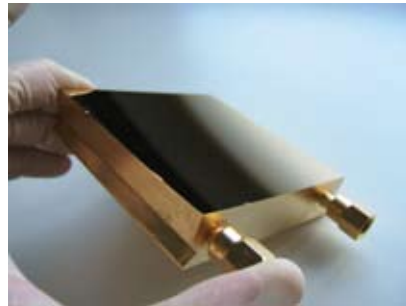




LBP Newsletter September 2016

Support for CO₂ lasers

Although fiber lasers have become the bulk of current laser OEM production, the reports of the death of CO₂ lasers are greatly exaggerated. However it does seem as though OEMs have dramatically cut support for installed CO₂ lasers, including stock of spare parts. As a result we have seen a surge in demand for our mirror reworking service, not just for truly obscure mirrors but for parts that were standard and widely available just 2 or 3 years ago. We can repair a wide range of laser mirrors to a 'good as new' condition. Simply email us with details of the part and a photograph if possible and we'll let you know what we can do.

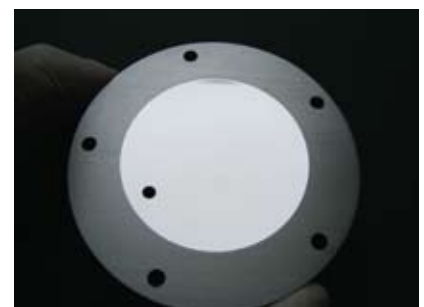


Substrates supply to specialist coaters

We've been forming close partnerships with optical coating companies to supply them with fully tested, high quality substrates. We manufacture the metal mirrors and deliver them polished, cleaned and ready for coating with traceability and test certification.

Examples include substrates we have supplied for UV mirrors for use with <200nm radiation, highly optimised mirrors for a single laser line(s) and broadband mirrors for UV and IR use.

Uniquely we polish metal mirror surfaces that are supersmooth and free from scatter and diffraction. We can typically achieve surface roughness better than $R_{rms} = 2.5nm$.



Contact us for help,
information and prices:

www.lbp.co.uk
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Partial Gold coating

We make our Gold mirror coating using electrochemical deposition. The benefit of this is that all mirror surfaces are gold coated, giving superior performance and durability. Sometimes though it is important that part of the mirror has the base metal exposed, with the gold coating restricted to certain surfaces or features.



Restricting the extent of gold coating by a "masking" technique that survives the hot and aggressive plating baths has proved difficult, but in the last few months we have successfully developed two different techniques to overcome this. Our customers have been quick to take advantage of these new techniques, using the partially coated mirrors in both laser and non laser optical systems.



We recently partially coated some stainless steel mirrors where a gold coated front surface was required, but the rear surface needed to be uncoated stainless steel for maximum magnetic properties. This allowed the mirrors to be mounted into magnetic holders, speeding alignment and assembly.

Aluminium mirrors can have a gold coated reflective front face, whilst the rest of the mirror remains black anodised. This is very useful for stray light and ghost image reduction, and we can now achieve this effect for customers with no painting or messy blackening processes.

Another application we have come across is where a zone of the reflective surface needs to be uncoated and unpolished such as this copper beam absorber / mirror combination.



Polishing Inconel

Most of our optics are sold for use in industrial or laboratory environments. Some applications need mirrors to work at extreme temperatures or in corrosive environments. We have had good results in polishing Inconel 625 to a laser quality mirror finish. Inconel alloys are oxidation and corrosion resistant materials, well suited for use in extreme environments subjected to pressure and heat. When heated, Inconel forms a thick, stable, passivating oxide layer protecting the surface from further attack. Inconel retains strength over a wide temperature range, attractive for high temperature applications where aluminium and steel would succumb to creep.



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