

# Litledalsfjellet

Filter component size 99%

24 February 2022



# Survey Data

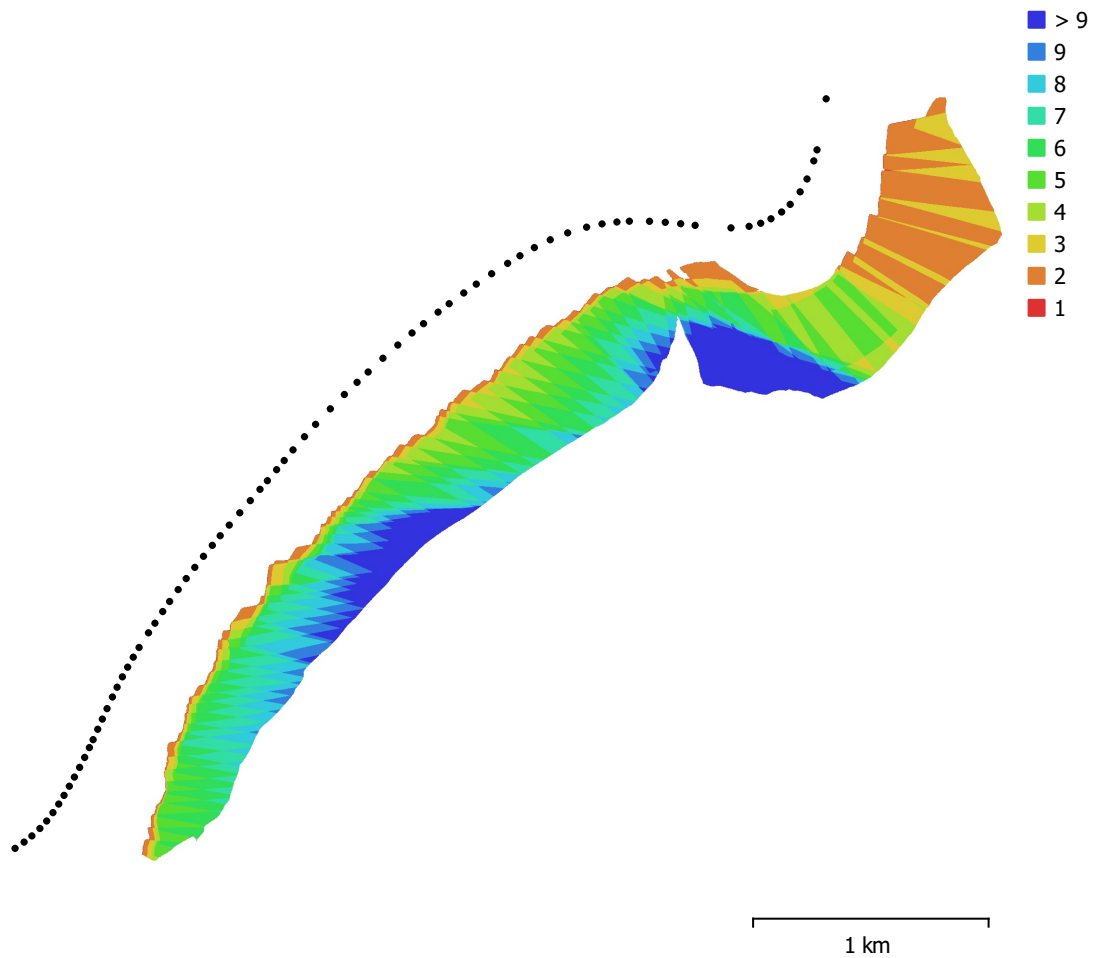


Fig. 1. Camera locations and image overlap.

Number of images:	80	Camera stations:	80
Flying altitude:	649 m	Tie points:	170,113
Ground resolution:	6.04 cm/pix	Projections:	613,921
Coverage area:	1.94 km <sup>2</sup>	Reprojection error:	0.367 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
NIKON D800 (50mm)	4924 x 7374	50 mm	4.88 x 4.88 $\mu$ m	No

Table 1. Cameras.

# Camera Calibration

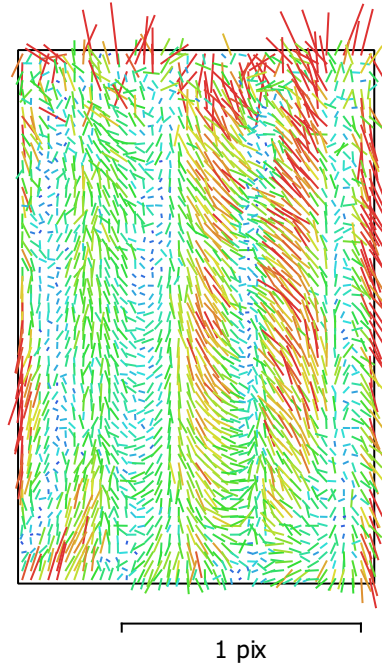


Fig. 2. Image residuals for NIKON D800 (50mm).

