

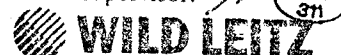
CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC20
LENS TYPE : 21 NAG IIA-F
LENS NO. : 7171

CALIBRATION DATE : 07.02.89

WILD LEITZ LTD

Wild Leitz Ltd
CH-9435 Heerbrugg
Calibration Department
Supervisor: *W.L.*



CAMERA CALIBRATION

CAMERA: RC20 LENS: 21 NAG IIA-F NO.: 7171 CALIBRATION DATE: 07.02.89

APERTURE : F / 4.0
 FILTER ON GONIDMETER : 450 NM
 FILTER ON CAMERA : --

PRINCIPAL DISTANCE FOR FOCUSSING DISTANCE 900 M : 213.55 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	
0	0.2	-0.5	0.3	-0.7	-0.1
20	0.0	-1.2	0.4	-1.4	-0.5
30	-0.1	-1.0	0.7	-1.9	-0.3
40	0.4	0.3	0.8	-0.6	0.2
50	0.7	0.5	1.0	-0.2	0.5
60	-0.3	0.2	0.8	-0.7	0.0
70	-1.5	-1.2	-1.7	-1.4	-1.4
80	-2.9	-1.8	-2.8	-2.4	-2.4
90	-2.8	-1.8	-3.7	-2.2	-2.6
100	-2.7	-2.4	-2.6	-2.5	-2.5
110	-0.9	-2.1	-0.9	-1.3	-1.3
120	0.9	-0.7	0.2	0.6	0.2
130	1.7	0.9	1.8	1.7	1.5
140	1.8	2.5	2.5	2.3	2.2
148	2.1	3.0	3.2	3.3	2.9

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
RAD.	75	75	83	82	50	43	37	49
TANG.	75	75	82	70	53	49	50	40

AWAR (AREA WEIGHTED AVERAGE RESOLUTION) IN LP/MM : 55

Mc (31)

CAMERA CALIBRATION

CAMERA: RC20 LENS: 21 NAG IIA-F NO.: 7171 CALIBRATION DATE: 07.02.88

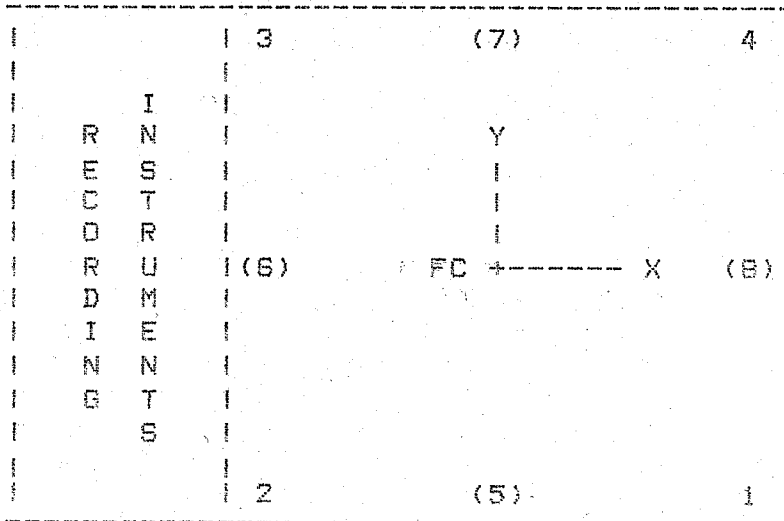
PRINCIPAL POINT OF AUTOCOLLIMATION (PPA) AND
PRINCIPAL POINT OF SYMMETRY (PPS)

