

**Conformation Inspection Test Plan & Procedures  
for BCA-1001 Boresighting Camera**



# BCA-1001 BCA Camera Conformation Test Manual

## 1. Purpose of Test

The purpose of this Test Plan is to establish the procedures to which the testing authority will follow in verification of the Graflex Boresight Camera Kit BCA-1001N-X or BCA-1001-X.

## 2. Applicable Documents

- A. BCA1001 Test Log, Camera (BCA1001TL)
- B. BCA1001 Test Log, Nitrogen Filled Camera (BCA1001NTL)

## 3. Description of Units to be Tested

The BCA-1001-N- Nitrogen Filled Boresight Camera or BCA-1001- Boresight Camera, and the mating Video Cable Assembly are all to be tested.

## 4. Test(s) Description

The Boresight Camera and mating Video Cable Assembly will be tested according to the design, performance, operating and interoperability characteristics found within the Data Logs described in Item 2 above.

## 5. Camera and Cable Tests

The following provide step by step instructions for testing and confirming each Boresight Camera and mated Cable meet the requirements found within the Boresight Camera Test Log.

### 5.A Camera Resolution:

Verify resolution via Boresight Test Bench #1 Collimator, USAF 1951 Resolution Chart, and BCA Camera Bench Fixture. Minimum resolution shall be 52 LP/mm. See Illustration 1 for the BCA Camera Bench Fixture.



**Illustration 1: BCA Camera Bench Fixture**  
– Holds Camera firmly in one position for use on Graflex Optical Bench.

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- 5.B Camera Interface: Verify via design prints and interface with telescope eyepiece. Slide BCA Camera onto Telescope eyepiece, snug fit without causing damage to eyepiece.
- 5.C Video Format: Verify via inspection of camera, vendor documentation.
- 5.D Cable Length: Verify by measuring and comparing to design prints.
- 5.E Knurled Knobs: Verify via operation. Confirm knobs turn smoothly and engage Telescope eyepiece insuring BCA Camera cannot move.
- 5.F Cable Continuity: Verify pin-out of Video Cable is assembled according to specification. The cable continuity, pin-out configuration, and solder joints are all confirmed by hooking the Camera and Cable to the BCA Camera/Cable Test Box and the BCA Camera Amperage Test Box.



**Illustration 2: BCA Camera/Cable Test Box**

- 5.G Connector Interface: Verify each cable connector mates properly (mechanical engagement) with mating connector. The mating (matching) BCA Camera and Cable shall be used when using BCA Camera/Cable Test Box.

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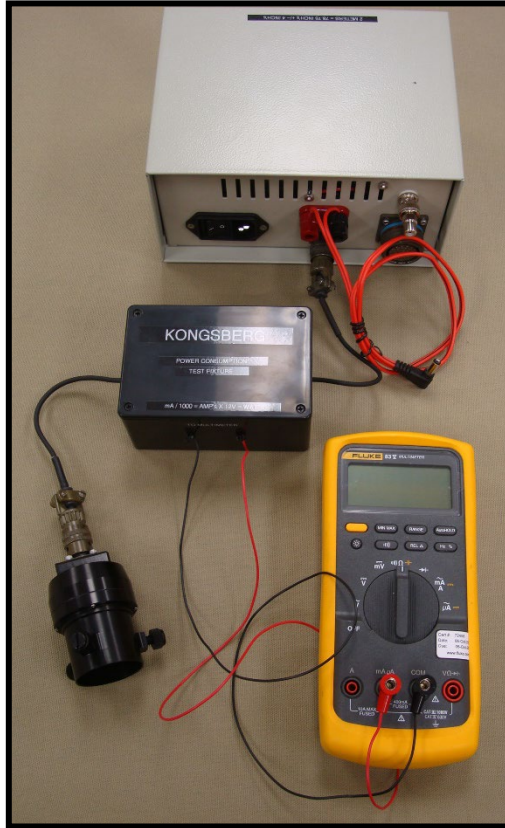


Illustration 3: BCA Camera Amperage Test Box

5.H Camera Function:

Verify Camera performs as designed confirming noise-free video stream. The mating (matching) BCA Camera and Cable along with the Camera Test Box shall be used throughout test. LCD is hooked to Camera Test Box "Video Output".

5.I Power Consumption:

Verify average power consumption is 1.2 Watts given a 12.0 Vdc input via demonstration, examination and test. The BCA Camera and BCA Camera Amperage Test Box (Illustration 3) shall be used throughout test.

5.J Pressurization:

Verified via demonstration, examination and test. Filled per and verified via calibrated test gauge or our Purge and Fill Test Bench (see Illustration 4A). Camera Pressure Connector shall be screwed into Purge Screw port and pressurization tested at 2 psi for 2 hours (See Illustration # 4A & 4B).

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Illustration 4A: Graflex Nitrogen Test & Purge Bench



Illustration 4B & 4C: Camera Pressure Connector is screwed into “purge port” and pressure held for 2 hours at 2 psi.

- 5.K Purging: Verify by inspection, test, and demonstration. Purge screw thread shall be free of burrs and sealing washer in new condition.
- 5.L Finish: Verified via physical examination. Finish shall be applied according to MIL-STD-171E and confirmed via vendor certificate of conformance to our design prints and MIL-STD-171E.



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**Illustration 5: Ohaus Electronic Scale**

5.M Weight: Verify weight does not exceed 113 grams via scale (see Illustration 5). The weight shall be 108 Grams  $\pm$  5 grams.