

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC20
LENS TYPE : 21/4 NAGA-F
LENS NO. : 7171

Calibration date: 14.11.1994

LEICA AG, HEERBRUGG

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

*Leica Heerbrugg Ltd
CH-9435 Heerbrugg*

*Calibration Department
Supervisor*



Aperture: 4.0
 Filter on goniometer: 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	Half - Sides				Mean
	1	3	2	4	
10	0.0	-0.4	-0.1	-0.1	-0.1
20	0.0	-0.8	-0.1	-0.5	-0.3
30	0.0	-0.1	0.4	-0.4	0.0
40	0.9	1.3	0.9	0.8	0.9
50	0.4	0.9	0.4	0.9	0.6
60	-1.7	0.0	-0.9	-0.3	-0.7
70	-2.9	-1.3	-2.9	-1.2	-2.0
80	-3.8	-1.6	-3.5	-1.9	-2.7
90	-2.6	-1.9	-3.3	-2.3	-2.5
100	-3.0	-2.1	-2.8	-2.4	-2.5
110	-1.6	-2.0	-1.4	-1.3	-1.5
120	0.7	-0.6	-0.4	-0.1	-0.1
130	1.9	0.8	1.8	1.5	1.5
140	2.3	2.7	2.7	2.4	2.5
148	4.0	3.1	4.4	2.8	3.5

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	75	83	82	50	43	37	49
Tangential:	75	75	82	70	53	49	50	40

AWAR (Area weighted average resolution) in lp/mm: 55

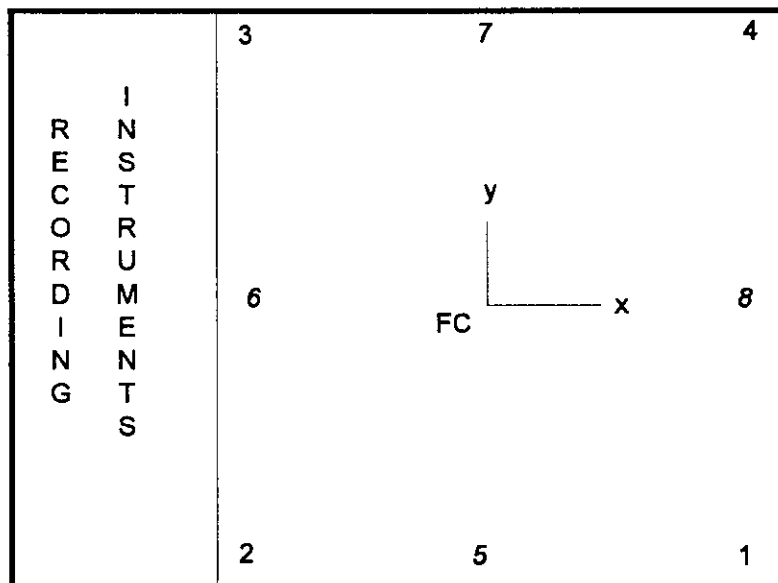


**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)**
referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	-0.006	0.002
PPS	-0.007	0.001

Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	105.999	-105.999	5	0.000	-109.994
2	-106.002	-105.999	6	-109.996	0.000
3	-106.001	106.002	7	0.000	110.000
4	106.002	106.000	8	110.003	0.005

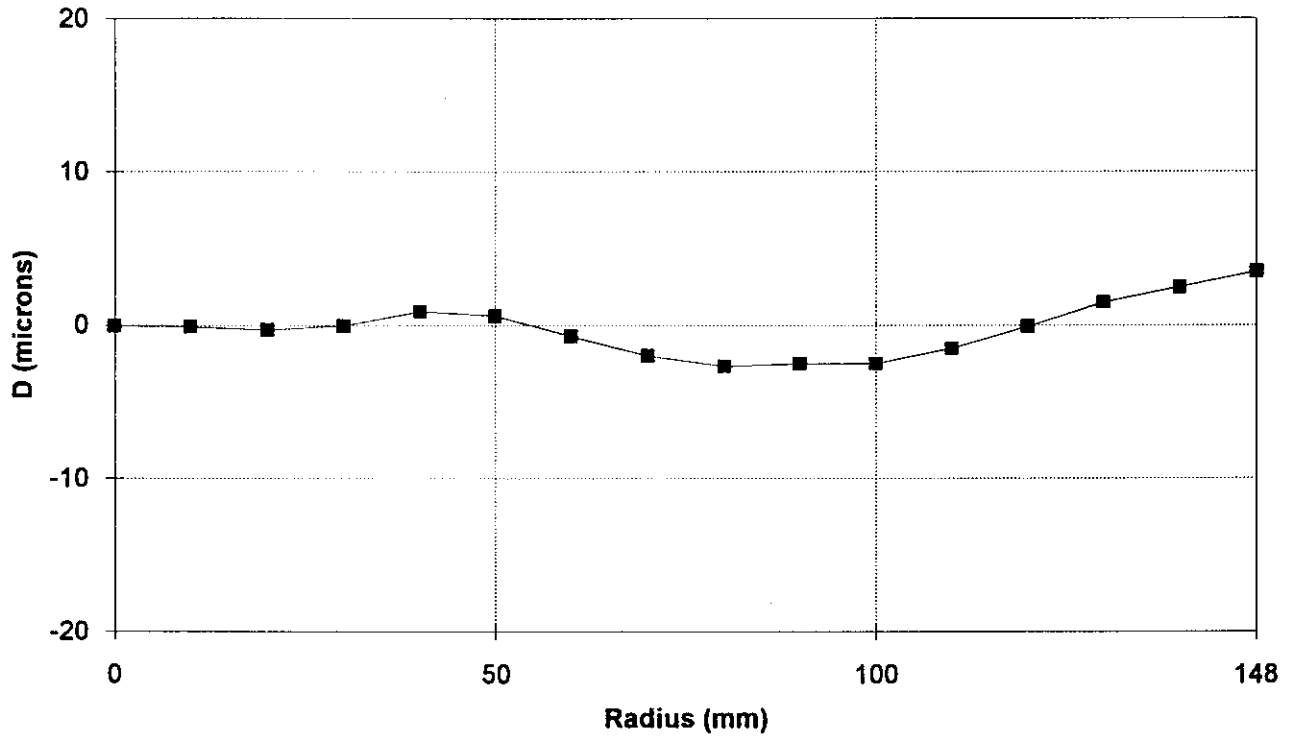


as seen on focal plane frame



Aperture: 4.0
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Filter on camera: --
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Mean radial distortion



Radial distortion for semi-diagonals referred to PPS

