

Quality Report



Generated with PIX4Dmapper version 4.8.4



Important: Click on the different icons for:



Help to analyze the results in the Quality Report



Additional information about the sections



Click [here](#) for additional tips to analyze the Quality Report

Summary



Project	Wn61Test
Processed	2025-06-03 11:39:12
Camera Model Name(s)	ILX-LR1_17mmF4DGDN Contemporary023_17.0_9504x6336 (RGB)
Average Ground Sampling Distance (GSD)	2.80 cm / 1.10 in
Area Covered	0.975 km ² / 97.5419 ha / 0.38 sq. mi. / 241.1561 acres

Quality Check



Images	median of 70151 keypoints per image	
Dataset	698 out of 708 images calibrated (98%), all images enabled, 8 blocks	
Camera Optimization	1.07% relative difference between initial and optimized internal camera parameters	
Matching	median of 6473.5 matches per calibrated image	
Georeferencing	yes, 6 GCPs (6 3D), mean RMS error = 0.008 m	

Preview

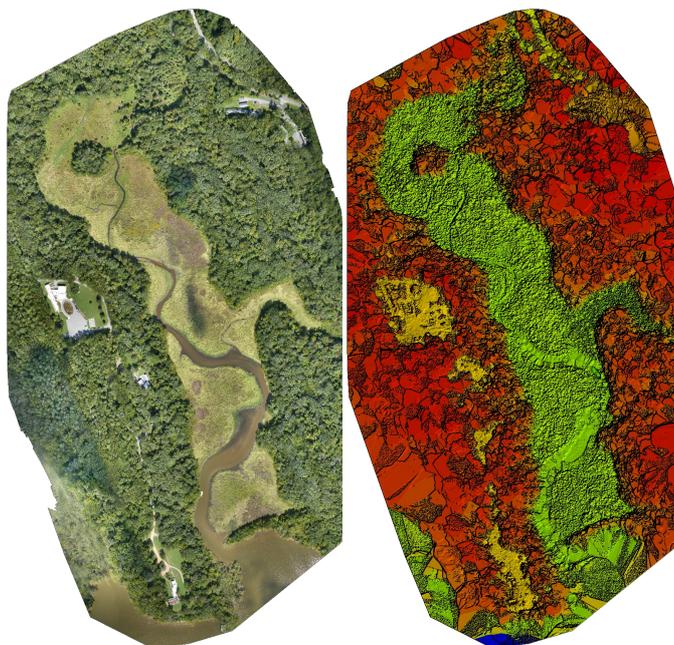


Figure 1: Orthomosaic and the corresponding sparse Digital Surface Model (DSM) before densification.

Calibration Details



Number of Calibrated Images	698 out of 708
Number of Geolocated Images	708 out of 708

