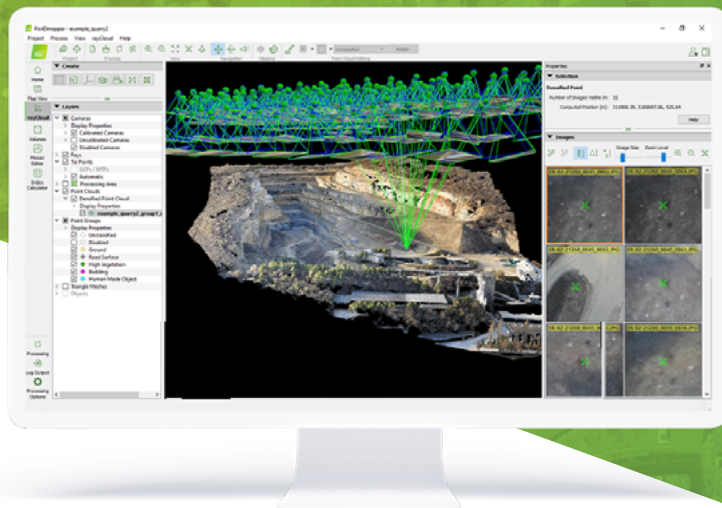




PIX4Dmapper



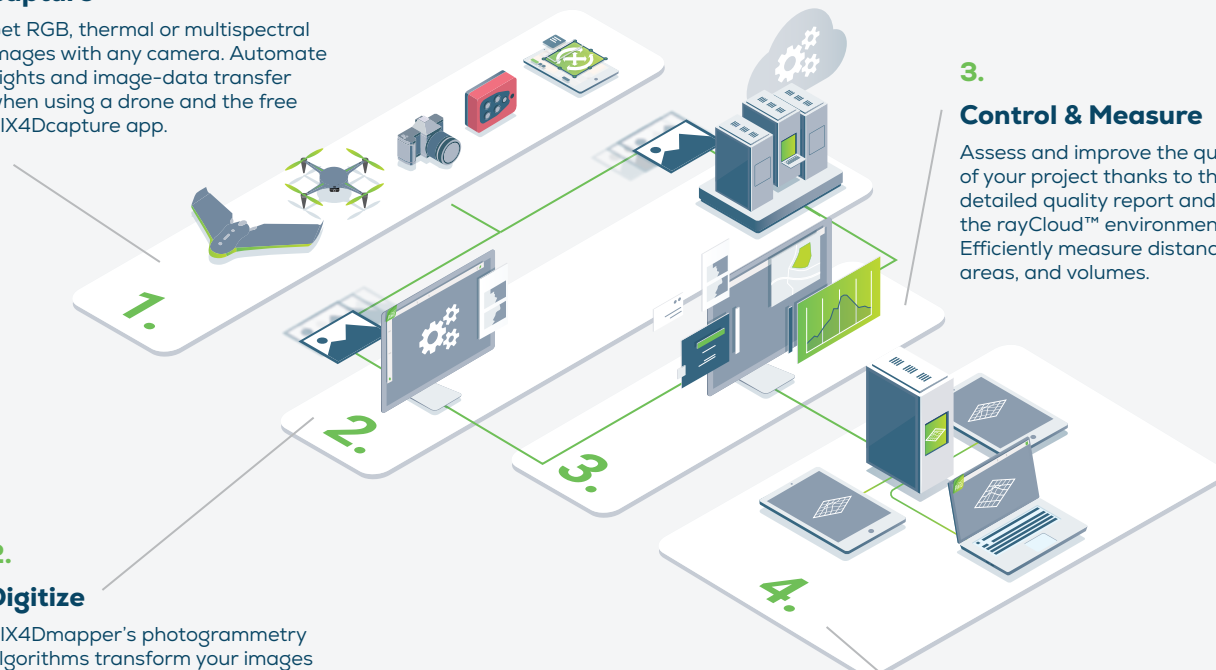
The leading photogrammetry and drone mapping software

Get survey-grade results from images

1.

Capture

Get RGB, thermal or multispectral images with any camera. Automate flights and image-data transfer when using a drone and the free PIX4Dcapture app.



2.

Digitize

PIX4Dmapper's photogrammetry algorithms transform your images in digital maps and 3D models. Seamlessly process your projects on your desktop using our photogrammetry software, or bundle with PIX4Dcloud for online processing.

3.

Control & Measure

Assess and improve the quality of your project thanks to the detailed quality report and the rayCloud™ environment. Efficiently measure distances, areas, and volumes.

4.

Collaborate & share

Selectively and securely share project data and insights with your team, clients and suppliers.