## NIKON D800 (50mm)

80 images

Type  
Frame

Resolution  
**4924 x 7374**

Focal Length  
**50 mm**

Pixel Size  
**4.88 x 4.88  $\mu\text{m}$**

	Value	Error	F	B1	B2	K1	K2	K3	P1	P2
<b>F</b>	<b>10599.5</b>	0.53	1.00	-0.66	0.07	0.08	0.09	-0.07	0.02	-0.07
<b>B1</b>	<b>-24.7577</b>	0.37		1.00	-0.08	-0.03	-0.04	0.03	0.06	0.28
<b>B2</b>	<b>1.18618</b>	0.33			1.00	0.00	0.01	-0.01	-0.26	0.06
<b>K1</b>	<b>-0.108165</b>	6.6e-05				1.00	-0.92	0.86	-0.00	-0.03
<b>K2</b>	<b>0.0659833</b>	0.00086					1.00	-0.98	-0.03	-0.02
<b>K3</b>	<b>0.21571</b>	0.0034						1.00	0.02	0.01
<b>P1</b>	<b>0.000123869</b>	6.6e-06							1.00	0.51
<b>P2</b>	<b>0.000276087</b>	7.6e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Locations

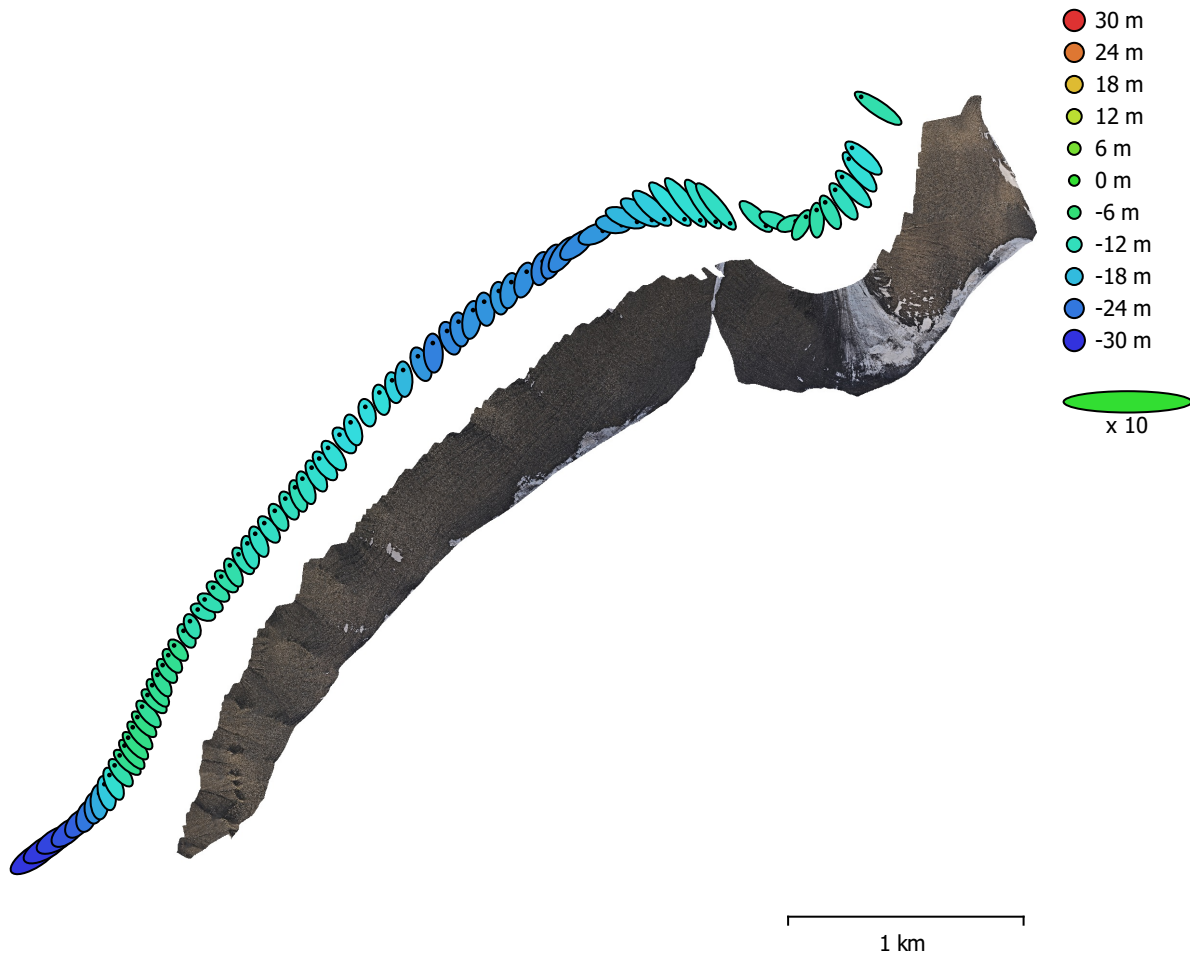


Fig. 3. Camera locations and error estimates.

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)
5.96955	7.12079	16.3195	9.29199	18.7794

Table 3. Average camera location error.  
X - Easting, Y - Northing, Z - Altitude.

