

# Q4-2016 Newsletter

## What's New

The end of 2016 is fast approaching, and we at Holo/Or are happy to announce the start of our [end-of-year stock sale](#). Until January 1, 2017, all stock items will be sold at 15 % discount for the first unit. This is your opportunity to enjoy the advantages of integrating diffractive optics into your own system at a reduced cost.

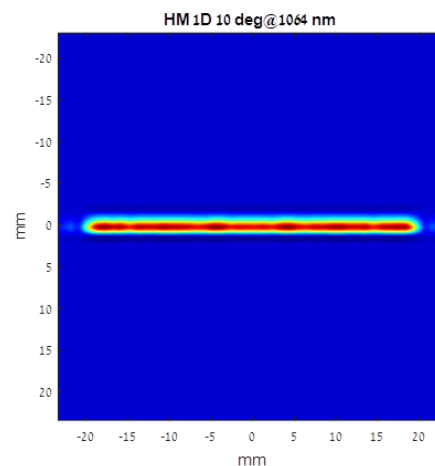
In 2016, Holo/Or has significantly upgraded its production capabilities, improving quality and reducing supply times. We continue investing in new products and production technologies, and remain committed to bringing our customers better solutions at lower costs.

### New Product releases in Q3-Q4 2016

In Q3-Q4 of 2016, Holo/or has added more than 45 new designs in all product categories. These new designs join our current library of more than 1,000 existing DOE designs.

All these designs can be ordered without any NRE costs, and enable our customers to check the feasibility of new projects for a lower initial cost. Recent advances in Holo/Or's production capabilities enable us to offer a new resizing service for a low NRE cost – every existing design can be produced on a different sized element to fit the customer's needs, with minimal increase in lead time (1-2 weeks).

Among others, we have added new line homogenizer designs with improved uniformity; positive diffractive axicons for elongated focus Bessel beam generation; more high homogeneity diffusers for square and rectangle generation; and expanded our double spot and triple spot line to encompass a broad range of angles. Visit our new products page. [Contact us for more information](#).



## Conferences and Exhibitions

[Upcoming- Photonics West – 31 January – 2 February Moscone Center, San Francisco](#)

[Also BiOS – 28-29 January, Moscone Center, San Francisco](#)

Holo/Or will be participating in [Photonics West](#), bringing new products to answer our costumers evolving beam shaping needs.

Come and visit us at [booth #309](#), Moscone Center South for Photonics West.

**SPIE.** **PHOTONICS**  
**WEST**  
**BIOS**

This year we will also be participating in [BiOS](#), to better serve our bio-medical and aesthetic laser industry costumers. Visit us at [booth #8743](#), Moscone Center

### [Upcoming- Laser World of Photonics, March 14-16, Shanghai, China,](#)

Holo/Or will be presenting its diffractive optics solutions at the [largest laser exhibition in China](#) next spring.

Visit us at the [Shanghai New International Expo Center](#).



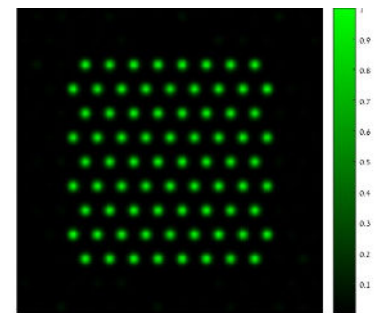
### [Participated- Bayern Photonics Workshop "High Power Laser Shaping " - 15 November - Nürnberg, Germany](#)

Holo/Or has participated in a workshop on the challenges of shaping high power laser beams. We presented several examples of the advantages of custom light distribution in welding, brazing and soldering application. See our presentation [here](#).

## Applications

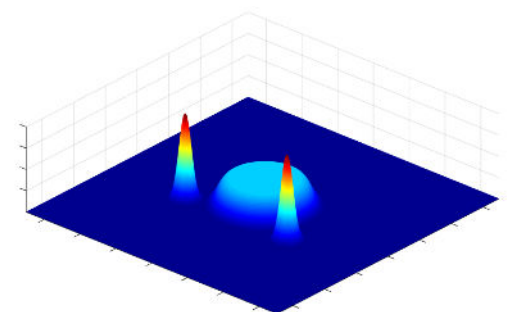
### [Hexagonal Multi-Spot in square array for aesthetic dermal treatment](#)

Aesthetic dermal treatment utilizing lasers is a rapidly growing field. In this application, laser light is split using diffractive optics into multiple spots that create an array of micro-scarring on the skin. These invisible micro scars create tension that eliminates creases from the skin, rejuvenating it and improving its appearance. Normally, DOE elements used for this purpose have a square lattice of spots, thus each spot has 4 near neighbors. Holo/Or has recently developed a [hexagonal multi-spot](#) array with square edges. This gives a more even distribution of the spots, with each spot having 6 near neighbors, thus potentially improving the treatment uniformity. The square edges of the array allow for good tiling of the treated area, without overlapping.



### [Special Homogenizer for brazing applications](#)

In laser brazing applications, two metal sheets are joined by a laser melted solder wire. The join quality has been proven to improve when the metal surfaces are cleaned and pre-heated before the brazing wire is melted.



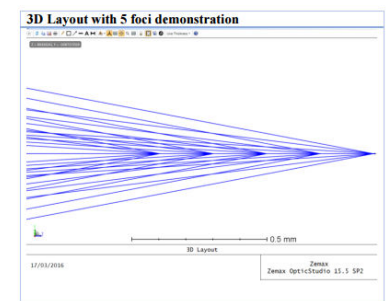
For this purpose, Holo/Or has developed a special homogenizer element that creates 2 small leading rays for cleaning/preheating and 1 large uniform beam that equally distributes the energy over the brazing wire to achieve better melting.

Our single diffractive element can replace the need for several lasers and complex opto-mechanical elements. This product is based on the concept of our homogenizer and shares its advantages: No sensitivity to incident beam size, shape, polarization, beam quality or alignment. [Read the Brazing Homogenizer brochure](#)

## Tutorials

### [Multi Focal DOE in Zemax](#)

Our Multi Focal Diffractive Optical Elements can be simulated in Zemax™. We have published a comprehensive [tutorial](#) for design and integration of Multi Focal Elements into optical systems in Sequential and non-Sequential mode of ZEMAX™. These tutorials include examples and a step-by-step walkthrough that allow any optical designer to combine multi focal elements into an existing Zemax™ set up.



## FAQ

### [Using small binary Top-Hat beam shapers with a Scanner and F-theta](#)

[Small binary Top-Hat beam shapers](#) (with 1.5 diffraction limits spot) are a highly useful, low cost solution for ablation and cutting applications. Customers are often interested in using small beam shapers in a scanning setup, using a scanner and f-Theta lens.

A frequently recurring question is the effect of the scanning field angle on the shape of the top hat. To help our customers, Holo/Or has published a new report based on VirtualLab™ simulations that shows the effects of scan angle on the beam shape at the working plane. Small top hat elements cannot be modeled by conventional ray optics, so we used physical optics simulations done on VirtualLab™ to model the system. As you can see, for scan angles up to 15 degrees (30 degrees full field), the effect on the Top-Hat profile is quite weak. Therefore, our customers can use most common scanning setups with our beam shaper elements without fear of beam distortion.

[Read the full Top Hat+ scanner+ F-Theta report](#)

