

**FLUKE®**

**Biomedical**

# **Nuclear Associates**

## **07-601, 07-619 and 07-618**

### **Fluoroscopic System Resolution Test Tools**

**Users Manual**

**Fluke Biomedical  
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## Section 1 General Information

### 1.1 General Information

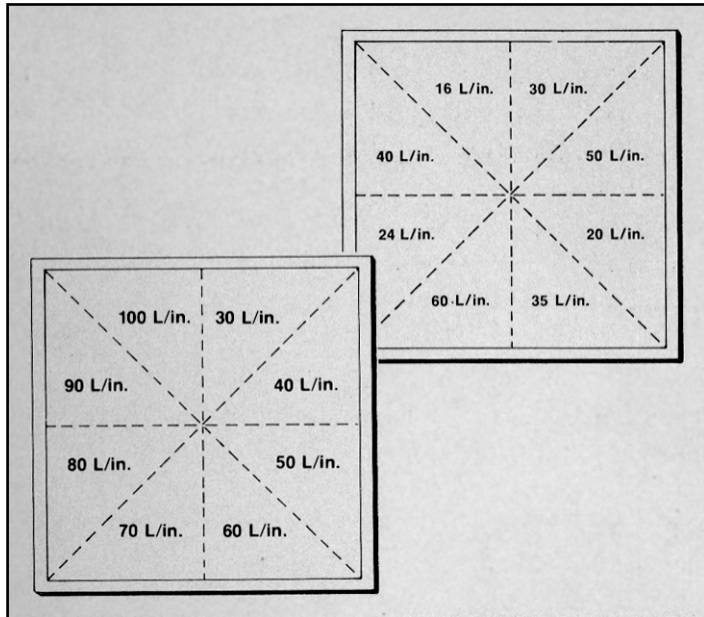


Figure 1-1. Fluoroscopic Resolution Test Tools

#### Models

- 07-601 Tool, 16-60 mesh
- 07-619 Tool, 30-100 mesh
- 07-618 Tool, 60-150 mesh

These 7½" square plastic plates each have a 7" square area containing 8 groups of copper or brass mesh screening in the following mesh-size ranges: 16 - 60 lines/inch or 30 - 100 lines/inch or 60 - 150 lines/inch. The screens are arranged in an irregular rotation to permit discrete visualization of groups. They can also be used to optimize television system focus as well as mirror optics and image intensifier settings.

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## **Section 2**

# **Instructions**

### **2.1 Instructions**

1. Place (or tape) the test tool in contact with the image amplifier base frame or film changer. For under-table intensifier tubes, lay the test tool on the tabletop.
2. Operate in the fluoroscopic mode at the lowest kVp and mA possible. Collimate so only the pattern is visible with the edge limited by the collimator.
3. The test may be repeated using a suitable phantom, such as the Nuclear Associates 07-706, as a beam block to determine clinical resolution capability.
4. For cineradiographic systems, exposure of only a few frames is needed to evaluate system resolution.

CAUTION
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Only persons qualified to work on image intensifier x-ray systems should attempt to focus and align them. Testing to the stated criteria will indicate proper performance. If the system falls short of its capabilities, contact qualified service personnel.

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## **Section 3**

# **Test Interpretation**

### **3.1 Test Interpretation**

1. A 6" image intensifier system observed via the monitor should be capable of resolving 30 mesh in the center of the field, and a 9" system must display at least 20 mesh.

It has become common practice to adjust the television to flatten the top and bottom of the 9" field so that only about 8" of the field are visible at the entrance aperture (most 9" image intensifier tubes are really 8½" diameter). Therefore, most 9" systems should resolve 24 mesh. If the 6" systems are similarly adjusted so that a 5" field is displayed, then they should resolve 35 mesh via the monitor. When 9" systems are in the magnified mode, they must resolve 30 mesh and may resolve 35 mesh via the monitor.

The monitor must be adjusted for both optical and electrical focus. It is a common occurrence in many optical systems for the lens mount or the camera tube mount to become loosened with age so that, when the position of the system is altered, it goes out of focus mechanically. If possible, tilt the entire x-ray system and determine that the entire system remains in good focus.

2. Film camera systems must resolve everything present at the output phosphor. The camera should be used to photograph the mesh pattern, and the lens adjusted for best focus during a series of test exposures. The lens iris and x-ray factors should be adjusted for acceptable noise...decrease the iris diameter and raise the mAs/image to decrease noise.

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