

CAMERA CALIBRATION CERTIFICATE

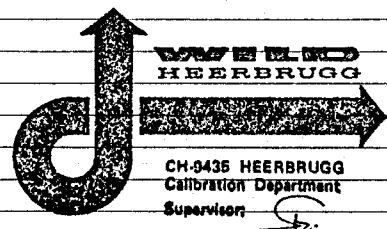
CAMERA TYPE : RC10

LENS TYPE : 30 AT II

LENS NO. : 4110

CALIBRATION DATE : 03.01.84

WILD HEERBRUGG LTD



CAMERA CALIBRATION

CAMERA: RC10 LENS: 30 AT II NO.: 4110 CALIBRATION DATE: 03.01.84

APERTURE : F / 4.0
 FILTER ON GONIOMETER : 450 NM
 FILTER ON CAMERA : --
 PRINCIPAL DISTANCE FOR FOCUSING DISTANCE 850 M : 305.36 MM

RADIAL DISTORTION (MICROMETERS)

 REFERRED TO PRINCIPAL POINT OF SYMMETRY (PPS)
 (POSITIVE VALUES DENOTE IMAGE DISPLACEMENT AWAY FROM CENTER)

| RADIUS MM | SEMI - DIAGONALS | | | | MEAN |
|--------------|------------------|------|------|------|------|
| | 1 | 3 | 2 | 4 | |
| 10 | -1.3 | -1.1 | -1.6 | -1.6 | -1.4 |
| 20 | -2.4 | -3.0 | -2.5 | -2.9 | -2.7 |
| 30 | -4.2 | -3.3 | -4.0 | -3.4 | -3.7 |
| 40 | -4.6 | -3.3 | -4.5 | -3.3 | -3.9 |
| 50 | -3.7 | -3.0 | -3.4 | -2.7 | -3.2 |
| 60 | -3.0 | -1.1 | -2.1 | -1.4 | -1.9 |
| 70 | -0.9 | 0.4 | -0.3 | 0.9 | 0.0 |
| 80 | 1.0 | 2.7 | 2.0 | 3.2 | 2.2 |
| 90 | 2.9 | 4.5 | 3.7 | 4.8 | 3.9 |
| 100 | 3.5 | 5.0 | 4.9 | 5.3 | 4.6 |
| 110 | 3.5 | 3.4 | 4.7 | 4.4 | 4.0 |
| 120 | 1.4 | 0.0 | 2.3 | 0.9 | 1.1 |
| 130 | -2.0 | -2.1 | 0.1 | -1.1 | -1.2 |
| 140 | -3.5 | -3.2 | -2.2 | -2.3 | -2.8 |
| 148 | -1.3 | -3.5 | -1.7 | -1.4 | -1.9 |

PHOTOGRAPHIC RESOLUTION (LINE PAIRS PER MILLIMETER)

 INTERNATIONAL 3-LINE TEST-CHART, CONTRAST (LOG) : 2.0
 APERTURE : 4.0
 FILTER : 450 NM
 FILM : AGFAPAN 25 PROFESSIONAL (ASA SPEED: 25)
 DEVELOPER : AGFA-GEVAERT STUDIOINAL LIQUID 1:15 6 MIN

| ANGLE: (DEGREES) | 0 | 5 | 10 | 15 | 20 | 25 |
|---------------------|----|-----|----|----|----|----|
| RAD. | 95 | 106 | 66 | 26 | 25 | 25 |
| TANG. | 95 | 94 | 51 | 44 | 30 | 22 |

AWAR (AREA WEIGHTED AVERAGE RESOLUTION) IN LP/MM : 41

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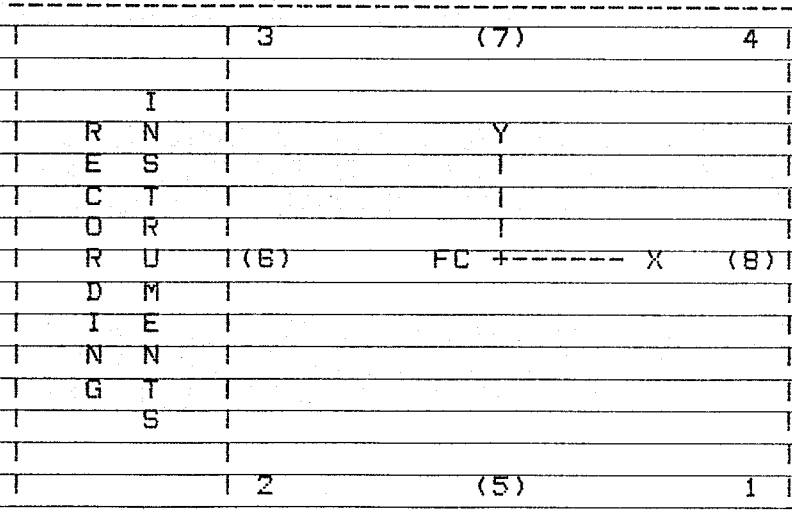
PRINCIPAL POINT OF AUTOCOLLIMATION (PPA) AND
 PRINCIPAL POINT OF SYMMETRY (PPS)

 REFERRED TO FC, SEE DIAGRAM

| | X (MM) | Y (MM) |
|-----|--------|--------|
| PPA | 0.023 | 0.024 |
| SPS | 0.024 | 0.024 |

FIDUCIAL MARKS, REFERRED TO FC

| | X (MM) | Y (MM) |
|---|----------|----------|
| 1 | 105.992 | -105.995 |
| 2 | -105.998 | -106.001 |
| 3 | -105.996 | 105.998 |
| 4 | 105.998 | 106.001 |