# Digital Elevation Model

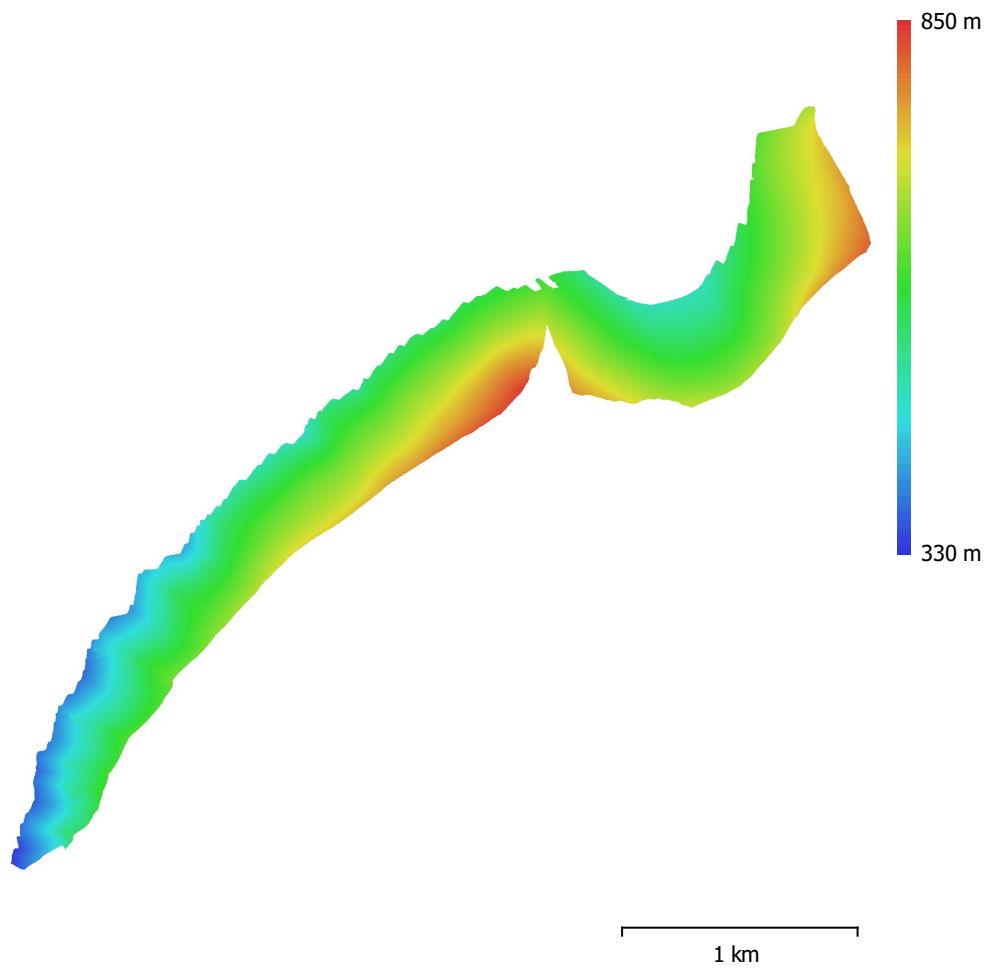


Fig. 4. Reconstructed digital elevation model.

Resolution: 92.9 cm/pix  
Point density: 1.16 points/m<sup>2</sup>

# Processing Parameters

## General

Cameras	80
Aligned cameras	80
Coordinate system	WGS 84 / UTM zone 33N (EPSG::32633)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	170,113 of 181,263
RMS reprojection error	0.133004 (0.366555 pix)
Max reprojection error	0.402993 (11.5315 pix)
Mean key point size	2.50269 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.72131

## Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	80,000
Tie point limit	8,000
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	1 minutes 22 seconds
Matching memory usage	1.73 GB
Alignment time	47 seconds
Alignment memory usage	104.85 MB
Software version	1.6.4.10928
File size	14.72 MB

## Depth Maps

Count	80
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Aggressive
Processing time	7 minutes 18 seconds
Memory usage	4.46 GB
Software version	1.6.4.10928
File size	583.81 MB

## Dense Point Cloud

Points	232,002,696
Point colors	3 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Aggressive
Processing time	7 minutes 18 seconds
Memory usage	4.46 GB
<b>Dense cloud generation parameters</b>	
Processing time	8 minutes 59 seconds
Memory usage	9.84 GB
Software version	1.6.4.10928
File size	3.25 GB

## Model

Faces	3,989,482
Vertices	2,001,123
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 15, 4 bands, uint8
<b>Texturing parameters</b>	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	4 minutes 54 seconds
UV mapping memory usage	7.66 GB
Blending time	1 minutes 59 seconds
Blending memory usage	8.80 GB
File size	518.37 MB
<b>Tiled Model</b>	
Texture	3 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Aggressive
Processing time	7 minutes 18 seconds
Memory usage	4.46 GB
<b>Reconstruction parameters</b>	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	3 hours 39 minutes
Memory usage	5.23 GB
Software version	1.7.2.12040
File size	1.27 GB
<b>System</b>	
Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12040
OS	Windows 64 bit
RAM	127.78 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	GeForce RTX 2080