PROFILER Family

IC PROFILER™, IC PROFILER™-MR & SRS PROFILER™

SUN NUCLEAR
corporation

THE INDUSTRY STANDARD

Every clinic should have a PROFILER. The PROFILER family of 2D arrays share a common mission: real-time precision measurement for a wide variety of routine QA, commissioning, and troubleshooting applications. A Sun Nuclear PROFILER is a convenient solution for real-time beam QA and dosimetry, without a water tank.

PROFILER™ Arrays

## Your Go-To Solution for Real-Time Beam QA

Features & Benefits

- Full-field real-time measurements
  - Flatness, symmetry, field size, beam center, penumbra width, light/radiation field
  - Identify startup/time dependent anomalies
  - Beam constancy, steering, diagnostics, collimator and rotational sag QA
  - Electron energy verification
  - Photon energy verification – IC PROFILER™
- Quick and easy setup
  - Portable and lightweight
  - Single power/data cable
  - No pre-irradiation required
  - No warm-up required

- Measure at isocenter for any gantry angle
  - Birdcage (SRS PROFILER™) and GMF (IC PROFILER)
- Low signal to noise (0.15%)
- User calibrated every 1-2 years with 15 minute patented calibration method
  - No need to send back to manufacturer
- Used by Varian Medical Systems®, Elekta®, Accuray® and ViewRay®
- Supports FFF beams
- MRI compatibility – IC PROFILER-MR

PROFILER Software

- Multiple real time parameter calculations
- Profile comparison , subtraction, overlay
- All relevant international and linac manufacturer calculation protocols
- Beam tuning and data plotting interface
- Real-time movie mode measurement and playback
- Import water tank data and compare to PROFILER files
- Developed in cooperation with market leading Linac manufacturers
- Report generation with output to PDF

- Analysis parameters
  - Flatness
  - Symmetry
  - Field size
  - Light-radiation field coincidence
  - Penumbra
  - Dose rate
  - Beam center
  - Output
  - Beam stabilization time (movie mode)
  - Electron energy verification (with accessory wedge)
  - Photon wedge angle calculation
  - Pulse counting
  - Dose/pulse
  - Pulse/second

IC PROFILER™

A 32 x 32 cm array using uniquely shaped ionization chambers on X, Y, and Diagonal axes for closest dosimetric match to water tanks. IC PROFILER is chosen as the industry standard by linac vendors for manufacturing and service worldwide.
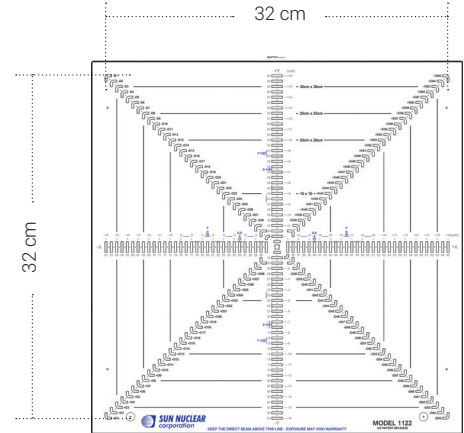
Beam Steering
Easy viewing of real-time beam changes of selected parameters

Specifications

- Unique curved ion chambers maximize signal and minimize volume averaging
- Full field measurements of X, Y, Diagonals
  - 45 cm x 45 cm diagonals
  - 40 cm x 40 cm X and Y field measurement at 75 cm SDD
- GMF™ holds IC PROFILER at isocenter for rotational measurements at any gantry angle
  - Add up to 1.5 cm (Varian Medical Systems®) or 3.0 cm (Elekta) buildup
- Only way to perform commissioning and routine QA on virtual wedges

IC PROFILER

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Detector Type:	Ion Chambers
Detector Quantity:	251
Detector Width: (mm)	2.9
Field Size: (cm)	32 x 32
Detector Axes:	X, Y, diagonals
Detector Spacing: (mm)	5

IC PROFILER™ Accessories

Electron Energy Quad Wedge Plate

- Used for precise electron energy measurements independent of wedge positioning
- Aluminum-based design
- Suitable for analysis of beam energies, ranging from 6 MeV to 22 MeV

