

FAIRCHILD PRECISION CAMERA  
CALIBRATION LABORATORY

CALIBRATION REPORT

T-11 CAMERA SERIAL NO. 57-247  
INNER CONE SERIAL NO. 2119  
LENS SERIAL NO. 2119

VOID  
(SEE LATER  
ISSUE)

# CALIBRATION CERTIFICATE

Submitted By

FAIRCHILD CAMERA AND INSTRUMENT CORPORATION

JAMAICA I, N. Y.

Camera Type T-11 Camera 51-141

Cone No. SF 119

Lens SF 119

a) Make and Type Bausch & Lomb Metrogon

b) Nominal Focal Length 6 Inch

c) Maximum Aperture f/6.3

This Certificate applies to the above subject precision camera with lens as stated herein. It was tested at maximum aperture. All measurements were made with parallel light incident on the lens. The effective wave length was 575 millimicrons.

#### IV. CALIBRATION

The lines joining opposite pairs of collimation index markers intersect at an angle of  $90^\circ \pm 1$  minute of arc, and their intersection indicates the location of the point of symmetry with a probable error not exceeding 0.05 mm. ~~The de-~~  
~~parture of the principal point from the auto-collimation point is ----- mm.~~

#### V. COLLIMATION MARKER SEPARATION

A - B ..... 237.02 mm.  
C - D ..... 235.45 mm.

Markers A and B lie in the line of flight.

The calibration of this camera was performed at a temperature of approximately  $72^\circ$  Fahrenheit.

#### VI. CALIBRATED FOCAL LENGTH MARKER SEPARATION

These marker separations are set at a distance equal to the calibrated focal length  $\pm 0.05$  mm.

FAIRCHILD CAMERA AND INSTRUMENT CORPORATION

*A. J. Morton*

Precision Camera Calibration Laboratory

Jamaica, New York

### I. FOCAL LENGTH

Flange Focal Distance	Equivalent Focal Length	Calibrated Focal Length
MM	MM	MM
131.01	151.17	151.17

The probable errors of these determinations of focal length do not exceed  $\pm 0.10$  mm.

### II. DISTORTION

Distortion Referred to the Calibrated Focal Length

7.5°	15°	22.5°	30°	35°	40°	45°
0.01	0.03	0.07	0.12	0.13	0.08	0.13

The values of the distortion are measured in millimeters and indicate the displacement of the image from its distortion-free position. A positive value indicates a displacement from the center of the plate. The probable error is approximately  $\pm 0.02$  mm.

### III. RESOLVING POWER

(Aerographic Film)

	0°	7.5°	15°	22.5°	30°	35°	40°	45°
Tangential	22	24	22	19	18	18	18	13
Radial	22	22	22	20	19	17	16	15

The values of the resolving power are given at specified intervals from the center of the field and are obtained by photographing suitable test charts comprised of patterns of parallel lines. The series of patterns of the test chart are imaged on the negative with lines per millimeter spaced as follows: 10, 11, 13, 14, 16, 18, 20, 22, 25, 28, 31, 36, 40, 45, 50, 57, 63, 71, 80.

