

CAMERA CALIBRATION CERTIFICATE

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

Calibration date: 21.02.1995

LEICA AG, HEERBRUGG

Leica

*Leica Heerbrugg Ltd
CH-9435 Heerbrugg*

*Calibration Department
Supervisor*

[Signature]

Aperture: 4.0
 Filter on goniometer: VIS (400 - 700 NM)
 Filter on camera: --
 C.F.L. : 153.15 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	-0.3	-0.1	-0.2	-0.1	-0.1
20	-0.7	-0.8	-0.5	-0.8	-0.7
30	-1.3	-1.3	-0.5	-1.8	-1.2
40	-1.5	-1.7	-1.0	-2.1	-1.5
50	-1.6	-2.3	-0.9	-2.1	-1.7
60	-2.4	-2.1	-0.4	-2.2	-1.7
70	-1.5	-1.9	-0.7	-1.6	-1.4
80	-1.6	-0.6	-0.3	-0.4	-0.7
90	-0.1	0.0	0.2	0.4	0.1
100	-0.1	0.7	1.4	1.5	0.8
110	0.4	0.5	2.1	2.0	1.2
120	1.2	0.6	1.4	2.0	1.3
130	0.6	0.5	1.9	2.5	1.3
140	0.4	0.3	2.0	1.3	1.0
148	-1.3	-1.6	-0.2	0.6	-0.6

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:	117	117	103	101	98	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

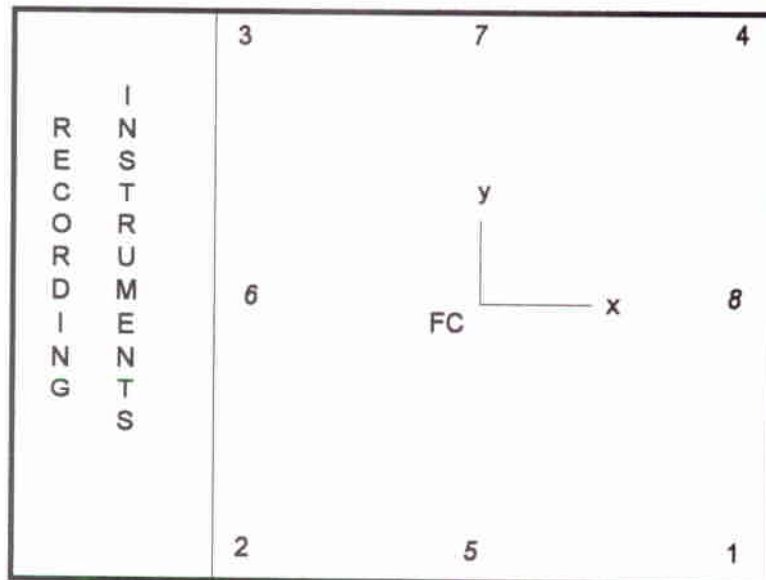
[Handwritten signature]

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

	x (mm)	y (mm)
PPA	0.009	0.000
PPS	0.009	-0.005

Fiducial marks, referred to central cross (FC)

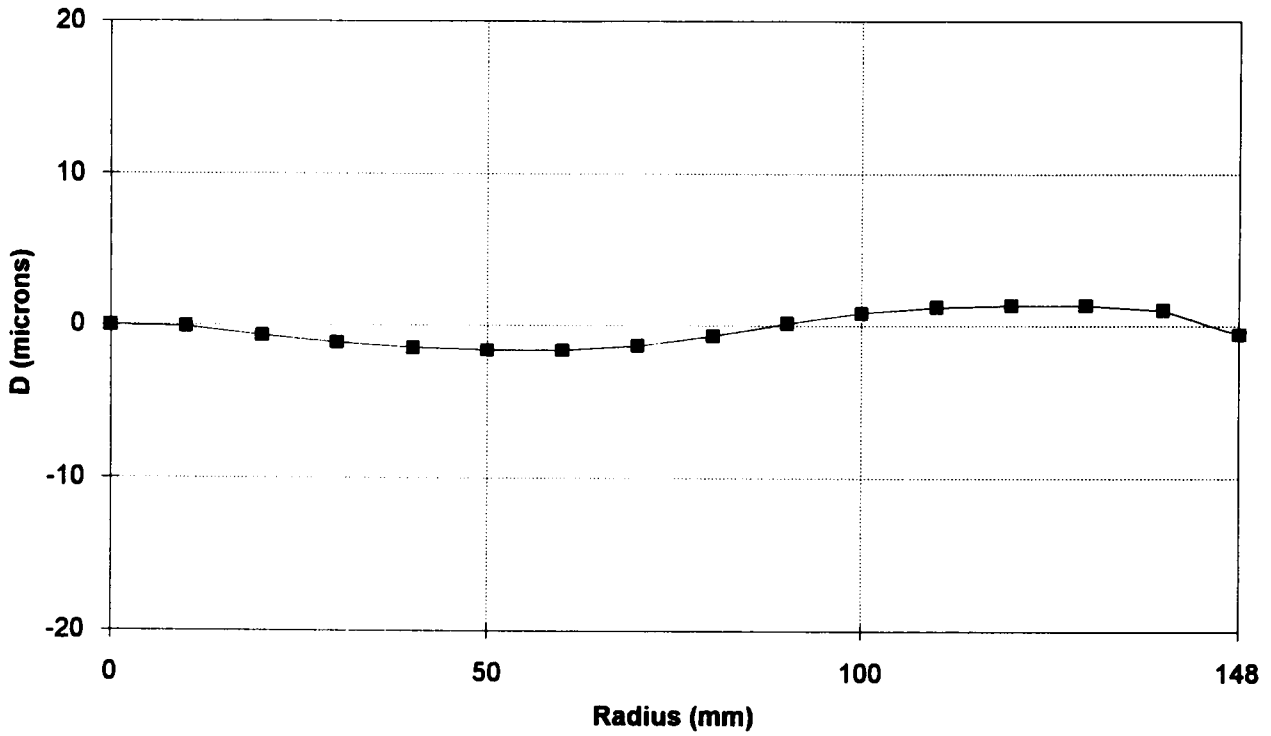
	x (mm)	y (mm)		x (mm)	y (mm)
1	106.000	-106.000	5	0.000	-111.998
2	-106.000	-106.000	6	-112.002	0.002
3	-106.001	106.001	7	0.000	112.001
4	106.000	106.001	8	102.001	0.001
				112.001	



as seen on focal plane frame

Aperture: 4.0
Filter on goniometer: VIS (400 - 700 NM)
Filter on camera: --
C.F.L. : 153.15 mm

Mean radial distortion



Radial distortion for semi-diagonals referred to PPS

