

**PANTHAIR SPECS SHEET - 16 OCTOBER 2023**



**LEAD'AIR INC**

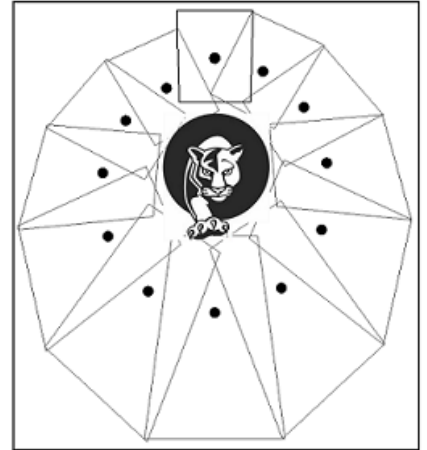
Aerial Survey Camera Systems

113 Hangar Road, Kissimmee,  
FLORIDA 34741  
USA

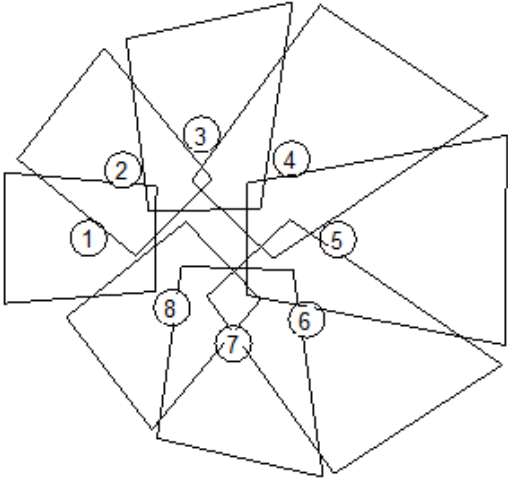
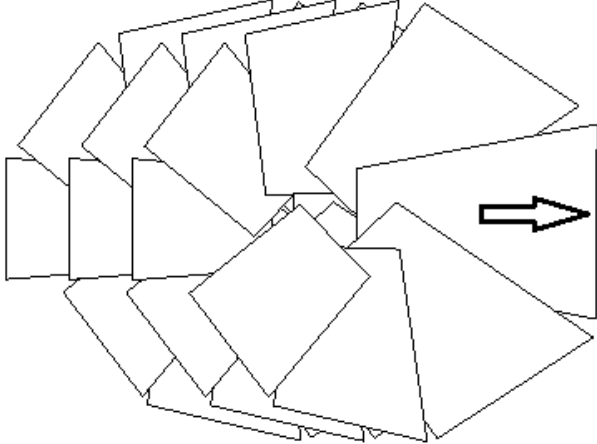
[www.trackair.com](http://www.trackair.com)

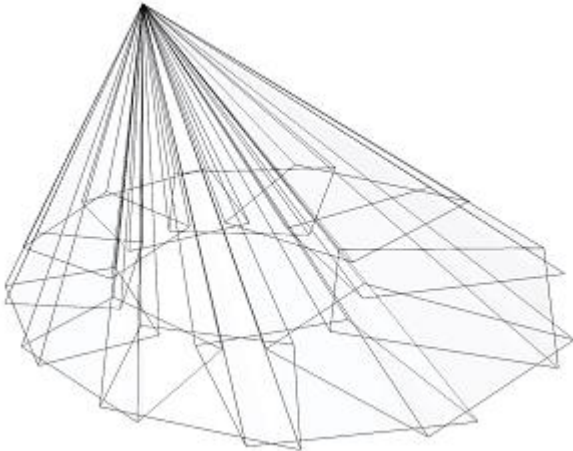

407-343-7571

*The PanthAir Logo*




Specifications	descriptions	Remarks
Camera system configuration	Single camera revolving system with continuous triggering.	
Pitch and inclination	Camera pitch varies with the angle of rotation from near vertical slant angle to high oblique slant angle.	
Coverage	Tilted 360° generating rear looking near vertical view, lateral oblique, and frontal high oblique.	
Camera type	Illunis EMC-103MP Global Shutter CMOS. Frame geometry Central Projection	Global Shutter implies no mechanical shutter.
Sensor	103 megapixels Gpixel GMAX32103 CMOS sensors in 35mm format. 9200 x 11276 pixels. Pixel size (µm) 3.20 Global shutter CMOS: Dynamic Range 65dB A/D conversion (bits) 12	
Frames per second	5 frames per second in normal operation 6 frames per second in highspeed operation	
Complete field of view 50mm lens	105.2° along track 102.6° across track	

