



VISION

Guided Tour

2024

Logistics
8 October 2024

Unlock the Efficiency of 3D Camera in Postal & Logistics Industry

Booth: Hall 8, B10

Targeted end-user applications

The Bumblebee X stereo camera revolutionizes postal and logistics operations by enhancing accuracy and efficiency in sorting, picking, and placing parcels. Its high-resolution 3D imaging and real-time data processing capabilities enable faster decision-making and operational efficiency, meeting the demands of modern logistics automation.



Teledyne FLIR IIS

Teledyne FLIR
Farhad Kazi,
farhad.kazi@teledyne.com

What you will see at our booth:

Our live demo showcases the Bumblebee X in action. The demonstration highlights its real-time processing with low latency, high-density point cloud generation, and high accuracy, proving its relevance and benefits in enhancing automation within postal and logistics operations.



Technological benefits

The Bumblebee X offers several technological benefits tailored to the postal and logistics industry:

- **Low Latency & High Accuracy:** Ensures real-time processing and precise measurements, enhancing operational efficiency and reducing errors.
- **High-Density Point Cloud Generation:** Give more detailed and nuanced robotic perception, crucial for complex tasks ranging from precise pick and place operations to safer navigation.
- **Wide Range Accuracy:** Provides exceptional accuracy across distances from 0.5 to 20 meters, making it suitable for handling parcels of various sizes.
- **5GigE Connectivity:** Allows rapid and extensive data transfer, critical for real-time logistics applications.
- **Robust Industrial Design:** Built to withstand demanding logistics environments, ensuring durability and consistent performance.
- **Future-Proof Architecture:** Supports continuous upgrades and feature additions, keeping the system at the forefront of technological advancements.
- **Ease of Integration:** Designed for seamless integration with existing logistics systems, simplifying setup and reducing downtime.

The Innovation

The Bumblebee X is unique due to its pioneering features and advanced capabilities:

- **First 5GigE Stereo Camera:** Leads the market with unmatched data streaming bandwidth, essential for real-time logistics applications.
- **World-Class Calibration:** High standard factory calibration with low RMS error and special design to maintain long-term calibration retention, ensuring consistent and reliable performance over time.
- **Future-Proof Design:** Innovative architecture allows for ongoing firmware upgrades and new feature additions, ensuring long-term sustainability and relevance.
- **Energy Efficiency:** Constructed with energy-efficient components and sustainable manufacturing practices, reducing environmental impact.

Links: <https://www.flir.com/products/bumblebee-x-5gige/>

Enhancing Logistics Efficiency and Label Inspection Accuracy with Auto DL

Booth: Hall 8, B11

Targeted end-user applications

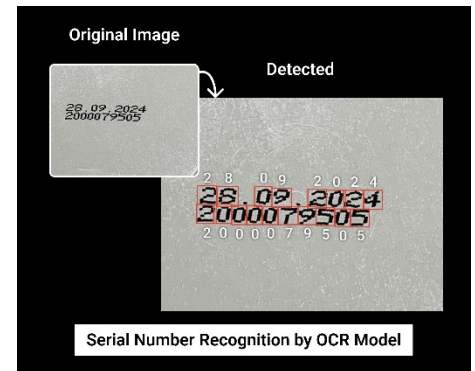
Neurocle's deep learning vision inspection software automates the sorting, classification, and tracking of goods through label recognition, maximizing distribution speed while ensuring top-tier packaging quality.

- **Postal Inspection:** Recognizes invoice numbers, container IDs, and license plates.
- **Logistics & Packaging Inspection:** Ensures proper package sealing, label alignment, and checks for container printing defects.

What you will see at our booth:

We will demonstrate an **OCR model that recognizes invoice numbers**. This demo will simulate actual production line vision inspection systems, where a camera captures real-time images of objects, and the deep learning model analyzes these images to inspection results.

