

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC30
LENS TYPE : 15/4 UAG-S
LENS NO. : 13242

Calibration date: 08.03.1999

SwissOptic AG, Heerbrugg

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

Aperture: 4.0
 Filter on goniometer: VIS (400 - 700 NM)
 Filter on camera: --
 C.F.L. : 152.814 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	-0.4	-0.8	-0.2	-0.6	-0.5
20	-0.7	-1.2	-0.3	-1.0	-0.8
30	-1.2	-1.8	-0.1	-1.8	-1.2
40	-1.4	-2.0	-0.6	-1.9	-1.4
50	-1.4	-2.5	-0.4	-2.0	-1.5
60	-1.9	-2.5	0.1	-2.1	-1.6
70	-1.2	-2.3	0.2	-1.4	-1.1
80	-1.3	-1.3	0.7	-0.6	-0.6
90	-0.1	-0.5	1.0	0.1	0.1
100	0.4	0.8	2.2	1.4	1.2
110	0.7	1.0	2.7	2.1	1.6
120	1.1	1.5	2.4	2.0	1.7
130	1.0	1.3	2.7	2.5	1.8
140	-0.5	0.2	-0.1	1.3	0.2
148	-2.3	-3.1	-2.4	0.3	-1.8

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	30	35	40	45
Radial:	117	117	115	90	98	119	128	96	80	74
Tangential:	117	116	101	87	82	96	111	99	87	52

AWAR (Area weighted average resolution) in lp/mm: 100

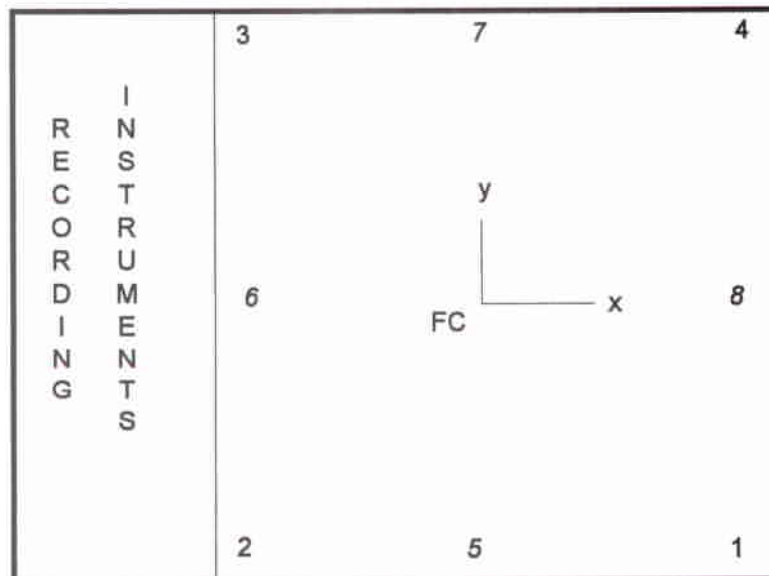


**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)
referred to central cross (FC), see diagram**

	x (mm)	y (mm)
PPA	-0.002	-0.010
PPS	-0.001	0.000

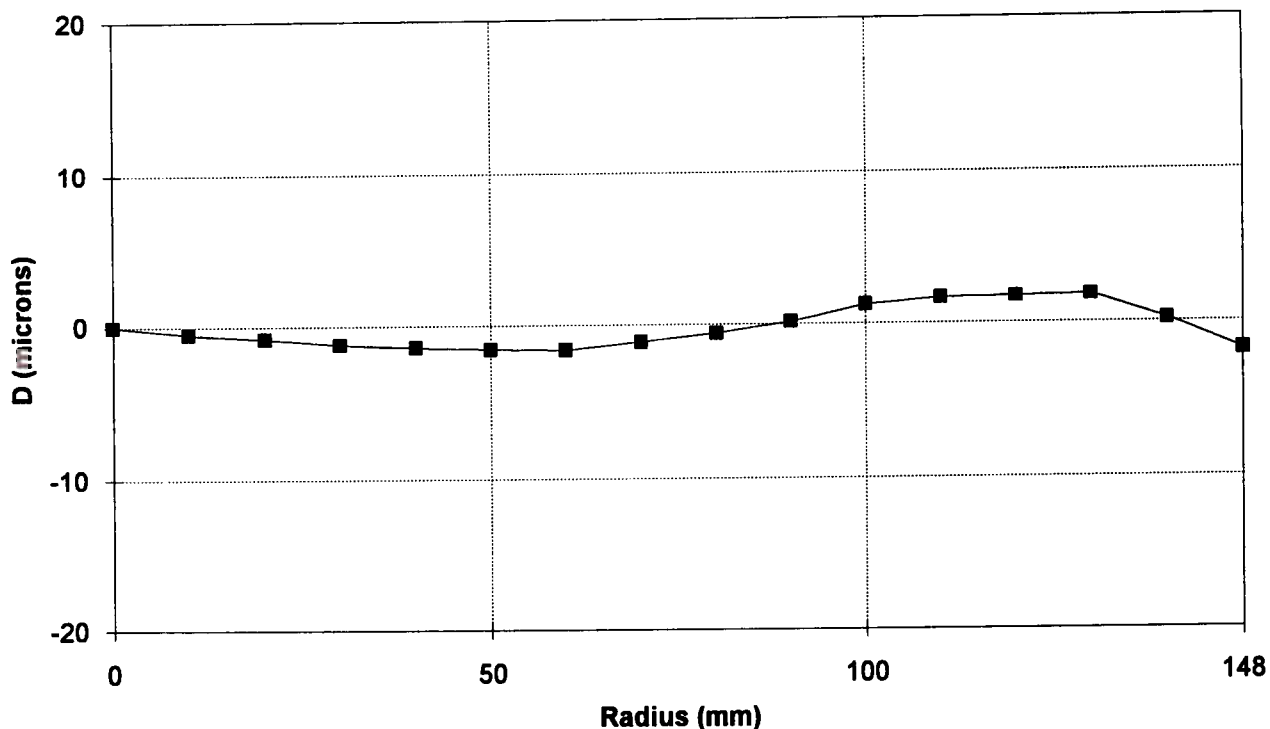
Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	106.000	-105.997	5	-0.003	-111.995
2	-106.004	-106.002	6	-112.005	-0.001
3	-106.002	105.999	7	0.001	111.993
4	106.002	106.000	8	112.004	0.000

