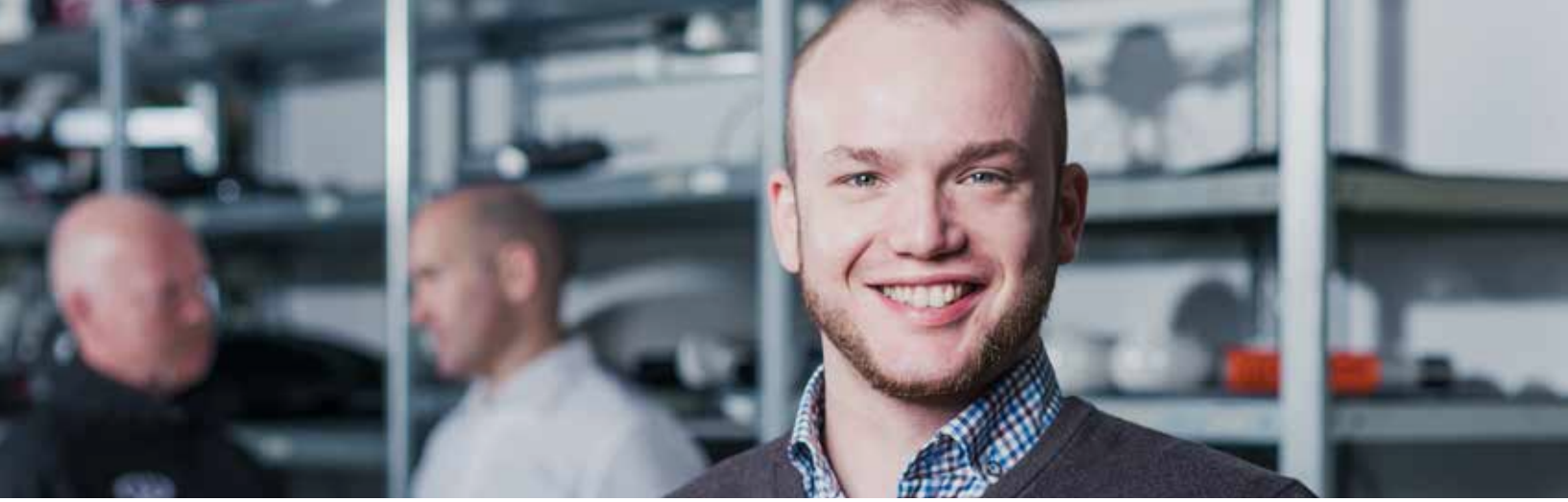
2020 // PRODUCT LINEUP

FULLY INTEGRATED SYSTEMS FOR PROFESSIONALS

microdrones®



PROFESSIONAL PEOPLE

Microdrones has invested in recruiting the best and brightest technology talent worldwide. Our sales management, training and customer support teams will help you succeed in making integrated drone systems a part of your business.

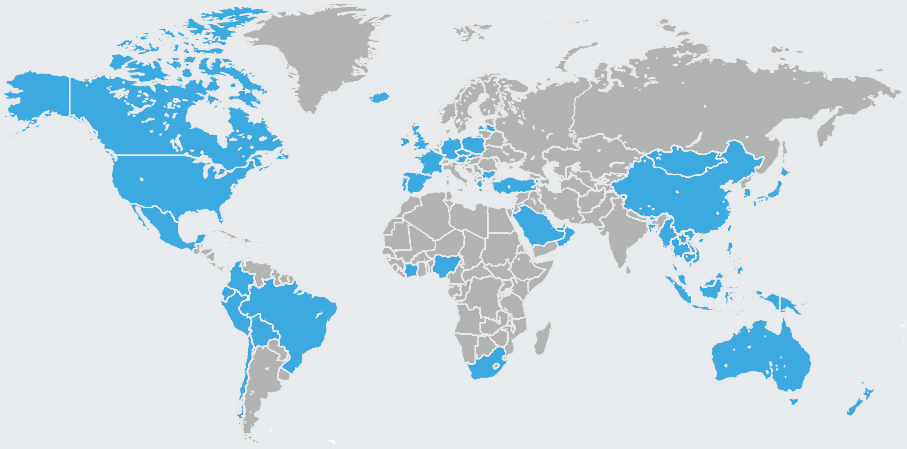
From ensuring that your employees know how to plan a flight and safely fly the aircraft to processing data and exporting it to your preferred visualization software, the training team will get you off the ground and keep you in the know.

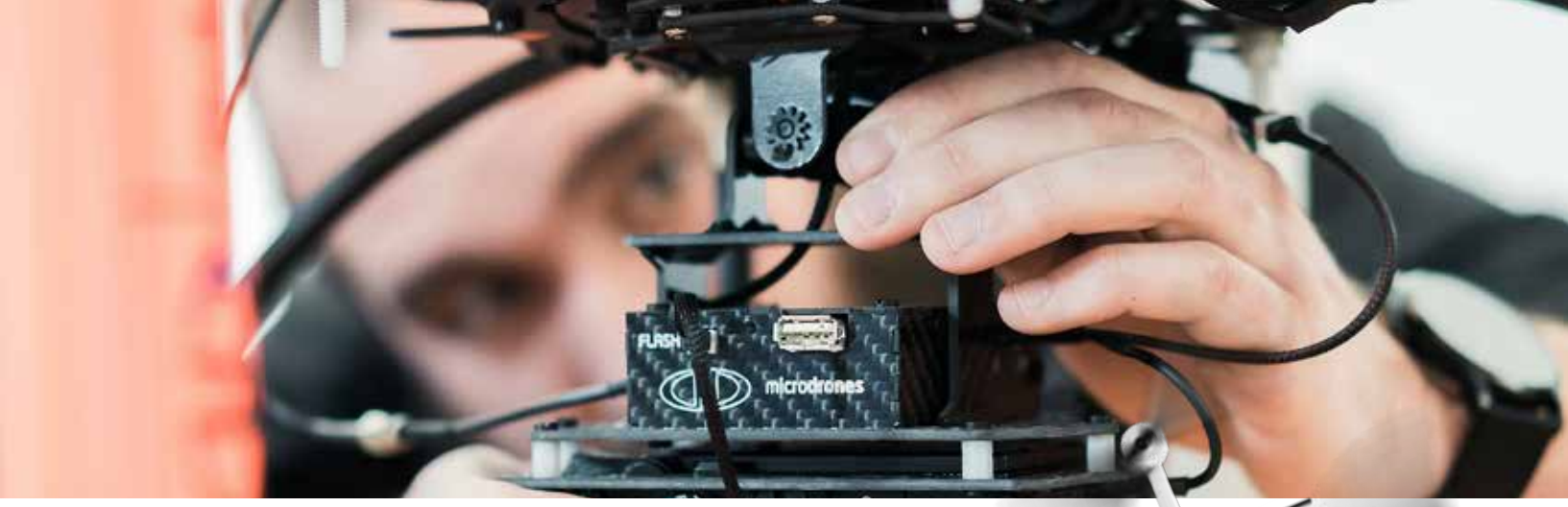
Our Customer Support team will become an extension of yours, helping to ensure that you are successful in the field and the office on every project.

When you need help with service, repair, warranty, or challenges that arise in the field, the Microdrones Customer Support Team will get working on your problem right away. Our support workflows are designed to minimize downtime, so that you are spending more time in the field and at the office with your system, making money.

POSITIONED FOR SUCCESS

Microdrones has strategically built a global footprint to efficiently distribute products while providing you the support you need in your market. It's a big world, but when you plug into the Microdrones distribution network, you are connecting with qualified professionals who will help you efficiently incorporate integrated drone systems into your business.





PACKAGED PRODUCTS THAT PERFORM

Microdrones products are a fully integrated technology solution that help you to innovate, to stand out from competitors, to work more safely and efficiently and to collect and use data in a more valuable way.

From unmanned aerial photogrammetry to LiDAR and area concern maps, you will have access to a full lineup of products that meet the needs of survey, construction, engineering and geomatics professionals. Your offering and engagement with these customers will grow, as their business grows.

mdLiDAR

For Point Cloud Deliverables

mdMAPPER

For Photogrammetry Deliverables

mdTECTOR

For Area Concern Map Deliverables

WE CALL OUR FULLY INTEGRATED SYSTEMS mdSOLUTIONS FOR A GOOD REASON.

Your UAV plus everything you need. All in one convenient package.

At Microdrones, our goal is to empower you to deliver the best possible work while cutting costs, saving time, and completing projects more easily. mdSolutions were developed with the realities of your job in mind.

Our mdLiDAR, mdMapper and mdTector packages combine industry-leading UAVs with payloads that were specifically designed for industrial applications like surveying, mapping, inspection, construction, mining, volumetrics, and precision agriculture.

GET IT ON Google Play

mdSOLUTIONS

These packages provide complete solutions that include aircraft, sensors, accessories, custom mounts, and even an Android tablet app that makes it easy to plan, monitor, adjust, and analyze your missions anywhere.

We've taken the guesswork out of the process, with fully integrated software, workflow, training and support so you are ensured a perfectly integrated aerial solution that performs flawlessly from start to finish.

mdINFINITY∞

(COMING SOON)

mdLiDAR

SOLUTIONS FOR ANY PROJECT OR DELIVERABLE.

LiDAR + Microdrones Aircraft + easy to use software = Extreme Geomatics Productivity.

mdLiDAR3000 and mdLiDAR1000 are fully integrated systems for producing 3D point clouds optimized for land surveying, construction, oil & gas, and mining applications.

Microdrones has developed end-to-end LiDAR solutions combining drones, LiDAR payloads, a fully integrated software workflow, and world class support to consistently provide quality deliverables.

mdMAPPER

Conquer large surveying or mapping projects in a fraction of the time.

mdMapper3000DµoG VHR is the flagship mdMapper system. With this aerial surveying solution, you'll achieve the highest level of data accuracy currently possible, cover more ground in one flight, use fewer people and less equipment on jobs – all without using ground control points.

In addition to this system, Microdrones offers a full range of mapping systems that meet your application, at your budget. From DG technology down to basic GCP-intensive photogrammetry, we have a solution that will meet your project needs and budget.

Significantly reduce your time spent on projects. Deliver unparalleled data quality. Become invaluable to your clients' success.

mdTECTOR

See and detect. Get over your gas detection problems.

mdTector1000CH4 LR consists of a Pergam gas sensor, mounted and integrated perfectly with a Microdrones md4-1000 UAV. It has an onboard HD video link. That means that you can see in real time what you are detecting with the laser sensor.

