

Berzeliuseggene

Reconstruction uncertainty 25

Projection accuracy 3

Reprojection error 0.3

Point Cloud Confidence 5-255

13 July 2023



Survey Data

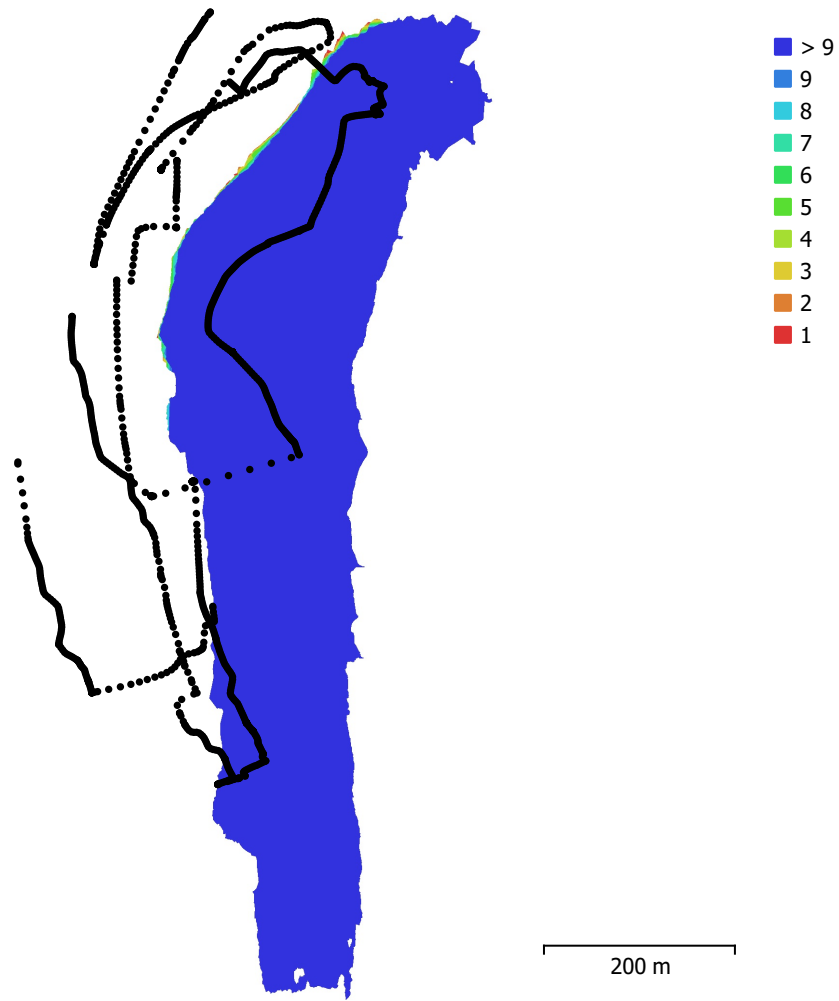


Fig. 1. Camera locations and image overlap.

Number of images:	1,230	Camera stations:	1,205
Flying altitude:	96.3 m	Tie points:	986,260
Ground resolution:	2.85 cm/pix	Projections:	5,278,882
Coverage area:	0.165 km ²	Reprojection error:	0.299 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Test_Pro (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 μ m	No

Table 1. Cameras.

Camera Calibration

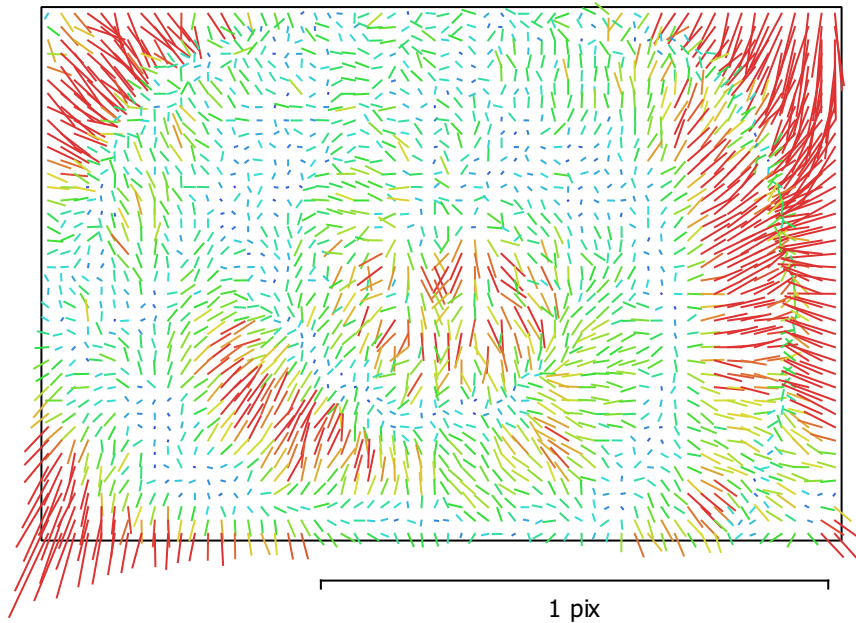


Fig. 2. Image residuals for Test_Pro (10.26mm).