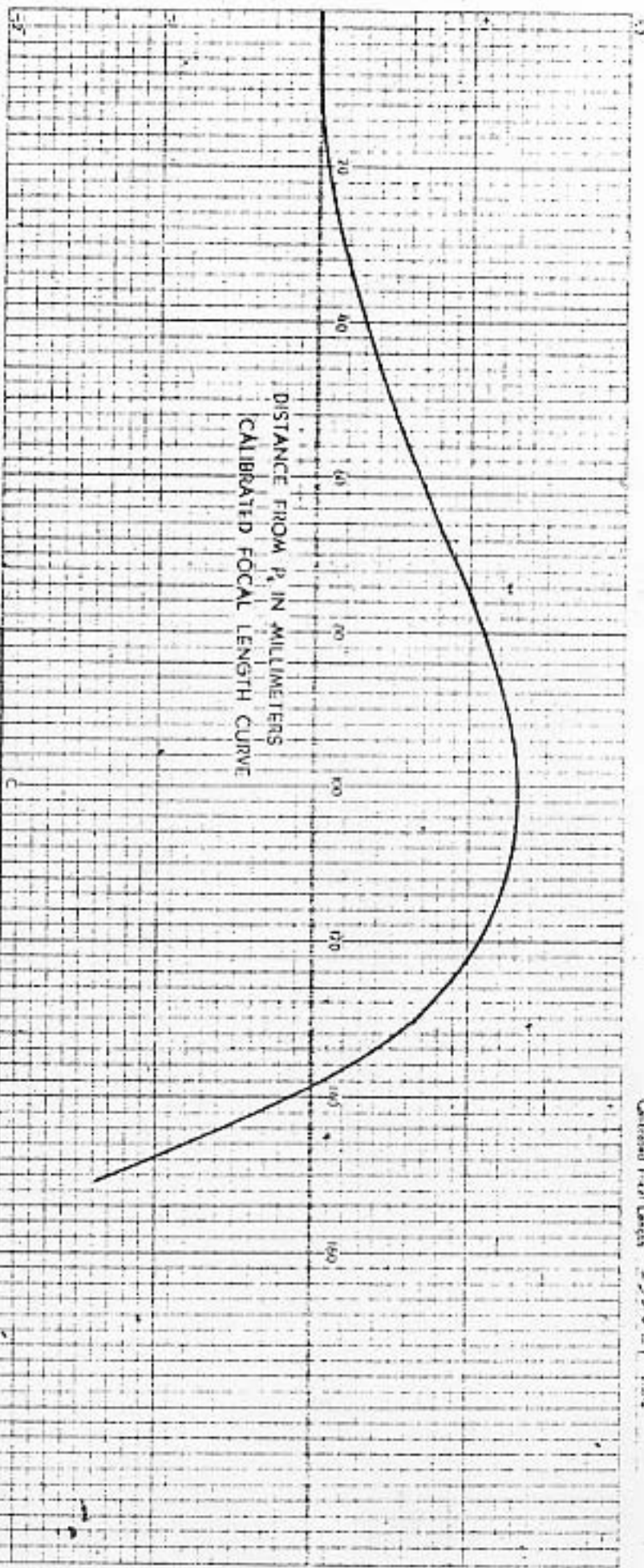
The row marked "*Tangential*" gives the number of lines per millimeter in the image on the negative of the finest pattern of the test chart that is distinctly resolved into separate lines when the lines lie perpendicular to the radius drawn from the center of the field. The row marked "*Radial*" gives similar values for the pattern of test lines lying parallel to the radius.

Fairchild Camera and Instrument Corp.  
 Jamaica, New York

SF 114

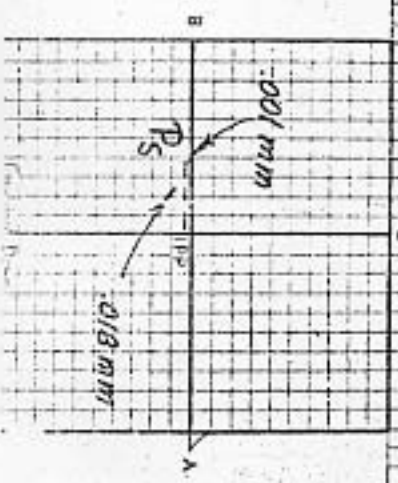
Cam SF 110  
 Case 51-141  
 Date 12.18.51  
 Calibrated Focal Length 152.17 mm

DISTORTION IN MILLIMETERS



DISTANCE BETWEEN FIDUCIALS  
 A — B = 237.02 mm.  
 C — D = 235.45 mm.

$X_{f_2} = \frac{0.018 \text{ mm}}{0.021 \text{ mm}}$   
 $Y_{f_2} = \frac{0.018 \text{ mm}}{0.021 \text{ mm}}$



RESOLUTION AEROGRAPHIC FILM

Angle off Axis	Line no. Tang.	Line no. Radial
0	22	22
7.5	24	23
15	25	24
22.5	27	25
30	28	26
35	29	27
40	30	28
45	31	29

Signed *A. J. Weston*  
 Precision Camera Calibration Laboratory