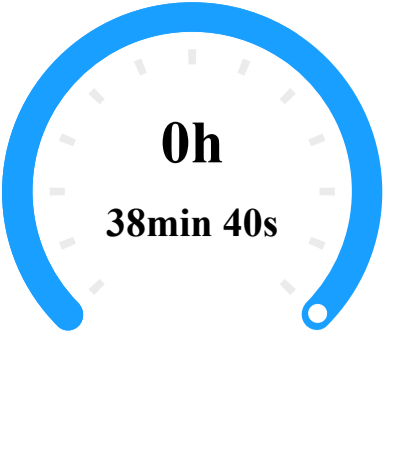


# DJI Terra Quality Report

V4.3.0 | 2024-12-09 18:22 | Mission: 2024-12-09ElevellSander\_10

## Quality Report for LiDAR Point Cloud Processing

### Aircraft Data Collection Time



**0h**  
**38min 40s**

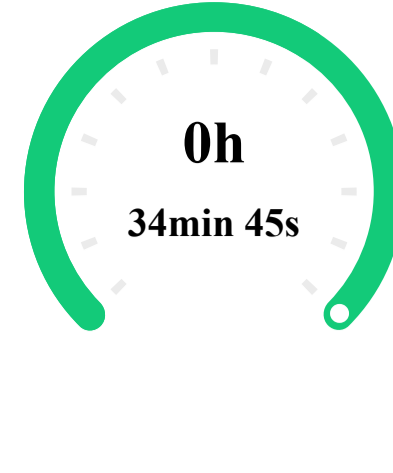
POS Data Collection Time

Point Cloud Data Collection Time

**38min 40s**

**27min 29s**

### Software Processing Time



**0h**  
**34min 45s**

Point Cloud Optimization Time

- Point Cloud Accuracy Optimization Time
- Point Cloud Colorization Time
- Merging Output Time
- Output Saving Time
- Others

Ground Point Classification Time

DEM Generation Time

**23min 39s**

6min 37s

3min 6s

1min 1s

3min 1s

9min 53s

**6min 16s**

**4min 50s**

## Reconstruction Parameters

### Point Cloud Optimization Parameters

Use custom base station data	Yes
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	2
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	3FCDJPE0045CRP
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	4.9m/s
Flight Height	72.04m
Ground Beam Diameter	365mm*36mm
Pulse Rate	240kHz
Scan Rate	720kHz

### Aircraft Parameters (Aircraft 2)

**Hardware Parameters**

Payload	DJI Zenmuse L1
Payload SN	3FCDJPE0045CRP
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 (2 Flights)**

Average Flight Speed	4.59m/s
Flight Height	101.25m
Ground Beam Diameter	506mm*50mm
Pulse Rate	240kHz
Scan Rate	720kHz

### Aircraft Parameters (Aircraft 3)

**Hardware Parameters**

Payload	DJI Zenmuse L1
Payload SN	3FCDJPE0045CRP
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 (3 Flights)**

Average Flight Speed	4.58m/s
Flight Height	96.23m
Ground Beam Diameter	481mm*48mm
Pulse Rate	240kHz
Scan Rate	720kHz

### Aircraft Parameters (Aircraft 4)

**Hardware Parameters**

Payload	DJI Zenmuse L1
Payload SN	3FCDJPE0045CRP
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 (4 Flights)**

Average Flight Speed	4.54m/s
Flight Height	88.78m
Ground Beam Diameter	443mm*44mm
Pulse Rate	240kHz
Scan Rate	720kHz

### Aircraft Parameters (Aircraft 5)

**Hardware Parameters**

Payload	DJI Zenmuse L1
Payload SN	3FCDJPE0045CRP
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 (5 Flights)**

