

# Q&A: Ophir Optics

CANADIAN INDUSTRIAL MACHINERY  
EXAMINES THE ROLE OF THE LENS IN  
THE CUTTING OF ALUMINUM.

**Q:** What role does the lens play - specifically in the cutting of aluminum?

**A:** The lens is an integral part of any cutting process.

Aside from the obvious fact that an old, dirty or scratched lens may not cut at all, a yellow lens is reflective.

Most often aluminum or stainless steel can be a lower gauge which is thinner and more pliable. Although pliability is nice when you are welding or bending and the malleability of the metal allows for a laser to cut quickly.

The downside to that is that the softer metal will often get 'drippy' and then you have to spend time burring off to get a smooth edge.

You really need a smooth edge if you are welding one piece of stainless or aluminum to another.

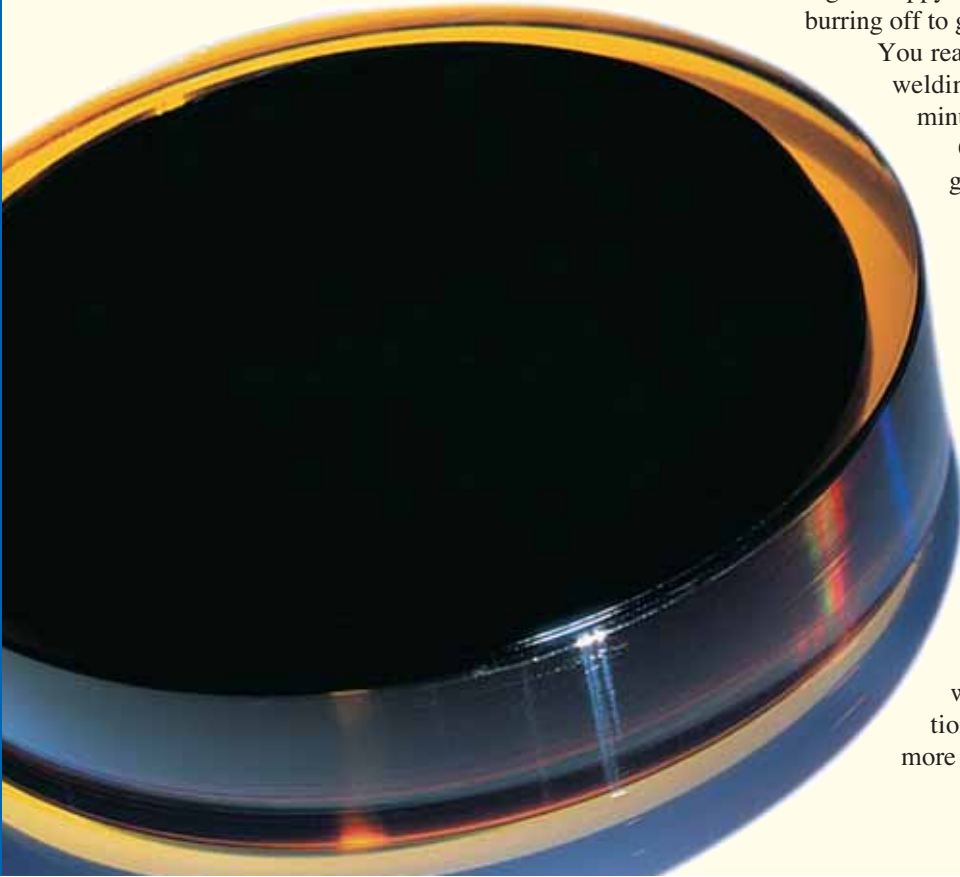
Otherwise, your weld will have gaps and that will affect its strength and may reduce its long term weld holding capability.

**Q:** Why is lens choice important?

**A:** The above statement leads us to lens choice.

All yellow lenses have a certain amount of reflectivity and in metals stainless and aluminum have the highest reflectivity as well.

This is a common complaint when cutting these metals. In addition, the soft metals tend to spatter more easily.



## **Q: How has Ophir solved the inherent issues in this type of laser cutting?**

**A:** The Black Magic lens is a really good solution for a couple of reasons.

The lens will not allow visible light to pass, however laser light thrives on this lens. The Black resists heating up like a yellow lens, which may be one reason the splatter does not adhere to the coating as strongly.

Also, since the coating is so durable, it tends to clean more easily. Spatter that will affix itself like cement to a yellow lens will clean off of the Black Magic.

That is why although it is more expensive in the up-front purchase because it is more expensive to manufacture the Black, it will more than pay for itself because it will last longer.

## **Q: What product from your line solves these issues and how/why was it developed?**

**A:** The Black Magic was the brainchild of our R&D Department when they were looking for a lens that would stand more abuse in a manufacturing environment.

When you visit the OEM, it is a beautiful, clean, dust free place to cut. There is plenty of light in the showroom and everyone is smiling and walking around in clean monogrammed shirts.

When you go to a real plant, they are up to their neck in metal cutting, sometimes 24/7 with cut metal on the floor and hands that are used to doing a hard

day's work that usually get dirt or grease on them. That's where reality is.

No special dust removal system to keep the air quality spotless in the average job shop.

They have to work in areas where many different machines are running all day and night and some of those are creating dirt that gets onto the lens.

## **Q: What is in the pipeline from Ophir that will solve these and other issues?**

**A:**

We just came out with a product called the EZ Clean Wipe which allows the operator to keep a small pre-moistened cloth in a foil packet in his work shirt pocket.

That way he can clean the lens without having to go to the lens cleaning kit that usually comes with the new machine.

I can't tell you how many of those kits are left on the end of a table near the machine, open...with all the tissue papers getting all the dust from the plant on them.

It's like washing your car with sandpaper.

Sometimes it is the incremental improvements that add up in any job. If you can get a lens to last longer and keep a machine cutting non-stop or just be able to clean a lens quickly where you work without a big project being made out of it, the day just runs a bit smoother.■