Test_Pro (10.26mm)

1230 images

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	10.26 mm	2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	4336.99	0.021	1.00	-0.01	-0.50	0.05	0.10	-0.10	0.01	-0.19
Cx	25.5073	0.039		1.00	-0.12	0.00	-0.01	0.02	0.96	-0.17
Cy	-46.137	0.034			1.00	-0.09	0.03	-0.03	-0.16	0.76
K1	-0.00155638	1e-05				1.00	-0.93	0.87	0.00	-0.13
K2	0.0168979	4e-05					1.00	-0.98	-0.01	0.04
K3	-0.0213212	4.9e-05						1.00	0.02	-0.04
P1	0.00183839	2.5e-06							1.00	-0.20
P2	-0.00262192	1.5e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

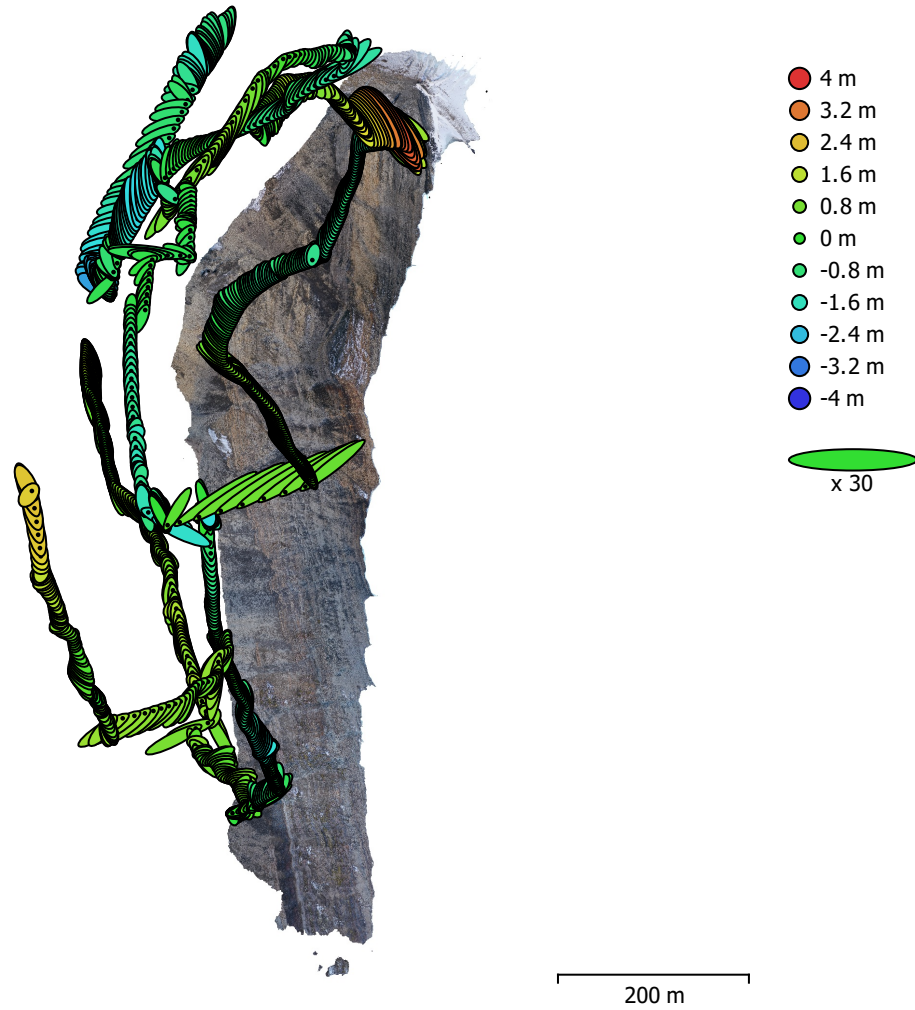


Fig. 3. Camera locations and error estimates.

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)
0.49374	0.694025	1.10507	0.851733	1.39522

Table 3. Average camera location error.

