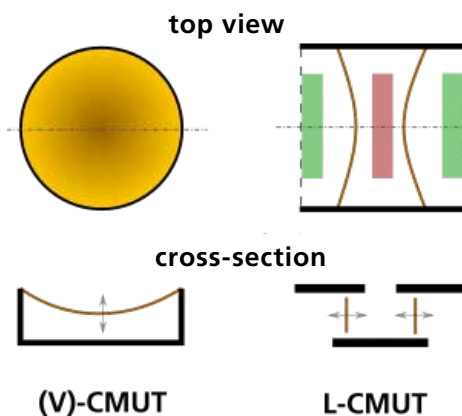


# L-CMUTs

## Micromachined ultrasound transducers L-CMUTs

Micromachined ultrasound transducers (MUT) offer companies an innovative development platform for precise measurement and diagnostics with the following key features: miniaturization, increased sensitivity and efficient array functionality.

L-CMUTs are a development of MUTs at Fraunhofer IPMS, which differ from classical electrostatic driven MUTs (CMUTs) by their design. Instead of a membrane, the volume of the chip is used to generate sound by means of laterally (L) moving elements. This results in potentially high specific sound pressures, high bandwidth and significantly lower frequencies for long ranges in air that can be achieved with MUTs.



### Typical characteristics

- Frequency: from audible sound range: 20 – 300 kHz
- Range: centimeters to a few meters
- Resolution: centimeters to millimeters
- Media: gaseous

Find out more  
on our website:

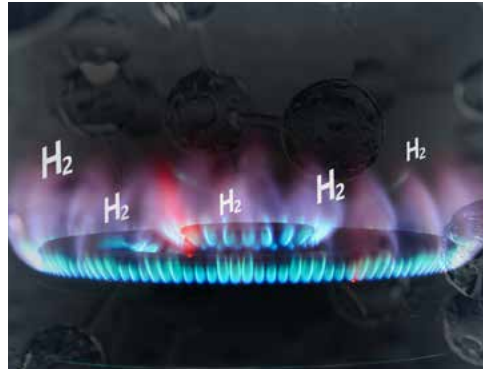


## Application examples



### Distance measurement

MUTs are used for distance measurement with an indication of direction.



### Industry: Flow sensor, concentration sensor

With the help of low-frequency ultrasound of L-CMUTs, flow and concentration of e.g. H<sub>2</sub> can be determined.



### Robotics

MUTs are used in environment recognition for collaborative robots.



### Industry: Recognition of individual parts on a conveyor belt

L-CMUTs detect and classify individual parts, for example on conveyor belts in industrial production.



### Gesture recognition in a museum

L-CMUTs serve as human-machine interfaces and thus as input devices for exhibits, for example.



### Industry: Predictive maintenance

L-CMUTs enable applications in predictive maintenance of machines and machine parts.

## Contact

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