PIX4Dmatic 2.5.0

FEATURE LIST

Click here for the full technical feature comparison for all PIX4Dmatic plans.

	FEATURES	ADVANTAGES
RELEASE NOTE	Technical release notes	
FEATURES PER LICENSE	Feature per license	Check out the detailed table to see what is included in PIX4Dmatic Analyst and PIX4Dmatic Standard
INPUTS	Aerial and terrestrial images	Process RGB images in the aerial and terrestrial images JPG, JPEG, TIF, and TIFF that support standard EXIF/XMP tags.
	PIX4Dmapper and PIX4Dsurvey projects	Import PIX4Dmapper and legacy PIX4Dsurvey projects to continue working in PIX4Dmatic.
	Open Photogrammetry Format (OPF)	Import and export a project in the Open Photogrammetry Format (OPF).
	LiDAR and RGB images from PIX4Dcatch	Import and process PIX4Dcatch data, depth maps (LiDAR) and RGB images, for a full terrestrial workflow.
	Point clouds (LiDAR)	Import external LiDAR point clouds (LAS/LAZ) to generate high-quality meshes, DSMs, and orthomosaics.
	Multi-camera support in the same project	Import and process images captured by different cameras simultaneously within the same project.
	Image geolocations and orientation	Import image geolocation and orientation information in CSV or TXT.
	Ground control points (GCPs)	Import ground control points and checkpoints to accurately georeference your project.
	GCPs marks	Import tie point (GCPs, MTPS, etc.) image marks from a PIX4Dmapper or another PIX4Dmatic project
	Known coordinate reference system (CRS)	Select a default coordinate reference system for easy setup, with EPSG or ESRI codes from known coordinate systems libraries.
	Geoids support	Select a geoid from a list of the most commonly-used geoid models or select a geoid height.
	Arbitrary coordinate reference system (CRS)	Georeference projects using local or site-specific coordinate systems defined by GCPs.
	Site localization	Import a site localization file to use a customer coordinate reference system in PRJ or in WKT generated with PIX4Dcatch.
	Region of interest (ROI)	Import or draw an ROI (KML) to delimit the processing area, speeding up processing and creating sharper outputs.
	Volume base surface (TIN)	Import a LandXML TIN file as base surface for volume computation.
	Edit camera internals and externals parameters	Fine-tune internal and external camera parameters for enhanced control over calibration and project accuracy.
	Vector files	Import vector files in DXF, SHP, zipped SHP or GeoJSON to view in your project.
	Animation trajectory	Import and export a video trajectory as a JSON file to create fly-through videos.
PROCESSING	Processing templates	Select the *Nadir*, *Oblique, PIX4Dcatch* or *Custom* processing template.
	Calibration	Define the *Template*, *Pipeline*, *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.
	Reoptimization	Reoptimize internal and external camera parameters based on GCPs, MTPs, VTPs, or mITPs to improve the reconstruction.
	Gaussian splats & point cloud	Select a template and sky filter to generate Gaussian splats and a high-quality dense point cloud.
	Dense point cloud	Create a high-quality dense point cloud using user-defined scale, density, noise filtering, and mask-aware parameters.
	Readjustment	Quickly adjust the point cloud after reoptimization without the need to re-densify the entire project.
	Depth point cloud	Create a depth point cloud based on LiDAR inputs from PIX4Dcatch.
	Depth & dense fusion	Create a single point cloud based on the depth point cloud and the dense point cloud.
	Outlier removal	Automatically detect and remove noise from imported or generated point clouds for cleaner outputs.
	Mesh	Generate a detailed 3D mesh using customizable parameters for texture size, deghosting, and smoothing.
	Digital surface model (DSM)	Define the *Input, Resolution, Surface smoothing, Interpolation, and Mask-aware* parameters to create a digital surface model with the point cloud.
	Orthomosaic	Define the *Deghosting, Oblique,* and Mask-aware parameters to create an orthomosaic with the digital surface model and the images.
	AI tools	Compute the data required for the object selection and image mask tools.
	Quality report	Assess the calibration and other processing step results with the detailed quality report.
	Terrain classification	A set of tools to identify terrain and non-terrain point cloud points, and display the result.
	Grid of points	Automatically create spot elevations and simplify the point cloud, generating a significantly lighter dataset.
	TIN	TIN (Triangular Irregular Network) is a seamless set of triangles representing a surface.
	Digital terrain model (DTM)	Calculate the DTM based exclusively on the height of the classified terrain points.
