

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC 30
LENS TYPE : 30/4 NAT-S
LENS NO. : 17101

Calibration date: 22.02.2001

SwissOptic AG, Heerbrugg

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

FO 017 *fw*

Aperture: 4.0
 Filter on goniometer: VIS (400 - 700 NM)
 Filter on camera: --
 C.F.L. : 303.811 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	-0.6	-1.0	-0.3	-1.0	-0.7
20	-1.5	-1.8	-1.0	-1.3	-1.4
30	-1.2	-1.7	0.0	-2.0	-1.2
40	-0.6	-1.2	0.3	-1.9	-0.8
50	-0.1	-1.1	1.1	-1.7	-0.4
60	-0.4	-0.3	1.4	-1.5	-0.2
70	0.5	-0.4	1.3	-0.9	0.1
80	0.7	0.3	1.9	-0.6	0.5
90	1.1	0.6	0.6	-0.5	0.4
100	0.5	0.7	0.3	-0.1	0.3
110	0.4	0.7	0.1	0.3	0.3
120	0.9	0.8	-0.5	0.2	0.3
130	-0.6	-0.1	-1.3	0.3	-0.4
140	-1.0	-0.1	-1.5	0.2	-0.6
148	0.6	0.0	1.2	1.3	0.7

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:	93	93	92	127	111	67
Tangential:	93	93	81	87	117	77

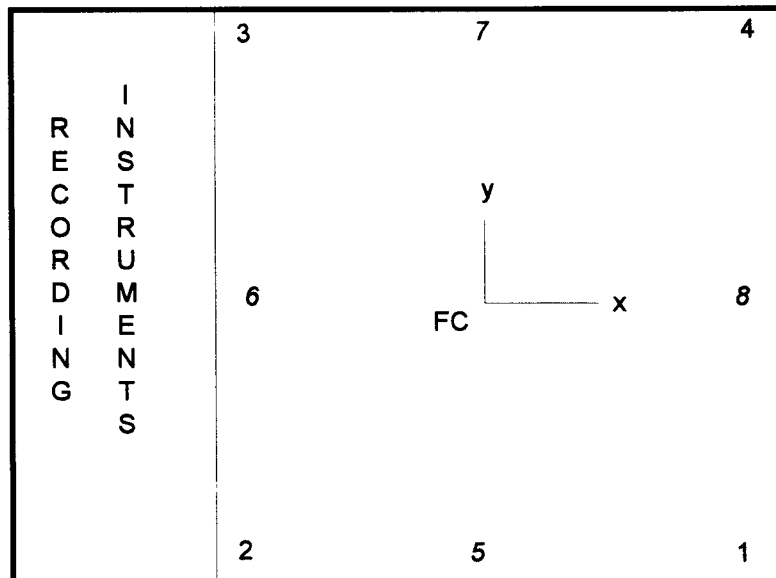
AWAR (Area weighted average resolution) in lp/mm: 100

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

	x (mm)	y (mm)
PPA	0.003	0.031
PPS	0.012	-0.005

Fiducial marks, referred to central cross (FC)

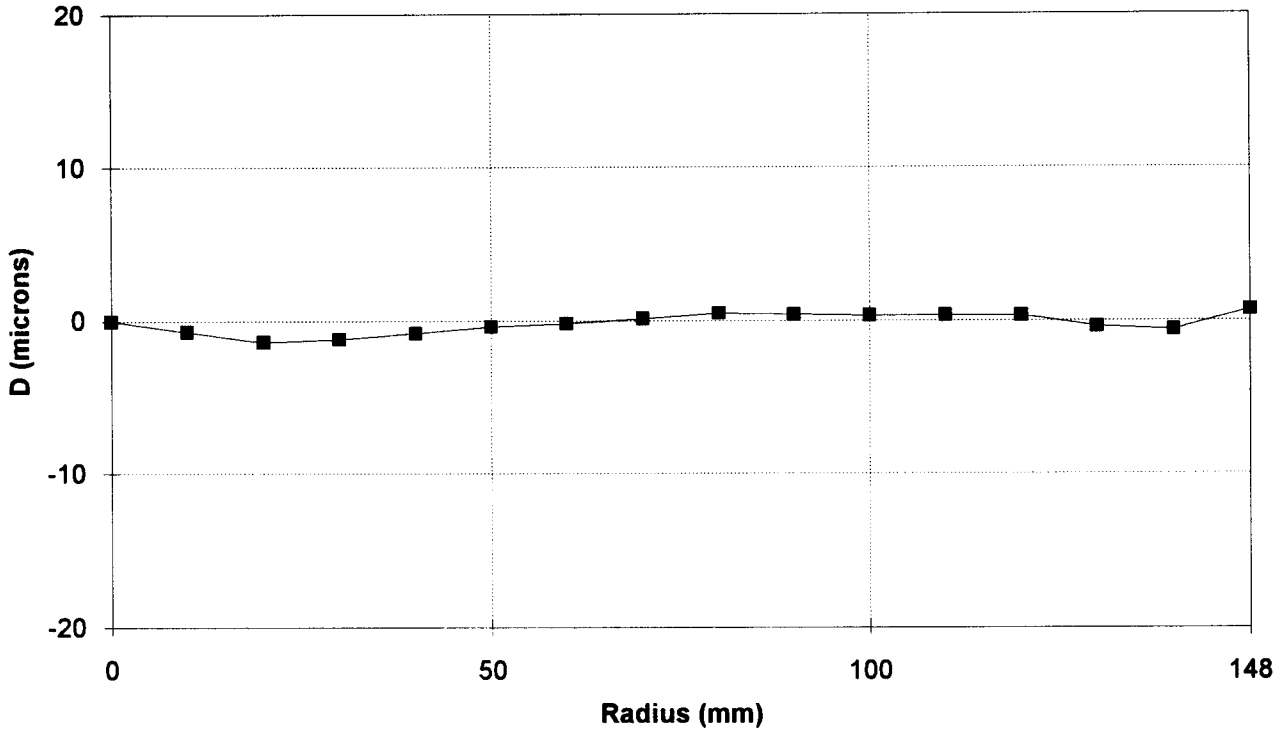
	x (mm)	y (mm)		x (mm)	y (mm)
1	105.996	-105.996	5	0.000	-111.995
2	-106.002	-105.999	6	-111.993	-0.004
3	-105.998	105.998	7	0.002	111.988
4	106.004	106.001	8	112.003	0.004