Average Flight Speed	4.68m/s
Flight Height	71.32m
Ground Beam Diameter	356mm*35mm
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	0.00015 m	0.00698 m	0.0001 m	0.00563 m	0.00012 m	0.00578 m
Attitude	0.0000074 rad	0.0001789 rad	0.0000065 rad	0.0001876 rad	0.0000658 rad	0.0005006 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	-0.023318 m	-0.047671 m	-0.001586 m	0.023318 m	0.027434 m	0.028555 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	179.49716 m	-0.029284 m	0.238514 m	-0.029284 m	0.048442 m	0.056572 m	86.13
GCP2	6694136.125 m	625112.438 m	179.2 m	179.181116 m	-0.014884 m	0.30318 m	-0.014884 m	0.0516 m	0.053668 m	83.57
GCP3	6694044.142 m	625090.714 m	150.69 m	150.677967 m	-0.009033 m	0.340194 m	-0.009033 m	0.082495 m	0.082936 m	98.09
GCP4	6694111.685 m	625160.523 m	181.57 m	181.548086 m	-0.023914 m	0.275226 m	-0.023914 m	0.067319 m	0.07139 m	90.1
GCP5	6694056.934 m	625189.852 m	180.32 m	180.281051 m	-0.036949 m	0.17979 m	-0.036949 m	0.059219 m	0.069759 m	95.99
GCP6	6694045.905 m	625168.006 m	180.66 m	180.610168 m	-0.044832 m	0.116488 m	-0.044832 m	0.054089 m	0.070223 m	82.2
GCP7	6694208.456 m	625141.916 m	179.95 m	179.912673 m	-0.033327 m	0.491804 m	-0.033327 m	0.068903 m	0.076479 m	65.25
GCP8	6694233.792 m	625153.495 m	179.75 m	179.719133 m	-0.029867 m	0.227545 m	-0.029867 m	0.058456 m	0.065598 m	79.25
GCP9	6694243.718 m	625124.336 m	180.77 m	180.725329 m	-0.047671 m	0.376477 m	-0.047671 m	0.06799 m	0.082968 m	64.7
GCP1_0	6694289.236 m	625125.852 m	178.88 m	178.867431 m	-0.015569 m	0.232136 m	-0.015569 m	0.057367 m	0.0594 m	99.45
GCP1_1	6694302.783 m	625064.538 m	177.18 m	177.164355 m	-0.011645 m	0.262435 m	-0.011645 m	0.041744 m	0.044284 m	92.93
GCP1_2	6694241.112 m	625062.939 m	177.07 m	177.067414 m	-0.001586 m	0.253153 m	-0.001586 m	0.057919 m	0.057876 m	66.58
GCP1_3	6694253.345 m	625112.746 m	178.79 m	178.790423 m	-0.004577 m	0.409745 m	-0.004577 m	0.063505 m	0.063611 m	65.89

