

## DJI Terra Quality Report

V4.3.0 | 2024-12-09 18:25 | Mission: 2024-12-09EidsvollSanderLIN

## Quality Report for LiDAR Point Cloud Processing



## Reconstruction Parameters

### Point Cloud Optimization Parameters

Use custom base station data	No
Scenario	Point Cloud Processing
Point Cloud Density (By Percentage)	High(100%)
Point Cloud Effective Distance Range	3-300 m
Accuracy Control and Check	Yes
Optimize Point Cloud Accuracy	Yes
Smooth Point Cloud	No

### Point Cloud Output Parameters

Point Cloud Format	PNTS   LAS
Merged Output	Yes
LiDAR Point Cloud Block Count	1
Ground Point Classification	Yes
Ground Point Classification Parameters	Gentle Slope   Building Max Diagonal 20m   Iteration Angle 6°   Iteration Distance 0.5m
DEM	Yes
DEM Parameters	By GSD   0.1m
Contour	No
Output Coordinate System	WGS 84 / UTM zone 32N   NN2000 height

## Mission Parameters

### Aircraft Parameters (Aircraft 1)

#### Hardware Parameters

Payload	DJI Zenmuse L1
Payload SN	3FCDJ7E0045CRP
LiDAR Parameters	https://enterprise.dji.com/zenmuse-l1/specs

#### LiDAR and IMU Calibration Parameters

Parameters	X	Y	Z	roll	pitch	yaw
Default	0.03508m	0.01694m	-0.04644m	3.1243374 rad	0.0232527 rad	0.0046024 rad

#### Flight Parameters (1 Flights)

Average Flight Speed	4.6m/s
Flight Height	73.24m
Ground Beam Diameter	366mm*366mm
Pulse Rate	240kHz
Scan Rate	720kHz

### System Parameters

CPU	AMD Ryzen 9 7950X 16-Core Processor 32 cores
GPU Count	1
GPU 0	NVIDIA GeForce RTX 4090
RAM	130805 M

## Accuracy Parameters

### POS Status

Fix	100.00%
Other	0.00%

### IMU Trajectory Error

Parameters	X(E) RMSE	Average X(E)	Y(N) RMSE	Average Y(N)	Z(U) RMSE	Average Z(U)
Location	0.00014 m	0.00698 m	0.00008 m	0.00562 m	0.00009 m	0.00575 m
Attitude	0.0000059 rad	0.0001761 rad	0.0000048 rad	0.0001841 rad	0.0000633 rad	0.0005248 rad

### Point Cloud Check Point Error

Parameters	No. of Check Points	Average Altitude	Average Altitude Difference	Min Altitude Difference	Max Altitude Difference	Average Absolute Value of Altitude Difference	Root Mean Square	Standard Deviation
Value	13	177.255231 m	-0.016865 m	-0.053205 m	0.016995 m	0.021689 m	0.026794 m	0.027889 m

