



	Features	Advantages
INPUTS	Aerial and terrestrial images (JPG, JPEG, TIF, and TIFF)	Process RGB images in the Aerial and terrestrial images JPG, JPEG, TIF, and TIFF that support standard EXIF/XMP tags
	LiDAR and RGB images from PIX4Dcatch	Import and process PIX4Dcatch data, depth maps (LiDAR) and RGB images, for a full terrestrial workflow
	Multi-camera support in the same project	Import images from different cameras and process them together in the same project
	Image geolocations and orientation (CSV and TXT)	Import image geolocation and orientation information in CSV or TXT
	Ground control points (GCPs) (CSV and TXT)	Import ground control points and checkpoints to accurately georeference your 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 the project with GCPs in local or site specific coordinate systems
	Site localization (WKT and PRJ)	Import a site localization file to use a customer coordinate reference system in PRJ or in WKT generated with PIX4Dcatch
	Region of interest (ROI) (KML)	Import or draw a region of interest to delimit an area in order to reduce the extent of outputs generated for a project, speed up the processing, or create sharper outputs
	Scale constraint	Add known distances as scale constraints and indicate their accuracy to scale your project
	Orientation constraint	Add distances with known axis and direction to orient your project
	Open Photogrammetry Format (OPF)	Import a project in the Open Photogrammetry Format (OPF)
	Edit camera internals and externals parameters	Fine-tune internal and external camera parameters for enhanced control over calibration and project accuracy
Vector files (DXF, SHP, ZIP, SHZ, GeoJSON, JSON)	Import geometry files in DXF, SHP, zipped SHP or GeoJSON to view in your project	
PROCESSING	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 that you do not lose your work, even if PIX4Dmatic unexpectedly stops
	Save copy	Save copy allows you to easily create a copy of your project, so that you can continue your work while being sure you have a copy of a previous state
	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
	Reoptimize	Reoptimize internal and external camera parameters based on GCPs, MTPs, VTPs, or miTPs to improve the reconstruction
	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 the calibration by generating intersection tie points automatically calculated with the scene's geometries, e.g. for indoor scenes
	Merge projects	Merge multiple PIX4Dmatic projects
	Depth point cloud	Create a depth point cloud based on LiDAR inputs from PIX4Dcatch
	Readjust	Readjust the point cloud after having reoptimized the project. No need to densify again after having reoptimized a project.
	Image pre-processing	Compute the data required for the object selection and image mask tools
	Dense point cloud	Define the point cloud Image Scale, Density, Minimum number of matches, Noise filter, Sky filter, and Mask-aware parameters to create a photogrammetry 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	

PROCESSING	Mesh	☒ Define the Pipeline, Template, Texture size, Deghosting, Decimation, Polygon-aware, Sky mask, Smoothing, Interior improvement, and Mask aware parameters to create a 3D textured mesh with the point cloud.
	Digital surface model	☒ 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.
	Quality report	☒ Assess the calibration and other processing step results with the detailed quality report.

TOOLS	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
	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 manual tie points to improve the calibration of your project
	Intersection Tie Points (ITPs)	☒ Create and mark manual ITPs or edit and delete automatic ITPs to 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
	Undo/Redo	☒ Undo/Redo your changes
	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	☒ The status center displays tracking notifications and progress reports of different processing steps
	Distance measurement	☒ Measure a distance in the 2D or 3D views, refine in the images for higher accuracy. Option to take projection distortions into account
	Volume measurement	☒ Measure a volume in the 3D view and refine in the images for higher accuracy
	Marker	☒ Create a marker to measure or highlight the position of a specific point
	Polyline	☒ Create a polyline to vectorize objects
	Polygon	☒ Create a polygon to vectorize a surface with the option to add a planarity constraint, add polygon holes, edit polygons or connect polygons into a polygonal mesh surface
	Vector layers and layers templates	☒ Enhance workflows with customizable vector layers and layer templates for efficient data management
	ASPRS classes	☒ Classify point clouds then edit, export, delete or show/hide each class
	Section view	☒ Create vertical or horizontal sections, or along a polyline, to vectorize a profile or verify the quality of the results
	Base maps	☒ Get context about your scene by displaying map or satellite data in the background of your scene in the 2D viewer
	Disable point cloud points	☒ Disable points in your point clouds for higher-quality meshes, DSMs, and orthomosaics.
	Clipping box	☒ Isolate a specific area of your point cloud for easier editing
	Views	☒ Create views of your project to easily access the same view point again and to document a scene in a custom report
	Videos	☒ Create a video animation with your saved views
	Invert selection	☒ Invert the point cloud selection
	Color by elevation	☒ Use a histogram and a selection of spectrums to display your point clouds by elevation value
	Color by relative confidence	☒ Use a histogram and a selection of spectrums to interactively display your point clouds by relative confidence value
	Minimum number of matches	☒ Display points in the automatic tie points (ATPs), dense point cloud, or fused point cloud based on the number of matches to assess the point cloud quality
	Snapping window	☒ Facilitates the picking of points when creating a geometry in the 3D view by giving a sense of depth
	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
	Image masks	☒ Create masks in images to improve the point cloud, mesh, DSM and orthomosaic by hiding obstructing objects and to measure objects

