

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC 30
LENS TYPE : 30/4 NAT-S
LENS NO. : 17130

Calibration date: 18.05.2004

LEICA AG, HEERBRUGG

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



Aperture: 4.0
 Filter on goniometer: 450 NM
 Filter on camera: --
 Principal distance for focussing distance 850 M m : 303.19 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	0.2	-0.5	-0.1	-0.4	-0.2
20	0.2	-0.7	-0.3	-0.6	-0.3
30	0.5	-1.0	0.8	-1.1	-0.2
40	1.1	-0.2	0.9	-0.5	0.3
50	2.0	0.1	1.5	0.2	0.9
60	1.6	0.6	2.1	0.3	1.1
70	2.3	0.7	2.1	0.9	1.5
80	1.9	1.4	2.5	1.2	1.7
90	2.2	1.4	1.8	1.2	1.6
100	0.9	1.0	1.1	1.0	1.0
110	-0.7	0.4	-0.2	1.0	0.1
120	-2.2	-0.6	-3.2	0.0	-1.5
130	-3.8	-1.3	-4.0	-1.1	-2.5
140	-2.7	-1.5	-2.8	-1.8	-2.2
148	2.6	-0.8	3.1	-1.3	0.9

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:	118	105	103	87	94	77

AWAR (Area weighted average resolution) in lp/mm: 102

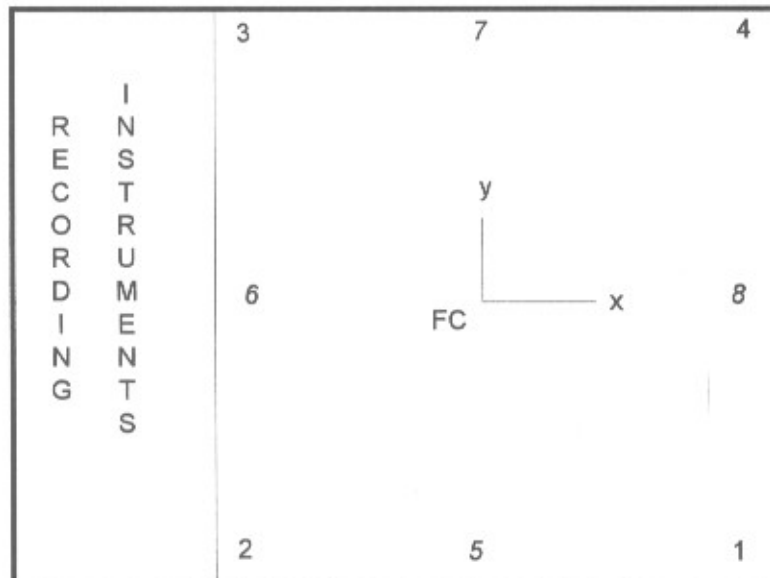


**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)**
referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	0.001	0.015
PPS	0.004	0.013

Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	106.003	-106.003	5	0.001	-112.000
2	-105.999	-106.000	6	-112.008	0.007
3	-106.004	106.004	7	-0.005	112.002
4	106.001	106.002	8	112.005	-0.003

