

RC 5-239

TEST OF AIR SURVEY CAMERA

Photographic Survey Corporation,  
1450 O'Connor Drive,  
Toronto 16, Ontario.

*J. Labrecque*

Wild RC-5 air survey camera No. 239 with Aviagon  
6" f/5.6 lens No. 239 was tested for compliance with the Spec-  
ification for Air Survey Photography, 1953.

Film Plane Flatness

The film locating surface as defined by the calibration frame  
departed from flatness by **under  $\pm 0.0005"$**  Consequently it **meets**  
Section 1.1.6.1 of the Specification.

Focus Setting

The camera as received was in satisfactory focus.

\*Filter Deviation

The maximum deviation produced by the filter was **4 sec.**  
The maximum rate of change of deviation was **satisfactory**. The  
filter **meets** the deviation requirements of Section 1.3.1.  
**This 1.3 x filter was marked NRL-239.**

Film Plane Illuminance

Illuminance in the film plane falls to **33%** of the maxi-  
mum value at **42.°5** off axis. This **meets** Section 1.6.3.3.1.

Fiducial Marks

Lines joining opposite fiducial marks intersect at 90°  
with an error of **under 1 min** This **meets** Section 1.1.7.1.

The intersection of these lines is within **0.50 mm.** of the  
principal point.

Calibration Focal Length

The calibrated focal length of the camera is **152.33 mm.**  
This **meets** Section 1.1.3.1.

Average Distortion

The maximum ~~departure of the average~~ radial distortion  
~~curve for this camera from the typical distortion curve of cameras~~  
~~made of this type~~ is **±0.01 mm.** This **meets** Section 1.6.2.3.

\*See summary.

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**\*\*** Asymmetric Distortion

The maximum asymmetry of radial distortion is 0.04 mm.  
This meets Section 1.6.2.2.

Summary

The camera meets the Specification for Air Photography, 1953.

\* A second filter, 2X, also marked NRL-239 accompanied the camera but was not used on it during calibration. The maximum deviation produced by this filter is 7 sec. It therefore meets the deviation requirements of Section 1.3.1.

**\*\*** Since this is a new camera, attention is drawn to non-mandatory section 1.6.2.4 of the Specification which read as follows:

"The tolerances given in Sections 1.6.2.1, 1.6.2.2 and 1.6.2.3 are such that they can be met by the majority of cameras presently being used for survey photography. Closer tolerances having about half the above values, would be desirable. These smaller tolerances can be met by new cameras. They will probably be made mandatory in this specification in a few years. Hence contractors are advised not to use the rather loose tolerances of the above sections in purchasing specifications for new cameras."

The 0.04 mm. of asymmetry of distortion found for this new camera is not less than half the amount permitted at present.