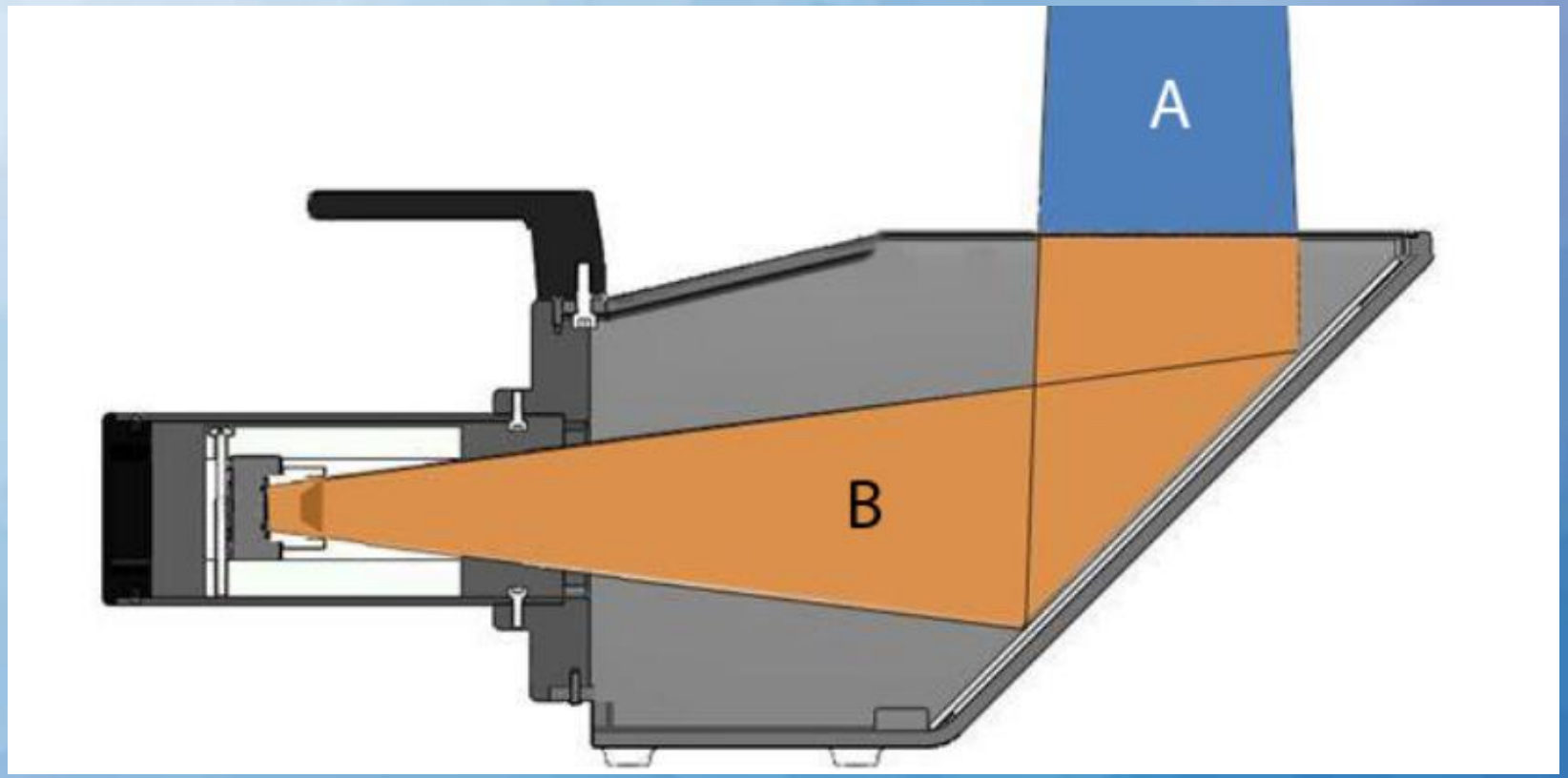
Logos Systems

XRV-3000 Eagle Proton and X-Ray Beam Quality Assurance

LogosVisionSystem.com

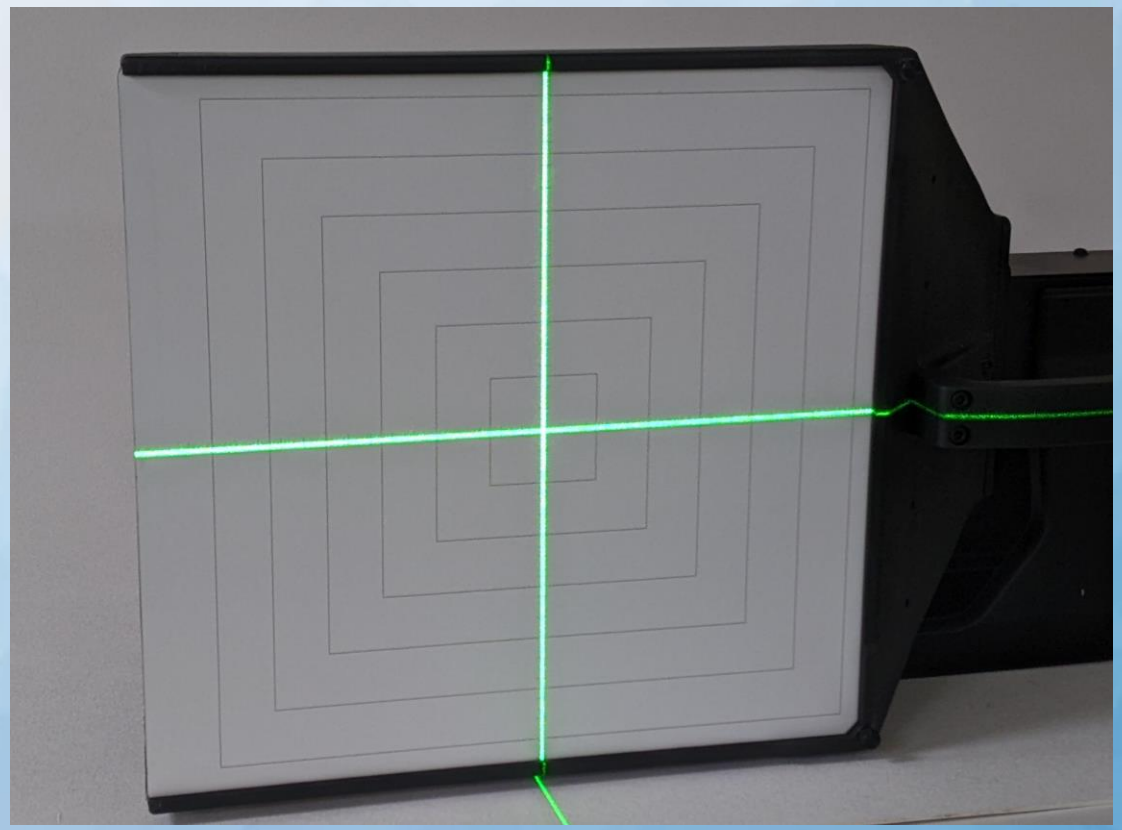
XRV-3000 Eagle QA Phantom

XRV-3000 Eagle Operation



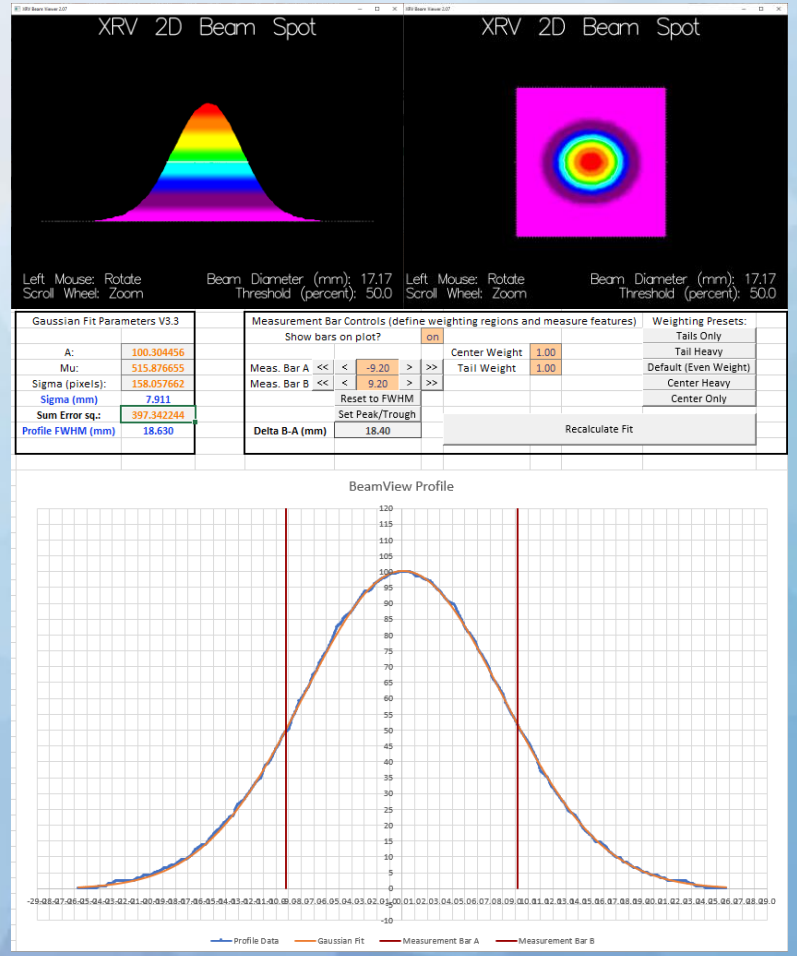
The planar scintillator converts the invisible radiation beam (A) into visible light (B), which reflects off the angled mirror and is captured by the CCD or high speed CMOS camera. Data is then processed in the included software

Easy Setup Process



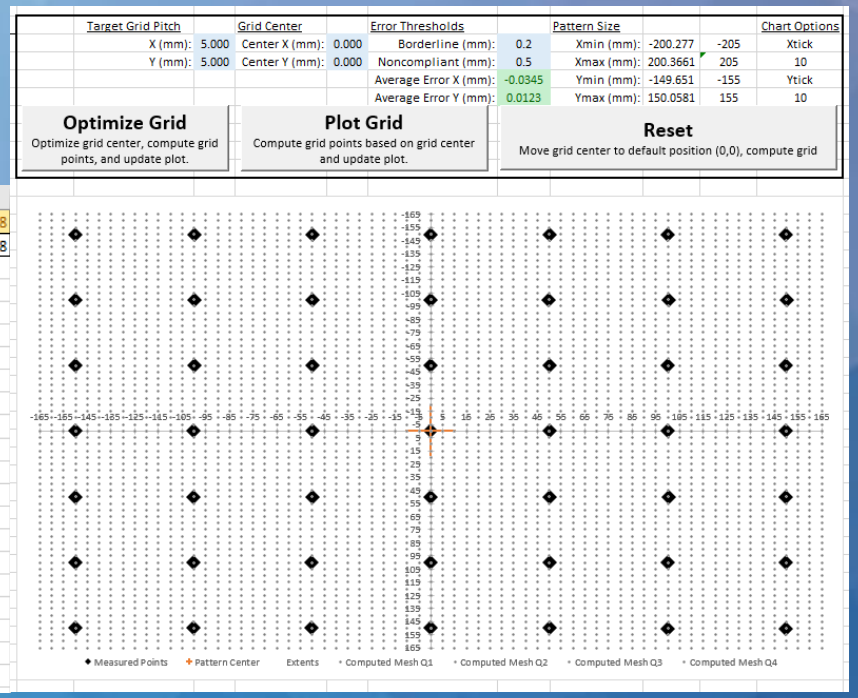
Target and side markings for fast laser setup
Six embedded tungsten fiducials for kV image alignment

