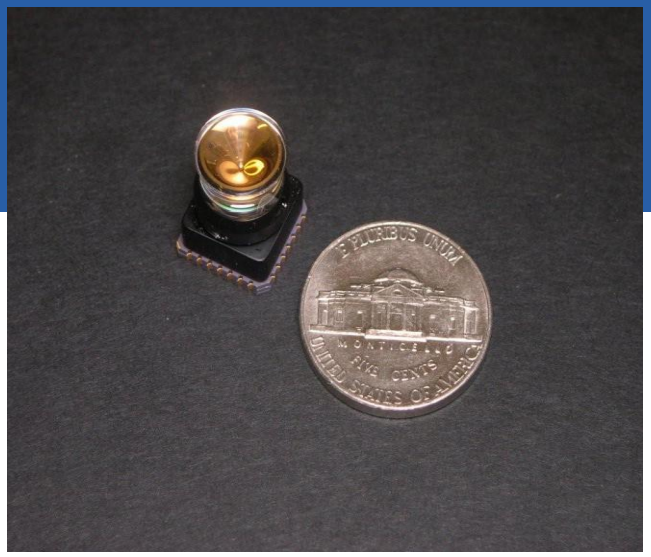
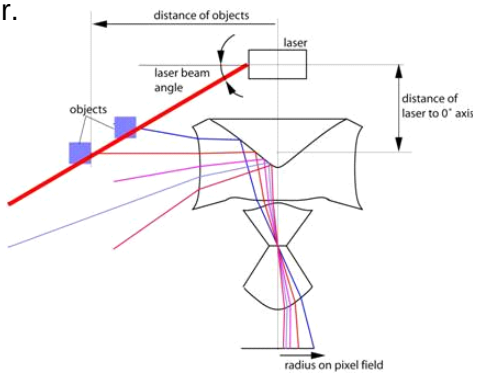
360°-Vision Camera

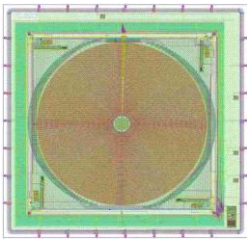
muFly Datasheet



CSEM presents a highly integrated ultra-miniature camera module with omni-directional view dedicated to autonomous micro-flying devices. Very tight design and integration requirements (related to size, weight, and power consumption) for the optical, microelectronic and electronic components are fulfilled. This 360°-vision camera plat-form is based on two components: 1. the catadioptric lens system consisting of a hyperbolic mirror and an imaging lens and 2. a dedicated image sensor.



The CMOS image sensor provides a polar pixel field. Since the number of pixels for each circle is constant, the unwrapped panoramic image achieves a constant resolution for all image regions. The whole camera module contains optical image pre-processing for effortless remapping of the acquired image into undistorted cylindrical coordinates.



Technical Specifications

Size Camera Module	12 x 12 x 15 mm
Weight Camera Module	< 3g
Vertical Field of View	+10° to -35°
Power Consumption	< 6 mW
Size Image Sensor	6 x 6 mm
Pixel Field	64 radial x 128 polar
Frame Rate	Up to 40 fps (programmable)
Dynamic Range	140 dB (ProgLog Technology)
Single Power Supply	3.3 V

Applications

This camera module can be used in many different areas, but ideally in applications needing instantantanous omni-directional view including distance information. Other possible application fields:

- Automotive
- Surveillance and Security
- Robotics
- Navigation and Collision Avoidance

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