NEUROCLE
Neurocle
Eunseo Kim, info@neuro-cle.com



Technological benefits

In the postal and logistics sectors, key inspection challenges include:

- **High-Speed Character Recognition:** Accurately detecting small characters on fast-moving objects on a conveyor.
- **Label Orientation Issues:** Identifying labels or invoices that are angled or not perfectly aligned.

Neurocle's Optimized Solution:

- **Dynamic ROI & Rotation Models:** Neurocle's inspection system corrects label orientation and accurately recognizes angled text, ensuring reliable detection even with fast-moving or misaligned objects.

The Innovation

Neurocle leverages an **Auto Deep Learning algorithm** to automatically optimize model structure and hyperparameters for high accuracy and adaptability.

- **Speed Optimization:** In fast-paced environments like logistics, users can choose speed optimization options or apply model compression techniques to enhance processing speed.
- **Dynamic ROI & Rotation Models:** These models dynamically adjust the region of interest (ROI) and rotate objects or text within images to the correct orientation, enabling clear, accurate readings.

Links:

<https://www.neuro-cle.com/en>

Autonomous Forklift for Outdoor Operations

Booth: Hall 8, C50

Targeted end-user applications

The AIT Austrian Institute of Technology (AIT) plays a key role in the optimisation of logistics processes. Recently, AIT has developed an autonomous forklift truck for the automation of outdoor loading and unloading processes.



Iman Kulitz, iman.kulitz@ait.ac.at

What you will see at our booth:

In our presentation we will show the automated loading and unloading of a lorry with pallets to and from a loading zone and we will explain the technology which makes the forklift operating safely even under harsh weather conditions.



Technological benefits

Intelligent automation for robust outdoor operation

The automated forklift truck is expected to significantly increase efficiency in the logistics sector in the future, as it is an automated, safe and user-centered transportation and logistics system with intelligent automation based on smart algorithms and multimodal sensor systems for robust outdoor operation in all weather conditions.

Integration of Human-Machine Interaction

AIT research and development also

- support the human operator in working with future autonomous systems, such as the automated forklift.
- integrate human-machine interaction interfaces to support easy control and monitoring of the machine by a human operator (e.g. remote operation, fleet management).

The Innovation

Automating the complex process of outdoor loading and unloading operations, especially under different weather conditions, in unstructured environments without predetermined routes and with a wide variety of obstacles, is a challenging task.

The precise loading of pallets requires the reliable detection and the centimetre-accurate positioning of the forklift truck, which is ensured by latest sensor technologies and intelligent software solutions.

AIT has now succeeded in significantly improving the forklift's adaptability and precision, making it possible to recognize and handle different types of pallets, even when they are partially covered, and to react more effectively to unforeseen events such as sudden obstacles.

In addition to pallets, the AIT is capable of handling a wide variety of man-made objects, such as various types of containers or boxes, or natural objects, such as tree trunks, with automated machines.

Links:

Website: <https://www.ait.ac.at/labs/large-scale-robotics-lab/>;

YouTube: <https://youtu.be/MbcEuVy-O6k?feature=shared>

How cameras and AI guide robots and handle parcels

Booth: Hall 8, C60

Targeted end-user applications

IDS offers a broad range of 2D and 3D cameras, intelligent cameras with integrated AI-based image processing and image analysis software which benefits logistics applications such as

- Barcode reading in parcel handling
- Checking labels or reading article numbers thanks to OCR (Optical Character Recognition)
- Palletizing & depalletizing
- Bin picking
- Automated guided vehicles and autonomous mobile robots for in-house logistics

What you will see at our booth:

- Never miss the perfect grip: Robotic bin picking application with 3D cameras
- Get closer than ever: 3D object recognition on short distance with 3D cameras
- Read more than others: Fast and reliable OCR with 2D cameras and AI
- Boost your automation level: Eliminate expensive manual or mechanical feeding

The logo for IDS, consisting of the letters "IDS" in a bold, black, sans-serif font, followed by three vertical bars of increasing height.

