



Be Smart. Be Safe. BeOSL.

The BeOSL Dosimeter is the essential component for whole body personal dosimetry measurements. This dosimeter measures the personal dose equivalents $H_p(10)$ and $H_p(0,07)$ in Sievert (Sv). The detector material beryllium oxide (BeO) readout is via optically stimulated luminescence (OSL). BeOSL Dosimeters are available in either a two-element and four-element-version. The BeOSL Dosimeter is versatile and can be used in many applications making it the best solution for whole body dosimetry measurements.

BeOSL Dosimeter

KEY FEATURES:

- MANUFACTURER CALIBRATED
- MULTIPLE READOUTS
- VERSATILE AND SUSTAINABLE DESIGN
- SMALL AND LIGHT FOR EASY HANDLING AND WEARING

BeOSL Dosimeter

TECHNICAL SPECIFICATIONS



Our cutting-edge BeOSL technology provides users with multiple dosimeter readouts (i.e., rereads) for dose result verification, dosimeter archiving and/or dose tracking.

With its durable and sleek design, the BeOSL Dosimeter is custom-made and manufactured in Germany. The BeOSL Dosimeter is comprised of high quality components to ensure the most accurate readouts possible for a high rate of wearing periods. Also, its detectors are always protected against environmental influences as the detector tray is extracted from the dosimeter only inside the BeOSL Equipment.

The BeOSL Dosimeter is available in both two-element or four-element versions which means it carries either two or four BeO detectors. With its excellent ceramic tissue equivalency of the BeO material, the two-element BeOSL Dosimeter uses only one detector for each unit ($H_p(10)$ and $H_p(0,07)$).

The two-element version covers the $H_p(10)$ detector with a filter made of Teflon. The $H_p(0,07)$ detector does not have an additional filter but the covering is constricted in this area. This version is smaller and lighter for easier handling and wearing.



Dosimeter Identification:

Bar Code (Code 128 C),
Internal RFID Chip on Request

Detector Material:

Beryllium Oxide

Radiation Type:

Photon Radiation and Beta
Radiation from Sr/Y-90

Nominal Dose Range:

$0,1 \text{ mSv} \leq H_p(10) \leq 10 \text{ Sv}$
 $16 \text{ keV} \leq E_{ph} \leq 7 \text{ MeV}$
 $0^\circ \leq \alpha \leq \pm 60^\circ$

Mechanical Resistance:

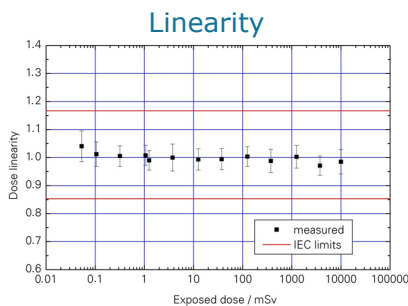
No Effect for Drop Heights up to
2 m/6.5 ft

Dimensions (2-Element):

LxWxH 58x23x9 mm /
2.3x0.9x0.4 in
Weight: 10 g

Dimensions (4-Element):

LxWxH: 71x23x9 mm /
2.8x0.9x0.4 in
Weight: 16 g



The four-element dosimeter has two additional detectors; one is covered with copper and the other one with lead. These detectors receive information to help energy meaning our algorithm can deliver a higher accuracy and clearer information on the irradiated radiation quality compared to other dosimeters.

As the manufacturer, we deliver only calibrated dosimeters. This is necessary since all BeO detectors have a different OSL sensitivity and in order to keep our

customers' lives simple, a calibration file is delivered with all the dosimeters.

BeOSL Technology is used by leading dosimetry services around the world!



DOSIMETRICS GMBH

OTTO-HAHN-RING 6

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COMPONENTS

Article Number	Description
1001	BeOSL Two-Element Dosimeter
1002	BeOSL Four-Element Dosimeter



DOSImetrics



Be Smart. Be Safe. BeOSL.

The BeOSL Reader is an essential component of every BeOSL System. The BeOSL Reader measures radiation exposure using state-of-the-art technology, optically stimulated luminescence (OSL). During the readout process, the material is exposed to light from a light emitting diode (LED). This stimulus causes instantaneous light emission from the BeO detectors which is measured by photomultiplier tubes (PMT). The amount of released light matches proportionally with the radiation dose to which the dosimeter was exposed.

