



PIX4Dmatic



# Next generation photogrammetry software for corridor and large scale mapping

From thousands of images to 3D spatial data



## Bigger datasets, accurate results

PIX4Dmatic processes thousands of images while maintaining survey-grade accuracy, halving the processing time, without the trouble of splitting and merging.



## Fully automated processing

Developed in close-collaboration with surveyors and mapping professionals to streamline your workflow: import, process and assess the quality of a project in just a few clicks, and move seamlessly from Pix4Dmatic to PIX4Dsurvey.



## Future-proofed for BVLOS

PIX4Dmatic is ready to support the large datasets generated by BVLOS\* (beyond visual line of sight) drone flights.

\*Where legally permitted

# Essential outputs, without compromising accuracy

in a fraction of the time

## Dense point cloud



Generate dense point clouds for large areas. PIX4D's proprietary .bpc file format is optimized for loading and manipulation of big point clouds.

**Export formats:**  
.las, .bpc

## Orthomosaic



Create orthomosaics that are geometrically corrected such that the scale is uniform. They are color balanced in order to be visually pleasing.

**Export formats:**  
GeoTIFF (.tiff)

## Digital surface model (DSM)



Generate a digital representation of all objects in the mapped area. It includes natural features as well as elevated objects, like buildings.

**Export formats:**  
GeoTIFF (.tiff)

## Compatible with PIX4Dsurvey



Seamless export of processed projects into PIX4Dsurvey to transform point clouds into actionable CAD-ready data.

**Export formats:**  
.p4m

  available for Windows & macOS







“The navigation and speed of both processing and display are revolutionary for the large projects we are working on.”

**Jason Hagon**  
GeoDrone Survey (UK)

Try for free at [pix4d.com/matic](https://pix4d.com/matic)



	Features	Advantages
INPUTS	Aerial and terrestrial images in .jpg .jpeg .tiff formats	☑ Process any RGB images that support basic EXIF/XMP tags
	LiDAR and RGB images from PIX4Dcatch	☑ Process both LiDAR and RGB image outputs from PIX4Dcatch for a full terrestrial workflow
	Multi-camera support in the same project	☑ Create a project using images from different cameras and process them together
	Import image geolocations and orientations as .csv or .txt	☑ Text file import (.csv/.txt) for image geolocation and orientation.
	Ground Control Points (GCPs)	☑ Import and mark ground control points to improve the absolute accuracy of the project
	GCPs marks	☑ Import of GCP marks from PIX4Dmapper into PIX4Dmatic
	Known reference coordinate system support	☑ Select EPSG or ESRI codes from known coordinate systems libraries
	Geoid support	☑ Support of most commonly used geoid models
PROCESSING	Arbitrary coordinate reference system support	☑ Georeferencing of the project with GCPs in local or site specific coordinate systems
	Multiprocessor CPU + GPU support	☑ Increase the processing speed by leveraging the power of CPU cores and threads, as well as GPUs
	Backup mechanism	☑ An automatic backup mechanism ensures that you do not lose your work when something unexpected stops PIX4Dmatic
	Calibration	☑ Define the Image Scale, Keypoints and Internals confidence parameters for the optimization of internal camera parameters (e.g. focal length, principal point of autocollimation and lens distortions) and external camera parameters (position, orientation) during calibration.
	Reoptimize	☑ Reoptimize internal and external camera parameters based on GCPs or MTPs to improve the reconstruction
	AutoGCP	☑ Automatic detection of control targets of known shape for faster marking experience
	Auto-mark	☑ For nadir projects, once at least 2 marks were added for a tie point, find more marks of the same point
	Depth point cloud	☑ Create a depth point cloud based on LiDAR inputs from PIX4Dcatch
	Point cloud densification	☑ Define the point cloud Density, Number of Matches, Image Scale, Noise filter and Sky filter parameters to create a dense point cloud based on the sparse point cloud created during calibration
	Depth & dense fusion	☑ Create a single point cloud based on the depth point cloud and the dense point cloud
	Mesh	☑ Define the mesh Texture size and Decimation criteria to create a 3D Textured Mesh
	Digital Surface Model	☑ Define the Resolution cm/px, enable Surface smoothing with its Median filter radius (px) and enable Interpolation for the digital surface model creation
	Orthomosaic	☑ Create an orthomosaic based on the digital surface model and the images
	Quality report	☑ Assess the quality of the reconstruction between processing steps with the Quality Report
	Processing templates	☑ Select between a Nadir, Oblique or Custom processing template
RAYCLOUD	Project visualization	☑ Visually assess the quality of optimized camera positions, automatic tie points, dense point cloud, digital surface model and orthomosaic
	GCPs	☑ Annotate GCPs with the highest accuracy, using both original images and 3D information at the same time
	Checkpoints	☑ Annotate Checkpoints with the highest accuracy, using both original images and 3D information at the same time to verify the absolute accuracy of the project
	Manual Tie Points (MTPs)	☑ Create and mark manual tie points to improve the calibration of your project
	Undo/Redo your changes	☑ Undo/Redo actions
	History	☑ All actions of a given session are available in the history panel. Revert to the project at any stage, while keeping the other steps that were done as items in the history
	Status center	☑ More detailed information about what happens when processing and working in the software

<b>EXPORT</b>	Point cloud (.las)	 Export generated point clouds in .las file format.
	Mesh (.obj)	 Export a 3D Textured Mesh in .obj file format.
	Digital Surface Model (.tiff)	 Export generated digital surface model in a single .tiff or in tiles. Select the compression rate of the file. LZW compression available
	Orthomosaic (.tiff)	 Export generated orthomosaic in a single .tiff or in tiles. Select the compression rate of the file. LZW compression available
	Quality report	 Export the quality report to assess the accuracy and quality of projects
	Direct export to PIX4Dsurvey	 Seamless export of processed PIX4Dmatic projects (.p4m) into PIX4Dsurvey. Together with Pix4D's proprietary .bpc file format, this leads to optimized loading and manipulation of large point clouds in PIX4Dsurvey.

<b>LANGUAGE</b>	Language option	 English, Japanese, Spanish
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**HARDWARE SPECS**



**CPU:** Quad-core or hexa-core Intel i5.



**GPU:** Any NVIDIA GPU that supports OpenGL 4.1 or higher.



**Disk Space:** 80 GB Free Space (2000-5000 images at 20MP).  
160 GB Free Space (5000-10000 images at 20MP).



**OS:** Windows 10, 64 bit or macOS Catalina.



**RAM:** 32GB (2000-5000 images at 20MP). 64GB (5000-10000 images at 20MP).