

10.11.92

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC20

LENS TYPE : 15/4 UAGA-E

LENS NO. : 13126

CALIBRATION DATE : 10.11.92

LEICA HEERBRUGG LTD

The Leica logo is written in a stylized, cursive script.

Leica Heerbrugg Ltd
CH-9435 Heerbrugg

Calibration Department
Supervisor

A circular stamp containing the name 'WILCO' and the number '210'.

CAMERA CALIBRATION

CAMERA: RC20 LENS: 15/4 UAGA-F NO.: 13126 CALIBRATION DATE: 10.11.92

APERTURE : F / 4.0
 FILTER ON GONIOMETER : VIS (400 - 700 NM)
 FILTER ON CAMERA : --
 CALIBRATED FOCAL LENGTH : 152.92 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	0.3	-0.4	0.1	-0.2	0.0
20	0.1	-0.5	0.0	-0.3	-0.1
30	-0.5	-0.8	-0.3	-1.1	-0.6
40	-1.0	-0.8	-1.1	-1.3	-1.0
50	-1.3	-1.5	-0.3	-1.7	-1.2
60	-0.7	-1.6	0.3	-2.2	-1.0
70	-0.1	0.4	0.2	0.3	0.2
80	0.1	1.2	1.0	1.0	0.8
90	1.0	1.6	1.5	1.7	1.4
100	0.7	1.2	2.3	1.9	1.5
110	0.7	0.6	2.4	2.4	1.5
120	0.0	-0.5	1.3	1.8	0.6
130	-1.7	-2.3	0.7	1.1	-0.5
140	-3.2	-3.2	0.3	0.4	-1.4
148	-3.3	-3.3	1.1	1.4	-1.0

PHOTOGRAPHIC RESOLUTION (LINE PAIRS PER MILLIMETER)

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

ANGLE: (DEGREES)	0	5	10	15	20	25	30	35	40	45
RAD.	106	119	104	81	56	54	73	69	57	42
TANG.	106	94	103	79	74	78	71	71	55	33

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



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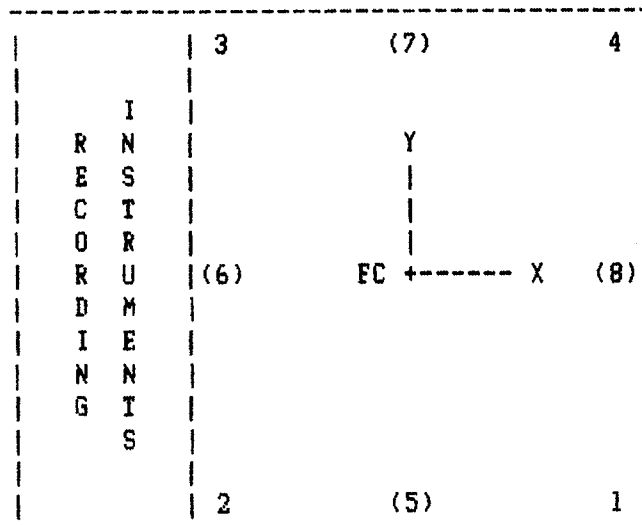
PRINCIPAL POINT OF AUTOCOLLIMATION (PPA) AND
PRINCIPAL POINT OF SYMMETRY (PPS)

