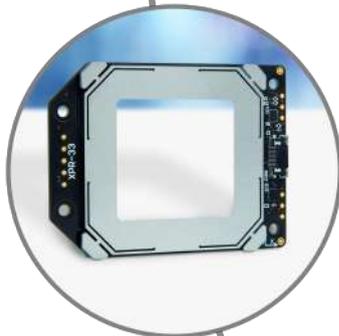


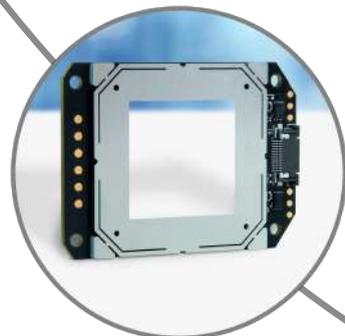


**Projection**



## **Reduce speckle & extend resolution**

Laser speckle reducers and pixel shifting windows are ideal for achieving speckle-free and affordable, high-resolution projection for DMD or micro-LED displays and thermal or high-sensitivity CCD and CMOS sensors. Small size, robust, and reliable tuning solutions for over a billion cycles. Highly accurate and repeatable.



## Pixel shifting windows

Accurate tilt of a glass window laterally shifts the light passing through it. Along with fast transition times, and low acoustic noise, our pixel shifters enable high resolution in:

Laser television

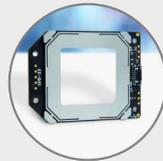


Thermal cameras



Integration of pixel shifting windows provides:

- Cost efficient 2 - 4x projection systems resolution increase
- Higher resolution thermal, monochrome, or color cameras



XPR-20

- Window size 20 mm
- Angular position accuracy < 5%
- Transition time < 1.2 ms

## Laser speckle reducers

Moving diffusers effectively reduce speckle up to 90% and homogenize the beam. The compact design makes them suitable for mini devices. Integrating our diffuser enables speckle-free:

Laser-based projectors



Backseat entertainment



Speckle is one of the main obstacles to widespread laser application in displays. Using our speckle reducers provides the following advantages:

- Various diffuser materials
- Integrated driving electronics
- Robust & long lifetime



LSR-4C

- Clear aperture 18.5 mm
- Max laser power 600 W
- Oscillation frequency 120 Hz



Let's talk about your application