Beam Profile and XY Grid Analysis



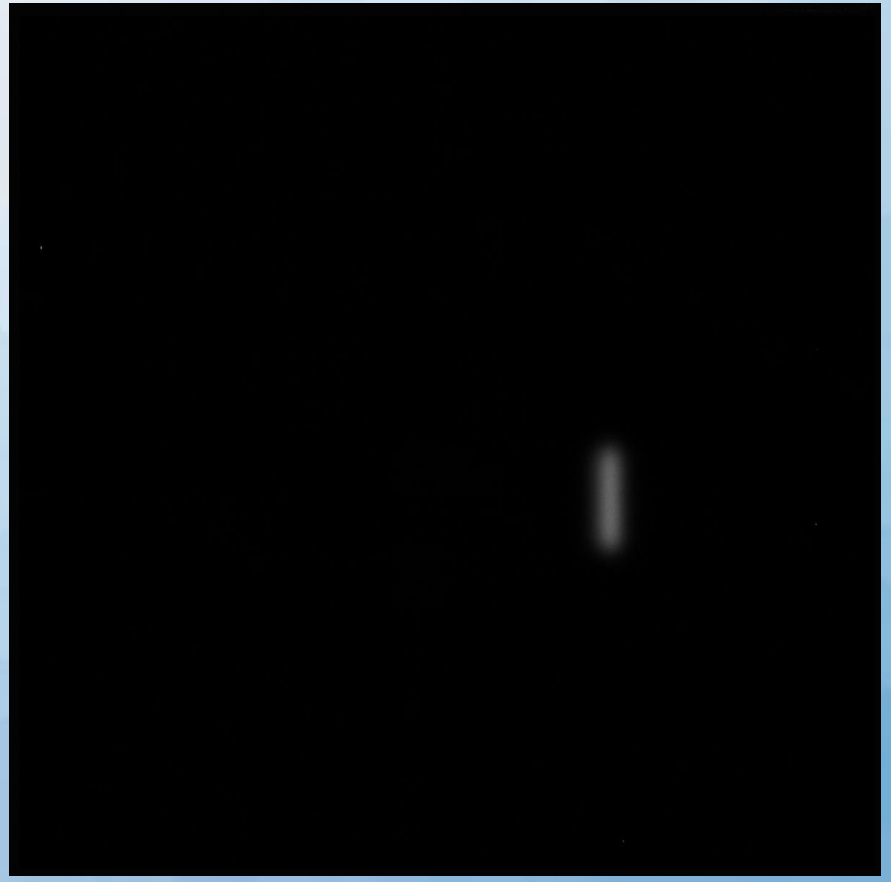
3D viewing of spot profiles and dual orientation Gaussian fitting

B	C	D	E
		Average Spot-to-grid distance:	0.271648
Spot Distance from Grid		Total Spot-to-grid distance:	17.1138
X 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	
-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	
0.089	0.1619	0.184750129	

