

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC30
LENS TYPE : 15/4 UAG-S
LENS NO. : 13211

Calibration date: 15.03.2004

LEICA AG, HEERBRUGG

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

FO 017

RC30

15/4 UAG-S

No. 13211

15.03.2004

Aperture: 4.0
 Filter on goniometer: 450 NM
 Filter on camera: --
 C.F.L. : 153.13 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	0.8	0.2	0.5	0.2	0.4
20	1.0	0.4	0.7	0.4	0.6
30	1.1	0.1	0.6	-0.3	0.3
40	1.0	0.1	0.2	-0.4	0.2
50	0.8	-0.8	-0.2	-0.9	-0.2
60	0.2	-1.2	0.2	-1.6	-0.6
70	0.8	-1.7	-0.1	-1.7	-0.6
80	1.1	-1.2	0.4	-1.8	-0.3
90	2.3	-0.9	0.7	-1.7	0.1
100	2.0	-0.4	1.2	-0.8	0.5
110	1.9	0.0	1.2	0.0	0.7
120	1.9	1.0	0.4	0.6	0.9
130	0.3	1.0	-0.4	0.8	0.4
140	-2.1	1.0	-2.0	0.0	-0.7
148	-3.5	0.4	-2.7	-0.6	-1.6

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	104	115	90	69	95	81	108	101	83
Tangential:	93	116	114	97	82	61	55	88	77	66

AWAR (Area weighted average resolution) in lp/mm: 85



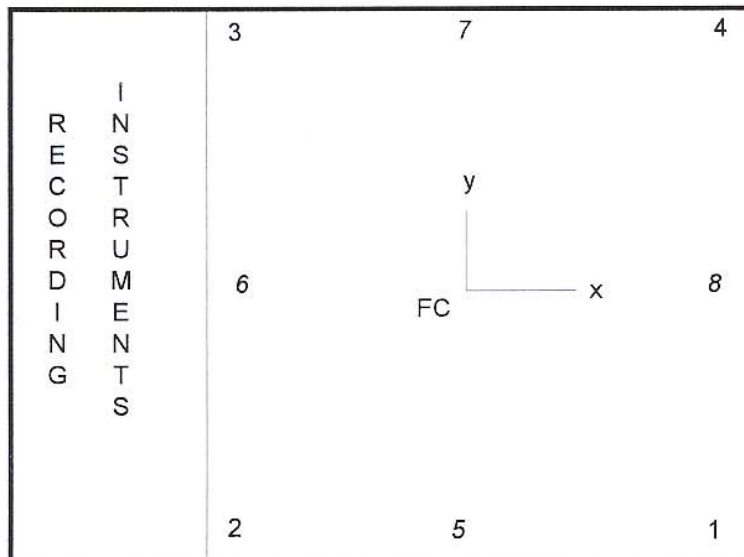
**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)**

referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	0.013	-0.004
PPS	0.012	-0.007

Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	106.003	-106.007	5	0.005	-110.012
2	-105.997	-105.996	6	-110.003	0.001
3	-106.002	106.005	7	-0.016	110.000
4	105.997	105.996	8	109.998	-0.012



as seen on focal plane frame

RC30

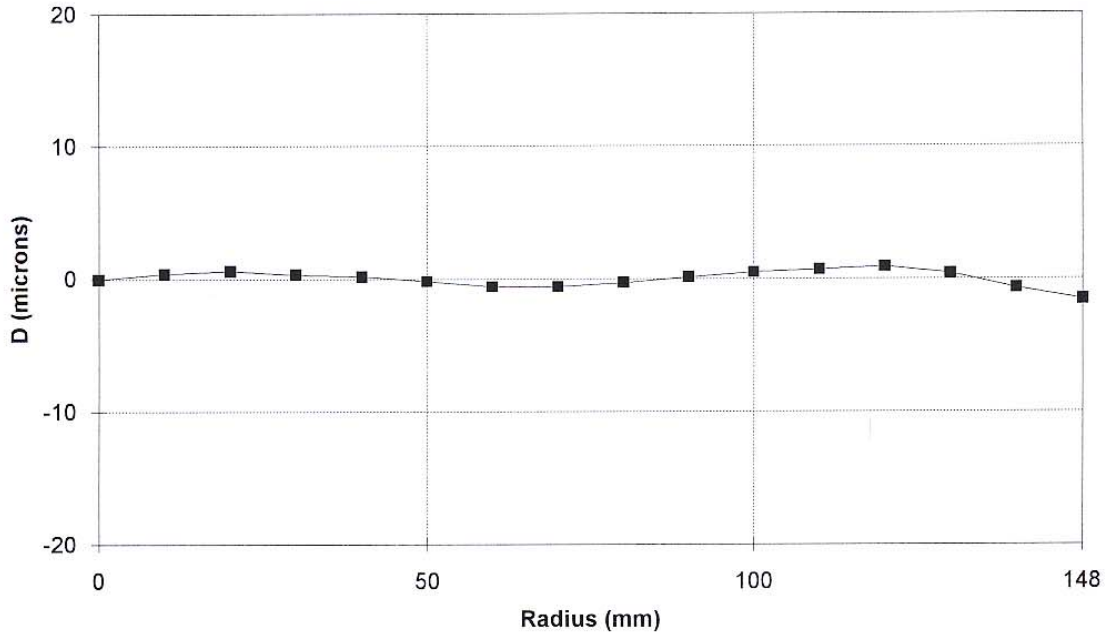
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Mean radial distortion



Radial distortion for semi-diagonals referred to PPS

