

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC 30
LENS TYPE : 30/4 NAT-S
LENS NO. : 17124

Calibration date: 11.03.2003

LEICA AG, HEERBRUGG

 **SwissOptic**
SwissOptic AG
Heinrich-Wild-Strasse
CH-9435 Heerbrugg
Schweiz

FD 017
Hoo

RC 30

30/4 NAT-S

No. 17124

11.03.2003

Aperture: 4.0
Filter on goniometer: 450 NM
Filter on camera: --
Principal distance for focussing distance 850 m : 303.16 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	-0.3	-0.8	-0.7	-0.9	-0.6
20	-1.0	-1.0	-1.0	-0.8	-0.9
30	-1.1	-1.1	-0.7	-1.4	-1.0
40	-1.2	-0.4	-0.7	-0.9	-0.8
50	-0.8	-0.3	-0.1	-0.4	-0.4
60	-0.8	-0.4	0.2	-0.7	-0.4
70	0.0	0.0	1.2	-0.3	0.2
80	-0.6	0.5	1.5	0.3	0.4
90	0.2	0.3	1.1	0.1	0.4
100	-1.1	-1.0	1.1	-0.8	-0.4
110	-2.4	-2.4	-0.9	-1.4	-1.7
120	-2.8	-2.4	-2.3	-1.4	-2.2
130	-2.0	-1.2	-1.3	0.0	-1.1
140	-0.3	-0.4	0.3	1.7	0.3
148	4.6	3.1	5.6	5.3	4.6

Photographic resolution (line pairs per millimeter)

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

Aperture: 4.0
Filter: 450 NM
Film: KODAK PANATOMIC X 2412
Developer: KODAK HC110

Angle (deg)	0	5	10	15	20	25
Radial:	118	117	116	114	111	85
Tangential:	106	117	103	110	104	87

AWAR (Area weighted average resolution) in lp/mm: 108

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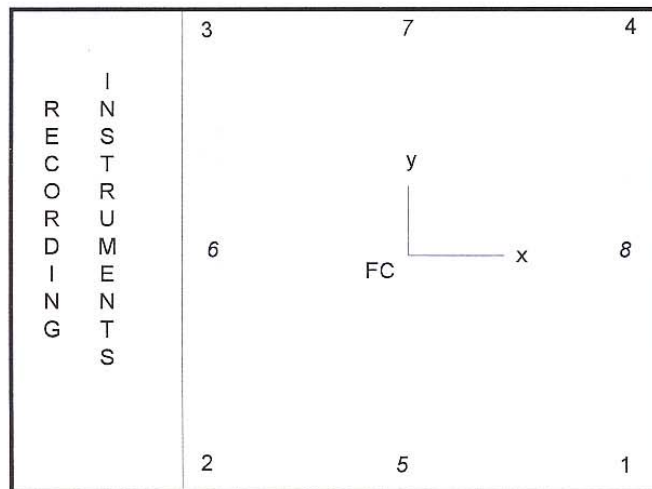
**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)**

referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	0.022	-0.007
PPS	-0.023	0.011

Fiducial marks, referred to central cross (FC)

