

ca 1322098

## CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC30  
LENS TYPE : 15/4 UAG-S  
LENS NO. : 13220

Calibration date: 12.03.1998

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. : 152.528 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	0.1	-0.5	-0.1	-0.1	-0.1
20	-0.3	-0.8	-0.3	-0.4	-0.4
30	-0.4	-1.0	0.0	-0.8	-0.5
40	-0.1	-0.6	-0.1	-0.9	-0.4
50	-0.1	-0.8	0.1	-0.7	-0.3
60	-0.3	-0.3	0.9	-0.7	-0.1
70	0.6	0.3	0.8	-0.2	0.3
80	0.5	1.3	1.2	0.5	0.8
90	1.6	1.7	1.2	0.5	1.2
100	1.0	1.7	1.3	0.1	1.0
110	1.0	1.4	1.2	0.2	0.9
120	0.9	0.8	-0.6	-0.8	0.0
130	0.1	-0.6	-1.5	-1.9	-0.9
140	-0.7	-0.7	-3.0	-2.2	-1.6
148	0.5	0.6	-2.7	0.1	-0.3

**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	92	113	98	95	114	121	113	93
Tangential:	93	92	101	97	92	96	88	79	77	66

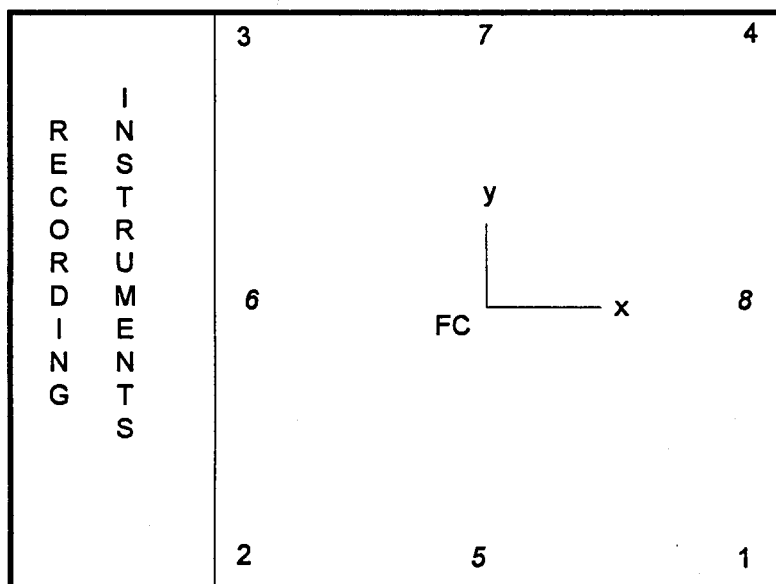
AWAR (Area weighted average resolution) in lp/mm: 97

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

	x (mm)	y (mm)
PPA	0.016	-0.001
PPS	0.018	-0.004

**Fiducial marks, referred to central cross (FC)**

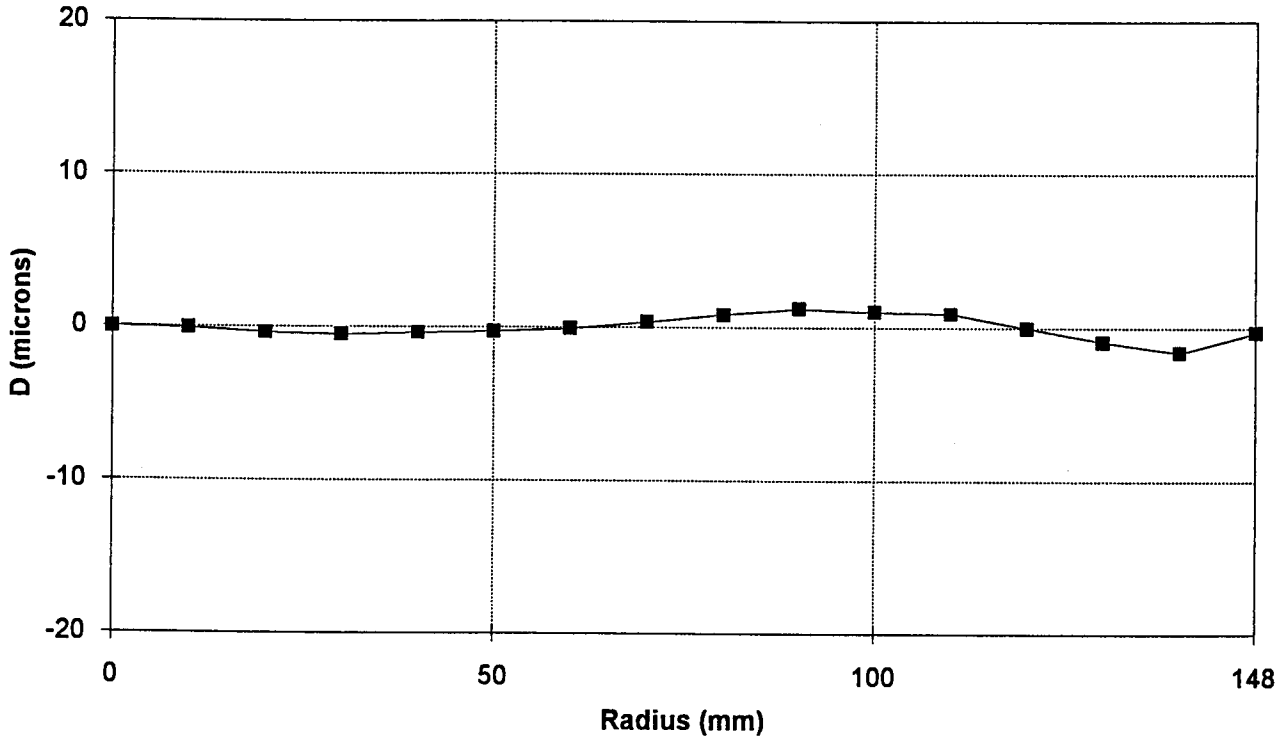
	x (mm)	y (mm)		x (mm)	y (mm)
1	105.998	-105.999	5	0.000	-112.001
2	-106.000	-106.002	6	-111.995	0.001
3	-106.001	106.002	7	0.004	112.002
4	106.002	106.004	8	112.000	0.003



