

9000 Series Dosimeters - have been the choice for many applications

*Decades of Reliability  
and now you can  
Upgrade!*



For Radiography, Fluoroscopy, Mammography, CT, Dental, and Survey.

**SENSORS** - "Gold Standard" Radcal Ion Chambers.

**ION CHAMBERS BENEFITS** - Air equivalent X-ray transparency and trusted accuracy.

**VERSATILITY** - X-ray Service, QA, Acceptance testing, and Industrial Applications.

Ion Chamber Technology: Air Equivalency and OEM Accuracy.

Huge Dynamic Range: Detectors for 0.1  $\mu$  G/hr resolution to 5.7 kGy/hr and 0.01 n Gy resolution to 20 kGy.

**UPGRADES** - Radcal's newest model 2186 also uses Radcal's Gold Standard Ion Chambers.

	9010 / 9015	ACCU-DOSE
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FUNCTION	9000 Meters - 9010 / 9015	Dosimeter - 2186
Dose Accumulate Hold	✓	✓
Dose Rate	✓	✓
Auto Dose	✓	✓
Last Dose	✓	✓
Max Dose Rate	✓	✓
Pulsed Cine	✓	✓
Pulsed Cine with Auto Sense		✓
Exposure Time		✓
Auto Temperature Correction	✓	✓
Auto Pressure Correction	Optional	✓
Optional XLPRO Software	✓	✓
Sensor options	<ul style="list-style-type: none"> <li>● Ion Chambers</li> <li>● XLPRO Software</li> </ul>	<ul style="list-style-type: none"> <li>● Ion Chambers</li> <li>● Dose Diodes</li> <li>● XLPRO Software</li> </ul>

**THE GOLD STANDARD IN RADIATION MEASUREMENT**

# 9010 AND 9015 KEY FEATURES AND BENEFITS:

KEY FEATURES	BENEFITS
Full Selection of Ion Chambers	Very low dose rates to very high dose rate applications
Ion Chambers	Independent of beam quality / filtration, air equivalency, recommended for AEC use
Sensor Interchangeability	Plug and Play chambers are interchangeable with any 9000 series dosimeter
Simple Operation	Auto Temperature and optional Pressure compensation, large scroll down menu screen

## ION CHAMBER SENSORS

FULL SPECIFICATIONS : [www.radcal.com](http://www.radcal.com)

**10X5-6**  
General Purpose In Beam Chamber



**10X5-180**  
Leakage and Low Level Measurements Chamber



**10X5-6M**  
Dedicated Mammography Chamber



**10X5-1800**  
Radiation Protection Chamber



**10X5-60/60E**  
Service and Image Intensifier Chamber



**10X5-0.18**  
High Dose Rate Chamber



**10X5-3CT**  
Computed Tomography Dose Index (CTDI) and DWP or DLP Chamber



**10X5-0.6**  
High Dose Rate Chamber



**10X5-0.6CT**  
Modern Wide Beam Multi-Slice CT Chamber



## SPECIFICATIONS / TECHNICAL DATA:

All specifications subject to change.