### Point Cloud Check Point List

ID	Check Point Latitude(Y/N)	Check Point Longitude(X/E)	Check Point Altitude(Z/U)	Reconstruction Altitude	Altitude Difference	Max Altitude Difference	Average Altitude Difference	Reconstruction Altitude Standard Deviation	Altitude Difference RMS E	Reflectivity
GCP1	6694186.476 m	625112.9 m	179.5 m	179.445795 m	-0.053205 m	0.011215 m	-0.053205 m	0.024356 m	0.058496 m	92.58
GCP2	6694136.125 m	625112.438 m	179.2 m	179.166951 m	-0.029049 m	0.0745 m	-0.029049 m	0.02091 m	0.035769 m	107.41
GCP3	6694044.142 m	625090.714 m	150.69 m	150.664493 m	-0.022507 m	0.187811 m	-0.022507 m	0.053355 m	0.057823 m	112.4
GCP4	6694111.685 m	625160.523 m	181.57 m	181.567048 m	-0.004952 m	0.170536 m	-0.004952 m	0.037218 m	0.037476 m	114.19
GCP5	6694056.934 m	625189.852 m	180.32 m	180.309155 m	-0.008845 m	0.139024 m	-0.008845 m	0.034105 m	0.035183 m	119.56
GCP6	6694045.905 m	625168.006 m	180.66 m	180.606684 m	-0.048316 m	0.011668 m	-0.048316 m	0.019796 m	0.052206 m	104.62
GCP7	6694208.456 m	625141.916 m	179.95 m	179.942503 m	-0.003497 m	0.053644 m	-0.003497 m	0.029394 m	0.029549 m	90.78
GCP8	6694233.792 m	625153.495 m	179.75 m	179.717446 m	-0.031554 m	0.051357 m	-0.031554 m	0.034617 m	0.046791 m	85.25
GCP9	6694243.718 m	625214.336 m	180.77 m	180.771695 m	-0.001305 m	0.077562 m	-0.001305 m	0.022669 m	0.02267 m	111.65
GCP10	6694289.236 m	625125.852 m	178.88 m	178.865964 m	-0.017036 m	0.140402 m	-0.017036 m	0.031578 m	0.035851 m	122.04
GCP11	6694302.783 m	625064.538 m	177.18 m	177.14567 m	-0.03033 m	0.049533 m	-0.03033 m	0.023524 m	0.038362 m	101.24
GCP12	6694241.112 m	625062.939 m	177.07 m	177.085995 m	0.016995 m	0.078011 m	0.016995 m	0.02161 m	0.027466 m	95.61
GCP13	6694253.345 m	625112.746 m	178.79 m	178.80936 m	0.01436 m	0.065796 m	0.01436 m	0.019631 m	0.024295 m	91.74

### DEM Error

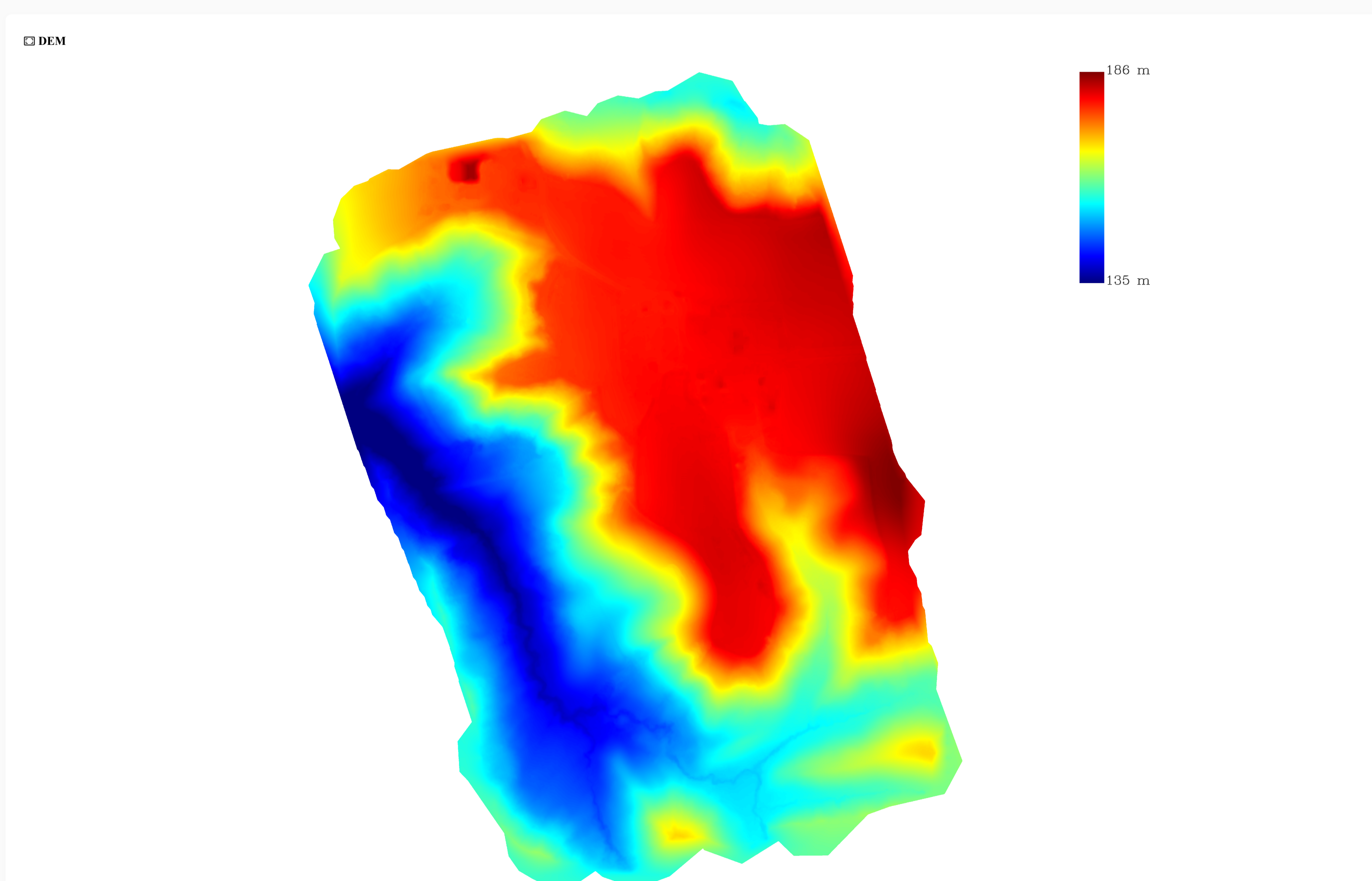
Parameters	No. of Check Points	Average Altitude	Average Altitude Difference	Min Altitude Difference	Max Altitude Difference	Average Absolute Value of Altitude Difference	Root Mean Square	Standard Deviation
Value	13	177.255231 m	-0.016698 m	-0.05162 m	0.015564 m	0.021982 m	0.025912 m	0.02697 m