? Initial Image Positions

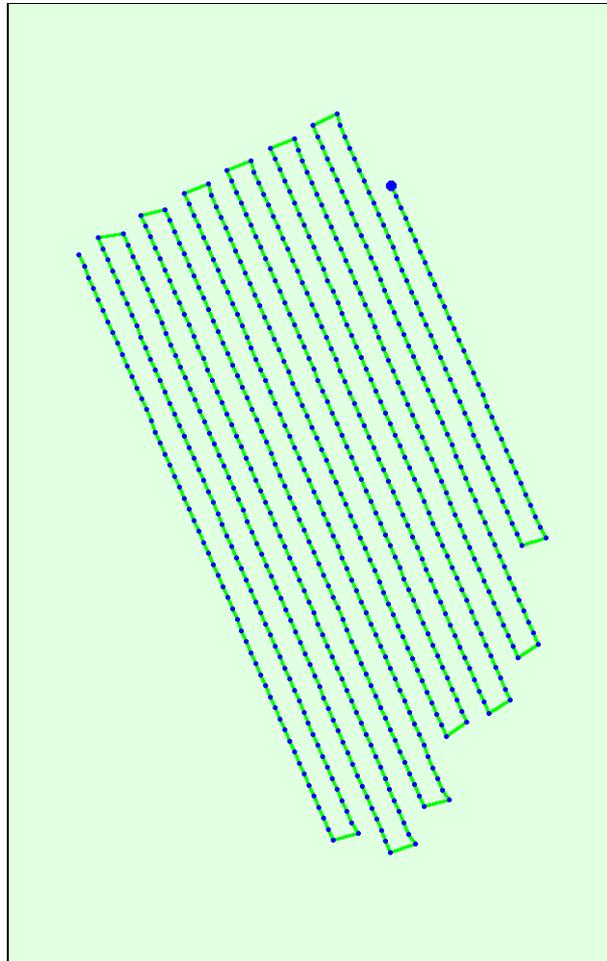
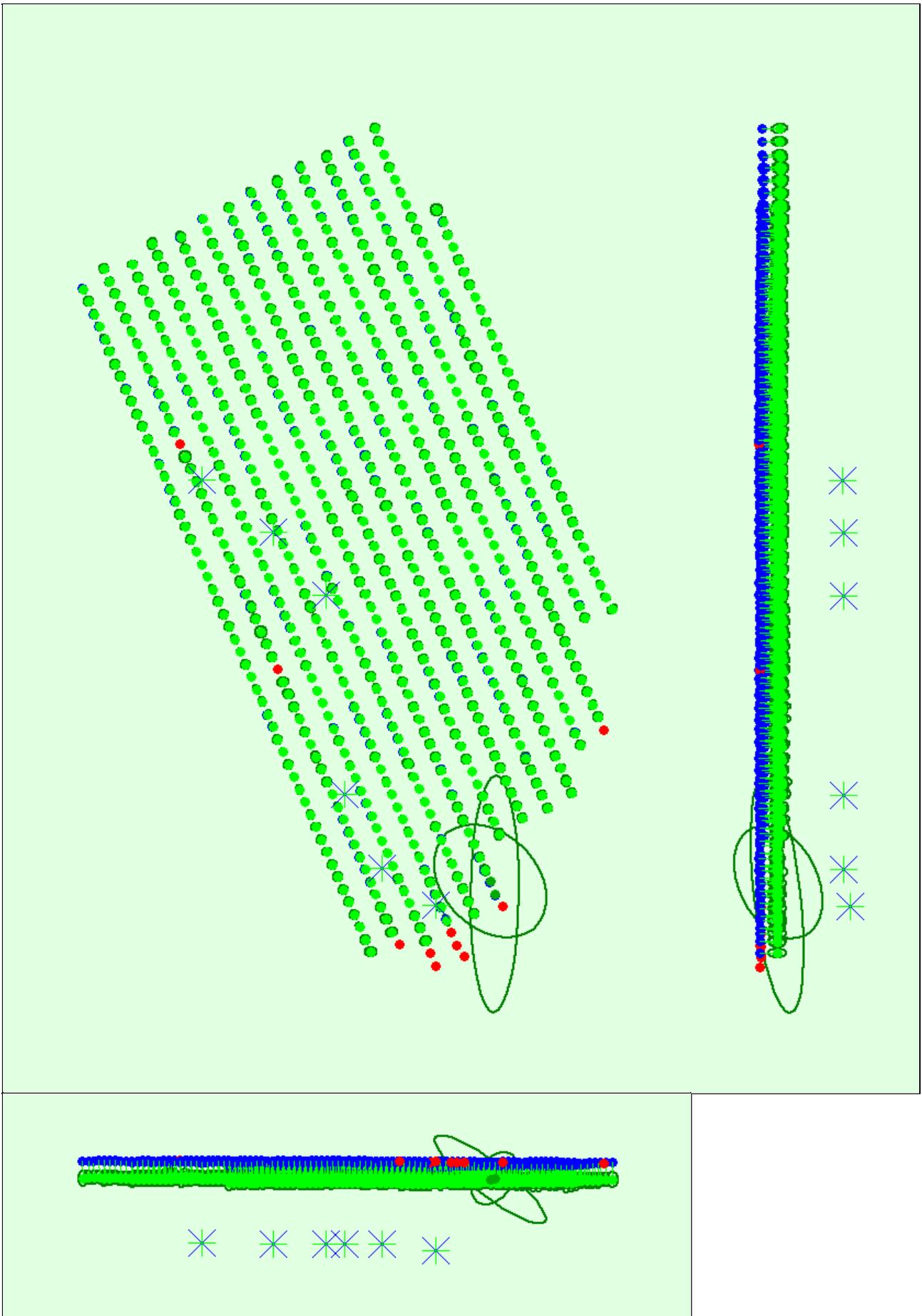


Figure 2: Top view of the initial image position. The green line follows the position of the images in time starting from the large blue dot.

? Computed Image/GCPs/Manual Tie Points Positions





Uncertainty ellipses 100x magnified

Figure 3: Offset between initial (blue dots) and computed (green dots) image positions as well as the offset between the GCPs initial positions (blue crosses) and their computed positions (green crosses) in the top-view (XY plane), front-view (XZ plane), and side-view (YZ plane). Red dots indicate disabled or uncalibrated images. Dark green ellipses indicate the absolute position uncertainty of the bundle block adjustment result.