BeOSL Reader

KEY FEATURES

- COMPLIANT TO IEC 62387
- EXTREMELY FAST READOUTS
- EASY TO USE, LEARN AND MAINTAIN
- NO NEED FOR NITROGEN

BeOSL Reader

TECHNICAL SPECIFICATIONS



The BeOSL Reader is a fundamental part of the BeOSL System. Our BeOSL technology provides multiple dosimeter readouts (i.e., rereads) for dose result verification, dosimeter archiving or dose tracking. The BeOSL Reader's exceptional engineering and design, high-end components, and local manufacturing in Germany ensure millions of readouts with as little downtime as possible.

The BeOSL Reader can be operated in two different ways: either manually or combined with automatic solutions. It is designed to read two- and four-element BeOSL Dosimeters. The two-element version measures $H_p(10)$ and $H_p(0,07)$ simultaneously within the limits of IEC 62387. The dose algorithms are linear and not based on a distinction of cases.

Our Reader goes above and beyond international standards. It is CE compliant and part of a dosimetry system that is PTB type tested (*Physikalisch-Technische Bundesanstalt* of Braunschweig, Germany) under reference number 23.52 11.01.

Also, the BeOSL Reader offers more than other systems can; it automatically extracts the card with the detector elements from the dosimeter assembly and pushes it back after the readout. In fast mode, the short readout time allows the operator to process 240 dosimeters per hour or more.

The BeOSL Reader is paired with its own very intuitive and user-friendly operational software, LabClient. It leads the user through the entire process with on-screen messages and self-explanatory pictographs. The Reader also controls the reader calibration and numerous quality management functions. More information about our software's functions can be found in the *LabClient Manual*.



Our IT and Customer Support Team is always ready to assist with any technical questions or inquiries the user may come across when operating any of our BeOSL equipment. With the BeOSL Reader, our expert staff are able to remotely access a customer's system (subject to the customer's permission) for monitoring and servicing any issues. The Dosimetrics' Team ensures both high quality service and products – we are ready to be your partner in providing a best dosimetry system possible to your clients.



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Dosimeter Identification:

Internal bar code reader (Code 128 C), internal RFID reader on request

Measurement Range (Dose):

30 μ Sv - 10 Sv

Measurement Range (Energy, Angle):

16 keV - 7 MeV
0° - \pm 60°

Repeatability:

σ < 3% for 1 mSv of Cs-137

Size:

Width: 20.5 cm / 8.1 in
Height without optional handle: 20.6 cm / 8.1 in
Length, drawer closed: 47.9 cm / 18.9 in
Length, drawer open: 57.5 cm / 22.6 in
Weight: 18.6 kg / 41 lbs

Electrical Supply Data:

100 - 240 V, 50 - 60 Hz

Maximum nominal power:

30 VA @ 100 V,
40 VA @ 240 V

Fuse:

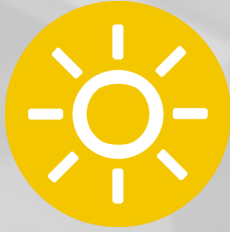
1 A, slow

IP 41

COMPONENTS

Article Number	Description
1001	BeOSL Two-Element Dosimeter
1002	BeOSL Four-Element Dosimeter
2001	BeOSL Reader
2002	BeOSL Eraser
2003	BeOSL Irradiator
2012-0001	Reader Control PC (full)
2012-0002	Reader Control PC (light)





Be Smart. Be Safe. BeOSL.

BeOSL Eraser and BeOSL Reader are the quintessential combination in the BeOSL System. The BeOSL Eraser permanently removes all dose information from the dosimeter. The BeOSL Eraser offers dynamic erasing time to fit the needs of the user. The quick processing time allows the user to save both money and time.

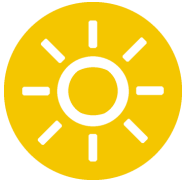
BeOSL Eraser

KEY FEATURES

- EASY TO LEARN, USE AND MAINTAIN
- INTERNAL BAR CODE READER
- VARIABLE ERASING TIME FOR THROUGHPUT OPTIMIZATION

BeOSL Eraser

TECHNICAL SPECIFICATIONS



The BeOSL Eraser is like all the other BeOSL Equipment distinguished by its exceptional engineering, high-end components and local manufacturing in Germany.

