

# Agisoft Metashape

Processing Report

14 November 2025



# Survey Data

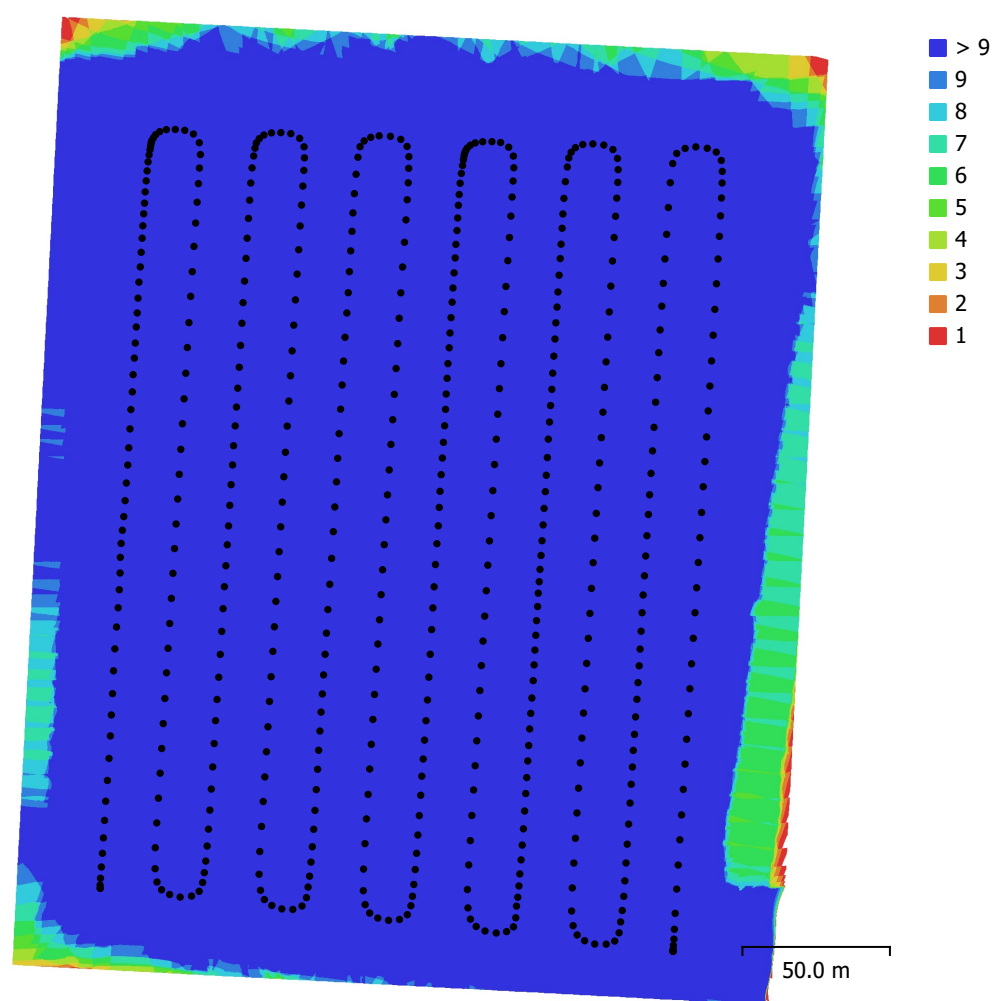


Fig. 1. Camera locations and image overlap.

Number of images:	545	Camera stations:	545
Flying altitude:	53.5 m	Tie points:	2,512,647
Ground resolution:	1.42 cm/pix	Projections:	18,020,871
Coverage area:	0.0834 km²	Reprojection error:	0.852 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>3758.46</b>	0.39	1.00	0.03	0.64	-0.89	0.24	-0.85	0.05	-0.60
<b>Cx</b>	<b>-0.0640172</b>	0.01		1.00	0.03	-0.02	-0.00	-0.03	-0.78	-0.02
<b>Cy</b>	<b>-8.19598</b>	0.013			1.00	-0.58	0.16	-0.55	0.02	-0.85
<b>K1</b>	<b>-0.113077</b>	2.5e-05				1.00	-0.44	0.77	-0.03	0.64
<b>K2</b>	<b>0.00713964</b>	1.2e-05					1.00	-0.65	0.01	-0.18
<b>K3</b>	<b>-0.0230506</b>	1.7e-05						1.00	-0.05	0.47
<b>P1</b>	<b>0.000281899</b>	4e-07							1.00	-0.01
<b>P2</b>	<b>-2.49659e-05</b>	4.7e-07								1.00

Table 2. Calibration coefficients and correlation matrix.