CHAMBERS	10X5-6	10X5-6M	10X5-60/60E	10X5-3CT *	10X5-180	10X5-1800	10X5-0.18	10X5-0.6/0.6CT
<b>Minimum Rate</b>	0.1 mR/min 0.1 µGy/min	0.1 mR/min 0.1 µGy/min	0.01 mR/min 0.01 µGy/min	0.1 mR/min 1 µGy/min	0.1 mR/hr 1 µGy/hr	0.01 mR/hr 0.1 µGy/hr	0.1 R/hr 1 mGy/hr	1 mR/min 1 µGy/min
<b>Maximum Rate</b>	840 R/min 7.4 Gy/min	840 R/min 7.4 Gy/min	80 R/min 730 mGy/min	1.7 kR/min 15 Gy/min	1.7 kR/hr 15 Gy/hr	65 R/hr 575 mGy/hr	650 kR/hr 5.7 kGy/hr	8 kR/min 74 Gy/min
<b>Minimum Dose</b>	1 µR 0.01 µGy	1 µR 0.01 µGy	0.1 µR 1 nGy	1 µR 0.01 µGy	0.01 µR 0.1 nGy	0.1 µR 0.01 nGy	0.01 mR 0.1 µGy	0.01 mR 0.1 µGy
<b>Maximum Dose</b>	70 kR 600 Gy	70 kR 600 Gy	7 kR 60 Gy	140 kR 1.2 kGy	2.3 kR 20 Gy	230 R 2 Gy	2.3 MR 20 kGy	700 kR 6 kGy
<b>Cine Specifications</b>	0.1 µR/f - >1R/f 1 nGy/f - >10 mGy/f	N/A	0.01 µR/f - >100 mR/f 0.1 nGy/f - >1.0 mGy/f	N/A	N/A	N/A	N/A	N/A
<b>Calibration Accuracy</b>	±4% using X-rays @ 60 kVp & 2.8 mm Al HVL	±4% using X-rays @ 20 kVp & 0.26 mm Al HVL	<b>-60</b> ±4% using X-rays @ 150kVp and 10.2 mm AL HVL <b>-60E</b> ±4% using X-rays @ 50kVp and 0.88 mm AL HVL	±4% using X-rays @ 150 kVp & 10.2 mm Al HVL	±4% using X-rays @ 150 kVp & 10.2 mm Al HVL	±4% using X-rays @ 150 kVp & 10.2 mm Al HVL	±4% using 60Co	<b>0.6</b> ±4% @ 60Co <b>0.6CT</b> ±4% using x-rays @ 150 kVp and 10.2mm Al HVL
<b>Exposure Rate Dependence</b>	±5%, 0.02 to 1000 R/min, up to 500R/s for 10 ms pulses	±5%, 0.02 R/min to 600 R/min	±5%, 2 mR/min to 199 R/min	±2%, 2 mR/s to 40 R/s	±5%, 20 mR/hr to 2000 R/hr	+0%, -5%, 0.1 mR/hr to 20 R/hr, -10% to 65 R/hr	±2%, 10 R/hr to 650 kR/hr	±2%, 10 mR/s to 100 R/s
<b>Energy Dependence</b>	±5%, 30 keV to 1.33 MeV (with build-up material)	±5%, 10 keV to 40 keV	<b>-60</b> ±5% 20 keV to 1.33 MeV (with build-up material) <b>-60E</b> ±5% 0.2 mm Al HVL to 1.33 MeV (with build-up material)	±5%, 3mm Al to 20 mm Al HVL	±5%, 33 keV to 1.33 MeV (with build-up material)	±5%, 33 keV to 1.33 MeV (with build-up material)	±5%, 45 keV to 1.33 MeV	<b>0.6</b> ±5%, 40 keV to 1.33 MeV (with build up cap) <b>0.6CT</b> ±5% 3 to 20 mm Al HVL
<b>Construction</b>	Polycarbonate walls and electrode conductive graphite interior coating; 6 cm <sup>3</sup> active volume; 0.05 kg	0.7 mg/cm <sup>2</sup> metalized polyester window; polyacetal exterior; 6 cm <sup>3</sup> active volume; 0.08 kg	Polycarbonate walls; conductive graphite exterior coating; 60 cm <sup>3</sup> active volume, 3 m low-noise triax cable; 0.13 kg	C552 air-equivalent walls and electrode; polyacetal exterior cap; 3 cm <sup>3</sup> active volume; 2 m, low-noise triax cable; 0.11 kg	Polycarbonate walls and electrode; conducting graphite exterior coating; 180 cm <sup>3</sup> active volume; 0.11 kg	Polycarbonate walls and electrode; conducting graphite exterior coating; 1800 cm <sup>3</sup> active volume; 0.54 kg	C552 air-equivalent walls & electrode; polyacetal exterior cap; 0.18 cm <sup>3</sup> active volume; 3 m, low-noise triax cable; 0.1 kg	C552 air-equivalent material & electrode; polyacetal exterior cap, 0.6 cm <sup>3</sup> active volume, <b>0.6</b> 12m triax <b>0.6CT</b> 3m triax cable

\* Uniformity Along Length & Partial Volume Exposure ±5%, to within 0.25 cm of chamber ends for a constant volume slice.