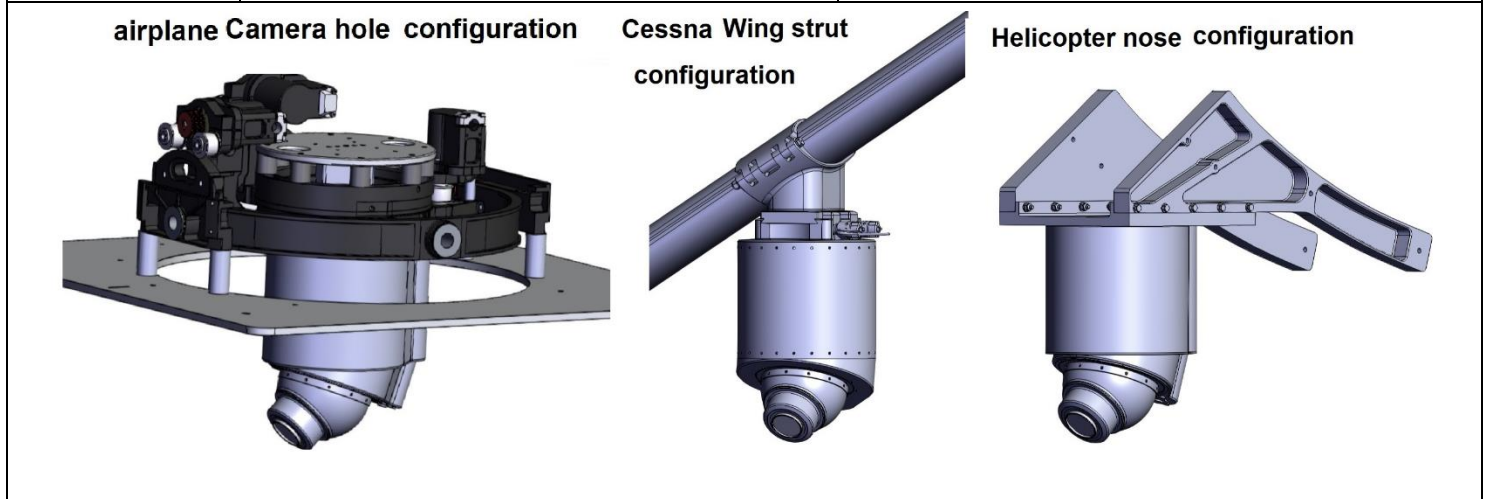
Footprint Shape	Circular 7 to 12 images. Here 8 images. 	Below 3 circular sequences 55% forward overlap 
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3D cone		
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Recommended Overlaps 3D mapping	Forward 55% Lateral 75%	Increase lateral overlap to 80% for very high buildings downtown area.
Inflight overlap	The forward overlap is maintained constant by the FMS regardless of the ground speed fluctuations.	
Capture Images per second	Variable, depending on configuration, aircraft ground speed and forward overlap. Exact forward overlap is sustained by adjusting rotation speed on the fly.	6 images possible; five image per second cover all possible conditions and configurations met by PanthAir
Size of a single image	103 megapixels	
Megapixels per second	On average PanthAir collects 515 megapixels per second (30.9 gigapixels per minute).	To our knowledge highest gigapixel amount of any aerial camera.
Data interface	10GigE	Camera Link available


Dimensions	Ø 330 mm – 1 foot , Height 330 mm – 1 foot	<p>The PanthAir housing</p> 																																								
FMS	The Sensor is controlled by the TRACKAIR snapSHOT Flight Management System																																									
Peripherals	8.3" Pilot display, 12.9" Operator display, 12" real-time image analysis and quality control display, MIDAS computer control system.																																									
Images per rotation	Depends on the lens focal length, between 7 and 12 images per rotation																																									
Duration of a rotation	Depends on images per rotation, between 1.5 second and 3 seconds.																																									
Available focal lengths	30mm, 35mm, 40mm, 45mm, 50mm, 55mm, 60mm, 65mm, 70mm, 80mm, 90mm and 100mm	preferred focal length 50mm																																								
AGL Altitudes	Between 1,000 feet and 5,000 feet Preferred altitude 2,000 feet	Automatic refocusing matching altitude.																																								
GSD	From 1 inch to 6 inch From 2.5 cm to 15.5 cm																																									
GSD versus altitude with 50mm lens. Also 75% spacing in meters	<table border="1" data-bbox="337 1503 776 1745"> <thead> <tr> <th>cm</th> <th>inch</th> <th>Feet</th> <th>75%</th> </tr> </thead> <tbody> <tr> <td>2.5</td> <td>1</td> <td>1100</td> <td>210m</td> </tr> <tr> <td>3</td> <td>1.2</td> <td>1300</td> <td>250m</td> </tr> <tr> <td>3.8</td> <td>1.5</td> <td>1670</td> <td>320m</td> </tr> <tr> <td>4</td> <td>1.6</td> <td>1750</td> <td>326m</td> </tr> </tbody> </table>	cm	inch	Feet	75%	2.5	1	1100	210m	3	1.2	1300	250m	3.8	1.5	1670	320m	4	1.6	1750	326m	<table border="1" data-bbox="933 1503 1360 1745"> <tbody> <tr> <td>5</td> <td>2</td> <td>2200</td> <td>410m</td> </tr> <tr> <td>6</td> <td>2.4</td> <td>2625</td> <td>490m</td> </tr> <tr> <td>7.6</td> <td>3</td> <td>3330</td> <td>620m</td> </tr> <tr> <td>10</td> <td>4</td> <td>4440</td> <td>830m</td> </tr> <tr> <td>12.7</td> <td>5</td> <td>5550</td> <td>1030m</td> </tr> </tbody> </table>	5	2	2200	410m	6	2.4	2625	490m	7.6	3	3330	620m	10	4	4440	830m	12.7	5	5550	1030m
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Maximum ground speed	Depends on the lens, forward overlap, etc. Typical ground speed with 50mm lens 140 knots (+/- 20% head/tail wind)																																									

