RAD-CHECK ™ PLUS X-RAY EXPOSURE METER

Proven Rad-Check technology specifically designed to provide you with the ultimate in versatility and cost-effective operation.

Fast and easy to use! Battery operation and built-in detector eliminate setup time.
Measures dose up to 2 R; dose rate up to 20 R/min.
Energy response is ± 5% from 30 to 150 kVp for the RAD-CHECK PLUS internal chamber.
Optional remote chambers for mammographic and cine imaging systems.
Extremely compact...6" x 6 1 /4" x 2 3 /4" high; weighs only 18 oz.

RAD-CHECK PLUS can perform:

Entrance skin exposure measurements (ESE).
Fluoroscopy exposure measurements.
Exposure checks; radiographic (mR/mAs).
Beam quality; Half Value Layer (HVL).
mAs reciprocity; mA Station Checks...
Plus many others, depending on the remote external chambers used.

Automatic Reset After Exposure:
There are no long cables (when the internal ionization chamber is used) or remote reset switches. Data accumulated during a prior measurement can be included in or eliminated from the next measurement.
In addition, the unit can be reset manually. This precision electrometer features a tilt-stand for convenient positioning of the unit.

Fast and Easy to Use:
Battery operation and built-in detector virtually eliminate setup time. Just place RAD-CHECK PLUS or external ion chamber on x-ray table; collimate, shoot and read the result.
Accurate:
Precision ion chamber and digital display ensure accuracy plus easy readability.

Accurate, lightweight, portable...this "industry standard" enables you to gain the critical edge in your QC program.

06-526 RAD-CHECK PLUS
06-526-2200 RAD-CHECK PLUS, SI Units

SPECIFICATIONS:
Ranges: 0.001 to 2 R, 0.01 to 20R/min
Internal Chamber: 30 cc volume, energy response ±5% from 15-65 keV (30-150 kVp filtered). 20.5 cm^2(5.1 cm diameter) effective measurement area. Center of Chamber 1.03 cm below top of chamber
Standard Calibration: At 75 kVp with 4 mm Al filtration at 22° C and one atmosphere
Reproducibility: Within 2% short-term over 100 mR to 2 R range (1 mGy to 20 mGy)
Electrometer Drift: 0.5 to 1 mR/minute typical; 6 mR/minute max (5 µGy to 10 µGy; 60 µGy/minute max)
Maximum Exposure Rate: Min. 90% collection efficiency at 20 R/second
Automatic Reset: Resets display to zero. Can also be reset manually
Operating Conditions: 10-40° C, max; 90% relative humidity
Display: 3 1 /2'' x 1 /2'' LCD, low battery indicator
Controls: Auto or manual reset selector. Display zero reset button. Dose or dose rate output selector. Integral or remote ion chamber selector. On/off switch
Power: 9 V battery, Mallory MN1604 or equal, greater than 100 hour life (50 hours in manual reset mode)
Dimensions: 2.75'' high x 6'' wide x 6.25'' deep (7 cm x 15.25 cm x 15.9 cm)
Weight: 18 oz (0.51 kg)

ACCESSORIES:

06-528 Remote Ionization Chamber: 30 cc volume; energy response: within 7%from 30 to 150 kVp (15-65 keV); 15 foot (4.5 meter) cable; 4'' x 4'' x 0.54'' thick (10.2 cm x 10.2 cm x 1.4 cm)

06-529 Mammographic Ionization Chamber: 3.3 cc volume; energy response: within 5% from 0.2 to 5.0 mm Al HVL (16 to 90 kVp); 15 foot (4.5 meter); 4 cm diameter x 1.5 cm thick

30-301-1000 CT Dose Probe: 3.2 cc volume; energy response: ±5% from 1 to 10 mm Al HVL; 0.9 meter cable; sensitive length: 4 inches (10.0 cm); chamber inside diameter: 0.25 inches (6.4 mm)

06-524-1000 Fluoroscopic Exit Dose Ionization Chamber: 150 cc volume; energy response: +/-10% from 1.8 to 10 mm Al HVL; 10 foot (3.0 meter) cable; 6.26'' x 8'' x 0.63'' (15.9 cm x 20.6 cm x 1.6 cm)

89-525 Carrying/Storage Case: Holds RAD-CHECK PLUS and Accessories

RAD-CHECK ™ MAMMO X-RAY EXPOSURE METER

Proven RAD-CHECK performance designed specifically for use in mammography.

