CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE :	RC30
LENS TYPE :	15/4 UAG-S
LENS NO. :	13410

Calibration date: 06.01.2006

LEICA AG, HEERBRUGG

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

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RC30 15/4 UAG-S No. 13410 06.01.2006

Aperture: 4.0
Filter on goniometer: VIS (400-700 NM)
Filter on camera: --
C.F.L. : 153.28 mm

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

Radius mm	Half - Sides 1	3	2	4	Mean
10	0.3	-0.5	0.1	-0.1	0.0
20	0.2	-0.8	-0.2	-0.2	-0.2
30	-0.1	-1.1	-0.3	-0.9	-0.6
40	0.1	-0.8	-0.4	-0.5	-0.4
50	0.2	-1.3	-0.6	-0.5	-0.5
60	-0.2	-1.3	-0.4	-0.8	-0.6
70	0.7	-1.1	-0.4	-0.4	-0.3
80	1.2	0.0	0.6	0.4	0.5
90	2.5	0.8	1.0	1.0	1.3
100	2.8	1.7	2.1	1.6	2.0
110	3.5	1.9	2.6	1.9	2.4
120	1.7	2.1	1.1	1.2	1.5
130	-0.8	1.1	-0.6	0.0	0.0
140	-2.4	-0.3	-2.7	-2.2	-1.9
148	-3.1	-2.8	-4.4	-4.5	-3.7

Photographic resolution (line pairs per millimeter)

International 3-line test-chart, contrast (log) : 2.0
Aperture: 4.0
Filter: VIS (400-700 NM)
Film: KODAK PANATOMIC X 2412
Developer: KODAK HC110

Angle (deg)	0	5	10	15	20	25	30	35	40	45
Radial:	147	147	129	142	139	134	128	121	101	83
Tangential:	147	146	143	138	130	121	111	88	77	59

AWAR (Area weighted average resolution) in lp/mm: 115

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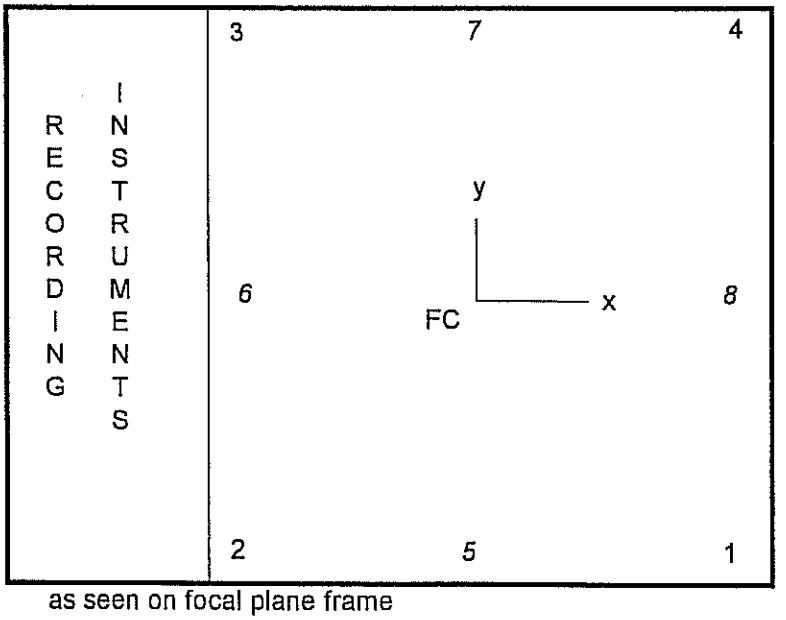
Principal point of autocollimation (PPA) and principal point of symmetry (PPS)
referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	0.004	0.003
PPS	0.003	-0.003

Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	106.004	-106.004	**5**	0.004	-111.982
2	-105.997	-105.997	**6**	-112.001	0.003
3	-106.002	106.003	**7**	-0.002	112.000
4	105.998	105.998	**8**	112.002	-0.003