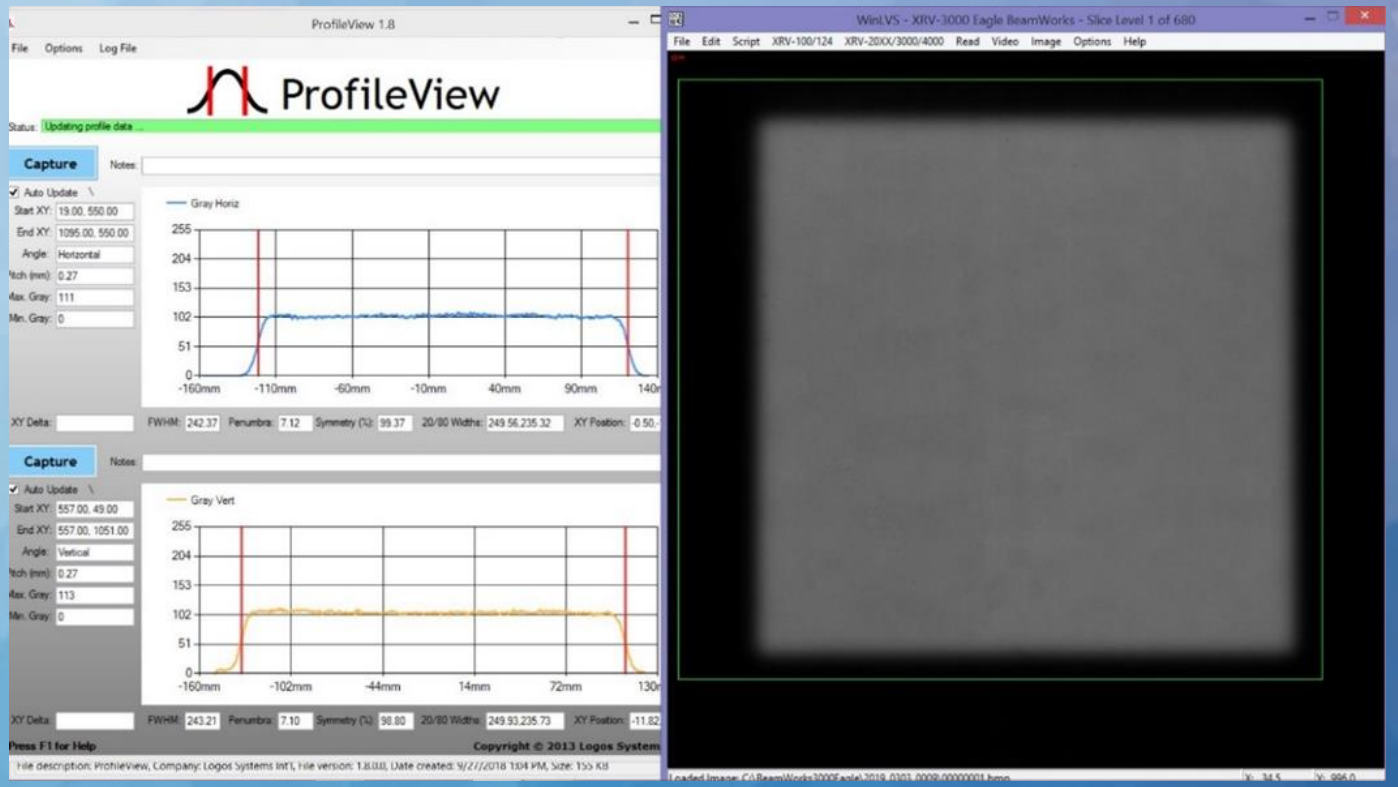


Export captures to Excel with color coded distance thresholds, measurements, and automatic grid plotting

Proton Field Assembly and QA

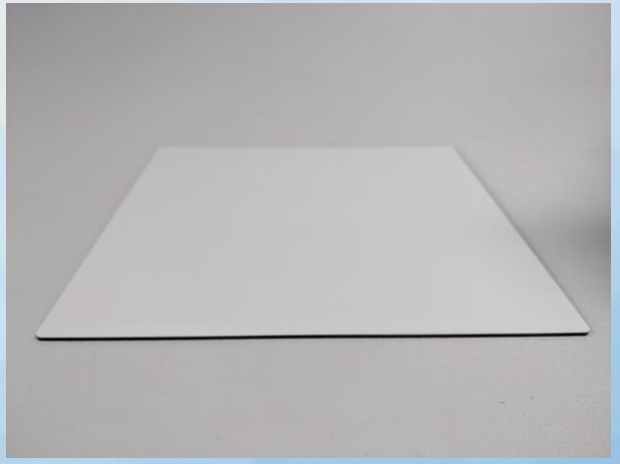


Beam streaks can be assembled into a larger field using software integration



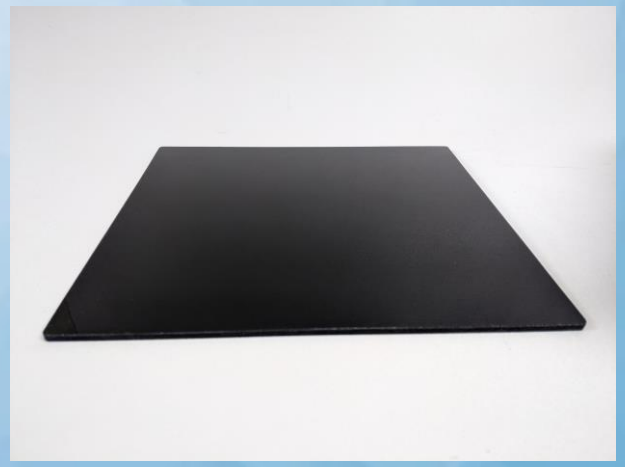
Analysis of a proton field can be done on either an assembled field with any scintillator or a single frame integration with a ClearView scintillator