The BeOSL Eraser can be operated in two different ways: either manually or combined with automatic solutions. It is designed to erase two- and four-element BeOSL Dosimeters.

All international standards are met with the BeOSL Eraser. It is CE compliant and part of a dosimetry system that is PTB type tested (*Physikalisch-Technische Bundesanstalt* of Braunschweig, Germany) under reference number 23.52 11.01.

It is simple; users save time and money in their dosimetry process with the BeOSL Eraser. Just like the BeOSL Reader, the BeOSL Eraser automatically extracts the card with the detector elements from the dosimeter assembly and pushes it back after erasing. Also, with its high capacity erasing stimulus, the dosimeter identification and variable erasing times, a manually operated BeOSL Eraser can process 90 dosimeters per hour or more.



The dose that was applied to a dosimeter can be completely removed by the BeOSL Eraser. This allows the user opportunity to use the BeOSL Dosimeters multiple times. The dosimeter can be returned to its dosimeter pool and can be assigned to a new or the same user again in the future.

BeOSL Technology is used by leading dosimetry services around the world!



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Dosimeter Identification:

internal bar code reader (Code 128 C)

Erasing Time:

typically 13 s for a dose of 0,5 mSv

Throughput:

90/hour in manual operation

Size:

Width: 20.5 cm / 8.1 in
Height without optional handle: 20.6 cm / 8.1 in
Length, drawer closed: 47.9 cm / 18.9 in
Length, drawer open: 57.5 cm / 22.6 in

Weight:

15.5 kg / 34.2 lbs

Electrical Supply Data:

100 - 240 V, 50 - 60 Hz

Maximum nominal power:

30 VA @ 100 V,
40 VA @ 240 V

Fuse:

1 A, slow

IP 41

COMPONENTS

Article Number	Description
1001	BeOSL Two-Element Dosimeter
1002	BeOSL Four-Element Dosimeter
2001	BeOSL Reader
2002	BeOSL Eraser
2003	BeOSL Irradiator
2012-0001	Reader Control PC (full)
2012-0002	Reader Control PC (light)





Partial Body Dosimeters — Practical and Accurate Dose Monitoring for Today and the Future!

In our modern world, partial body dosimeters are becoming increasingly more important to ensure accurate dose measurements of various appendages including hands, fingers and eyes. Research and recent trends show that the need for these types of measurements will only further increase in the future. As medical and industrial technologies continue to develop, partial body radiation dose measuring will become a necessity. Especially when the dose distribution is too inhomogeneous to be measured by whole body dosimeters. Partial body dosimeters ensure accurate measurements and can be seamlessly integrated into existing BeOSL Systems.

BeOSL ezClip

AVAILABLE TO WEAR WITH:

- FINGER RING
- EYE LENS DOSIMETER
- VARIOUS ADAPTERS

BeOSL ezClip

TECHNICAL SPECIFICATIONS

A smart and simple partial body dosimetry solution.

Dosimeter Identification:
QR code and human readable number

Detector Material:
Beryllium Oxide

Radiation Type:
Photon radiation and Beta radiation from Sr/Y-90

Nominal Dose Range:
30 μ Sv - 10 Sv

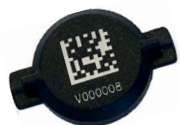


The BeOSL ezClip is the perfect addition to your BeOSL dosimetry equipment and accessories. The ezClip is ready to be paired with our OSL Ring Dosimeter and Eye Lens Dosimeter.

Fit in the ezCase, the BeOSL ezClip can be handled exactly like the whole body dosimeter; it allows the user to erase, read and prepare the ezClip. Also, our software seamlessly assists the user with assembling the barcode of the ezClip to its dosimeter and readout badge (via the ezCase). The convenience of our software allows the user more flexibility in handling his or her own detectors.

