

Holo/Or Newsletter – Q2 2022

Conferences and publications

Come visit us at Laser World of Photonics Munich, 26-29.4, booth XXX

After two long years during which we have not been able to exhibit, we are excited to once again be a part of [Laser world of photonics](#). Come meet us at our booth to discuss your laser beam shaping challenges! Our staff of trained application engineers is always at the booth and happy to help, but if you want to get our undivided attention - [set up an appointment](#) (link)

Save the date: Holo/Or CTO talks about laser surface texturing at AILU workshop 19.5.2022

Interested in how DOEs can be used to easily shape laser light to enable laser surface texturing? Want to hear more on our DLITE concept and the work we did with HILASE center, where we textured more than 40,000 points with one laser pulse? Come hear our CTO, Mr. Natan Kaplan, talk on these topics on the 19.5.2022 laser surface texturing workshop by the Association of Industrial Laser Users. This is a hybrid workshop – we will be presenting remotely. You can also read our partner's recently published [article](#) on the subject

Read more & register [here](#)

Applications

Application spotlight: Solar panel production- How Diffractive Optics enable the energy transition

With the increasing importance of green energy, the solar panel market is seeing a major boost. Multiple processes in solar panel production utilize high power lasers, and many of these processes benefit when DOEs are added to the system. Such processes include:

- Scribing of the top glass surface. The top layer of a solar panel is often some form of glass. These materials are often very reflective and prevent light from the sun to penetrate to the substrate of the photovoltaic cell and be converted into electricity. In order to avoid these reflections, a [top-hat laser beam](#) is used to scribe the top surface, making it diffusive and highly non-reflective, whilst retaining high transmissivity and non-absorption.
- Laser-forming of grooves to insert metal contacts into the bulk of the photovoltaic substrate. Solar panels rely on the idea that electromagnetic radiation from the sun in the form of photons (the sun's light) interacts with a semi-conductor substrate to release electrons via the



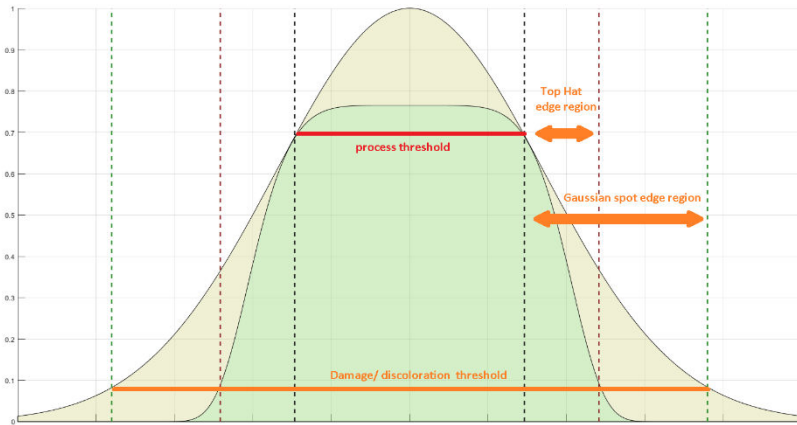


photo-electric effect, and then transfer these electrons through a conductive material. Common buried electrode designs apply layers of these substances one on top of another, and scribe inlays to produce junctions between layers and transmission channels. These scribes, when done using a gaussian beam profile produce channel walls which are sloping, reducing profile width uniformity and wasting energy below the ablation threshold. Thanks to the sharp edges in

the intensity profile of top-hat laser beam profiles, these channels can now be scribed with very smooth and uniform walls, ensuring consistent electrode width and utilizing the laser energy efficiently, thus increasing throughput. To even further increase throuput, a [diffractive beam splitter](#) can be used, often combined with the beam shaper as a single, compact component.

Holo/Or can help you with your laser solar panel production processes. [Contact us](#) for more details or get a [quote in the product page](#)

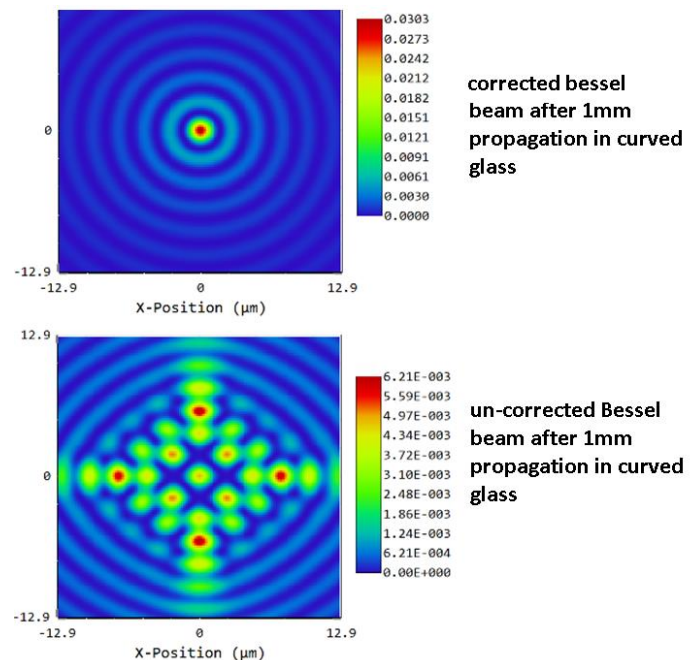
New Products

Curved glass laser cutting module

Laser glass cutting is a fast growing application field, and we at Holo/Or offer a [proven solution](#) for high throughput flat panel laser glass cutting, with our [DeepCleave modules](#) family.

Another major sub-application, especially important following the covid19 crisis, is the cutting of glass tubes, including glass vials for medical use. For such cases, the curved surface of the glass disrupts the Bessel rings typically used to generate a large depth of focus spot, resulting in bifurcation of the spot and loss of power.

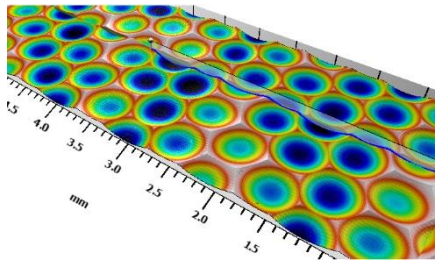
To combat this, Holo/Or has developed a customized solution based on our [MF focus module](#) and a specially customized diffractive axicon DOE. Just tell us the curvature of the glass you want to cut, and we will be happy to design a compensated Bessel Beam DOE



that will ensure a tight focus over the entire glass thickness.

The official “curved glass cutting module page” is coming soon to our website, but you do not have to wait- [Contact us](#) and get a quote today.

Cost-effective broad band diffusers for high power applications



Laser hardening by heat treatment often employs lower-cost, multi-kW fiber lasers and requires spreading the energy over large areas with high efficiency, while still using cost-effective components. The efficiency and large angle requirements are well served by our [Broad band hybrid diffusers product family](#), that can reach up to 30X30 degrees while maintaining efficiency of >90%.

We at Holo/or have recently improved our [Broadband diffuser](#) glass components production process to make medium (>10 pcs) and large batches significantly more affordable. Get a quote at the BD page or [Contact us with you inquiry](#)



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