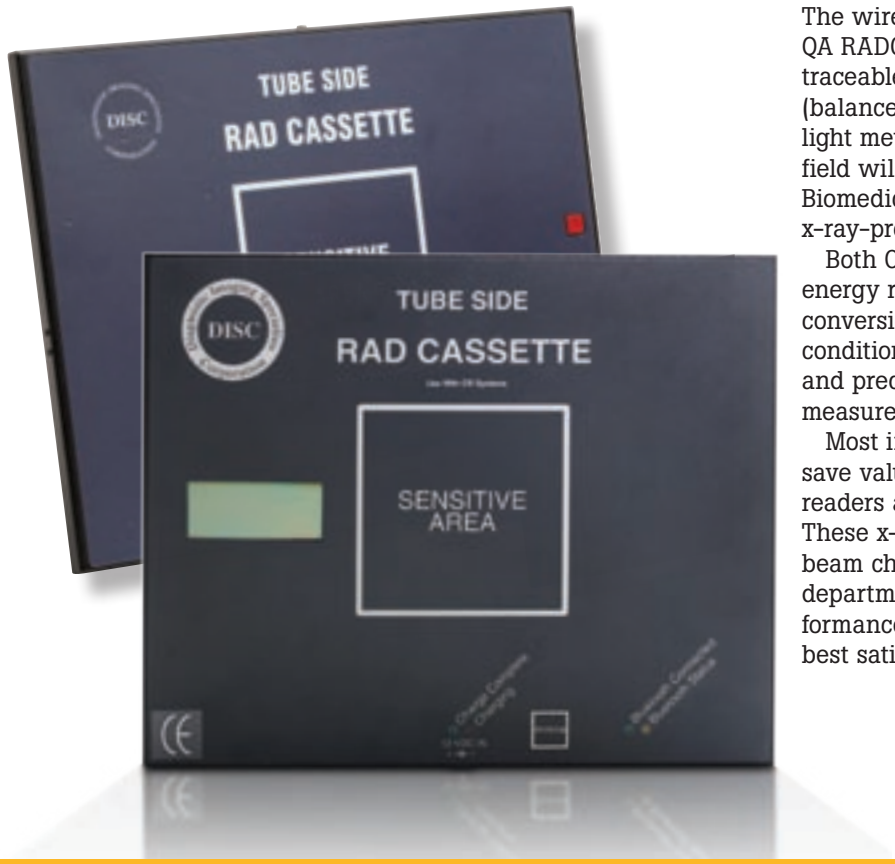
FLUKE®

Biomedical

07-CRXW and 07-QRX
Wireless CR RADCHEX and QA RADCHEX

Technical Data



The wireless 07-CRXW CR RADCHEX and 07-QRX QA RADCHEX are factory radiation-calibrated, NIST-traceable light meters that can be used to calibrate (balance) CR plate readers (also radiation-calibrated light meters) in the field. The CR plate reader in the field will be calibrated and traceable to the Fluke Biomedical factory radiation-calibrated and traceable x-ray-produced light exposure.

Both 07-CRXW and 07-QRX have the same x-ray energy response as a CR system (x-ray-to-light conversion efficiency is the same for various beam conditions). This enables them to be used as accurate and precise replacements for the plate reader's light measurement value (exposure index value).

Most importantly, the 07-CRXW and 07-QRX can save valuable time when calibrating or accessing CR readers and AEC used with multiple x-ray systems. These x-ray systems may have different filtration and beam characteristics even when located in the same department or imaging center. Balancing system performance and dose is an important QA requirement best satisfied with either the 07-CRXW or 07-QRX.

Key features

- Calibrates computed radiography (CR) plate readers and automatic exposure control (AEC)
- Assesses ongoing performance of CR plate reader, AEC, and automatic programmed radiography (APR)
- Sets and maintains desired clinical system speed (dose) of the CR system
- Calibrates CR plate readers in the field to be traceable to a factory radiation-produced light condition
- Links radiation exposure (mR) to the front of the plate accurately and predictably to a CR light measurement value (CRLU)
- Provides a reliable and reproducible method of accurately maintaining a CR manufacturers' specific factory calibration
- Provides three different tube-head filtration choices for users who desire a non-filtered beam condition for field plate reader calibration
- Software selections of multiple beam conditions for different CR manufacturers
- Ideal tools for service engineers, physicists, and quality assurance personnel

Applications

07-CRXW CR RADCHEX

The wireless 07–CRXW is ideal for use by service engineers to initially calibrate and trouble–shoot the CR plate reader, AEC, and density selector set–tings. Physicists use 07–CRXW to assess the performance of CR–AEC for compliance to clinical system speed objectives and patient dose. Radiology managers can use 07–CRXW to assist in the establishment of technique charts and training to determine ALARA techniques for various exam types. QA per–sonnel can use 07–CRXW to periodically document the per–formance of the CR system and to compare CR to film/screen systems regarding desired ALARA objectives.

