

Wehrli / Geosystem

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Pushbroom Digital Cameras



DAS Family of Cameras

Wehrli/Geosystems is a cooperative effort between, Wehrli & Associates Inc. (USA) and Geosystem (Ukraine), dedicated to designing, developing and manufacturing technologically advanced photogrammetric products.

Many of our clients have special applications which require unique digital cameras. We partner with clients worldwide to design and implement the best suited solution. Our expertise gives you the right solution economically and timely.

Advanced Technology:

Today our efforts are concentrated on providing digital aerial cameras with the latest in push-broom technology.

Our family of digital aerial cameras adapt to a variety of applications from conventional imagery for stereo compilation and orthophoto rectification to high oblique imagery for public safety applications to true color nadir imagery integrated to LIDAR data collection systems.

All our digital aerial cameras are interfaced to most IMU/GPS systems providing highly accurate imagery with superior radiometry.

DAS Camera Systems Offer:

- Complete workflow from mission planning and data acquisition to map production
- Highly modular camera head capable of acquiring multiple channels of image data
- Contiguous, seamless flight strip images in true RGB color
- Real-time image view and automatic selection of optimal exposition during flight
- On-the-fly lossless compression allowing up to 16 hours of image capture/terabyte
- Unlimited flight time with hot swap RAID storage units
- Robust/stable design supported by components made from invar steel

Stereoscopic Views From Different Perspectives



Integrated with popular GPS/IMU and stabilized platforms



Medium Format Stereo/Orthophoto Camera

Ideal solution for large scale stereo mapping and orthophoto production.

Selectable stereo for 3D-mapping with 16°, 26° or 42° convergence angle.

A narrow view angle (36°) across the flight path reduces perspective distortion (building lean).

Contiguous strips, instead of hundreds of small images, ease the orthorectification process .

Brilliant radiometry and the highest dynamic range allows for image capture even under adverse weather conditions.



Specification

Parameter	Value
Number of simultaneous channels (RGB/NIR)	3/-
Active pixels	8000xRGB
Pixel size, micron	9
Focal distance, mm	110
Field of view (across the strip), degree	36
Angles for backward/forward channels, degree	16/26
Radiometric resolution, bit	42 (14 bit per band)
Dynamic range, db	75
Line rate, Hz	250-745
Power requirements	DC 28V/17A (max)
Weight, kg (net/whole system with platform and PC)	42/150
Dimensions, mm	560 x 257 x 419

Flight modes

GSD cm	Swath width m	Height (AGL) m	Maximum speed km/h
5.0	400	611	135
7.5	600	917	203
10.0	800	1222	270
12.5	1000	1528	338
15.0	1200	1833	405
17.5	1400	2139	473
20.0	1600	2444	540
22.5	1800	2750	608
25.0	2000	3056	675
27.5	2200	3361	743
30.0	2400	3667	810

GSD inch	Swath width ft	Height (AGL) ft	Maximum speed knots
2	1333	2037	74
3	2000	3056	111
4	2667	4074	148
5	3333	5093	185
6	4000	6111	222
7	4667	7130	259
8	5333	8148	296
9	6000	9167	333
10	6667	10185	370
11	7333	11204	407
12	8000	12222	444

Large Format Stereo/Orthophoto Camera



A universal camera suited for medium or small scale mapping projects.

Allows you to cover large areas with a minimum of flight lines – has a wider swath than conventional film cameras.

Selectable stereo for 3D-mapping with 16°, 26° or 42° convergence angle.

Robust and stable design supported by components made from invar steel.

Specification

Parameter	Value
Number of simultaneous channels (RGB/NIR)	3/-
Active pixels	15960xRGB
Pixel size, micron	9
Focal distance, mm	123.2
Field of view (across the strip), degree	60
Angles for backward/forward channels, degree	16/26
Radiometric resolution, bit	42 (14 bit per band)
Dynamic range, db	58
Line rate, Hz	210-745
Power requirements	DC 28V/20A (max)
Weight, kg (net/whole system with platform and PC)	67/220
Dimensions, mm	480 x 528 x 504

Flight modes

GSD	Swath width	Height (AGL)	Maximum speed
cm	m	m	km/h
5.0	798	684	135
7.5	1197	1027	203
10.0	1596	1369	270
12.5	1995	1711	338
15.0	2394	2053	405
17.5	2793	2396	473
20.0	3192	2738	540
22.5	3591	3080	608
25.0	3990	3422	675
27.5	4389	3764	743
30.0	4788	4107	810
32.5	5187	4449	878
35.0	5586	4791	945
37.5	5985	5133	1013
40.0	6384	5476	1080

GSD	Swath width	Height (AGL)	Maximum speed
inch	ft	ft	knots
2	2660	2281	74
3	3990	3422	111
4	5320	4563	148
5	6650	5704	185
6	7980	6844	222
7	9310	7985	259
8	10640	9126	296
9	11970	10267	333
10	13300	11407	370
11	14630	12548	407
12	15960	13689	444
13	17290	14830	481
14	18620	15970	518
15	19950	17111	555
16	21280	18252	593

Medium Format Stereo/Ortho Camera with NIR

The most versatile photo-grammetric camera. In addition to capturing RGB images for nadir/forward/backward, it captures NIR in the nadir direction.

