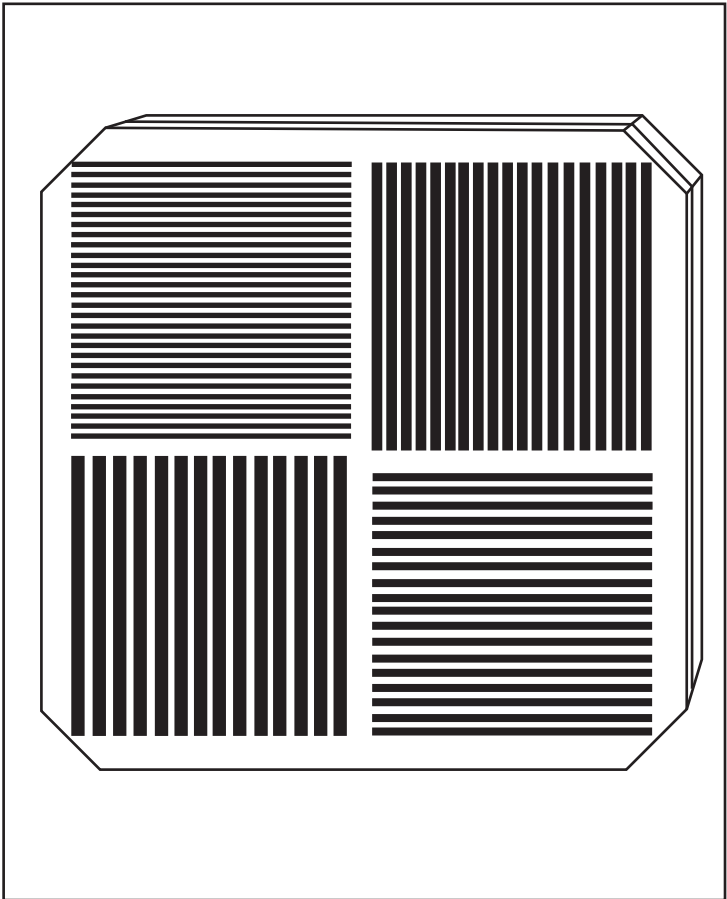


# BAR PHANTOMS

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## INSTALLATION/ OPERATION MANUAL

243-800  
243-935  
243-975  
243-985  
243-986  
243-955



# BIODEX

Biodex Medical Systems, Inc.

20 Ramsey Road, Shirley, New York, 11967-4704

Tel: 800-224-6339 (*Int'l 631-924-9000*),

Fax: 631-924-9241 Email: [info@biodex.com](mailto:info@biodex.com), [www.biodex.com](http://www.biodex.com)

**This manual covers installation and operation procedures for the following products:**

- 243-800 Phantom, Bar, Standard, High Resolution
- 243-935 Phantom, Bar, Rectangular
- 243-955 Phantom, Bar, Cardiac
- 243-975 Phantom, Bar, Rectangular, Triple Head
- 243-985 Phantom, Bar, E-Cam, 4-Quadrant
- 243-986 Phantom, Bar, Symbia

**INTRODUCTION**

Bar Phantoms offer precise determination of camera intrinsic resolution, collimator spatial resolution, field size and linearity. We offer a range of sizes manufactured to the highest quality standards.

**TO DETERMINE INTRINSIC RESOLUTION (WEEKLY)**

1. Remove the collimator from the camera face.
2. Invert the camera head so that the crystal is facing up.
3. Install the bar phantom on the camera by carefully placing the Phantom on the crystal face.
4. Place the camera's holding fixture (if there is a fixture) over the phantom so that the appropriate holes in the fixture align with the collimator bolt holes.
5. Secure the fixture to the detector head.

**NOTE:** *Biodex does not supply a fixture. If there is no camera holding fixture, face the phantom and camera up and put the point source at a distance above the phantom, or use a Flood Phantom.*

6. Invert the detector head and elevate it to its highest position.
7. Using a point source (10mCi of Tc-99m in a lead container with a 1/8 inch hole drilled in the top) aligned to crystal center, accumulate 500,000 to 900,000 counts with a 20% window. Record the image on film.
8. Depending upon the type of camera, the film or image obtained should resolve the:
  - 1/4", 3/16", 5/32" or 1/8" bars on the Standard High Resolution Bar Phantom
  - 2 mm, 2.5 mm, 3 mm, or 3.5 mm on the Rectangular Bar Phantom, Triple Head Rectangular Bar Phantom, Cardiac Bar Phantom, E-Cam Bar Phantom and Symbia Bar Phantom

This is the intrinsic resolution of the system. At the edges of the field a curving of the bars may occur. This barreling should be obscured by the addition of the collimator. Edge packing or broadening of the bars may also occur and should be obscured by the addition of the collimator. The images should be uniform with straight bars.

