

Made for every clinical user, SunSCAN™ 3D simplifies beam scanning with SRS-class accuracy and user-centered design. SunSCAN 3D introduces faster, easier workflows and hyper-accurate dosimetry.

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Q: What are the main components of SunSCAN 3D?

A: SunSCAN 3D Water Tank, Automatic Leveling Platform (ALP), Mini-Lift Table (MLT), Control Center, SunSCAN Reservoir

Q: How many cables are needed to use SunSCAN 3D?

A: SunSCAN 3D includes a power cord, Power Data Cable (25m) and proprietary quick connect cable bundles between the Control Center and SunSCAN 3D junction box.

Q: Can I use the SunSCAN 3D cables with other products?

A: Yes, Sun Nuclear uses the same Power Data Cable for all products. Products such as SunSCAN 3D, ArcCHECK®, DailyQA™ 3, IC PROFILER™, SRS MapCHECK®, MapCHECK® 3, PC Electrometer™ and 1D SCANNER™ can work using the same cable.

Q: What is the accuracy of the different drive systems?

A: Diameter Drive: screw-driven, accuracy < 30µm.

Vertical Drive: screw-driven, accuracy < 30µm.

Ring/Theta Drive: belt-driven, accuracy < 0.05°.

Q: What is the positional accuracy of SunSCAN 3D, and how much hysteresis is found in the scanning mechanism?

A: The 3-drive systems of the water tank – ring, diameter and vertical – can move and adjust the detector with 0.1 mm accuracy throughout the 3D volume of the tank.

Hysteresis is minimal and determined at the factory where automatic corrections are built into the system through the firmware.

Q: What scanning modes are available on the SunSCAN 3D?

A: The following scanning modes are available:

- Continuous scan mode at 0.025, 0.05, 0.1, 0.25, 0.5, 0.8, 1.6 and 2.0 cm/second speed
- Step-by-Step (same resolution for all the scan)
- Step Regions (different resolution for different regions of the scan)

Q: What is the maximum scanning range of the SunSCAN 3D?

A: The maximum scanning range is:

- Horizontal, X and Y: 650mm
- Vertical, Z: 400mm



Q: How can the system be used to measure large (40cm) fields? Are diagonal scans an option?

A: The 65cm of scanning range of the Water Tank is sufficient to measure 40x40cm scans even at 30 cm depth.

Due to the unique cylindrical design of the SunSCAN 3D, the ring can rotate to 45 degrees (or any angle) to measure diagonals for the 40x40cm field size without any repositioning.

▶ AutoSetup™ Routine

Q: What is the procedure for setting up the water tank (levelling, alignment) and how does automation help in this process?

A: The leveling routine is part of AutoSetup™ and can level to 0.02° accuracy. Leveling is accomplished using the water level sensor and the Automatic Leveling Platform (ALP). This task takes about 4 minutes and is fully automatic.

The alignment/centering routine is part of AutoSetup and can align the center of the system to better than 0.1mm accuracy. Alignment is accomplished by delivering a 5 x 10cm beam and measuring profiles in both the in-plane and cross-plane direction. This task takes about 3 minutes, and is fully automatic. Between filling the tank (approximately 7 minutes) and the total time needed for AutoSetup routines (approximately 7 minutes), users can be ready to scan about 15 minutes after rolling the SunSCAN 3D into place under the accelerator.

Both tasks, levelling and alignment, are automatic, user independent, and provide sub-millimeter and hundredths of a degree accuracy. If preferred, these tasks can be done manually.

▶ Compatibility

Q: Is surface detection automatic?

A: Yes, surface detection is part of AutoSetup and detects the surface to better than 0.1mm accuracy. Detector alignment at water surface can be performed manually if preferred.

Q: Can you measure TPR with the SunSCAN 3D?

A: Yes, with SunSCAN TPR, measurements are supported for Varian Medical Systems®, Elekta, Siemens and CyberKnife® delivery systems.

▶ Filling & Draining

Q: How long does it take to fill and drain the SunSCAN 3D with the SunSCAN Reservoir?

A: Filling time: 7 minutes; Draining time: 7 minutes

Q: Does the SunSCAN 3D drain completely?

A: Yes, the SunSCAN 3D features a sloped bottom to ensure complete draining.

▶ SunDOSE™ Software

Q: Are there pre-defined queues for collecting data for TPS commissioning and conducting annual QA according to current TG recommendations?

A: Yes, SunDOSE software is loaded with TPS pre-defined queues of measurements. The queues for commissioning or annual QA include multiple TPS systems such as Varian Medical Systems® Eclipse™, iPlan, MasterPlan, Monaco, Pinnacle, Prowess Panther, RayStation and XiO.

Q: Does SunDOSE Software require a license?

A: The included SunDOSE software requires a license that can be downloaded from the Sun Nuclear Support site. It can be installed in as many computers as needed. There are no associated charges to install the software on multiple computers.

Q: Is a license required to export data to my TPS?

A: There is no additional license associated for TPS export. TPS systems such as Varian Medical Systems® Eclipse™, iPlan, MasterPlan, Monaco, Pinnacle, Prowess Panther, RayStation and XiO are included.

▶ Ion Chambers

Q: Which ionization chambers for photons, electrons and small fields are recommended?

A: The following ionization chambers are recommended:

- Photons: SNC125c™
- Electrons: SNC350p™
- Small fields: EDGE Detector™

SunSCAN 3D is compatible with most detectors available in the market. Contact Sun Nuclear Support for a complete list.

Q: Is there a Farmer type chamber that is recommended?

A: Yes, SNC600c is the recommended Farmer Type chamber. SunSCAN 3D is compatible with most detectors available in the market. Contact Sun Nuclear Support for a complete list.

▶ Tank Diagnostics & Storage

Q: Are there diagnostic tools included with the SunSCAN 3D?

A: Yes. SunSCAN 3D is the only tank that can diagnose itself and detect and correct detector positioning errors or misalignments in detector movement relative to the beam. Because small field measurements require a high degree of detector positioning accuracy, Sun Nuclear has also implemented diagnostic features which quantify detector walkout due to gantry sag and gantry tilt along with SunSCAN 3D vertical drive tilt (axis parallel to the horizontal (diameter drive)) and vertical drive swing out (axis perpendicular to the horizontal drive). The tools also provide instructions for correcting misalignment in small field PDD and profile measurements.

Q: Is SunSCAN 3D and its accessories portable? Does Sun Nuclear provide shipping cases?

A: Yes, the system breaks down into components that are easily lifted by two people and can be transported in a small van or SUV. ATA approved transport cases are available to prevent damage when shipping and protect the system while in storage.

Q: Can SunSCAN 3D be easily stored?

A: Yes. The SunSCAN Mini-Lift Table's legs can be folded in, and the handle is collapsible for storage.

Additionally, the SunSCAN Reservoir features the same collapsible handle and when turned sideways can be stored with the SunSCAN 3D in storage configuration. In this configuration the SunSCAN 3D and SunSCAN Reservoir together have the same or smaller footprint than systems with integrated reservoirs.

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