

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC20
LENS TYPE : 15/4 UAGA-F
LENS NO. : 13129

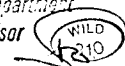
CALIBRATION DATE : 19.02.91

WILD LEITZ LTD



Leica Heerbrugg Ltd
CH-8435 Heerbrugg

Calibration Department
Supervisor



CAMERA CALIBRATION

CAMERA: RC20 LENS: 15/4 UAGA-F NO.: 13129 CALIBRATION DATE: 19.02.91

APERTURE : F / 4.0
 FILTER ON GONIOMETER : VIS (400 - 700 NM)
 FILTER ON CAMERA : --
 CALIBRATED FOCAL LENGTH : 152.85 MM

RADIAL DISTORTION (MICROMETERS)

 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	0.7	-0.1	0.6	-0.1	0.2
20	0.6	0.5	0.9	0.3	0.5
30	0.3	0.8	1.2	0.0	0.5
40	0.0	1.4	0.5	0.3	0.5
50	0.1	1.2	0.5	0.3	0.5
60	-0.7	1.8	0.5	0.4	0.5
70	-0.1	2.1	0.0	1.0	0.7
80	0.2	2.6	0.4	1.2	1.1
90	0.8	3.0	0.2	1.9	1.4
100	1.0	1.8	1.2	1.2	1.3
110	1.3	1.3	1.2	1.0	1.2
120	1.1	0.4	-0.2	0.1	0.3
130	-1.0	-0.8	-1.4	-0.9	-1.0
140	-1.9	-2.7	-2.1	-2.0	-2.1
148	-1.6	-4.5	-1.3	-3.1	-2.6

PHOTOGRAPHIC RESOLUTION (LINE PAIRS PER MILLIMETER)

 INTERNATIONAL 3-LINE TEST-CHART, CONTRAST (LOG) : 2.0
 APERTURE : 4.0
 FILTER : 450 NM
 FILM : AGFAPAN 25 PROFESSIONAL (ASA SPEED: 25)
 DEVELOPER : KODAK HC110 PREPARATION 2 SOLUTION C

ANGLE: (DEGREES)	0	5	10	15	20	25	30	35	40	45
RAD.	95	84	93	81	79	68	73	77	65	42
TANG.	95	84	82	79	66	78	63	63	49	42

AWAR (AREA WEIGHTED AVERAGE RESOLUTION) IN LP/MM : 69



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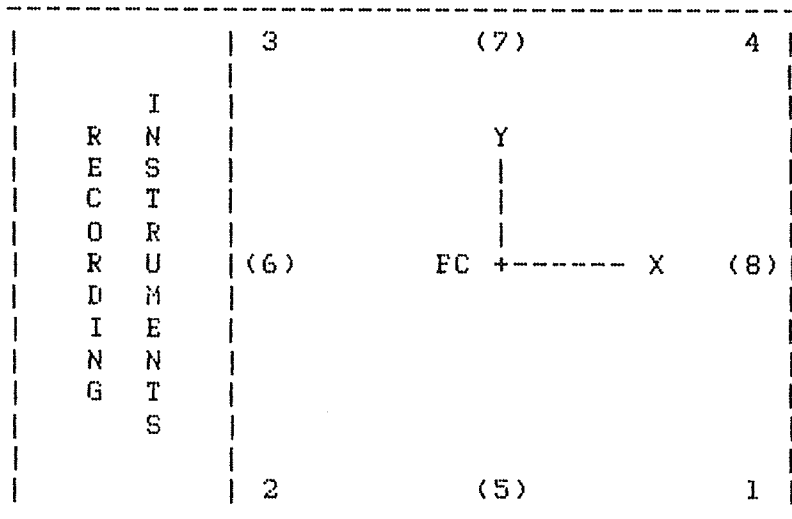
PRINCIPAL POINT OF AUTOCOLLIMATION (PPA) AND
PRINCIPAL POINT OF SYMMETRY (PPS)

REFERRED TO FC, SEE DIAGRAM

	X (MM)	Y (MM)
PPA	0.003	0.005
S	-0.002	0.007

FIDUCIAL MARKS, REFERRED TO FC

	X (MM)	Y (MM)		X (MM)	Y (MM)
1	105.996	-106.000	5	-0.002	-110.012
2	-105.998	-106.001	6	-109.999	0.002
3	-106.000	106.004	7	-0.001	110.005
4	105.999	106.003	8	109.999	0.004

