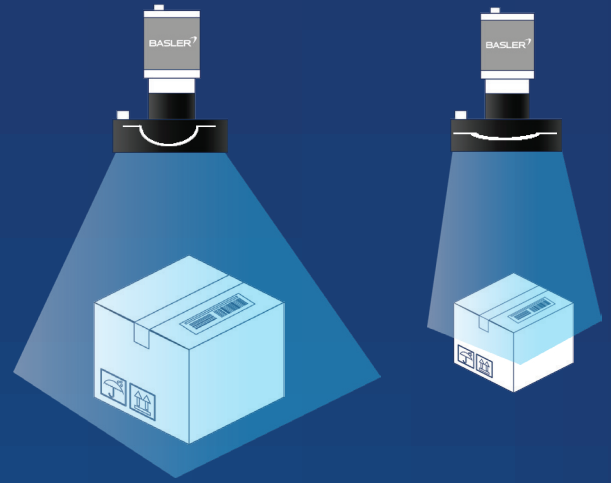


Liquid Lens Autofocus Vision Solution

ACCOMPLISH YOUR VISION TASKS WITH FAST AND EASY-TO-INTEGRATE AUTOFOCUS TECHNOLOGY.

Basler's liquid lens vision solution provides autofocusing within a hundred milliseconds—one of the fastest autofocus systems on the market. It allows users to accurately focus on the target object despite working distances that continuously change beyond the normal depth of focus for machine vision lenses. Our system enables OEMs and system integrators to automate complex inspection tasks with a compact, cost-effective solution. This autofocus vision system can be integrated into completely automated systems for many different vision tasks, including: classifying, code reading, position recognition, measurements, error detection, and more.



Solution highlights



Accomplish your autofocus task with an all-in-one vision system



Streamline your automation efforts



Speed up system development



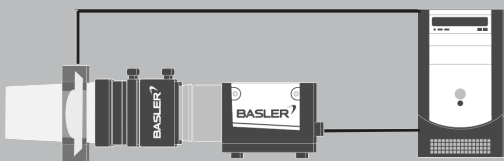
Get expert advice on the optimal solution for your application

How does the system function?

The curvature of the liquid lens is adjusted by applying an electrical current. This allows the focal length to be tuned to the desired value to bring the target into focus. Instead of controlling the liquid lens with a hardware controller and programming codes, Basler offers the option of controlling it with a customized camera. Dedicated firmware and algorithms are developed within the camera to meet your autofocus requirements, making this an all-in-one vision system offering fast refocusing, compact size, and easy integration.

Streamline your automation efforts

Developing an autofocus solution on your own



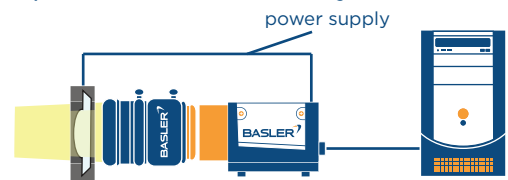
2
C#, python
Requires development
2
Very high
Advanced

VS

System Diagram

Host Devices
API
AF Algorithm
Personnel Required
Programming Effort
Training

Basler's autofocus solution: liquid lens controlled by a camera



1
C, C++, C#, python, VB.NET, Java
Already built into the camera
1
Very low (1 line of code)
Entry level

Solution Example

Key Specifications of the Vision System

Working Distance	150 mm - infinite
Angle of View (AOV)	8.2" (Hor.) / 6.1" (Ver.)
Focus Tuning Time	< 25 ms
Autofocus Processing Time	75 ms(min.)
AF Frame Coverage	93%

Customized Camera (model: acA2040-120ucAFC)

Sensor Format	1/1.8" (IMX252)
Resolution (H x V)	2048 px X 1536 px
Frame Rate	120 fps
Interface	USB 3.0
Pixel Bit Depth	8, 10 or 12 bits
Digital Input	1
Digital Output	1
Power Supply	via USB 3.0 interface
Power Requirement (typical)	3.4 W

Fixed Focal Lens (model: C23-5028-5M-P)

Focal Length	50.0 mm
Lens Mount	C-mount
Iris	F2.8 - F16.0
Sensor Format	2/3"
Min. Working Distance	400 mm

Liquid Lens (model: EL-16-40-TC)

Clear Aperture	16 mm
Response Time	5 ms
Settling Time	25 ms
Lifecycles	> 1'000'000'000
Max Power Consumption	3.0 W (@500 mA)
Weight	40 g



More Possibilities by Customizing Basler Cameras



ace

Sensor Format: up to 1.2"
Frame Rate: up to 751 fps
Interface: USB 3.0 or GigE



ace 2 R PRO

Sensor Format: up to 1.2"
Frame Rate: up to 168 fps
Interface: USB 3.0 or GigE



boost R

Sensor Format: up to 35 mm
Frame Rate: up to 400 fps
Interface: CoaXPress 2.0

Basler AG
Germany, Headquarters
Tel. +49 4102 463 500
sales.europe@baslerweb.com

Basler, Inc.
USA
Tel. +1 610 280 0171
sales.usa@baslerweb.com

Basler Asia Pte Ltd.
Singapore
Tel. +65 6367 1355
sales.asia@baslerweb.com