Fast and easy to use!
Measures dose: 0.001 to 20 mGy; 0.01 to 20 mGy/min.
Extremely compact…6" x 6 1 /4" x 2 3 /4"; weighs only 18 oz.
Specifically designed and calibrated for use with the model 06-529 Mammography Ionization Chamber.

RAD-CHECK MAMMO can perform:
Entrance Skin Exposure Measurements (ESE).
Exposure checks; radiographic (mR/mAs).
Beam quality; Half Value Layer (HVL).
mAs reciprocity; mA Station Checks…Plus
many others, depending on the remote external chambers used.

RAD-CHECK MAMMO is built on the same proven technology as the RAD-CHECK PLUS, but is optimized to provide accurate dose and dose rate readings in the mammography range. It's economi-cal, since you don't pay for features you can't use. Our mammography chamber (required for use with this electrometer), has been thoroughly tested and will match the performance of any other parallel-plate mammography chamber mammography chamber available. Accurate readings can also be made with a different volume ionization chamber using correction factors. Precise, reliable, proven technology that economically answers your specific needs and requirements.
RAD-CHECK
MAMMO will help elevate your QC program to new heights.

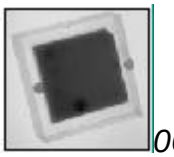
SPECIFICATIONS:
Ranges: .001 to 2 R; .001 to 2 R/min (.001 to 2 mGy; .001 to 2 mGy/min)
Standard Calibration: At 23, 28, 30 and 35 kVp (Mo/Mo) at 22° C and one atmosphere using model 06-529 chamber (optional)
Reproducibility: Within 2% short-term over 100 mR to 2 R range (1mGy to 20 mGy)
Electrometer Drift: 10 mR/minute typical; 60 mR/minute max

(10 µGy; 60 µGy/minute max)
Maximum Exposure Rate: Min. 90% collection at 20 R/second
Manual Reset: Resets display to zero
Operating Conditions: 10-40° C, max; 90% relative humidity
Display: 3 1 / 2 " x 1 / 2 " LCD, low battery indicator
Controls: Reset button. Dose or dose rate output selector.
On/off switch
Power: 9V battery, Mallory MN1604 or equal, greater than
50 hour life
Dimensions: 2.75" high x 6" wide x 6.25" deep
(7 cm x 15.25 cm x 15.9 cm)
Weight: 18 oz (0.51 kg)

06-526-5290 RAD-CHECK MAMMO
06-526-5292 RAD-CHECK MAMMO, SI Units

ACCESSORIES:
06-529 Mammographic Ionization Chamber: 3.3 cc volume;
energy response: within 5% from 0.2 to 5.0 mm
AI HVL (16 to 90 kVp); 15 foot (4.5 meter) cable;
4 cm diameter x 1.5 cm thick
89-525 Carrying/Storage Case: Holds RAD-CHECK
MAMMO and Accessories

IMPORTANT NOTE: *MQSA requires exposure readings with the Mammography Accreditation*
Phantom…the RAD-CHECK MAMMO is ideal!

 *06-529*

Small and portable, it will accurately provide the mid-glandular dose readings required by MQSA.

RAD-CHECK ™ MICRO-R X-RAY EXPOSURE METER

Nuclear Associates' RAD-CHECK MICRO-R technology gives you the ability to measure dose and rate in fluoroscopy with the accuracy and reliability of equipment that costs two or three times more.

Fast and easy to use!
Dual-range for high and low dose rate fluoroscopy.
Optimized for use with Nuclear Associates'
100 cc Image Intensifier Ion Chamber model (06-524-3000).
Portable, no AC power cords.

RAD-CHECK MICRO-R can perform:
Entrance Skin Exposure Measurements (ESE).
Fluoroscopy exposure examinations.
Exposure checks; radiographic (mR/mAs).
Beam quality; Half Value Layer (HVL).
mAs reciprocity; mA Station Checks…
Plus many others, depending on the remote external chambers used.

This state-of-the-art electrometer is designed for measuring dose and rate under high and low dose rate conditions.
It is excellent for cardiac cath and fluoroscopy and the perfect choice for tight budgets. With the RAD-CHECK MICRO-R, measurements are easy to perform and highly accurate. Incorporate

RAD-CHECK MICRO-R into your routine QC program for fluoroscopy now, and accurately measure what your patient exposures actually are from fluoroscopically-guided procedures. This precision electrometer also features a tilt-stand for convenient adjustment of display visibility.