Whether your gas infrastructure is in a hard to reach riverbed or near a steep cliff… the tough, carbon-fiber built drone will easily navigate terrain that would be difficult, dirty or dangerous by traditional foot crews. Microdrones is known for its field-proven aircraft platform. It's sturdy, stable, resistant to wind and weather, as well as dust and dampness.

EVERY SYSTEM STARTS WITH A POWERFUL UAV PLATFORM. FOR MORE THAN TEN YEARS, MORE THAN 1000 PROFESSIONAL USERS WORLDWIDE HAVE TRUSTED MICRODRONES®

Businesses and institutions all over the globe rely on Microdrones aircraft to cut operating costs and make their work more efficient, safe, and accurate. Here are just a few reasons commercial users trust Microdrones aircraft:

RAIN AND HEAT RESISTANT

The Microdrones molding process keeps electronics and wiring protected from the elements. Our system is resistant to rain, sand and salt, so you can fly in harsh conditions.

ROBUST HOUSING AND COMPONENTS

Robust carbon fiber construction makes easy work of an occasional rough landing. Carbon fiber also insulates interior components so you can fly at more extreme temperature and humidity levels.

GNSS RECEIVER

A GNSS chip combines the power of all existing satellite-based positioning systems around the globe (GPS, GLONASS, Galileo, and Beidou), dramatically improving accuracy. This provides superior positioning and increased efficiency, while reducing risks of breakdown and missed data.

A PLUS FOR EFFICIENCY

Our plus sign (+) shaped configuration is more practical. With a motor on the front, the rear and each side, the airframe remains more stable in level flight and during turns. With less energy being consumed for stability, the extra power goes to carrying heavier payloads.

FAILSAFE MOTORS FOR MINIMUM DOWNTIME

Brushless, low RPM motors and large props work seamlessly for the life of your airframe. Our motors don't need to work as hard, which translates to longevity.

STABLE FLIGHT FOR PRECISE RESULTS

Our smart auto pilot system instantly responds to changing winds to maintain the proper flight attitude. For mapping, stable flight delivers more accurate and precise data.

READY FOR THE FUTURE

The Microdrones platform is ready to be upgraded when new developments in hardware and firmware are implemented.

PLAN FLY

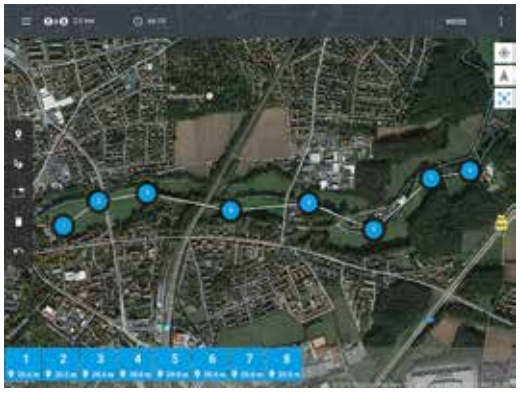
mdCOCKPIT APP: FUNCTION AND FLEXIBILITY AT YOUR FINGERTIPS.

Plan, monitor, adjust, and analyze your missions right from your tablet.

Professionals who use Microdrones UAVs for surveying, mapping, volumetrics, inspection, construction, mining, precision agriculture, and many other commercial applications will appreciate the mdCockpit Android tablet app.

This app was designed for professional drone users and makes it easy to plan, monitor, change, and analyze your flights right from your tablet.

When you're out in the field flying missions, you should always expect the unexpected. The mdCockpit app was developed to provide you with the flexibility you need to tackle projects and overcome changes and challenges as they arise.



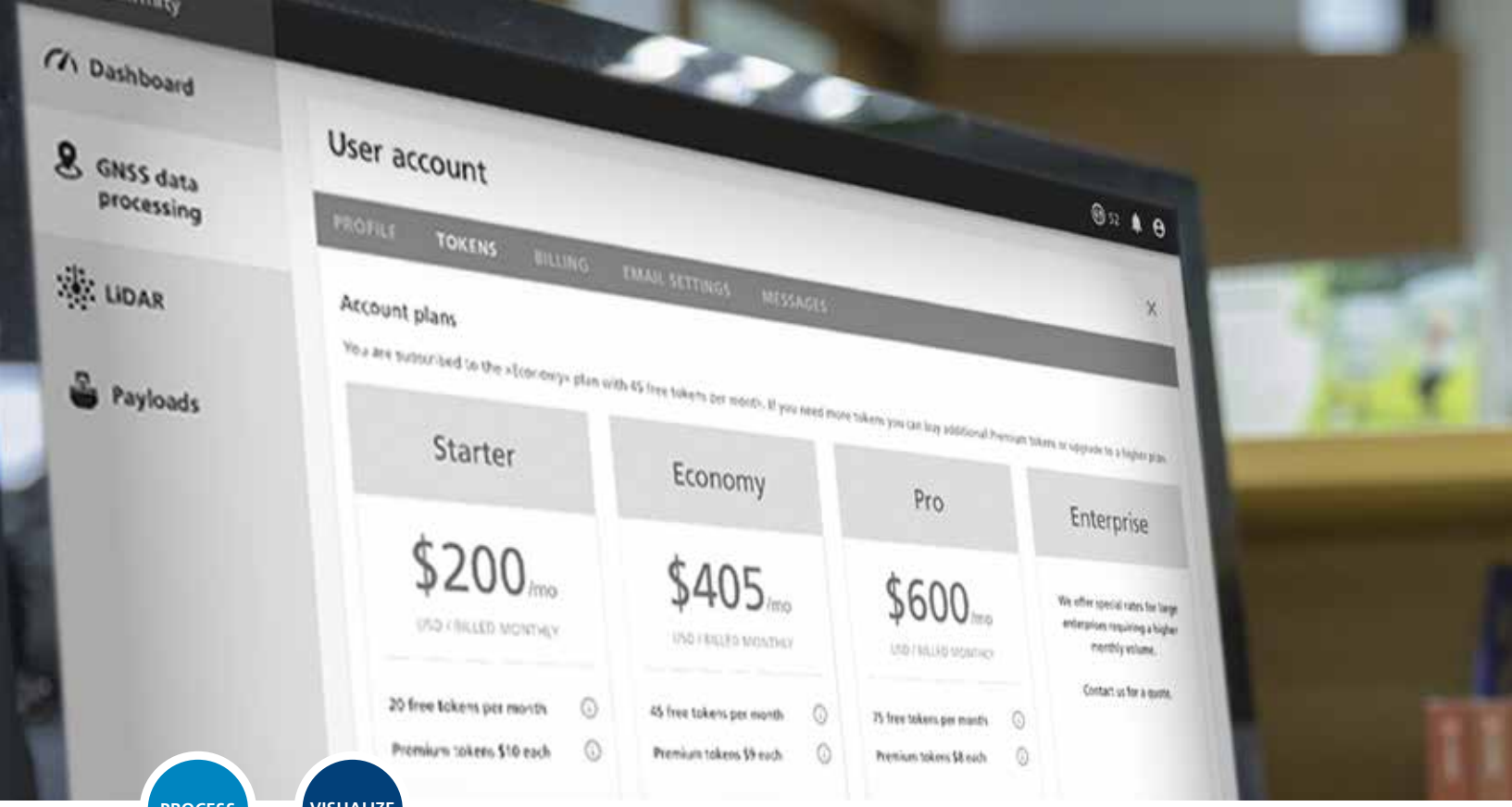
GET IT ON Google Play

How to download the mdCOCKPIT app:

Downloading the mdCockpit app onto your Android tablet is easy. Just visit our page in the Google Play store.

Technical Requirements:
Before downloading, be sure you have firmware mdOS 4.47 or higher. To complete this update, visit the Clients Only section of the Microdrones website and complete the simple steps.

Your tablet must be Android 7.0.0 Marshmallow or higher.



PROCESS VISUALIZE

COMING SOON IN 2020: MEET mdINFINITY

mdINFINITY

mdInfinity is a powerful ecosystem that will enable you to quickly and efficiently process geospatial data, including Trajectory Processing, Pointcloud Georeferencing, Boresight Calibration and Pointcloud Colorization.

The first module we introduce will be trajectory processing, and we will continue to add modules that expand the flexibility and usability across all of our systems.

You'll enjoy added convenience when processing trajectory data collected by your Microdrones system.

This is a simple, intuitive token-based system. You can export EO and SBET files without having to open third party POSPac software!

HERE'S WHAT YOU CAN DO WITH IT:

Input
- Trajectory file (T04)
- Base station file (T02 and RINEX)

Trajectory Processing Alternatives:
- Using a dedicated base station
- Using a dedicated base station along with Trimble RTX
- Using Trimble Smart Base
- Using Trimble PP-RTX

mdInfinity software will become the backbone of the Microdrones product ecosystem. We will constantly add features, functionality, and tools.

Export
- SBET
- Exterior Orientation
- Supports a variety of global, regional and local horizontal datums and geoids
- Quality control report

Dashboard
- Projects overview
- Details
- Payment/Download
- Status

Coming Soon:
- Pointcloud
- Georeferencing
- Boresight Calibration
- Pointcloud Colorization

mdLiDAR
3000DL

HEAVY PROJECTS? MAKE *LIGHT WORK* OF THEM ALL.

The complete package to add unmanned aerial LiDAR to your geomatics services.

The mdLiDAR3000DL uses the lifting power, resilience and efficiency of the Microdrones aircraft platform to carry a perfectly integrated Riegl miniVUX-1DL and a Sony RX1R II camera. The result? You can quickly acquire high density and accurate LiDAR data in the field and efficiently turn it into a 3D colorized pointcloud back at the office or on your laptop.

mdLiDAR3000DL is an end-to-end LiDAR solution combining a drone, a LiDAR payload, a fully integrated software workflow, and world class support to consistently provide quality deliverables.

Riegl miniVUX-1DL

A perfectly integrated Riegl miniVUX-1DL paired with a 42.4 megapixel camera mounted with a custom, lightweight, vibration-free, quick release mount to capture the data you need.

