Basler Time-of-Flight Camera

IMAGES IN NEW DIMENSIONS

GiGE®
VISION

- Pulsed Time-of-Flight Camera provides a multipart image with 2D and 3D data in one shot

- VGA resolution for outstanding 3D imaging

- Offers a broad variety of industrial features for a wide range of applications

- Easy to integrate: Single component for reduced complexity – no moving parts

- Ease of use: GigE interface – GigE Vision and GenICam 3D compliant

- Excellent price/performance ratio

BASLER
the power of sight

Time-of-Flight Cameras for 3D Shape and Volume Measurement

Basler's pulsed Time-of-Flight (ToF) Camera with standard machine vision interface and high resolution makes 3D shape and volume measurement applications quick and easy.

The measurement principle is based on the time the light needs to travel from the light source to the object and back to the camera. The further the distance, the longer the time. Both light source and image acquisition are synchronized in such a way that the distances can be extracted and calculated from the image data.

This measurement principle can also be found in the animal world. There, dolphins use sonar to navigate. Our camera works the same way, but it uses light, not sound.

Powered by unique cutting-edge ToF Panasonic CCD sensor technology, this system achieves best-in-class 2D VGA resolution while maintaining over 9 million depth values per single shot.

The combination of 2D and depth image in one shot from one camera makes 3D imaging easy without sacrificing the 2D image potential. This also makes the camera setup and integration process elementary for system manufacturers while reducing total system costs.

Over a broad range of 0 m to 13 m, the Basler ToF Camera delivers depth data for each pixel. It can achieve a depth accuracy of +/-1 cm within a working range of 0.5 m to 5.8 m. Higher levels of depth accuracy should be possible in closed environments and by using prior knowledge when processing images, such as "the shape is a cube".

Finally, with its integrated NIR light source, our camera is impervious to indoor ambient light and can even see in the dark!

Your benefits include:

- Pulsed Time-of-Flight Camera provides a multipart image with 2D and 3D data in one shot

- VGA resolution for outstanding 3D imaging

- Easy to integrate: Single component for reduced complexity – no moving parts

- Total system cost reduction

- Industrial standard interface (GigE)

- Broad variety of industrial features for a wide range of applications

- Use of NIR LEDs which provide eye safety according to EN 62471:2008

- Optimized for indoor applications
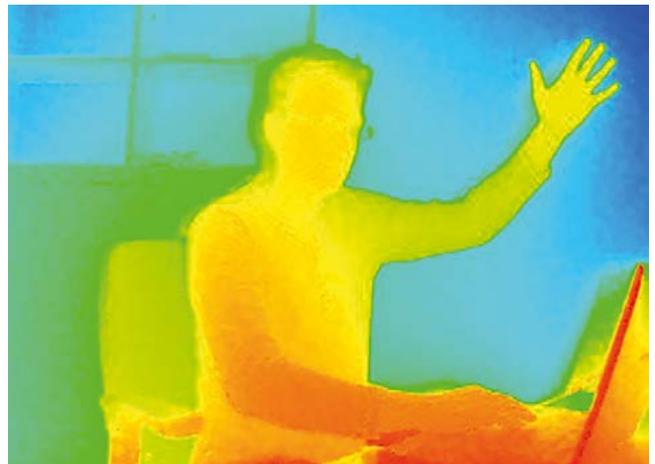
Sample "Gesture Control" Image Taken by ToF Camera

TYPICAL APPLICATIONS

A Basler ToF Camera can be used in a wide variety of applications. Examples include:

Logistics Automation

Basler ToF Cameras can be used for shipment packaging assistance, e.g. box filling, box or pallet stacking, volume scanning, or labelling / OCR. They can also be used for shelf robot assistance or for luggage and box routing.

