



Pixcurve

Making cameras lighter, brighter and more compact

What is Pixcurve?

Pixcurve is CEA-Leti's latest curving technology for various optical components. This technology helps significantly reduce optical component size and achieve higher level of performance and compensation for optical aberrations.

Compactness: Up to 60% reduction in lens size in some cases without altering the quality of the image

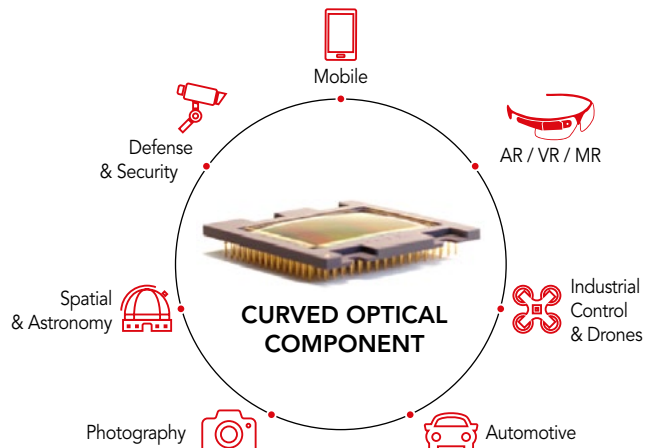
Performance & compensation for optical aberrations:

- Minimizing the vignetting effect
- Enhancing field of view
- Enhancing luminosity

Pixcurve is easy-to-implement for image sensor manufacturers, and allows integrators to fabricate more compact and higher quality cameras.

Applications

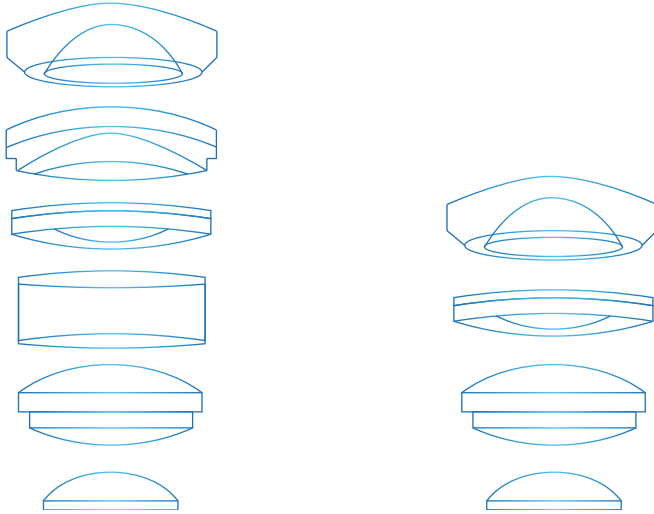
CEA-Leti's technology can be adapted to curve various optical components—2D & 3D imagers, IR sensors, Microdisplays—for:





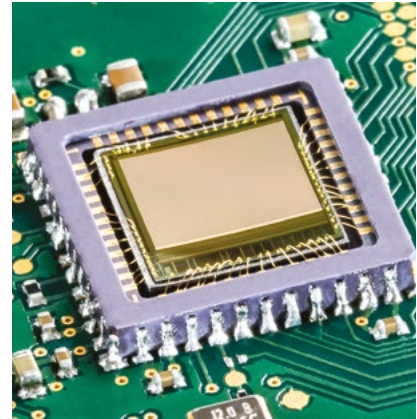
What's new?

CEA-Leti worked on different shapes for curved image sensors and microdisplays including spherical, cylindrical or free-form. Tunable curvature technology is also being developed for adjustable shapes.



Regular flat lenses solution

Lenses design with Pixcurve



What's next?

CEA-Leti is currently working on:

- Wafer level curvature technologies for high-volume applications
- Tunable curvature for disruptive optical applications
- Curved microdisplays
- Optical designs dedicated to curved sensors

The institute is also partnering with industrial companies to help establish supply-chain solutions.

Interested in this technology?

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PUBLICATIONS:

- Chambion & AI / Curved Full-Frame CMOS Sensor: Impact on Electro-Optical Performances / ESTC 2018
- Chambion & AI / Collective curved CMOS sensor process: application for high-resolution optical design and assembly challenges / ECTC 2019
- Zuber & AI / Tolerancing and characterization of curved image sensor systems / Applied Optics 2020

CEA-Leti, technology research institute

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