Screens, Curtains, Roller Blinds & Enclosures

Protection from Stray Laser Radiation

lasermet
laser safety solutions

ISO 9001 REGISTERED FIRM
Cert No GB3164
2682
ISO/IEC 17025:2005
Only for optical testing to:
IEC/EN 60825-1
IEC/EN 60825-12
IEC/EN 60601-2-22

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Lasermet offers laser users a range of laser-blocking free-standing screens, curtains and roller blinds.

Designed for use as passive guards to enclose an area where Class 3B or Class 4 lasers are in use either to protect against accidental exposure to the laser beam or for long term blocking of laser radiation at lower power densities. They have all been developed by Lasermet specifically to provide the most cost-effective and high-quality solutions to virtually all laser-blocking requirements.

All Lasermet laser-blocking products are CE marked and certified to EN 60825-4 (Safety of Laser Products Part 4: Laser Guards).

Laser-blocking curtains, roller blinds and standard screens are made from a laser-blocking material which has been specially developed by Lasermet. This can be supplied off the roll or as ready-made ceiling or wall-mounted curtains, roller blinds, window blocks or free standing screens and enclosures.

Also available are heavy-duty screens for high power, multi-kilowatt materials-processing lasers. These are made from a 50 mm thick sandwich of steel and a special lightweight laser-blocking material.

Lasermet Laser Blocking Screens are offered in standard and heavy-duty options. Both are made from materials which have been specially developed by Lasermet using their expert understanding of practical laser safety requirements. These screens can be used to block lasers of all wavelengths.

Standard Laser Blocking Screens

These are available in two standard size screens. The LBS-8 is 2.44 m (8 ft) wide and the LBS-4 is 1.22 m (4 ft) wide.

Both are 1.92 m (6 ft 4 in) high, which is high enough to protect the eyes of anyone less than 6 ft 8 inches tall standing right up to the screen, while low enough to pass through a standard doorway. The screens can be made higher if desired.

	Irradiated Area	PEL (T2) 100s
White Side	1 mm^2 500 mm^2	3 MW/m^2 0.7 MW/m^2
Black Side	1 mm^2 500 mm^2	1 MW/m^2 0.5 MW/m^2

Standard Laser-Blocking Screens consist of a black powder coated steel framework, mounted on lockable castors. The framework supports a laser-blocking screen made from Lasermet's specially-developed laser-blocking material which seals to the floor.

The material is white on one side and black on the other side and will operate as a blackout screen as well as a laser-blocking screen.

Both sides will block laser radiation but if the white side is used as the laser-blocking side a higher specification of blocking will be achieved, making it suitable for higher power lasers.

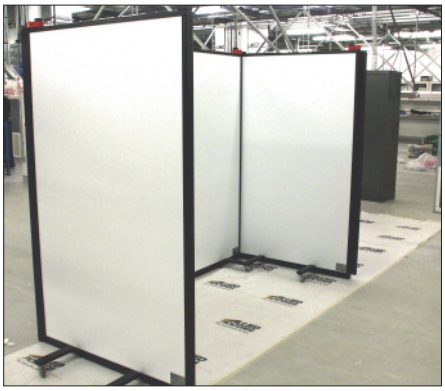
The material is fireproof. When irradiated with greater than 0.5 MW/m^2 it will emit a non-hazardous smoke and may glow, thus indicating that a stray beam is present.

Standard screens can be wheeled easily into position and then kept there by locking the castors. Multiple screens can be connected together using connecting pieces (LBS-C) in a straight line or at an angle up to 90 degrees. If four or more screens are used a rectangular enclosure can be constructed.

Heavy-Duty Laser Blocking Screens

These screens are designed to block all lasers, including high power, multi-kilowatt materials processing lasers.

There are two standard size screens, both of which are 1.98 m high. The LBS-HD-8 is 2.35 m wide and the LBS-HD-4 is 1.185 m wide.



The screens consist of a 50 mm thick sandwich of steel and a special lightweight laser-blocking material, with a white laminate finish on both sides. This is mounted on a powder-coated steel framework, with heavy-duty lockable castors.

The screens can be wheeled into position and then kept there by locking the castors. They can be used to form a complete enclosure or part thereof.