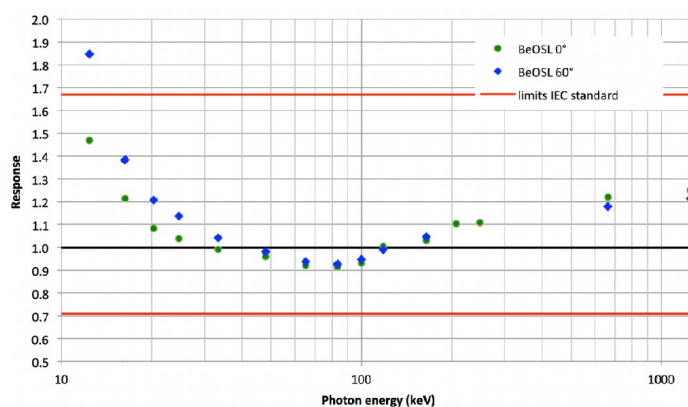


The ezClip + OSL Finger Ring pairing allows precise finger and/or hand dosimeter measurements. The small size provides the wearer a maximum amount of comfort and lightness when facing difficult tasks. The OSL Ring can be adjusted and custom-sized to fit the user's finger.



The ezClip + Eye Lens Dosimeter are the best solutions for eye dose monitoring. It can either be worn in a headband adapter or in radiation protection goggles.

Energy and Angular Response



The BeOSL ezClip was designed and manufactured locally in Germany.

MADE IN GERMANY

COMPONENTS

Article Number	Description
1003	ezClip
2007	Opening Device OSL Ring (manual)
2008	Opening Device OSL Ring (pneumatic)
4004	ezCase
4010	Ring Type OSL
4014	Headband Adapter for Eye Lens Dosimeter
4018	Eye Lens Dosimeter
4019	Headband
4020	Eye Lens Dosimeter Mounting Tool
4021	Adhesive Adapter for Eye Lens Dosimeter

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The Quality Assurance (QA) dosimeter is an essential solution to ensure the best reader calibration possible. The QA is easy to manage and provides automatic recalibration for its users. Combined with our software, reader calibration can be done quickly allowing the user more accuracy and time.

Quality Assurance

KEY FEATURES

- CONTROL READER CALIBRATION TO ENSURE THE HIGHEST POSSIBLE QUALITY
- USER-FRIENDLY
- AUTOMATIC RECALIBRATION

Quality Assurance

TECHNICAL SPECIFICATIONS



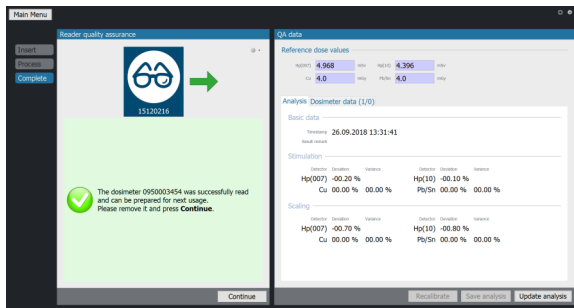
Quality Assurance (QA) guarantees that the BeOSL Reader measures accurately and provides automatic recalibration. Dosimetrics provides and calibrates special QA dosimeters to ensure accuracy and quality.

Why are QA checks recommended? Every BeOSL Reader has its own calibration. To ensure that the BeOSL Reader sensitivity is stable, the reader's progression should be monitored with the QA measurements to guarantee the highest quality of the measurements.

Our QA comes in the form of a dosimeter which is physically identical to the BeOSL dosimeters, however, it is labeled as "QA dosimeter." The special labeling allows a QA dosimeter to be read for a longer period of time to achieve maximum precision. What makes our QA dosimeters different is that they are not affected by fading and background effects. This means an accurate check via the reader is always available.



There are two ways the QA dosimeters can be used. The first option is to rent them already irradiated as a QA flexKit. The QA flexKit contains QA dosimeters irradiated by a German quality-checked irradiation facility, control dosimeters (also called "Controls") to consider natural background (i.e., by air freight) and/or inevitable radiation (i.e., during customs inspections) as the QA flexKit was created in an accredited lab. It comes with an irradiation certificate.



The process for getting a QA flexKit is simple. Our Technical and Sales Support Team can help calculate the exact number of quality assurance and control dosimeters that are needed to fit any sized dosimetry service. We provide individual solutions to ensure what's best for every customer. Our software helps guide the user through the quick and easy QA process (see the *Lab Client Manual* for

further details). Combined with our software, the QA dosimeters and control dosimeters provide automatic calibration to the user. This means safe, precise measurements are always accessible.

The second option is that the QA Dosimeters can be purchased. If the user opts for this option, then their QA Dosimeters have to be irradiated by a local irradiation lab.

