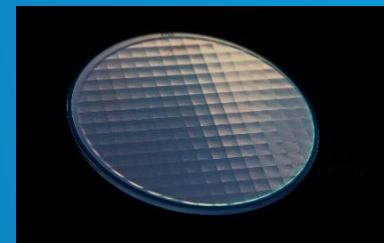
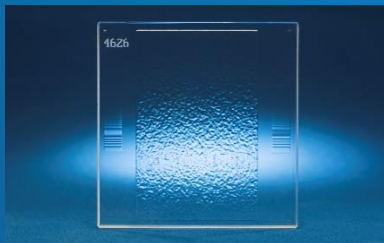
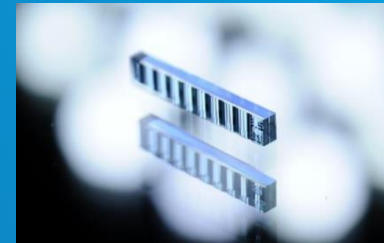
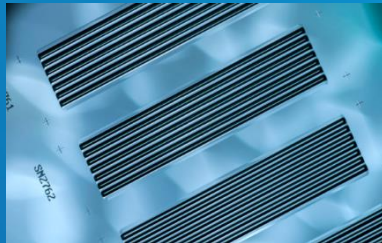
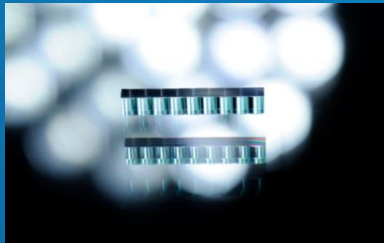
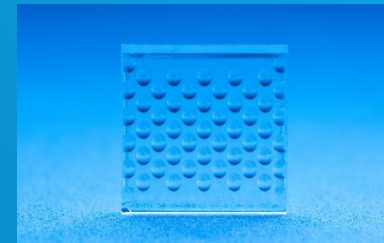
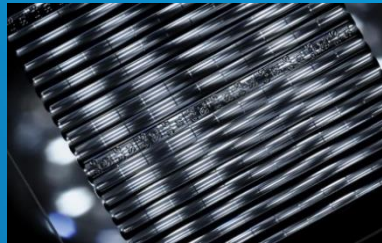




PowerPhotonic

Micro-optics for blue and UV lasers

Roy McBride, CEO, PowerPhotonic Ltd





PowerPhotonic

Company overview

Summary

- High performance fused silica micro-optics
- UK-based design and manufacture
- 35 staff
- Class 1000 cleanroom
- Shipping freeform micro-optics since 2006

Technology Leadership

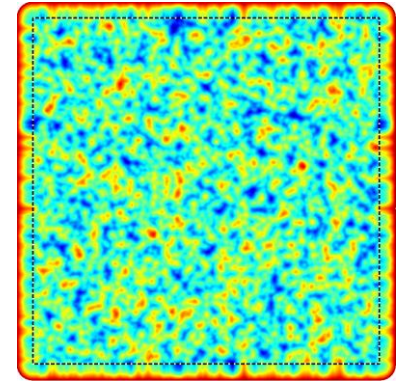
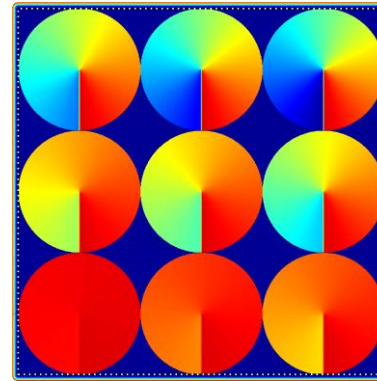
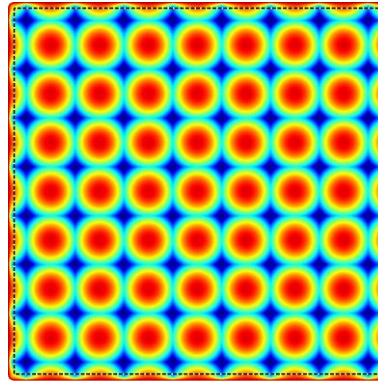
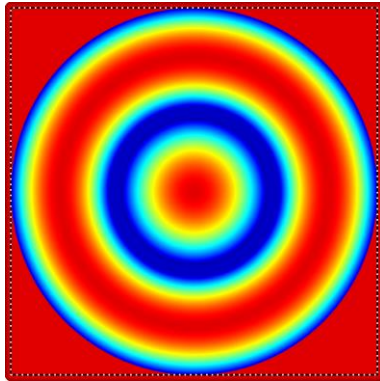
- Class-leading micro-optics
- Proprietary patented laser direct-write process
- One process from prototype to volume
- 24/7 lights-out automated production





