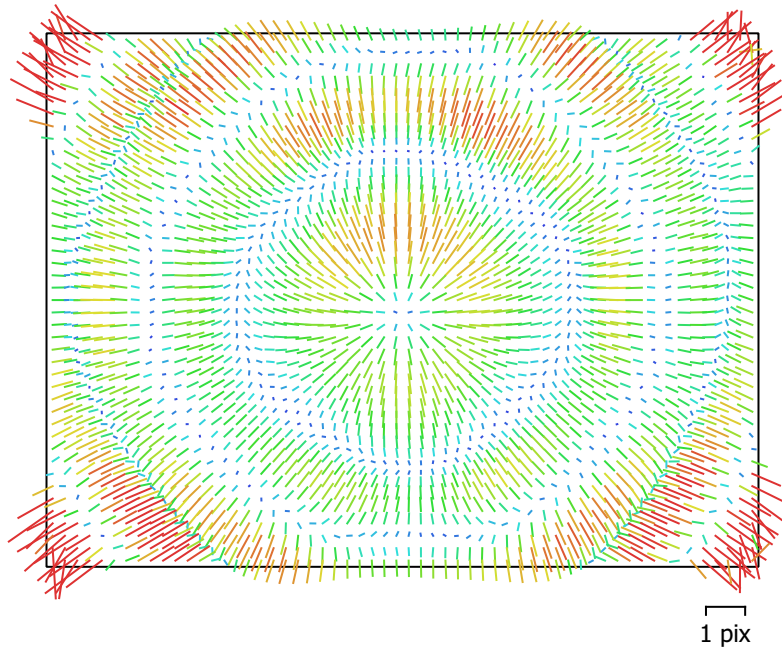


Fig. 2. Image residuals for M3E (12.29mm).

## M3E (12.29mm)

545 images, precalibrated

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>5280 x 3956</b>	<b>12.29 mm</b>	<b>3.36 x 3.36 <math>\mu\text{m}</math></b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>3729.51</b>	0.33	1.00	0.08	0.54	-0.90	-0.20	-0.07	-0.02	-0.47
<b>Cx</b>	<b>1.60772</b>	0.01		1.00	0.05	-0.06	-0.04	0.02	-0.20	-0.05
<b>Cy</b>	<b>-9.1179</b>	0.013			1.00	-0.48	-0.11	-0.04	-0.03	-0.56
<b>K1</b>	<b>-0.103332</b>	2e-05				1.00	-0.22	0.44	0.04	0.42
<b>K2</b>	<b>-0.0158744</b>	2.6e-05					1.00	-0.95	-0.04	0.11
<b>K3</b>	<b>-0.001943</b>	2.2e-05						1.00	0.05	0.02
<b>P1</b>	<b>0.000291634</b>	4.4e-07							1.00	0.02
<b>P2</b>	<b>1.17477e-06</b>	4.9e-07								1.00

Table 2. Calibration coefficients and correlation matrix.