Scintillator Modules



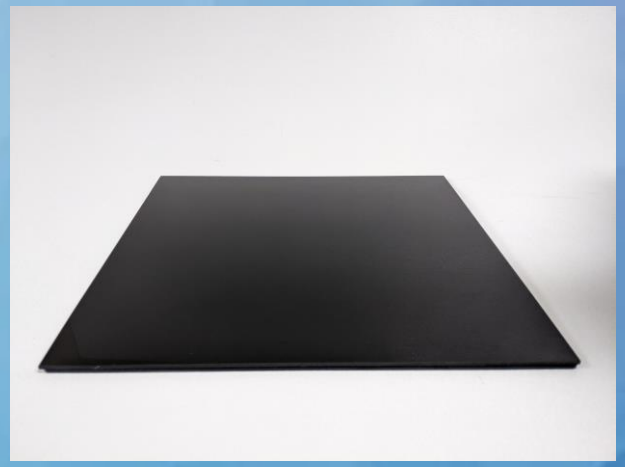
Standard Gadox Scintillator

High sensitivity for individual spot profiles and XY pattern QA



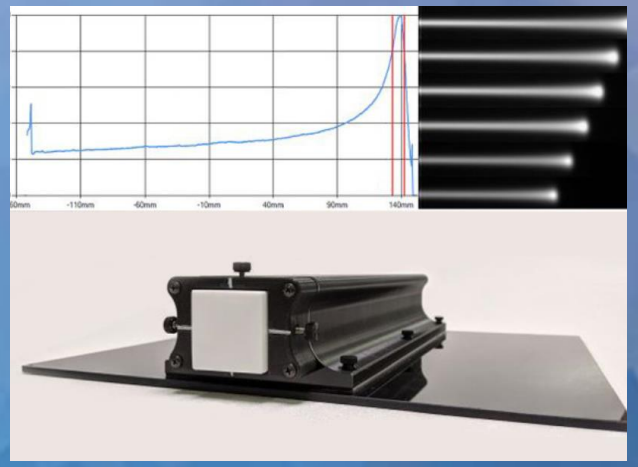
ClearView Plastic Scintillator

Medium sensitivity, designed for even response large field QA



ClearView UHDR Glass Scintillator

Lowest sensitivity for ultra high dose rate captures and FLASH experimentation



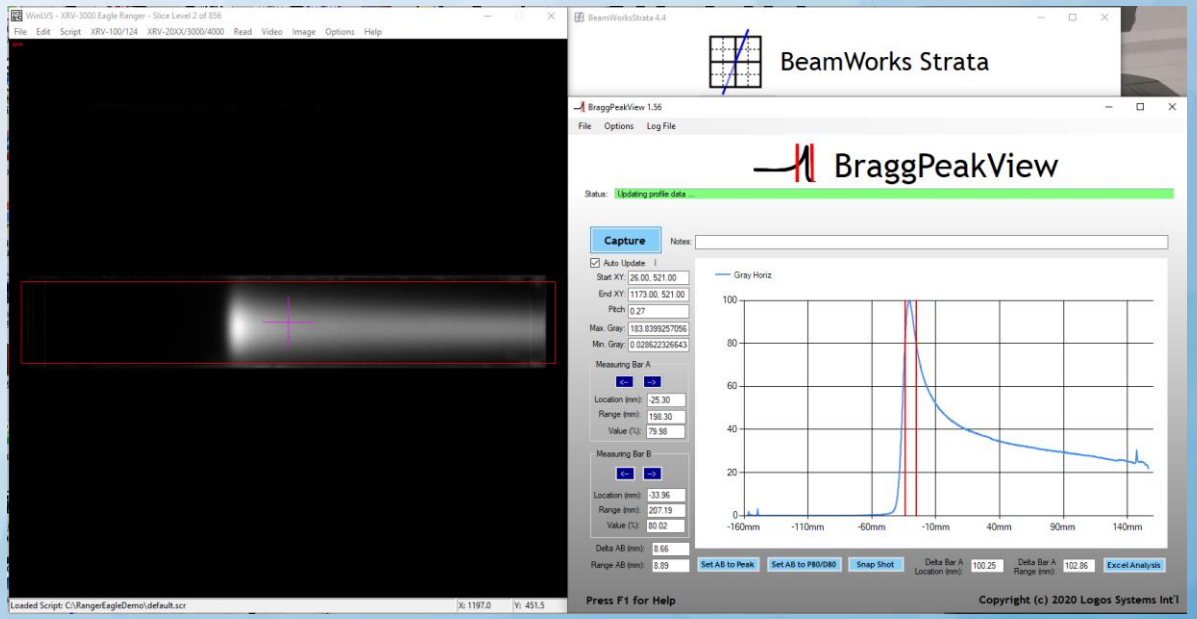
Ranger-300 Plastic Scintillator

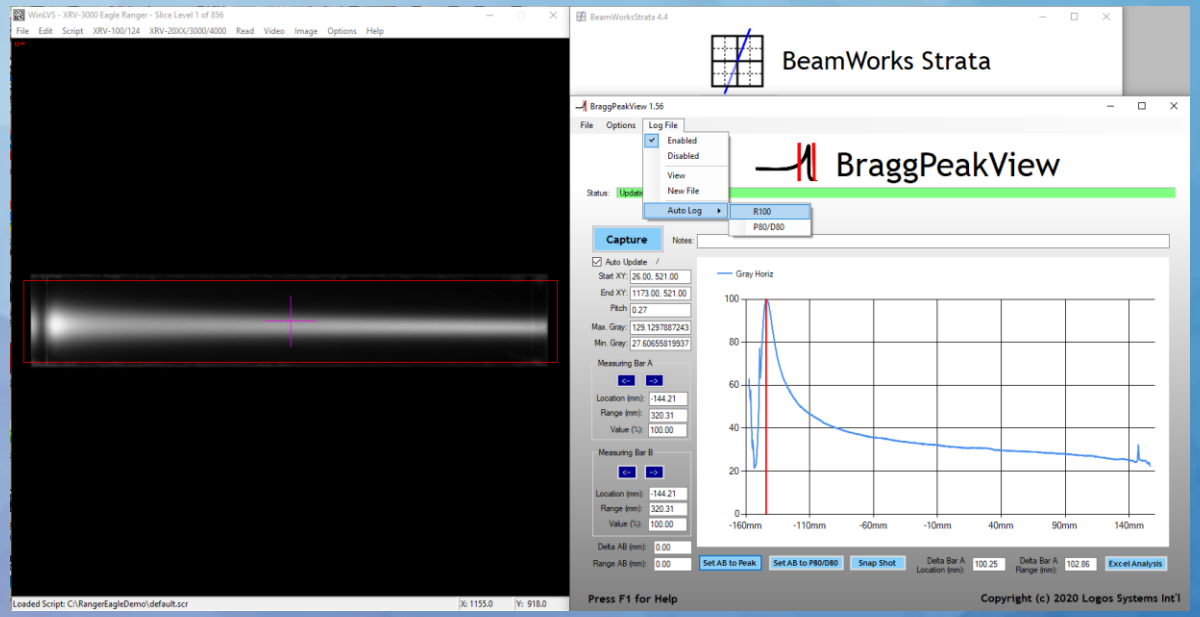
Medium sensitivity for fast, single beam, any angle Bragg Peak QA

Ranger-300 Plus Mounted in XRV-4000 Hawk

Double Width Ranger for the Eagle and Hawk

Proton Range Verification with the Ranger-300





BraggPeakView can quickly and automatically record a series of R100 and P80/D80 measurements into a CSV log file.

