

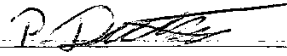


Camera Calibration Certificate

(Cover sheet)

Object	Camera Type	Lens Type	Lens-No (Serial-No)	Remarks
	RC 10	<input type="checkbox"/>		
	RC 10A	<input type="checkbox"/>		
	RC 20 / RC 30 (RC 20)	<input type="checkbox"/>		
	RC 30	<input checked="" type="checkbox"/>	15/4 UAG-S	13355

Acceptance	Characteristics	Acceptance	Remarks
	Radial distortion	yes	
	Photographic resolution	yes	
	Principal point of autocollimation [PPA]	yes	
	Principal point of symmetry [PPS]	yes	
	Fiducial marks	yes	
	Mean radial distortion	yes	
	Radial distortion for semi-diagonals referred to PPS	yes	

Inspection	Signature / Remarks	
Calibration Date	29.05.2001	
Inspector: Name: Paul Dietsche	Signature: 	
Position: Inspector		
Inspection stamp-No: FO 066		
Inspection plan	487872 14.04.1989	(Identification-No) (Version)
Lens cone calibration process specification	870105 19.01.2000	(Identification-No) (Version)

Maintenance	Remarks	
The last date, when service/ overhaul of this lens cone was performed.	29.05.2001	Inspektion & Kalibration
Recommendation:	To avoid any malfunctions / damages, it is recommended to perform a complete service / overhaul as soon as possible. See „Lens calibration process specification“ or „Technical Reference Manual“	

CAMERA CALIBRATION CERTIFICATE

CAMERA TYPE : RC30
LENS TYPE : 15/4 UAG-S
LENS NO. : 13355

Calibration date: 30.05.2001

SwissOptic AG, Heerbrugg

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

FO 066
Me

RC30

15/4 UAG-S

No. 13355

30.05.2001

Aperture: 4.0
 Filter on goniometer: VIS(400-700NM)
 Filter on camera: --
 C.F.L. : 153.597 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	-0.2	0.3	-0.3	0.2	0.0
20	-0.2	0.2	0.1	0.5	0.1
30	-0.6	-0.5	0.3	-0.7	-0.3
40	-0.5	0.0	0.2	-0.3	-0.1
50	-1.1	-0.8	-0.3	-0.5	-0.6
60	-1.9	0.0	-0.3	-0.5	-0.6
70	-1.0	-0.7	0.1	-0.8	-0.6
80	-1.8	0.6	0.0	0.2	-0.2
90	-0.2	0.6	0.5	-0.2	0.1
100	-0.4	0.8	0.8	0.3	0.3
110	-0.5	0.6	0.7	1.0	0.4
120	1.2	0.1	1.0	0.8	0.7
130	0.8	0.0	0.8	1.3	0.7
140	1.1	-0.7	1.1	1.2	0.6
148	-0.4	-0.7	-0.8	-0.1	-0.5

Photographic resolution (line pairs per millimeter)

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

Aperture: 4.0

Filter: 450 NM

Film: KODAK PANATOMIC X2412

Developer: KODAK HC110

Angle (deg)	0	5	10	15	20	25	30	35	40	45
Radial:	131	131	145	142	139	134	128	108	101	83
Tangential:	131	146	143	138	130	121	111	99	77	59

AWAR (Area weighted average resolution) in lp/mm: 115

FO 066 *[Signature]*

RC30

15/4 UAG-S

No. 13355

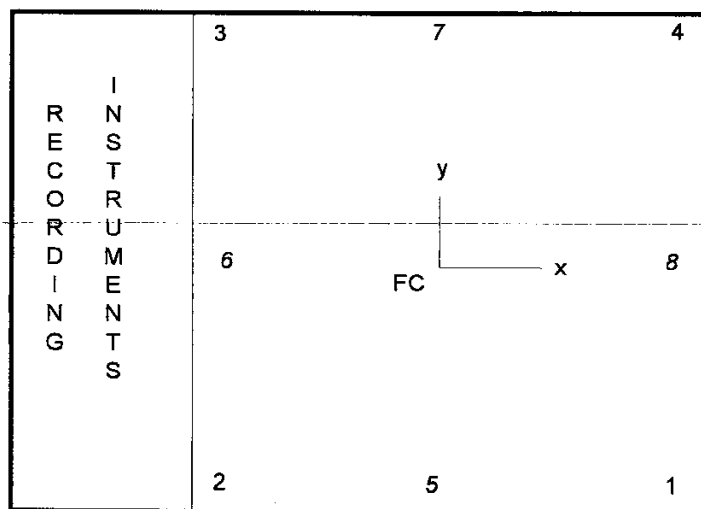
30.05.2001

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	0.008
PPS	-0.008	-0.001

Fiducial marks, referred to central cross (FC)

	x (mm)	y (mm)		x (mm)	y (mm)
1	106.004	-106.004	5	0.005	-111.999
2	-105.994	-105.995	6	-112.001	0.006
3	-106.004	106.005	7	-0.005	112.005
4	106.004	106.005	8	111.998	-0.004



as seen on focal plane frame

FO 065
[Signature]

