

LASER BEAM PRODUCTS

NEWSLETTER Sept 2010



Versatile stainless steel

Mirrors made from uncoated Stainless Steel (or Inox) are extremely versatile with uses in many industries such as pharmaceutical, brewing, medical, and nuclear. The corrosion resistance of Stainless Steel is perfect for use in outdoor applications, and in humid or dusty conditions.

The hard polished mirror surface can be used as a reference for other optics, or equipment to be mounted on.

Laser Beam Products have made circular, rectangular and even multifaceted prisms from Stainless Steel, with laser quality polished reflective surfaces. The typical reflectivity of Stainless Steel in the visible spectrum is 60%.

The ready availability of Stainless Steel, and ease of machining means **low prices** and **quick delivery times**, even for single prototype mirrors.

Stainless steel mirror



Aluminium 'Lipstick' mirrors

"Lipstick" mirrors

Need a mirror to be mounted at exactly 45 degrees? Then try our "Lipstick" mirrors above.

The face is 45 degrees to the base to within 1 arc minute, and they can be made from many metals. The surfaces can be dielectric coated as well. This example is made from Aluminium and coated for high reflectivity in the UV and Visible spectrum.

Lipstick mirrors could be made from Copper, for use with high power CO₂ lasers or medical Er:YAG lasers.

This particular solution evolved from a medical industry customer who found his adhesive bonding technique of glass-based mirrors distorted the mirror flatness, and worse still allowed the mirror to move over time, losing alignment of his precision scanning equipment during use.

A solid metal lipstick mirror also allows simple replacement of the mirror during on site servicing, when factory based alignment equipment is not available.

Overall this solution simplified the equipment assembly, improved productivity, and importantly consistency of equipment in the field.



Stainless Steel 'lipstick' mirrors

Parlez-vous Francais?

LBP is adding a series of foreign language documents to its website. There are now several documents to download in Spanish and French, and we plan to add more over time.

For more information visit our website: www.lbp.co.uk/Downloads



Off to a good start

A newly appointed Production Manager at a laser cutting shop was surprised to find lots of half used laser mirrors dotted around on desks, in cupboards, tool boxes and other hidey holes.

A quick round up gave him enough mirrors to last him a year! They were sent to LBP for re-working, we repaired them and returned them to him as good as new.

A great first day at a new job!

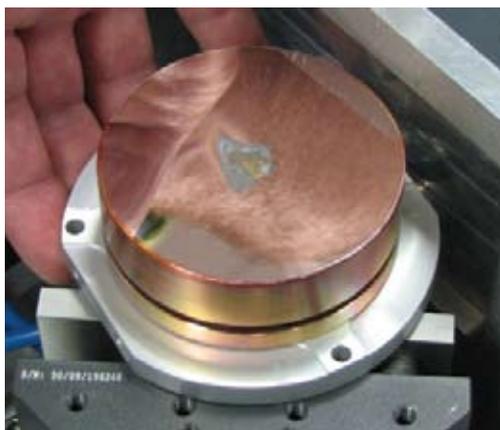
Also this month...

We have upgraded the sensitivity of our CO₂ laser calorimeter. This has allowed us to measure the reflectivity of large mirrors weighing 3/4 Kg.

Not all CO₂ lasers are the same.....

We have recently helped several customers using TEA (Transversely Excited Atmospheric) CO₂ lasers, which are a PULSED CO₂ laser type. Not realising that the term "CO₂ laser optics" often refers to mirrors designed for the far more common CW (Continuous Wave) laser types (fast axial flow, slab discharge etc) the standard mirrors they sourced completely failed within a few seconds due to the very high laser pulse energies. After waiting several months for delivery, a few seconds of use was disappointing!

Our Gold coating withstands both high power CW *and* MegaWatt pulsed TEA lasers. We were able to take the used failed mirrors, remove the remains of the ablated dielectric coating, and then Gold coat them.



failed, damaged mirrors

Interestingly the first true high power TEA CO₂ laser was developed in Baldock, England, just 5 miles away from our factory here in Biggleswade.

Our Gold coated Copper mirrors have been independently certificated as having an LIDT of 46J/cm² in a 80ns pulse.

DON'T FORGET For Infra Red mirrors, think Laser Beam Products

We can supply mirrors in many materials including Copper, Aluminium, Silicon, Nickel, Brass and Molybdenum and with a variety of optical coatings including Gold, MaxR, Protected Silver and 1/4 wave phase retarder.

For more information, help and advice or prices:

visit our website www.lbp.co.uk

call us on: **+44 (0)1767 600877** or email us at: sales@lbp.co.uk

Laser Beam Products Units B&C Stratton Park Dunton Lane Biggleswade Bedfordshire SG18 8QS United Kingdom