

CAMERA CALIBRATION CERTIFICATE

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

Calibration date: 15.12.1995

LEICA AG, HEERBRUGG

The Leica logo is written in a stylized, cursive script.

*Leica Heerbrugg Ltd
CH-9435 Heerbrugg*

*Calibration Department
Supervisor*

A handwritten signature in black ink, appearing to be 'ANTONIO', is written over a circular stamp.

Aperture: 4.0
 Filter on goniometer: VIS (400 - 700 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	-0.4	-1.0	-0.7	-0.8	-0.7
20	-0.7	-1.8	-0.8	-1.3	-1.1
30	-1.0	-2.3	-0.8	-2.3	-1.6
40	-1.0	-2.6	-1.0	-2.8	-1.8
50	-1.1	-3.2	-1.2	-3.0	-2.1
60	-1.7	-3.1	-0.6	-3.0	-2.1
70	-0.7	-2.7	-0.7	-2.3	-1.6
80	-1.0	-1.6	-0.5	-1.3	-1.1
90	0.4	-0.8	-0.1	-0.3	-0.2
100	0.6	0.3	0.7	1.0	0.6
110	1.2	1.0	1.5	2.5	1.5
120	1.7	1.6	1.5	2.7	1.8
130	1.5	1.9	2.2	2.8	2.1
140	-0.4	0.5	1.2	1.2	0.6
148	-1.8	-0.3	0.7	0.5	-0.2

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	115	113	123	134	128	86	80	83
Tangential:	117	130	101	109	103	96	99	79	69	52

AWAR (Area weighted average resolution) in lp/mm: 98

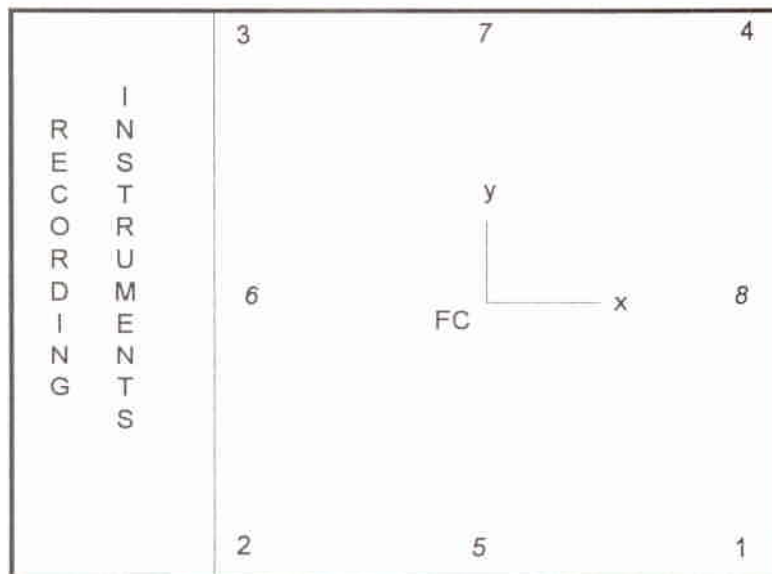
**Principal point of autocollimation (PPA) and
principal point of symmetry (PPS)**

referred to central cross (FC), see diagram

	x (mm)	y (mm)
PPA	0.002	0.010
PPS	0.002	0.003

Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	105.999	-105.998	5	-0.002	-111.997
2	-106.000	-106.002	6	-112.001	0.002
3	-106.000	105.999	7	0.004	111.994
4	106.001	106.003	8	111.993	0.003

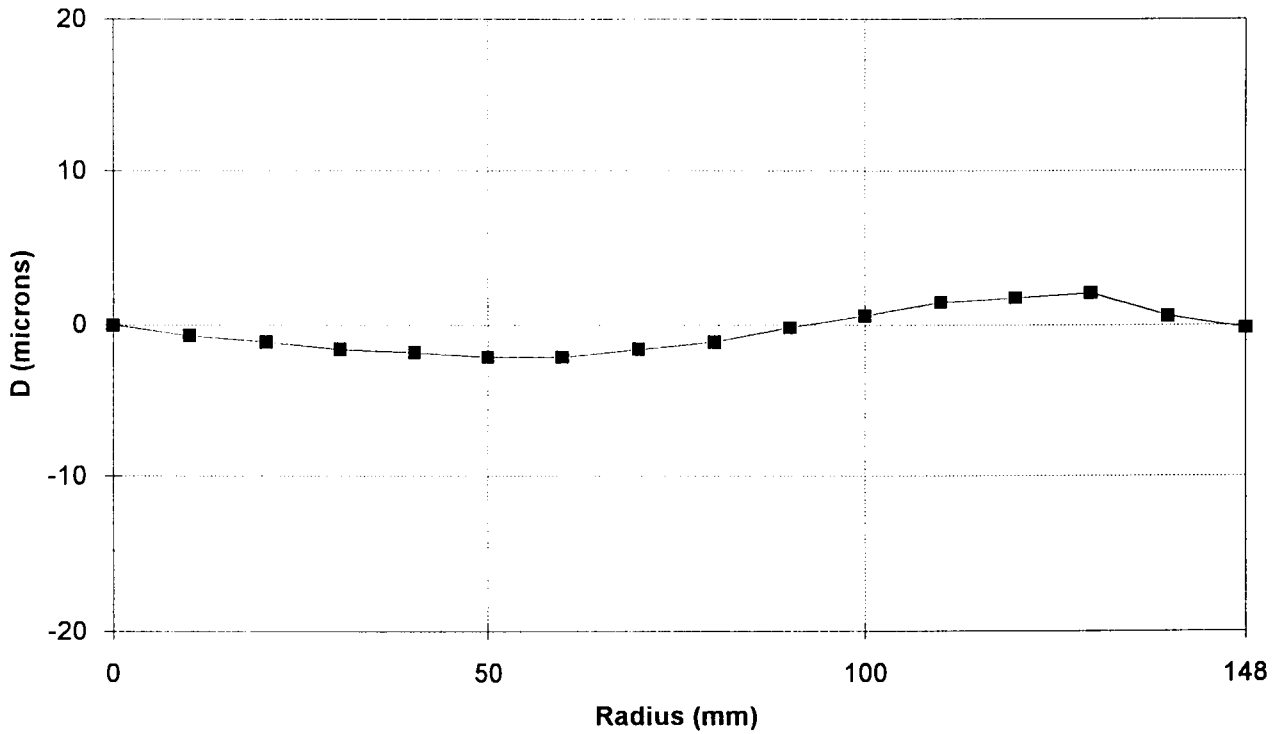


as seen on focal plane frame

[Handwritten signature]

Aperture: 4.0
Filter on goniometer: VIS (400 - 700 NM)
Filter on camera: --
C.F.L. : 152.63 mm

Mean radial distortion



Radial distortion for semi-diagonals referred to PPS