Photon Energy Quad Wedge Plate

- Used for precise photon energy measurements independent of wedge positioning
- Copper-based design
- Suitable for analysis of beam energies, ranging from 6 MV to 20 MV, including 6FFF and 10FFF
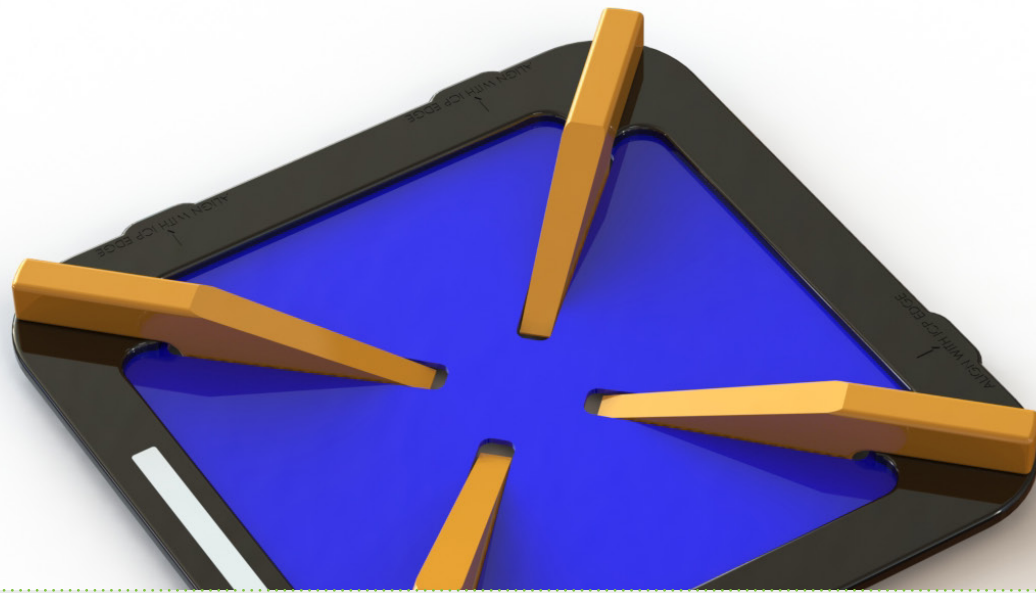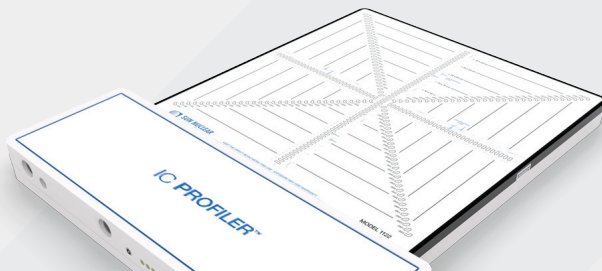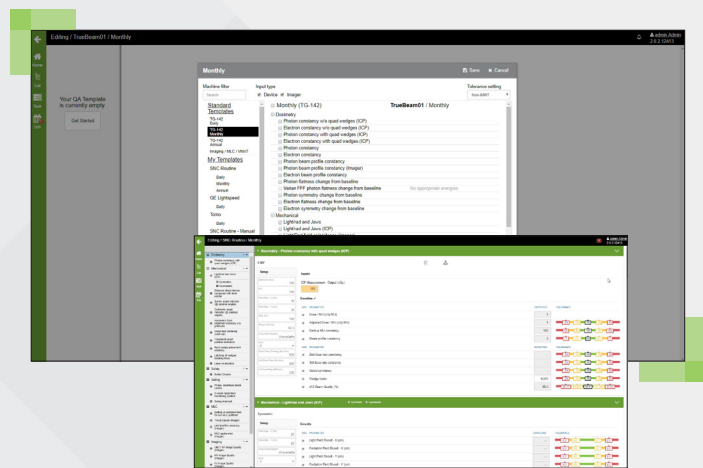

INTEGRATION

Integration with the SunCHECK™ Platform

The SunCHECK Platform has direct device integration to IC PROFILER™ to enable automated beam measurement, eliminating the need for additional software and transfer of data.