9. Remove the bar phantom and fixture and reinstall the collimator.

### **TO DETERMINE COLLIMATOR RESOLUTION (MONTHLY)**

1. Invert the camera head so that the collimator faces up and place the bar phantom on top of the collimator.
2. Place a flood source on top of the bar phantom. The flood source should contain 1 to 2 mCi of Tc-99m or other appropriate radionuclide.
3. With a 20% window, accumulate 500,000 to 900,000 counts. Record the image on film. Depending on the camera system utilized, resolution should occur as follows:
  - 1/4", 3/16", 5/32" or 1/8" on the Standard High Resolution Bar Phantom
  - 2 mm, 2.5 mm, 3 mm, or 3.5 mm on the Large Rectangular Bar Phantom, Cardiac Bar Phantom, and Triple Head Bar Phantom, E-Cam Bar Phantom and Symbia Bar Phantom

By keeping a regular record of the camera's performance, any changes in response can easily be detected. If a malfunction should occur, this performance record may help the service personnel to diagnose the malfunction and facilitate repairs.

### **CLEANING INSTRUCTIONS**

- As needed, wipe down with a damp rag and mild detergent. If contaminated, use diluted solution of Radiacwash (#005-100).

### **SPECIFICATIONS**

#### **243-935 Phantom, Bar, Rectangular**

Dimensions: 22.25" l x 17" w x .5" h (56.5 x 43.2 x 1.27 cm)  
Lead Bar Widths: .079", .098", .118" and .138" (2, 2.5, 3 and 3.5 mm)  
Field Across Bar Configurations: 21" l x 15.9" w (53.3 x 40.5 cm)  
Shipping Weight: 21 lb (10 kg)

#### **243-800 Phantom, Bar, Standard, High Resolution**

Dimensions: 16.875" l x 16.875" w x .5" h (43 x 43 x 1.28 cm)  
Lead Bar Widths: .25", .187", .156", and .125" (6.4, 4.8, 4 and 3.2 mm)  
Field Across Bar Configurations: 15.875" l x 15.875" w (40.3 x 40.3 cm)  
Shipping Weight: 14 lb (6 kg)

#### **243-985 Phantom, Bar, E-Cam, 4-Quadrant**

Includes two removable screw knobs for insertion/removal of phantom from camera head.  
Dimensions: 16" l x 21.5" w x .5" h (41 x 55 x 1.27 cm)  
Lead Bar Widths: .079", .098", .118" and .138" (2, 2.5, 3 and 3.5 mm)  
Field Across Bar Configurations: 20.3" l x 14.875" w (51.6 x 37.8 cm)  
Shipping Weight: 19 lb (8.7 kg)

**243-986 Phantom, Bar, Symbia**

Includes two removable screw knobs for insertion/removal of phantom from camera head.

Dimensions: 16" x 21.4" w x 5" h (41 x 54.36 x 54.61)

Lead Bar Widths: .079", .098", .118" and .138" (2, 2.5, 3 and 3.5 mm)

Field Across Bar Configurations: 20.3" l x 14.875" w (51.6 x 37.8 cm)

Shipping Weight: 19 lb (8.7 kg)

**243-955 Phantom, Bar, Cardiac**

Dimensions: 15.5" l x 9.25" w x .5" h (39.4 x 23.5 x 1.27 cm)

Lead Bar Widths: .079", .098", .118" and .138" (2, 2.5, 3 and 3.5 mm)

Field Across Bar Configurations: 14.5" l x 8.25" w (36.8 x 21 cm)

Shipping Weight: 15 lb (6.80 kg)

**243-975 Phantom, Bar, Rectangular, Triple Head**

Dimensions: 11" l x 18" w x .5" h (28 x 45.7 x 1.27 cm)

Lead Bar Widths: .079", .098", .118" and .138" (2, 2.5, 3 and 3.5 mm)

Field Across Bar Configurations: 10" l x 17" w (25.4 x 43.2 cm)

Shipping Weight: 19 lb (8.7 kg)

*Authorized European Community Representative:*



Emergo Europe

Molenstraat 15

2513 BH, The Hague

The Netherlands

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