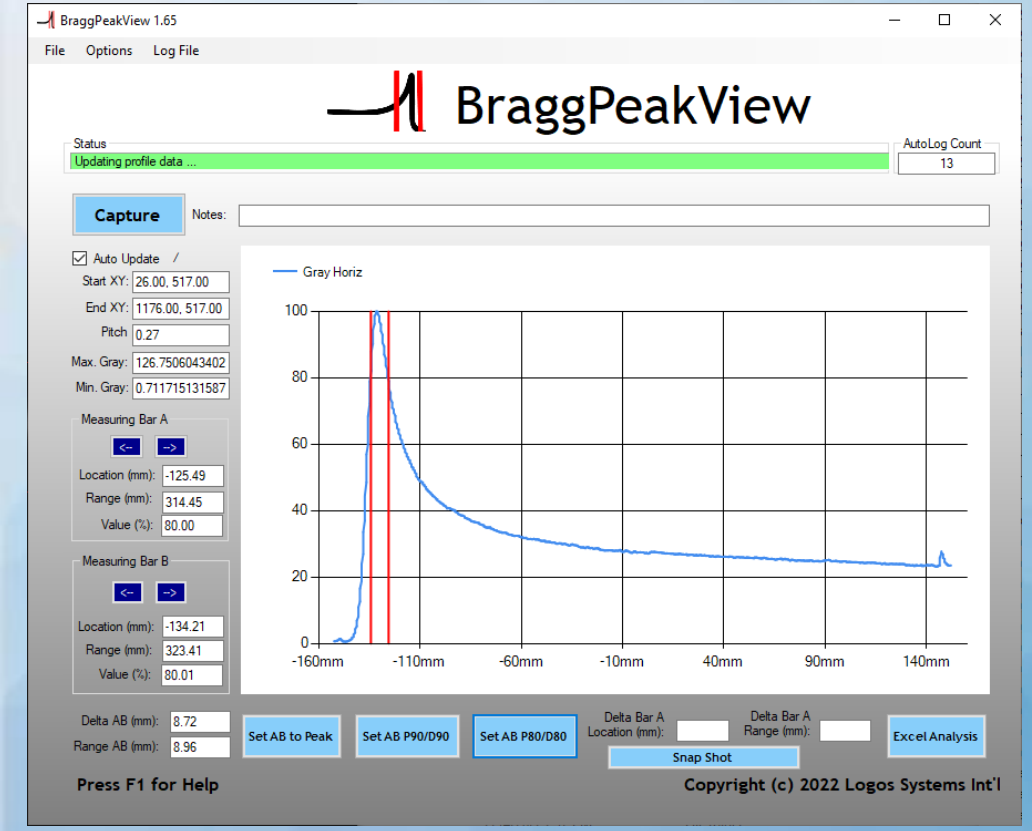
Profile_20210113_0001.log - Notepad

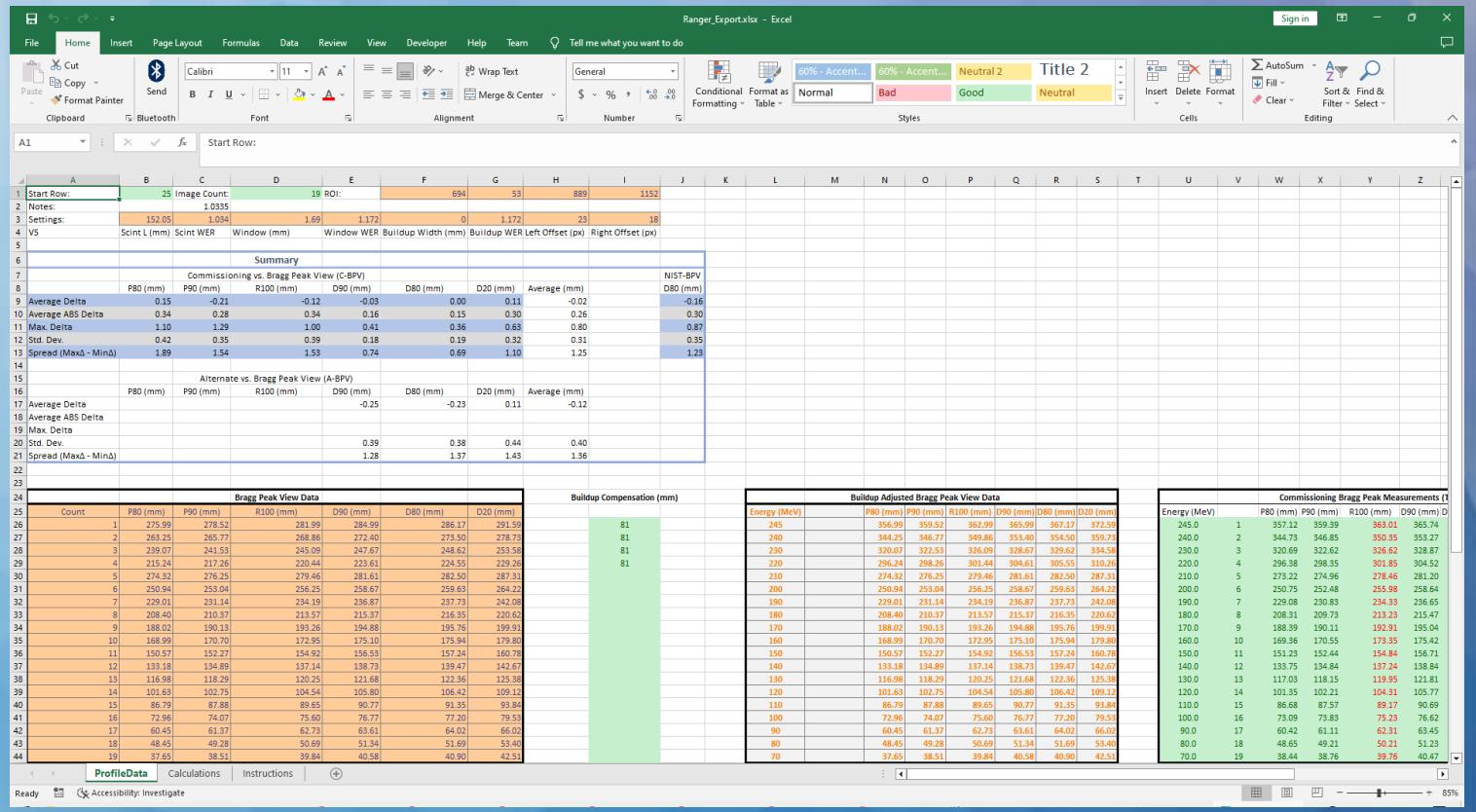
File Edit Format View Help

```
BraggPeakView R100 Autolog
Count:,7
Date:, 01/13/2021,11:57:04
Notes:

 Image , R100 Range
 Index ,     (mm)
1, 320.31
2, 203.91
3, 193.49
4, 173.54
5, 154.71
6, 136.14
7, 33.28
```

