

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC30
LENS TYPE : 15/4 UAG-8
LENS NO. : 13240

Calibration date: 29.01.2003

LEICA AG, HEERBRUGG

 **swissoptic**
SwissOptic AG
Heinrich-Wild-Strasse
CH-9436 Heerbrugg
Schweiz

FD 912 

Aperture: 4.0
 Filter on goniometer: 450 NM
 Filter on camera: -
 C.F.L.: 152.63 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	-0.7	-0.9	-0.6	-0.7	-0.7
20	-1.1	-1.6	-0.9	-1.2	-1.2
30	-1.3	-2.1	-0.7	-2.0	-1.5
40	-1.4	-2.1	-1.0	-2.0	-1.6
50	-1.4	-2.5	-0.8	-1.8	-1.6
60	-2.0	-2.2	-0.4	-1.7	-1.5
70	-1.0	-2.1	-0.4	-1.0	-1.1
80	-1.2	-1.1	0.2	-0.1	-0.5
90	0.0	-0.7	0.3	0.3	0.0
100	0.4	-0.1	2.0	1.2	0.8
110	0.8	-0.2	2.2	2.2	1.2
120	1.6	0.7	2.3	2.7	1.8
130	0.6	0.0	2.4	2.3	1.3
140	-1.5	-0.7	1.3	1.1	0.0
148	-3.6	-1.3	0.0	1.2	-0.9

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	131	115	113	110	108	128	86	80	74
Tangential:	117	104	101	83	118	88	99	70	61	52

AWAR (Area weighted average resolution) in lp/mm: 83

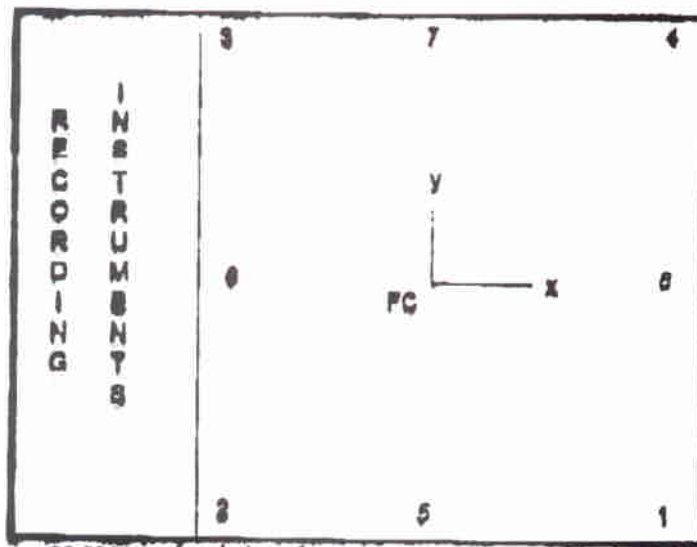
FO 012
 1/10

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

	x (mm)	y (mm)
PPA	-0.001	0.013
PPS	0.000	0.002

Fiducial marks, referred to central cross (FC)

