



### III. Resolving Power in cycles/mm

Area-weighted average resolution: 82.9

Field angle:	0°	7.5°	15°	22.5°	30°	35°	40°
Radial lines	134	134	113	95	95	67	40
Tangential lines	134	134	113	95	80	67	57

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 B No. 127914 and the KL No. 127848 filters accompanying this camera are within 10 seconds of being parallel. The B filter was used for the calibration.

### V. Shutter Calibration

<u>Indicated shutter speed</u>	<u>Effective shutter speed</u>	<u>Efficiency</u>
1/200	4.12 ms = 1/240 s	71%
1/400	1.88 ms = 1/530 s	71%
1/600	1.25 ms = 1/800 s	71%
1/800	0.94 ms = 1/1060 s	71%
1/1000	0.75 ms = 1/1330 s	71%

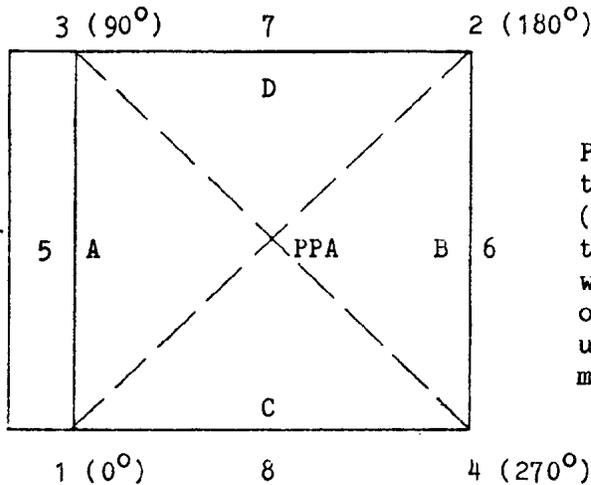
The effective shutter speeds were determined with the lens at aperture f/4. The method is considered accurate within 3 percent. The technique used is Method I described in American National Standard PH3.48-1972(R1978).

### VI. Magazine Platen

The platen mounted in FK 24/120 film magazine No. 118832 does not depart from a true plane by more than 13  $\mu$ m (0.0005 in).

The platen for this film magazine is equipped with an identification marker that will register "CZ359" in the data strip area for each exposure.

VII. Principal Point and Fiducial Coordinates



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 direction-of-flight fiducial marker or data strip is to the left.

	<u>X coordinate</u>	<u>Y coordinate</u>
Indicated principal point, corner fiducials	-0.008 mm	0.005 mm
Indicated principal point, midside fiducials	0.000	0.003
Principal point of autocollimation	0.0	0.0
Calibrated principal point (point of symmetry)	0.005	0.001

Fiducial Marks

	<u>X coordinate</u>	<u>Y coordinate</u>
1	-103.946 mm	-103.934 mm
2	103.928	103.942
3	-103.912	103.921
4	103.919	-103.934
5	-113.003	0.008
6	112.998	-0.002
7	-0.001	113.001
8	0.001	-112.986

VIII. Distances Between Fiducial Marks

Corner fiducials (diagonals)

1-2: 293.979 mm                      3-4: 293.935 mm

Lines joining these markers intersect at an angle of 89° 59' 47"

Midside fiducials

5-6: 226.001 mm                      7-8: 225.987 mm

Lines joining these markers intersect at an angle of 90° 00' 11"

Corner fiducials (perimeter)

1-3: 207.855 mm                      2-3: 207.840 mm

1-4: 207.865 mm                      2-4: 207.876 mm

The method of measuring these distances is considered accurate within 0.005 mm

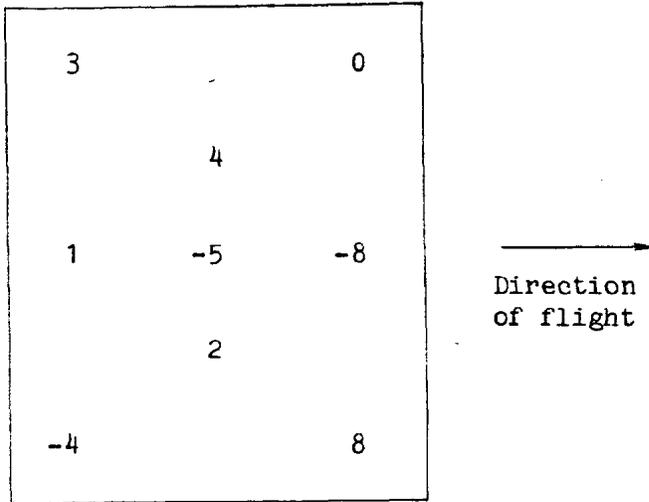
IX. Stereomodel Flatness

Magazine No.: 118832

Base/Height ratio: 0.6

Platen ID: CZ359

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 stereomodels based on comparator measurements on contact glass (Kodak Micro-flat) diapositives made from Kodak 2405 film exposures. These measurements are considered accurate within 5  $\mu$ m.

X. Resolving Power in cycles/mm

Area-weighted average resolution: 44.1

Film: Type 2405

Field angle:	0°	7.5°	15°	22.5°	30°	35°	40°
Radial lines	67	67	67	48	48	34	28
Tangential lines	67	67	57	48	40	40	34

This report supersedes the previous calibration of this camera contained in USGS Report of Calibration No. RSAS/823, dated August 26, 1982.

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FILM RADIAL DISTORTION, STEREOMODEL FLATNESS AND RESOLUTION

Magazine No.: 118832  
Platen ID: CZ359

Base/Height ratio: 0.6  
Maximum angle of field tested: 40°

Calibrated Focal Length

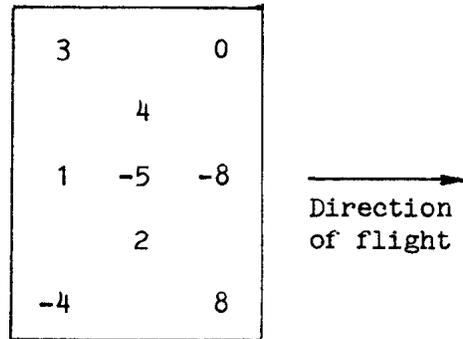
flash plate: 152.740 mm  
film: 152.742 mm

IX. Radial Distortion

Field angle	$\bar{D}_c$	$D_c$ for azimuth angle			
		0° A-C	90° A-D	180° B-D	270° B-C
degrees	um	um	um	um	um
7.5	0	0	2	0	0
15	1	1	0	0	2
22.5	-1	-1	0	-3	0
30	0	1	0	-2	0
35	-1	-2	0	-4	1
40	1	-1	3	1	2

X. Stereomodel Flatness

The values shown on the diagram are the average departures from flatness (at negative scale) for two computer-simulated stereomodels based on comparator measurements on contact glass (Kodak micro flat) diapositives made from Kodak 2405 film exposures. These measurements are considered accurate within 5 um.



Stereomodel test point array  
(values in micrometers)

XI. Resolving Power in cycles/mm

Area-weighted average resolution:	44.1					Film:	Type 2405
Field angle:	0°	7.5°	15°	22.5°	30°	35°	40°
Radial lines	67	67	67	48	48	34	28
Tangential lines	67	67	57	48	40	40	34

This report supersedes the previous calibration of this camera contained in USGS Report of Calibration No. RSAS/823, dated August 26, 1982.

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