SPECIFICATIONS:
Ranges: Low: 0.01 to 19.99 mR; 0.1 to 199.9 R/min
High: 0.01 to 19.99 R; 0.1 to 1999 R/min
Standard Calibration: At 75 kVp with 4 mm Al filtration at 22° C and one atmosphere using model 06-524-3000 chamber (optional)
Reproducibility: Within 2% short-term over 100 mR to 2 R range (1mGy to 20 mGy)
Electrometer Drift:
Low Range: 1 mR/minute typical; 6 mR/minute max
High Range: 10 µR/min typical; 60 µR/min max
Maximum Exposure Rate: Min. 90% collection at 20 R/second
Manual Reset: Resets display to zero
Operating Conditions: 10-40° C, max; 90% relative humidity
Display: 3 1 / 2 " x 1 / 2 " LCD, low battery indicator
Controls: Reset button. Dose or dose rate output selector. High or low range selector. On/off switch
Power: 9 V battery, Mallory MN 1604 or equal, greater than 50 hour life
Dimensions: 2.75" high x 6" wide x 6.25" deep (7 cm x 15.25 cm x 15.9 cm)
Weight: 18 oz (0.51 kg)

06-526-5240 RAD-CHECK MICRO-R
06-526-5242 RAD-CHECK MICRO-R, SI Units
ACCESSORIES:
89-525 Carrying/Storage Case: Holds RAD-CHECK MICRO-R and Accessories

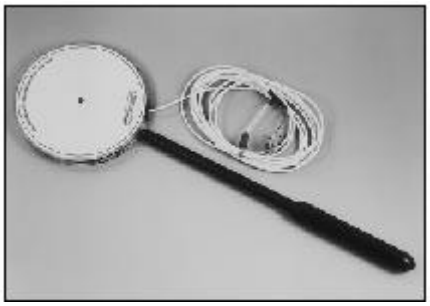
IMAGE INTENSIFIER ION CHAMBER

Volume: 100 cc
Optimized for use with our RAD-CHECK and MICRO-R.
Can be used with virtually any other commercially available electrometer.
Designed to measure diagnostic x-rays.
When used with RAD-CHECK MICRO-R, it is possible to measure exposure rate as low as.
10 micro Roentgens per second.

06-524-3000 Image Intensifier Ion Chamber

IMAGE INTENSIFIER ION CHAMBER

Designed to measure diagnostic x-rays.



It's low attenuation permits virtually no interference with automatic brightness systems. Optimized for use with our RAD-CHECK ™ MICRO-R
Can be used with virtually any other commercially available electrometer.

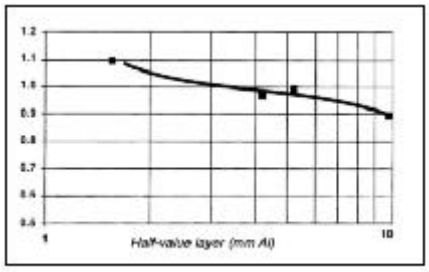
This 100 cc low profile ion chamber is designed specifically for measuring exposure rate at the input phosphor of fluoroscopic image intensifier tubes.
Its extremely thin envelope enclosure allows for the most
accurate results possible! Its unique size and shape allow it to be inserted into the spot film tray of typical image intensifier systems.

A 21'' long detachable handle allows for easy insertion and removal.

When used with the RAD-CHECK MICRO-R, it is possible to measure exposure rates as low as 10 micro Roentgens per second.

Chamber Energy Dependence

KVCP	NIST Technique	Approx. HVL (mm Al)	Coul/µR x10^{-14}	Correction Factor
60	M60	1.68	3.32	0.95
75	M75	4.1	3.49	1.00
100	M100	5.1	3.72	1.06
150	M150	10.2	3.94	1.12



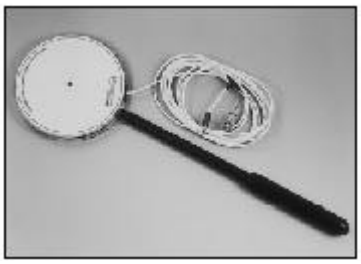
Model 06-524-3000 Energy Response

SPECIFICATIONS:
Volume: 100 cc
Nominal Sensitivity: 30 nC/R @ M75
Rate: 10µR/s
Exposure: 100µR in 10 seconds
Max. Exposure Rate: Min. 90% collection at 20R/Sec
Total Attenuation: 0.275 (mm Al) equivalent @ 30 KeV
Operating Voltage: 200 to 300 volts DC
Handle Length: 21'' (53.34 cm)
Cable Length: 10' (3 m). Cable Termination, BNC/Banana

