

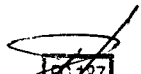
CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC30
LENS TYPE : 15/4 UAG-S
LENS NO. : 13211

Calibration date: 07.02.2000

SwissOptic AG, Heerbrugg

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


10787

Aperture: 4.0
 Filter on goniometer: VIS(400 - 700 NM)
 Filter on camera: --
 C.F.L. : 153.128 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	0.0	0.2	0.1	0.1
20	0.3	-0.1	0.3	0.2	0.1
30	-0.1	-0.6	0.3	-0.4	-0.2
40	-0.4	-0.8	-0.1	-0.5	-0.4
50	-0.9	-1.5	-0.6	-0.9	-0.9
60	-1.6	-1.7	-0.3	-1.5	-1.2
70	-1.1	-1.5	-0.7	-1.3	-1.1
80	-1.4	-0.9	-0.6	-0.8	-0.9
90	0.0	-0.6	-0.6	-0.7	-0.4
100	-0.1	-0.3	0.3	0.1	0.0
110	0.7	-0.4	1.1	0.7	0.5
120	1.3	-0.1	0.6	0.9	0.6
130	0.8	-0.2	0.6	0.8	0.5
140	0.0	0.9	0.3	0.1	0.3
148	0.0	2.4	0.9	1.8	1.2

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

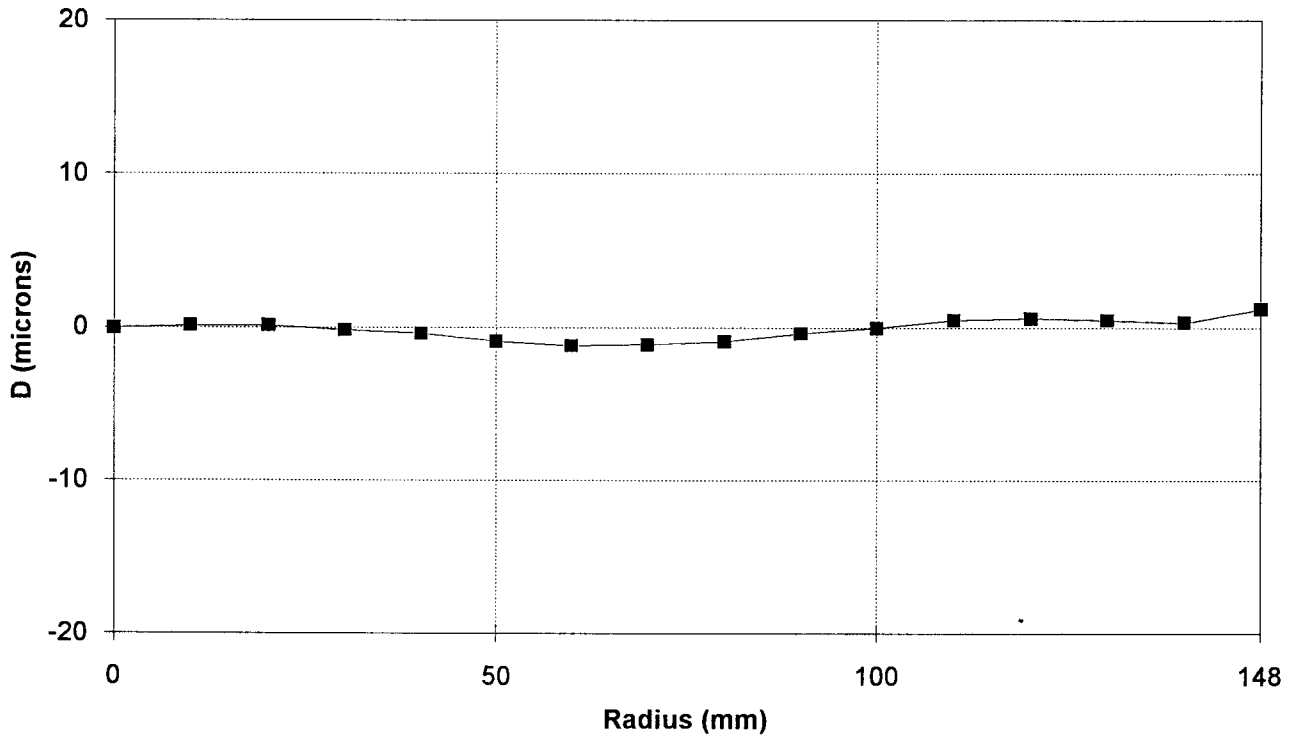
Angle (deg)	0	5	10	15	20	25	30	35	40	45
Radial:	93	93	115	90	87	67	90	96	101	74
Tangential:	93	104	114	109	92	68	78	79	77	66

