CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE :	RC30
LENS TYPE :	15/4 UAG-S
LENS NO. :	13258

Calibration date: 12.01.1998

SwissOptic AG, Heerbrugg

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

FO 167

RC30 15/4 UAG-S No. 13258 12.01.1998

Aperture: 4.0
Filter on goniometer: VIS (400 - 700 NM)
Filter on camera: --
C.F.L. : 153.152 mm

Radial distortion (micrometers) referred to principal point of symmetry (PPS)
(Positive values denote image displacement away from center)

Radius	Half - Sides				Mean
mm	1	3	2	4	
10	-0.1	-0.6	-0.3	-0.5	-0.3
20	-0.4	-1.5	-0.4	-1.0	-0.8
30	-1.0	-2.1	-0.7	-2.1	-1.4
40	-1.3	-2.3	-1.1	-2.4	-1.7
50	-1.7	-2.8	-1.6	-2.7	-2.2
60	-1.9	-2.5	-0.8	-2.7	-1.9
70	-1.3	-2.5	-1.2	-2.2	-1.8
80	-1.5	-1.4	-0.9	-1.5	-1.3
90	-0.2	-0.5	-0.4	-0.6	-0.4
100	-0.1	0.3	0.8	0.3	0.3
110	0.4	0.4	1.8	1.2	0.9
120	0.8	0.8	1.4	2.1	1.2
130	0.6	0.8	2.2	2.4	1.5
140	0.6	1.4	2.5	2.4	1.7
148	-0.2	-0.4	0.6	2.2	0.5

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:	117	117	103	101	89	106	128	108	71	83
Tangential:	117	116	101	87	103	96	111	99	77	41

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

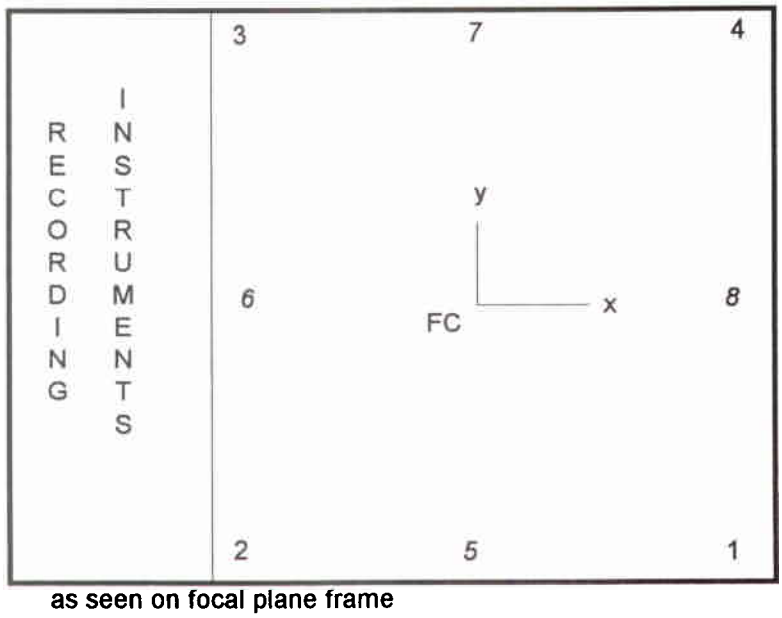
FC787

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

	x (mm)	y (mm)
PPA	0.010	-0.007
PPS	0.006	-0.004

Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	106.000	-105.999	**5**	-0.003	-112.003
2	-106.002	-106.003	**6**	-111.999	0.001
3	-106.001	106.000	**7**	0.000	112.000
4	106.000	106.001	**8**	111.998	0.001



as seen on focal plane frame

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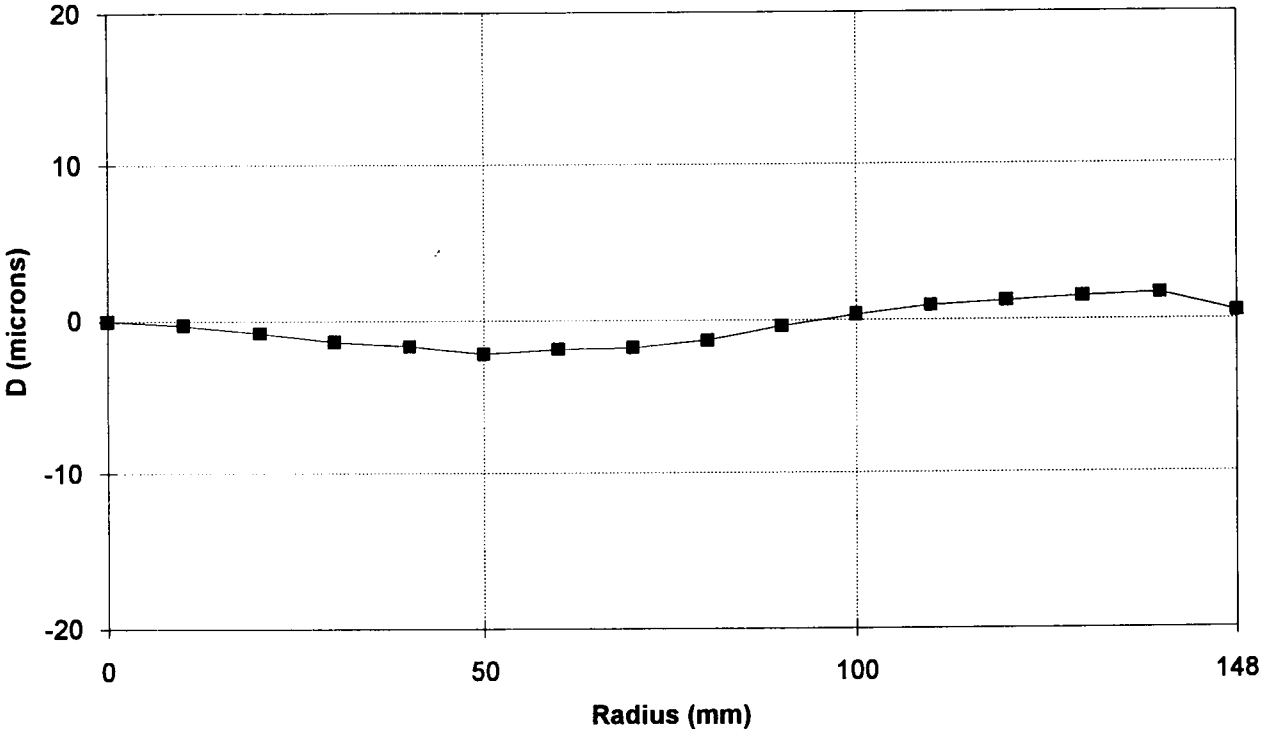
Mean radial distortion



Radial distortion for semi-diagonals referred to PPS