

### 10X9-6

#### General Purpose In Beam Chamber

The 10X9-6 chamber permits in-beam measurements as described in "Routine Compliance Testing for Diagnostic x-ray systems" (PB89-205215). This chamber is ideal when using the CDRH geometry (the 10T5 test stand).



### 10X9-180

#### Leakage and Low Level Measurements Chamber

The 10X9-180 ion chamber is designed for leakage measurements as described in "Regulations for the Administration and Enforcement of The Radiation Control for Health and Safety Act of 1968" (HHS Publication FDA 88-8035), and provides the required effective cross-section of 100 cm<sup>2</sup>.



### 10X9-6M

#### Dedicated Mammography Chamber

Long before the Mammography Quality Assurance Standards Act, Radcal designed what proved to be one of the finest low energy chambers on the market. It's extraordinary flat energy response over the 10 - 40 keV has been documented in technical papers and makes corrections unnecessary. Unlike solid state detectors, the -6M's response is not influenced by tube target material or filtration..



### 10X9-1800

#### Radiation Protection Chamber

The 10X9-1800 ionization chamber is intended for low-level radiation measurements such as shielding leakage, irradiator and environmental. Unlike typical survey meters, the 10X9-1800 chamber offers improved accuracy over a wider dynamic range.



### 10X9-60/60E

#### Service and Image Intensifier Chambers

The dynamic range and thin profile of these chambers make them ideal for virtually all X-ray service applications:

- Input Dose at the Image Intensifier
- High dose rates encountered in Fluoroscopy
- Cine, spot film devices & other special procedures



### 10X9-3CT

#### Computed Tomography Dose Index (CTDI) and DWP or DLP Chamber

When used in conjunction with Radcal's 20CT6 (head phantom) and Radcal's 20CT14 (body phantom) the 10X9-3CT permits evaluation of the radiation output as prescribed by HHS publication FDA 88-8035. It's excellent energy, partial volume response and position uniformity has been well documented.



Additionally, the -60E(extended) chamber's increased sensitivity at lower energies turns the chamber into a "Universal" detector, covering mammography through R&F and beyond. The 8231 holder is recommended.

for use with: discontinued 9095 control unit



### SPECIFICATIONS / TECHNICAL DATA:

All specifications subject to change.

CHAMBERS	10X9-6		10X9-6M		10X9-60/60E		10x9-3CT *		10X9-180		10X9-1800	
<b>Min Rate</b>	1 µR/s	10 nGy/s	1 µR/s	10 nGy/s	100 nR/s	1 nGy/s	2 µR/s	20 nGy/s	50 nR/s	500 fGy/s	5 nR/s	50 fGy/s
<b>Max Rate</b>	22 R/s	190 mGy/s	22 R/s	190 mGy/s	2.2 R/s	19 mGy/s	44 R/s	380 mGy/s	0.7 R/s	6 mGy/s	0.07 R/s	0.6 mGy/s
<b>Min Dose</b>	10 µR	100 nGy	10 µR	100 nGy	1 µR	10 nGy	20 µR	200 nGy	200 nR	2 nGy	20 nR	200 fGy
<b>Max Dose</b>	79 kR	700 Gy	79 kR	700 Gy	7.9 kR	70 Gy	158 kR	1.4 kGy	2.6 kR	23 Gy	0.26 kR	2.3 Gy
<b>Cine Specifications</b>	0.1 µR/f - > 1 R/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	
<b>Calibration Accuracy</b>	±4% using X-rays @ 60kVp and 2.8 mm AL HVL		±4% using X-rays @ 30kVp and 0.50 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 @ 150kVp and 10.2 mm AL HVL		±4% using X-rays @ 150kVp and 10.2 mm AL HVL		±4% using X-rays @ 150kVp and 10.2 mm AL HVL	
<b>Exposure Rate Dependence</b>	±5%, 0.4 mR/s to 80 R/s, up to 500 R/s for 50 us 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 20R/hr, -10% to 65 R/hr	
<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%, 3 to 20 mm AL HVL		±5%, 30 keV to 1.33 MeV (with build up material)		±5%, 33 keV to 1.33 MeV	
<b>Construction</b>	Polycarbonate walls and electrode conductive graphite interior coating; 6 cm <sup>3</sup> active volume; 0.05kg		0.7 mg/cm <sup>2</sup> metalized polyester window; polyacetal exterior; 6cm <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; conductive 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	

Calibration Accuracy ± 4 %, Energy Dependence ± 5 %. Plug-and-play. \* Uniformity Along Length & Partial Volume Exposure ±5%, to within 0.25 cm of chamber ends for a constant volume slice. Active length of 10 cm.