# Camera Locations

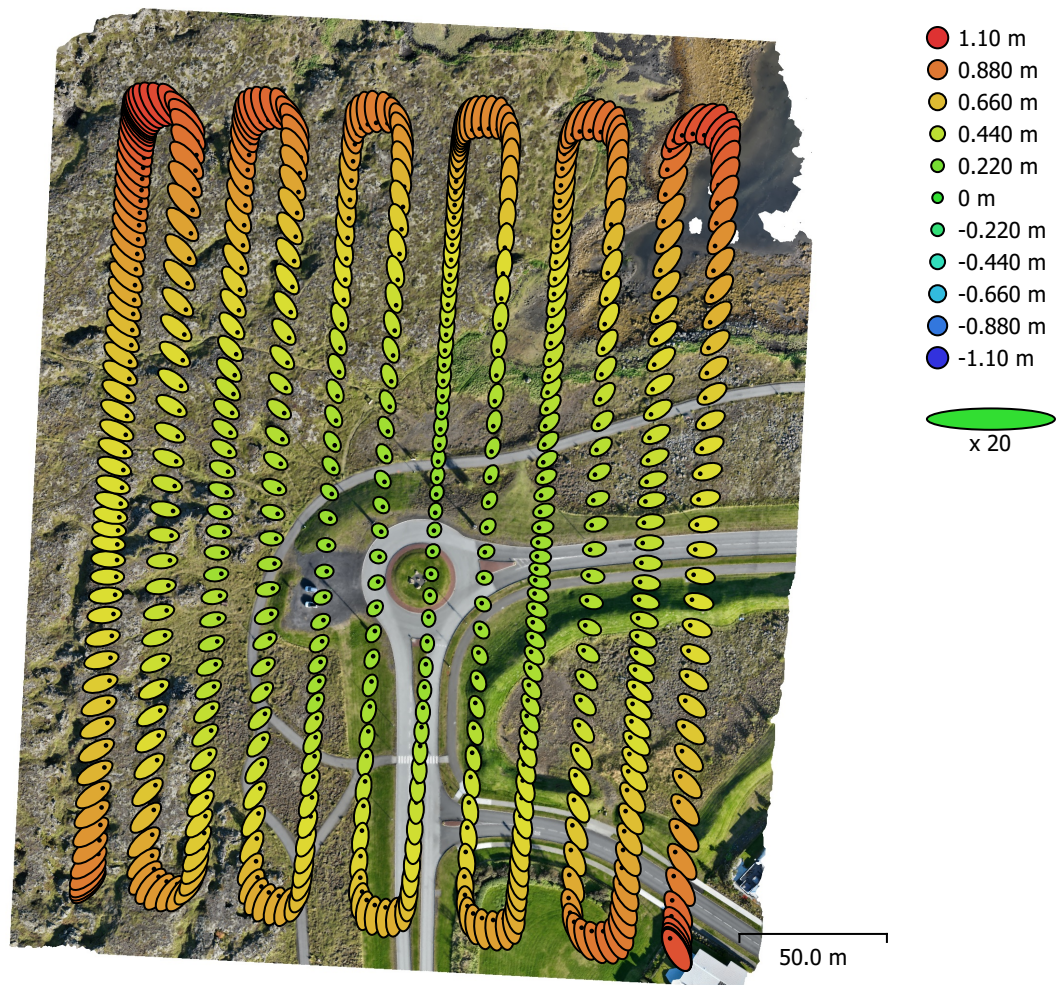


Fig. 3. Camera locations and error estimates.

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)
18.2062	25.9293	64.0523	31.6827	71.4597

Table 3. Average camera location error.

