



MIRION
TECHNOLOGIES

RADOS TOM
Tool&Object Monitor
CheckPoint:Waste™ family



FEATURES...

- Fibre detector technology
 - Better detection
 - Improved detector geometry
 - Minimized deadzones
 - Simple maintenance
- High throughput
 - Compact measurement chamber
 - Fast integral measurement
- Modular hardware design to match customer's requirements
- Software designed to easily adapt to customer's work environment
- Easy maintenance
 - Standardization of parts
 - Reduced electronics
 - Rugged
- Touchscreen 10,4"
- Ability to network

RADOS TOM

Tool&Object Monitor

TOM is a further supplement to the RADOS Clearance Monitors based on our tried and tested measurement philosophy. It is the first clearance monitor equipped with RADOS fibre detector technology, as proven for many years in RADOS body monitors, such as HandFoot-Fibre™ and TwoStep™-Exit.

TOM is a reliable and fast monitor for release measurements of various objects such as tools and small items, any to fit into the 40 x 50 x 40 cm chamber, not exceeding 50 kg.

A simple user guidance and easy-to-select parameters make work efficient & safe. The user has got the choice to either use one of the preset measurement modes, or easily adding as many additional modes as required.

health physics

A Mirion Technologies Division

Featuring:

RADOS



MONITOR DESCRIPTION

Detectors

The measurement chamber is equipped with 4 to 6 RADOS GammaFibre™ detectors sized 40 x 40 x 5 cm located left, right, bottom, top, and front and back (optional).

Fibre detectors have been developed by RADOS aiming at a much improved detector geometry, decreasing dead-zones to a minimum, and at the same time having detector electronics reduced to a photomultiplierbox, counting electronics and light fibre connections.

This finally adds up to very low maintenance effort and costs, and precise data.

Status LED strips

- green - ready to measure
- blue - service
- red - contamination

RADOS PC 2010

Mini-UPS for mains failure protection

- Buffers voltage fluctuations
- Keeps monitor alive for several minutes
- Will power monitor down automatically and smoothly

Designed for performance in nuclear environment

- Painted mild steel housing for being easily decontaminated

Options

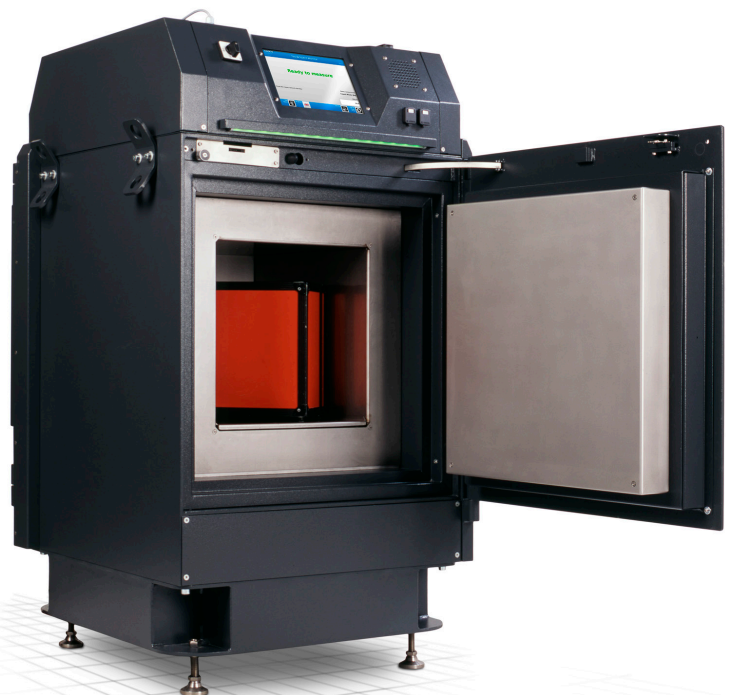
- Lead 50 mm instead of 25 mm
- Additional door on exit side
- Additional screen on exit side
- 2 additional detectors (back and front)
- Scale for up to 50 kg
- Underframe for easy handling
- Various languages available
- Link to CeMoSys™ server for centralized monitoring

For software options see below.