# Camera Locations

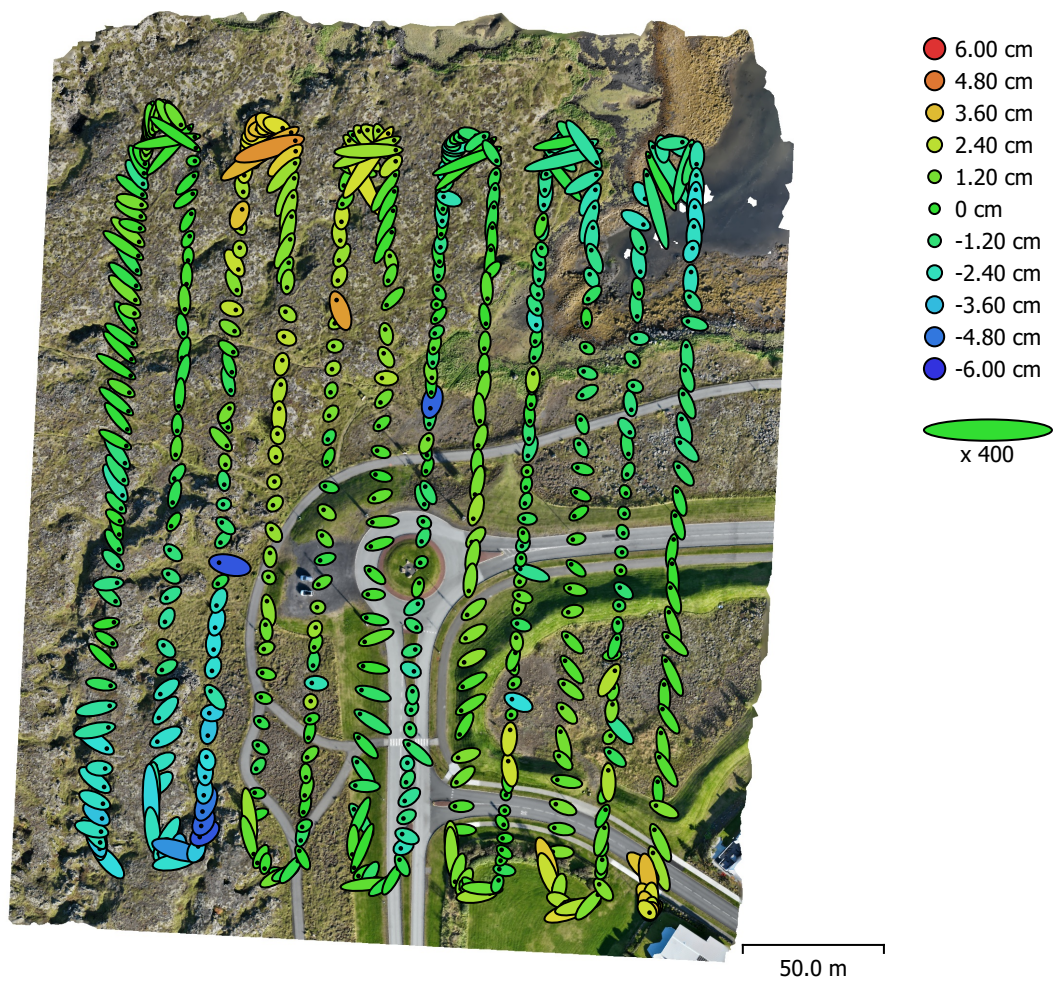


Fig. 3. Camera locations and error estimates.

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)
1.17919	1.37824	1.61461	1.81385	2.42838

Table 3. Average camera location error.