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

# Ground Control Points

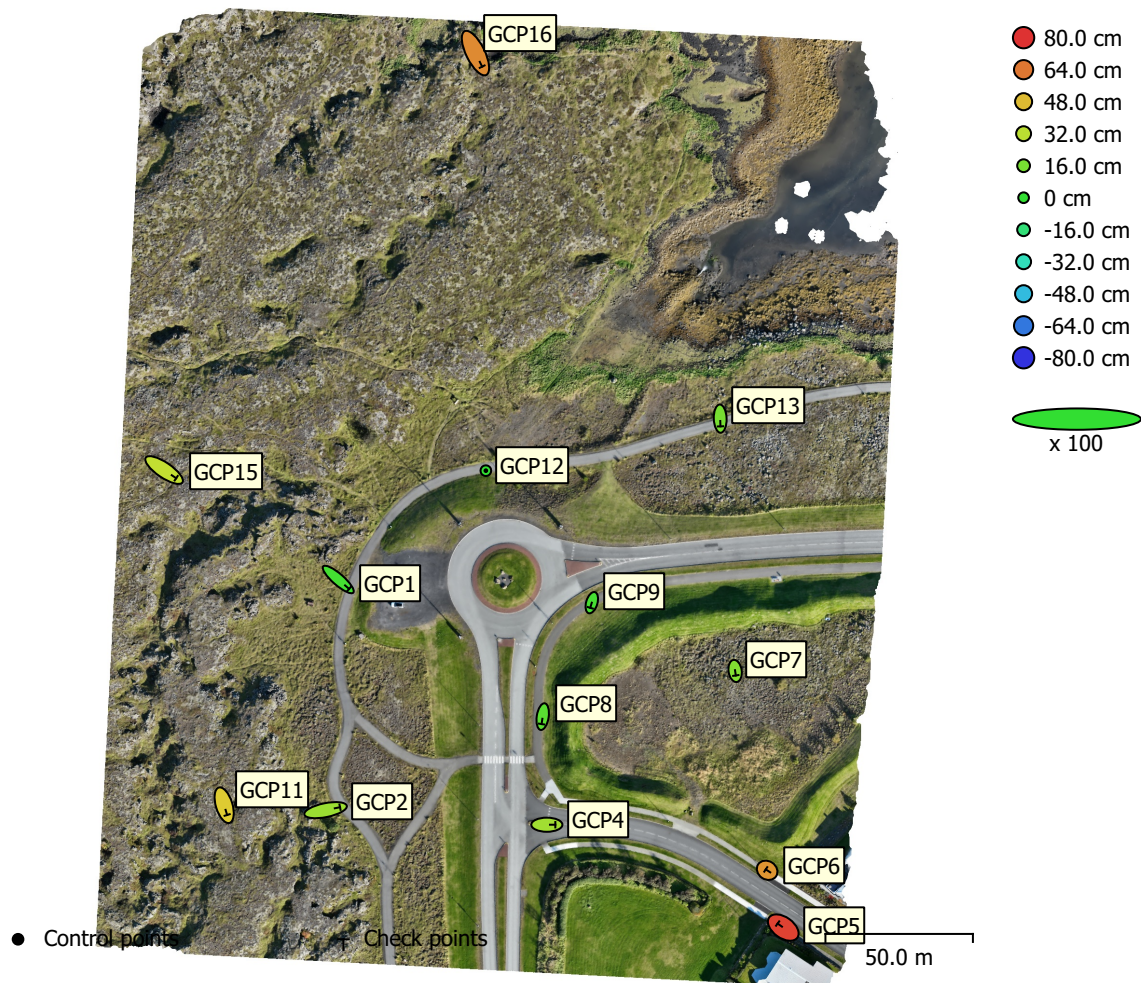


Fig. 4. GCP locations and error estimates.

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)
1	1.62861e-05	2.42761e-05	0.000332377	2.9233e-05	0.00033366

Table 4. Control points RMSE.

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

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
12	4.93339	4.87956	38.3948	6.93891	39.0168

Table 5. 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>
GCP12	-1.62861e-05	2.42761e-05	-0.000332377	0.00033366	1.372 (35)
<b>Total</b>	<b>1.62861e-05</b>	<b>2.42761e-05</b>	<b>0.000332377</b>	<b>0.00033366</b>	<b>1.372</b>

Table 6. Control points.  
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	4.5393	-9.19233	59.4575	60.3348	1.121 (22)
GCP15	8.19767	-5.53768	33.4855	34.9163	1.051 (16)
GCP13	0.181215	-5.23962	16.0936	16.9261	1.178 (34)
GCP11	2.01865	-6.60139	44.3732	44.907	2.500 (30)
GCP9	-1.04447	-3.4837	4.48822	5.77679	2.627 (34)
GCP8	-0.770409	-5.03732	9.28505	10.5915	1.392 (32)
GCP7	0.463112	-3.06841	18.5148	18.7731	0.990 (22)
GCP6	-0.928132	0.609745	56.9617	56.9726	1.773 (25)
GCP5	-3.81279	2.72986	76.3354	76.4793	1.251 (19)
GCP4	5.76089	0.00021282	25.9483	26.5801	1.396 (45)
GCP2	9.77975	1.98256	24.3822	26.3451	1.514 (40)
GCP1	7.34959	-6.39089	4.0992	10.5671	1.139 (30)
<b>Total</b>	<b>4.93339</b>	<b>4.87956</b>	<b>38.3948</b>	<b>39.0168</b>	<b>1.628</b>

Table 7. Check points.  
X - Easting, Y - Northing, Z - Altitude.



