

3D Lithography for Optoelectronic Packaging

Made in Germany – Europe



All-in-1 Solution for Transforming Design Ideas into Industrial Manufacturing
for 21st Century Applications

Multiphoton Optics Key Facts

Fraunhofer Spin-Off

2013 founded, 2014 Seed,
2015 Series A, 2019 Series B

LithoProf3D Hardware Series, P&E/PPU Production


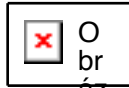


Products and Services

Technology, Materials, Software, Integration

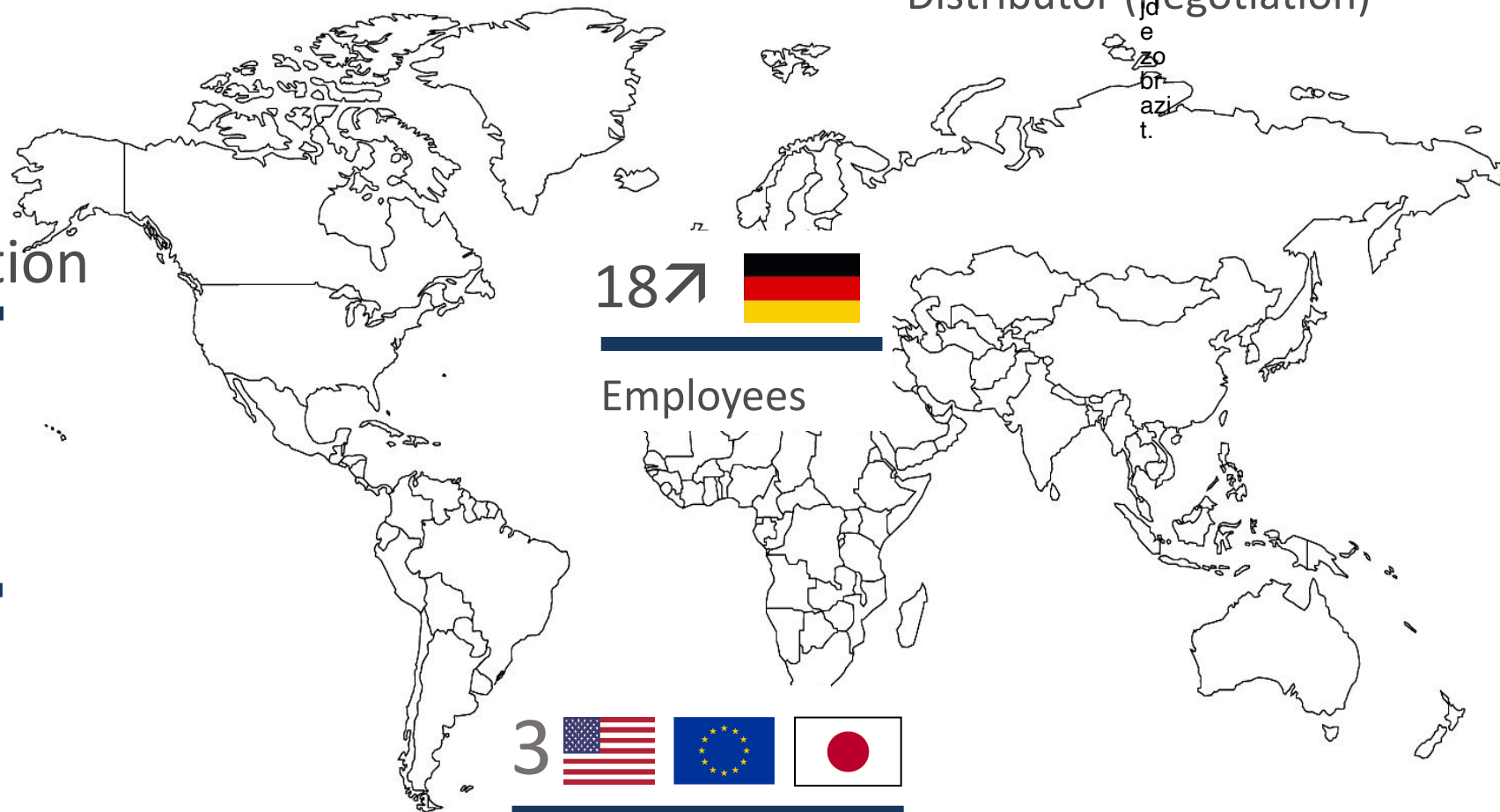
Solid and Exclusive Know-how

>32
Patents

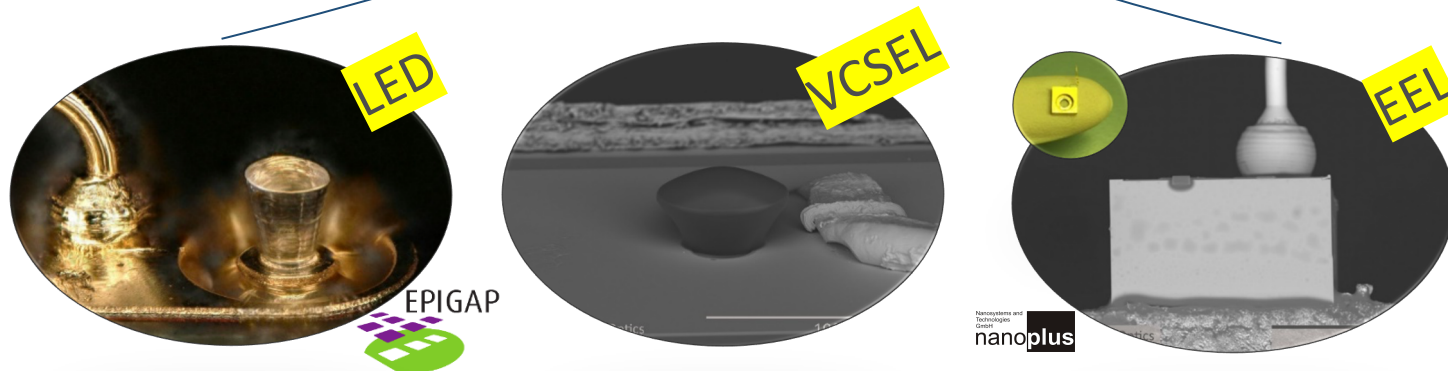
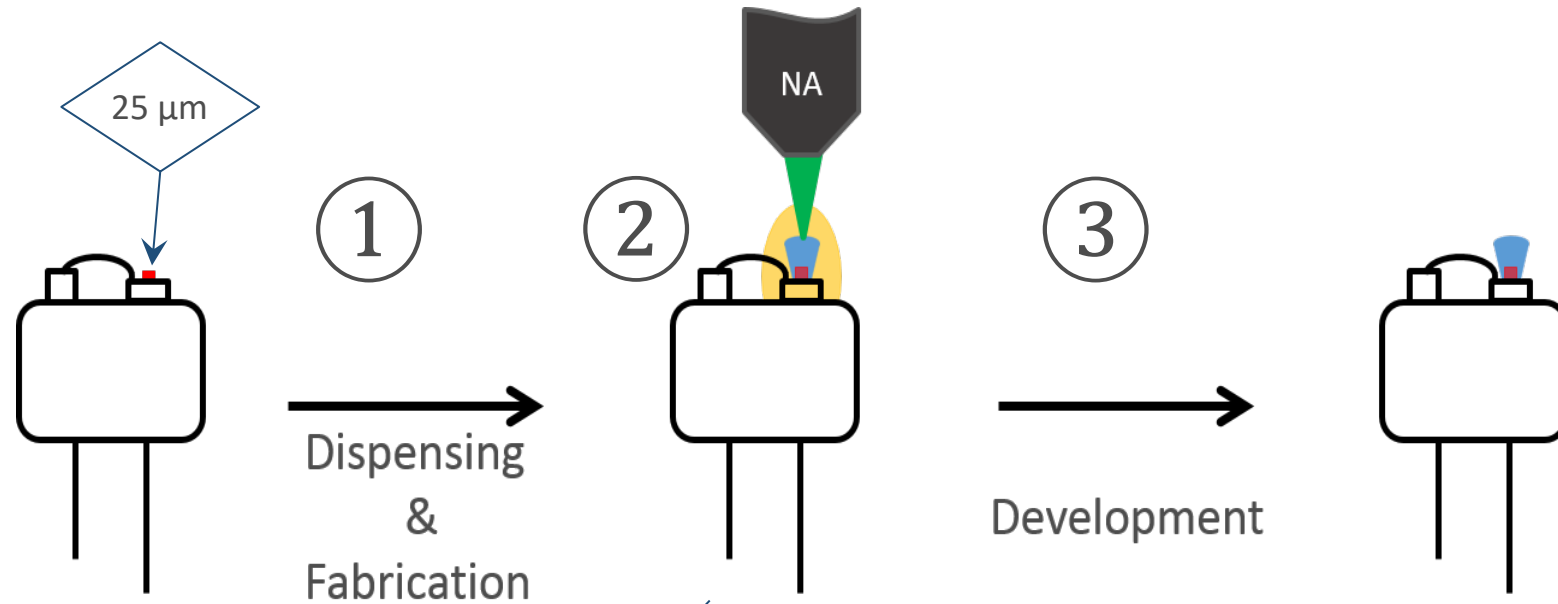
30
Registered brands