🔍 Absolute camera position and orientation uncertainties



	X[m]	Y[m]	Z[m]	Omega [degree]	Phi [degree]	Kappa [degree]
Mean	0.080	0.085	0.119	0.054	0.052	0.051
Sigma	0.039	0.088	0.033	0.030	0.027	0.029

🔍 Overlap

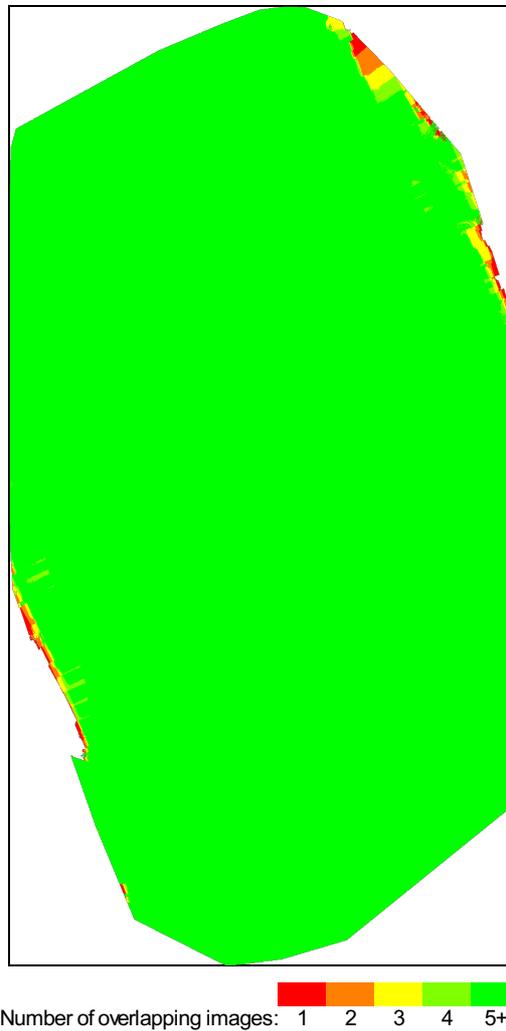


Figure 4: Number of overlapping images computed for each pixel of the orthomosaic. Red and yellow areas indicate low overlap for which poor results may be generated. Green areas indicate an overlap of over 5 images for every pixel. Good quality results will be generated as long as the number of keypoint matches is also sufficient for these areas (see Figure 5 for keypoint matches).

Bundle Block Adjustment Details



Number of 2D Keypoint Observations for Bundle Block Adjustment	5200275
Number of 3D Points for Bundle Block Adjustment	2244377
Mean Reprojection Error [pixels]	0.119

🔍 Internal Camera Parameters

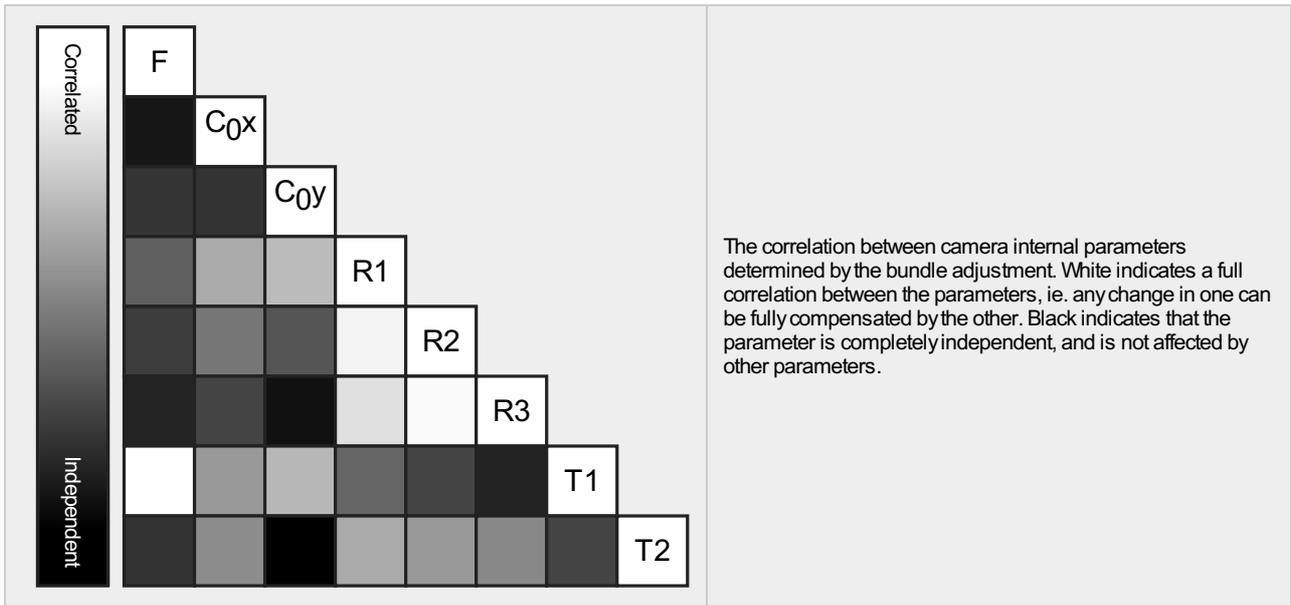
📷 ILX-LR1_17mmF4DGDN|Contemporary023_17.0_9504x6336 (RGB). Sensor Dimensions: 35.000 [mm] x 23.333 [mm]