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

Digital Elevation Model

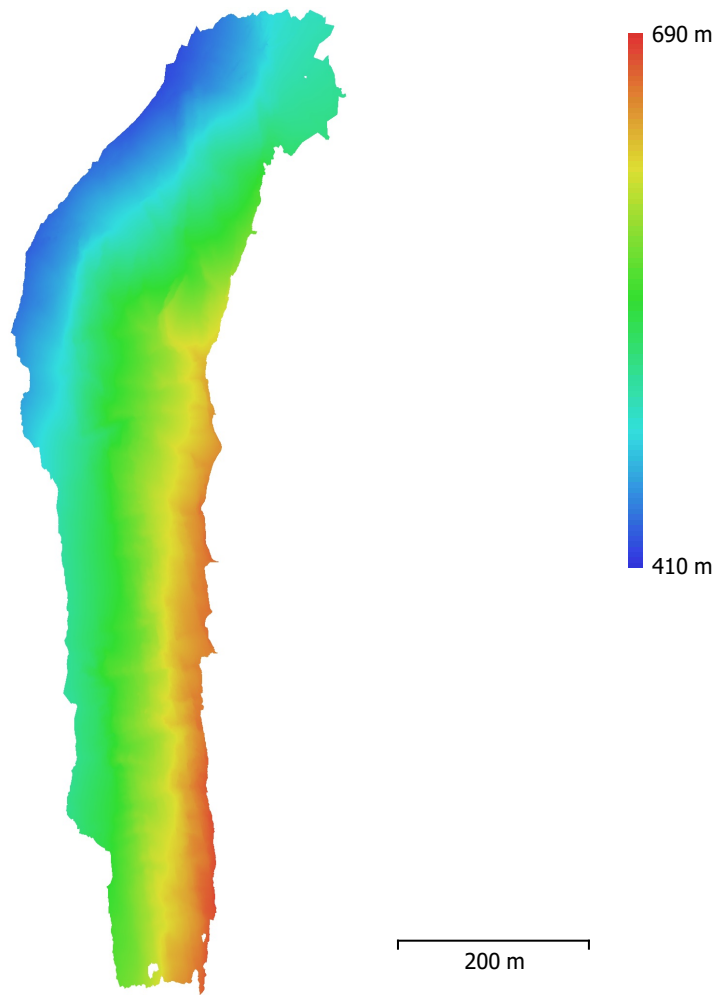


Fig. 4. Reconstructed digital elevation model.

Resolution: 5.7 cm/pix
Point density: 308 points/m²

Processing Parameters

General

Cameras	1230
Aligned cameras	1205
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	986,260 of 6,306,658
RMS reprojection error	0.130899 (0.299215 pix)
Max reprojection error	0.576468 (2.8641 pix)
Mean key point size	2.25867 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	6.08765

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	No
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	2 hours 18 minutes
Matching memory usage	2.73 GB
Alignment time	2 hours 20 minutes
Alignment memory usage	3.27 GB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	28 seconds
Date created	2022:10:31 11:54:57
Software version	1.8.4.14856
File size	626.61 MB

Depth Maps

Count	1205
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Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	2 hours 17 minutes
Memory usage	6.60 GB
Date created	2022:10:31 18:49:27
Software version	1.8.4.14856
File size	8.30 GB

Point Cloud

Points	95,167,322
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Point attributes

Color	3 bands, uint8
Normal	

Confidence	5 - 238
Point classes	
Created (never classified)	95,167,322
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	2 hours 17 minutes
Memory usage	6.60 GB
Point cloud generation parameters	
Processing time	11 hours 10 minutes
Memory usage	28.52 GB
Date created	2022:11:01 01:56:16
Software version	1.8.4.14856
File size	1.64 GB
Model	
Faces	9,779,006
Vertices	4,880,844
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 10, 4 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	2 hours 17 minutes
Memory usage	6.60 GB
Point cloud generation parameters	
Processing time	11 hours 10 minutes
Memory usage	28.52 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Point cloud
Interpolation	Disabled
Strict volumetric masks	No
Processing time	39 minutes 44 seconds
Memory usage	10.15 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	9 minutes 29 seconds
UV mapping memory usage	3.48 GB
Blending time	12 minutes 34 seconds
Blending memory usage	6.20 GB
Blending GPU memory usage	4.69 GB
Date created	2023:07:12 14:19:07
Software version	2.0.2.16334
File size	683.17 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	16

Processing time 2 hours 17 minutes
Memory usage 6.60 GB

Reconstruction parameters

Source data Point cloud
Tile size 256
Face count High
Enable ghosting filter No
Processing time 1 minutes 33 seconds
Memory usage 8.32 GB
Date created 2022:11:07 17:28:35
Software version 1.8.4.14856
File size 571.05 MB

System

Software name Agisoft Metashape Professional
Software version 2.0.2 build 16334
OS Windows 64 bit
RAM 127.71 GB
CPU Intel(R) Core(TM) i9-10900K CPU @ 3.70GHz
GPU(s) Quadro RTX 5000