

# Thermo Scientific DXT-RAD

## Extremity Dosimeter

The Thermo Scientific DXT-RAD Extremity dosimeter is a disk dosimeter designed for nuclear power or nuclear medicine personnel that have a high risk of exposure to ionizing radiation, particularly on their hands, due to their work in close proximity to radiation materials and radiation producing equipment.

### Key Features and Benefits

- Permanent Individual Barcodes – Ensure unbroken chain of custody
- Hot or Cold Sterilization – Enjoy flexibility in processing
- Fast Readout – Recognize efficiency in processing by reading out the DXT-RAD in less than 30 seconds
- TLD Material to meet application needs – Select from a range of TLD materials and filtration for use in specific radiation environments
- System Compatibility - Process DXT-RAD Dosimeters in the same Thermo Scientific Harshaw TLD Readers as traditional TLD multi-element card dosimeters, utilizing DXT-RAD Carrier Cards with capacity for four extremity dosimeters.



Radiation workers who work closely with radioactive materials and radiation producing equipment are particularly susceptible to over-exposure on their hands. This requires monitoring skin radiation dose on the fingers or wrists, exactly where the exposure is likely to be the highest. Detect and measure photon or beta radiation dose closest to the source using the Thermo Scientific™ DXT-RAD Extremity Dosimeter.

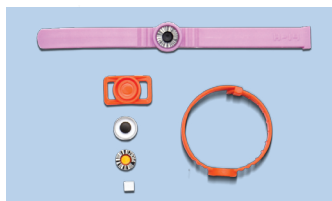
The DXT-RAD Extremity Dosimeter provides Radiation Safety Managers the ability to determine their personnel's highest potential exposure to drive appropriate corrective action. The small and versatile single-element dosimeters fit comfortably into adjustable rings and wrist bands, ensuring wearability without

interfering with the task at hand.

The DXT-RAD Extremity Dosimeters utilize the same high-quality and reliable thermoluminescent dosimetry material of the Thermo Scientific Harshaw TLD multi-element card dosimeters and offers additional advantages over other market options including, permanent individual barcodes, hot or cold sterilization, fast read out and near tissue equivalency. These features, combined with compatibility with the broader Thermo Scientific Harshaw TLD system, including high capacity readers and software programs makes the DXT-RAD the ideal solution for extremity dosimetry.



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## Material options to meet exact application needs

The Thermo Scientific DXT-RAD Extremity Dosimeter is offered in a variety of options to meet each customer's specific dosimetry application. Select from materials and filtration appropriate for monitoring shallow skin dose ( $H_p(0.07)$ ) of photon or beta radiation, with or without the presence of neutrons. Choose material with the radiological properties to meet your requirements for sensitivity and angular performance.

## Accessories to support efficient dosimeter processing

Thermo Scientific offers a range of accessories and complimentary products to complete a TLD extremity dosimetry system. This includes adjustable rings and wrist bands for wearing the dosimeter, and automated load/unloading instruments, carrier cards, tools and software for processing the dosimeters. DXT-RAD Extremity Dosimeters can be read out in Thermo Scientific Harshaw hot gas TLD readers using an integrated or external DXT-RAD camera.



## Technical and Radiological Specifications of the Thermo Scientific DXT-RAD Extremity Dosimeter

DXT-RAD Dosimeter Model	Part Number	Mass Density	TLD Material Type	Application	Useful Range
DXT-107H	26995	7 mg/cm <sup>2</sup>	TLD-100H LiF:Mg,Cu,P (Natural Lithium Fluoride)	Photon, Beta (3.3 mg/cm <sup>2</sup> cap) Neutron-Free Environment	0.20 mSv – 10 Sv (20 mrem - 1000 rem)
DXT-707H	26998	7 mg/cm <sup>2</sup>	TLD-700H LiF:Mg,Cu,P (Lithium-7 Fluoride)	Photon, Beta (3.3 mg/cm <sup>2</sup> cap) Neutron Environment	0.20 mSv – 10 Sv (20 mrem - 1000 rem)
DXT-707H-2	28909	7 mg/cm <sup>2</sup> (2 mm dia.)	TLD-700H LiF:Mg,Cu,P (Lithium-7 Fluoride)	Photon, Beta (3.3 mg/cm <sup>2</sup> cap) Neutron Environment High Angular Performance	0.20 mSv – 10 Sv (20 mrem - 1000 rem)
DXT-760H	26999	63 mg/cm <sup>2</sup>	TLD-700H LiF:Mg,Cu,P (Lithium-7 Fluoride)	Photon, Beta (3.3 mg/cm <sup>2</sup> cap) Neutron Environment Higher Sensitivity	0.10 mSv – 10 Sv (10 mrem - 1000 rem)
DXT-100	26994	100 mg/cm <sup>2</sup>	TLD-100 LiF:Mg,Ti (Natural Lithium Fluoride)	Photon Neutron-Free Environment	0.20 mSv – 10 Sv (20 mrem - 1000 rem)
DXT-600	26996	100 mg/cm <sup>2</sup>	TLD-600 LiF:Mg,Ti (Lithium-6 Fluoride)	Photon, Neutron Used with DXT-700 For Neutron Measurements	0.20 mSv – 10 Sv (20 mrem - 1000 rem)
DXT-700	26997	100 mg/cm <sup>2</sup>	TLD-700 LiF:Mg,Ti (Lithium-7 Fluoride)	Photon Neutron Environment	0.20 mSv – 10 Sv (20 mrem - 1000 rem)

Part Number	Filtration	Application
28573	3.3 mg/cm <sup>2</sup>	Photon, Beta, Neutron
28908	3.3 mg/cm <sup>2</sup>	Photon, Beta, Neutron (designed for use with DXT-707H-2 dosimeter)
27176	5 mg/cm <sup>2</sup>	Photon, Beta, Neutron
500597	42 mg/cm <sup>2</sup>	Photon, Neutron

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