

ca 1710197

## CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC 30  
LENS TYPE : 30/4 NAT-S  
LENS NO. : 17101

Calibration date: 12.08.1997

LEICA AG, HEERBRUGG

*Leica*

*Leica Heerbrugg Ltd  
CH-9435 Heerbrugg*

*Calibration Department  
Supervisor*



Aperture: 4.0  
 Filter on goniometer: VIS (400 - 700 NM)  
 Filter on camera: --  
 Principal distance for focussing distance 850 m : 303.801 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	-0.9	-0.4	-1.1	0.0	-0.6
20	-1.5	-1.3	-2.1	-1.0	-1.4
30	-1.8	-1.6	-2.3	-1.4	-1.7
40	-1.5	-0.4	-2.0	-0.5	-1.1
50	-1.1	-0.3	-2.2	-0.4	-1.0
60	-1.0	0.5	-1.6	-0.1	-0.5
70	0.0	-0.1	-1.6	0.2	-0.3
80	0.3	0.6	-0.7	0.0	0.0
90	1.4	0.1	-0.9	-0.6	0.0
100	0.5	0.1	-1.4	-0.7	-0.3
110	0.7	1.1	-0.3	-0.6	0.2
120	1.3	1.4	-1.4	-0.8	0.1
130	0.8	0.4	-0.2	-1.3	0.0
140	0.2	0.2	-0.3	-0.7	-0.1
148	1.9	2.0	3.2	2.3	2.3

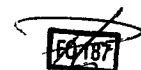
**Photographic resolution (line pairs per millimeter)**

International 3-line test-chart, contrast (log) : 2.0

Aperture: 4.0  
 Filter: 450  
 Film: KODAK TECHNICAL PAN 2415  
 Developer: KODAK HC110

Angle (deg)	0	5	10	15	20	25
Radial:	67	67	47	41	50	54
Tangential:	67	59	65	39	37	55

AWAR (Area weighted average resolution) in lp/mm: 48

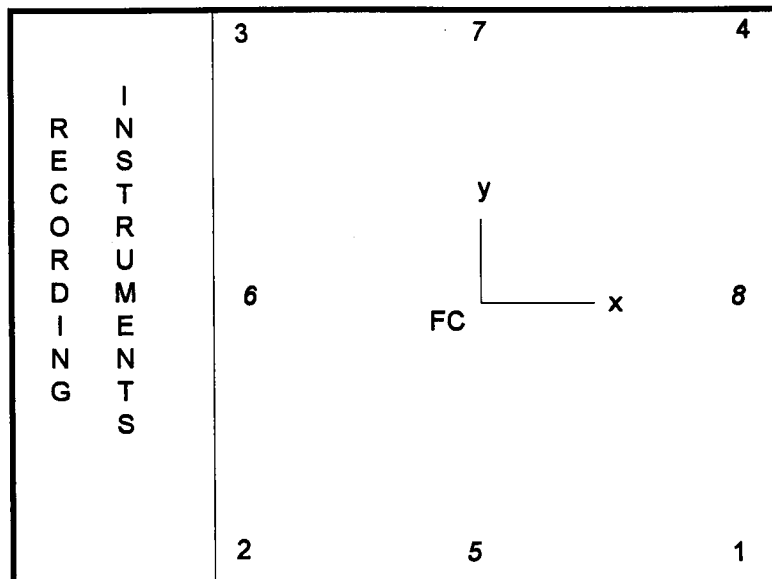


**Principal point of autocollimation (PPA) and  
principal point of symmetry (PPS)**  
referred to central cross (FC), see diagram

	x (mm)	y (mm)
<b>PPA</b>	-0.005	0.019
<b>PPS</b>	-0.009	-0.031

**Fiducial marks, referred to central cross (FC)**

	x (mm)	y (mm)		x (mm)	y (mm)
<b>1</b>	105.995	-105.995	<b>5</b>	0.000	-111.990
<b>2</b>	-106.001	-105.998	<b>6</b>	-111.993	-0.002
<b>3</b>	-105.996	105.995	<b>7</b>	0.001	111.984
<b>4</b>	106.002	105.999	<b>8</b>	111.998	0.004