Focusing	Automatic permanent refocusing of the lens according to preset values stored in the FMS memory.	
Possible installations	The same PanthAir system can be installed: <ul style="list-style-type: none"> <li>• Inside an airplane with camera hole</li> <li>• Outside an airplane on the wing strut</li> <li>• On a helicopter nose mount</li> <li>• In a category 3 drone.</li> </ul>	See drawing below



Wing mounting allows the user to transform a regular airplane into an efficient inexpensive aerial survey airplane. The installation can be done in a couple hours by an airframe and powerplant mechanic without making any permanent modifications to the airplane. The Meeker wing strut attachment shown here is FAA STC certified for the Cessna 172, 182 and 206. The pod has anti-vibration dampers as well as automatic drift angle correction +/- 30 degrees.

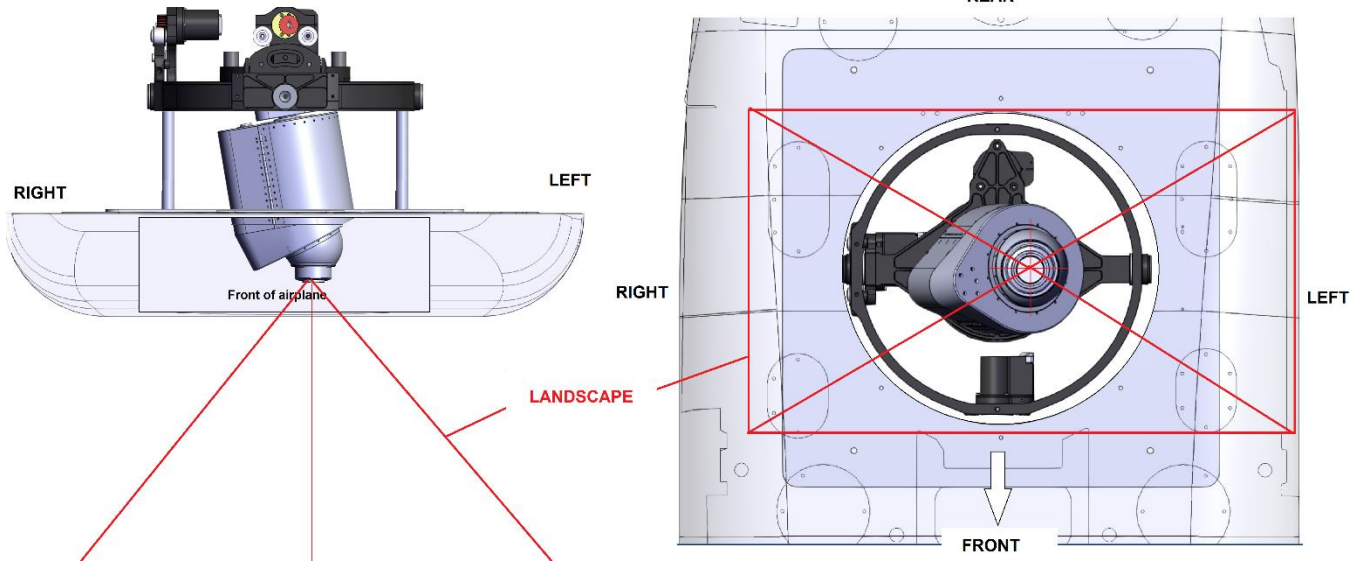
Full stabilization and drift correction	Stabilized mount Available for inside airplane above camera hole installation and helicopter nose mount installation	
Drift correction	Drift correction available for wing strut installation (no stabilization) as well as for cat 3 drone installation	
GNSS receiver/IMU	Integrated, Trimble Applanix AP+, Applanix IMU 69	Other IMU options possible