Proton Range Verification with the Ranger-300

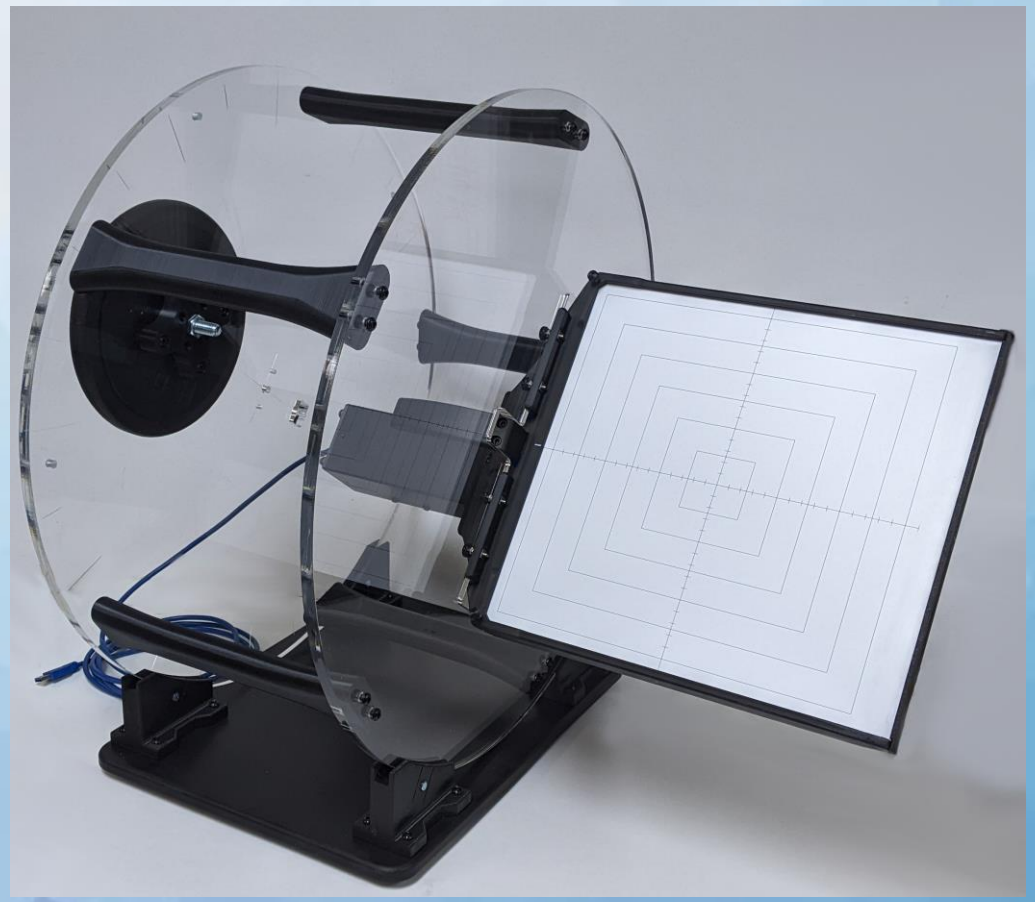




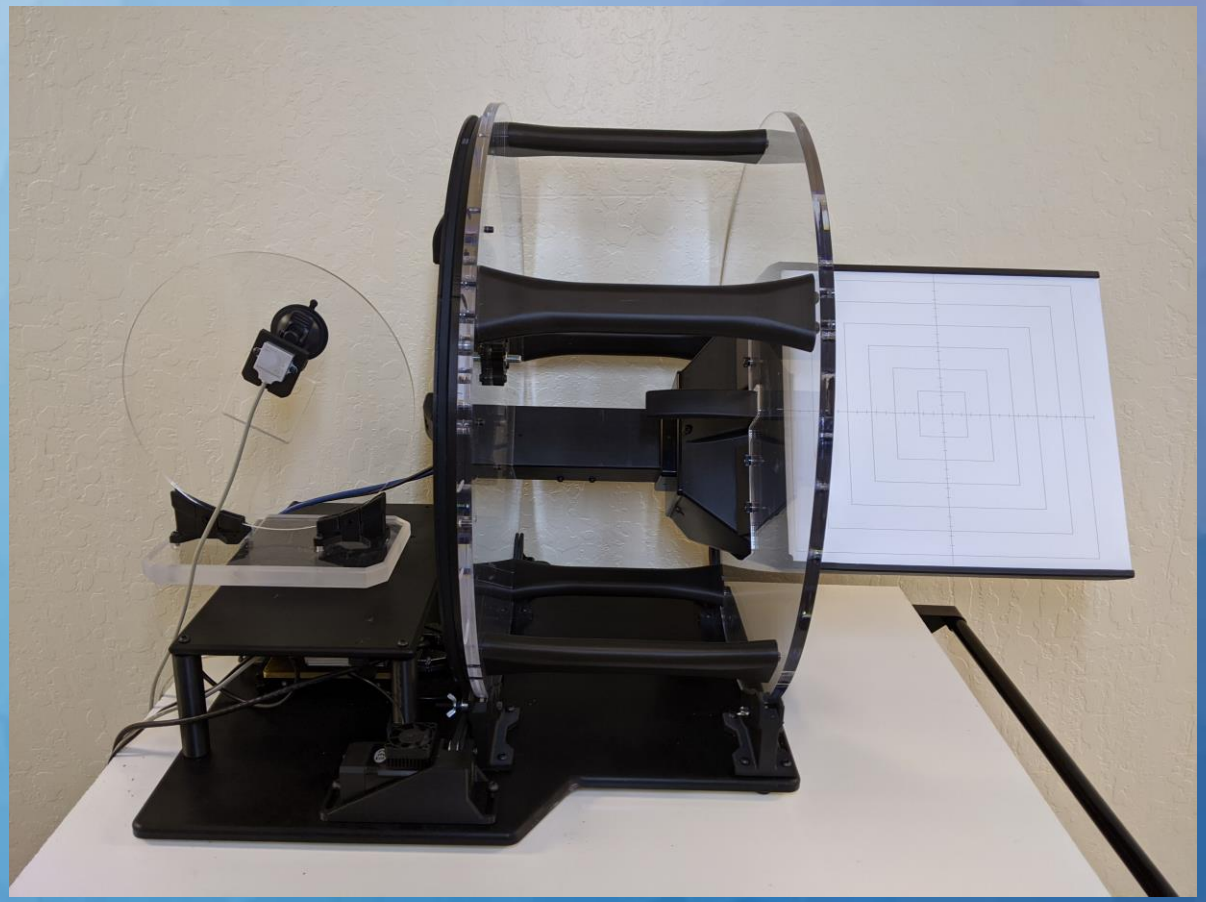
BraggPeakView integrates, corrects for quenching in the scintillator, and performs measurements on each beam

