The MIDAS Solution

The MIDAS 5 system is a complete turn-key oblique imaging solution for 3D modeling of cities as well as rooftop studies, etc. The Midas 5 camera system includes all the components required for its operation. It comes with a dedicated suspension mount allowing the system to be installed rapidly in any aerial survey aircraft. It includes the comprehensive X-Track Flight Management software suite allowing the planning and execution of complex survey missions. Finally it is delivered with a fully integrated Applanix POSAV IMU to which Applanix has added special MIDAS support.

The MIDAS 5 oblique camera system allows operators to immediately begin production and start generating revenue from the first day of flying. It can be equipped with a selection of cameras including the efficient Nikon D810e, the unmatched PhaseOne iXA-180 and soon the NEW Canon EOS 5DS 50 megapixel camera.

Fully customizable, the MIDAS 5 system can be configured with any quantity of cameras and other sensors. Available with a wide range of focal lengths and 3 axis servo stabilization, the MIDAS 5 is the ideal solution for nearly any project requirement.

The MIDAS 5 is a highly modular system intelligently designed for easy troubleshooting and exchange of parts. Numerous LED’s on the front panel and several software tools allow for rapid identification of any hardware issues so that any module can be identified and exchanged in a few minutes. MIDAS 5 is specifically designed to eliminate down time due to equipment issues.

Over 100 MIDAS systems are currently in use the world over capturing millions of images per year with a proven track record of unrivaled, dependable operation.

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A true metric quality is attained by Lead’Air’s CamLens mounting system. This unique system joins the camera and lens in such a way that there is absolute rigidity, thus allowing for a stable calibration of the camera system that retains its accuracy over time. Each camera is calibrated at Lead’Air’s Kissimmee, Florida facility and a calibration report is provided to the customer.

The combination of this camera calibration and the Applanix IMU data combines to create a high precision geometric fidelity. Recently obtained imagery has provided precisions below 0.4 pixels simultaneously across all looks, relative accuracies of less than 1.5xGSD for 2D and less than 2xGSD for 3D processing. When applying ground control, absolute accuracies are less than 2xGSD for 2D and less than 3xGSD for 3D processing.

Lenses are interchangable depending on the application required by the customer. Note that lens changes will require a day or two at our facilities to create a calibration for the new CamLens configuration.
MIDAS 5 system equipped with the SteadyTrack STP-400 “Puppet’Air” system. This system is optimized for use with small camera-holes while providing complete 3 axis stabilization.
TECHNICAL SPECIFICATIONS (GENERAL)

Technical specifications MDC

Power requirements ................................................................. 24-28 Volts at 12-13 Amp
Size ....................................................................................... 19 x 13 x 15 inch (490 x 330 x 390 mm)
Navigation/camera control ...................................................... Integrated X-TRACK flight management system
GPS ....................................................................................... Integrated Garmin 18 or any external receiver
FMS interface ........................................................................... Flat panel touch screen
Drift measurement .................................................................... Integrated vertical video with display
Cameras .................................................................................. 5 Nikon D-810 36 MP (1 vertical + 4 tilted)
Sensor ..................................................................................... 14 bits
Images .................................................................................... 5 x 36 Megapixel raw images
Image quality control .............................................................. Integrated real time viewer with display
Image storage .......................................................................... 6 Solid State SATA SSD Drives
Performance ........................................................................... 1.5 second interval with Nikon D810
Altitude .................................................................................... Max 13,000 feet
Operation temperature ............................................................ 32-140 Fahrenheit (0-60 Celsius)
Shock/vibration ......................................................................... Pneumatic shock absorbers
IMU ......................................................................................... Integrated Applanix POSAV 410

Technical specifications fully stabilized camera mount

Drift correction ........................................................................ Motorized +/- 30 °
Pitch/roll leveling ..................................................................... Motorized +/- 10 °
Camera angle ........................................................................... Fixed (30 to 60 degree brackets available)
Shock/vibration ........................................................................ Pneumatic shock absorbers

Technical specifications camera pod/fairing

US certification (each airplane must be individually certified) ...... Cessna 172/182/206 (other aircraft possible)

Weight and balance

Midas computer system MDC w’ frame, POS, cables and disks .......... 106 lbs 48 kg
Midas Mount and extension cylinder ........................................... 75 lbs 34 kg
Midas array with cameras .......................................................... 128 lbs 58 kg
Total .......................................................................................... 309 lbs 140 kg
The MIDAS five camera system is available for lease or rental in most countries. The basic terms will be a three months minimum rental/lease period followed by monthly extensions. Other conditions will vary from country to country. Rental systems are the state of the art MIDAS 5 systems currently manufactured by Lead Air and consist of:

- Five photogrammetrically calibrated 36 Mpixel D800e Nikon cameras fitted with Zeiss lenses.
- Stabilized mount (+/- 15 degrees pitch and roll, +/- 30 degrees drift).
- Fully automated image storage and management.
- Integrated Track’Air flight management system.
- Integrated Applanix AP40 GNSS FMU-200 IMU system with worldwide exportability.
- Complete set of carefully selected spare parts.
- Onsite training, installation and assistance with boresighting procedure.

MIDAS generates accurate orientated oblique images which can be used to create city 3D models. Please note that MIDAS does not include a post processing system capable of creating city 3D models; you will have to use a third party 3D processing system.

The ability to rent a MIDAS will allow existing oblique photography providers to expand their capabilities as needed and profitably harness temporary increases in demand. Operators without oblique capability can now bid on projects with oblique requirements.

Please contact us for more information and check our web site for our lease/rental detailed conditions.