RC30

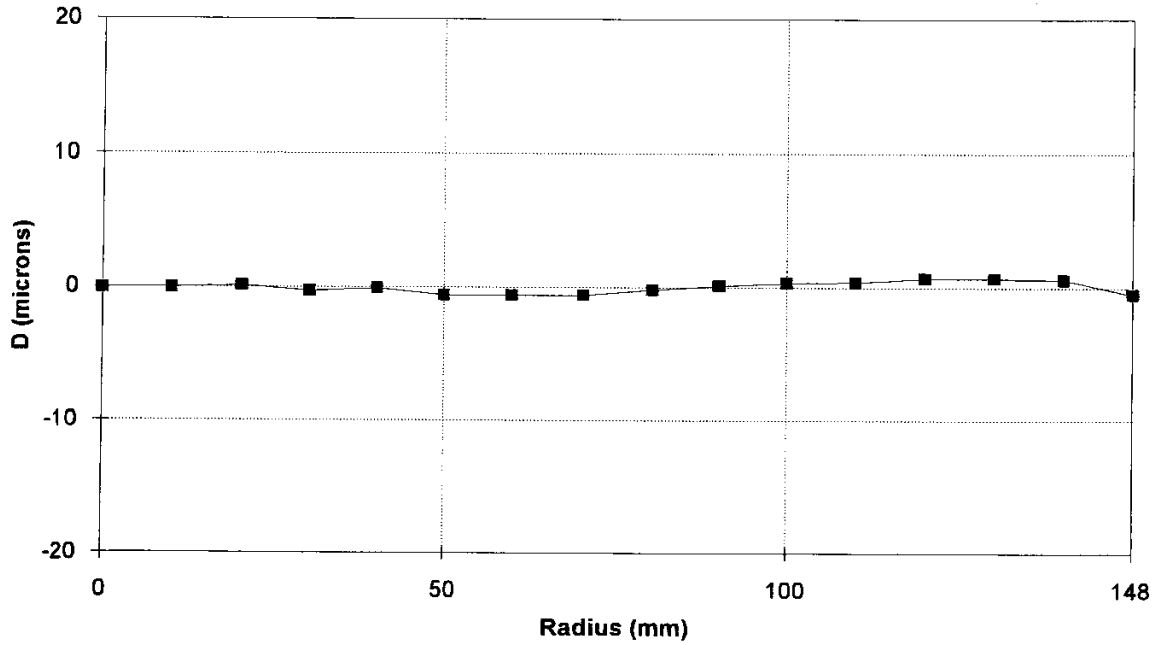
15/4 UAG-S

No. 13355

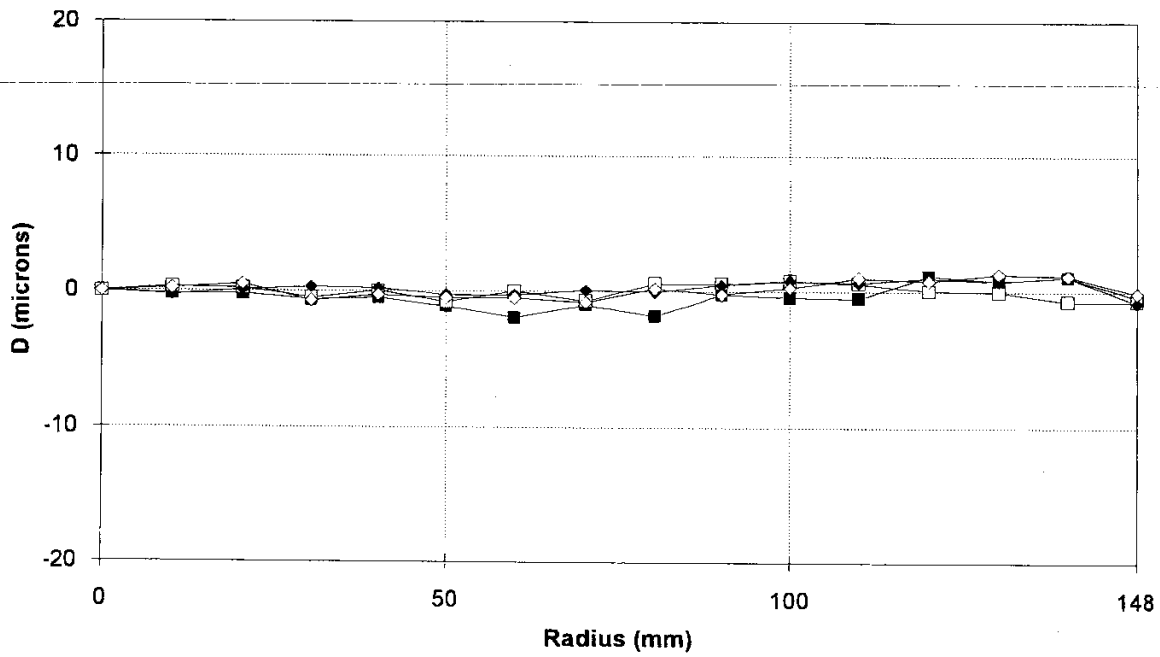
30.05.2001

Aperture: 4.0
 Filter on goniometer: VIS(400-700NM)
 Filter on camera: --
 C.F.L. : 153.597 mm

Mean radial distortion



Radial distortion for semi-diagonals referred to PPS



—■— 1 —□— 3 —◆— 2 —◇— 4

FO 058