



QA MAMCHEX Meter



Product Description

The QA MAMCHEX is a factory x-ray-calibrated NIST/PTB traceable meter that can be used for CR Mammo manufacturers' or hospitals custom quality assurance programs. In addition, the instrument can be used to:

- 1) Assess, calibrate, and balance Mammo CR plate readers throughout a department;
- 2) Assess and calibrate automatic exposure control (AEC) sensitivity and density control settings;
- 3) assess the operating speed of the CR system; and
- 4) be used as a daily and long-term indicator of the X-ray and CR system 'calibration drift'.

Specifications

X-ray energy dependence: Simulates relative light output of Photostimulatable Phosphor Plate (PSP) within +/- 3% over kVp range of 20kVp to 32kVp and a patient equivalent thickness range of 2cm to 8cm (within specified operating rates).

Digital Range: Mammo Light Units (MamLU);
MamLU: 0 to 6553.5

Minimum MamLU Rate: 15.0/Sec (approx. 1.5 mR/Sec cassette entrance exposure rate)

Maximum MamLU Rate: 3000/Sec (approx. 300 mR/Sec cassette entrance exposure rate)

Power On/Off: Manual Switch

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

Operating environment: 15°C to 35°C (59°F to 95°F)

X-ray beam filter: 2mm Al (type 1100) supplied for plate reader calibration assessment – 4" x 4" to attach to collimator housing

Electronic Cassette Dimensions: Fits 18 x 24 cm Bucky;
Fits 24 x 30 cm Bucky with L adaptor

Electronic Cassette Weight: 1.8kg (3.9 lb); L adaptor 0.73kg (1.6lb)

Primary End Benefit

Since the meter has the same energy response to x-rays as the imaging plate, the meter can **take the place of the plate and reader** when assessing the AEC system performance for thickness and kVp 'tracking', and density selector settings providing a **tremendous (eight-fold) boost in productivity**.

Applications

The QA MAMCHEX is ideal for use by technologists and QA personnel to periodically check and document the performance of the Mammo CR system and to compare CR to film/screen systems to achieve desired ALARA objectives. Service and biomedical engineers can use the meter to initially calibrate and troubleshoot the X-ray tube, CR plate reader, AEC, and density selector settings. Physicists can use the instrument to assess the performance of Mammo CR systems for compliance to clinical system speed objectives and breast dose.

This meter comes with "data logging" Excel software so technologists can enter and "track" daily calibration "drift" of the AEC system, tube output, and plate reader.

The QA MAMCHEX has its meter LCD display in the electronic cassette. (see photo). Values are displayed directly in this display window after each exposure. If the operator wishes to record the values in available software data fields on a PC or laptop, it is accomplished through manual entry.

QA Mamchex is designed to work with all major brands of CR mammographic equipment.

Features

The QA Mamchex is a simple, easy-to-use, and an inexpensive instrument that is self-contained and provides two values when exposed to x-rays: MamLU, which represents the plate reader light output from a CR imaging plate when exposed to x-rays (also represents the pixel values on the image); and Speed (which represents the relative system speed at which the CR system is operating compared to a film/screen system). Once its 'electronic' cassette has been exposed to x-rays, the two values appear automatically on an LCD display on the front of the cassette.

A pressure sensitive On/Off switch activates the meter and is used to RESET the meter between exposures. The size of the electronic cassette is the same as a standard CR mammo cassette and can be placed in the Bucky tray for 'in-Bucky' or 'table-top' measurements.