

Company News

Holo/Or partner at European BURST project Kick off meeting - contributing to the future of PV cells

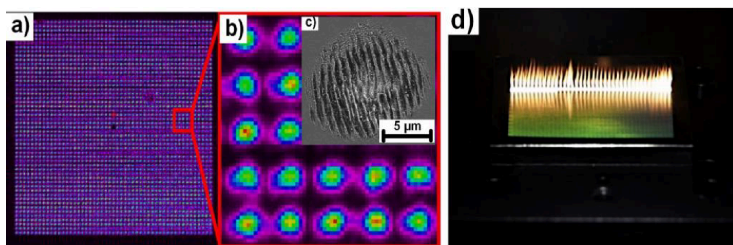
Holo/Or is proud to announce it is a member of the **BURST european consortium**, whose kickoff meeting was on 29-30.5.2024.

The BURST project will explore methods to improve **Photovoltaic cells efficiency and cost**, including a photonics crystals based approach where laser texturing is likely to play an important part. We believe this project will allow us to contribute to the PV industry and better serve our customers. Stay tuned for future updates!



Publications and conferences

Diffraction optics significantly increase surface texturing speed for micro-scale laser texturing



Laser texturing using 51X51 MS diffractive element by Holo/Or. Image courtesy of HILASE

In a recent [article](#) by our long term partner HILASE, the potential of multi-beam laser texturing approaches was reviewed, showing major increase in texturing rate of micro-scale structures compared to other approaches .

Dr. Petr. Hauschwitz and his team used our [DLiTe beam splitter](#) and a specially designed large field focuser we provided to achieve **texturing rates of >0.19m²/min with ~5um features** .

Interested in laser surface texturing ? [contact us!](#)

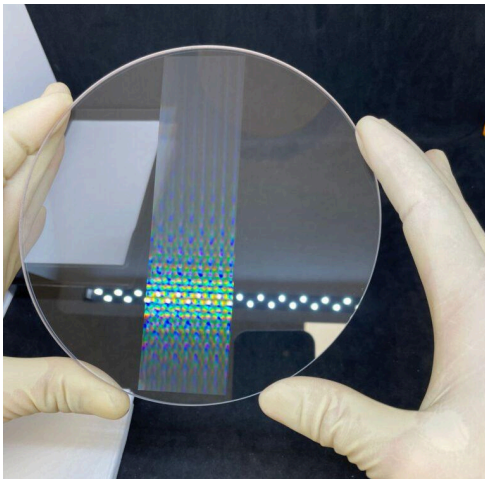
Calling down the lightning with diffractive optics shaped light

Can you control lightning by light? It turns out you can! Using a Holo/Or [vortex phase plate](#), researchers have shown that they can enhance the range of **fs laser induced electric filamentation discharge in air**. Read more about this interesting application in [their article here](#).

Holo/or Or diffractive optical elements are especially suitable for high power ultra-short pulse application such as this, as they are robust, high LIDT, made of thin fused silica with little temporal dispersion, and can be provided as reflective elements by HR dielectric mirror coating.



Products and Applications



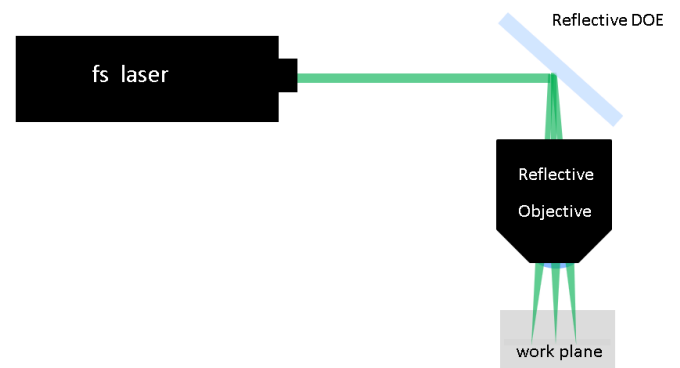
Play it safe- with Holo/Or diffractive optics for defense, robustness is built-in!

The increasing worldwide interest in high energy laser weapons and interception systems is driving demand for high quality, low tolerances optical components such as lenses, prisms and [beam shapers](#). Holo/Or diffractive optical elements are uniquely suited for such applications, due to their almost non-existent angular tolerances, their high LDT, flat surface and low thermal sensitivity. Read more about the ways our DOE can support the **laser defense industry** in our new [product page](#), or [contact us](#) directly with your needs.

Shaping at the speed of light- Reflective DOEs for ultra short pulsed lasers

As powerful **ultra-short pulses lasers** are becoming more common in many industrial applications, they pose new challenges to shaping optics. The need to minimize temporal dispersion is driving many laser integrators to use Holo/Or fused silica DOEs, as they are thin (can be <1mm) and have minimal dispersion.

For cases where even this weak dispersion is unacceptable, **Holo/Or can make a reflective version of any DOE** in our [catalogue](#), by coating with high LDT dielectric mirror coating. Such reflective DOEs can be designed for any AOI (45 deg and 0 are typical), and offer zero temporal dispersion while having the same precision



and performance of our standard, transmissive DOEs. From [spiral phase plates](#) to [top hat beam shapers](#) – just ask us for the reflective beam shaping optics you need.

Technical Tips

Technical tips- best practices when integrating beam shapers in high NA systems

[Top hat beam shaper elements](#) are highly useful for many precise laser applications such as light sheet microscopy, micro-drilling and LIFT (laser assisted forward-transfer). In some cases, very small spot sizes of 3-30um are needed, requiring tight focusing with a **large NA focusing optic**.

Such systems tend to be very sensitive, even without adding a beam shaper, thus we at Holo/Or have compiled some tips for our customers on how to work with beam shapers in these systems:

- Read the [Top Hat installation manual](#) you received with the parts, and follow the procedure.
- Make sure the focus optics / work plane is installed on a suitable mount to allow for **fine adjustment in Z**, typically Z step should be much less than the top hat spot size. i.e, for a 20X20um spot, Z steps of 1um are acceptable.
- Share the **focusing system Zemax model** with Holo/Or, if possible, so we can simulate the performance with our beam shaper. Often, commercial objectives give sub optimal performance, especially in UV wavelengths, which is why Holo/Or has developed our own [Top Hat UV focuser](#).
- If you can still not get the desired result, **contact Holo/Or for support**. Please enclose **PN & SN** of the parts, as well as a description and images of your optical setup.