Easy end-to-end workflow:

PLAN

- Simple mission planning using mdCockpit
- User inputs the point density or flying height and drone speed

FLY

- Fully automated mission execution and real-time mission monitoring using mdCockpit

PROCESS

- Thorough georeferencing data processing using the dual-IMU Applanix APX-20 UAV DG and mdInfinity software
- Automated final point cloud processing using mdLiDAR processing software

VISUALIZE

- Final point cloud in standard ASPRS LAS format usable in any GIS or CAD software environment
- Quick and Accurate point cloud colorization using accurate system-produced orthomosaics and a user-friendly, seamless workflow

THE mdLiDAR3000DL PACKAGE INCLUDES:

PLATFORM

md4-3000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-3000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Fully Integrated LiDAR paired with a Sony RX1R II Camera & Quick Connect Mount
A perfectly integrated Riegl miniVUX-1DL paired with a 42.4 megapixel camera.

Applanix APX-20 UAV DG
Compact single-board module with survey-grade GNSS receiver and dual precisely calibrated IMUs for mapping.

SOFTWARE

mdLiDAR Processing Software
Complete point cloud processing and data export, via one integrated software suite and workflow, specially designed for Microdrones mdLiDAR family of systems.

POSPac UAV DG
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-20 UAV DG.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)

mdLiDAR3000DL (**equipped with Riegl miniVUX-1DL**) technical specs:

SOLUTION COMPONENTS

Platform

md4-3000

Payload

- LiDAR Sensor: Riegl miniVUX-1DL
- Camera: RX1R II
- Georeferencing: Trimble APX-20 UAV DG

Software

- mdCockpit
- POSPac UAV DG
- mdLiDAR Processing Software

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

15713 g

System Operational Temperature

-10 °C to 50 °C

System Accuracy

- LiDAR Point Cloud:
  - Horizontal: 1-3 cm
  - Vertical: 2-4 cm

- Photogrammetry:
  - Horizontal: 1-2 pixels
  - Vertical: 3-4 pixels

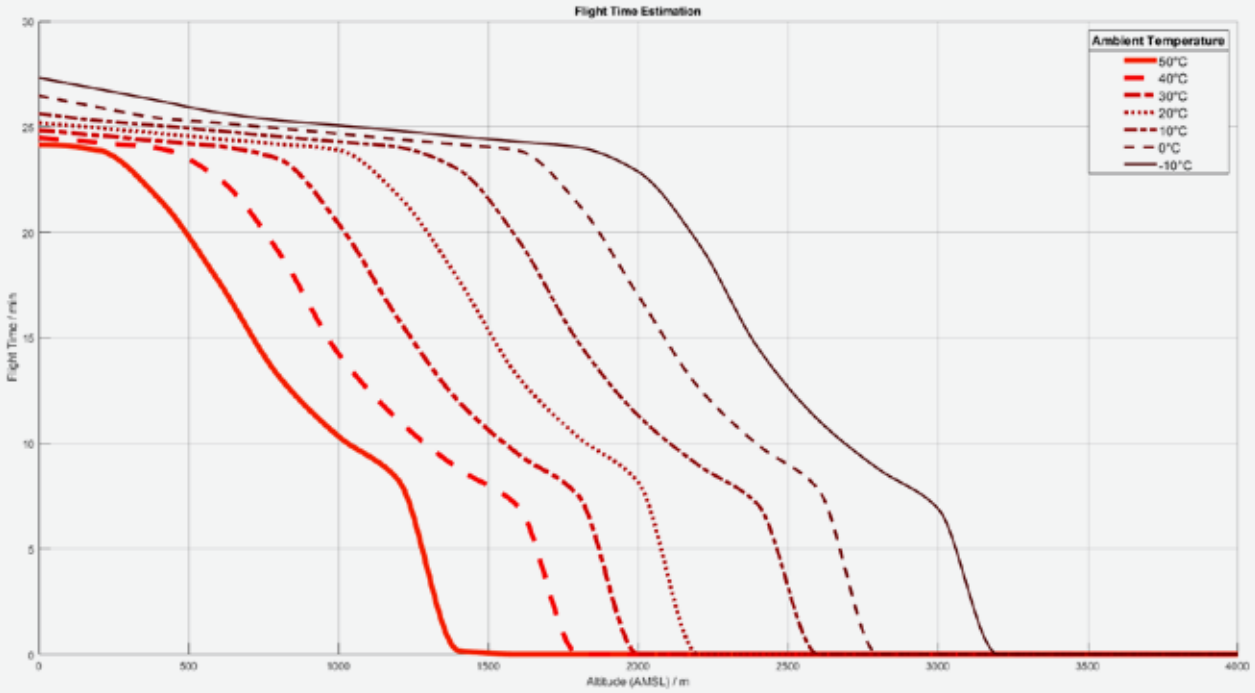
PRODUCT PERFORMANCE

Flight altitude AGL (ft/m)*	130/40	195/60	260/80
Speed (m/s)	Point Density** (swath center // edge) in pts/m^2		
3	308 // 2,637	206 // 2,144	154 // 1,853
4	227 // 1,977	152 // 1,607	114 // 1,391
5	188 // 1,581	126 // 1,289	94 // 1,113
6	156 // 1,317	106 // 1,072	80 // 928
GSD (mm)	5.3	8	10.6
Swath Width (ft/m) at 46° FOV	112/34	164/50	223/68
Number of Laser Returns	5	5	5
Example of a 20-Minute Flight (minutes)***			
Area Coverage at 20% (overlap ac/ha)****	33/13.5	49/20	68/27.5
Area Coverage at 50% (overlap ac/ha)****	21/8.5	32/13	42/17

*Flight altitude Above Ground Level (AGL)
**Average point density. Note that calculation does not factor target remission (reflectivity %)
***An Example of a 20-minute flight under standard flight conditions
****Area coverage is computed for an example of a 20-minute survey (3 minutes for take-off and landing) at a drone speed of 5 m/s)

APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.



mdLiDAR 3000

ANOTHER END-TO-END LiDAR OPTION

The complete package to add unmanned aerial LiDAR to your geomatics services.

The mdLiDAR3000 uses the lifting power, resilience and efficiency of the Microdrones aircraft platform to carry a perfectly integrated Riegl miniVUX-1UAV and a Sony RX1R II camera. The result? You can quickly acquire high density and accurate LiDAR data in the field and efficiently turn it into a 3D colorized pointcloud back at the office or on your laptop.

mdLiDAR3000 is an end-to-end LiDAR solution combining a drone, a LiDAR payload, a fully integrated software workflow, and world class support to consistently provide quality deliverables.

Riegl miniVUX-1UAV

A perfectly integrated Riegl miniVUX-1UAV paired with a 42.4 megapixel camera mounted with a custom, lightweight, vibration-free, quick release mount to capture the data you need.

Easy end-to-end workflow:

PLAN

- Simple mission planning using mdCockpit
- User inputs the point density or flying height and drone speed

FLY

- Fully automated mission execution and real-time mission monitoring using mdCockpit

PROCESS

- Thorough georeferencing data processing using the dual-IMU Applanix APX-20 UAV DG and mdInfinity software
- Automated final point cloud processing using mdLiDAR processing software

VISUALIZE

- Final point cloud in standard ASPRS LAS format usable in any GIS or CAD software environment
- Quick and Accurate point cloud colorization using accurate system-produced orthomosaics and a user-friendly, seamless workflow

THE mdLiDAR3000 PACKAGE INCLUDES:

PLATFORM

md4-3000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-3000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Fully Integrated LiDAR paired with a Sony RX1R II Camera & Quick Connect Mount
A perfectly integrated Riegl miniVUX-1UAV paired with a 42.4 megapixel camera.

Applanix APX-20 UAV DG
Compact single-board module with survey-grade GNSS receiver and dual precisely calibrated IMUs for mapping.

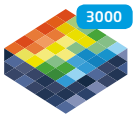
SOFTWARE

mdLiDAR Processing Software
Complete point cloud processing and data export, via one integrated software suite and workflow, specially designed for Microdrones mdLiDAR family of systems.

POSPac UAV DG
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-20 UAV DG.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)



mdLiDAR3000 (**equipped with Riegl miniVUX-1UAV**) technical specs:

SOLUTION COMPONENTS

Platform

md4-3000

Payload

- LiDAR Sensor: Riegl miniVUX-1UAV
- Camera: RX1R II
- Georeferencing: Trimble APX-20 UAV DG

