

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC 30
LENS TYPE : 30/4 NAT-S
LENS NO. : 17124

Calibration date: 07.12.1999

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: --
 Principal distance for focussing distance 850 m : 303.146 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	0.3	-0.6	0.1	-0.1
20	-1.4	0.2	-1.7	0.4	-0.6
30	-1.3	0.3	-1.3	0.0	-0.5
40	-1.3	1.7	-1.1	1.6	0.2
50	-0.8	1.9	-0.5	1.8	0.6
60	-1.2	2.0	0.3	1.8	0.7
70	-0.5	1.7	0.2	1.6	0.7
80	-0.9	1.9	0.7	1.9	0.9
90	-0.5	1.5	0.0	1.1	0.5
100	-1.8	-0.2	0.0	0.1	-0.4
110	-2.0	-1.9	-0.6	-0.6	-1.2
120	-2.1	-2.6	-1.5	-1.3	-1.8
130	-1.3	-2.0	-0.4	-0.5	-1.0
140	-0.2	-1.9	1.0	0.9	0.0
148	2.7	0.4	4.3	2.1	2.3

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
Radial:	118	117	116	114	94	85
Tangential:	118	117	114	110	104	87

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

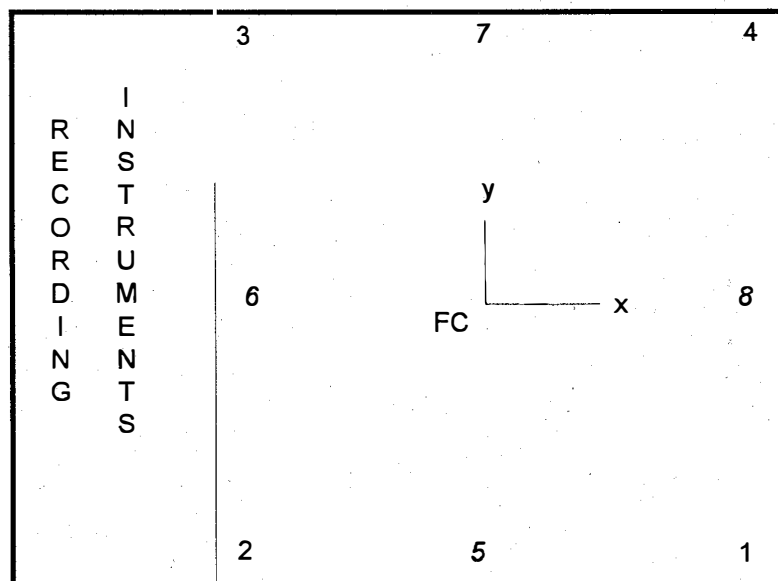
**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)**

referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	0.018	0.008
PPS	-0.012	-0.006

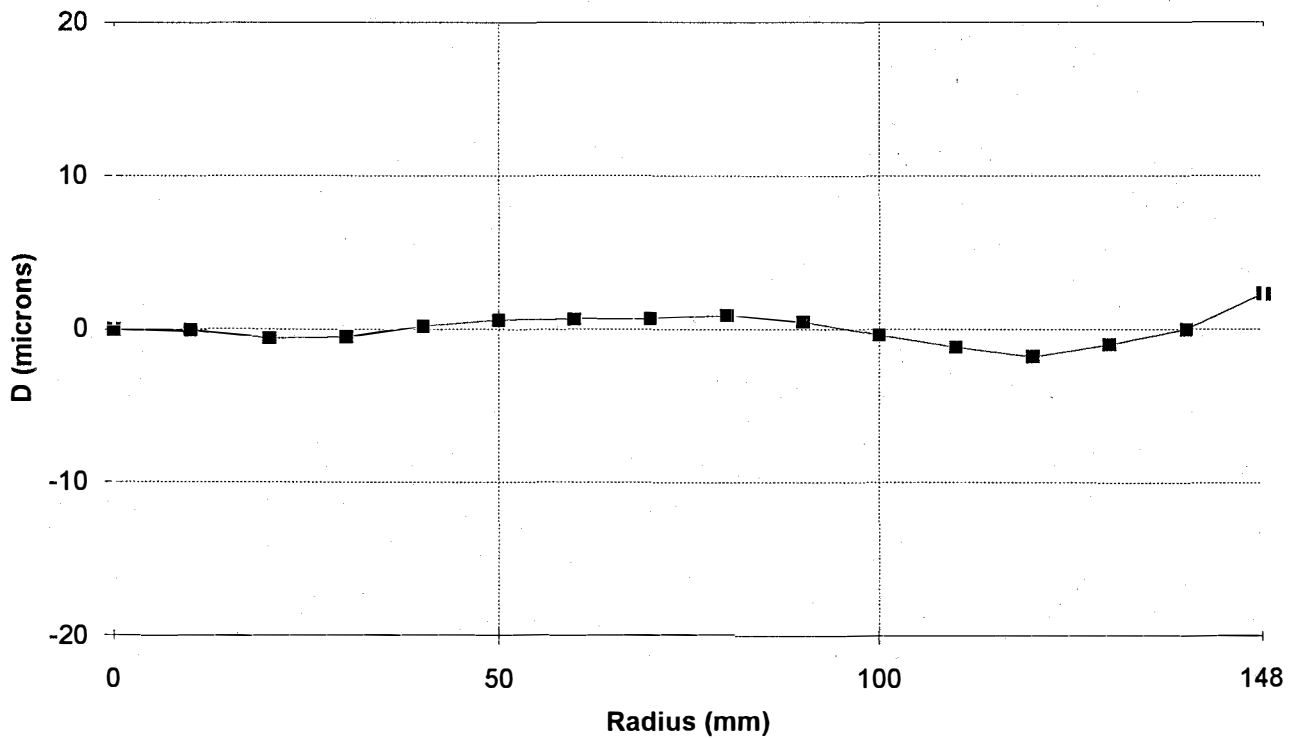
Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	106.003	-106.002	5	0.001	-112.005
2	-105.998	-105.999	6	-111.999	0.005
3	-106.003	106.003	7	-0.002	112.005
4	105.999	105.999	8	111.995	0.000



as seen on focal plane frame

Aperture: 4.0
Filter on goniometer: VIS (400 - 700 NM)
Filter on camera: --
Principal distance for focussing distance 850 m : 303.146 mm

Mean radial distortion**Radial distortion for semi-diagonals referred to PPS**