

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC20  
LENS TYPE : 21/4 NAGA-E  
LENS NO. : 7176

CALIBRATION DATE : 27.11.91

LEICA HEERBRUGG LTD

*Leica*

*Leica Heerbrugg Ltd  
CH-8435 Heerbrugg*

*Calibration Department  
Supervisor*



CAMERA CALIBRATION

CAMERA: RC20 LENS: 2 1/4 NAGA-F NO.: 7176 CALIBRATION DATE: 27.11.91

APERTURE : F / 4.0  
 FILTER ON GONIOMETER : 450 NM  
 FILTER ON CAMERA : --  
 CALIBRATED FOCAL LENGTH : 214.74 MM

RADIAL DISTORTION (MICROMETERS)

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 REFERRED TO PRINCIPAL POINT OF SYMMETRY (PPS)  
 (POSITIVE VALUES DENOTE IMAGE DISPLACEMENT AWAY FROM CENTER)

RADIUS MM	SEMI - DIAGONALS				MEAN
	1	3	2	4	
10	1.3	0.8	0.9	1.0	1.0
20	2.2	1.1	2.4	2.0	1.9
30	3.0	3.0	3.6	3.7	3.3
40	4.4	4.2	4.5	4.8	4.4
50	4.4	4.5	4.2	5.2	4.5
60	2.2	3.4	2.8	3.5	2.9
70	0.7	2.4	0.3	2.6	1.5
80	-1.2	1.4	-0.4	1.4	0.3
90	-1.4	-0.1	-1.1	0.2	-0.6
100	-2.8	-1.7	-1.2	-1.0	-1.6
110	-3.3	-3.1	-1.8	-1.7	-2.4
120	-2.6	-3.9	-2.2	-2.6	-2.8
130	-2.4	-3.5	-1.0	-1.7	-2.1
140	-1.5	-1.9	0.3	-0.1	-0.8
148	0.4	-0.4	2.5	1.4	0.9

PHOTOGRAPHIC RESOLUTION (LINE PAIRS PER MILLIMETER)

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 INTERNATIONAL 3-LINE TEST-CHART, CONTRAST (LOG) : 2.0  
 APERTURE : 4.0  
 FILTER : 450 NM  
 FILM : KODAK TECHNICAL PAN 2415  
 DEVELOPER : KODAK HC110

ANGLE: (DEGREES)	0	5	10	15	20	25	30	35
RAD.	75	84	74	82	56	48	46	49
TANG.	75	75	65	63	53	55	50	45

AWAR (AREA WEIGHTED AVERAGE RESOLUTION) IN LP/MM : 57



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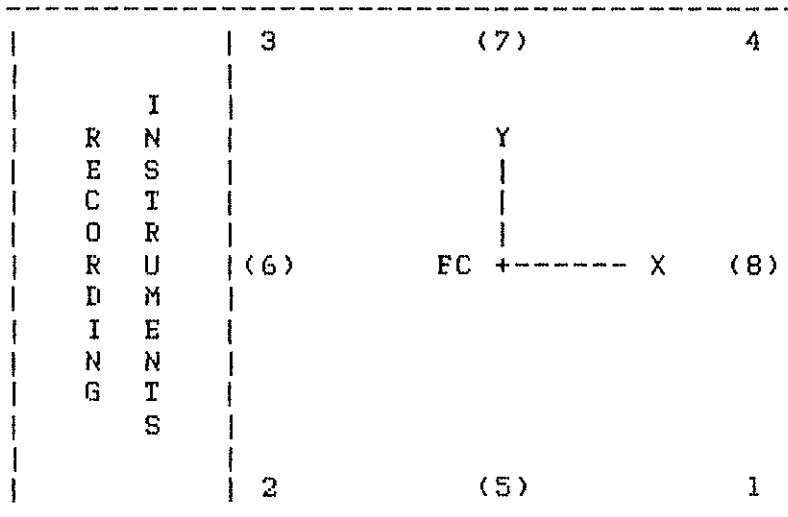
PRINCIPAL POINT OF AUTOCOLLIMATION (PPA) AND  
PRINCIPAL POINT OF SYMMETRY (PPS)

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REFERRED TO FC, SEE DIAGRAM

	X (MM)	Y (MM)
PPA	-0.010	-0.004
S	-0.017	-0.021

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DUCIAL MARKS, REFERRED TO FC

