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Dr. B. K. Sapra  
Head, RP&AD

**Government of India  
Bhabha Atomic Research Centre  
Radiological Physics & Advisory Division**

Ref: RPAD/MPS/2021/112792

August, 31 2021

**Invitation of Quotation: Fabrication of quality assurance phantom for digital radiography equipments**

**Brief Description**

The QA phantom for digital radiography equipments will be made up of Perspex sheet of size 30 x 30 cm<sup>2</sup> and thickness of 1.0 cm. The Perspex sheet will have seven embedded test objects to measure various QA parameters of x-ray machine such as x-ray beam collimation, central x-ray beam alignment, dynamic range, spatial resolution, low contrast resolution, signal uniformity and modulation transfer function (MTF). For checking the congruence of radiation and optical field, Perspex sheet will have radioopaque markings for defining x-ray beam sizes of 30 x 30, 26 x 26, 23 x 23, 20 x 20 cm<sup>2</sup>. Dynamic range measurement will be done using a high contrast resolution step wedge made up of Copper of various thicknesses. Embedded low contrast resolution test tool will have 8 discs of different thicknesses made up of low density Polystyrene. For testing central x-ray beam alignment, a conical cylinder of 5 cm height and 2.5 cm diameter along with two steel balls each of 1 mm diameter positioned at bottom and top of the central axis of the cylinder will be used. For MTF evaluation of the x-ray system, a tantalum sheet of 3 x 3 cm<sup>2</sup> and 100 micron thick will be embedded into the phantom. A line bar pattern made up of high 'Z' material will be provided by us for embedding into the Perspex sheet. For signal uniformity checking of the x-ray system, Perspex phantom will have radioopaque markings in the periphery and central area. Potential fabricator may contact us for any clarification in the design and dimension of the QA phantom/test objects. Fabricator need to obtain approval on their final fabrication drawing before starting the work.

Place of Delivery : Room No. 404, CT&CRS, Anushaktinagar, Mumbai 400 094

Due Date : 30-09-2021

Please send your quotation for the above fabrication & supply in a sealed envelope superscribed "Quotation for Fabrication of quality assurance phantom for digital radiography equipments. Attention: Dr. (Smt) Reena Sharma" so as to reach the undersigned on or before 30-09-2021. Rate(s) shall be typewritten only.

Please note that quotation should be on letter head/ quotation format and should have Good and Service Tax Identification number (GSTIN) and PAN number. The quotations should be delivered to our office through post only.

  
(B. K Sapra)

Head, RPAD

**Quotations should be addressed to:**

Dr. (Smt) Reena Sharma,  
Medical Physics Section, RP&AD,  
Room No. - 404, CT&CRS, Anushaktinagar,  
Mumbai - 400 094. Tel: 022-2559-8714