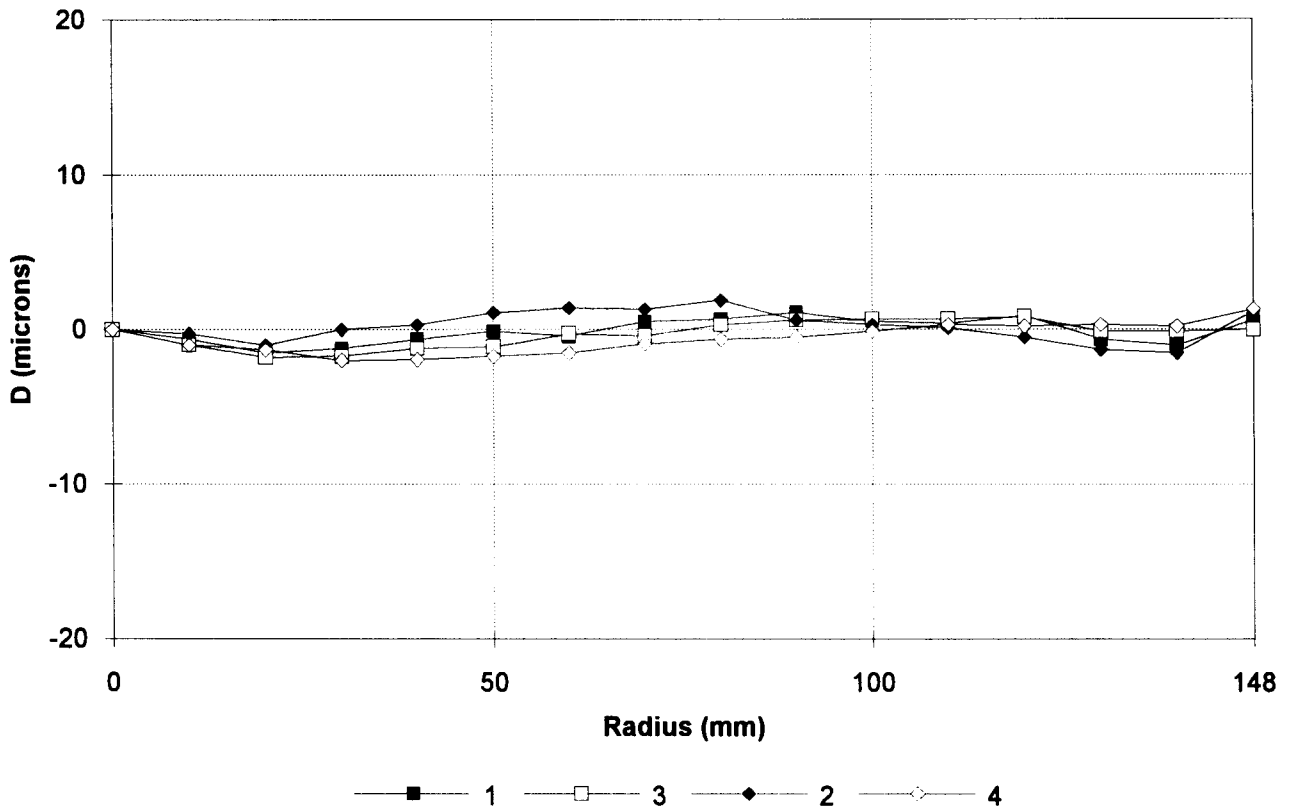
as seen on focal plane frame

Aperture: 4.0
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Filter on camera: --
C.F.L. : 303.811 mm

Mean radial distortion



Radial distortion for semi-diagonals referred to PPS



FO 017
[Signature]