

CAMERA CALIBRATION CERTIFICATE

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

Calibration date: 13.11.1995

LEICA AG, HEERBRUGG



Leica Heerbrugg Ltd
CH-9435 Heerbrugg

Calibration Department
Supervisor


311

Aperture: 4.0
 Filter on goniometer: 450 NM
 Filter on camera: --
 Principal distance for focussing distance 900 m : 214.74 mm

Radial distortion (micrometers) referred to principal point of symmetry (PPS)
 (Positive values denote image displacement away from center)

Radius mm	Half - Sides				Mean
	1	3	2	4	
10	1.1	0.7	0.8	0.8	0.8
20	1.7	0.6	1.8	1.0	1.2
30	2.3	1.9	2.7	2.6	2.3
40	3.9	3.9	4.0	4.4	4.0
50	3.8	4.6	4.0	5.1	4.3
60	2.5	4.2	3.3	4.0	3.5
70	1.7	2.8	1.3	3.0	2.2
80	-0.3	1.8	0.4	1.6	0.8
90	-0.9	0.0	-0.9	-0.1	-0.4
100	-2.0	-1.8	-1.2	0.3	-1.1
110	-3.0	-1.9	-2.2	-1.1	-2.0
120	-2.8	-3.7	-3.3	-3.0	-3.2
130	-3.0	-3.3	-2.7	-2.7	-2.9
140	-1.6	-1.9	-0.1	-1.9	-1.3
148	1.6	0.1	2.2	0.4	1.0

Photographic resolution (line pairs per millimeter)

International 3-line test-chart, contrast (log) : 2.0

Aperture: 4.0
 Filter: 450 NM
 Film: KODAK TECHNICAL PAN 2415
 Developer: KODAK HC110

Angle (deg)	0	5	10	15	20	25	30	35
Radial:	75	84	74	82	56	48	46	49
Tangential:	75	75	65	63	53	55	50	45

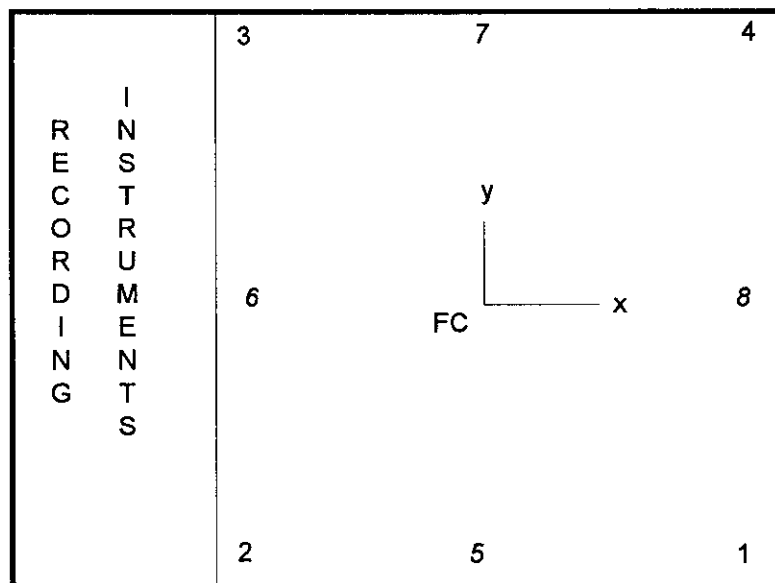
AWAR (Area weighted average resolution) in lp/mm: 57

**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)**
referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	-0.014	0.000
PPS	-0.020	-0.022

Fiducial marks, referred to central cross (FC)

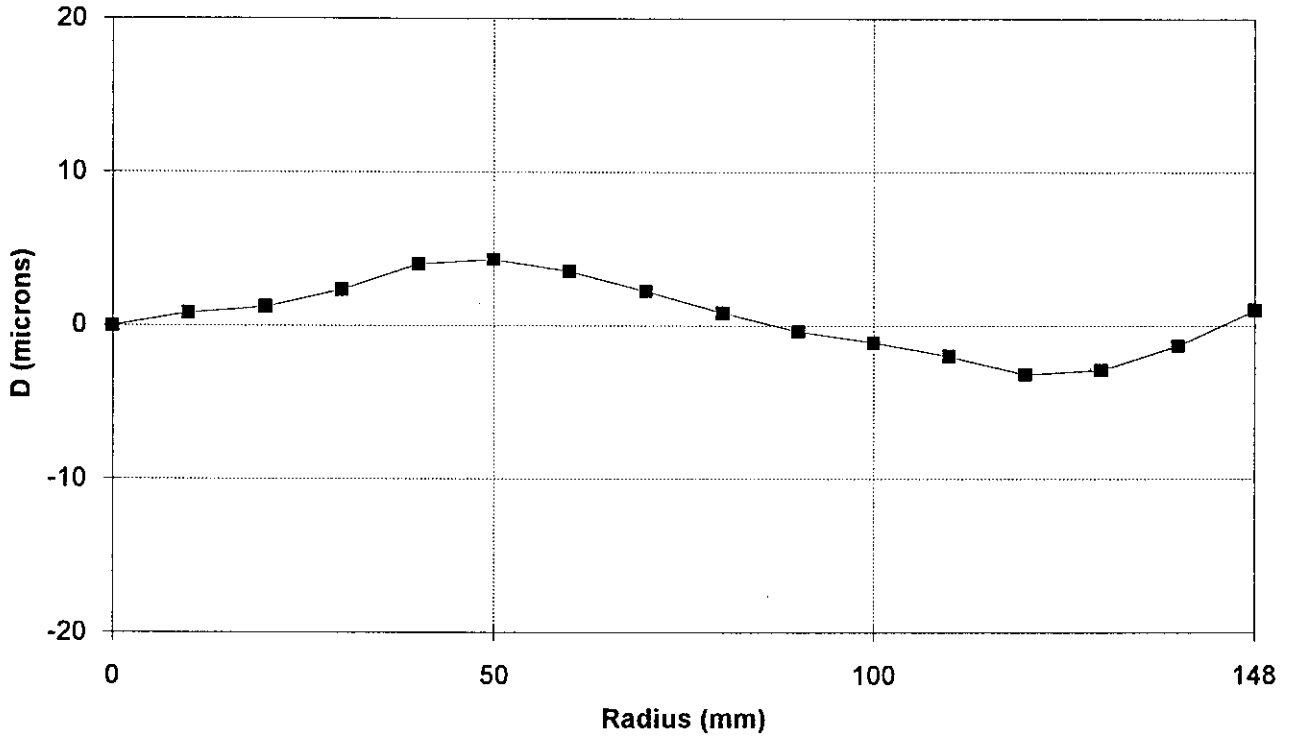
	x (mm)	y (mm)		x (mm)	y (mm)
1	106.000	-106.003	5	-0.001	-109.975
2	-106.001	-106.000	6	-110.008	0.000
3	-105.998	106.001	7	-0.003	110.020
4	106.003	106.003	8	110.002	0.005



as seen on focal plane frame

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Mean radial distortion



Radial distortion for semi-diagonals referred to PPS