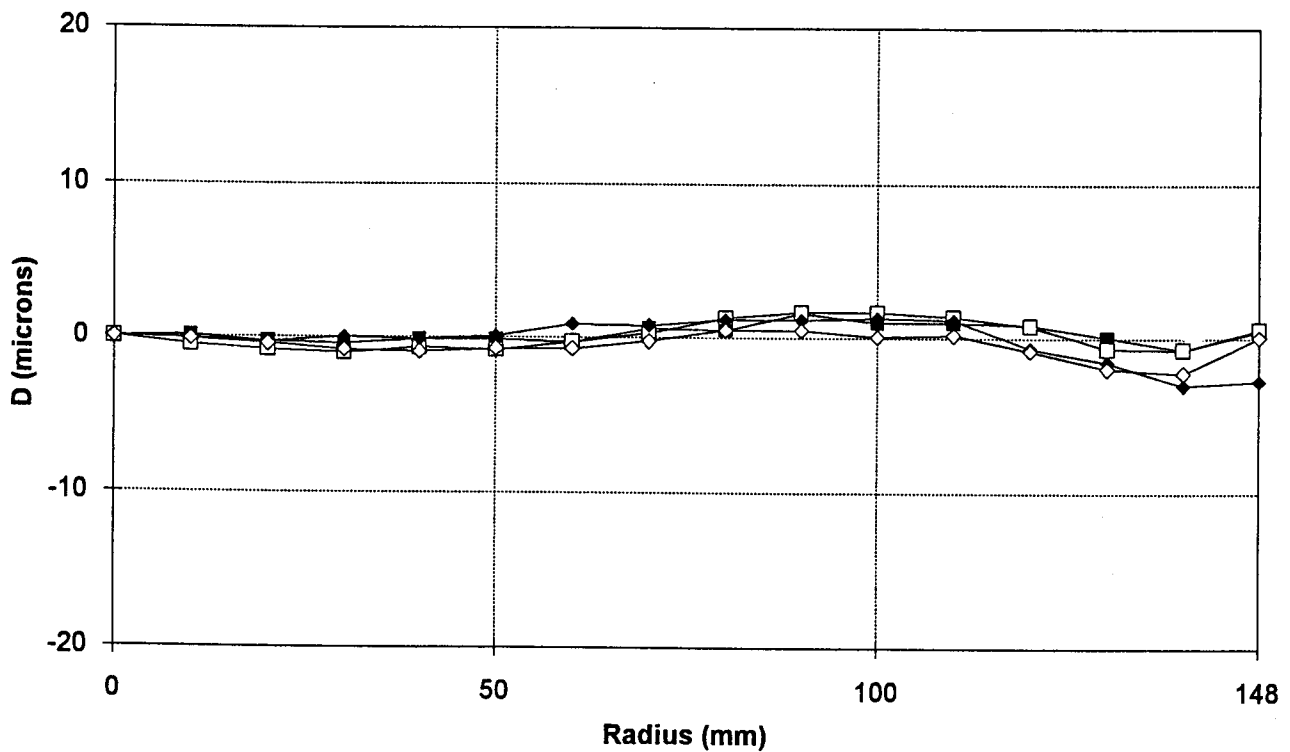
as seen on focal plane frame

Aperture: 4.0  
Filter on goniometer: VIS (400 - 700 NM)  
Filter on camera: --  
C.F.L. : 152.528 mm

### Mean radial distortion



### Radial distortion for semi-diagonals referred to PPS



■ 1    □ 3    ● 2    ◇ 4

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