REFERRED TO FC, SEE DIAGRAM

	X (MM)	Y (MM)
PPA	0.001	0.000
S	0.001	0.005

PRODUCTION MARKS, REFERRED TO FC

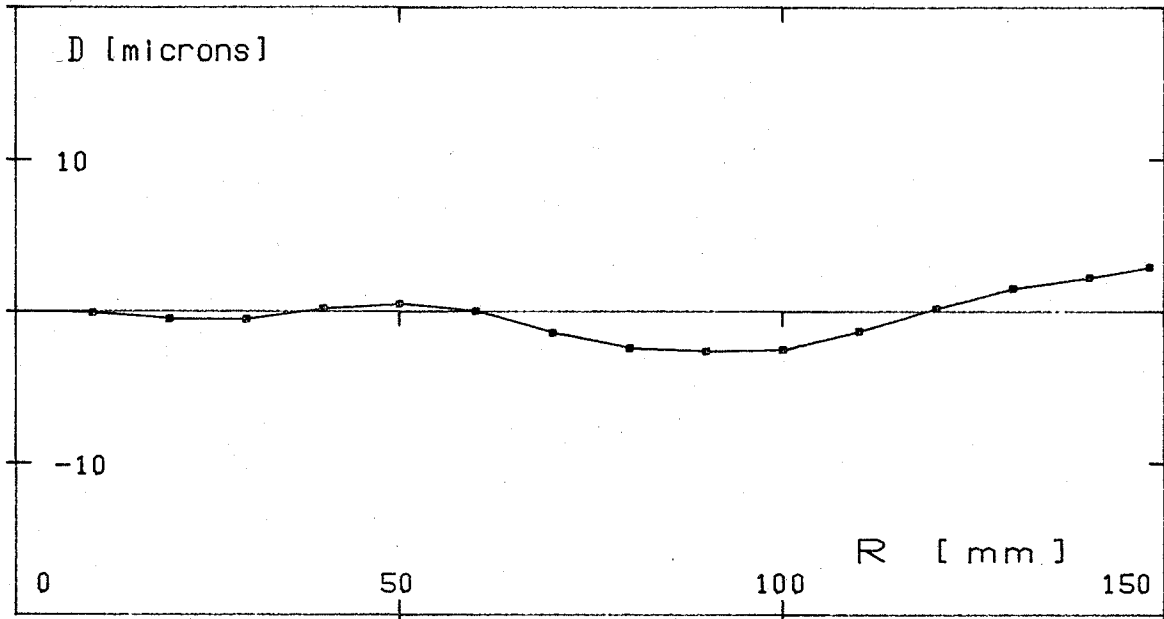
	X (MM)	Y (MM)
1	105.999	-106.000
2	-105.999	-106.000
3	-105.999	106.001
4	105.999	106.001



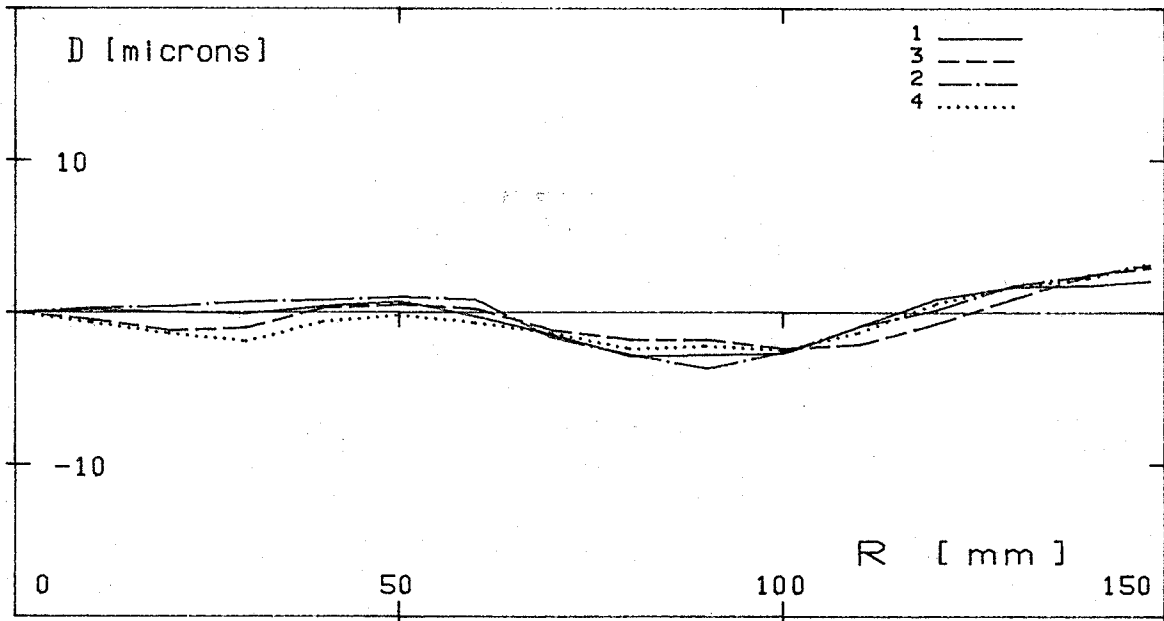
AS SEEN ON FOCAL PLANE FRAME



APERTURE : F / 4.0
FILTER ON GONIOMETER : 450 NM
FILTER ON CAMERA : --
P.D. (900 m) : 213.55 MM



MEAN RADIAL DISTORTION CURVE



RADIAL DISTORTION FOR SEMI-DIAGONALS REFERRED TO PPS