

## **Pushing ultrafast laser drilling technologies to the edges**

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Ultrafast laser technologies offer many advantages in the production of precision drilling at high speed. The resolution, throughput and versatility of holes drilled with these laser sources can surpass what is possible with conventional drilling. In addition, since the application is digital, there is a lot of flexibility in the geometry and other features.

This presentation highlights the processing technologies of Pulsar Photonics which are available to the market. It includes multi-beam scanning technologies with drilling rates in the range of several kHz, the mass production of microfilter devices with through holes diameters below 3  $\mu\text{m}$ , and precise nozzle manufacturing with high aspect ratio and burr free holes with rectangular cross section.

As the technology advances, more specialised system technologies using coordinated scanners, beam shaping and machine axes become available which increase capability and flexibility of laser drilling.