AWAR (Area weighted average resolution) in lp/mm: 86

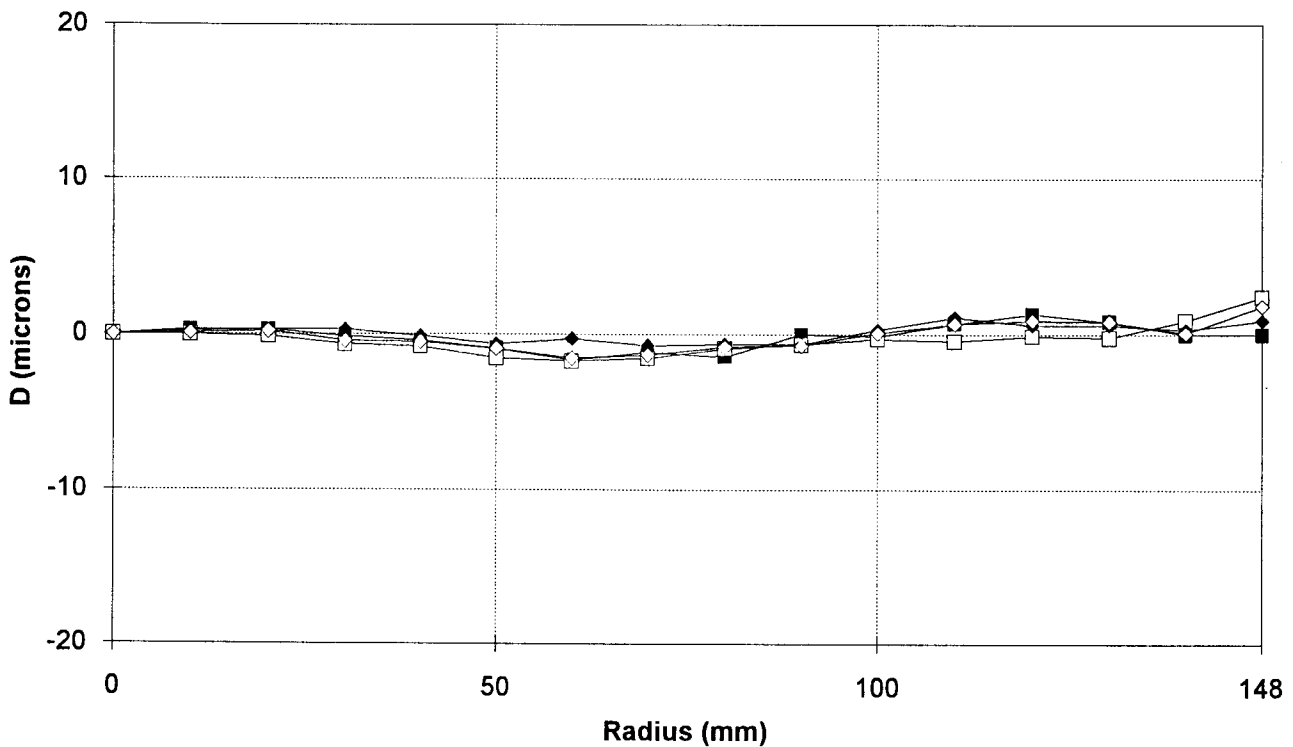


Aperture: 4.0
Filter on goniometer: VIS (400 - -700 NM)
Filter on camera: --
C.F.L. : 153.128 mm

Mean radial distortion



Radial distortion for semi-diagonals referred to PPS



—■— 1 —□— 3 —◆— 2 —◇— 4

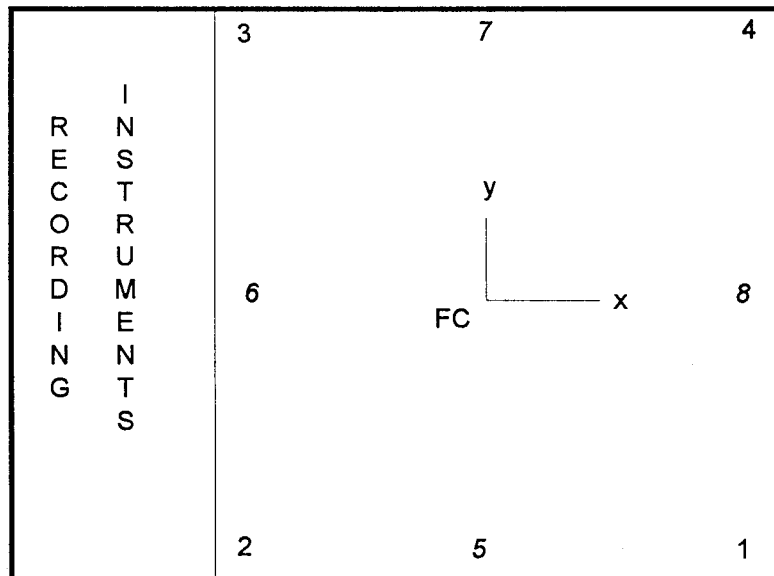


**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)**
referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	0.007	-0.009
PPS	0.005	-0.013

Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	106.000	-106.002	5	0.002	-110.008
2	-106.001	-105.999	6	-110.006	-0.003
3	-105.998	106.000	7	-0.012	109.995
4	105.998	105.996	8	109.998	-0.008



as seen on focal plane frame

~~FO/87~~