BeOSL Technology is used by leading dosimetry services around the world!



QA flexKit:

- QA Dosimeters (irradiated)
- Control Dosimeters
- USB data stick
- Irradiation certificate
- Storage time: up to six months

Dosimeter Types:

- Two-Element BeOSL Dosimeter
- Four-Element BeOSL Dosimeter

COMPONENTS

Article Number	Description
3015-0001	BeOSL Two-Element QA Dosimeter — QA flexKit
3015-0002	BeOSL Two-Element Control Dosimeter — QA flexKit
3015-0003	BeOSL Two-Element Setup Fee — QA flexKit
3015-0004	BeOSL Four-Element QA Dosimeter — QA flexKit
3015-0005	BeOSL Four-Element Control Dosimeter — QA flexKit
3016-0006	BeOSL Four-Element Setup Fee — QA flexKit
1001-0019	BeOSL Two-Element Dosimeter QA
1002-0003	BeOSL Four-Element Dosimeter QA

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Cartridge Based Automation is an excellent solution for small and earnest monitoring services that want to go beyond manual processes. The system is based on dosimeter cartridges which are processed automatically. With our Cartridge Based Automation, reading, erasing and preparing are extremely easy. It is designed to significantly raise production quantities. More automation means more time for the user; our Cartridge Based Automation is an essential addition to a dosimetry service.

Cartridge Based Automation

KEY FEATURES

- WORKS WITH BOTH WHOLE BODY DOSIMETERS AND PARTIAL BEOSL BODY DOSIMETERS
- CAN HOLD OVER 240 DOSIMETERS
- EASY TO USE & MAINTAIN

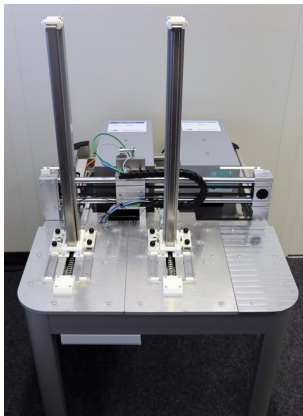
Cartridge Based Automation

TECHNICAL SPECIFICATIONS



Automation brings processes to life and gives the user more time to take care of other tasks. Our automation concept allows the dosimetry system to work on its own. The Cartridge Based Automation provides more reliability and independence.

It works seamlessly with either existing or new BeOSL Technology. This system consists of four dosimeter cartridges that are all automatically processed for reading, erasing and preparing. Every cartridge has the capacity to hold over 60 dosimeters; meaning each system can load more than 240 dosimeters in total. These cartridges can be easily loaded and changed while the Cartridge Based Automation is working. The system is designed to make the user's life easier and provide automation. The Cartridge Based Automation allows the user to grow his/her dosimetry service while simultaneously providing a higher processing capacity.



Dimensions (table):

LxWxH 108x69x82 cm /
42.5x27x32.3 in

Dimensions (table and cartridges):

LxWxH 108x69x145 cm /
42.5x27x57 in

Weight:

~50 kg (without BeOSL Reader and Eraser)

~100 kg (with BeOSL Reader and Eraser)

Power Supply:

230 V AC / 50 Hz

Fuse: 16A

$P_{max} < 1000$ W

Air pressure:

6 bar (oil-free)



With the Cartridge Based Automation, Two-Element BeOSL Dosimeters are quickly read, erased and prepared. When inserted into the ezCase (as shown in the photo on the left), Partial Body BeOSL Dosimeters including the Eye Lens Dosimeter and OSL Finger Ring Dosimeter can be processed in our Cartridge Based Automation as well. Find us on YouTube and watch the Cartridge Based Automation in action.



 /DosimetriesGmbH

To ensure precise processes, the Cartridge Based Automation works with a work flow control software. This provides the user with setting adjustments and options. The system can be customized to fit just right to any type

of routine. The user sees results quickly, tracks his/her dosimeters and optimizes dosimeter processes.

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MADE IN GERMANY

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COMPONENTS

Article Number	Description
2005	Cartridge Based Automation
1001	BeOSL Two-Element Dosimeter
1002	BeOSL ezCase
2001	BeOSL Reader
2002	BeOSL Eraser
2012-0001	BeOSL Reader Control PC (full)
2012-0002	BeOSL Reader Control PC (light)

