

# SunCHECK™ Patient Specifications



## General Specifications (applies to all unless noted)

Browser support	Google Chrome (recommended), IE 11
Meets Reimbursement/Reporting Requirements	Yes
Supported Treatment Modalities	HDR Brachytherapy, 3D CRT, IMRT, VMAT, SRS and SBRT
API Connectivity	Yes, SunCHECK Patient

## Plan Quality Checks - PlanCHECK™

Treatment Planning Systems Supported	Varian Medical Systems® Eclipse™ via Scripting, others via DICOM
Physics Checks	Rules-based checks: Treatment and non-treatment beam verifications, plan parameters, structures and deliverability
Dosimetric Checks	Structure-based checks: Dose/volume metrics with user-definable constraints; complex dosimetry metrics such as: Conformality Index, Conformation Number, Gradient Index and Gradient Measure for multiple structures, plus Homogeneity Index, Inhomogeneity Index and more

## Secondary Calculations - DoseCHECK™

Supported Systems	<ul style="list-style-type: none"> <li>• Elekta and Varian Medical Systems® Linacs, including Varian Medical Systems® Halcyon™ System</li> <li>• Accuray TomoTherapy Hi-Art®, H-Series™ and Radixact® Systems, including Precision Treatment Planning System</li> <li>• Varian Medical Systems® and Elekta HDR Brachytherapy Systems</li> </ul>
Dose Calculation Algorithms	<ul style="list-style-type: none"> <li>• Conventional Linacs: Collapsed Cone Convolution Superposition</li> <li>• TomoTherapy Systems: Monte Carlo</li> <li>• HDR Brachytherapy: TG-43 compliant algorithm</li> </ul>
Available Analysis & Pass/Fail Criteria	<ul style="list-style-type: none"> <li>• Photon: Composite &amp; Beam Point doses, MUs*, 3D Dosimetric Analysis</li> <li>• Electron: Beam Point doses</li> <li>• HDR: Composite Point doses, Source Information, Multi Fraction Plans, 3D Dosimetric Analysis</li> </ul>

## Pre-Treatment QA - PerFRACTION™

Data Sources	EPID and/or Log Files (dependent on Linac and imaging type used in delivery), and/or ArcCHECK array
Available Analysis & Pass/Fail Criteria	<ul style="list-style-type: none"> <li>• Composite and Beam Point Doses, 2D Relative Dose Analysis, 3D Dosimetric Analysis</li> <li>• 2D Absolute Dose Analysis (Absolute Dose Option**)</li> </ul>

## In-Vivo Monitoring - PerFRACTION™

Dose Calculation Image Set	Planning CT, Cone Beam CT (CBCT Recalculation Option**)
Available Analysis & Pass/Fail Criteria	<ul style="list-style-type: none"> <li>• Composite and Beam Point Doses, 2D Relative Dose Analysis, 3D Dosimetric Analysis</li> <li>• 2D Absolute Dose Analysis (Transit Dosimetry Option**)</li> </ul>

*\*Varian Medical Systems® and Elekta Linac Plans only, not applicable for TomoTherapy \*\*PerFRACTION Dosimetry Package*

# SunCHECK™ Machine

## Specifications



### General Specifications (applies to all unless noted)

Browser support Google Chrome (recommended), IE 11

Meets Reimbursement/Reporting Requirements Yes

### Daily, Monthly, Annual QA

Protocol support

- TG-142 (all 127 tests in tables 1-6)
- TG-51
- DIN
- Daily QA Support: TG-66, TG-148, TG-135 and 10CFR 35
- Custom tasks and templates

Direct Device Connection Daily QA™3, IC PROFILER™ and Quad Wedges (Optional)

### Imaging, VMAT, MLC QA - SNC Machine™

Imaging Test Support

- Image Quality: CBCT, KV, MV
- MLC
- VMAT

MLC/ Mechanical

- MLC: Picket Fence, Positioning, Leaf Speed, Hancock
- Winston Lutz: Radiation & Machine Isocenter, Hancock
- Starshot: Gantry, Couch, Collimator
- Light/Radiation Field Congruence

VMAT

- Dose Rate vs. Gantry Speed
- Leaf Speed
- Arc Point Dose
- DMMLC Point Dose

### Sun Nuclear Phantoms

	Line Pairs (mm):	0.1, 0.2, 0.5, 1.0 ± 0.025
<b>MV-QA</b>	ROI:	9 (4 spatial, 4 contrast, 1 center)
	Dimensions (cm):	12.7 L x 10.2 W x 2.5 D
<b>kV-QA</b>	Line Pairs (mm):	0.6, 1.2, 1.8, 2.4 ± 0.01
	ROI:	28 (4 spatial, 23 contrast, 1 center)
	Dimensions (cm):	12.7 L x 12.7 W x 1.6 D
	Field Sizes (cm):	10 x 10; 15 x 15
<b>FS-QA</b>	Markers (±0.1mm):	56 - Field size (7 per field edge)
	Dimensions (cm):	17.8 L x 17.8 W x 0.6 D
<b>WL-QA</b>	Dimensions (cm):	6.0 x 6.0 x 6.0
	Sphere Size (mm):	7.0
	Sphere Center Accuracy (mm):	0.2

### Additional Phantom Compatibility

Sun Nuclear	MultiPHAN™, CT ACR 464 Phantom
Standard Imaging	PIPSPro Phantoms
Phantom Laboratory	CatPhan 503, 504, 600, 604
Leeds	TOR 18FG
Varian Medical Systems®	Las Vegas Phantom
PTW	EPID QC Phantom
GE Medical Systems	GE Daily Phantom

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