1    

Distributor (negotiation)

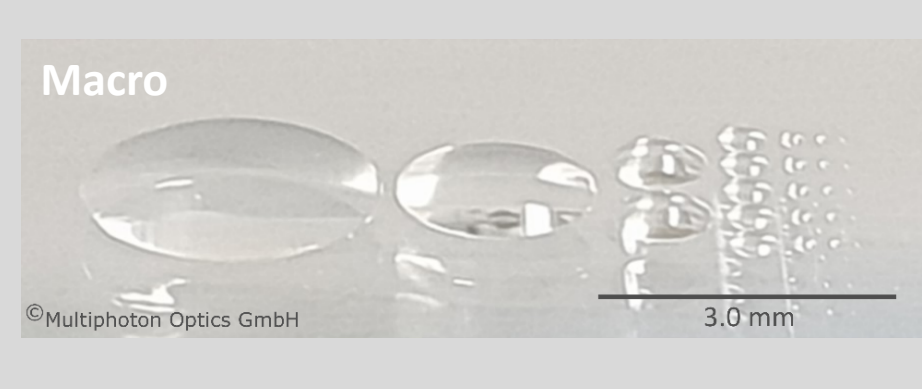
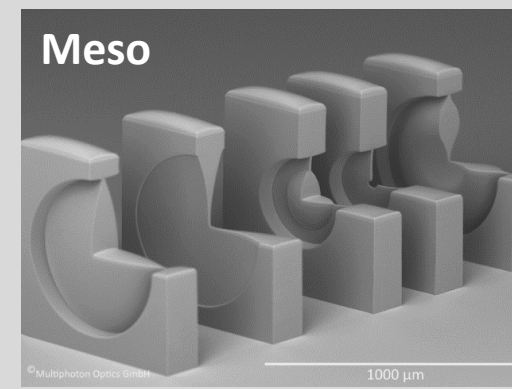
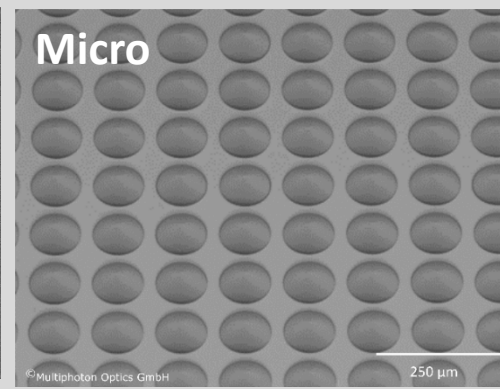
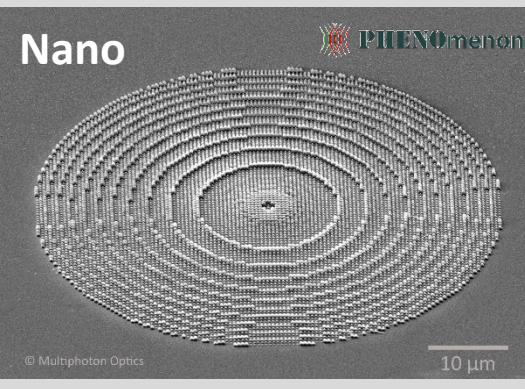


Be Lean. Shape it. 1 – 2 – 3 Steps.