EXIF ID: ILX-LR1_17mmF4DGDN|Contemporary023_17.0_9504x6336

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
--	--------------	-------------------	-------------------	----	----	----	----	----

Initial Values	4616.229 [pixel] 17.000 [mm]	4752.000 [pixel] 17.500 [mm]	3168.000 [pixel] 11.667 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	4665.624 [pixel] 17.182 [mm]	4743.433 [pixel] 17.468 [mm]	3135.196 [pixel] 11.546 [mm]	-0.069	0.014	0.001	-0.000	-0.000
Uncertainties (Sigma)	3.610 [pixel] 0.013 [mm]	1.108 [pixel] 0.004 [mm]	0.901 [pixel] 0.003 [mm]	0.001	0.001	0.000	0.000	0.000



pixel count

The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

2D Keypoints Table

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	70151	6473
Mn	22315	55
Max	79996	18968
Mean	66577	7450

3D Points from 2D Keypoint Matches

	Number of 3D Points Observed
In 2 Images	1802070
In 3 Images	288568
In 4 Images	88665
In 5 Images	36229
In 6 Images	16794
In 7 Images	7929
In 8 Images	2106
In 9 Images	745
In 10 Images	456
In 11 Images	319
In 12 Images	198
In 13 Images	129
In 14 Images	66
In 15 Images	36
In 16 Images	9
In 17 Images	19
In 18 Images	14
In 19 Images	12

Figure 5: Computed image positions with links between matched images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate weak links and require manual tie points or more images. Dark green ellipses indicate the relative camera position uncertainty of the bundle block adjustment result.

Relative camera position and orientation uncertainties

	X[m]	Y[m]	Z[m]	Omega [degree]	Phi [degree]	Kappa [degree]
Mean	0.380	0.442	0.605	0.192	0.157	0.085
Sigma	0.381	0.862	0.334	0.098	0.081	0.061

Geolocation Details

Ground Control Points

GCP Name	Accuracy XY/Z [m]	Error X[m]	Error Y [m]	Error Z [m]	Projection Error [pixel]	Verified/Marked
0 (3D)	0.020/ 0.020	0.002	0.001	0.018	0.409	14 / 14
1 (3D)	0.020/ 0.020	-0.005	-0.014	0.000	0.274	14 / 14
2 (3D)	0.020/ 0.020	-0.007	-0.016	-0.008	0.262	14 / 14
3 (3D)	0.020/ 0.020	0.004	0.005	-0.004	0.258	18 / 18
4 (3D)	0.020/ 0.020	-0.006	0.011	-0.005	0.163	17 / 19
5 (3D)	0.020/ 0.020	0.010	0.012	0.001	0.226	16 / 16
Mean [m]		-0.000035	-0.000059	0.000382		
Sigma [m]		0.006175	0.011237	0.008411		
RMS Error [m]		0.006175	0.011237	0.008420		

Localisation accuracy per GCP and mean errors in the three coordinate directions. The last column counts the number of calibrated images where the GCP has been automatically verified vs. manually marked.

