



Laboratory grade blackout solutions

Economical and fully customizable blackout products for optics and photonics.

Website: www.grayflare.com

Email: sales@grayflare.com

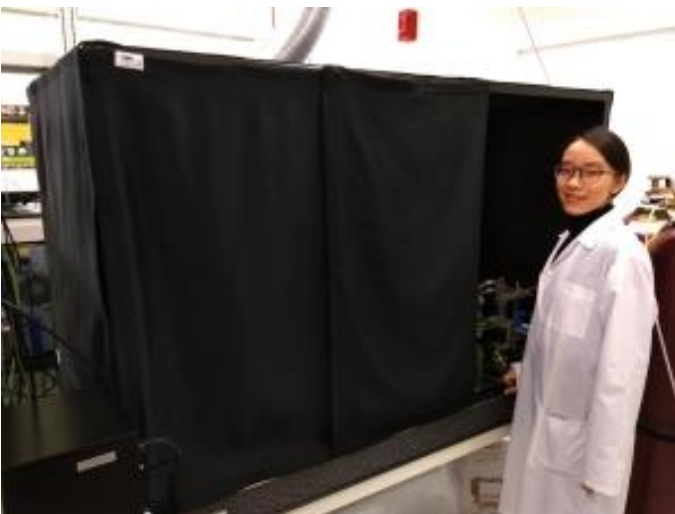
Our products

SoftBlack™ optical blackout curtains

We are pleased to offer the most versatile, easily installed, and economical optical laboratory blackout solution on the market. Born of our own need to isolate optical experiments from other parts of our lab, we created a useful, convenient, and economical blackout solution that can be readily customized for your experiment.

SoftBlack™ is our lower-cost option. The fabric panels are lightweight and easy to install. They have outstanding blackout quality. They are extremely opaque, easy to handle, and have superb blackout quality with a professional look and feel. These systems are best for optical blackout requirements and can be used for laser barriers for class 1, 2, and some class 3 lasers. Laser barrier safety information on our curtains is available from our website.

SoftBlack systems will come with an NFPA-701 flame retardant safety certification.



LaserBlack™ laser barrier blackout curtains

These lightweight blackout systems are under development. They're made from special coated polymer fabric used in the aerospace industry and law enforcement. They will block class 3 lasers and some class 4 lasers. The interior polymer layer can withstand very high temperatures. The coating helps to shape and cut the polymer fabric and improves the laser barrier capacity. The fabric is light, clean, extremely opaque, and very strong.

LaserBlack™ systems are more expensive than SoftBlack blackout systems and can be used as a laser barrier up to a significantly higher laser irradiance. LaserBlack systems will also come with NFPA-701 flame retardant certification.

Options

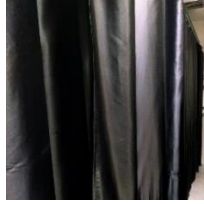
Our standard systems have rare earth magnets sewn directly into the fabric along the edges of the curtain, so that they can be affixed or removed from magnetic steel frames. The curtains can be quickly installed, removed, or folded back to allow access to any part of the experiment. 9-inch magnet spacing is standard but a 6-inch option is also available.

In addition to optical setups, our magnetic curtains attach to steel window frames in order to isolate the lab from the outside environment. When you want people to see inside or simply need outside light, you can remove the curtain in an instant. No other laboratory



blackout system has this level of flexibility.

We also offer a hook and loop option at the same price. Similar to Velcro, it has the hook side sewn on curtain and the loop side has adhesive backing. The adhesive side has to stick to your framing.



Sometimes it is necessary to slide a blackout curtain across a lab or around a large setup. For lab curtains, grommets are usually the best mounting option. These are used with hooks to slide a curtain along a rail.

Just tell us the dimensions of the curtain you want and we'll quickly send you a quote. Please note that if you want to use a hook and rail system, you must purchase it system from a distributor and have your building maintenance people install it. We don't sell or install rails. The hooks and rails used in the system shown here came from McMaster-Carr. You can use hook and rail systems from other distributors too.

Framing systems

Many labs have steel shelving units above the optical table, onto which our magnetic curtains can be directly attached. This eliminates the needs for a separate frame. For this option, before ordering you should check to make sure that a permanent magnet can stick to your frame.

We offer customized framing systems for systems without an appropriate pre-existing steel frame or shelving unit. Just specify the size you want, and we will ship your magnetic frame with your curtains. The photo at the beginning of this brochure uses one of our frames.



The frames are lightweight hollow steel tubes, matte black with 1-in² cross section. Assembly is quick and tidy. The magnetic curtains attach directly to the frame and can be easily folded back to access any part of the experiment.

Blackout quality

When you design your experiment, it is important to consider how much blackout you need. For extremely sensitive experiments where even single stray photons may influence the results, several precautions must be taken.

The blackout material must be extremely opaque. Our high-quality curtains have been extensively tested using

broadband and laser sources. Our curtains are made of the best lightweight and non-rubberized blackout fabric. They are excellent light blockers.

Light leaks, if present, usually occur where the curtain mounts to the frame. Our regular blackout systems have a 9-inch spacing between the magnets. We find that this is suitable for most experiments. We often work with low light levels, such as single photon counting experiments, for which the 9-inch spacing suffices with some care to ensure that the curtain is well placed on the frame.

We also offer high-density magnetic placement, with magnets separated by 6 inches. In our experience it is difficult to observe light leaks from these systems. Tighter magnet spacing will increase the cost of the system by ~25%. Alternatively, the hook-and-loop system holds the curtain at all points, so there is little opportunity for light leaks.

One advantage of our systems is that it is simple to run feedthroughs into your experiment. However, this unavoidably creates tiny light leaks around the cables. We have never found this to be a problem in our experiments, but if you want to avoid this then you need to install your power from the inside, for example using overhead power strips on a shelving unit.

Pricing

A full price list can be found on our website at www.grayflare.com. The cost of a system will depend on the size, options, and choice of fabric (SoftBlack vs. LaserBlack). For US prices please use the current exchange rate. We offer a 10% discount to all educational institutes and government labs.



By way of comparison, a system including the frame for blackout or laser safety curtains from other vendors can cost up to \$10,000 or more for enclosures around a standard optical table.

Since every setup is unique, we encourage you to email us with your exact dimensions, and we will quickly get back to you with a quotation for your blackout system.