

	Features	Advantages
<b>INPUTS</b>	Aerial (nadir and oblique) and terrestrial imagery support	Process images taken at any angle and from any aerial manned or unmanned platform as well as from the ground
	Imagery from video (mp4 or avi format) support	Software automatically extracts still frames from video files to create a project
	Any camera (compact, SLR, multi-spectral, GoPro, Tetracam, large-frame add-on)	Use images acquired by any camera, from small to large sensors, from consumer-grade to highly specialized cameras
	Multi-camera support for the same project	Create projects using more than one camera and process them together (NIR and RGB for example)
	Standard camera rig support	Process camera rigs (arrays) of multiple multi-band synchronized cameras from known manufacturers (Tetracam, Airinov, MicaSense, WaldoAir) for more robust, accurate and faster processing
	Multiple file types (.jpg, single band or multi band .tiff)	Input various file types, including single or multi-band images
	Ground Control Point edit and import (.csv, .txt)	Import and edit Ground Control Points to improve the accuracy of your project
	Local, global and arbitrary coordinate reference system support in meters and feet	Choose from all known coordinate systems or your own local system
	Camera exterior orientation(omega, phi, kappa) support	Optimize camera exterior orientation parameters starting from GPS/IMU input parameters
External point cloud import	Import a point cloud from different sources, such as aerial LiDAR, and use it to create a DSM and orthomosaic	
<b>PROCESSING</b>	Rapid Check processing mode	Process initial project results in low-resolution within minutes
	Rapid Check Quality Report	Assess quality and completeness of acquired images while still on site
	Processing templates	Automate processing and generation of outputs by using standard or customized templates
	Camera self-calibration	Optimize internal camera parameters, such as focal length, principal points and lens distortions, without the need of a camera calibration report
	Automatic Aerial Triangulation (AAT) and Bundle Block Adjustment (BBA)	Process automatically with or without known camera position and exterior orientation
	Automatic point cloud densification (semi-global matching add-on)	Produce a dense and detailed 3D point cloud, which can be used as a basis for DSM and orthomosaic generation
	Automatic point cloud filtering & smoothing	Use presets or edit point cloud filtering and smoothing options
	Automatic terrain/object point cloud classification and DTM extraction (BETA)	Classify and remove buildings and vegetation automatically in the point cloud to generate bare-earth DTMs and contour lines. For additional control, select and delete points manually in the rayCloud to improve DTM generation
	Automatic brightness and color correction	Compensate automatically for change of brightness, luminosity and color balancing of images
	Quality Report	Assess quality of projects
	Project merging	Process parts of projects individually and merge them into one project
	Project area definition	Import (.shp) or draw specific orthomosaic and point cloud densification/filtering areas to generate results inside specific boundaries
	Project splitting	Split large projects automatically into smaller parts for more efficient large-scale mapping
	Targeted Feature Extraction	Give the number of features to find either more features in low-texture images to assist the reconstruction or less features for large-frame data sets to speed up processing
GPU support	Leverage the power of Nvidia GPU's for 10%-75% faster initial processing (depending on image content and project size). GPU support also used for densification and semiglobal matching	
<b>RAYCLOUD EDITOR</b>	Project viewing	Assess flight plan and camera positions, inspect automatic keypoint matching and add uncalibrated cameras
	Navigation Modes	View the point cloud / mesh in standard, trackball, or first person modes
	Scale and Orientation Constraint	Set accurate scale and orientation of projects with no or imprecise geolocation by simply defining one distance and one axis
	Manual tie point editing	Annotate and edit GCPs (2D & 3D), Check Points and Manual Tie Points with the highest accuracy, using both original images and 3D information at the same time
	Project reoptimization	Reoptimize camera positions and rematch images based on GCPs and Manual Tie Points to improve reconstruction of difficult areas
	Image annotation	Remove points from the 3D point cloud and create filters based on image content
	Point cloud editing	Select, classify or delete points from the point cloud using various selection tools
	Orthoplane definition	Define a plane to generate an orthomosaic from building facades, bridge piles, etc
	Polyline object creation	Annotate and measure polylines (3D breaklines) in the point cloud and accurately refine polyline vertexes in multiple original images
	Surface object creation	Annotate and measure surfaces in the point cloud and accurately refine surface vertexes in multiple original images; use the surface to simplify, flatten and correct DSMs (e.g. for removing structures or tree stands)
	Volume object creation	Annotate and measure volumes in the point cloud. Import/export reference surface for volume calculation and easily determine changes in volume over time
	Digitization tools / Vector object editing	Draw and edit vector objects and export them in various formats (.dxf, .shp, .dgn, .kml)
	Fly-through animation	Create a virtual camera trajectory in the 3D point cloud, play the animation in real-time, export the animation as a video (in mp4 and avi format) and the flightpath waypoints in CSV format