	Contour lines	Contour lines are lines on a map that connect points of equal elevation, used to represent a three-dimensional landscape on a two-dimensional surface.
	Road object detection	Road objects detection automatically detects manholes, drains, and poles by using the images.
	Surface comparison	Calculate cut and fill volumes by comparing any two surfaces (TINs and point clouds), with support for defining custom boundaries,
TOOLS	Multicore 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 your work is protected against unexpected software interruptions.
	History	Access a complete history panel to view all session actions and revert the project to any previous state.
	Pause processing	Pause main processing steps of the processing panel momentarily, to conduct minor tasks in other applications.
	Selection tools	Select entities on the project using a rectangle, a polygon, or on their color.
	Vectorization tools	Create a geometry using differents vectorization tools: marker, circle, arc, polyline, polygon, assisted road marking, roof detection and wall detection.
	Measurement tools	Measure in 2D or 3D using differents tools: distance and volume.
	Select only	Select only the desired entity: layers, grid of points, point clouds, cameras, tie points, views.
	Invert selection	Invert the point cloud selection.
	Focus on selection	Quickly navigate to selected point clouds, geometries, or sections in complex scenes.
	Split, join, and continue polylines	Easily vectorize with the features to split, join, and continue polylines.
	Drape polyline	Drape polylines onto the point cloud and adjust complexity for accurate representation.
	Vector layers and layers templates	Enhance workflows with customizable vector layers and layer templates for efficient data management.
	Lock layers	Prevent accidental modifications by locking layers during visualization or processing steps.
	Scale constraint	Improve project scaling accuracy by adding known distances and specifying their precision.
	Orientation constraint	Use known axis direction to accurately orient your project globally.
	Stockpile detection	Automatically detect stockpiles and generate volume polygons for quick and accurate volume calculation.
	Orthomosaic editor	Refine the final orthomosaic using content from the original captured images for enhanced results.
	Section view	Create vertical or horizontal sections, or along a polyline, to vectorize a profile or verify the quality of the results.
	Orthoplane	Create an orthoplane from a section view.
	Convert geometries	Convert geometries in a different type of geometry, i.e. polyline in polygon.
	Object selection tool	A smart object select tool which automatically selects a group of points identified as belonging to the same object in one click for point cloud classification.
	Share to PIX4Dcloud	Share a project to PIX4Dcloud.
	Process in PIX4Dcloud	Process a project from PIX4Dmatic to PIX4Dcloud.
	Merge projects	Merge multiple PIX4Dmatic projects.
	Custom report	Create a custom report tailored to different needs.
	Masks	Enable AI-assisted masking by simply placing prompts on images to exclude unwanted objects from the different outputs (e.g. point cloud, mesh, orthomosaic).
	Point cloud registration	Align two or more point clouds to create a unified point cloud.
	Terrain class	Identify, edit, export, delete, and show/hide terrain and non-terrain point cloud points.
	ASPRS class	Import or classify point clouds using ASPRS standard, and edit, export, delete or show/hide each class.
	Disable point cloud points	Disable points in your point clouds for higher-quality meshes, DSMs, and orthomosaics.
	Restore disabled point cloud points	After disabling point cloud point, restore them to the project to correct mistakes.
	Clipping box	Isolate a specific area of the point cloud using a clipping box for focused editing and visualization.
	Status center	Monitor tracking notifications and detailed progress reports for all processing steps.
	Ground control points (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 MTPs to manually improve the calibration of your project.
	Vertex tie points (VTPs)	A geometry vertex can be converted to a vertex tie point (VTP), so that image marks of geometries are taken into account during calibration or reoptimization.
	Auto-mark	Auto-mark will automatically find more marks in images for tie points or geometry vertices, as long as you marked at least 2 images.
	AutoGCP	Automatic detection of targets with known shape and texture without manual intervention.
	Intersection tie points (ITPs)	Improve calibration, especially in complex scenes, by automatically generating tie points calculated from scene geometries.
	Videos & views	Create professional video animations using your saved project views.
	Views	Create and save specific views of your project to easily return to the same viewpoint for documentation and reporting.
	Save copy	Create a copy of your project at any point to safeguard a previous state while continuing work.
	2D and 3D views (rayCloud)	Visually assess the accuracy of the initial and optimized image and tie point (GCPs, MTPs, etc.) positions, and visualize the automatic tie points, dense point cloud, mesh, digital surface model, and orthomosaic. In the 2D or 3D, and perspective or orthographic views.
	Undo/Redo	Undo/Redo your changes.