Smarter Monthly QA

Directly connect your IC PROFILER and take advantage of efficient TG-142 templates for easy Monthly (and Annual) QA. Simply deliver the test beam, then accept or reject results on your terms and timeframe.

Using the IC PROFILER and Quad Wedges for monthly constancy and beam quality checks takes only **15 minutes** for 5 beams vs. **60 minutes** without.

SunCHECK Machine internal testing

Compatibility & Integration

On its own, IC PROFILER is a quick tool for real-time beam analysis without a water tank. It can also be used for Varian Medical Systems® Halcyon™ System QA, or in support of Magnetic Resonance (MR) modalities.

IC PROFILER™-MR

The IC PROFILER-MR supports real-time beam analysis in the presence of magnetic fields. IC-PROFILER-MR is:

- Used by Elekta and ViewRay® development and engineering teams
- Compatible with linac-based treatment delivery systems
- Compatible with ViewRay-designed couch mounted stand

COMPATIBILTY

Varian Medical Systems® Halcyon™ System QA

Sun Nuclear is pleased to support installation of this system with a dedicated Acceptance and Verification package* which includes the IC PROFILER for beam analysis.
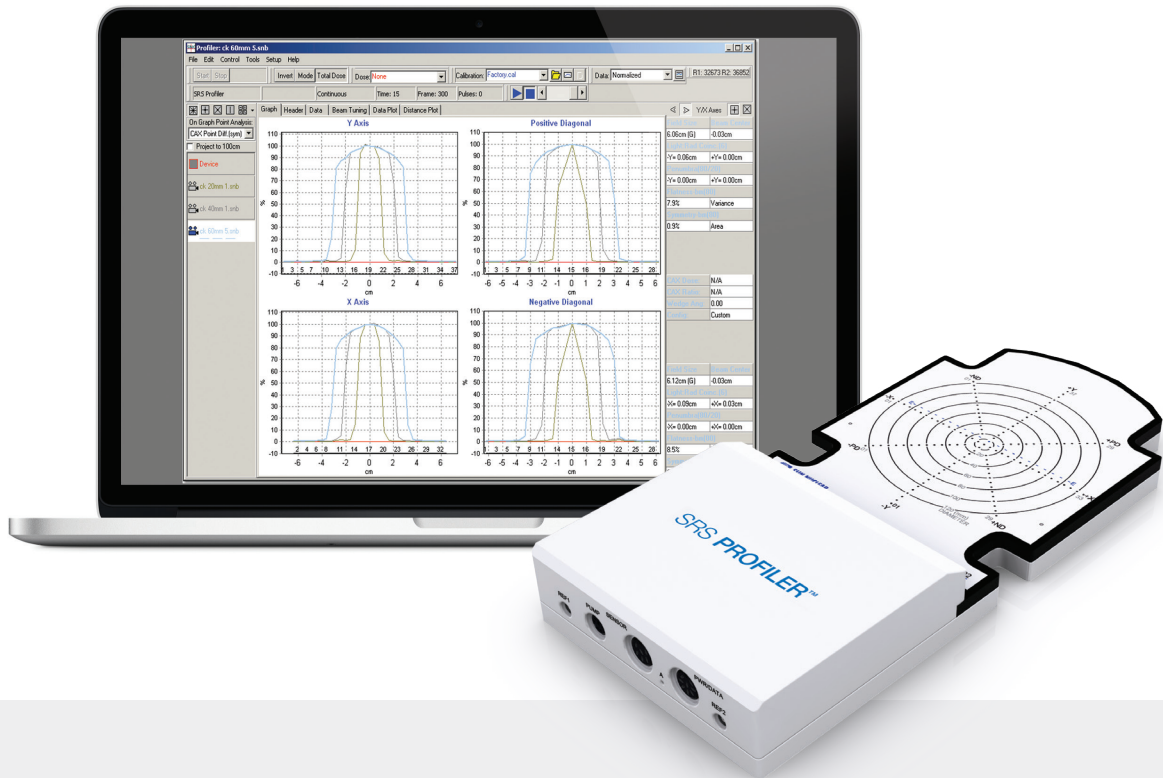
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*3D SCANNER™ is available for Beam Model Verification. Visit sunnuclear. com to learn more.
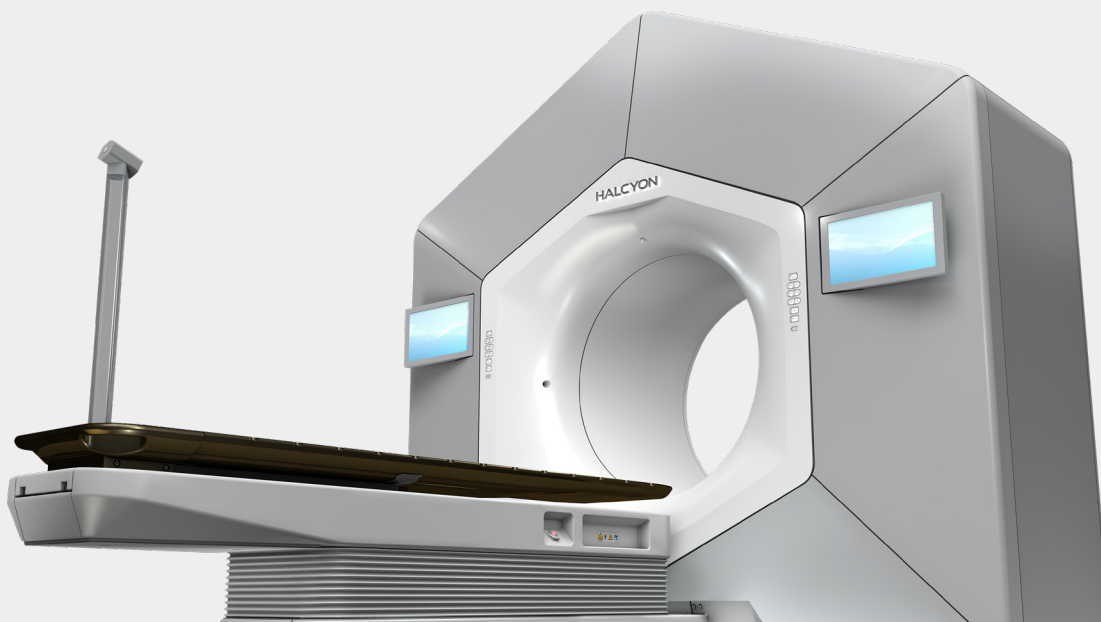
SRS PROFILER™