Freeform, direct-write optical fabrication

PowerPhotonic



Increasing Complexity

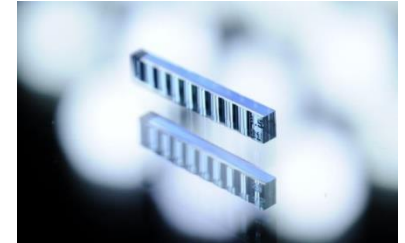
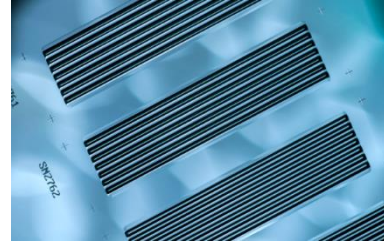
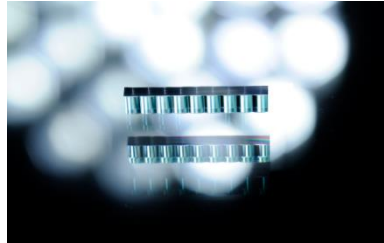
- **Freeform = design freedom**
 - Free from symmetry constraints
 - Realise complex optical designs
 - Wide range of functionality
- **Direct-write = flexibility**
 - No masks, no moulds
 - Trial, iterate and optimise design
 - Prototype to volume in one process

- **High-performance**
 - Precision fabrication
 - Low scatter, low loss
- **All-silica – broad transmission spectrum**
 - From $<200\text{nm}$ to $>2\mu\text{m}$
- **High fluence and power handling**
 - Multi-kW CW
 - Multi-joule ns, ps, fs

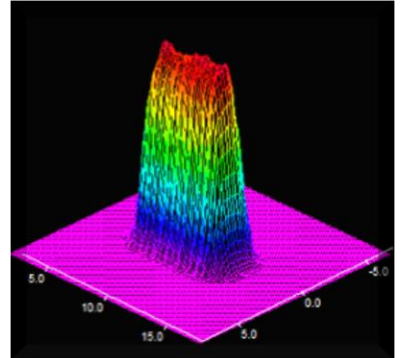
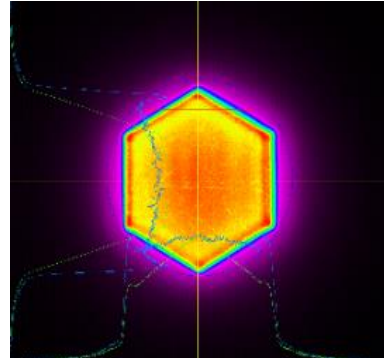
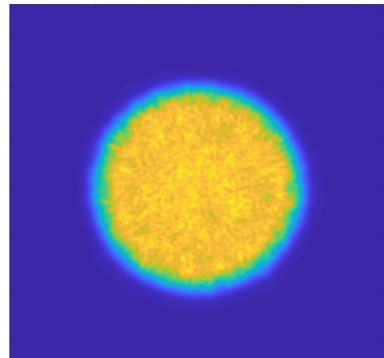
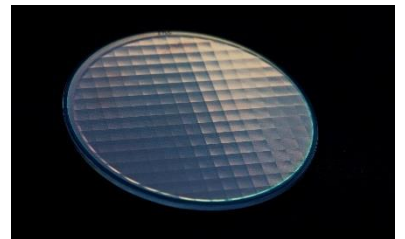
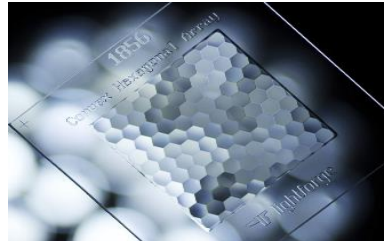


Product examples

High power diode laser collimation



Laser beamshaping





Laser applications in blue and UV

- **Industrial**
 - Copper welding
 - 3D printing
- **Lighting & imaging**
 - Laser projection display
 - Phosphor pump
- **Medical**
 - UV sterilisation

- **Emerging applications?**





Looking for

- **New applications for blue and UV lasers and LEDs**
 - High performance
- **Optical design and fabrication challenges in blue and UV**
 - High efficiency
 - Beamshaping
- **High power materials and coatings in blue and UV**
 - High power CW
 - High fluence USP
- **Ideas? Problems? Solutions?**
 - Ask now, or contact us later!