Factory Automation and Robotics

Factory Automation and Robotics are other fields that offer a wide range of application possibilities for the Basler ToF Camera. In bin picking machines, for instance, the ToF Camera can:

- Find objects
- Pick objects
- Mount objects
- Detect damaged objects
- Detect stacking failures

In addition, there are many more applications in the field of parts inspection: Basler ToF Cameras play an integral role in monitoring the packaging and size of parts, and control their completeness during the manufacturing process, thus providing valuable support in quality inspection.

Medical

In the Medical field the Basler ToF Camera can be used in various applications. Examples are patient monitoring or patient positioning in systems like magnetic resonance tomography. Furthermore, the ToF Camera can be deployed in various applications of Biometrics. Particularly in this area the third dimension will open a whole set of new possibilities.

Autonomous Vehicles

For autonomous vehicles, the Basler ToF Camera can be a valuable tool for navigation, utilizing the depth information for obstacle avoidance, and the 2D data for standard image processing.

TECHNICAL DETAILS

Specifications

Camera	Basler ToF Camera
Sensor Vendor	Panasonic
Resolution	640 × 480
Type	NIR
Frame Rate	20
Working Range	0 m to 13 m
Accuracy	+/- 1cm*
Interface	Gigabit Ethernet, GigE Vision and GenICam compliant
Lens	FOV: 57°× 43°
Software	Windows and Linux
Exposure Control	Programmable, Auto Mode, external trigger signal
Synchronization	Via external trigger, via software trigger or free run
Digital I/O	1 in/1 out
Operating Temperature	0°C – 50°C
Weight	~0.4 kg
Power	24VDC, 15W
Conformity	CE, RoHS, GenICam, GigE Vision, FCC, Eye safety EN 62471:2008

Specifications and housing are subject to change without prior notice.

*Scene dependent: in a range of 0.5 m to 5.8 m, based on a flat white target with over 90% reflectivity, in a room with zero ambient light at 22°C, in default settings mode, looking at the center of the range image.
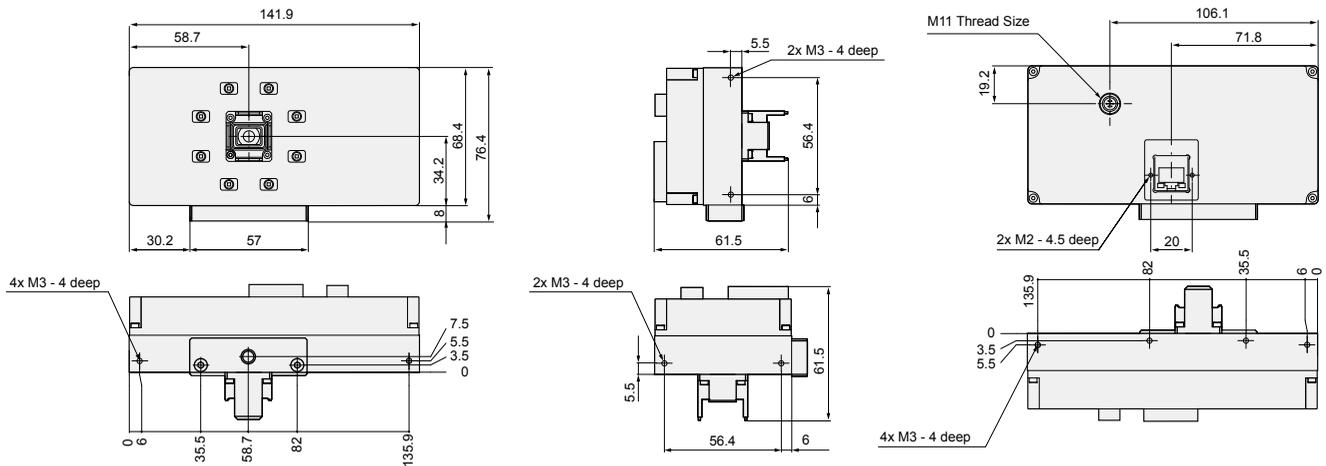
Dimensions (in mm)

Please visit our website to find further Basler offices and representatives close to you:
www.baslerweb.com/sales

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