

PIXCURVE

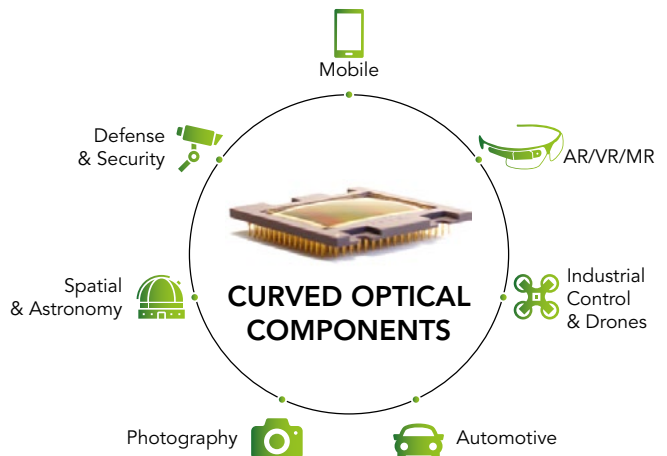
MAKING AR/VR/MR SYSTEMS MORE COMPACT WITH CURVED MICRODISPLAYS

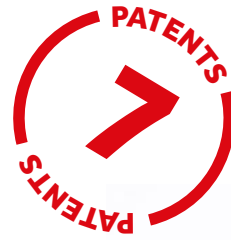
+ WHAT IS PIXCURVE?

Currently, Augmented/Virtual/Mixed Reality (AR/VR/MR) glasses remain bulky. PIXCURVE is CEA-Leti's latest curving technology for various optical components. By decreasing dimensions and optical aberrations of the associated optics, using curved components helps significantly reduce the product's final size without compromising quality—offering even better performance in some cases.

+ APPLICATIONS

PIXCURVE technology is well suited to make AR/VR/MR glasses more compact. It can also be adapted to curve various optical components for:

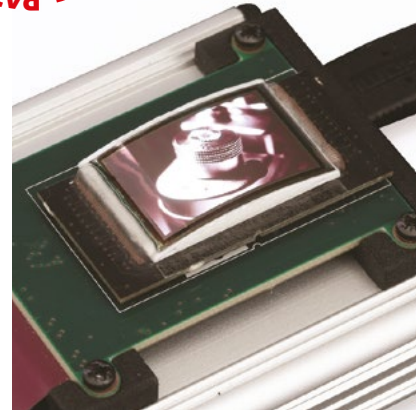
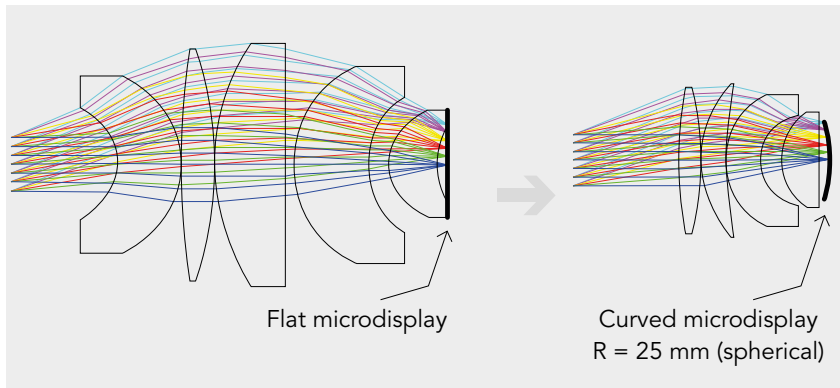




+ WHAT'S NEW?

This technology consists in thinning the silicon wafer till it resembles a sheet of paper. The institute already demonstrated for imaging applications, an impressive simplification of the optical system—40 percent fewer lenses required—and a 2.5x reduction of the total lens length compared to equivalent commercial systems.

Concerning microdisplays, ray tracing simulations give very promising results for compacity using 25 mm curvature radius. The team also identified a unique process flow to curve an OLED display at wafer-level scale with a 45mm radius of curvature.



PERFORMANCES

Functional OLED microdisplay curved with a 45 mm radius.
Format: 1920 x 1200 WUXGA,
1" diagonal.

Demonstration as part of the
EEC H2020 LOMID project.

+ WHAT'S NEXT?

CEA-Leti is currently working on:

- Wafer level curvature technologies for high-volume applications
- Tunable curvature for disruptive optical applications
- Associated optical designs

The institute is also collaborating with industrial partners to help establish supply-chain solutions.

INTERESTED IN THIS TECHNOLOGY?

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