



PET IQ

Anthropomorphic PET Phantom

PET IQ is a realistic anthropomorphic PMMA vessel, which simulates the trunk of the human body (fig. 1), and complies with standards **NEMA-NU2 (2007)** and **IEC 61675-1 (2014)** for quality control of image quality in PET.

On one face of the phantom is a circular plate into which six hollow PMMA spheres can be screwed. The inner active diameters of the spheres are 10mm, 13mm, 17mm, 22mm, 28mm and 37mm (fig. 2); and the wall thickness is 1mm. The spheres are filled with water for cold lesion imaging and with ¹⁸F_{FDG} for hot lesion imaging.

A 50mm diameter cylindrical lung tissue mimicking insert is attached to the centre of the circular plate in order to provide realistic attenuation.



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Details



fig. 1 PET trunk



fig. 2 Spheres insert

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- A PMMA holder is provided for convenience when filling the spheres with solution.



fig. 3 Sphere holder

The spheres are placed in the holder and filled with activity through the threaded boss. Only one needle length is required unlike externally filled phantoms. The rods are then screwed onto the spheres and the rod/sphere assembly is screwed to the cap and into the lid of the phantom.

The spheres and rods are low attenuation PMMA, not high attenuation and fragile glass as with other manufacturers. This has two benefits; the spheres are less likely to break when filling with a metal needle and in transport, and the rods are solid, so there is not a 'capillary' of activity adjoining the sphere.



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