



LASER BEAM PRODUCTS

NEWSLETTER February 2012



Reworking saves £8,000

One of our customers, well-known for making domestic heat exchanger systems, uses a sophisticated laser machine for cutting and welding the pipework.

They contacted us about reworking the mirrors in their two beam delivery systems. With around 19 pieces of 70mm internally water cooled mirrors, including a roof prism beam splitter, the cost saving was around 8,000 GB Pounds compared to buying new mirrors.

Not quite believing that such large sums could be saved without compromising performance we made a few trial pieces that the customer was happy with. It wasn't long before we received all the mirrors for reworking, plus a lot of previously used ones that had been kept for a "rainy day".

The pictures show a typical 'before' mirror, burnt and scratched, and one layer of the return shipment after they had been repaired.



mirror before reworking



reworked mirrors, packed

Hardened Metal Mirrors

There are many industries where the demands on an optical mirror are more than reflectivity and laser damage threshold. For example surface hardness, chemical resistance and magnetic properties might be important.

We have had several requests for more unusual materials recently. We have made square mirrors from EN31 (a tool steel hardened to Rockwell 60-64) and we've produced mirrors from the more exotic Titanium (Grade 5) which is widely used in the aerospace and medical industries.



Tool steel square mirrors



Titanium mirror

We are always happy to make trials on novel materials, and over the years we've accumulated a database of dozens that we have production processes prepared for. These include Molybdenum, Tungsten, Aluminium, ARCAP, Brass, Nickel and 406 Stainless.

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Some examples



45 degree 'lipstick' mirror



Mirror with mount and 'O' ring groove



Mirror and mounting plate

Quantum Cascade Lasers

First demonstrated in 1994 Quantum Cascade Lasers are finding more and more uses, not least in gas sensing and defence applications. We offer two types of mirror coating, "Protected Silver" and "Electroplated Gold" both of which are well-proven with customers using QCL sources. These coatings can be deposited onto Copper or Aluminium substrates, and offer a broad 99%+ reflectivity in the 1 to 20um spectrum.

If you are using traditional "optic plus mount" solutions we may also be able to save you money (a typical kinematic mount for a 50mm mirror costs £100). By "designing in" improvements using the machinability of metals, and our creative polishing and coating technology we can incorporate mounting holes, threads, flanges, dowel pins, alignment holes etc into a monolithic mirror. This can:

- * Reduce component count and cost
- * Improve assembly time, especially for a field serviceable item
- * Reduce weight and space
- * Improve mechanical stability and reduce alignment errors

New Ways to keep in touch

As well as our regular newsletters, you can now keep up with the latest news and developments at LBP via our Facebook page, on Twitter (@lasermirror) and via our blog at:

laserbeamproducts.wordpress.com

we'd like to get your thoughts, comments and feedback so please take a look and join in the discussion.

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

Read our blog: laserbeamproducts.wordpress.com

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