Software

TOM's software is designed for user-defined performance. The user may choose all parameters needed from a broad range of preset parameters, for any user-specific task. Parameters can either be modified via service mode which is accessible to authorised personnel only, or by choosing the specific expert measurement mode. Yet, it is possible to simply use preset modes.

- The software includes P² algorithm to shorten measurement time by analysing statistics to evaluate the probability of counts increasing.
- The selection of material parameters is supported by pictures - both preset and to be added by user.
- Monitor software runs on basis of real time multitasking operating system QNX to ensure fast and reliable operation.
- Optional software modules:
 - System Check incl. detector test
 - Basic Calibration
 - Nuclide Vectors
 - Scale Select
 - Dose Rate Calculation



FUNCTIONAL DESCRIPTION

Background Measurement

- Background is measured automatically after starting the system
- Background is constantly updated between measurements
- Background measurement can also be initiated by authorised personnel

Measurement

- Loading chamber
- Input of measurement data
- Measurement starts after chamber has been loaded and doors are closed, or data input is completed respectively
- Measurement time calculation based on background level, calibration, nuclide vector and statistical parameters
- Measurement result

Display of measurement result

- Measurement value display in Bq, Bq/g (with scale only), Bq/cm²
- Graphic display of activity distribution and activity position, possible with 6 detectors only

Logged measurement data

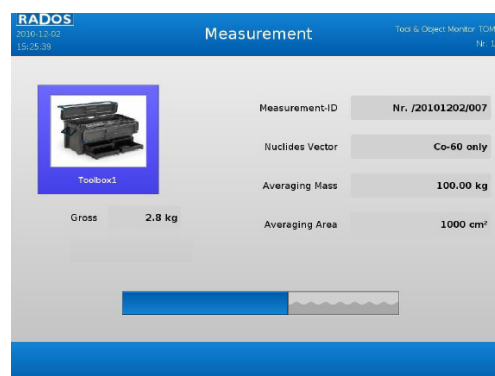
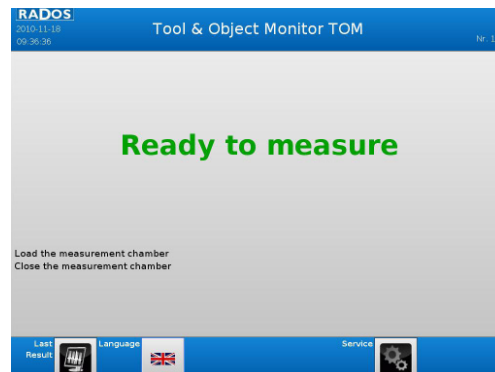
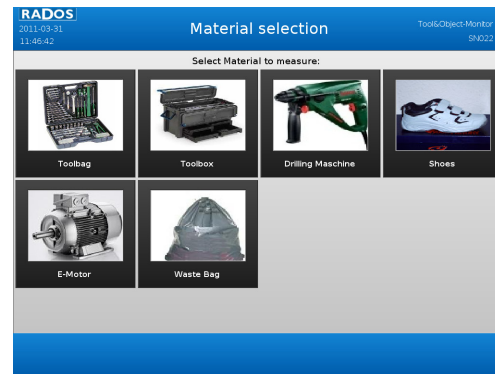
- Date and time of measurement
- Material type and weight of measurement material
- Specific activity in Bq/g (with scale only) and Bq/cm² and total activity in Bq
- Alarm level exceeded or not
- Protocol is printed (clean and/or contaminated)

Calibration

The use of a calibration is to get the relation of the count rate to the activity and to take all influencing factors into account.

Calibration can be performed by the customer.

The basic calibration (option) splits efficiencies into a nuclide and a material dependant part. Calibration menus for various materials and nuclides are available. Existing calibrations can also be imported (Option: Basic Calibration).