Absolute Geolocation Variance

Mn Error [m]	Max Error [m]	Geolocation Error X [%]	Geolocation Error Y [%]	Geolocation Error Z [%]
-	-0.04	0.72	0.14	3.02
-0.04	-0.04	0.29	0.29	1.29
-0.04	-0.03	1.29	1.58	3.02
-0.03	-0.02	4.31	3.74	6.75
-0.02	-0.01	13.79	11.64	14.80
-0.01	0.00	31.18	28.16	21.98
0.00	0.01	28.59	37.50	18.53
0.01	0.02	12.21	12.36	13.65
0.02	0.03	5.17	3.74	7.90
0.03	0.04	1.15	0.57	4.31
0.04	0.04	0.57	0.29	2.16
0.04	-	0.72	0.00	2.59
Mean [m]		-0.408208	0.129976	31.555263
Sigma [m]		0.013405	0.011295	0.026136
RMS Error [m]		0.408428	0.130466	31.555274

Min Error and Max Error represent geolocation error intervals between -1.5 and 1.5 times the maximum accuracy of all the images. Columns X, Y, Z show the percentage of images with geolocation errors within the predefined error intervals. The geolocation error is the difference between the initial and computed image positions. Note that the image geolocation errors do not correspond to the accuracy of the observed 3D points.

Geolocation Bias	X	Y	Z

Translation [m]	-0.408153	0.129992	31.555071
-----------------	-----------	----------	-----------

Bias between image initial and computed geolocation given in output coordinate system.

Relative Geolocation Variance



Relative Geolocation Error	Images X[%]	Images Y[%]	Images Z[%]
[-1.00, 1.00]	88.51	91.38	86.06
[-2.00, 2.00]	98.13	99.57	96.55
[-3.00, 3.00]	99.71	99.86	98.56
Mean of Geolocation Accuracy [m]	0.020000	0.020000	0.030000
Sigma of Geolocation Accuracy [m]	0.000000	0.000000	0.000000

Images X, Y, Z represent the percentage of images with a relative geolocation error in X, Y, Z.

Geolocation Orientational Variance	RMS [degree]
Omega	12.835
Phi	4.147
Kappa	2.212

Geolocation RMS error of the orientation angles given by the difference between the initial and computed image orientation angles.

Initial Processing Details



System Information



Hardware	CPU: 12th Gen Intel(R) Core(TM) i9-12950HX RAM: 128GB GPU: Intel(R) UHD Graphics (Driver: 32.0.101.6078), NVIDIA RTX A4500 Laptop GPU (Driver: 32.0.15.7276)
Operating System	Windows 11, 64-bit

Coordinate Systems



Image Coordinate System	WGS 84
Ground Control Point (GCP) Coordinate System	WGS 84 / UTMzone 18N
Output Coordinate System	WGS 84 / UTMzone 18N

Processing Options



Detected Template	No Template Available
Keypoints Image Scale	Full, Image Scale: 0.5
Advanced: Matching Image Pairs	Custom Use Capture Time: yes, Number of Neighboring Images: 1 Use Triangulation of Image Geolocation: yes Use Distance: no Use Image Similarity: yes, Maximum Number of Pairs for Each Image Based on Similarity: 1 Use MIPs: yes, Maximum Number of Image Pairs per MIP: 5 Use Time for Multiple Cameras: no
Advanced: Matching Strategy	Use Geometrically Verified Matching: no
Advanced: Keypoint Extraction	Targeted Number of Keypoints: Automatic
Advanced: Calibration	Calibration Method: Geolocation Based Internal Parameters Optimization: All External Parameters Optimization: All Rematch: Auto, no

Point Cloud Densification details



Processing Options



Image Scale	multiscale, 1/2 (Half image size, Default)
Point Density	Optimal
Minimum Number of Matches	3
3D Textured Mesh Generation	yes
3D Textured Mesh Settings:	Resolution: Medium Resolution (default) Color Balancing: no
LOD	Generated: no
Advanced: 3D Textured Mesh Settings	Sample Density Divider: 1
Advanced: Image Groups	group1
Advanced: Use Processing Area	yes
Advanced: Use Annotations	yes

Results



Number of Generated Tiles	11
Number of 3D Densified Points	242169172
Average Density (per m ³)	96.1

DSM, Orthomosaic and Index Details



Processing Options



DSM and Orthomosaic Resolution	1 x GSD (2.8 [cm/pixel])
DSM Filters	Noise Filtering: yes Surface Smoothing: yes, Type: Sharp
Raster DSM	Generated: yes Method: Inverse Distance Weighting Merge Tiles: yes
Orthomosaic	Generated: yes Merge Tiles: yes GeoTIFF Without Transparency: no Google Maps Tiles and KML: no
Raster DTM	Generated: yes Merge Tiles: yes
DTM Resolution	5 x GSD (2.8 [cm/pixel])