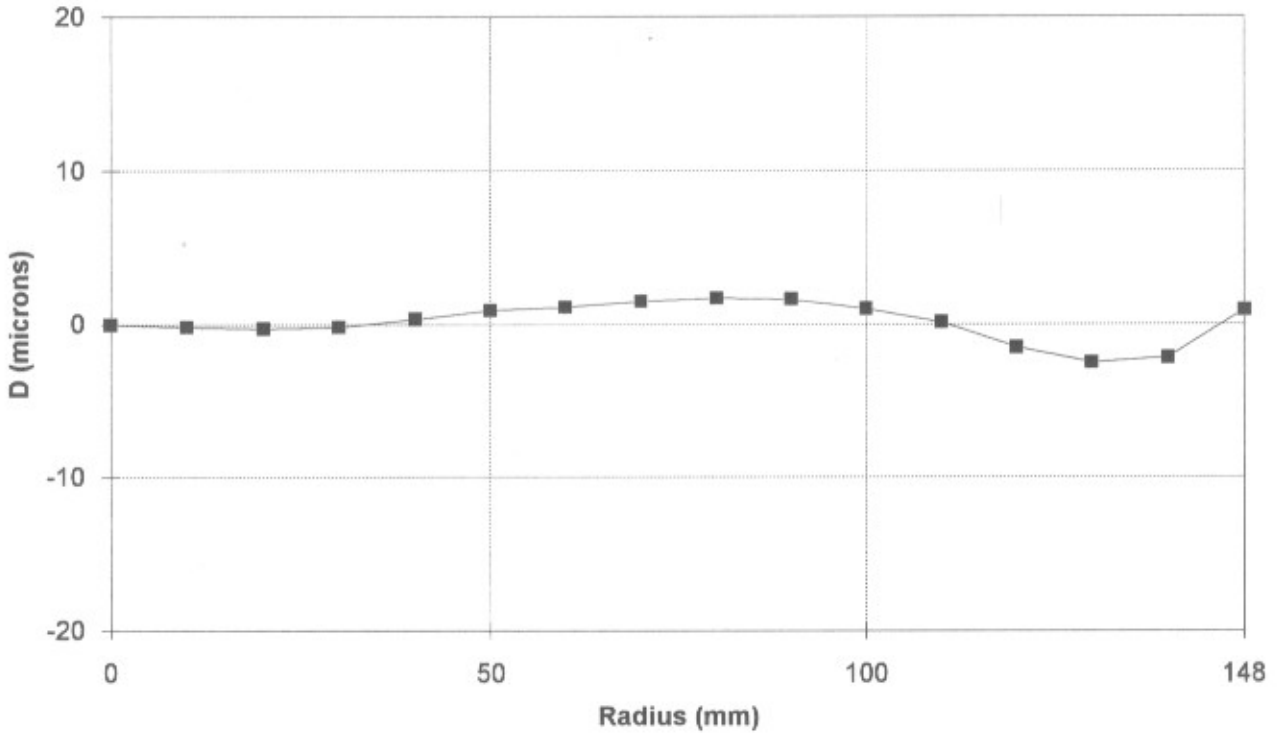


as seen on focal plane frame

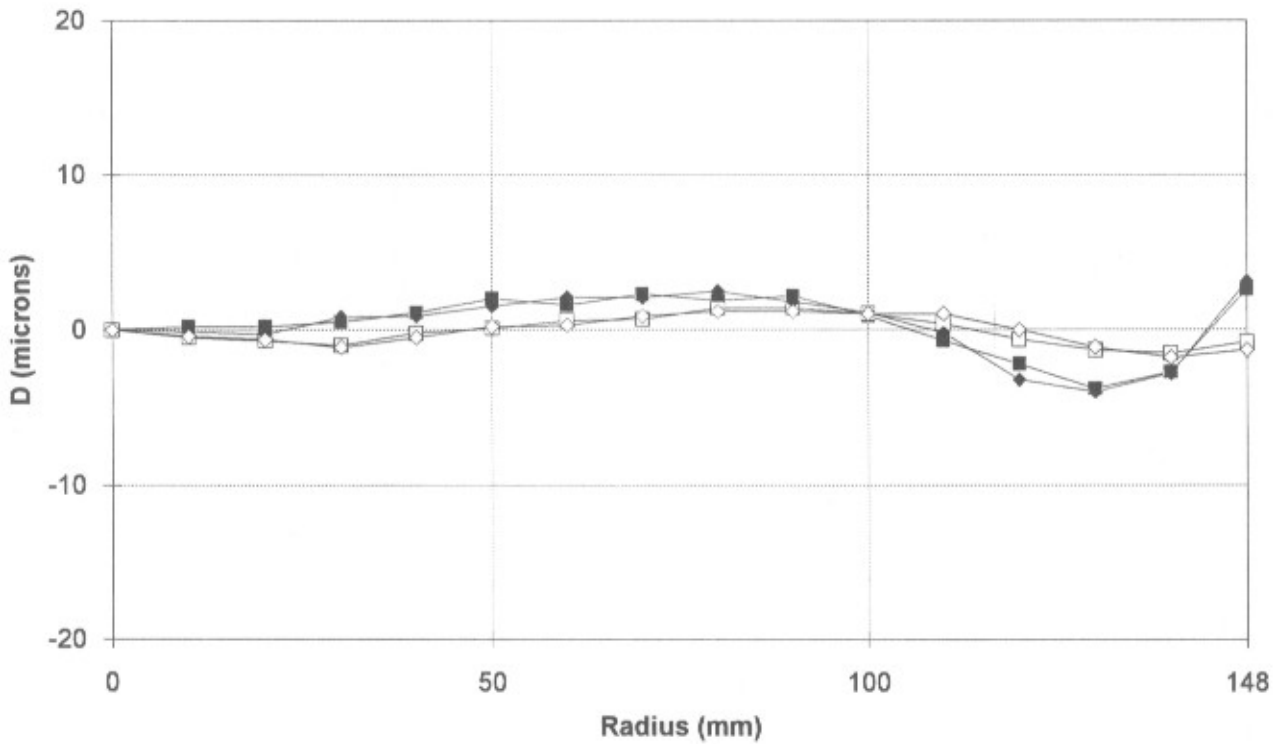


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Mean radial distortion



Radial distortion for semi-diagonals referred to PPS



—■— 1 —□— 3 —◆— 2 —◇— 4