Software

- mdCockpit
- POSPac UAV DG
- mdLiDAR Processing Software

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

14823 g

System Operational Temperature

-10 °C to 50 °C

System Accuracy

- LiDAR Point Cloud:
  - Horizontal: 1-3 cm
  - Vertical: 1-3 cm

- Photogrammetry:
  - Horizontal: 1-2 pixels
  - Vertical: 3-4 pixels

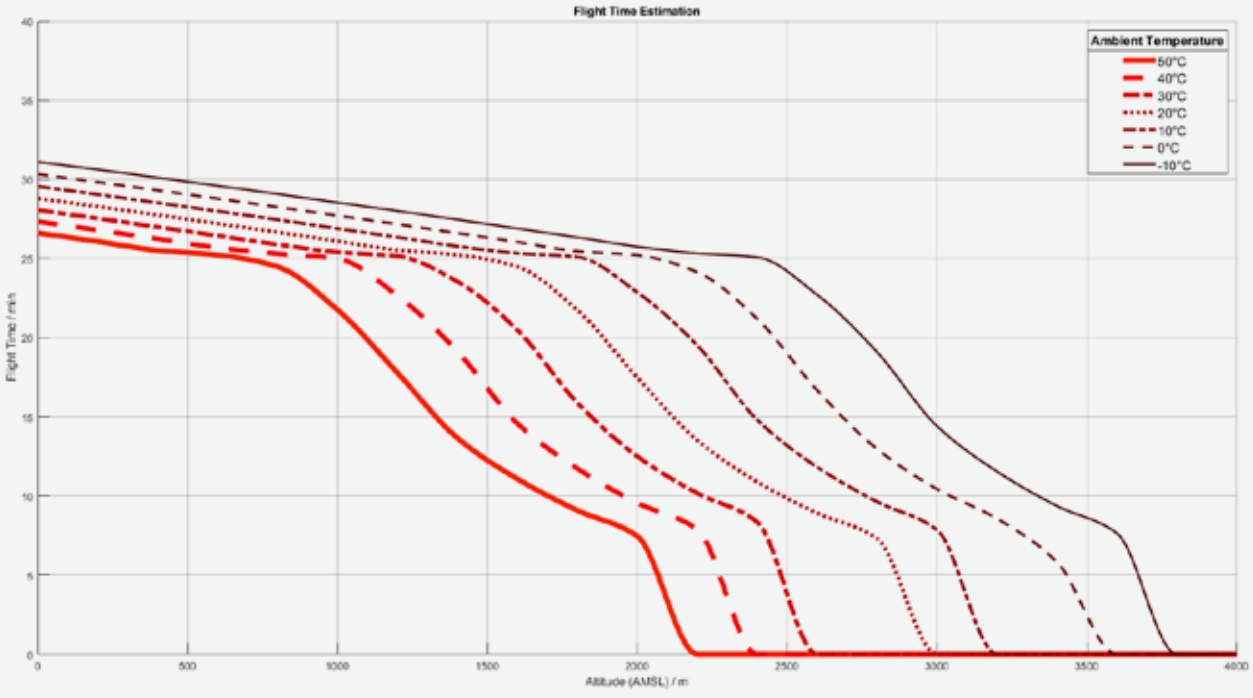
PRODUCT PERFORMANCE

Flight altitude AGL (ft/m)*	130/40	195/60	260/80
Speed (m/s)	Point Density (pts/m²)**		
3	130	90	65
4	100	65	50
5	80	55	40
6	65	45	35
GSD (mm)	5.3	8	10.6
Swath Width (ft/m) at 56° FOV	148/45	213/65	279/85
Swath Width (ft/m) at 80° FOV	230/70	328/100	443/135
Number of Laser Returns	5	5	5
Example of a 20-Minute Flight (minutes)***			
Area Coverage at 20% Overlap (ac/ha)****	44.5/18	64/26	84/34
Area Coverage at 50% Overlap (ac/ha)****	27/11	42/17	52/21

*Flight altitude Above Ground Level (AGL)
**Average point density. Note that calculation does not factor target remission (reflectivity %)
***An example of a 20-minute Flight under standard flight conditions
****Area coverage is computed for an example of a 20-minute survey (3 minutes for take-off and landing) at a drone speed of 5 m/s at 56° Field of View (FOV)

APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.



mdLiDAR 1000

Trimble POWERED

YOU HAVE IMPORTANT POINTS TO MAKE.

LiDAR + Microdrones aircraft + easy to use software = geomatics productivity.

mdLiDAR1000 is a fully integrated system for producing 3D point clouds optimized for land surveying, construction, oil & gas, and mining applications.

mdLiDAR1000 consistently provides an accuracy of 0.2 ft (6 cm) when flown at 130 ft (40 m) at a speed of 6.7 mph (3 m/s).

A lightweight, downward oriented LiDAR solution that efficiently scans at an 85 degree field of vision with a custom, lightweight, vibration-free, quick release mount to capture the data you need.

Easy end-to-end workflow:

PLAN

- Simple mission planning using mdCockpit
- User inputs the point density or flying height and drone speed

FLY

- Fully automated mission execution and real-time mission monitoring using mdCockpit

PROCESS

- Thorough georeferencing data processing using the Applanix APX-15 UAV DG and mdInfinity Software
- Automated final point cloud processing using mdLiDAR processing software

VISUALIZE

- Final point cloud in standard ASPRS LAS format usable in any GIS or CAD software environment

THE mdLiDAR1000 PACKAGE INCLUDES:

PLATFORM

md4-1000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-1000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Fully Integrated LiDAR & Camera
A lightweight, downward oriented LiDAR solution that efficiently scans up to a 85 degree field of view.

Applanix APX-15 UAV DG
Compact single-board module with survey-grade GNSS receiver and a precisely calibrated IMU for mapping.

SOFTWARE

mdLiDAR Processing Software
Complete point cloud processing and data export, via one integrated software suite and workflow, specially designed for Microdrones mdLiDAR family of systems.

POSPac UAV DG
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-15 UAV DG.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)

mdLiDAR1000 technical specs:

SOLUTION COMPONENTS

Platform

md4-1000

Payload

- LiDAR Sensor: SICK LD-MRS4
- Camera: FLIR 5MP Global Shutter
- Georeferencing: APX-15 UAV

Software

- mdCockpit
- POSPac UAV DG
- mdLiDAR Processing Software

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

6505 g

System Operational Temperature

-10 °C to 50 °C

System Accuracy

- LiDAR Point Cloud:
  - Horizontal: 6 cm
  - Vertical: 6 cm

- Photogrammetry:
  - Horizontal: 1-2 pixels
  - Vertical: 3-4 pixels

PRODUCT PERFORMANCE

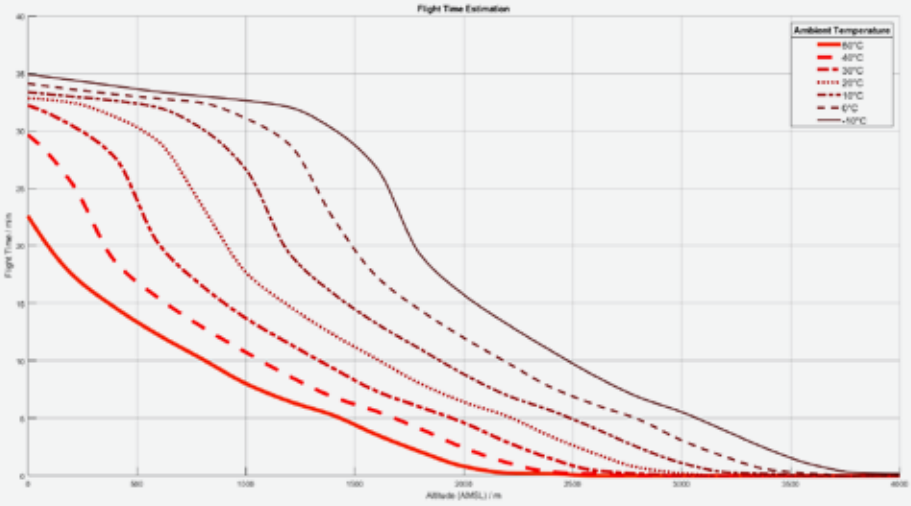
Flight Altitude AGL* (ft/m)	100/30	130/40	165/50
Speed (m/s)	Point Density (pts/m²)**		
2	160	120	95
3	105	80	65
4	80	60	50
5	65	50	40
GSD (mm)	12.9	17.2	21.4
Swath Width (m)	55	75	95
Flight Time (minutes)***	25	25	25
Number of Laser Returns	3	3	3

*Flight altitude Above Ground Level (AGL)
**Average point density. Note that calculation does not factor target remission (reflectivity) %
***Flight time is calculated under standard flight conditions (using new Microdrones batteries)

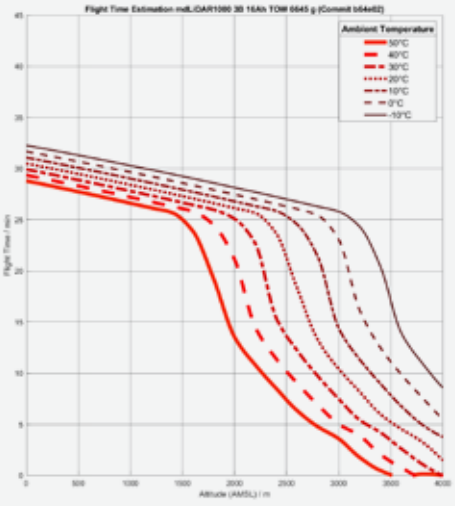
APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.

2 BLADE FLIGHT TIME



(OPTIONAL) 3 BLADE FLIGHT TIME



mdMAPPER
3000DµoG VHR

Trimble POWERED

A NEW STATE OF MIND FOR MAPPING SERVICE PROVIDERS: WE PACKED MANNED AIRCRAFT AVIATION QUALITY INTO A UAV SYSTEM.

Very high resolution, Double the DG, triple the image quality, in just half the time*

Sometimes less *isn't* more. With mdMapper3000DµoG VHR, you'll quickly acquire highly dense and accurate data, in half the time. This system is designed, engineered and built for professional mappers to build professional grade mapping products.

The mdMapper3000DµoG VHR combines the lifting power, resilience and efficiency of the Microdrones md4-3000 aircraft platform, with a perfectly integrated Phase One camera and the power of direct georeferencing. This results in an unparalleled one pixel mapping accuracy from a 1000 ft. drone flight height.

A 100 megapixel Phase One iXM-100 camera paired with a custom, lightweight, vibration-free, quick connect mount to capture the images you need.

Do more – with more.

This package is all about resilience, convenience, and all-around performance. The md4-3000 UAV can stand up to intense environmental challenges, from strong winds and magnetic fields, while the fully integrated PhaseOne iXM-100 sensor, provides ultra high resolution for the most accurate and dense data.

- Lifting power, resilience and efficiency of the Microdrones md4-3000 aircraft platform
- Perfectly integrated Phase One camera
- Quickly acquire high density and accurate data
- Complete, end-to-end solution includes hardware, software, workflow, training and support

*Note: Actual project completion times may vary based on desired surface coverage, altitude flown, drone speed, desired mapping accuracy, and post processing methods.

THE mdMAPPER3000DµOG VHR PACKAGE INCLUDES:

PLATFORM

md4-3000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-3000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Fully Integrated PhaseOne iXM-100 Camera & Quick Connect Mount
100 megapixel camera paired with a custom, lightweight, vibration-free, quick connect mount to capture the images you need.

Applanix APX-15 UAV DG
Compact single-board module with survey-grade GNSS receiver and a precisely calibrated IMU for mapping.