Heavy-duty screens can be used to block lasers of all wavelengths. They offer protection to the following specifications:

Irradiated Area	PEL (T3) 10 s	PEL (T2) (T2) 100s
4 mm^2	61 MW/m^2	34 MW/m^2
2000 mm^2	2.7 MW/m^2	1.5 MW/m^2

Where a production line uses a Class 4 laser for cutting and welding, it is impractical for the whole facility to observe Class 4 safety regulations. However, laser blocking screens can be formed into an enclosure to protect other workers, or alternatively a complete enclosure can be built (see over page) to turn the laser facility into a Class 1 system.

Laser-Blocking Curtains

Laser-Blocking Curtains are made from Lasermet's specially-developed laser-blocking material and can be supplied ready-made as ceiling or wall-mounted curtains. The material is white on one side and black on the other side and will operate as a blackout screen as well as a laser-blocking screen.

Both sides will block laser radiation but if the white side is used as the laser-blocking side a higher specification of blocking will be achieved, making it suitable for higher power lasers.

The material is fireproof. When irradiated with greater than 0.5 MW/m^2 it will emit a non-hazardous smoke and may glow, thus indicating that a stray beam is present. Protection times given by the material at various power densities are shown in the specifications below.

The top of the curtain has brass eyelets every 150 mm and the curtain is supplied with a stainless steel hook for connecting to a curtain track.

The weight of the material is 1.3 kg/sq m. Heavy duty curtain tracks can be supplied for smooth operation and for applications where the curtain needs to be suspended below the fixing points high-quality cubicle curtain track is available.

	Irradiated Area	PEL (T2) 100s
White Side	1 mm^2 500 mm^2	3 MW/m^2 0.7 MW/m^2
Black Side	1 mm^2 500 mm^2	1 MW/m^2 0.5 MW/m^2

Laser Blocking Roller Blind

Lasermet Laser-Blocking Roller Blinds are made from the same Lasermet laser-blocking material as the curtains and are made-to-measure to fit any size of window. They are available as standard or encapsulated options.

When using Standard Laser-Blocking Roller Blinds for non-recessed windows it is advisable to allow an extra 50 mm on the height and width, giving an extra 100 mm all round, thereby ensuring that there is no possibility of laser beams passing through the window.

Encapsulated Laser Blocking Roller Blind

Encapsulated laser safety roller blinds are made using the same laser-blocking material as the standard laser safety roller blinds. However, the roller blind is built into a white finish aluminium frame, which encapsulates the top, both edges and bottom of the blind. This eliminates any possibility of laser beams passing round the sides of the blind, blocks out all light and gives a much neater finish.

Class 1 Enclosures for Class 4 Lasers - CE Certified to EN 60825-4

We supply and install Class 1 room size laser enclosures for high power lasers. All enclosures are sold tested and certified to EN 60825-4 (Safety of Laser Products Part 4 - Laser Guards). These can be supplied complete with interlock system and illuminated signs. Fume extraction and/or air conditioning can also be supplied, as can CCTV. This is a cost effective and extremely easy method of enclosing your laser system which fulfils your safety requirements and frees up space for other activities.

The specification of the enclosure to EN 60825-4 is as follows:

Irradiated Area	PEL (T3) 10 s	PEL (T2) (T2) 100s
4 mm^2	61 MW/m^2	34 MW/m^2
2000 mm^2	2.7 MW/m^2	1.5 MW/m^2

Shown here pictures of a 5 m x 5 m x 3 m enclosure with double door entrance, for a robot mounted 2 kW fibre laser. This enclosure was supplied complete with interlock system, laser safe vents, CCTV and lighting.

Laser enclosure with interlock system and CCTV

CE Certified Laser Blocking Partitions

We also supply CE certified laser blocking partitions with or without doors, for dividing one laser lab into two or more sections. These semi-permanent partitions are cost effective and extremely quick to install, without the mess and fuss of building a brick or plasterboard wall. As such they offer an alternative to traditional methods of room division, and can also be easily undone at a later date if required. Alternatively they can be left as a permanent installation.

All partitions are tested and certified to EN 60825-4 with the following specification:

Irradiated Area	PEL (T3) 10 s	PEL (T2) (T2) 100s
4 mm^2	61 MW/m^2	34 MW/m^2
2000 mm^2	2.7 MW/m^2	1.5 MW/m^2

Inside view showing robot mounted laser and laser-safe air vents

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