



Proton and X-ray Digital Camera Phantoms

3D and 2D Beam Metrology - Logos Systems International

Fast and Accurate End-to-End Quality Assurance

FOR IMMEDIATE RELEASE

New Proton Range Verification Tool from Logos Systems Int'l Captures Full Span of Beam Energies

Scotts Valley, CA – September 10, 2020 – Logos Systems Int'l, a pioneer in digital camera beam metrology, today announced the release of the Ranger-300 proton beam range verification tool. It allows direct visualization of the proton beam path using a transparent block of scintillator. Up to 30 cm of the beam path may be visualized giving physicists a detailed view at the Bragg peak along with proximal and distal locations of interest.

Until now, a typical beam QA tool consisted of separate sensors placed at discrete positions along the beam path limiting the overall resolution. Sample measurements at a higher resolution could only be obtained with range shifters and interpolation. The Ranger-300 has a continuous optical view of the beam with no discontinuities. In addition, the Ranger-300 scintillator is close to tissue equivalence and has no electrodes or other metallic components that may distort measurements.

"Physicists were asking us for a QA tool that allowed them to see where the actual beam was traveling," said Brett Nelson, President and Director of Engineering at Logos Systems. "The Ranger-300 does that in real-time, and gives them an unprecedented view of the beam as it travels toward its target depth."

In the treatment room, the Ranger-300 is mounted on the top of the XRV-3000 Eagle or XRV-4000 Hawk phantom designed by Logos Systems. It is oriented so that the beam enters the 40 x 40 mm target window of a plastic scintillator block that is approximately 305 mm long. The water equivalent ratio (WER) for the scintillator is approximately 1.03.

The path of the beam from the entry point into the block through the 305 mm length is captured by the XRV Hawk or Eagle camera at a resolution of 0.27 mm/pixel and the depth analysis is performed by the Logos high-powered BraggPeakView software.

"The effective resolution of Ranger measurements is better than 0.5 mm over energy ranges from 70 to 230 MeV." said Nelson."

The Ranger-300 module weighs only 2 kg (4 lbs). The XRV-3000 Eagle or XRV-4000 Hawk that support it weigh less than 8 kg (17 pounds). Because of its streamlined design and ease of use, it can be used as often as needed including daily QA.

"With its unique view of the beam, remarkable precision, and unsurpassed speed, the Ranger-300 is designed for facilities that have the highest standards of excellence and value." Nelson said.

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About Logos Systems Int'l

Logos Systems Int'l, based in Scotts Valley, California, specializes in developing and manufacturing proton and x-ray beam calibration systems using its innovative scintillator technology. Their products deliver results in real-time and without film, providing the benefits of high speed and low cost. With its heritage in Silicon Valley, it is known worldwide as a leader in computer vision and precision metrology.

For more information, visit www.logosvisionsystem.com, or email info@logosvisionsystem.com

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