SOFTWARE

POSPac UAV DG
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-15 UAV DG.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)

mdMapper3000DµoG VHR technical specs:

SOLUTION COMPONENTS

Platform

md4-3000

Payload

- Camera: PhaseOne iXM-100 Camera (35mm lens)
- Georeferencing: APX-15 EI UAV

Software

- mdCockpit
- POSPac UAV DG

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

13323 g

System Operational Temperature

-10 °C to 40 °C

System Accuracy

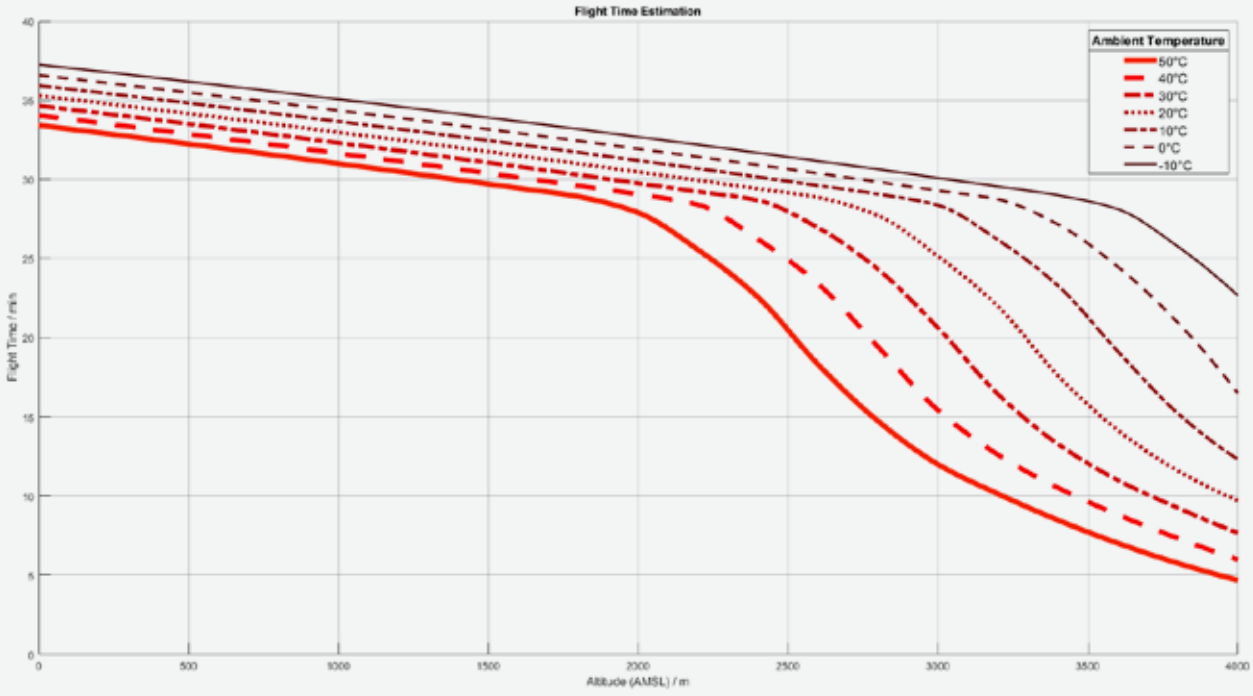
- Photogrammetry:
  - Horizontal: 1-2 pixels
  - Vertical: 2-3 pixels

PRODUCT PERFORMANCE

		mdMapper3000DµoG VHR (35 mm Lens)	mdMapper3000DµoG VHR (80 mm Lens)
Flight Parameters	Area Covered (@120 m)	265 ac (150 ha)	159 ac (64 ha)
	Area Covered (@300 m)	976 ac (395 ha)	406 ac (164 ha)
	Camera Model	Phase One iXM-100 (35 mm lens)	Phase One iXM-100 (80 mm lens)
	Image Sensor Size	100 Megapixel	100 Megapixel
	Image Format	IIQ + JPEG/TIFF	IIQ + JPEG/TIFF
	GSD cm/pixel (@120 m)	1.3 cm	0.6 cm
	GCP	No	No
	Overlaps (front/side)	80%/40%	80%/40%
Post-Processing	Method	Optimized aerial triangulation using GNSS-Inertial solution	Optimized aerial triangulation using GNSS-Inertial solution
	Orientation	High precision sensor (INS)	High precision sensor (INS)
	Position	High precision sensor (GNSS)	High precision sensor (GNSS)
	Accuracy (flight height < 300 m)	1-2 GSD (X,Y) and 2-3 GSD (Z)	1-2 GSD (X,Y) and 2-3 GSD (Z)
	Accuracy (flight height > 300 m)	1 GSD (X, Y, Z)	1-2 GSD (X,Y) and 2 GSD (Z)
Advantages		• No GCP needed • Efficient flight planning – cover greater areas • Enables corridor mapping and area mapping	• No GCP needed • Efficient flight planning – cover greater areas • Efficient post-processing (EO apriori and less images) • Enables corridor mapping

APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.



mdMAPPER
3000DµoG

Trimble POWERED

COVER MORE GROUND IN ONE FLIGHT, USE FEWER PEOPLE AND LESS EQUIPMENT ON YOUR PROJECTS.

Powerful aircraft, double the direct georeferencing.

With mdMapper3000DµoG, you'll quickly acquire highly dense and accurate data, in half the time.

Meet the most precise data requirements and cover more ground in one flight. mdMapper3000DµoG will help you deliver unparalleled data quality in less time you'll achieve the highest level of data accuracy currently possible, cover more ground in one flight, use fewer people and less equipment on jobs – all without using ground control points.

A 42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need. And because we integrate popular camera selections, when it's time to upgrade, you only have to change the camera, not the whole system!

A complete photogrammetry solution, ready to grow and expand with your business.

This package is all about resilience, convenience, and all-around performance. The md4-3000 UAV can stand up to intense environmental challenges, from strong winds and magnetic fields, while the proven Sony RX1R II gets the job done right.

- Lifting power, resilience and efficiency of the Microdrones md4-3000 aircraft platform
- Perfectly integrated Sony RX1R II
- Quickly acquire high density and accurate data
- Complete, end-to-end solution includes hardware, software, workflow, training and support
- When you are ready to upgrade to VHR or LiDAR, this system is ready to grow with you, and can become an mdMapper3000DµoG VHR or mdLiDAR3000 system by purchasing the payload(s) and related firmware and software subscriptions.

*Note: Actual project completion times may vary based on desired surface coverage, altitude flown, drone speed, desired mapping accuracy, and post processing methods.

THE mdMAPPER3000DµOG PACKAGE INCLUDES:

PLATFORM

md4-3000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-3000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Sony RX1R II & Nadir Mount
42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need.

Applanix APX-15 UAV DG
Compact single-board module with survey-grade GNSS receiver and a precisely calibrated IMU for mapping.

SOFTWARE

POSPac UAV DG
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-15 UAV DG.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)

mdMapper3000DµoG technical specs:

SOLUTION COMPONENTS

Platform

md4-3000

Payload

- Camera: RX1R II
- Georeferencing: APX-15 EI UAV

Software

- mdCockpit
- POSPac UAV DG

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

12373 g

System Operational Temperature

-10 °C to 50 °C

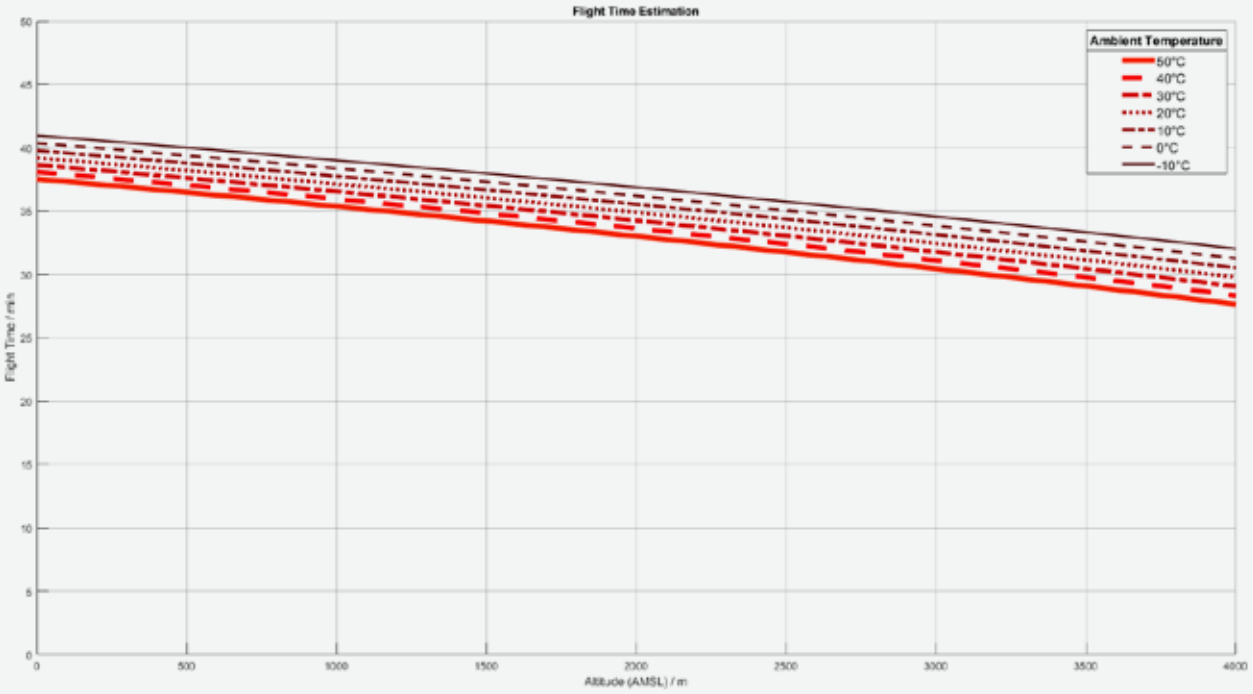
PRODUCT PERFORMANCE

		mdMapper3000DµoG
Flight Parameters	Area Covered (@120 m)*	198 ac (80 ha)
	Camera Model**	Sony RX1R II
	Image Format	RAW + JPEG
	GSD cm/pixel (@120 m)	1.6 cm
	GCP	No
	Overlaps (front/side)	80%/40%
Post-Processing	Method	Optimized aerial triangulation using GNSS-Inertial solution
	Orientation	High precision sensor (INS)
	Position	High precision sensor (GNSS)
	Accuracy	1-2 GSD (X, Y) and 2-4 GSD (Z)
Advantages		• No GCP needed • Efficient flight planning – cover greater areas • Efficient post-processing (EO apriori and less images) • Enables corridor mapping

*Note: Actual project completion times may vary based on desired surface coverage, altitude flown, drone speed, desired mapping accuracy, and post processing methods.

APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing



mdMAPPER
3000PPK

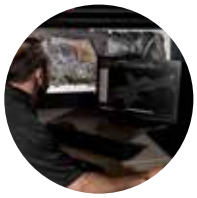
BIG PLATFORM, BIG POTENTIAL TO GROW WITH YOUR BUSINESS.

Build your business services on a remarkable platform, starting with PPK.

With mdMapper3000PPK and just 1-3 ground control points, you'll efficiently acquire highly dense and accurate data.