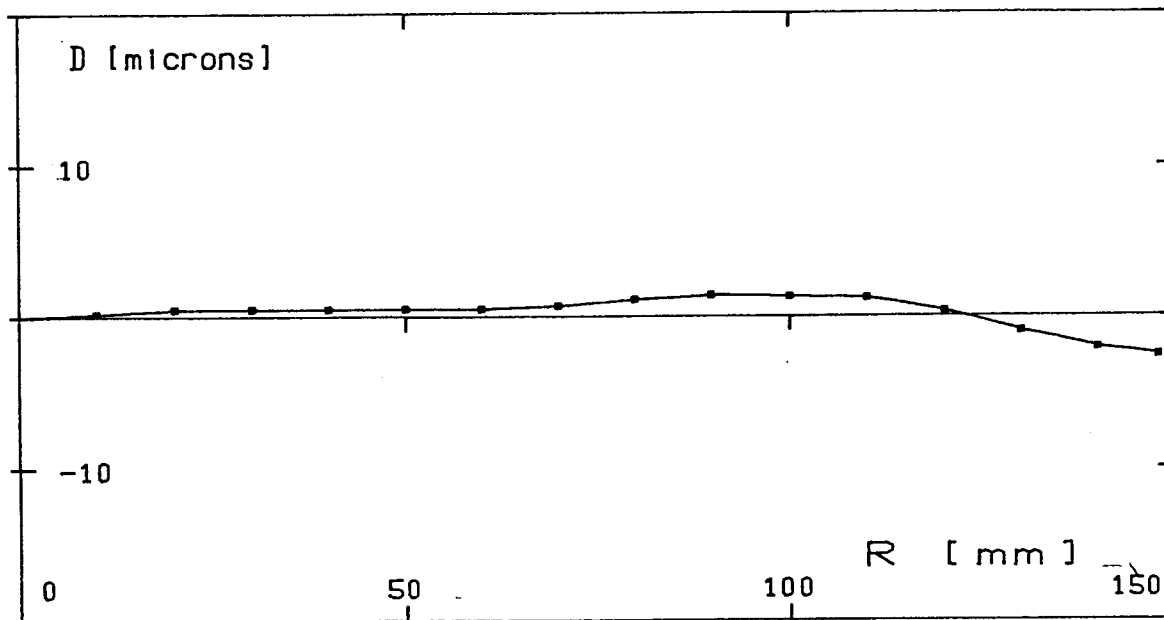


AS SEEN ON FOCAL PLANE FRAME

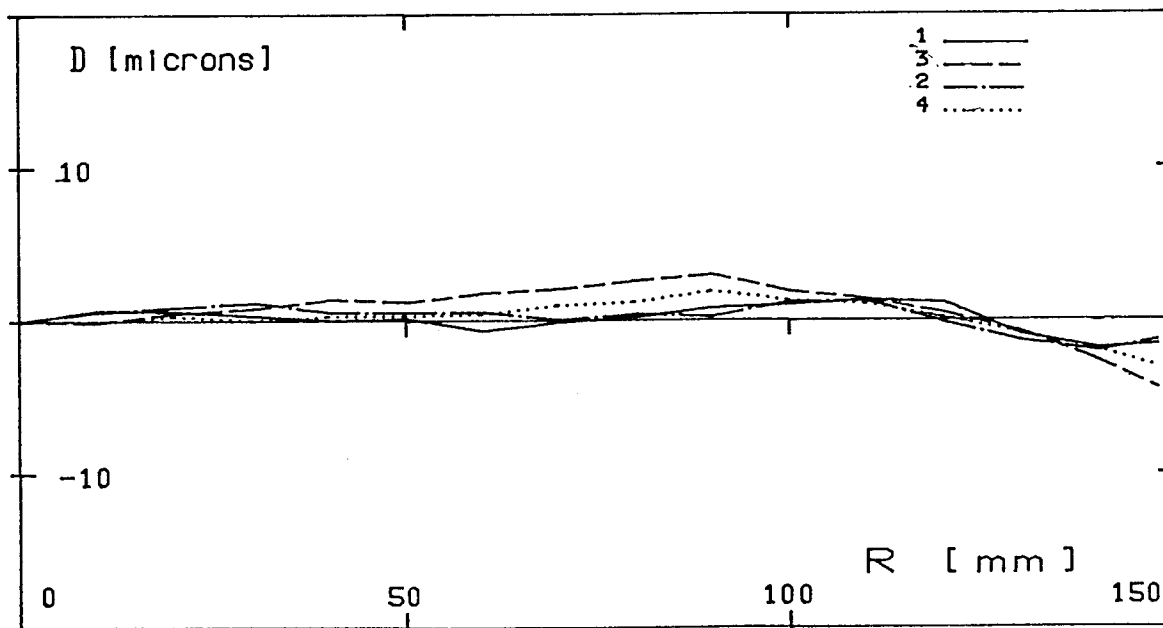


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FILTER ON CAMERA : --
C.F.L. : 152.85 MM



MEAN RADIAL DISTORTION CURVE



RADIAL DISTORTION FOR SEMI-DIAGONALS REFERRED TO PPS