

P+[®] Imaging System Readiness Testing for **Digital (CR / DR) Systems**

"BY PERFORMING THIS TEST DAILY, PRIOR TO EXPOSING PATIENTS, YOU ARE HELPING ELIMINATE UNNECESSARY RADIATION EXPOSURE." STEVE R. AREY CRES,CBET P+ DESIGNER

Instructions for plotting imaging system readiness tests on form ASICR

- 1. Cassette number:** Ensure that warm-up procedures have been performed on the x-ray tube. Prepare a **numbered** cassette, used daily for patient exams and place the cassette in the table bucky tray. Write the cassette **number** in the plotting chart block provided for that day. Center the tray using the collimator alignment light. Place the P+[®] on the table and orient the "HEAD" markings toward the head of the table. Center it in the light field at 40" (102cm) SID. Collimate to the top edges of the P+[®], you should see an 8" shadow on the table top at the base of the phantom. Look at the collimator dials to see that they are pointed on 8" x 8" (20cm x 20cm) (+/- .8" or +/-2cm).
- 2. Exposure Number:** Expose the P+[®] phantom using your technique for an average adult, (23cm) AP Lumbosacral (L/S) Spine exam, which produces an Exposure Number in the range expected for your system. Look at the finished image. When you feel you have produced the optimal image, write the technique factors (**kVp, maS**) for that optimal image in the blocks provided at the top right of your daily system readiness chart. **Use this same technique each day prior to x-raying patients** as you check your systems ability to resolve the objects in your phantom image.
- 3. Artifacts / noise:** Look over your phantom image for artifacts which should **not** be present. Any artifacts should be recorded by placing an "x" in the appropriate box for that day. Artifacts should be investigated to locate the source; cassettes, grids, mechanical parts in the table, digitizers, computer software, archival devices, monitors, recording and storage devices. Cassettes should all be numbered and alternated to check for artifacts in all cassettes regularly.
- 4. High Contrast Sensitivity:** There are a total of **five (5) numbered line mesh patterns** which are machined inside of your P+[®] phantom. The line mesh patterns are set on a 45° angle with respect to the "+" machined in the top surface of the phantom. The mesh vary in sizes from 20 lines per inch (.8 lp/mm), 30 lines (1.18 lp/mm), 40 lines (1.57 lp/mm) 50 lines (1.96 lp/mm) and 60 lines per inch (2.36 lp/mm). Plot on the control chart the highest number of mesh visible in the phantom image for that day. If the expected number of lines can not be visualized, contact your service company for repairs.
- 5. Low Contrast Sensitivity:** There are a total of **16 holes in groups of four (4)** machined inside of your P+[®] phantom. Plot on the control chart the total number of holes visible in your P+[®] phantom image for that day. If the expected number of holes can not be visualized, contact your service company for repairs.

Note: The P+[®] phantom imaging test method does not replace the need for annual calibration of your imaging equipment by a qualified and registered service company or medical physicist. See page 2 of instructions for further information.