### DEM Error

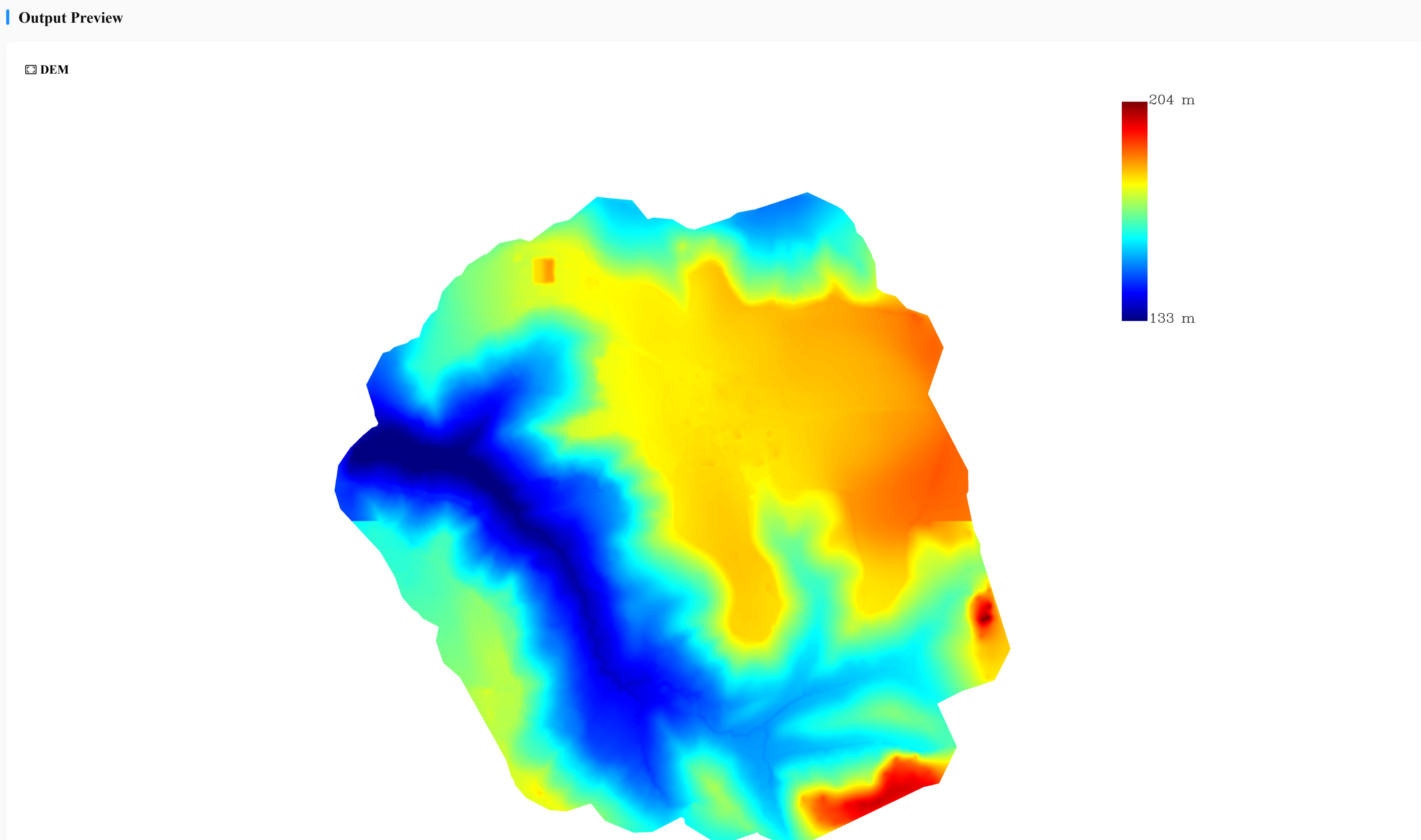
Parameters	No. of Check Points	Average Altitude	Average Altitude Difference	Min Altitude Difference	Max Altitude Difference	Average Absolute Value of Altitude Difference	Root Mean Square	Standard Deviation
Value	13	177.255231 m	-0.164987 m	-0.239105 m	-0.045776 m	0.164987 m	0.173981 m	0.181085 m

### 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	179.396842 m	-0.102158 m	86.13
GCP2	6694136.125 m	625112.438 m	179.2 m	179.008836 m	-0.107164 m	83.57
GCP3	6694044.142 m	625090.714 m	150.69 m	150.457844 m	-0.229156 m	98.09
GCP4	6694111.685 m	625160.523 m	181.57 m	181.385934 m	-0.186066 m	90.1
GCP5	6694056.934 m	625189.852 m	180.32 m	180.131204 m	-0.186752 m	95.99
GCP6	6694045.905 m	625168.006 m	180.66 m	180.512635 m	-0.142365 m	82.2
GCP7	6694208.456 m	625141.916 m	179.95 m	179.757935 m	-0.188065 m	65.25
GCP8	6694233.792 m	625153.495 m	179.75 m	179.509895 m	-0.239105 m	79.25
GCP9	6694243.718 m	625124.336 m	180.77 m	180.679799 m	-0.093201 m	64.7
GCP1_0	6694289.236 m	625125.852 m	178.88 m	178.713414 m	-0.169586 m	99.45
GCP1_1	6694302.783 m	625064.538 m	177.18 m	177.028264 m	-0.147736 m	92.93
GCP1_2	6694241.112 m	625062.939 m	177.07 m	177.023224 m	-0.045776 m	66.58
GCP1_3	6694253.345 m	625112.746 m	178.79 m	178.567292 m	-0.227707 m	65.89

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	123points/m <sup>2</sup>	16points/m <sup>2</sup>	0.25 m	179928	2.49%
1:1000	123points/m <sup>2</sup>	4points/m <sup>2</sup>	0.5 m	46026	2.78%
1:2000	123points/m <sup>2</sup>	1points/m <sup>2</sup>	1 m	11860	3.27%

### Output List

Point Cloud	PNTS   LAS
DEM	GeoTIFF