The 07–CRXW uses Bluetooth® to communicate with a laptop computer so that the CRLU (CR Light Units), EI (Exposure Index) and estimated mR values mea–sured by the electronic cassette are automatically recorded and displayed on the laptop screen.

Benefits

Using the 07–CRXW to calibrate x–ray system AEC and CR plate readers instead of a dosimeter can improve productivity significantly. A full system AEC and CR plate reader calibration process can take as much as six hours. Employing the 07–CRXW the process can be completed in under two hours. A substantial productivity gain for service, biomedical or physics professionals.

07-QRX QA RADCHEX

Essentially, the wireless 07–QRX performs all of the functions of the 07–CRXW, however CRLU and speed numbers (repre–senting the relative system speed of the CR system com–pared to a film/screen system) are displayed on a LCD readout built into the electronic cassette. A pressure sensitive On/Off switch activates the 07–QRX and is used to reset the meter between exposures. The values may be manually entered into the software program on a laptop or PC if desired but a laptop is not required to use the 07–QRX.

The 07–CRXW and 07–QRX are designed to work with all major brands of CR equipment.

Benefits

The 07–QRX QA RADCHEX is ideally suited for fast and easy daily checks of AEC and CR system exposure continuity. Data obtained from daily checks can be used for trend analysis of individual systems as well as a way to monitor the balanced performance of CR systems throughout the healthcare enterprise.

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Technical specifications

X-ray energy dependence
Simulates relative light output of photostimulatable phosphor plate (PSP) within ± 3 % over kVp range of 60 kVp to 120 kVp and a patient equivalent thickness range of 5 cm to 35 cm (within specified operating rates)

Digital range
Computed radiography light units; CRLU (AEC#); 0 to 500, CRLU (AEC#); 0 to 5000 (07-QRX)

Minimum CRLU rate
1.5/s (approx. 0.15 mR/s entrance exposure rate), 7/sec (approx. 0.7 mR/sec entrance exposure rate) (07-QRX)

Maximum CRLU rate
2500/s (approx. 250 mR/s entrance exposure rate), 25000/sec (approx. 2500 mR/s entrance exposure rate)

Power on/off
Manual switch

Controls
Wireless communications with computer software; Bluetooth wireless communications (07-CRX only)

Functions
Measures CRLU (AEC#); converts CRLU to CR manufacturers specific CR plate reader light exposure index value (EI); user selectable; calculates cassette input exposure values for various x-ray beam conditions (exposure in mR plus backscatter)

Power requirements
Built-in NiMH rechargeable battery pack (9.6 V)

Typical battery life between charging
5 hrs, 20 hrs (07-QRX)

X-ray beam filter
1.5 mm copper (B152-110); 6 in x 6 in complete with velcro straps to attach to x-ray tube collimator housing

Environmental requirements
Operating temperature: 15 °C to 35 °C (59 °F to 95 °F)

Dimensions (WxDxH)
30 cm x 24 cm x 1.3 cm (12 in x 10 in x 0.5 in)

Weight
1.8 kg (3.9 lb)

Computer software
CD-ROM containing Microsoft® Excel program

Computer requirements
Computer capable of running Windows® 98 or higher with Microsoft Excel, Computer not required to operate (07-QRX). Software is provided with (07-QRX) to manually enter values if desired

Ordering information

Models

07-CRXW	Wireless CR RADCHEX, including PC-based Excel® documentation software
07-QRX	Wireless QA RADCHEX, including PC-based Excel® documentation software

Optional accessories

07-AEC6	For film/screen applications to assess and calibrate automatic exposure control (AEC)—radiographic and mammographic systems
07-AEC6M	For film/screen applications to assess and calibrate automatic exposure control (AEC)—mammographic systems

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About Fluke Biomedical

Fluke Biomedical is the world's leading manufacturer of quality biomedical test and simulation products. In addition, Fluke Biomedical provides the latest medical imaging and oncology quality-assurance solutions for regulatory compliance.

Today, biomedical personnel must meet the increasing regulatory pressures, higher quality standards, and rapid technological growth, while performing their work faster and more efficiently than ever. Fluke Biomedical provides a diverse range of software and hardware tools to meet today's challenges.

Fluke Biomedical Regulatory Commitment

As a medical test device manufacturer, we recognize and follow certain quality standards and certifications when developing our products. We are ISO 9001 certified and our products are:

- CE Certified, where required
- NIST Traceable and Calibrated
- UL, CSA, ETL Certified, where required
- NRC Compliant, where required

Fluke Biomedical.
Better products. More choices. One company.

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