### DEM Checklist

ID	Check Point Latitude(Y/N)	Check Point Longitude(X/E)	Check Point Altitude(Z/U)	Reconstruction Altitude	Altitude Difference	Reflectivity
GCP1	6694186.476 m	625112.9 m	179.5 m	179.44738 m	-0.05162 m	92.58
GCP2	6694136.125 m	625112.438 m	179.2 m	179.165315 m	-0.030685 m	107.41
GCP3	6694044.142 m	625090.714 m	150.69 m	150.666618 m	-0.026382 m	112.4
GCP4	6694111.685 m	625160.523 m	181.57 m	181.563043 m	-0.008957 m	114.19
GCP5	6694056.934 m	625189.852 m	180.32 m	180.304771 m	-0.013229 m	119.56
GCP6	6694045.905 m	625168.006 m	180.66 m	180.614717 m	-0.040283 m	104.62
GCP7	6694208.456 m	625141.916 m	179.95 m	179.950013 m	0.004013 m	90.78
GCP8	6694233.792 m	625153.495 m	179.75 m	179.718971 m	-0.030029 m	85.25
GCP9	6694243.718 m	625214.336 m	180.77 m	180.768041 m	-0.004959 m	111.65
GCP10	6694289.236 m	625125.852 m	178.88 m	178.868138 m	-0.014862 m	122.04
GCP11	6694302.783 m	625064.538 m	177.18 m	177.145589 m	-0.030411 m	101.24
GCP12	6694241.112 m	625062.939 m	177.07 m	177.083771 m	0.014771 m	95.61
GCP13	6694253.345 m	625112.746 m	178.79 m	178.810564 m	0.015564 m	91.74

When altitude difference between check point and actual point is greater than 60 cm, error data of the check point will be displayed as \* and the check point will not be used for calculation

## Output Preview



## Output Parameters

### Point Cloud Density

Scale	Point Cloud Average Density	Point Cloud Standard Density	Grid Side Length	Total Grid Number	Non-conforming Grid Ratio
1:500	990points/m <sup>2</sup>	16points/m <sup>2</sup>	0.25 m	2532680	1.21%
1:1000	990points/m <sup>2</sup>	4points/m <sup>2</sup>	0.5 m	640188	1.1%
1:2000	990points/m <sup>2</sup>	1points/m <sup>2</sup>	1 m	161900	1.14%

### Output List

Point Cloud	PNTS   LAS
DEM	GeoTIFF