<b>INDEX CALCULATOR</b>	Radiometric adjustment interface	Make the indices more reliable and accurate by correcting for illumination effects using a radiometric target
	Reflectance map	Generate an accurate Reflectance map at the preferred resolution as accurate basis of index maps
	Multiple region management	Improve your analysis by managing and visualizing index values per region (field boundary)
	Automated index generation (NDVI)	Generate single-band and index maps based on pre-defined formulas in a single click without manual user intervention
	Formula editing	Create and save your own formulas choosing among each available input band and generate custom index maps
	Class management	Create a basis of your annotated prescription map by segmenting the data into classes using statistical algorithms (equal spacing, equal area, Jenks)
	Prescription annotation	Match ground observations with scouting data by assigning rates and annotations based on your decisions
	Prescription map export	Put your data into action and import the application map directly into the tractor console or most Farm Management Software
<b>MOSAIC EDITOR</b>	Region editing	Create and edit regions on the orthomosaic, choose the best content from multiple underlying images and projection type to remove moving objects or artifacts
	Local blending	Edit only the desired portion of the orthomosaic, blend it in real-time and get the improved orthomosaic within minutes
	Planar/ortho projection selection	Select planar or ortho projection for each created region to remove artifacts
<b>OUTPUT RESULTS</b>	2D output results:	<ul style="list-style-type: none"> <li>Nadir orthomosaics in GeoTIFF output format</li> <li>Orthomosaics from user-defined plane in GeoTIFF output format</li> <li>Google tiles export in KML and HTML output formats</li> <li>Mapbox tiles in MB format</li> <li>Index maps (DVI, NDVI, SAVI, etc.) in GeoTIFF and Geotiff format</li> <li>Prescription maps in SHP format</li> </ul>
	3D output results:	<ul style="list-style-type: none"> <li>3D PDF for easy sharing of 3D mesh</li> <li>Nadir DSMs and DTMs in GeoTIFF format</li> <li>DSMs from user-defined plane in GeoTIFF output format</li> <li>Full 3D textured mesh in OBJ, PLY, DXF, FBX and Zipped OBJ format</li> <li>Point cloud in LAS, LAZ, XYZ and PLY output format</li> <li>Contour lines in SHP, DXF, PDF format</li> <li>User-defined vector objects in DXF, SHP, DGN and KML format</li> </ul>
	Generate fly-through animations and flightpaths	Point cloud and 3D mesh fly-through animation in MP4 and AVI formats Fly-through waypoints and path in CSV format
	Optimized camera position, external orientation and internal parameters, undistorted images	Export Aerial Triangulation results into traditional photogrammetry software solutions (e.g. INPHO, Leica LPS, DAT/EM Summit Evolution)
	Personal support	Get free access to personal support
<b>SUPPORT &amp; MORE</b>	Extensive Knowledge Base	Find answers to most of your questions on our publicly available and continuously updated Knowledge Base
	Training	Gain in-depth knowledge of Pix4D software with webinars and workshops organized on a regular basis
	Translation of the software	Interface translated in Chinese and Spanish
	Multi-device license	License can be activated on two computers: one for on-site Rapid Check and one for full processing mode
	Licensing server	Easily move your license among several computers by activating and deactivating devices at any time

#### Hardware specifications

Minimum requirements: Windows 64bit / 7, 8, 10, Server / 2-Core CPU / 4GB RAM / GPU: any Nvidia and AMD model starting from 2008 and Intel model starting from 2012 (OpenGL 3.2). Recommended: 6-Core CPU i7 or Xeon / 16GB RAM (or more depending on dataset size) / CUDA compatible GPU  
OS X beta version available. Recommended: minimum i7 CPU / 16GB RAM (for larger projects and faster processing).



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