XRV-3000 Eagle QA Phantom



XRV-3000 Eagle

XRV-3000 Eagle Operation



The planar scintillator converts the invisible radiation beam (A) into visible light (B), which reflects off the angled mirror and is captured by the CCD or high speed CMOS camera. Data is then processed in the included software

Easy Setup Process



Target and side markings for fast laser setup Six embedded tungsten fiducials for kV image alignment

Interchangeable Scintillator Modules



Standard Gadox Scintillator ClearView Plastic Scintillator

High sensitivity for individual spot profiles and XY pattern QA Medium sensitivity, designed for even response large field QA ClearView UHDR Glass Scintillator

Lowest sensitivity for ultra high dose rate captures and FLASH experimentation Ranger-300 Plastic Scintillator

Medium sensitivity for fast, single beam, any angle Bragg Peak QA

Beam Profile and XY Grid Analysis



3D viewing of spot profiles and dual orientation Gaussian fitting

				points, and update		
В	с	D	E			
		Average Spot-to-grid distance:	0.271648			
B Spot Distance from ist from grid (mm) Y Dist 0.2774 0.1499 0.0225 -0.105 -0.2324 0.1943 0.0668 -0.0606 0.3661 0.0003 -0.1271 0.0225 0.1721 -0.2324 -0.3599 0.3439	ce from Grid	Total Spot-to-grid distance:	17.1138	•		
Dist from grid (mm)	Y Dist from grid (mm)	Abs. Dist from grid (mm)				
0.2774	0.3487	0.445581025				
0.1499	0.3487	0.379554607		· · · · · · · · · · · · · · · · · · ·		
0.0225	0.3487	0.349425157				
-0.105	0.3487	0.364165745		• • • • • • • • • • • • • • • • • • • •		
-0.2324	0.3487	0.419048267				
0.1943	0.3487	0.399179383				
0.0668	0.3487	0.355040744		-103+-103+-103+-103+-103+-103+-103+-103+		
-0.0606	0.3487	0.353926617				
0.3661	0.3487	0.505589656				
0.0003	-0.1149	0.114900392		•		
-0.1271	-0.1149	0.171337153				
0.0225	-0.1149	0.117082279				
0.1721	-0.1149	0.206930955		•		
-0.2324	0.1619	0.283233773				
-0.3599	0.1619	0.394638594				
0.3439	0.1619	0.380103696		•		
0.2164	0.1619	0.270260189		Measured Point		

1										
1	Target Grid Pitch		Grid Center		Error Thresholds		Pattern Size			Chart Options
I	X (mm):	5.000	Center X (mm):	0.000	Borderline (mm):	0.2	Xmin (mm):	-200.277	-205	Xtick
	Y (mm):	5.000	Center Y (mm):	0.000	Noncompliant (mm):	0.5	Xmax (mm):	200.3661	205	10
					Average Error X (mm):	-0.0345	Ymin (mm):	-149.651	-155	Ytick
I					Average Error Y (mm):	0.0123	Ymax (mm):	150.0581	155	10
-	Optimize Grid Optimize grid center, compute grid points, and update plot.		Plot Grid Compute grid points based on grid center and update plot.			Reset Move grid center to default position (0,0), compute grid				



Export captures to Excel with color coded distance thresholds, measurements, and automatic grid plotting

Proton Field Assembly and QA





Beam streaks can be assembled into a larger field using software integration Analysis of a proton field can be done on either an assembled field with any scintillator or a single frame integration with a ClearView scintillator.

Proton Range Verification with the Ranger-300



BraggPeakView integrates, corrects for quenching in the scintillator, and performs measurements on each beam

Automatic export into Excel for a summary of P80, P90, R100, D90, D80, and D20 deviations from input values and an indepth analysis for each beam

Manual and Motorized Gantry Cradle Options





Manual Gantry Cradle for individual gantry angle deliveries Motorized Gantry Cradle for automatic gantry following, step/shoot, or programmed motion

Motorized Gantry Cradle Software



BeamWorks Angle Server keeps track of the snout and Gantry Cradle using inclinometers and predicts upcoming motion, ensuring angular deviations are below 0.5 degrees

👫 BeamWorks Cor	ntrol V2.8						- 0	×		
BeamWorks Gantry Cradle Control										
	29.9	29	29.9 30		0.03		STOP			
Otation	Gantry Cradle Snout Angle Internal Motor Angle									
Status: Output Data: I/1/14000.14000P190.190R Gantry cradle heartbeat motion started Raw Data Received: /0@:/?										
Gantry (Cradle Angl	e Control Jo	g/Teach	Plan Co	ntrol Options	Settir	ngs			
Gantry Cradle Manual Positioning 30.00 (30.00) Speed: Target Angle										
3.0 deg 2.0 deg 1.6 deg 1.2 deg	g/sec g/sec g/sec g/sec	Faster	ccw	10 (deg) / 1 (deg)	CW 10 (de	eg)	Snout Hunt Enable			
1.0 deg 0.8 deg 0.6 deg	g/sec g/sec g/sec	Slower	ccw	0.1 (deg)	CW 0.1 (d	eg)	-0.1 Snout Delta Angle			
Adaptive Follow Mode										
	Start	Resume	Home: Gantry Cradle Internal			Hunt	Hunt: Snout			

BeamWorks Control commands the Gantry Cradle, including 'jogging' to the current snout location, 'hunting' the snout with large movements, and 'following' the snout in small steps

Connectivity and Calibration







High Bandwidth USB 3.0 connection to laptop or workstation using a single power-over-fiber-optic cable

Easy to perform calibration using a grid of dots in the scintillator slot, backlit with included light bar

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