as seen on focal plane frame

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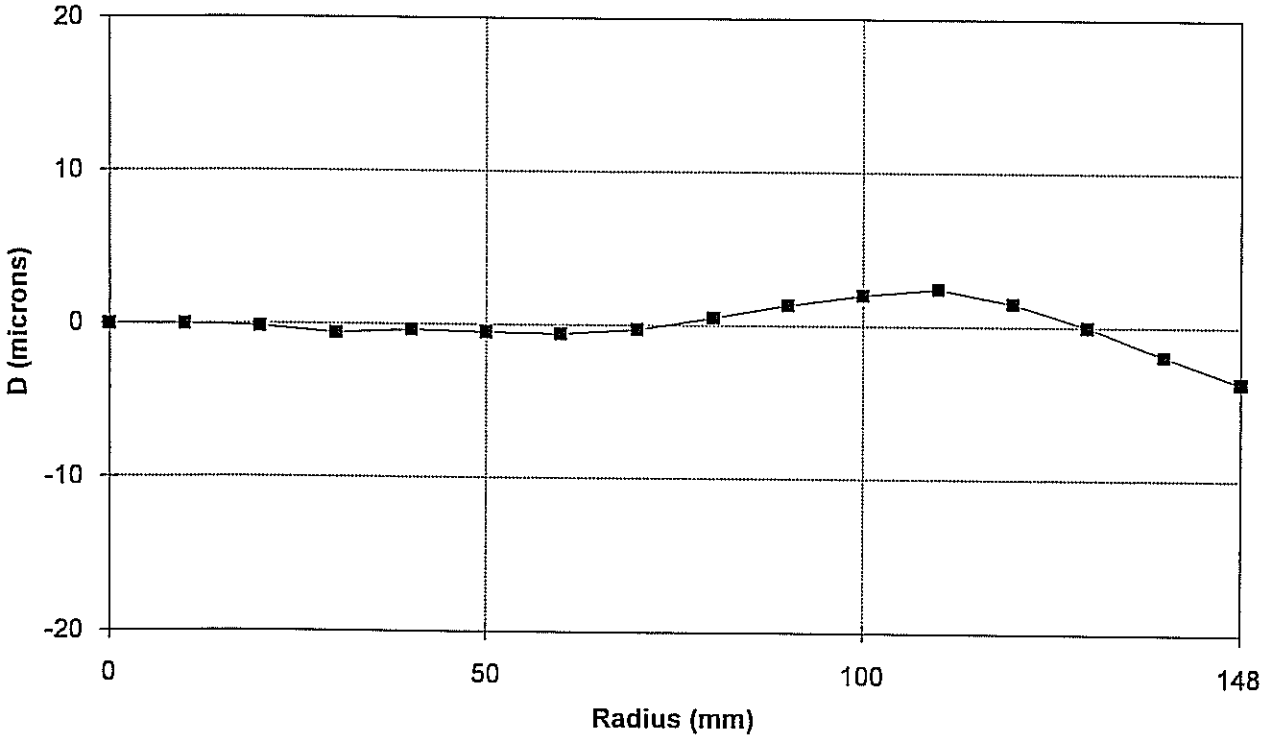
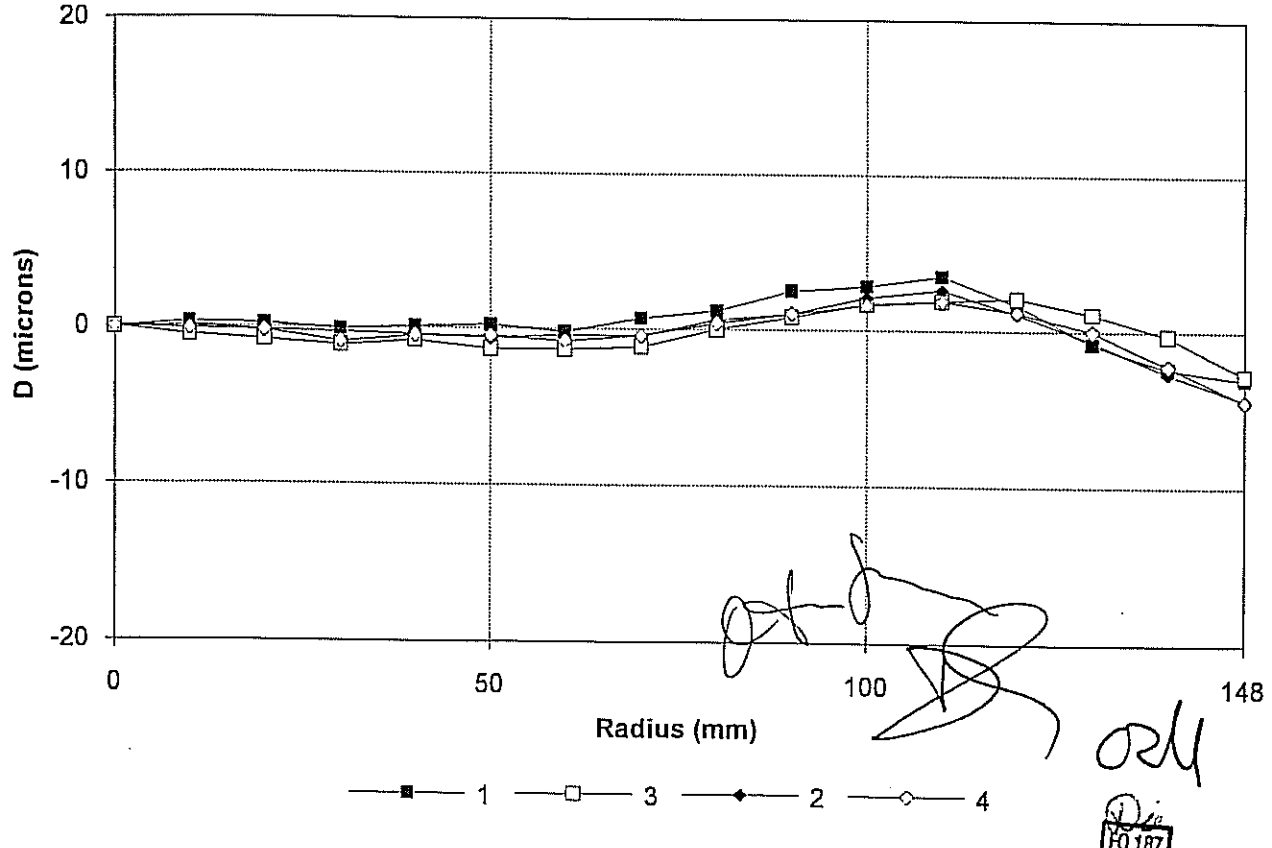
Mean radial distortion



Radial distortion for semi-diagonals referred to PPS



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