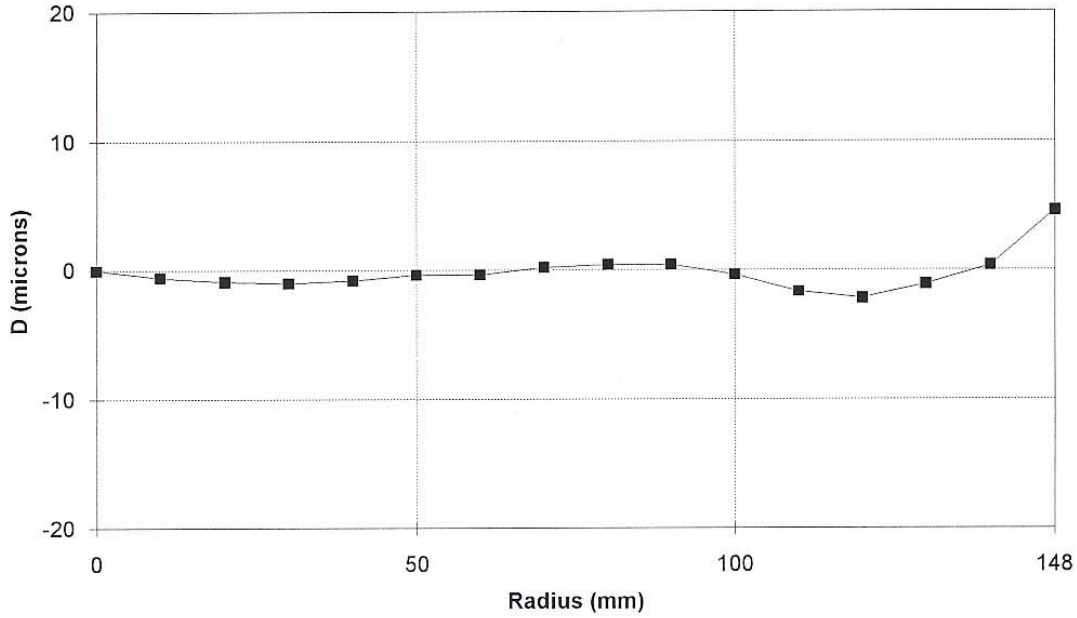
	x (mm)	y (mm)		x (mm)	y (mm)
1	106.002	-106.003	5	-0.001	-112.009
2	-105.996	-105.998	6	-112.001	0.004
3	-106.003	106.003	7	-0.003	112.006
4	105.997	106.000	8	111.993	-0.002



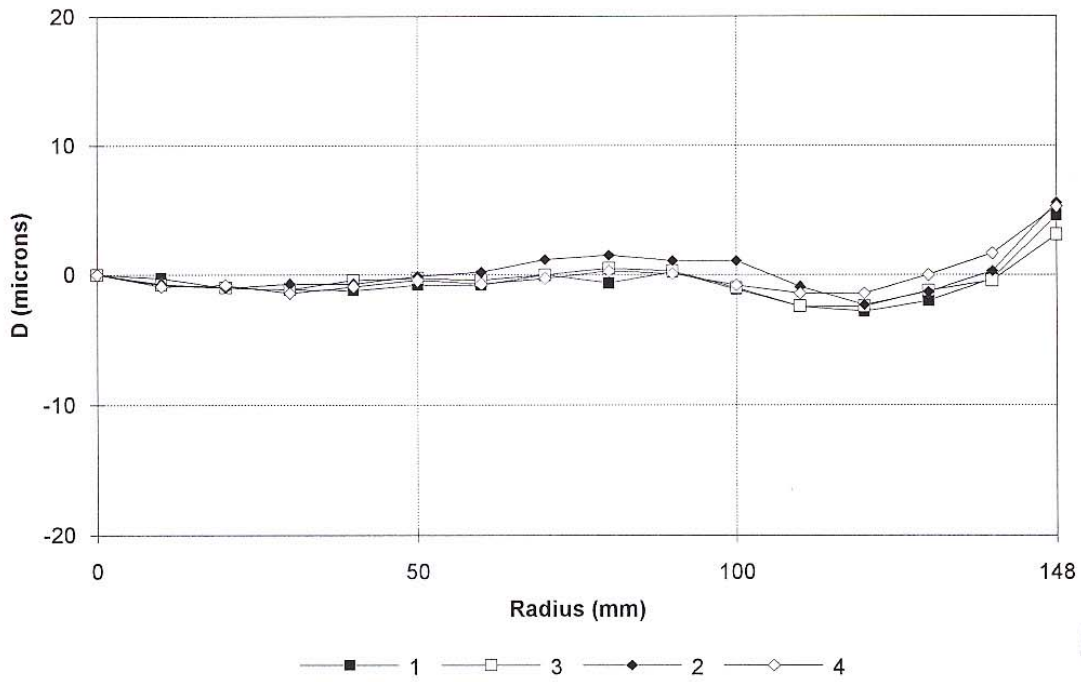
as seen on focal plane frame

Aperture: 4.0
Filter on goniometer: 450 NM
Filter on camera: --
Principal distance for focussing distance 850 m : 303.16 mm

Mean radial distortion



Radial distortion for semi-diagonals referred to PPS



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