Window Thickness: .110" (2.79 mm)
Housing Material: Acrylic
Housing Color: Clear
Housing Dimensions: 5.5" diameter (14.0 cm diameter)
Surface Area: 100 cm 2 , 4.5" diameter
Thickness: 0.720" (18.3 mm)
Weight: 30 oz (840 g)

06-524-3000 Image Intensifier Ion Chamber

SHADOW-FREE, LARGE-VOLUME IMAGE INTENSIFIER IONIZATION CHAMBER



This 150 cc ionization chamber is designed primarily for measuring exposure rate at the image intensifier input phosphor.
It's extremely thin envelope enclo-sure allows for the most accurate results possible! Because of its unique size and shape, it can be inserted into the spot film tray. A 16 1 /2" long thread-ed handle allows for easy insertion and removal.
And its low attenuation means virtually no interference with automatic brightness systems.

Ion Chamber is compatible with the RAD-CHECK MICRO-R and most commercially available electrometers.

SPECIFICATIONS:
Volume: 150 cc
Energy Response: +/-10% from 1.8 to 10 mm Al HVL
Dimensions: 6.26" x 8" x 0.63" (15.9 cm x 20.6 cm x 1.6 cm)
Weight: 1.10 lbs (.50 kg)

06-524-1000 Shadow-Free, Large Volume Image Intensifier Ionization Chamber, with 10-foot (3-meter) Cable

RAD-CHECK ™ REMOTE X-RAY EXPOSURE METER

Specifically designed for use with the external 30 cc remote ion chamber (Model 06-528).
Dose: 0.001 to 2R; 0.01 to 20 R/min.
Easy setup puts the display close to you when it's difficult to see into the room.

RAD-CHECK REMOTE can perform:

Entrance Skin Exposure Measurements (ESE).
Fluoroscopy exposure measurements.
Exposure checks; radiographic (mR/mAs).
Beam quality; Half Value Layer (HVL).
mAs reciprocity; mA Station Checks…
Plus many others, depending on the remote external chambers used.

The RAD-CHECK REMOTE works specifically with an external remote chamber, so it's extremely versatile.
It's the ideal quality control device for a variety of appli-cations and situations, since it gives you the opportuni-ty to place the chamber in any orientation!
And it's per-fect for phantom testing, fluoroscopy or when using an external ion chamber. (External ion chambers other than 06-528 may be used, but require system recalibration.)

The RAD-CHECK REMOTE is easy to set up and use.
Its versatility makes it the perfect addition to your QC test equipment. In those cases where it's inconvenient to have the display in the x-ray room, or visibility is difficult,

RAD-CHECK REMOTE puts the display next to you.

Model 06-528

SPECIFICATIONS:
Ranges: 0.001 to 2 R; 0.01 to 20 R/min
Standard Calibration: At 75 kVp with 4 mm Al filtration at 22° C and one atmosphere using model 06-528 chamber (optional)
Reproducibility: Within 2% short-term over 100 mR to 2 R range (1 mGy to 20 mGy)

Electrometer Drift: 0.5 to 1 mR/minute typical; 6 mR/minute max. (5 µGy to 10 µGy; 60 µGy/minute max)
Maximum Exposure Rate: Min. 90% collection at 20 R/second
Manual Reset: Resets display to zero
Operating Conditions: 10-40° C, max; 90% relative humidity
Display: 3 1 /2'' x 1 /2'' LCD, low battery indicator
Controls: Reset button. Dose or dose rate output selector. On/off switch. Tilt stand to adjust display visibility
Power: 9V battery, Mallory MN1604 or equal, greater than 50 hour life
Dimensions: 2.75'' high x 6'' wide x 6.25'' deep (7 cm x 15.25 cm x 15.9 cm)
Weight: 18 oz (0.51 kg)

06-526-5280 RAD-CHECK REMOTE
06-526-5282 RAD-CHECK REMOTE, SI Units

ACCESSORIES:


Model 06-528

06-528 Remote Ionization Chamber:
30 cc volume; energy response: within 7% from 15-65 keV (30-150 kVp filtered); 15 foot (4.5 meter) cable; 4'' x 4'' x 0.54'' thick (10.2 cm x 10.2 cm x 1.4 cm thick); 4 oz. (0.11 kg.)

89-525 Carrying/Storage Case:
Holds RAD-CHECK REMOTE and Accessories

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