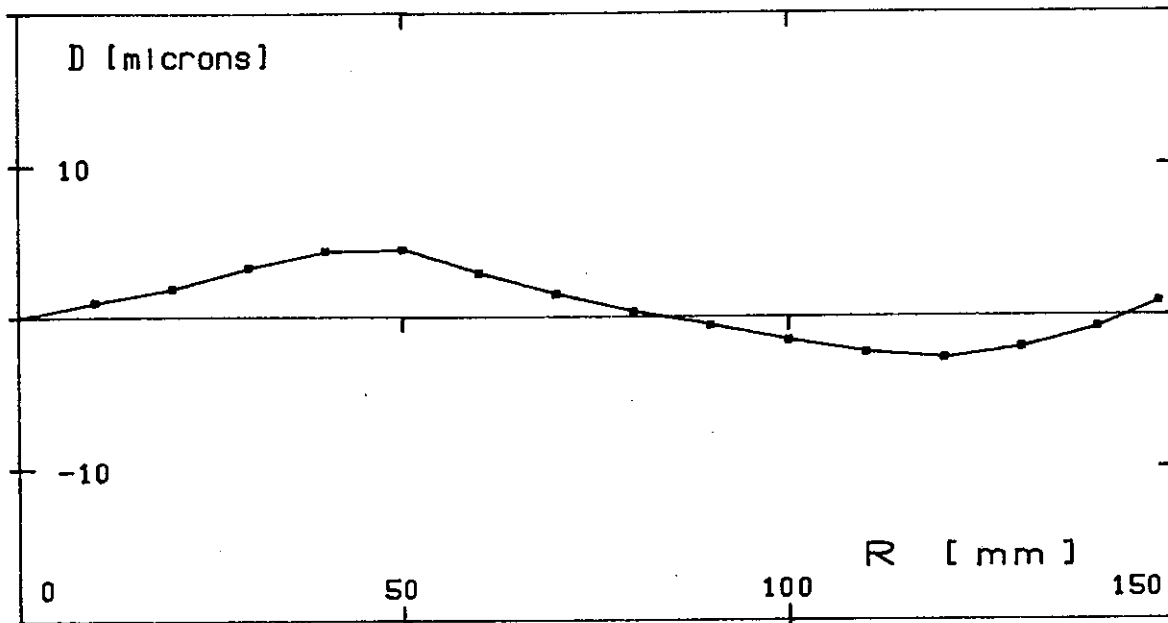
	X (MM)	Y (MM)		X (MM)	Y (MM)
1	105.998	-106.001	5	0.002	-109.974
2	-105.999	-106.001	6	-110.002	0.001
3	-105.997	106.000	7	-0.001	110.016
4	106.001	106.003	8	110.001	0.002



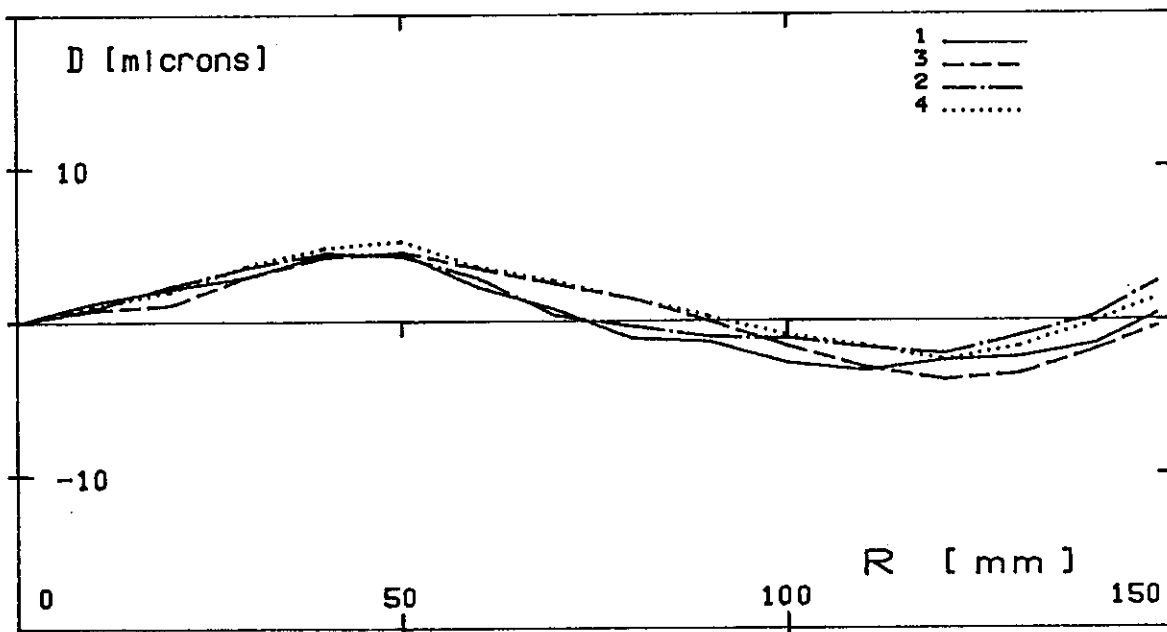
AS SEEN ON FOCAL PLANE FRAME

WILD  
910

APERTURE : F / 4.0  
FILTER ON GONIOMETER : 450 NM  
FILTER ON CAMERA : --  
C.F.L. : 214.74 MM



MEAN RADIAL DISTORTION CURVE



RADIAL DISTORTION FOR SEMI-DIAGONALS REFERRED TO PPS