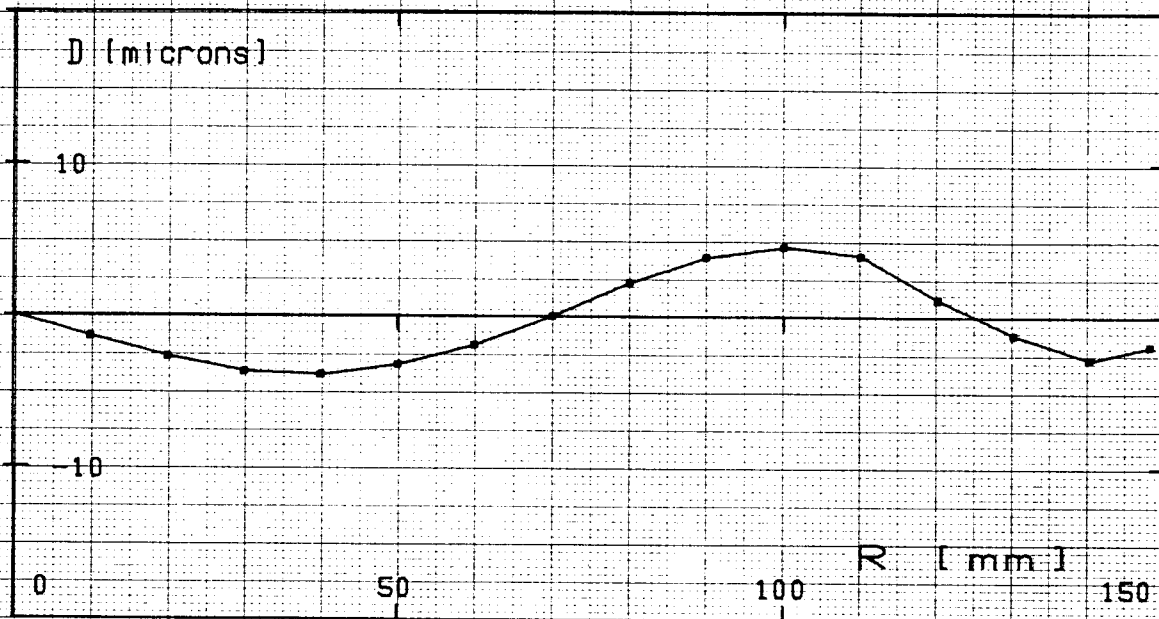
AS SEEN ON FOCAL PLANE FRAME

to.

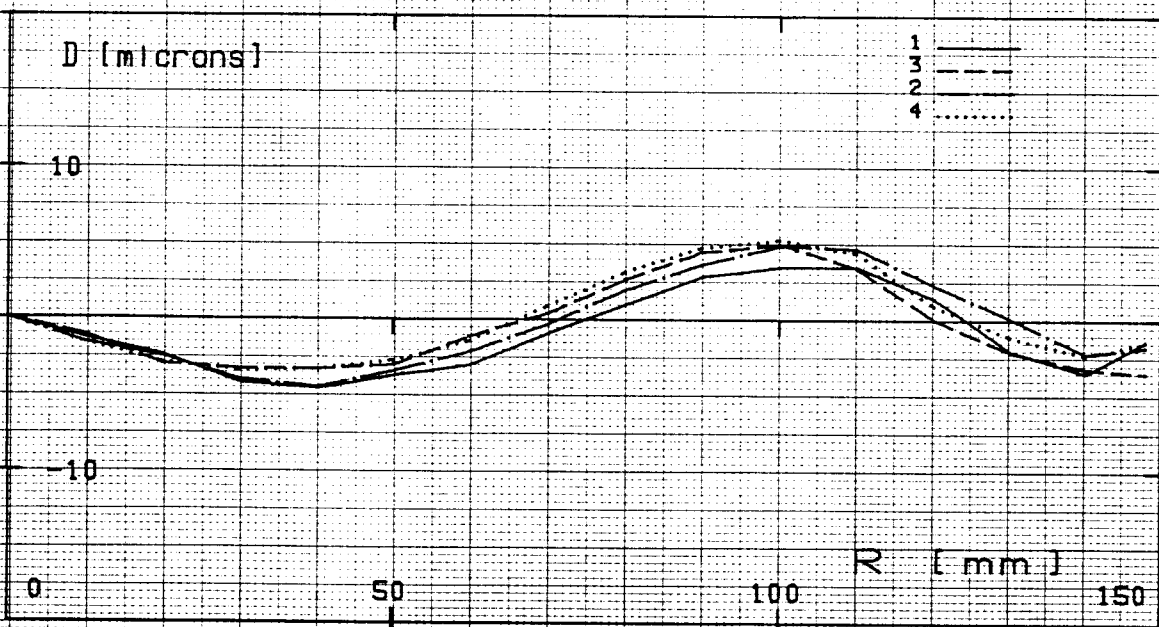
RC10 30 AT II NO. 4110

03.01.84

APERTURE : F / 4.0
FILTER ON GONIOMETER : 450 NM
FILTER ON CAMERA : --
P.D. (850m) : 305.36 MM



MEAN RADIAL DISTORTION CURVE



RADIAL DISTORTION FOR SEMI-DIAGONALS REFERRED TO PPS