A 12 x 14 cm array using SunPoint Diode Detectors for small field measurements.

Specifications

- SunPoint® Diode Detector technology is 800 times smaller than micro ionization chambers, and 100 times more signal than micro ionization chambers. The small size is ideal for accurate penumbra characterization and steep gradients.
- Full field measurements of X, Y, diagonals
- Attaches to the Accuray® CyberKnife® birdcage
  - Measure at any node position
- On Accuray Recommended Equipment List for CyberKnife

SRS PROFILER

Detector Type:	SunPoint™ Diode Detectors
Detector Quantity:	125
Detector Width: (mm)	0.8
Largest Field Size: (cm)	14.4 cm diameter
Detector Axes:	X , Y , diagonals
Detector Spacing: (mm)	4

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Patient Safety Starts Here
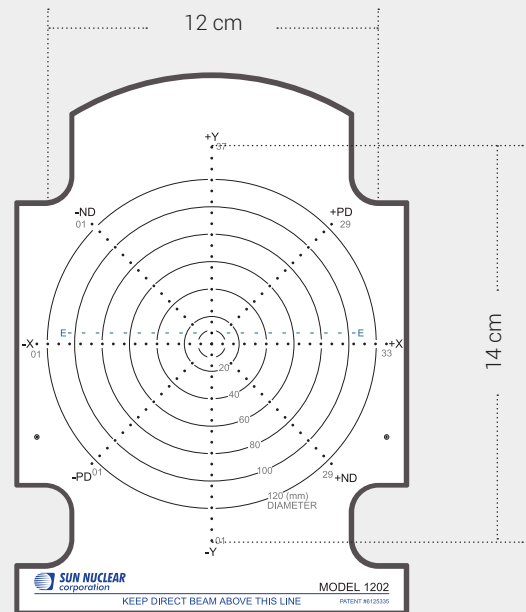
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