	Snapping window	Facilitates the picking of points when creating a geometry in the 3D view by giving a sense of depth.
	Base maps	Add context to your scene by displaying map or satellite data in the background of the 2D viewer.
	Automatic defaults for missing camera parameters	Obtain default values when internal camera parameters are missing.
SETTIINGS	Sizes	Customize the display size of project elements like cameras, tie points, markers, and masks.
	Labels	Enable or disables the label of the markers, mask, and countour lines height label.
	Point clouds	Establish the minium number of matches, and select the colorization based on a parameter: elevation, normals, and GPS time.
	Volumes	Choose to visualize cut and fill volumes in binary and gradient colors.
	Viewing options	Customize the visual display parameters to optimize your workspace layout and viewing experience for different tasks.
	Background	Personalize the color of the project background.
EXPORT	Project as OPF	Export your entire project using the Open Photogrammetry Format (OPF) 1.0 specifications.
	Quality report	Export the quality report to assess the accuracy and quality of projects.
	Custom report	Export custom reports with your logo containing an *Overview plan*, *Views,* and an *Inventory* describing your project.
	Image geolocation and orientations	Export image geolocation and orientation data.
	Undistorted images	Export the images with geometric lens distortions removed.
	Export GCPs	Export GCPs for enhanced workflow flexibility.
	Export marks	Export marks of tie points.
	Export MTPs and mITPS	Export tie point marks (MTPs, mITPs) in .TXT or .CSV file formats.
	Region of interest (ROI) (KML)	Export the defined region of interest (KML) used within the project.
	Depth point cloud	Export generated point clouds in LAZ, LAS (1.2 and 1.4) and XYZ file formats.
	Dense point cloud	Export generated point clouds in LAZ, LAS (1.2 and 1.4) and XYZ file formats.
	Depth & dense fusion	Export generated point clouds in LAZ, LAS (1.2 and 1.4) and XYZ file formats.
	Point cloud from mesh	Export a point cloud derived directly from the generated mesh in .LAZ format.
	Mesh	Export a 3D textured mesh in OBJ, PLY, Cesium 3D tiles (B3DM, JSON), SLPK, and FBX file format.
	Gaussian splatting	Export Gaussian Splatting project in PLY format.
	Digital surface model (DSM)	Export a generated digital surface model in a single cloud optimized GEOTIFF or in tiles. Optionally with TFW and PRJ files. Select the compression rate of the file. LZW compression available.
	Orthomosaic	Export a generated orthomosaic in a single or tiled cloud optimized .geotiff with optional TFW and PRJ files, as JPG with a JGW file for geolocation, or as KML. Select the compression rate of the file. LZW or JPEG compression available.
	Sections	Export the geometries created from section views.
	Geometries	Export created geometries (Markers, Polylines, Polygons) and layers to DXF, zipped SHP, SHP, CSV, and LandXML.
	Grids	Export generated grids to DXF, SHP, GeoJSON, CSV, LAZ, LAS (1.2 and 1.4).
	TIN	Export generated TIN in LandXML and GeoTIFF.
	DTM	Export a generated Digital Model Terrain (DTM) in TIFF with optional TFW and PRJ files. Select the compression rate and export using the project CRS or Web Mercator.
	Contour lines	Export generated contour lines in DXF, SHP or GeoJSON.
	Video	Export a video of your project to share on social media or with stakeholders in WEBM format
LANGUAGES	Language options	Access the software in 12 languages: English, French, German, Japanese, Korean, Portuguese, Simplified Chinese, Spanish, Traditional Chinese, Turkish, Czech, and Ukrainian.
MIN HARDWARE SPECS	**CPU:** Quad-core or hexa-core Intel i5	
	GPU: Any NVIDIA GPU that supports OpenGL 4.1 or higher	
	Disk space: SSD, 150 GB - 300 GB Free space (2,000-5,000 images at 20 MP). SSD, 300 GB - 450 GB Free space (5,000-10,000 images at 20 MP).	
	OS: Windows 11 (64 bit) or macOS Sequoia (15.x) + Sonoma (14.x)	
	RAM: 32 GB (2,000-5,000 images at 20 MP). 64 GB (5,000-10,000 images at 20 MP).	
LICENSING OPTIONS	Organizational license support	If you are in a Pix4D organization, you can access those organizational licenses and see how many are available.
	SSO support	SSO-enrolled companies can use their defined SSO provider to log in.
	Offline license	Fully offline licensing available.
	Proxy configuration	The usage of proxys is supported for system or manual proxy configurations.

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