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

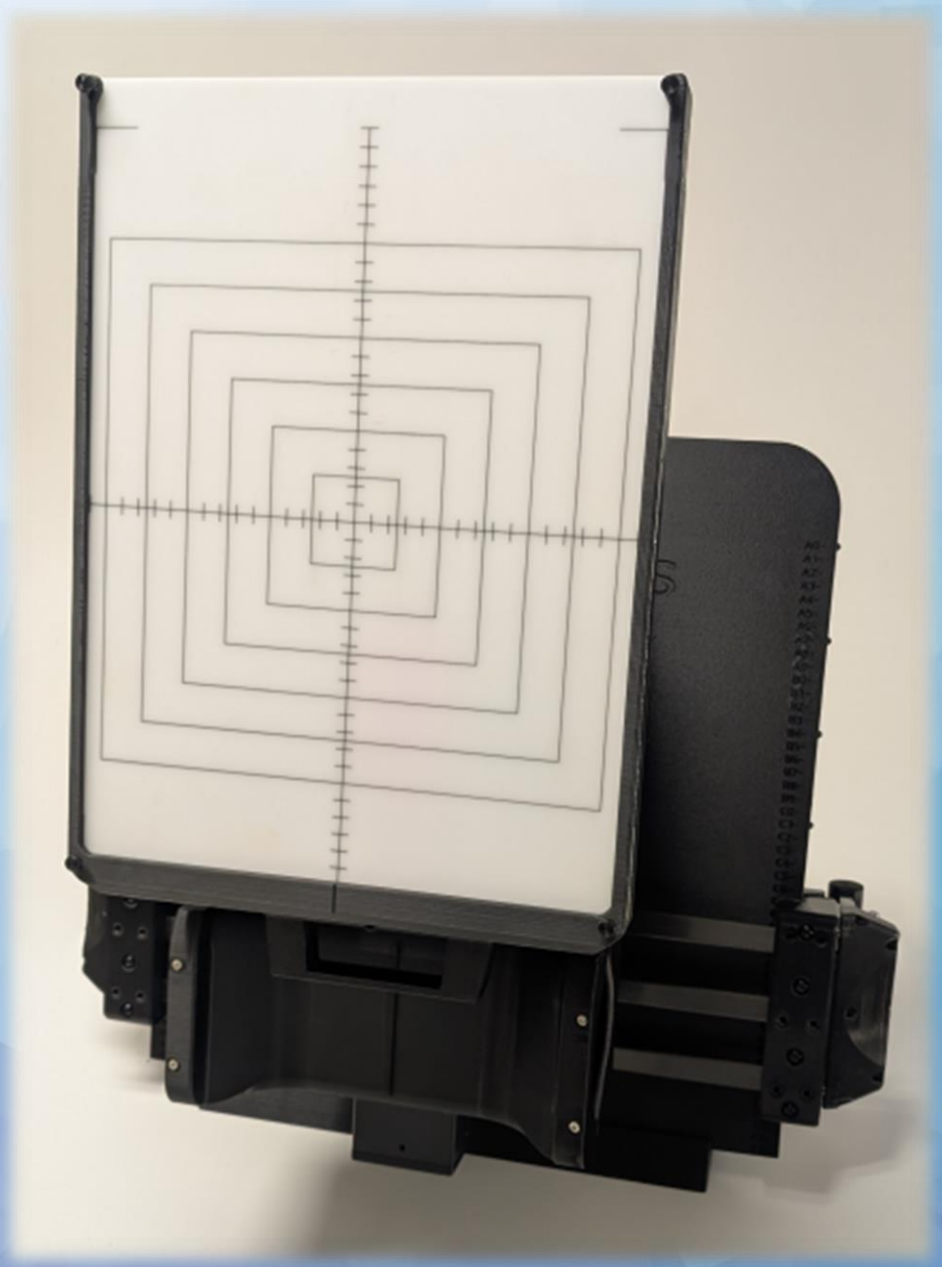
Manual and Motorized Gantry Cradle Options



Manual Gantry Cradle
for individual gantry
angle deliveries



Motorized Gantry Cradle for
automatic gantry following,
step/shoot, or programmed motion



The **LTCA** (Logos Treatment Chair Adapter) allows Eagle and Hawk phantoms to be attached to upright patient chairs at vertical index positions (XRV-4000 Hawk shown)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Ranger