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

# Ground Control Points

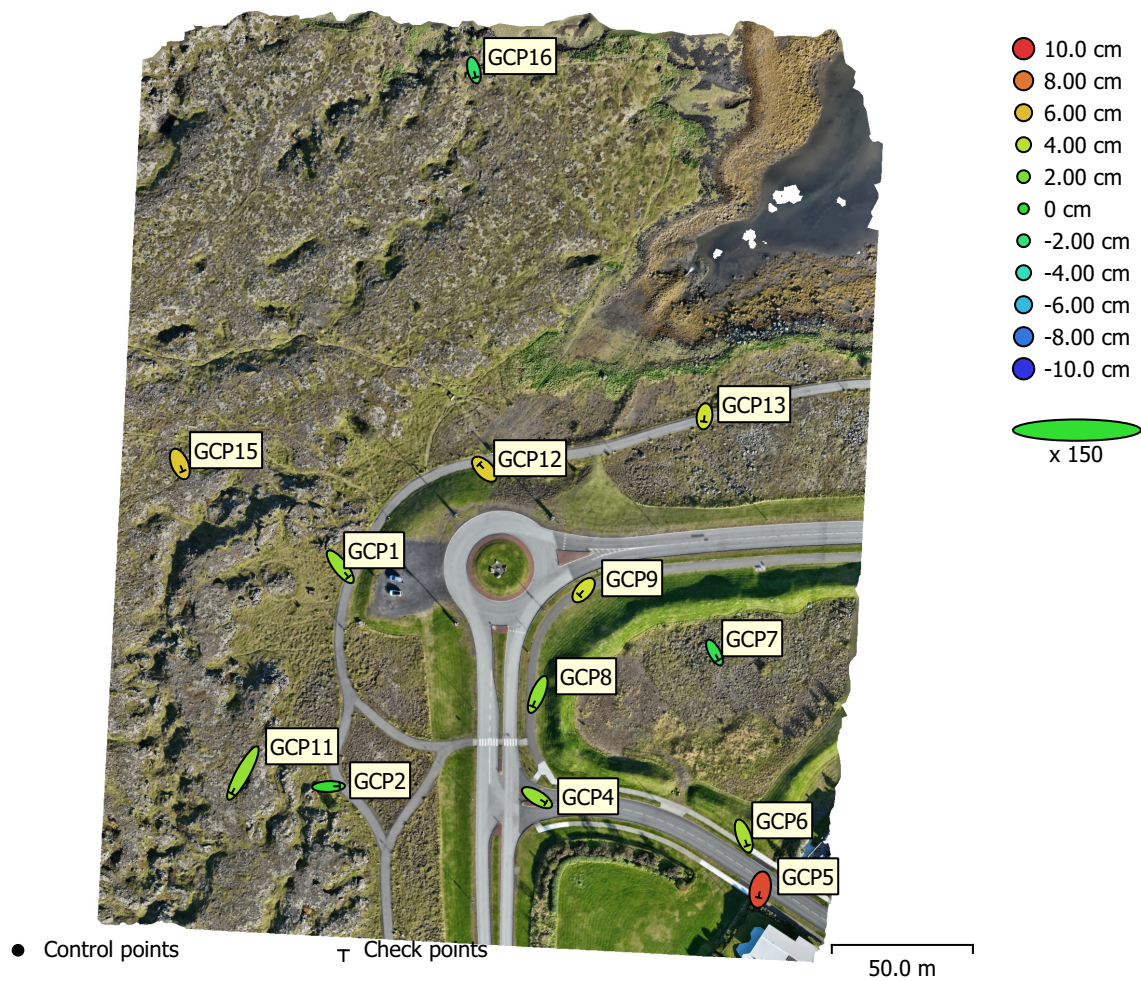


Fig. 4. GCP locations and error estimates.

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)
13	2.95433	4.34731	4.29328	5.25616	6.78671

Table 4. Check points RMSE.

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

<b>Label</b>	<b>X error (cm)</b>	<b>Y error (cm)</b>	<b>Z error (cm)</b>	<b>Total (cm)</b>	<b>Image (pix)</b>
GCP16	0.860509	-3.37076	-1.60068	3.82945	1.482 (22)
GCP15	1.45921	-3.40863	5.67744	6.78096	1.048 (16)
GCP13	-0.34266	-2.49854	4.59172	5.2387	1.161 (34)
GCP12	-2.41916	2.471	5.49337	6.49117	1.402 (35)
GCP11	-5.32418	-9.69125	2.8734	11.4247	2.447 (30)
GCP9	-2.0893	-2.41049	4.69367	5.67505	2.600 (34)
GCP8	-2.42525	-5.73018	2.58594	6.73824	1.361 (32)
GCP7	1.90136	-3.56253	-0.816031	4.11979	0.978 (22)
GCP6	1.65197	-4.56632	3.36632	5.90867	1.792 (25)
GCP5	-0.749042	-3.73794	9.35485	10.1018	1.259 (19)
GCP4	4.12071	-2.47487	2.9307	5.62977	2.138 (45)
GCP2	5.23806	0.190049	0.112209	5.24271	1.647 (40)
GCP1	3.8352	-4.91095	2.91129	6.87763	1.218 (30)
<b>Total</b>	<b>2.95433</b>	<b>4.34731</b>	<b>4.29328</b>	<b>6.78671</b>	<b>1.723</b>

