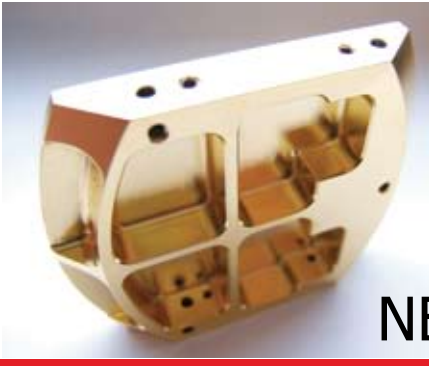

LASER BEAM PRODUCTS

NEWSLETTER November 2012

Mirrors with Mounts Can Save Money

Our mirrors can be designed and manufactured as one monolithic block of "mirror and mount". Small simple kinematic mounts can cost €100, often more than the mirror. Robust design ensures the mirror remains distortion free, and can be pre-aligned for simple installation. Here are some examples of what can be done:

Replace Dangerous Parts Now

We have a stock of 20mm diameter mirrors designed as replacements for Chinese Laser Systems. We would urge you to change the original mirrors as they can crack and allow the beam to blind people. If you're concerned about your system, please contact us with some details and we can help.

Christmas shutdown

We wish all our customers and suppliers a happy and relaxing festive season.
Please note that we will be closed from Tuesday 25th December to Tuesday 1 January 2013 inclusive.

Laser World of Photonics, Munich 13-16 May 2013

LBP is once again exhibiting at the laser show in Germany next year. On show will be a range of our products including metal coatings for UV, Vis, infra red and even THz applications. We will also be exhibiting mirrors for fiber and disc lasers.

Latest website additions

We have produced several new pdf downloads for our website this year. Subjects include Reworking, Dental and Medical Laser Mirrors and Prototype Mirrors. You can view them at www.lbp.co.uk/Downloads

How to contact us:

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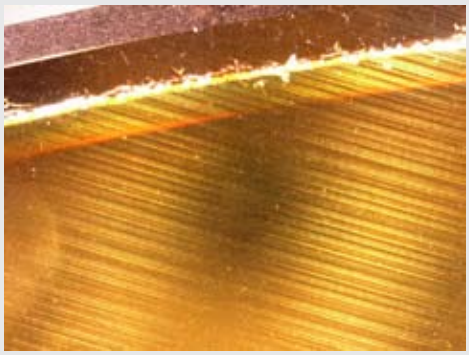
November 2012 Newsletter

Diamond Machining

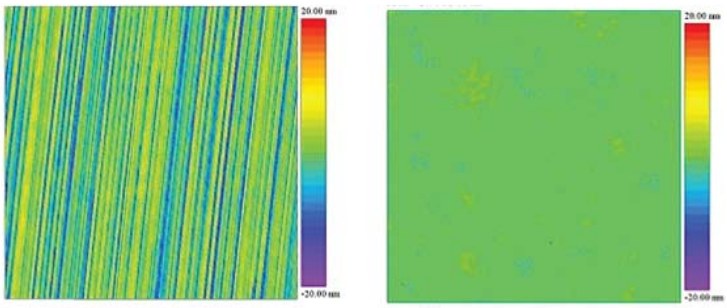


A diamond machined surface

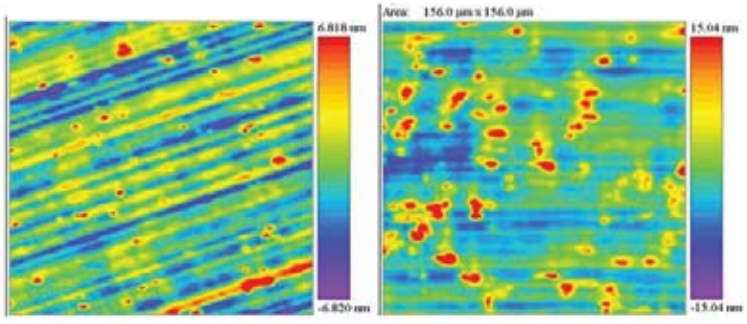
Most solid metal mirrors used in the infra red have their faces prepared by Single Point Diamond Turning (SPDT). However it is often possible to see the repeating waviness of the mirror surface, or even a rainbow "blaze" can be seen. Such surface roughness is very complicated to assess, comprising micro roughness, mid-frequency chatter and a long frequency waviness, all of which vary with orientation as well.

In the vis/UV spectrum this is simply not acceptable, the scatter is large and the turning grooves act as a diffraction grating. With CO_2 lasers a visible alignment beam can be scattered so badly after just 3 or 4 reflections that the power loss makes it invisible. The infra red scatter from diamond machined surfaces is mainly "low angle", so scattered energy propagates in much the same direction as specularly reflected beam, but will heat up mirror mounts, bellows and beam delivery hardware.

The solution is well known, use a polished mirror surface! We regularly polish mirrors that have been prepared by SPDT to remove the machining artefacts and reduce surface roughness. Our polished mirror surfaces will be between 5 and 10 times smoother than those produced by SPDT.



Our polished mirrors have surface roughness around 1/10 of a SPDT mirror. The result is reduced scatter and higher Laser Damage Threshold.



Crystalline mirror surfaces have a grain structure that contributes to scatter and laser damage especially with pulsed lasers. Our amorphous coating eliminates this and dramatically improves pulsed Laser Damage Threshold.

Whatever your requirements, contact us for help, information & prices:

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