Service

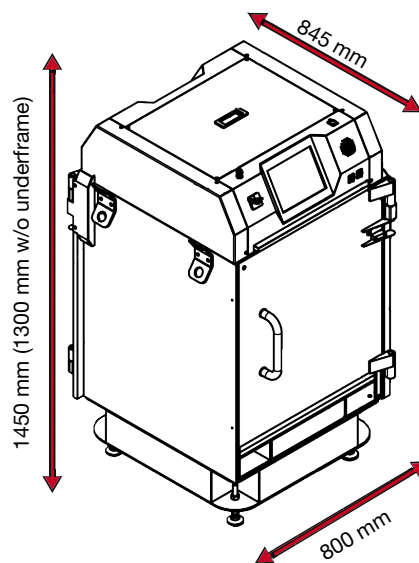
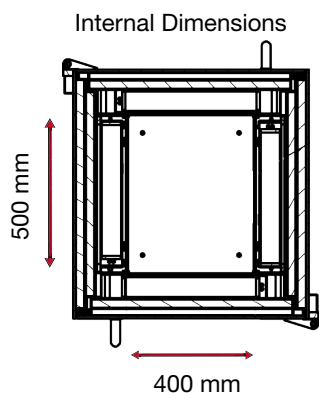
TOM is nearly free of any service requirements.

Testing and calibration is supported by dedicated software functions, such as a large array of self test, an integrated testing support function, and an optional system check module.

Different user groups can be defined, providing certain levels of authorisation.

Technical Specifications:		CheckPoint:Waste™		Tool&Object Monitor TOM
Detector	Type	Size		
RADOS GammaFibre™	RFD1600-G	40 x 40 x 5 cm		
detector housing, shielding	plastic 4 mm, 25 or 50 mm lead			
Detection Limits (MDA) Parameters: $k_{(1-\alpha)} = k_{(1-\beta)} = 1.65$, 0.1 µSv/h 50 mm lead shielding; measurement time: 30 s		4 detectors	6 detectors	
	Co-60	35 Bq	30 Bq	
	Cs-137	85 Bq	70 Bq	
Electronics	Industrial PC, Hard Disc, Touchscreen 10,4”, USB and LAN Device			
Software	Real Time Multi-tasking Operating System QNX 6 (UNIX like, POSIX compliant), User Software			
Mains	100 - 240 V	1,0 - 2,0 A	50-60 Hz	
Dimensions (see also figure below)	Overall	1300 x 800 x 845 mm; with underframe: 1450 mm height		
	Chamber	400 x 500 x 400 mm		
	Weight	1300 up to 1950 kg, depending on shielding and no. of detectors		
Environmental Conditions	Temperature	5°C - 45°C		
	Relative humidity	< 75%, max. 95% on yearly average, no condensation		
EMC	Compliant with European Electromagnetic Compatibility Directives.			





Since norms, specifications and designs are subject to occasional change, please ask for confirmation of the information given in this publication.

© Copyright 2011, All rights reserved. For trademark and registered trademark information.

The copyright in this work is the exclusive property of Mirion (RADOS) Technologies GmbH and is protected under the laws of Germany and other countries worldwide.



MIRION
TECHNOLOGIES

Health Physics
Division

www.mirion.com

7NUC_TOM_Y018-006E_1_PDB

Mirion Technologies (MGPI) Inc
5000 Highlands Parkway
Suite 150
Smyrna Georgia 30082
USA
T +1.770.432.2744
F +1.770.432.9179

Mirion Technologies (MGPI) SA
BP 1
F-13113 Lamanon
Frankreich
T +33 (0) 4 90 59 59 59
F +33 (0) 4 90 59 55 18

Mirion Technologies (RADOS) Oy
P.O. Box 506
FIN-20101 Turku
Finnland
T +358 2 4684 600
F +358 2 4684 601

Mirion Technologies (RADOS) GmbH
Ruhrstrasse 49
D-22761 Hamburg
Deutschland
T +49 40 85193 0
F +49 40 85193 256