

III. Lens Resolving Power in cycles/mm

Area-weighted average resolution: 109

Field angle:	0°	7.5°	15°	22.7°	30°	35°	40°
Radial Lines	134	159	134	134	113	95	95
Tangential Lines	134	134	113	113	113	95	80

The resolving power is obtained by photographing a series of test bars and examining the resultant image with appropriate magnification to find the spatial frequency of the finest pattern in which the bars can be counted with reasonable confidence. The series of patterns has spatial frequencies from 5 to 268 cycles/mm in a geometric series having a ratio of the 4th root of 2. Radial lines are parallel to a radius from the center of the field, and tangential lines are perpendicular to a radius.

IV. Filter Parallelism

The two surfaces of the Wild 420 filter No. 7946 accompanying this camera are within 10 seconds of being parallel. This filter was used for the calibration.

V. Shutter Calibration

Indicated Time (sec)	Rise Time (μ sec)	Fall Time (μ sec)	½ Width Time (ms)	Nom. Speed (sec)	Efficiency (%)
1/125	1596	1556	8.34	1/140	88
1/250	947	896	4.25	1/270	86
1/500	446	448	2.19	1/520	87
1/1000	233	222	1.10	1/1040	87

The effective exposure times were determined with the lens at aperture f/4. The method is considered accurate within 3 percent. The technique used is described in International Standard ISO 516:1999(E).

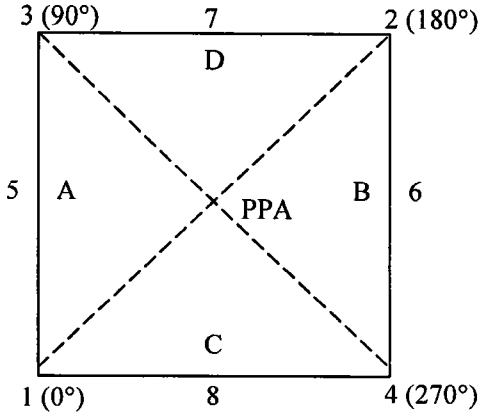
VI. Film Platen

The platen mounted in Wild drive unit No. 5365 does not depart from a true plane by more than 13 μ m (0.0005 in).

This camera is equipped with a platen identification marker that will register "740" in the data strip area for each exposure.

VII. Principal Point and Fiducial Mark Coordinates

data strip side



Positions of all points are referenced to the principal point of autocollimation (PPA) as origin. The diagram indicates the orientation of the reference points when the camera is viewed from the back, or a contact positive with the emulsion up. The data strip is to the left.

Indicated principal point, corner fiducials
 Indicated principal point, midside fiducials
 Principal point of autocollimation (PPA)
 Calibrated principal point (point of symmetry)

	<u>X coordinate (mm)</u>	<u>Y coordinate (mm)</u>
Indicated principal point, corner fiducials	0.009	-0.007
Indicated principal point, midside fiducials	0.006	-0.007
Principal point of autocollimation (PPA)	0.000	0.000
Calibrated principal point (point of symmetry)	-0.010	0.012

Fiducial Marks

1	-105.991	-106.008
2	106.006	105.992
3	-105.991	105.992
4	106.011	-106.008
5	-111.992	-0.008
6	112.009	-0.006
7	0.010	111.995
8	0.002	-112.021

VIII. Distances Between Fiducial marks

Corner fiducials (diagonals)	1-2: 299.810 mm	3-4: 299.814 mm
Lines joining these markers intersect at an angle of 89° 59' 59"		
Midside fiducials	5-6: 224.001 mm	7-8: 224.016 mm
Lines joining these markers intersect at an angle of 89° 59' 51"		
Corner fiducials (perimeter)	1-3: 212.000 mm	2-3: 211.996 mm
	1-4: 212.002 mm	2-4: 212.000 mm

The Method of measuring these distances is considered accurate within 0.003 mm

Note: For GPS applications, the nominal entrance pupil distance from the focal plane is 277mm.

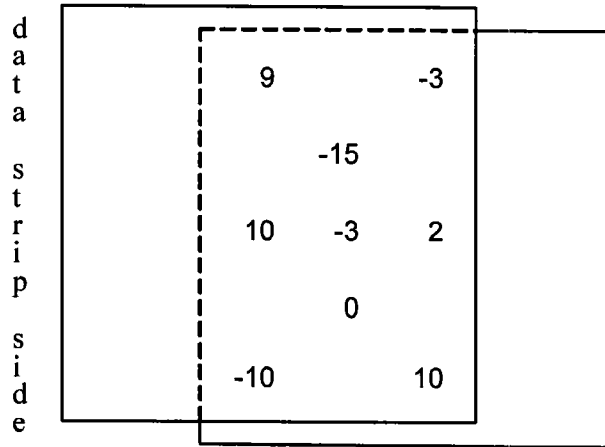
IX. Stereomodel Flatness

FMC Drive Unit No: 5365

Base/Height ratio: 0.6

Platen ID: 740

Maximum angle of field tested: 40°



Stereomodel Test Point Array
(values in micrometers)

The values shown on the diagram are the average departures from flatness (at negative scale) for two computer-simulated stereo models. The values are based on comparator measurements on Agfa Avitone P3p copy film made from Agfa Aviphot Pan 200 film exposures. These measurements are considered accurate to within 5 μm.


X. System Resolving Power on film in cycles/mm

Area-weighted average resolution: 51

Film: Pan 200

Field angle:	0°	7.5°	15°	22.7°	30°	35°	40°
Radial Lines	57	57	57	57	57	48	48
Tangential Lines	57	57	48	57	48	48	40

This aerial mapping camera calibration report supersedes the previously issued USGS Report No. OSL/3532, dated September 2, 2010.


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 Climate and Land Use Change