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

# Digital Elevation Model

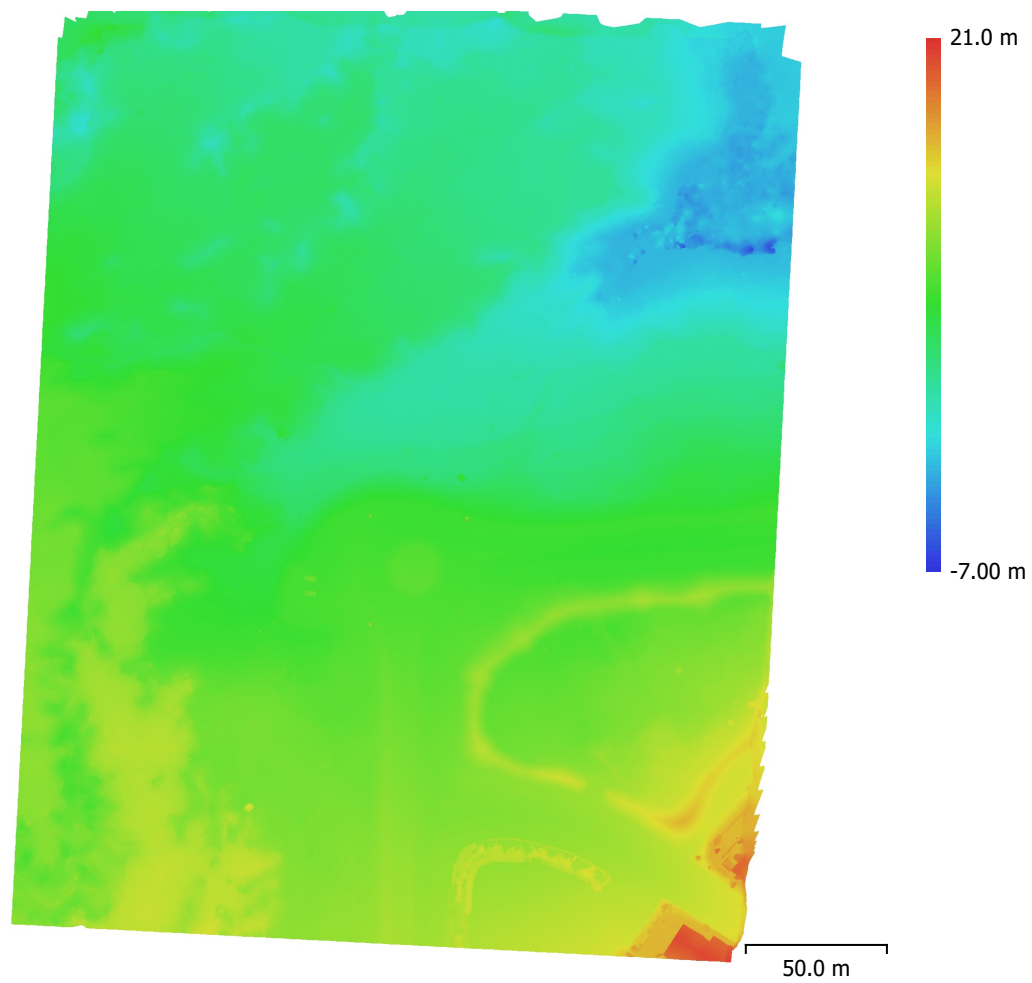


Fig. 5. Reconstructed digital elevation model.

Resolution: 10.9 cm/pix  
Point density: 83.5 points/m<sup>2</sup>



# Processing Parameters

## General

Images	545
Aligned images	545
Markers	16
Coordinate system	ISN2016 + ISH2004
Rotation angles	Yaw, Pitch, Roll

## Tie Points

Points	779,360 of 2,703,888
RMS reprojection error	0.270084 (0.547328 pix)
Max reprojection error	1.59428 (3.25819 pix)
Mean key point size	2.02443 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	7.68292

## Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Source
Key point limit	60,000
Key point limit per Mpx	1,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	20 minutes 55 seconds
Matching memory usage	2.63 GB
Alignment time	11 minutes 54 seconds
Alignment memory usage	5.69 GB

## Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Exclude corners	No
Optimization time	12 seconds
Date created	2025:11:14 09:09:59
Software version	2.3.0.21427
File size	1.11 GB

## Model

Faces	6,902,927
Vertices	3,452,280
Vertex colors	3 bands, uint8

## Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	25 minutes 4 seconds
Memory usage	6.30 GB

## Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled



Strict volumetric masks	No
Processing time	18 minutes 52 seconds
Memory usage	16.37 GB
Date created	2025:11:14 10:15:06
Software version	2.3.0.21427
File size	148.14 MB
<b>DEM</b>	
Size	2,568 x 3,166
Resolution	10.9 cm/pix
Coordinate system	ISN2016 + ISH2004
<b>Reconstruction parameters</b>	
Source data	Model
Interpolation	Enabled
Processing time	6 seconds
Memory usage	684.80 MB
Date created	2025:11:14 10:53:37
Software version	2.3.0.21427
File size	38.16 MB
<b>System</b>	
Software name	Agisoft Metashape Professional
Software version	2.3.0 build 21427
OS	Windows 64 bit
RAM	127.76 GB
CPU	12th Gen Intel(R) Core(TM) i9-12900K
GPU(s)	NVIDIA GeForce RTX 3070 Ti