Meet your project needs with mdMapper3000PPK. This is a powerful, highly expandable system that can withstand the rigors of daily field use.

A 42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need. And because we integrate popular camera selections, when it's time to upgrade, you only have to change the camera, not the whole system!



Your ticket to the big leagues of drone photogrammetry and LiDAR.

The md4-3000 UAV can stand up to intense environmental challenges, from strong winds and magnetic fields, while the proven Sony RX1R II gets the job done right.

- Lifting power, resilience and efficiency of the Microdrones md4-3000 aircraft platform
- Perfectly integrated Sony RX1R II
- Quickly acquire high density and accurate data
- Complete, end-to-end solution includes hardware, software, workflow, training and support
- When you are ready to upgrade to VHR or LiDAR, this system is ready to grow with you, and can become an mdMapper3000DµoG VHR or mdLiDAR3000 system by purchasing the payload(s) and related firmware and software subscriptions

*Note: Actual project completion times may vary based on desired surface coverage, altitude flown, drone speed, desired mapping accuracy, and post processing methods.

THE mdMAPPER3000PPK PACKAGE INCLUDES:

PLATFORM

md4-3000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-3000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Sony RX1R II & Nadir Mount
42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need.

Applanix APX-15 UAV DG
Compact single-board module with survey-grade GNSS receiver and a precisely calibrated IMU for mapping.

UPGRADEABLE TO DµoG

DµoG READY

DµoG READY
When you are ready to expand, this system will expand with you. mdMapper3000PPK is easily upgradeable via firmware to direct georeferencing.

SOFTWARE

POSPac UAV DG
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-15 UAV DG.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)

mdMapper3000PPK technical specs:

SOLUTION COMPONENTS

Platform

md4-3000

Payload

- Camera: RX1R II
- Georeferencing: APX-15 EI UAV PPK (upgradeable to DG)

Software

- mdCockpit
- POSPac UAV PPK (upgradeable to DG)

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

12373 g

System Operational Temperature

-10 °C to 50 °C

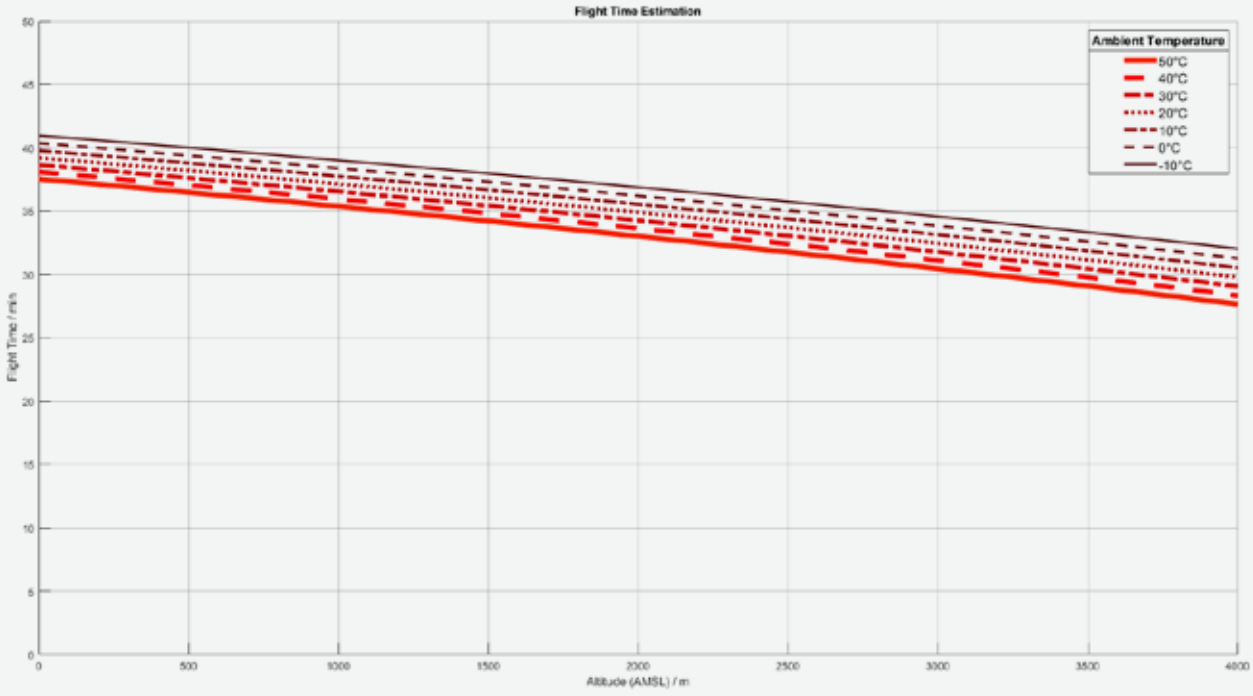
PRODUCT PERFORMANCE

		mdMapper3000PPK
Flight Parameters	Area Covered (@120 m)*	198 ac (80 ha)
	Camera Model**	Sony RX1R II
	Image Format	RAW + JPEG
	GSD cm/pixel (@120 m)	1.6 cm
	GCP	Yes, 1-3 GCP's depending on application
	Overlaps (front/side)	80%/40%
Post-Processing	Method	Optimized aerial triangulation using GNSS-Inertial solution
	Orientation	N/A
	Position	High precision GNSS
	Accuracy	1-3 GSD (X, Y) and 3-5 GSD (Z)
Advantages		• Only 1-3 GCPs needed • Efficient flight planning - cover greater areas • Efficient post-processing • Enables area mapping

*Note: Actual project completion times may vary based on desired surface coverage, altitude flown, drone speed, desired mapping accuracy, and post processing methods.

APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.



mdMAPPER
1000DG

Trimble POWERED

NO GROUND CONTROL POINTS, LESS SIDELAP, MORE PRODUCTIVITY.

Master your geospatial data by putting direct georeferencing to work for you. With mdMapper1000DG, you'll achieve the highest level of data accuracy currently possible using fewer ground control points – or no ground control points at all.

Conquer large projects in a fraction of the time.
Meet the most precise data requirements and cover more ground in one flight. mdMapper1000DG will help you deliver unparalleled data quality in less time.

A 42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need. And because we integrate popular camera selections, when it's time to upgrade, you only have to change the camera, not the whole system!

Imagine saving 10 hours per project.

Why does direct georeferencing matter in UAV mapping?

Calling this solution a game-changer is no exaggeration. The reduced/eliminated need to install ground control points, low side lap, and industry-leading flight times add up to significant time and cost savings.

To the right is an example comparison of a surveying project completed using two different mdMapper packages: mdMapper1000+, which uses aerial triangulation, and mdMapper1000DG, which uses direct georeferencing.

As you can see in the image on the right, the direct georeferencing solution's lower front and side lap resulted in the UAV's ability to cover more ground more quickly when compared with the aerial triangulation solution on the left. The chart below shows the actual amount of time spent and number of images taken.

Workflow Task	mdMapper1000	1000DG	Difference
Plan project	1 hr	1hr	-
GCP layout	2 hrs	-	2 hrs
Flight	35 mins	15 mins	20 mins
Data processing	12 hrs	4 hrs	8 hrs
Total	**15.35 hrs**	**5.15 hrs**	**10.20 hrs**

The results of this sample project may vary depending upon conditions.

Result: mdMapper1000DG completed its mission in less than half the time it took mdMapper1000+.

RAISE YOUR EXPECTATIONS

mdMapper1000DG as a corridor mapping tool.

When a Chilean mine company invited Microdrones to perform a demonstration at one of their sites, the team was eager to show off their newly released mdMapper1000DG solution – and the cost savings, accuracy, efficiency, and safety this direct georeferencing (DG) system achieves. The client challenged the team and the system with a corridor mapping assignment, and both rose to the occasion.

MAIN POINTS

- A corridor mapping project in Chile
- 5 km (3.1 mi) road
- High altitude, 8,202 ft (2500 meters)
- Rough winds, frigid conditions
- Were unexpectedly asked to corridor map

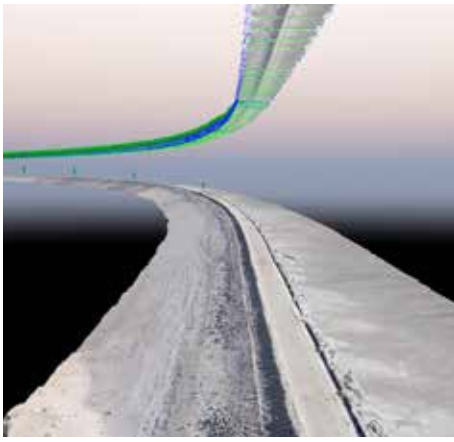
The Microdrones mdMapper1000DG performed on an un-anticipated request to map an existing wall. With a non-DG solution, this project would have taken much more time and effort, and would have required GCPs (ground control points.)

As seen in xyHt

Read the full story in the xyHt "Heights" supplement from March 2017:
www.microdrones.com/links/xyht-corridor-mapping


Microdrones

Microdrones® Succeeds at Unexpected Corridor Mapping Request



mdMapper1000DG: Collect the data and images you need, all in one site visit.

Dramatically reduce your time spent on projects with mdMapper1000DG. Direct georeferencing technology allows you to achieve the highest possible level of accuracy without using ground control points (GCPs).

- Reduce or eliminate your need to install GCPs.
- Drastically reduce time spent on post-processing and data collection, thanks to an impressively decreased side lap.
- Access hard-to-reach or dangerous sites without risking human injury.
- Improve your efficiency with industry-leading flight times and resilience to harsh environmental conditions.
- Realistically perform corridor mapping without the need for many control points.

The client had plans to heighten a 10-kilometer retaining wall so that it could contain their reservoir and reduce water waste for the mining operation. They wanted us to show that we could efficiently map that wall with our system. We did it.

THE mdMAPPER1000DG PACKAGE INCLUDES:

PLATFORM

md4-1000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-1000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Sony RX1R II & Nadir Mount
42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need.

Applanix APX-15 UAV DG
Compact single-board module with survey-grade GNSS receiver and a precisely calibrated IMU for mapping.

