



CHECKMATE 2TM

Simple and Reliable Daily QA

A therapy beam constancy meter intended for simple radiation output checks.

Introduction

CHECKMATE 2 is a therapy beam constancy instrument intended for output checks on central axis. The CHECKMATE 2 is ideal for these applications:

- Central axis dose constancy for daily measurements
- Output checks that require quick setup
- Other special applications including repeatability, monitor chamber linearity, output factors

Hardware

CHECKMATE 2 uses a single vented ionization chamber located in the center of a precision template, with light field markings at 10 x 10cm² and 20 x 20cm². The ion chamber is located at a nominal depth of 1.0g/cm². Measured values appear on a large display which is easily viewed at the control station bunker monitor.

Calibration is performed by the user for up to 15 calibration values. The calibrated memory positions automatically advance to the next position each time the beam turns off.

Easy Setup

Setting up CHECKMATE 2 is quick and easy. Simply position the unit on the treatment couch and align with the crosshairs. CHECKMATE 2 uses rechargeable batteries which eliminate the need for cables during the measurement process. Battery condition can be seen immediately after turning on the unit by looking at the battery level indicator on the end panel display. CHECKMATE 2 automatically corrects measurements for air density using on built-in temperature and pressure transducers.

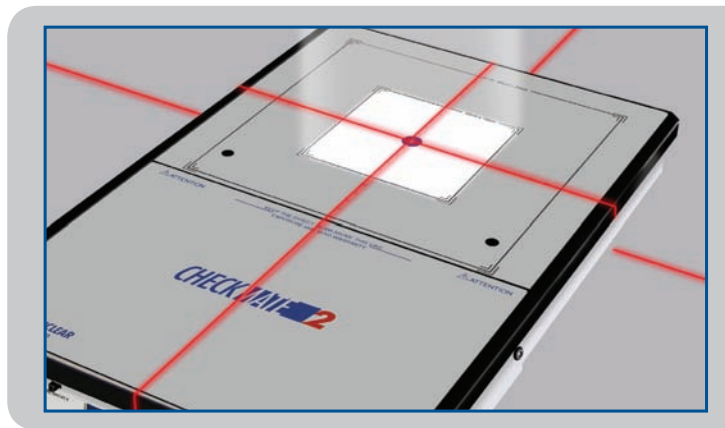
Taking Measurements

Taking measurements with CHECKMATE 2 is simple:

- 1 STEP** Turn on the power switch.
- 2 STEP** Place CHECKMATE 2 on the treatment couch and align the crosshairs and the light field to the instrument template.

- 3 STEP** Expose CHECKMATE 2 to the beam.

- 4 STEP** Read the measured dose on the numeric display on the end of the instrument.



The numeric dose value displayed indicates the percentage of the stored calibration value. The displayed value can be viewed on the bunker monitor or directly by entering the vault.

Technical Specifications

Detector Array

Type
Vented ionization chamber, fully guarded
Quantity
1, located for CAX measurements
Volume
0.6 cm ³
Parallel plate separation
4mm
Detector bias
350 volts
Collection electrode
1.4 cm diameter, carbon
Inherent buildup
Effective: 1.0 ± 0.1 g/cm ²
Radiation measured
Photons: Co-60 to 25 MV
Electrons: 5 MeV to 25 MeV

Construction

Dimension
25.5 cm wide, 40 cm long, 5.5 cm thick
Weight
4.9 kg

Alignment Template

Light field alignment
10x10, 20x20 cm ²

Measurement Performance

Display units
Percentage of dose calibration set by user
Display range
0.1% to 999.9%
Measurement performance uncertainties
Reproducibility: 0.2%, (100 cGy)
Long-term Stability: 0.5%/year
Beam limits for measurement performance
Maximum Dose per accelerator pulse: 3.6 cGy
Maximum average dose rate: 3400 cGy/min
Maximum Dose: 133 Gy
Minimum Dose Rate: 20 cGy/min

Environmental

Recommended ranges
Operating Temperature: 15°C to 35°C
Storage Temperature: 0°C to 50°C
Relative Humidity: < 90% non-condensing

All data used is best available at time of publication. Data is subject to change without notice