FORM NBS-259
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U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
WASHINGTON 25, D.C.

NATIONAL BUREAU OF STANDARDS
REPORT OF TEST

2.2/181055

on

ONE PHOTOGRAPHIC OBJECTIVE

Submitted by

Aliragon Engineering Company
2001 Military Highway, N.W.
San Antonio 13, Texas

I. Focal Lengths

Back Focal Distance 122.44 mm
Equivalent Focal Length 155.19 mm
Calibrated Focal Length 155.20 mm

The values of the focal lengths have been selected to give best average definition across the entire negative and do not necessarily correspond to those value of focal lengths which give best definition on the axis. The probable errors of these determinations of focal length do not exceed ±0.10 mm.

II. Distortion

A. Distortion referred to the equivalent focal length

5°	10°	15°	20°	25°	30°	35°	40°	45°
0	0	14	36	69	105	137	112	-114

B. Distortion referred to the calibrated focal length

5°	10°	15°	20°	25°	30°	35°	40°	45°
-1	-2	10	31	62	96	128	100	-128

The values of the distortion are measured in microns 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 does not exceed ±10 microns.

XXI. Resolving Power

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°
Tangential	63	63	46	39	32	32	27	27	27	10
Radial	63	63	53	46	39	32	32	27	32	27

The values of resolving power are given at 5° 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 the lines spaced in a geometric series of the fourth root of two lines to the millimeter. 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 the test lines lying parallel to the radius.

This report applies to the Bausch & Lomb Metrogon lens No. DP9662, nominal focal length 6 inches, maximum aperture f/6.3. It was tested at maximum aperture mounted in a Fairchild Type K-17C shutter case No. 54-1160. All measurements were made with collimated incident light using a K-3 filter, a tungsten source and Eastman Kodak spectroscopic emulsion Type V-F on selected flat glass plates. Development was in D-19 at 68°F for three minutes with continuous agitation.

The filter mounted on this lens has surfaces parallel to within ten seconds of arc.

For the Director,

Francis E. Washer, Chief
Refractometry Section
Metrology Division

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WPT:lhf