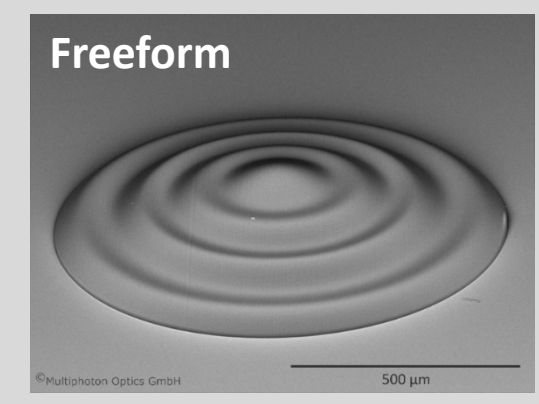
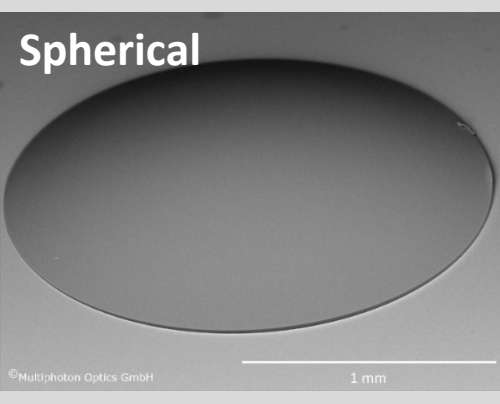


Scale it. Shape it.

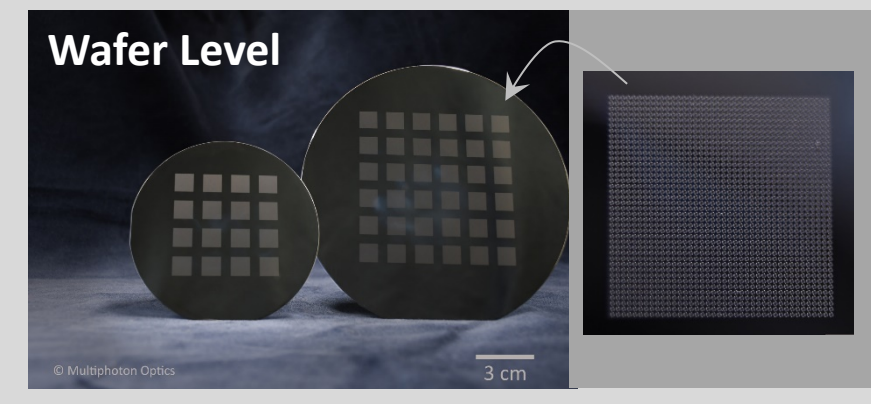
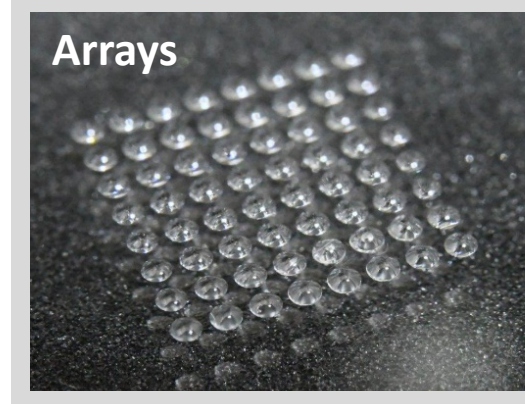
Scalability