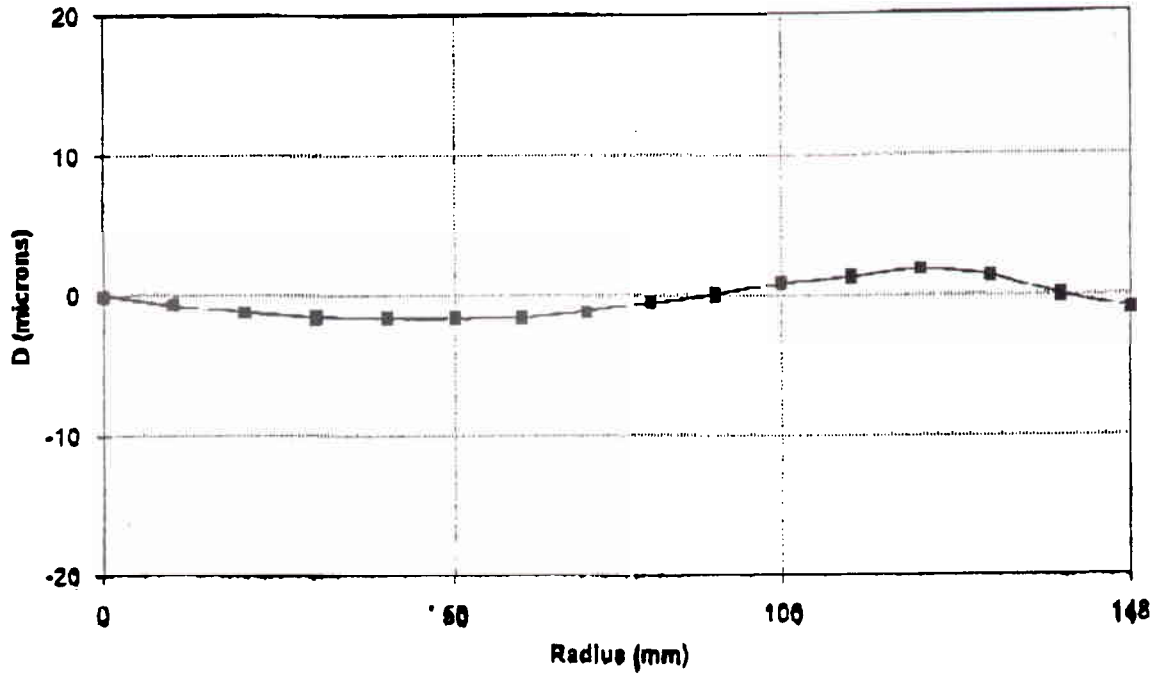
	x (mm)	y (mm)		x (mm)	y (mm)
1	106.001	-106.000	5	-0.003	-112.000
2	-105.999	-106.001	6	-112.005	0.001
3	-106.001	106.999	7	0.003	111.995
4	106.001	106.003	8	111.997	0.001



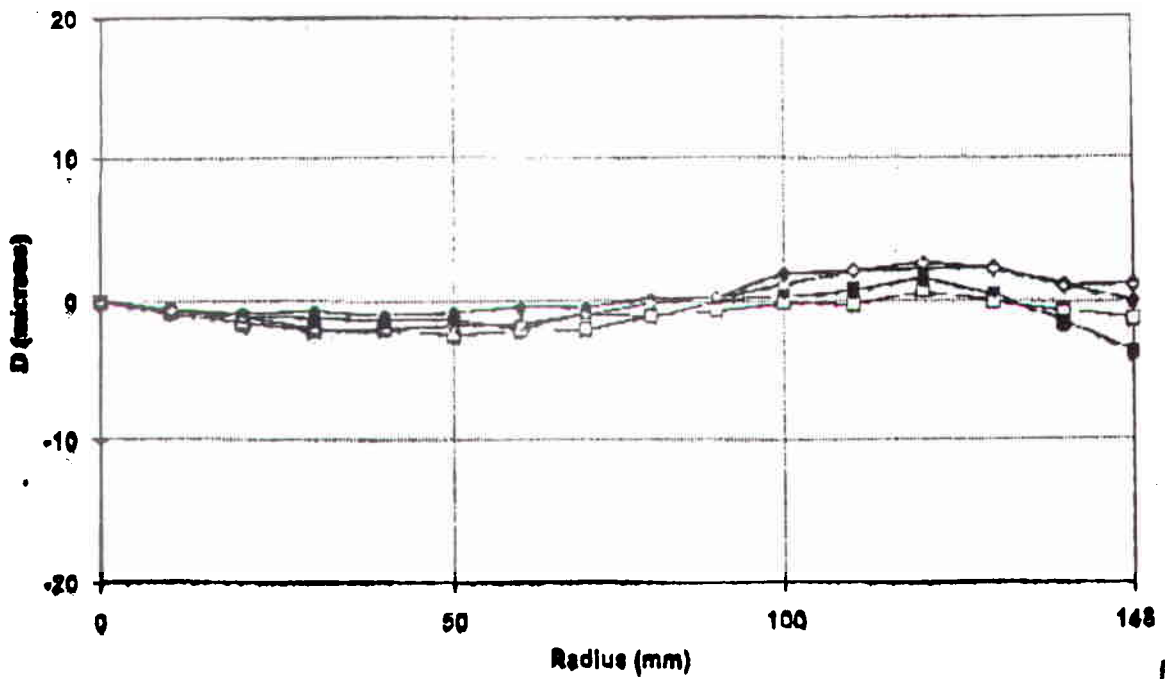
as seen on focal plane frame

Aperture: 4.0
Filter on goniometer: 450 NM
Filter on camera: -
C.F.L.: 152.83 mm

Mean radial distortion



Radial distortion for semi-diagonals referred to PP6



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PO 312
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