A variety of tools for digitizing reality

- Camera self-calibration
- Automatic point cloud classification
- Merge or split projects
- Detailed quality report
- Error ellipsoid displaying MTP/GCPs accuracy in 3D
- Rolling shutter correction
- Scale and orientation constraint
- Image masking for disregarding invalid pixels among all images
- Object creation and digitization
- Tiled Level-of-Detail (LoD) mesh
- Automatic DTM generation
- Orthoplane for creating orthomosaic of any plane/facade
- Radiometric adjustment to generate accurate index and thermal maps
- Custom indices for raster computation based on reflectance values
- Multi-core CPU processing
- GPU-accelerated processing
- Fly through video

Recommended Hardware Specs



CPU: quad-core or hexa-core Intel i9/Xeon

GPU: compatible with OpenGL 3.2 and 2 GB RAM



RAM: 16GB - 64GB



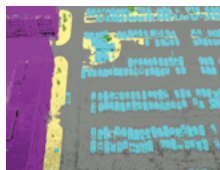
OS: Windows 8, 10 64 bits

Outputs

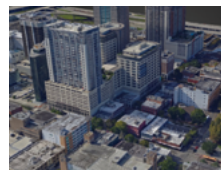
Easily export your maps and models to industry-compatible formats



Full-color point cloud
.las, .laz, .ply, .xyz



Classified point cloud
.las, .laz



3D textured mesh
.ply, .fbx, .dxf, .obj, .pdf, Level-of-detail mesh in .osgb, .slpk



Orthomosaic
GeoTiff (.tif), .kml



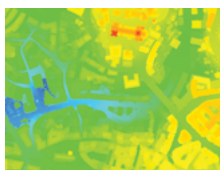
Facade orthomosaic
GeoTiff (.tif)



Facade digital surface model
GeoTiff (.tif)



Digital Terrain Model (DTM)/
GeoTiff (.tif)



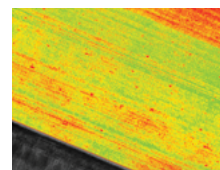
Digital Surface Model (DSM)
GeoTiff (.tif), .xyz, .las, .laz



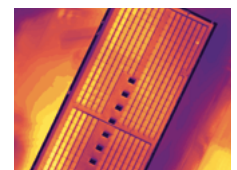
Contour lines
.shp, .dxf, .pdf



Reflectance maps
GeoTiff (.tif)



Index maps
GeoTiff (.tif), .shp



Thermal maps
GeoTiff (.tif)

Try for free at pix4d.com/mapper



	Features	Advantages
INPUTS	Aerial –nadir & oblique– and terrestrial imagery	Process images taken from any angle from, any aerial or terrestrial, manned or unmanned platform
	Video (mp4 or avi format)	Automatically extracts still frames from videos to create a project
	Any camera (compact, DSLR, thermal, multispectral, fisheye, 360°, large-frame, etc.) images in .jpg or .tiff	Use images acquired with any camera, from small to large frames, from consumer-grade to highly specialized cameras (large frame add-on required for images over 55 MP)
	Multi-camera support in the same project	Create a project using images from different cameras and process them together
	RTK/PPK + IMU data support	Allows faster and more robust calibration when using the Accurate Geolocation Pipeline
	Camera rig support	Process images using known rig relatives from multiple synchronized cameras
	Ground control point edit and import	Import and edit ground control points to improve the absolute accuracy of your project
	Known or custom reference coordinate system support in imperial or metric units	Select EPSG code from known coordinate systems or define your own local system
	Camera exterior orientation support	Optimize camera exterior orientation parameters starting from GPS and IMU input parameters
	External point cloud import	Import point clouds from different sources, such as LiDAR, to generate DSMs & orthomosaics
PROCESSING	Processing templates	Automate processing and generation of outputs by using standard or customized templates
	Rapid Check with Quality Report	Rapid processing template for a quick dataset-check while still on site
	Camera self-calibration	Optimize internal camera parameters, such as focal length, principal point of autocollimation and lens distortions
	Rolling shutter effect correction	Correct the warp of images taken with rolling shutter cameras (like GoPro, DJI Phantoms, etc.) to maintain accuracy even when flying fast and low
	Automatic Aerial Triangulation (AAT) and Bundle Block Adjustment (BBA)	Process automatically with or without known camera exterior orientations: (x, y, z, w, f, k)
	Automatic point cloud densification	Produce a dense and detailed 3D point cloud, which can be used as a basis for DSM and 3D mesh
	Automatic point cloud filtering & smoothing	Use presets for point cloud filtering and smoothing options
	Machine-learning point cloud classification	Automatically classify the RGB dense point cloud into five groups: ground road surfaces, high vegetation, buildings and human-made objects
	Automatic DTM/DEM extraction	Remove above-ground objects from DSM and create a bare-Earth model
	Automatic brightness and color correction	Compensate automatically for change of brightness, luminosity and color balancing of images
	Quality Report	Assess the accuracy and quality of projects
	Project merging and splitting	Combine multiple projects into one or split large projects into several for more efficient processing
	Project area definition	Import (.shp) or draw specific areas to faster generate results inside specific boundaries
	Custom number of keypoints	Set the number of keypoints to filter noise or speed up processing
	Multiprocessor CPU + GPU support	Increase the processing speed by leveraging the power of CPU cores and threads, as well as GPUs
Radiometric processing and calibration	Calibrate and correct the image image reflectance, taking the illumination and sensor influence into consideration	

