Holo/Or Newsletter – Q2 2023

Fort hcoming Exhibitions

LASER World of PHOTONICS 2023!

HOLO/OR will participate in LASER World of PHOTONICS Munich, June 27-30, 2023!

Come and visit us at Booth 505, Hall B3!

Our staff of experienced application engineers will be glad to support your needs, and if you wish to schedule a meeting during the exhibition please contact us

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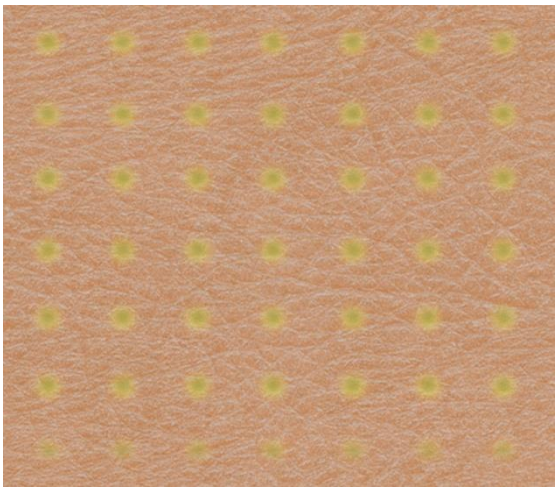
Publications

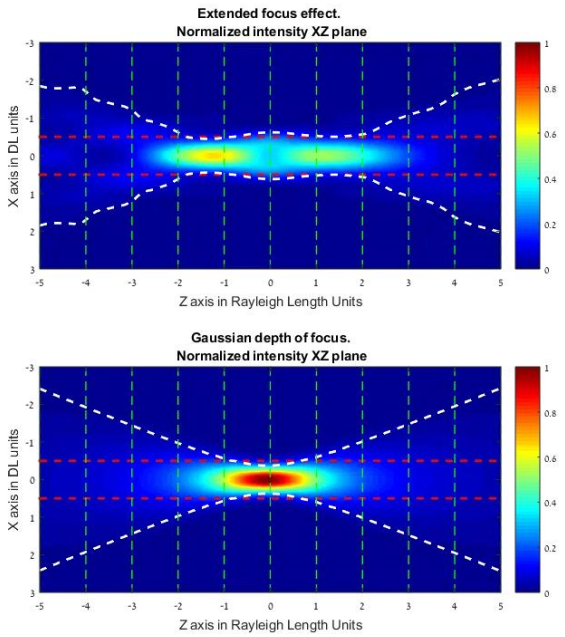
New article- Diffractive optics are the way to get best results in Pico second laser skin treatment !

In a new publication at biomedical optics express , the authors found that diffractive optical elements give the best skin liaison uniformity in ps laser skin treatment. When used to generate an array of spots on the skin for fraction treatment, beam splitter and diffractive microlens array DOEs gave better results compared to alternatives such as refractive microlens arrays. Kudos to the authors from the Bioablation lab at PNU, Korea.



This result is in line with our many years of experience in this field , as many of our customers use multi spot DOEs successfully for fractional laser skin treatment with good results. Interested in our beam splitter DOE or diffractive lens array? Contact us and we will be happy to help!

Elongated Focus DOE helps the CERN large Hadron collider by improving ablation in copper coating layer



Our small Top Hat beam shapers have many applications, including their use as elongated focus elements for depth of focus extension in transparent materials. However, it turns out that their depth of focus extension isa highly useful even in ablation of non transparent materials such as copper.

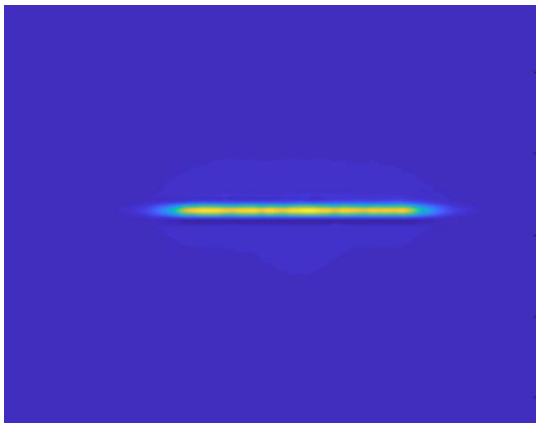
In a new article at optical materials express , the authors used our EF-014-J-Y-A DOE to ablate high aspect ratio trenches in copper in order to reduce the secondary electron emission from a copper surface similar to those used in CERN. Compared to a standard gaussian spot, the shaped spot showed much less sensitivity to defocus and yielded improved texturing process performance.

Holo/Or is proud to support the High Luminosity upgrade of the CERN LHC.

Do you want to harness the same cutting edge shaping technology for your industrial needs? See our elongated focus DOE page or contact us directly.

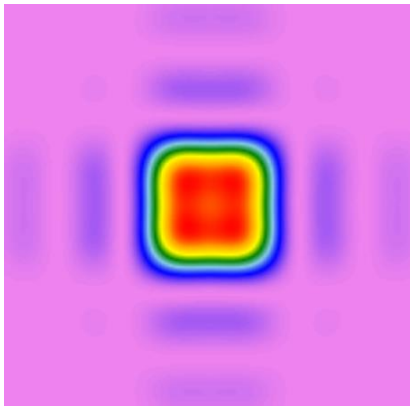
Products and Applications

Mixing the Axes- want to get uniform in line shaping of multimode lasers? Use our tailored diffusers



Many of our customers wish to use line shaped high power multimode lasers for tasks such as laser surface treatment, debonding, laser heating and other area treatment processes . Line uniformity is often a critical parameter for these applications, but since these are multimode lasers, normal top hat beam shapers cannot be used, and typically line flat top diffusers are used. However, these elements tend to suffer from some speckle-related non-uniformity, arising from the modes one-dimensional interference, and reducing uniformity.
Holo/Or has developed a novel concept for a line diffuser that slightly diffuses both axes, thus mixing the interference and creating a much smoother integrated intensity when the line is scanned over the surface.
By tailoring the diffuser to the laser, we can make sure the line width remains almost the same s as the original spot size, while significantly improving the top- hat diffuser uniformity.
Want to know more? Contact us for a line diffuser tailored to your laser and system.

Sometimes all you need is just a small change- with great effect! Check out our mode converters.



Holo/Or customers often struggle with challenging optical systems where the desired laser spot shape is only a few times the diffraction limited spot size. Such systems leave little scope for high aspect ratio shaping such as Top Hat shapers. Still, often a small change in the spot shape can have significant process benefits, and it is for these exact cases Holo/Or offers mode converter binary phase plates, our Vortex lens family and our small Top hat binary phase plate elements. All these are solutions that can give exactly that bit of shaping that can improve your process, without a strong increase in the spot size required for more aggressive shaping.

Feel free to ask us about small beam shapers !

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