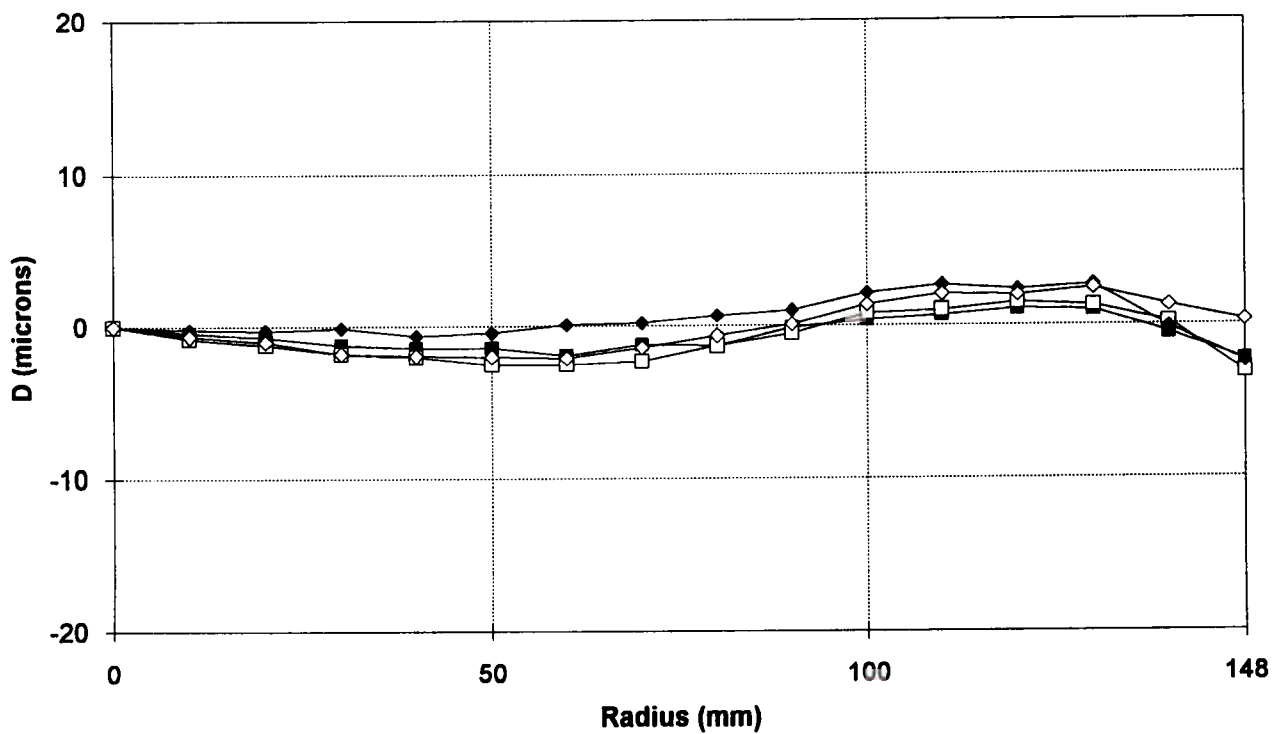


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Mean radial distortion



Radial distortion for semi-diagonals referred to PPS



—■— 1 —□— 3 —◆— 2 —◇— 4