



DESIGN & MANUFACTURE OF DIFFRACTIVE OPTICAL ELEMENTS

## Q4 2017 Newsletter

Holo/Or would like to thank everyone who came to our booth at the Laser World of Photonics exhibition in Munich. For those who could not make it, we will be participating in the Photonics West and BiOS 2018 exhibitions in San Francisco and in the Laser World of Photonics China 2018 in Shanghai. All are welcome and we encourage you visit us!

### End-of-the-year sale!

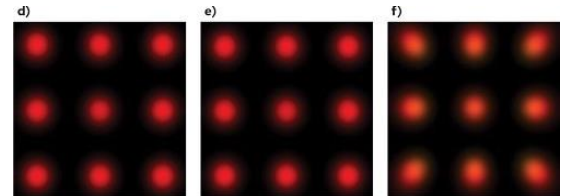
We continue our annual tradition, applying **up to 20% discount** to orders placed before December 27th, for items available from stock (limited to 1 piece per PN).

Place an order now and take advantage of this amazing opportunity!

### Publications

Holo/Or is very proud to have our latest white paper featured in Optical Engineering Exchange, Laser Focus World's online magazine. Using the physical optics tool VirtualLab™, we have studied in detail the effects of using an ultra-short pulsed laser with our diffractive optical elements.

Read the full article [here](#).



VirtualLab™ Simulation results for a  $3 \times 3$  multi-spot DOE with a  $78.25 \mu\text{m}$  period, Gaussian pulses with width of: (d), 100 fs USP (e), and 5 fs USP inputs (f) with 5 mm input beam diameter

### What's New

#### [New Laser Application section for using DOE in different industries](#)

Over the years, Holo/Or has built an extensive knowledge base regarding the use of DOEs in different industries, based on our experience with real customers and applications. To aid our customers in finding the suitable DOE for their application, we have added a new section explaining the use our DOEs in several popular Laser applications. You can read more about the different uses of our DOEs in various applications and [material processing](#), [aesthetic treatments](#), [structured light](#), [fiber coupling](#) and [research / scientific applications](#).



## New Products

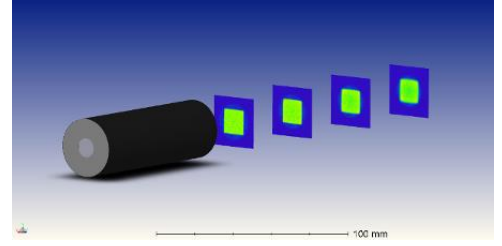
### [Collimated Homogenizer Module](#)

The Collimated Homogenizer Module is Holo/Or's tailored solution for applications requiring a wide range of working distances. The Collimated Homogenizer is the natural complement for our standard diffractive Homogenizer, which gives a shaped intensity spot at the focal plane.

With a Collimated Homogenizer Module, the uniform-intensity beam is maintained with high fidelity, power uniformity, and constant size/shape

over an extended working distance range (up to 300mm range!).

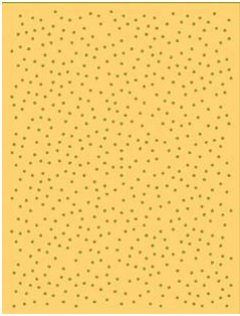
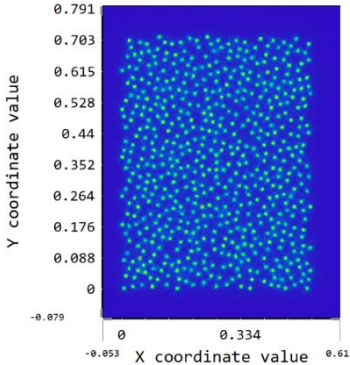
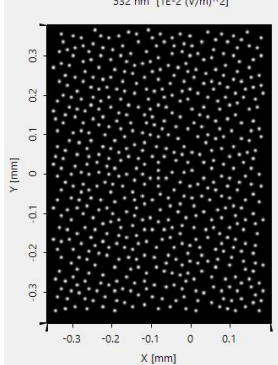
Popular applications include aesthetic skin treatments, laser welding of polymers and laser surface treatments (cleaning, hardening, de-coating, color ablation / de-painting, etc.).



## Technical Tips

### [Flexible VCSEL Array source modeling in both Zemax™ and VirtualLab™](#)

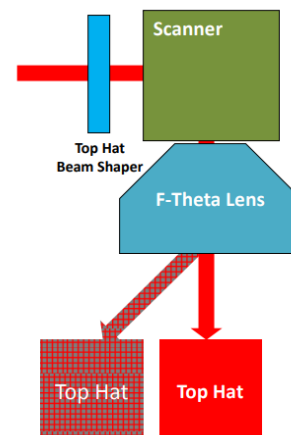
Following a growing interest in using our DOEs with VCSEL Array sources, usually with large-angled Multi-Spot elements, we have extended our capabilities in simulating said VCSEL sources with defined random emitter positions in both Zemax™ and VirtualLab™.

| Original picture of customer's source   | Zemax™ detector view  | VirtualLab™ camera detector   |
|---|---|---|
|  |  |  |

## Frequently Asked Questions

### [Using Top Hat beam shapers with scanning optics](#)

Many of our customers wish to integrate our [Top-Hat beam shapers](#) into scanning setups. Such setups include a scanner and F-theta lens combination, and are usually designed with a defined maximal input beam diameter. For Gaussian beams, this means an aperture of X1.5 beam diameter. However, our beam shapers create beams that contain important diffractive waves that will have a strong effect on uniformity when clipped. As a rule, Holo/Or recommends using a clear aperture of X2.5 beam size. Read more on the subject in our [report](#).



For more information please visit our website: [www.holoor.com](http://www.holoor.com)