SOFTWARE

POSPac UAV DG
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-15 UAV DG.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)

mdMapper1000DG technical specs:

SOLUTION COMPONENTS

Platform

md4-1000

Payload

- Camera: RX1R II
- Georeferencing: APX-15 UAV DG

Software

- mdCockpit
- POSPac UAV DG

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

5870 g

System Operational Temperature

-10 °C to 50 °C

System Accuracy

- Photogrammetry:
  - Horizontal: 2-3 pixels
  - Vertical: 3-5 pixels

PRODUCT PERFORMANCE

		mdMapper1000DG
Flight Parameters	Area Covered (@120 m)*	198 ac (80 ha)
	Camera Model**	Sony RX1R II
	Imagery Format	RAW + JPEG
	G.S.D. cm/pixel (@120 m)	1.6 cm
	G.C.P.	No
	Overlaps (front/side)	80% / 40%
Post-Processing	Method	Optimized Aerial Triangulation / GNSS-Inertial Solution
	Orientation	High Precision Sensor (INS)
	Position	High Precision Sensor (GNSS)
	Accuracy	2-3 GSD (X,Y) and 3-5 GSD (Z)
Advantages		• No GCP Needed • Efficient Flight Planning – Cover Greater Areas • Efficient Post-processing (EO apriori and less images) • Enables Corridor Mapping

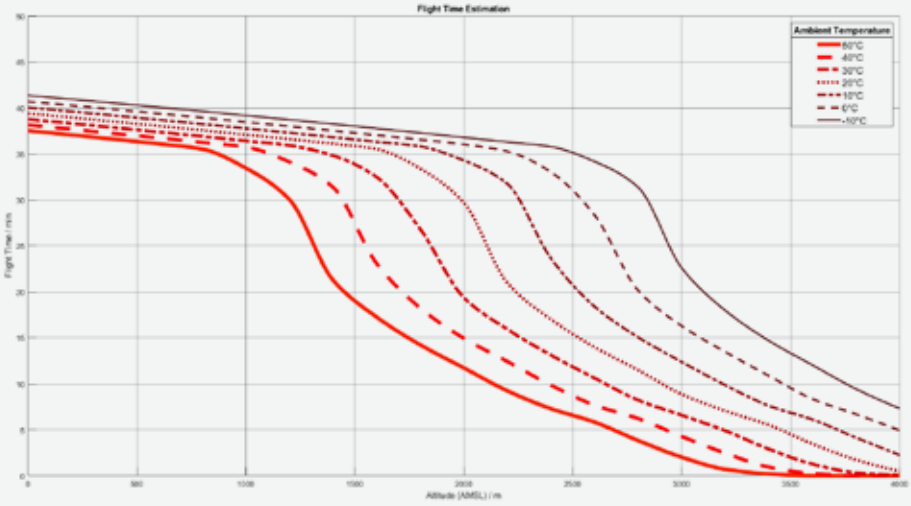
* Typical project benchmark comparisons based on missions completed in Canada in 2016.

** The current camera models are listed. These may be replaced by equivalent or better cameras depending on availability from the manufacturer.

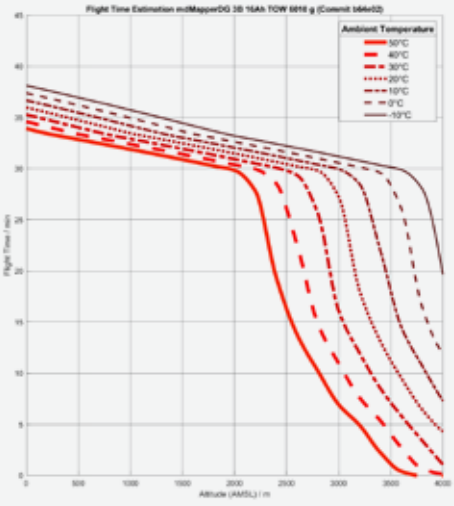
APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.

2 BLADE FLIGHT TIME



(OPTIONAL) 3 BLADE FLIGHT TIME



mdMAPPER
1000PPK

DG READY

Trimble POWERED

POWERFUL ACCURACY WITH JUST 1-3 GROUND CONTROL POINTS.

It grows with you.

Microdrones customers asked for a system that could deliver excellent results with a handful of ground control points. We listened.

mdMapper1000PPK fills an important niche for customers who may not be ready for DG, and are willing to set up 1-3 ground control points for their projects.

And when your business, projects or services expand to require DG, this system is easily and affordably upgradeable via a DG READY firmware update.

A 42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need. And because we integrate popular camera selections, when it's time to upgrade, you only have to change the camera, not the whole system!

Do more – even in intermittent conditions.

This package is all about resilience, convenience, and all-around performance. The md4-1000 UAV can stand up to intense environmental challenges, from strong winds and magnetic fields to high temperatures and voltage. It also boasts the longest flight times on the market.

- Improve your efficiency by staying in the air longer. mdMapper1000 delivers an average flight time of 30 – 45 minutes, depending upon conditions.
- Fly in harsh weather and stay on schedule – even on days with rough wind.
- Compatible with accessory kits for precision agriculture, inspection, LiDAR, and Direct Georeferencing.

THE mdMAPPER1000PPK PACKAGE INCLUDES:

PLATFORM

md4-1000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-1000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Sony RX1R II & Nadir Mount
42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need.

Applanix APX-15 UAV PPK
Compact single-board module with survey-grade GNSS receiver. IMU is present, ready for DG when you are ready to ugrade.

UPGRADEABLE TO DG

DG READY

DG READY
When you are ready to expand, this system will expand with you. mdMapper1000PPK is easily upgradeable via firmware to direct georeferencing.

SOFTWARE

POSPac UAV PPK
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-15 PPK.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)

mdMapper1000PPK technical specs:

SOLUTION COMPONENTS

Platform

md4-1000

Payload

- Camera: RX1R II
- Georeferencing: APX-15 UAV PPK (upgradeable to DG)

Software

- mdCockpit
- POSPac UAV PPK (upgradeable to DG)

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

5870 g

System Operational Temperature

-10 °C to 50 °C

System Accuracy

- Photogrammetry:
  - Horizontal: 2-3 pixels
  - Vertical: 3-5 pixels

PRODUCT PERFORMANCE

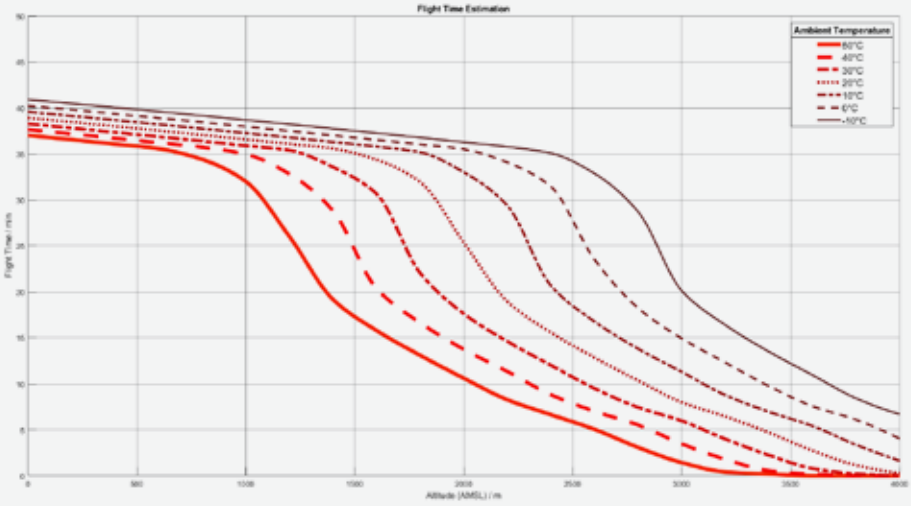
		mdMapper1000PPK
Flight Parameters	Area Covered (@120 m)*	198 ac (80 ha)
	Camera Model**	Sony RX1R II
	Imagery Format	RAW + JPEG
	G.S.D. cm/pixel (@120 m)	1.6 cm
	G.C.P.	Yes: 1-3 GCPs, Depending on application.
	Overlaps (front/side)	80% / 40%
Post-Processing	Method	Aerial triangulation with high precision positioing
	Orientation	No IMU
	Accuracy	2-3 GSD (X,Y) and 3-5 GSD (Z)
Advantages		Efficient flight planning – Cover greater areas

* Typical project benchmark comparisons based on missions completed in Canada in 2016.
** The current camera models are listed. These may be replaced by equivalent or better cameras depending on availability from the manufacturer.

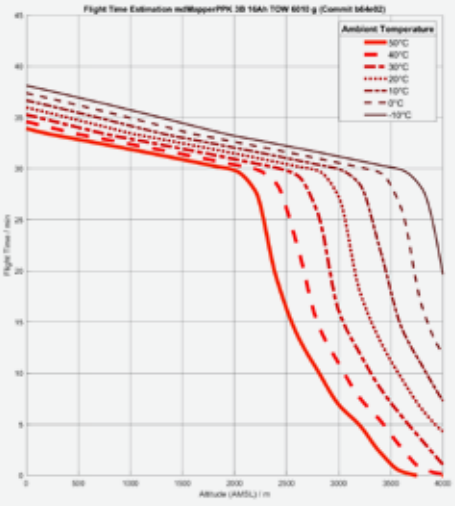
APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.

2 BLADE FLIGHT TIME



(OPTIONAL) 3 BLADE FLIGHT TIME



mdMAPPER
1000+

Trimble POWERED

PPK READY

DG READY

READY TO GROW WITH YOUR BUSINESS

It will grow at your pace.

Many users needed basic GCP intensive aerial surveying, but wanted to keep the option to upgrade open. The Microdrones mdMapper1000+ builds on the classic mdMapper1000, but it's PPK Ready or DG Ready when you are!

Via an easy, affordable firmware update, you'll enjoy a full PPK or DG system without any physical or hardware upgrades!

A 42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need. And because we integrate popular camera selections, when it's time to upgrade, you only have to change the camera, not the whole system!

Do more – even in intermittent conditions.

This package is all about resilience, convenience, and all-around performance. The md4-1000 UAV can stand up to intense environmental challenges, from strong winds and magnetic fields to high temperatures and voltage. It also boasts the longest flight times on the market.

- Improve your efficiency by staying in the air longer. mdMapper1000 delivers an average flight time of 30 – 45 minutes, depending upon conditions.
- Fly in harsh weather and stay on schedule – even on days with rough wind.
- Compatible with accessory kits for precision agriculture, inspection, LiDAR, and Direct Georeferencing.