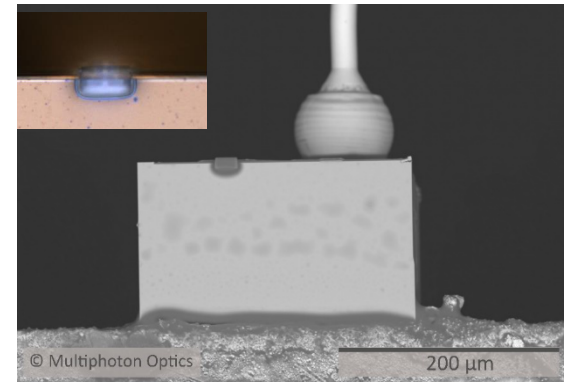
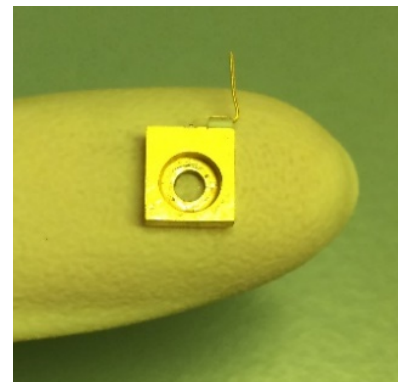
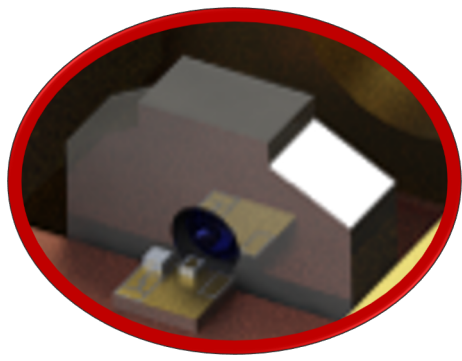
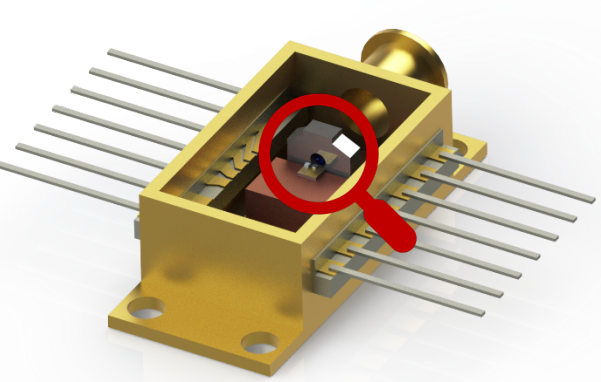
Shape



Size



Shape it. Cost down.



Novel packaging approach for far-field improvement

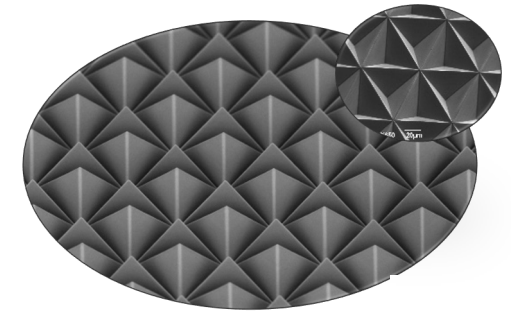
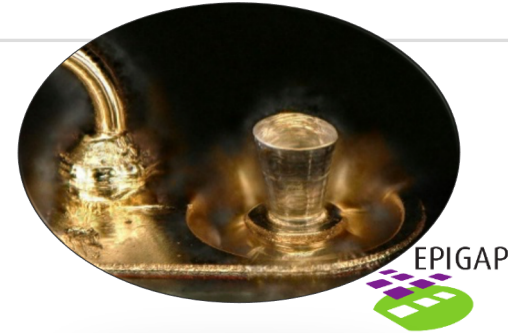
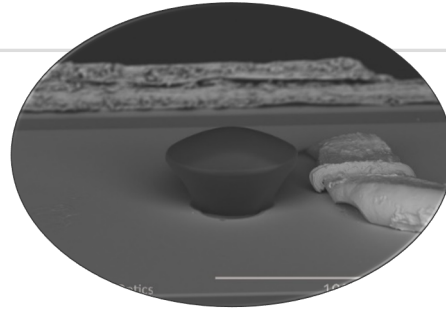
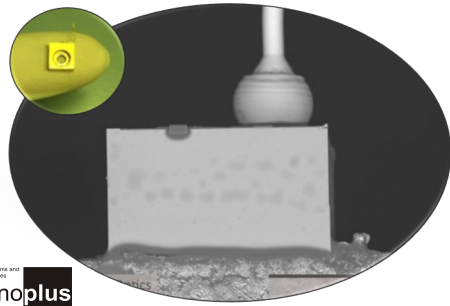
State of the Art (Legacy Process)	Multiphoton Optics' Breakthrough > 10,000 hrs. stability
>5 additional process steps	Automated process: 3 steps in total, direct printing
Large distance between the laser and the optics: low degree of miniaturization	Significant miniaturization, enhanced functionality
Passive and active alignment necessary	Passive alignment
Introduction of bulky optics (aspheres or cylinder lenses) to improve the far-field	---
Additional / manual labor	---
→ High Cost and Time Consuming	→ Low Cost and Fast Fabrication
	→ Scale up – Production



Production Agreement



Summary



**Maskless Lithography
Laser Direct Writing**
(additive, subtractive, ablative, ...)