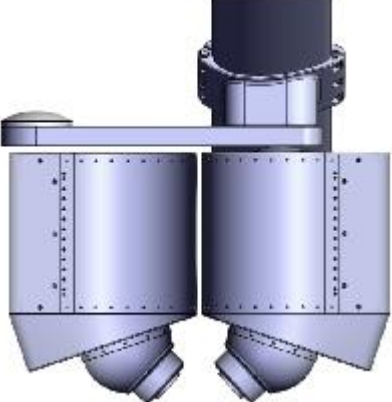
Post processing software	Compatible with most commercial 3D mapping software such as: <ul style="list-style-type: none"> <li>• ArcGIS Reality by ESRI</li> <li>• Photomesh by SKYLINE Software Systems</li> <li>• Etc</li> </ul>	Orlando 3D mesh (Skyline Photomesh) 
Planning software	TRACKAIR snapPLAN	

**TRUE ORTHO MAPPING MODE**

True ortho	The PanthAir can be installed in the stabilized mount in vertical looking mode in order to perform normal vertical mapping as well as collect imagery for generating true ortho	The camera is rotated sideways so as to capture the mapping and ortho imagery in landscape mode.
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**PANTHAIR IN MAPPING TRUE ORTHO CONFIGURATION**



<b>NEW DEVELOPMENTS AND UPRADES</b>		
In development: Corridor version	Q1 2024; Lead'Air is announcing 200 megapixels dual PanthAir specially designed for single pass 3D corridor mapping.	
Programmed upgrade: 150 megapixels camera.	Q3 2024; Lead'Air is announcing a 150-megapixel camera as an optional replacement for the original 100 megapixels.	A low-cost upgrade will be available for early clients who wish to replace their original 100 mp with the 150 mp
Planned: High altitude version	Q4 2024; Lead'Air is announcing twin camera 300-megapixel system allowing 3D mapping survey at 10,000 feet and higher	

<b>PURCHASE AND DELIVERY CONDITIONS</b>		
Ordering and delivery time	<ul style="list-style-type: none"> <li>• Orders placed in October and November 2023 will be delivered within 10 weeks.</li> <li>• Orders placed in December 2024 and January 2024 will be delivered in 8 weeks.</li> <li>• Orders placed in February 2024 and later will be delivered in 6 weeks.</li> </ul>	
Warranty and support	2 years from date of delivery. Delivery includes a kit of components which can be easily exchanged by the user on site (belt, etc).	
Money back warranty	In the case of purchase, up to two months after delivery, 100% money back warranty if the system is returned, no question asked.	
Price per unit	Less than \$200,000.	The total price depends on the options selected.
PPU option	Lease agreement option based on the PPU pay per use model. The ownership and responsibility of the product stays with Lead'Air, and the customer pays a fee for usage on demand.	With this payment model the customer pays for using the product rather than having to buy it. Contact us for more information.
Data ownership	You own your data, the PanthAir is 100% free from content program restrictions.	

<b>TECHNICAL SPECIFICATIONS</b>	
Weight	Maximum weight 23 kg – 50 lbs Include camera pod + computer control system + display + cables
Power consumption	Maximum consumption 100 Watts at 12V, 50W at 24V Protected for power input voltage spikes.
EMI - EMC	The pod enclosure is shielded to meet RTCA DO-160 standards for airborne equipment: <ul style="list-style-type: none"> <li>• Magnetic Effects</li> <li>• Radio Frequency Susceptibility (Radiated and Conducted)</li> <li>• Emission of Radio Frequency Energy</li> </ul>
Environmental conditions	Environmental conditions met by the sensor:  Target standards rating: IP65. Dust: complete protection is provided by sealed enclosure. Rainwater protection: In-flight protection is provided by sealed enclosure.
temperature	Operating temperature range -10°C to 50°C    14°F to 122°F °
Vibrations and shocks	The PanthAir is designed to meet RTCA/DO-160 vibration and shock testing methods for standard vibration test (Category S)
Preventive maintenance	On site small preventive maintenances to be performed by the user <ul style="list-style-type: none"> <li>• Daily preflight check as per manufacturer instructions</li> <li>• The radial belt must be checked on a monthly basis and replaced when necessary.</li> <li>• Lubrication as per manufacturer instructions</li> <li>• BIOS computer battery may need to be replaced when applicable.</li> <li>• Etc.</li> </ul>
Overhauls	Recommended time between full overhauls 1,000 hours
Performances	Camera and turret performances: Minimum triggering interval 0.20 second Max frames per second 5 Time to fire 12 photos at 30° interval 2.5 seconds.

**LEAD'AIR IS LOOKING FOR PARTNERS AND INVESTORS**

The development and marketing of the new Lead'Air line of 3D products is a considerable effort which absorbs most of our resources. Hence Lead'Air is actively looking for business partners and investors interested in joining forces with our company to help support and promote our worldwide initiatives and products. Please contact JP Barriere [jp@trackair.com](mailto:jp@trackair.com).