THE mdMAPPER1000+ PACKAGE INCLUDES:

PLATFORM

md4-1000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-1000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Sony RX1R II & Nadir Mount
42.4 megapixel camera paired with a custom, lightweight, vibration-free, nadir mount to capture the images you need.

Applanix APX-15 UAV
Compact single-board module with survey-grade GNSS receiver. IMU is present, ready for PPK or DG when you are ready to ugrade.

UPGRADEABLE TO PPK OR DG

PPK READY
When you are ready to expand, this system will expand with you. mdMapper1000+ is easily upgradeable via firmware to PPK.

DG READY
When you are ready to expand, this system will expand with you. mdMapper1000+ is easily upgradeable via firmware to DG.

SOFTWARE

POSPac UAV PPK or POSPac UAV DG Ugradable
Direct georeferencing post processing software – used to achieve maximum accuracy and efficiency from data collected by APX-15 UAV (PPK or DG).

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdInfinity Software (Coming Soon)

mdMapper1000+ technical specs:

SOLUTION COMPONENTS

Platform

md4-1000

Payload

- Camera: RX1R II
- Georeferencing: None (upgradable to PPK and DG)

Software

- mdCockpit

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)

5820 g

System Operational Temperature

-10 °C to 50 °C

System Accuracy

- Photogrammetry:
  - Depends on Ground Control Point (GCP) accuracy and distribution

PRODUCT PERFORMANCE

		mdMapper1000+
Flight Parameters	Area Covered (@120 m)*	148 ac (60 ha)
	Camera Model**	Sony RX1R II
	Imagery Format	RAW + JPEG
	G.S.D. cm/pixel (@120 m)	1.6 cm
	G.C.P.	Yes
	Overlaps (front/side)	80% / 60%
Post-Processing	Method	Aerial Triangulation
	Orientation	Calculated during the A.T.
	Position	From UAV GNSS reciever
	Accuracy	Depends on Ground Control Point (GCP) accuracy and distrubution
Advantages		Large area mapping

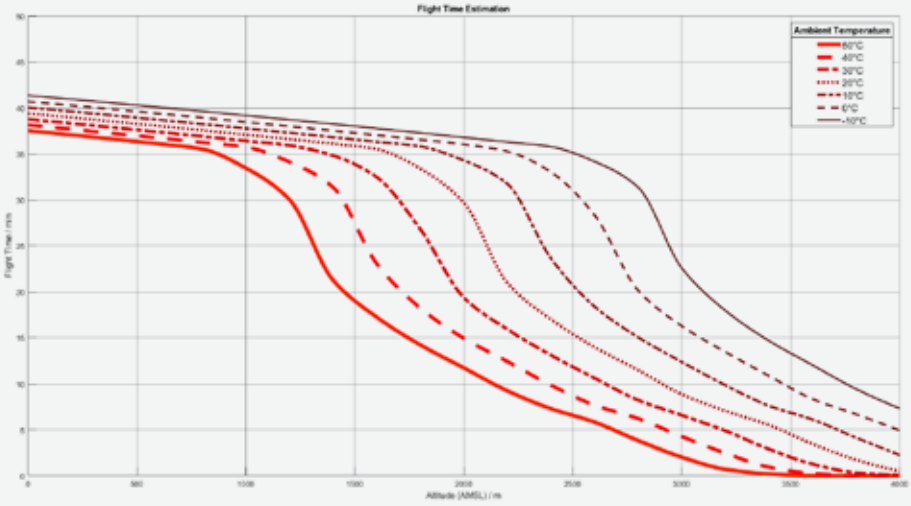
* Typical project benchmark comparisons based on missions completed in Canada in 2016.

** The current camera models are listed. These may be replaced by equivalent or better cameras depending on availability from the manufacturer.

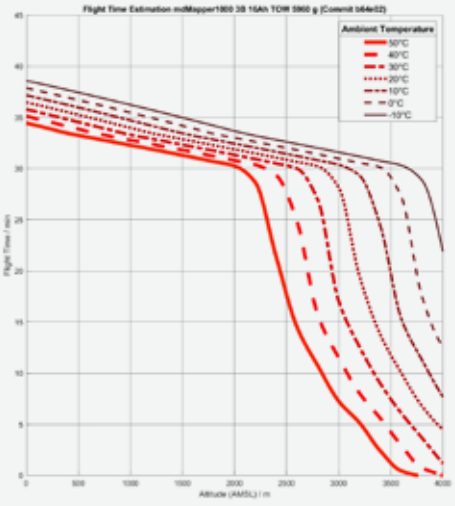
APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.

2 BLADE FLIGHT TIME



(OPTIONAL) 3 BLADE FLIGHT TIME



mdTECTOR
1000CH4 LR

GET OVER YOUR GAS DETECTION PROBLEMS.

mdTector, from Microdrones, is a lineup of professional aerial inspection solutions.

mdTector1000CH4 LR, is a fully integrated aerial methane inspection package. It's purpose-built for professionals who are responsible for inspecting methane gas infrastructure.

mdTector1000CH4 LR consists of a Pergam gas sensor, mounted and integrated perfectly with a Microdrones md4-1000 UAV. It has an onboard HD video link. That means that you can see in real time what you are detecting with the laser sensor.

A perfectly integrated Pergam Laser Methane Falcon sensor for detecting Methane (CH4) and methane-containing gases, 1 – 50,000 ppm × m.

It goes where people shouldn't.

Whether your gas infrastructure is in a hard to reach riverbed or near a steep cliff… the tough, carbon-fiber built drone will easily navigate terrain that would be difficult, dirty or dangerous by traditional foot crews. Microdrones is known for its field-proven aircraft platform. It's sturdy, stable, resistant to wind and weather, as well as dust and dampness.

The mdTector1000CH4 LR is versatile and can be used for:

- Natural gas line surveys
- Tank inspections
- Gas well testing
- Landfill emission monitoring
- Plant safety

THE mdTECTOR1000CH4 LR PACKAGE INCLUDES:

PLATFORM

md4-1000
Robust, powerful, stable and dependable. Build your business on this versatile platform.

Charger, Flight Battery & Carrying Case
One md4-1000 flight battery and charger for maximum flight endurance and a field tough carrying case.

COMMUNICATIONS

mdRC
Proven, professional controls and telemetry keep you in control when you need it most.

Digital Data Link
Conveniently connect your Microdrones UAV to your digital devices.

PAYLOAD

Integrated Methane Gas Sensor & FPV Camera with Video Link
Pergam LMm Gen 2 for Methane (CH_4) and methane-containing gases, 1 – 50,000 ppm×m

SOFTWARE

mdTector Viewer App
Visualize methane detection levels, post flight on a map, via an intuitive, easy to use Microdrones Android app.

mdCockpit Tablet Software
Simple swipes of the finger help you plan your survey area and monitor progress in flight on your Android tablet.

mdTector1000CH4 LR technical specs:

SOLUTION COMPONENTS

Platform
md4-1000

Payload
Sensor: Pergam Laser Methane Falcon

Software
- mdCockpit
- mdTector Viewer App

TECHNICAL SPECIFICATIONS

Solution Take off Weight (TOW)
5520 g

System Operational Temperature
-10 °C to 50 °C

PRODUCT PERFORMANCE

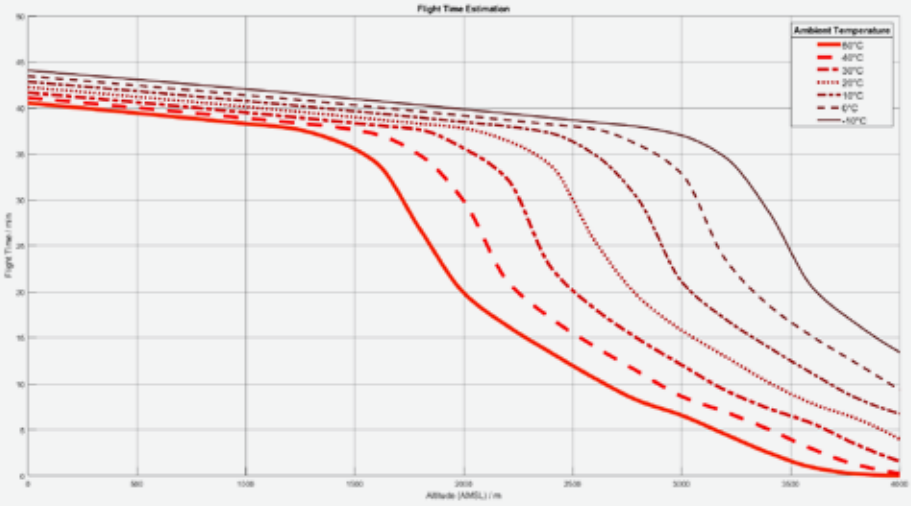
Target Gas	Methane (CH_4) and methane-containing gases (natural gas and similar)
Detection Limits	1 – 50,000 ppm × m
Detection Speed	0.1 seconds[1]
Detection Distance	1.5 ft. (0.5 m) – 328 ft. (100 m)
Laser Safety Class	Guide light (Green laser light): Class 3R, Measurement light (infrared laser light): Class 1
Dimensions	120 (W) × 120 (D) × 140 (H) mm
Features	Live view telemetry, Live view video feedback

[1] The mdTector1000CH4 solution averages 10 data in order to record 1 value each second.
[2] Please take note that the lower distance values might represent safety issues for the UAV in terms of altitude above ground level.

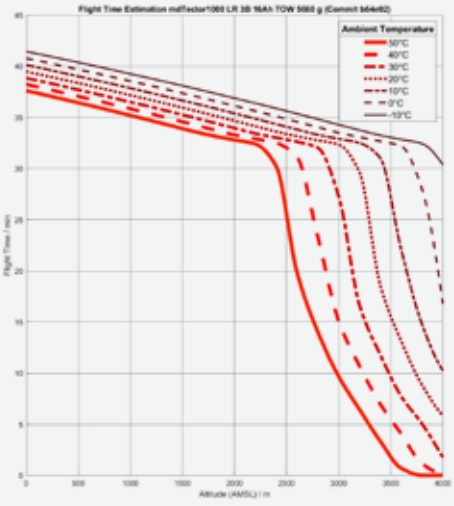
APPROXIMATE FLIGHT TIME

Systems are delivered with a preflight planning tool that will provide the pilot with the low battery level recommended for safe landing.

2 BLADE FLIGHT TIME



(OPTIONAL) 3 BLADE FLIGHT TIME



microdrones®