RAYCLOUD EDITOR	Project visualization	Assess quality of optimized camera positions, 3D point cloud and mesh
	Navigation modes	View 3D point cloud and mesh in standard, trackball or first person viewing modes
	Scale Constraint	Accurately scale projects with no or imprecise geolocation by defining one/multiple distances
	Orientation Constraint	Orientate objects with no or imprecise geolocation by defining directions of one/multiple axes
	Ground control point (GCP) / Manual tie point (MTP) editing	Annotate and edit 2D and 3D GCPs, check points, and MTPs with the highest accuracy, using both original images and 3D information at the same time
	Ellipsoid error visualization	Visually assess the size of the error of the computed position of a GCP or MTP
	Project reoptimization	Reoptimize camera positions and/or rematch images based on GCPs & MTPs to improve reconstruction
	Image masking	Carve: Remove points from 3D point cloud and create filters based on image content
		Mask: Clear the unwanted background in orthoplane results.
		Global Mask: Disregard objects that appear in all images, such as a drone leg or a tripod
	Point cloud editing	Select, classify or delete points from the point cloud using various selection tools
	Orthoplane creation	Define a plane to generate a DSM and orthomosaic from building facades, bridge piles, etc
	Polyline and surface object creation	Annotate and measure polylines and surfaces in the point cloud.
Accurately refine vertexes in multiple original images		
3D mesh and DSM editing	Annotate & create surfaces in the point cloud to flatten an area or fill up holes in the mesh and DSM	
Visual outlier detection	Detect and visualize incorrectly-clicked MTPs (Manual Tie Points)/GCPs (Ground Control Points)	
Fly-through animation	Create a virtual camera trajectory, play the animation in real-time and export it	
VOLUME MANAGER	Volume object creation	Annotate and measure volumes based on the DSM
	Volume object management	Import and export selected volume bases in .shp files to enable easy monitoring of stockpiles on site
	Base adjustment	Adjust the reference base to fit different terrain and obtain accurate measurement
MOSAIC EDITOR	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 or ortho projection selection	Select planar or ortho projection for each created region to remove artifacts
INDEX CALCULATOR	Radiometric adjustment interface	Make the vegetation indices more reliable and accurate by applying radiometric corrections
	Reflectance map	Generate an accurate Reflectance map and the preferred resolution as a basis of index maps
	Multiple region management	Improve your analysis by managing and visualizing index values per region
	NDVI map	Generate singleband and NDVI maps based on pre-defined formulas without user intervention
	Index formula editing	Create and save your own formulas choosing among each input band and generate custom index maps
	Class management	Create a basis of your annotated vector map by segmenting the data into classes using statistical algorithms
	Prescription annotation	Match on-site scouts and observations by assigning annotations based on your decisions
	Prescription map export	Put your data into action and export the prescription map in .shp format

OUTPUT RESULTS	2D output results:	Nadir orthomosaics in GeoTIFF output format Orthomosaics from user-defined orthoplane in GeoTIFF output format Google tiles export in .kml and .html output formats Index maps (Thermal, DVI, NDVI, SAVI, etc.) in GeoTIFF and GeoJPG format Prescription maps in .shp format
	2.5D output results:	• Nadir DSMs and DTMs in GeoTIFF format • DSMs from user-defined orthoplane in GeoTIFF output format
	3D output results:	• 3D PDF for easy sharing of 3D mesh • Full 3D textured mesh in .obj, .ply, .dxf, and .fbx format • Tiled Level-of-detail (LoD) mesh in osgb and slpk (Esri) format • Point cloud in .las, .laz, .xyz and .ply output format • Contour lines in .shp, .dxf, .pdf format • Classified point cloud in .las and .csv format • Contour lines in .shp, .dxf, .pdf format • User-defined vector objects in .dxf, .shp, .dgn, and kml format
	Fly-through animation and flight paths	Export the animation in .mp4 and .avi formats and the fly-through waypoints and path in .csv format
	Optimized camera position, external orientation and internal parameters,	Export Aerial Triangulation results into third-party software (e.g. INPHO, Leica LPS, DAT/EM Summit Evolution)
	Undistorted images	If the original images were acquired using a perspective lens an undistorted copy of the calibrated images will be generated

MULTI-LINGUAL	Language Options	English, Spanish, Mandarin (zh-CH, zh-TW), Russian, German, French, Japanese, Italian and Korean
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HARDWARE SPECS



CPU: Quad-core or hexa-core Intel i7/Xeon recommended



HD: SSD recommended
RAM: 16GB - 60GB



GPU: Compatible with OpenGL 3.2
2 GB RAM recommended



OS: Windows 10 64 bits