

LASERMET ORCA LASER BLOCKING CURTAINS INSTRUCTION MANUAL



**ORCA Certified Laser Blocking Curtains
to BS EN IEC 60825-4**

LASERMET ORCA Laser Blocking Curtains Instruction Manual

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1 Declaration of Conformity



LASERMET LIMITED

Laser Blocking Curtains, Roller Blinds, & Window Blocks

**Made from Lasermet Material: BLOCK-MAT-HP2
BLOCK-MAT-HP3WW
BLOCK-MAT-HP4BB**

DECLARATION OF CONFORMITY

This is to certify that the Laser Blocking Curtains, Roller Blinds, & Window have been tested in accordance with the following directives and standards and found to comply.

Lasermet certifies that this product complies with the basic requirements for health and safety as provided by the following directives and standards:

Directives: Machinery Directive 2006/42/EC

Standards: EN 60825-4:2006 +A1:2008 +A2:2011
Safety of Laser Products, Part 4 – Laser Guards


Irradiated Area	PEL (T3) 10s	PEL (T2) 100s
4 mm ²	3.9 MW/m ²	2.2 MW/m ²
2000 mm ²	0.62 MW/m ²	0.35 MW/m ²

Supplier:

Lasermet Limited
Lasermet House
137 Hankinson Road
Bournemouth
BH9 1HR
Dorset
United Kingdom

Country of Origin: England

Signed:


Paul Tozer
Managing Director

Date: 10 June 2019



2 Safety Warnings

This device is intended to be used as part of a safety system which may be used to protect personnel and equipment from possible injury, damage, or loss.

As such it must be installed and wired according to these instructions and tested by suitably qualified persons. No attempt may be made to tamper with the parts, open them, or use them outside of the parameters contained herein.

The units are only designed to be fixed to surfaces using their inbuilt fixing holes. They must not come into contact with each other or any other moving part when in use. The parts should never be subject to impact or mechanical strain.

Safety switches should never be defeated or bypassed. It is imperative that all steps are taken to ensure that any spare actuators are made unavailable, such that they cannot be used to defeat the switch or reduce the protection offered by the system in any way.

3 Concept

Lasermet's ORCA Laser Blocking Curtain is intended to be used to stop stray laser radiation from escaping a laser-controlled area such as a laboratory, operating theatre or other area containing a laser. Typical uses are over windows or as part or all of a laser enclosure. The curtain should be used to protect those outside the area from the laser radiation. Those inside the laser-controlled area must wear suitable personal protective equipment (e.g. laser protective eyewear). To maintain the safety of those outside the laser-controlled area this product must be used in accordance with the following instructions.

Lasermet's ORCA Laser Blocking Curtains are made from Lasermet's specially developed laser blocking material and are CE marked and certified to EN 60825-4 Safety of Laser Products Part 4: Laser Guards. (Hospitals in the UK should adhere to the requirements of the NHS Estates HBN 26 – "Facilities for surgical procedures".)

Laser Blocking Curtains

Made-to-measure, the ORCA Curtains are ideally suited to prevent inadvertent escapes of laser radiation, within the limits specified in the Declaration of Conformity.

Lasermet provides a full range of laser interlock equipment including control systems, interlock switches, illuminated warning signs, laser shutters, door locks, external power supplies etc. which can be connected to provide a complete laser interlock system. Full support, design and installation is available from Lasermet, please contact us for any queries. Contact details are given at the end of this manual.

4 Maintenance

The curtain should be inspected at regular intervals for signs of damage from laser beams. If any such damage is evident the curtains should be replaced or sent for repair.

Lasermet's Laser Blocking Curtains do not require regular maintenance. There are no preventative maintenance requirements.

4.1 Cleaning

If the unit needs to be cleaned, abrasive cleaning materials must not be used as they may cause damage. For best results clean with special cleaning wipe available from Lasermet, part number LBS-CW.

Alternatively, the laser blocking material can be cleaned with soapy water (mild detergent) or it can be cleaned with Klorosept (or similar — used in hospital environments) using a soft cloth or similar. The laser blocking material has been tested with Klorosept as described below. Klorosept is therefore recognised as a safe fluid to use when cleaning Lasermet's ORCA Laser Blocking Curtain material.