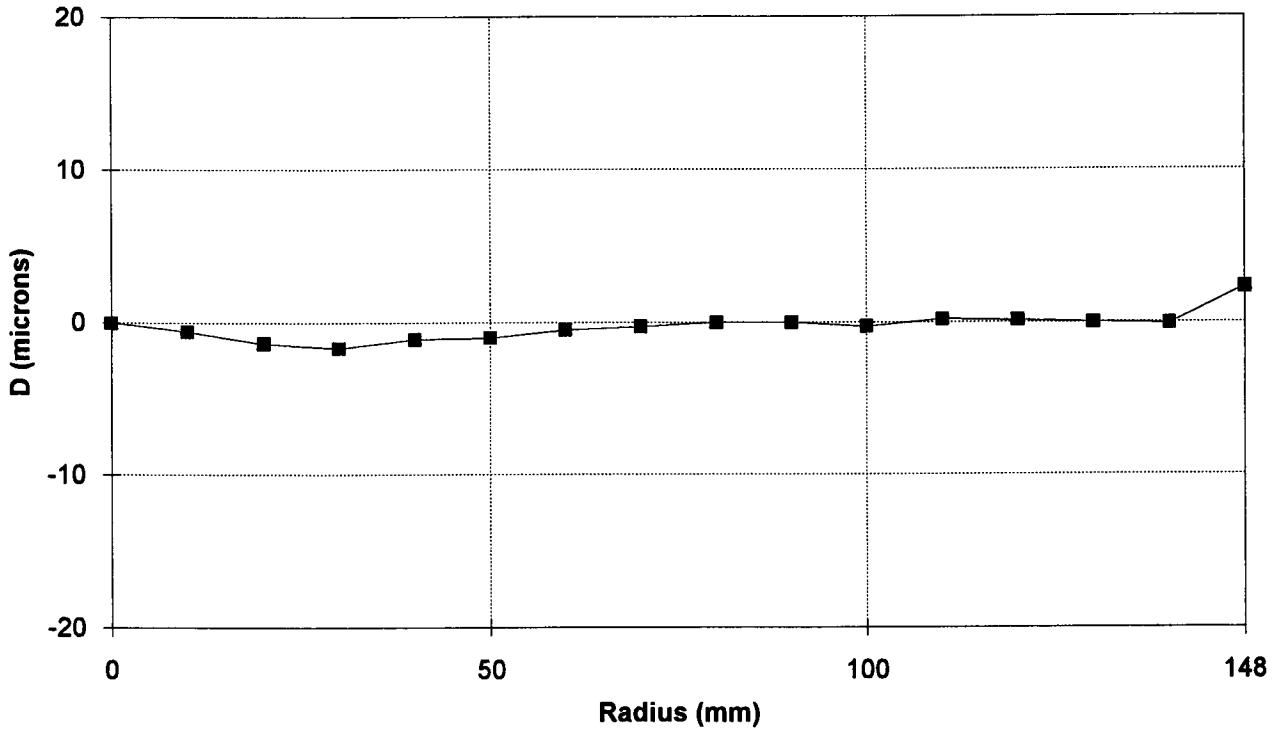


as seen on focal plane frame

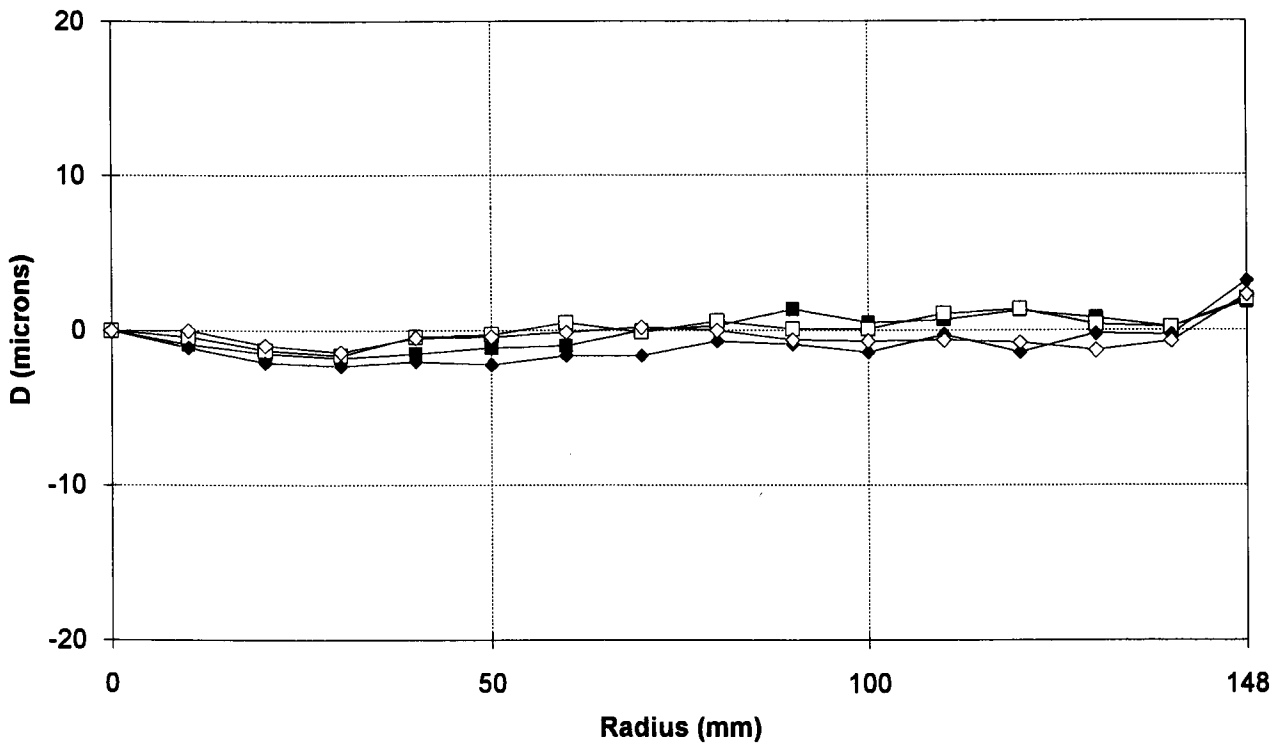


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### Mean radial distortion



### Radial distortion for semi-diagonals referred to PPS



■ 1    □ 3    ◆ 2    ◇ 4