# Digital Elevation Model

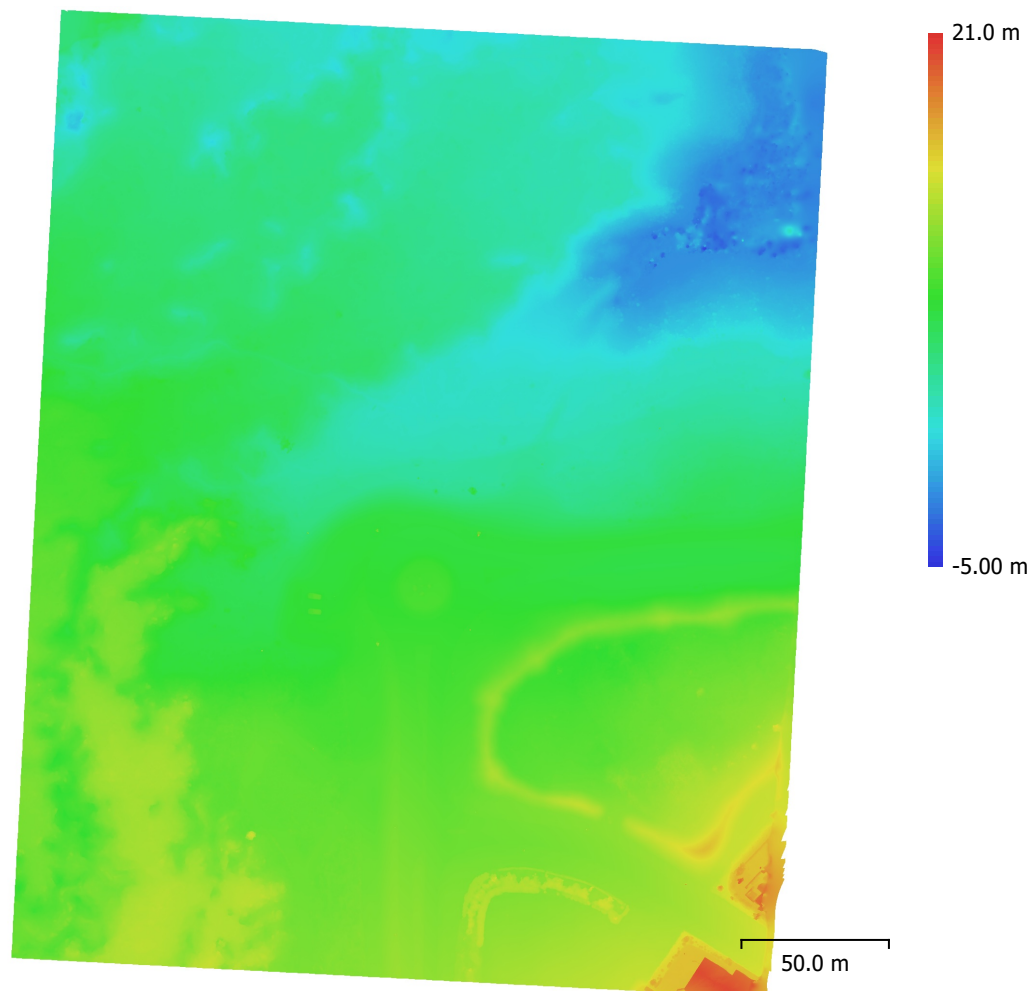


Fig. 5. Reconstructed digital elevation model.

Resolution: 10.5 cm/pix  
Point density: 91.3 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	2,512,647 of 2,703,885
RMS reprojection error	0.272918 (0.852143 pix)
Max reprojection error	1.0482 (64.3487 pix)
Mean key point size	3.24623 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	7.68293

## 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 51 seconds
Matching memory usage	2.20 GB
Alignment time	13 minutes 48 seconds
Alignment memory usage	5.63 GB

## Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Exclude corners	No
Optimization time	34 seconds
Date created	2025:11:14 13:25:12
Software version	2.3.0.21427
File size	1.15 GB

## Model

Faces	6,740,729
Vertices	3,377,118
Vertex colors	3 bands, uint8

## Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	25 minutes 12 seconds
Memory usage	6.85 GB

## Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled



Strict volumetric masks	No
Processing time	18 minutes 46 seconds
Memory usage	13.56 GB
Date created	2025:11:14 12:00:28
Software version	2.3.0.21427
File size	144.76 MB
<b>DEM</b>	
Size	2,647 x 3,207
Resolution	10.5 cm/pix
Coordinate system	ISN2016 + ISH2004
<b>Reconstruction parameters</b>	
Source data	Model
Interpolation	Enabled
Processing time	6 seconds
Memory usage	398.05 MB
Date created	2025:11:14 13:01:06
Software version	2.3.0.21427
File size	39.68 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