

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC30
LENS TYPE : 15/4 UAG-S
LENS NO. : 13301

Calibration date: 29.11.1999

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. : 153.503 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	-1.0	-0.4	-0.7	-0.6
20	-0.7	-1.7	-1.0	-1.4	-1.2
30	-1.3	-2.3	-1.1	-2.1	-1.7
40	-1.1	-1.8	-1.1	-1.9	-1.4
50	-0.7	-1.8	-1.0	-1.4	-1.2
60	-1.0	-1.6	-0.4	-1.3	-1.0
70	-0.1	-1.4	-0.2	-0.5	-0.5
80	0.2	-0.7	0.4	0.2	0.0
90	1.5	-0.4	0.7	0.6	0.6
100	0.9	-0.3	1.7	1.2	0.8
110	0.6	0.3	2.4	1.9	1.3
120	0.6	0.0	1.5	1.5	0.9
130	-0.4	-0.7	1.2	1.6	0.4
140	-1.8	-0.5	1.0	1.5	0.0
148	-3.3	-0.8	0.9	1.5	-0.4

Photographic resolution (line pairs per millimeter)

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

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

Angle (deg)	0	5	10	15	20	25	30	35	40	45
Radial:	117	117	115	101	98	119	114	108	90	83
Tangential:	117	116	114	109	103	108	111	111	87	59

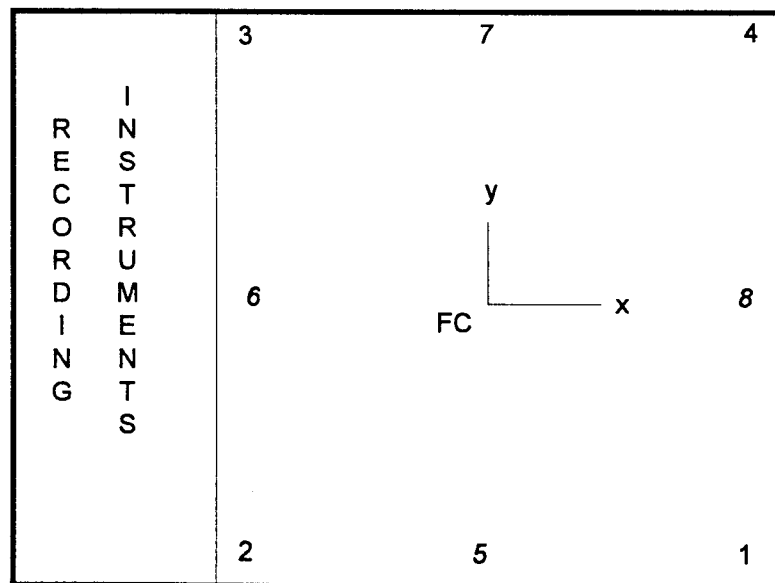
AWAR (Area weighted average resolution) in lp/mm: 106

**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	0.011
PPS	0.006	0.003

Fiducial marks, referred to central cross (FC)

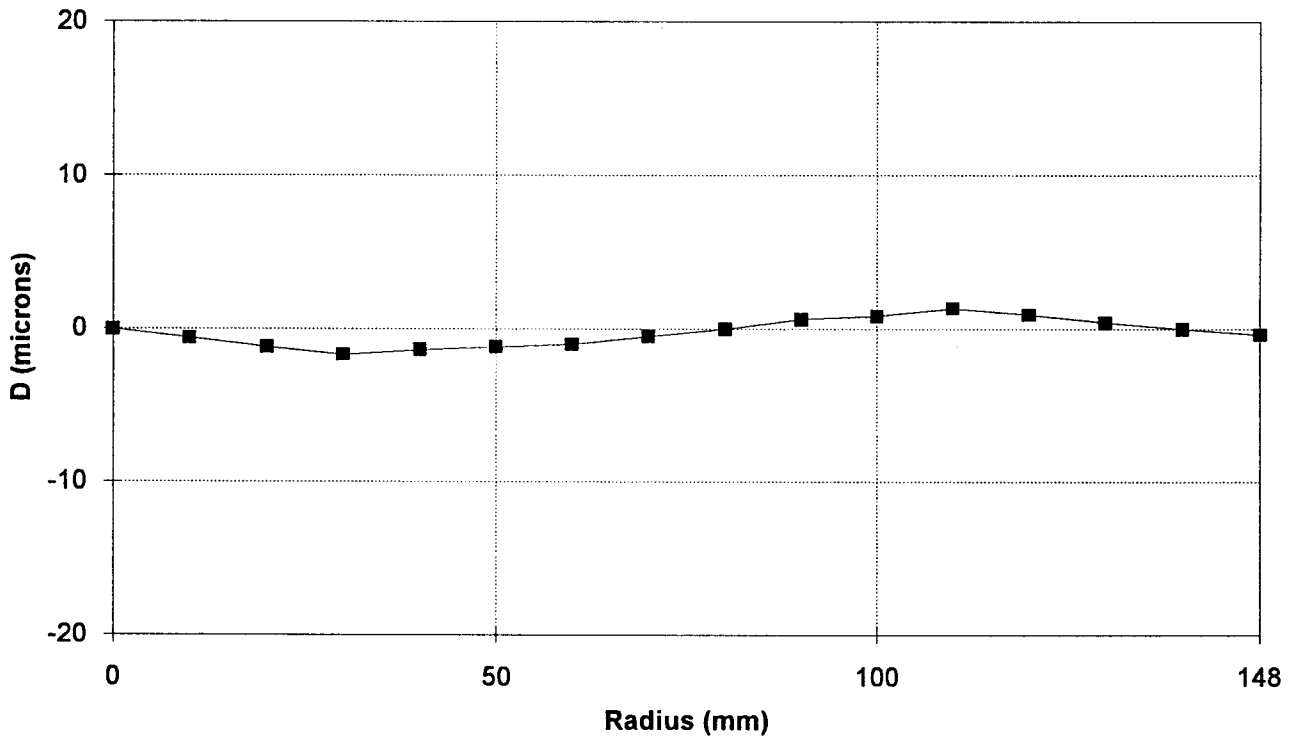
	x (mm)	y (mm)		x (mm)	y (mm)
1	106.001	-105.997	5	-0.001	-111.992
2	-106.001	-106.000	6	-112.001	0.002
3	-106.002	105.998	7	0.000	111.988
4	106.000	105.999	8	112.003	-0.001



as seen on focal plane frame

Aperture: 4.0
Filter on goniometer: VIS (400 - 700 NM)
Filter on camera: --
C.F.L. : 153.503 mm

Mean radial distortion



Radial distortion for semi-diagonals referred to PPS