4.2 Laser Blocking Material Test Report

In an in-house study, NaDCC solutions (Klorosept) at concentrations up to 10,000mg/l available chlorine were used to evaluate the effects of chlorine on the texture, appearance (colour), smell and weight of Lasermet Laser Blocking Curtain samples.

The Lasermet material which was supplied by Lasermet UK was divided into four equal size pieces measuring 153 x 168mm approximately and subjected to a range of test parameters as detailed below.

Note: Soaking of blinds is not a standard practice in hospitals but was used as an extreme worst-case exposure scenario to exaggerate any possible adverse effects.

No.	Conditions	Weight before	Weight after 2 hours	Weight after 24 hours	Appearance/ Smell/ Texture after 2 hours	Appearance/ Smell/ Texture after 24 hours
1	Sample wiped once with 10,000mg/l solution and left to dry in air	28.1328g	28.1356g	28.1474g	No Change	No Change
2	Control Sample left to soak in deionised water	27.8612g	28.7328g Allowed to air dry for 30 mins = 28.2938g & still drying Returned to solution	29.8128g Allowed to dry completely overnight = 27.7846g	No Change	No Change
3	Sample left to soak in 1,000mg/l solution	28.4258g	29.3188g Allowed to air dry for 30 mins = 29.0236g & still drying Returned to solution	30.8120g Allowed to dry completely overnight = 28.4274g	No Change	No Change in appearance or texture. Bitter-sweet odour from sample.
4	Sample left to soak in 10,000mg/l solution	28.4198g	29.4652g Allowed to air dry for 30 mins = 29.2296g & still drying Returned to solution	31.4662g Allowed to dry completely overnight = 28.9150g	No Change in appearance or texture. Slight bitter-sweet odour from sample.	No Change in appearance or texture. Slight bitter-sweet odour from sample.

5 Installation

Fix the Lasermet recommended curtain track to the wall or ceiling as desired. Curtain track options are also available for applications where the track is suspended below the ceiling. Where bends are required these tracks must be supplied pre-bent to specification.

The top edge of the curtain has eyelets. Consumer hooks (S hooks with one end smaller than the other) are supplied. For each eyelet hook the large end of the consumer hook through the eyelet and hook the small end through the curtain track runner.

The curtain can be used to block laser radiation from either side.

6 Specifications

The curtain can be used for blocking lasers of all wavelengths between 180 and 10600 nm (inclusive). Either side can be used to block the laser radiation.

PEL Rating (Protective Exposure Limit)

Irradiated Area	PEL (T3) 10s	PEL (T2) 100s
4 mm ²	3.9 MW/m ²	2.2 MW/m ²
2000 mm ²	0.62 MW/m ²	0.35 MW/m ²

For longer times the PEL may be less. The user should ensure that the irradiance of the incident laser radiation does not exceed the PEL.

The optical density of the curtain is greater than 5, when exposed below the PEL.

7 Warranty

Lasermet provide a 12-month warranty for defects in materials and manufacture, from the date of installation or delivery. This warranty covers the Laser Blocking Curtain Material and the structure of the unit. Installations completed by Lasermet are covered against defects in workmanship for 12 months.

Damage or defects caused by other factors are not covered. For example, industrial contamination, incorrect cleaning, storm damage. Consequential loss is not covered under warranty. Compensation for indirect or direct loss or damage is expressly excluded. Rectification of the defects or a replacement does not initiate a new warranty period. No claims, under the warranty, are valid in the case of minor, technically unavoidable deviations in colour, patterns or structure or in the case of dimensional deviations of ± 5 mm.

All curtains are made-to-measure units. For this reason, cancellation of orders placed and the return and or exchange of the goods are excluded. For all deliveries, payments and other legal transactions, English law takes precedence for any litigation.

8 Contact Details

Lasermet provide a full range of laser interlock equipment including interlock switches, illuminated warning signs, laser shutters, entry keypads with built-in fail-safe override timer, door locks, external power supplies etc. which can be interconnected to provide a complete system. We also supply equipment and consultancy covering all aspects of laser safety. Full support, design, and installation is available from Lasermet, please contact us for any queries.

For sales and technical support:

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