REFERRED TO FC, SEE DIAGRAM

	X (MM)	Y (MM)
PPA	0.006	0.011
S	0.004	0.008

FIDUCIAL MARKS, REFERRED TO FC

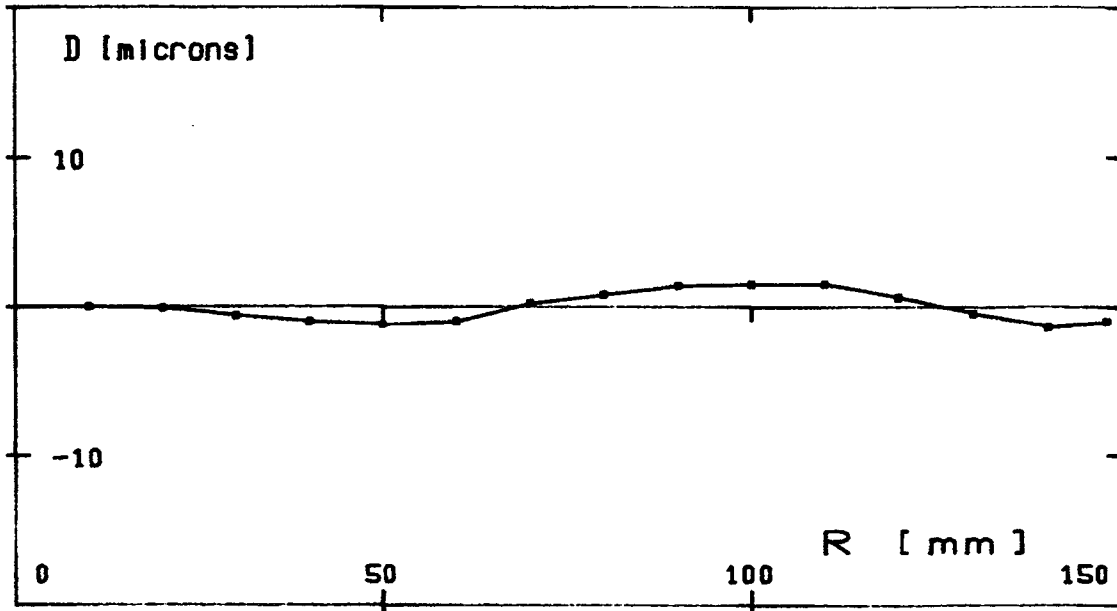
	X (MM)	Y (MM)		X (MM)	Y (MM)
1	105.998	-105.996	5	-0.006	-110.002
2	-106.001	-106.002	6	-110.005	0.003
3	-106.002	106.000	7	0.000	110.002
4	106.000	106.001	8	110.005	0.001



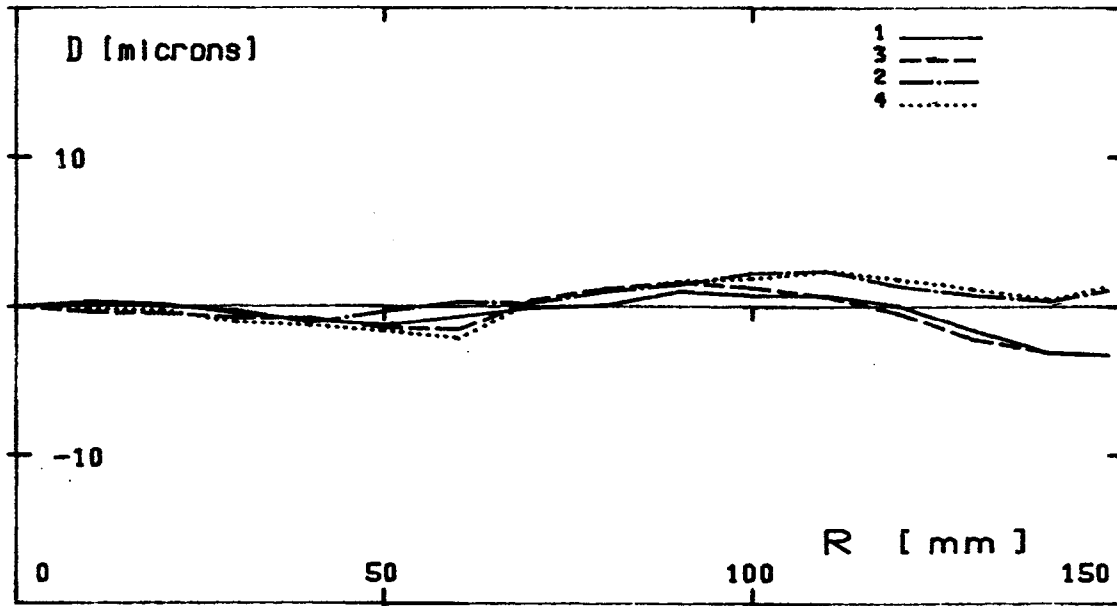
AS SEEN ON FOCAL PLANE FRAME

RC20 15/4 UAGA-F NO. 13126 10.11.92

APERTURE : F / 4.0
FILTER ON GONIOMETER : UIS (400 - 700 NM)
FILTER ON CAMERA : --
C.F.L. : 152.92 MM



MEAN RADIAL DISTORTION CURVE



RADIAL DISTORTION FOR SEMI-DIAGONALS REFERRED TO PPS