Best suited for large scale mapping projected including stereo compilation, orthophoto rectification and some remote sensing requirements.

Superior radiometry and high dynamic range.



Specification

Parameter	Value
Number of simultaneous channels (RGB/NIR)	3/1 (nadir)
Active pixels	8000xRGB/NIR
Pixel size, micron	9
Focal distance, mm	100
Field of view (across the strip), degree	39
Angles for backward/forward channels, degree	16/26
Radiometric resolution, bit	42 (14 bit per band)
Dynamic range, db	72
Line rate, Hz	310-745
Power requirements	DC 28V/18A (max)
Weight, kg (net/whole system with platform and PC)	67/220
Dimensions, mm	480 x 528 x 572

Flight modes

GSD	Swath width	Height (AGL)	Maximum speed
cm	m	m	km/h
5.0	400	556	135
7.5	600	833	203
10.0	800	1111	270
12.5	1000	1389	338
15.0	1200	1667	405
17.5	1400	1944	473
20.0	1600	2222	540
22.5	1800	2500	608
25.0	2000	2778	675
27.5	2200	3056	743
30.0	2400	3333	810

GSD	Swath width	Height (AGL)	Maximum speed
inch	ft	ft	knots
2	1333	1852	74
3	2000	2778	111
4	2667	3704	148
5	3333	4630	185
6	4000	5556	222
7	4667	6481	259
8	5333	7407	296
9	6000	8333	333
10	6667	9259	370
11	7333	10185	407
12	8000	11111	444

3-OC-1 3D-Modeling/Emergency Services

Medium Format Oblique Camera



RGB at 0 (nadir) and 45° (backward/forward).

Special camera to obtain near true ortho and wall building textures simultaneously.

Can be used for orthophoto, mapping, DSM and 3D-modeling.



Specification

Parameter	Value
Number of simultaneous channels (RGB/NIR)	3/-
Active pixels	8000xRGB
Pixel size, micron	9
Focal distance, mm	80 (nadir)/110/110
Field of view (across the strip), degree	48 (nadir)/36/36
Angles for backward/forward channels, degree	45/45
Radiometric resolution, bit	42 (14 bit per band)
Dynamic range, db	73
Line rate, Hz	250-745
Power requirements	DC 28V/17A (max)
Weight, kg (net/whole system with platform and PC)	57/210
Dimensions, mm	465 x 460 x 528

Flight modes

GSD	Swath width	Height (AGL)	Maximum speed
cm	m	m	km/h
5.0	400	444	135
7.5	600	667	203
10.0	800	889	270
12.5	1000	1111	338
15.0	1200	1333	405
17.5	1400	1556	473
20.0	1600	1778	540
22.5	1800	2000	608
25.0	2000	2222	675
27.5	2200	2444	743
30.0	2400	2667	810
32.5	2600	2889	878
35.0	2800	3111	945
37.5	3000	3333	1013
40.0	3200	3556	1080

GSD	Swath width	Height (AGL)	Maximum speed
inch	ft	ft	knots
2	1333	1481	74
3	2000	2222	111
4	2667	2963	148
5	3333	3704	185
6	4000	4444	222
7	4667	5185	259
8	5333	5926	296
9	6000	6667	333
10	6667	7407	370
11	7333	8148	407
12	8000	8889	444
13	8667	9630	481
14	9333	10370	518
15	10000	11111	555
16	10667	11852	593

Medium Format Orthophoto Camera

The most automatic and cost effective solution for orthophoto.

Camera and LIDAR are mounted together to share the same GPS/IMU.

Camera captures near true ortho image at the same time as LIDAR captures DEM. That is, a narrow view angle across the flight path (36°) reduces perspective distortion (building lean).



Specification

Parameter	Value
Number of simultaneous channels (RGB/NIR)	1/-
Active pixels	8000xRGB
Pixel size, micron	9
Focal distance, mm	110
Field of view (across the strip), degree	36
Angles for backward/forward channels, degree	-
Radiometric resolution, bit	42 (14 bit per band)
Dynamic range, db	75
Line rate, Hz	250-745
Power requirements	DC 28V/15A (max)
Weight, kg (net/whole system with PC)	12/100
Dimensions, mm	270 x 254 x 388

Flight modes

GSD	Swath width	Height (AGL)	Maximum speed
cm	m	m	km/h
5.0	400	611	135
7.5	600	917	203
10.0	800	1222	270
12.5	1000	1528	338
15.0	1200	1833	405
17.5	1400	2139	473
20.0	1600	2444	540
22.5	1800	2750	608
25.0	2000	3056	675
27.5	2200	3361	743
30.0	2400	3667	810
32.5	2600	3972	878
35.0	2800	4278	945
37.5	3000	4583	1013
40.0	3200	4889	1080

GSD	Swath width	Height (AGL)	Maximum speed
inch	ft	ft	knots
2	1333	2037	74
3	2000	3056	111
4	2667	4074	148
5	3333	5093	185
6	4000	6111	222
7	4667	7130	259
8	5333	8148	296
9	6000	9167	333
10	6667	10185	370
11	7333	11204	407
12	8000	12222	444
13	8667	13241	481
14	9333	14259	518
15	10000	15278	555
16	10667	16296	593



An-2



Cessna 206



Cessna 404



Turbo Commander



Pilatus Porter



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