IDS Imaging Development
Systems

Sophie Pfalzgraf,
s.pfalzgraf@ids-imaging.de



Technological benefits

Whether for 2D, 3D or AI-based tasks, cameras from IDS open up a seemingly endless range of applications. The combination of quality „Made in Germany“, long-term availability and exceptional ease of use makes the products unique. Offering a high degree of variety of sensors, interfaces and housing variants. IDS is providing a convenient one-stop-shop experience, offering all accessories like lenses, cables, interface cards able to fulfil even highly specialised requests, thanks to more than 25 years of experience in (customized) hard- and software development.

The Innovation

- Huge USB or GigE camera portfolio: from entry-level to high performance with state-of-the-art sensors e.g. Sony Starvis2.
- Cost-free, highly versatile SDK; regular firmware updates for feature extensions; unique software features, e.g. line scan modus for area scan cameras.
- Uniquely broad 3D camera portfolio: models for close range applications yet with large field of view (distances close to 20 cm) up to models for distances up to 5 m with proven fast and precise 3D point clouds. Strong for static and moving objects; also with reflective and non-structured surfaces.
- DENKnet AI: Use of most reliable and advanced OCR technologies. Handle special characters, difficult-to-read fonts, cluttered backgrounds and much more with exceptionally high accuracy.
- New @ VISION: 2024
2D camera with event-based sensor - IDS first iToF camera - new camera category for industrial monitoring applications (with streaming / recording) - USB 10 Gbps showcase.

Links:

<https://en.ids-imaging.com/ensenso-stereo-3d-camera.html>

Maximizing Material Handling Efficiency with Machine Vision

Booth: Hall 8, D50

Targeted end-user applications

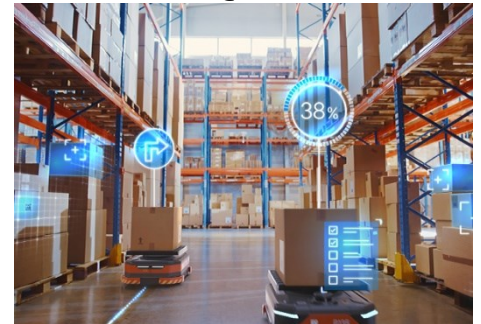
In two live demonstrations, Basler will showcase various solutions for barcode reading and dimensioning in logistics, as well as for vision-guided robotics. Visitors to the booth will learn how Basler, as a leading provider of machine vision solutions, derives tailor-made integrated solutions from its broad portfolio of hardware and software components to meet the specific challenges of applications in the logistics industry.



Kathrin Martens,
Kathrin.Martens@baslerweb.com

What you will see at our booth:

At its booth, Basler will show two material flow demos with different applications that are perfectly suited for vision-guided robots and 2D/3D vision technologies. This will demonstrate how machine vision, as a key element of successful warehouse automation, reliably reduces system complexity and costs, increases efficiency and accuracy, and thus makes logistics companies even more successful.



Technological benefits

The vision systems presented for barcode reading are based on Basler ace 2 cameras, Basler lenses, and Basler image processing software. With in-camera image processing for barcode identification, we demonstrate lean and powerful options for efficient and accurate barcode recognition.

For package inspection, our time-of-flight (ToF) cameras with onboard processing are ideal, because they reduce the need for external processing units, saving space and cost.

Our intelligent stereo vision solutions support plug-and-play applications through Basler's robotics application software. This simplifies integration and significantly reduces implementation time.

For improved object recognition and precise positioning in pick and place applications, our stereo vision camera delivers stunning 3D images.

Our offering significantly improves the efficiency and accuracy of logistics processes through the use of advanced vision technologies and customised solutions.

The Innovation

Scanning, picking, sorting, dimensioning: Due to the variety of tasks in different working environments in logistics, there is no single machine vision solution for everything. As a leading provider of machine vision solutions, Basler is able to derive tailor-made, integrated solutions from its broad portfolio of hardware and software components. What makes Basler's offering unique is the seamless integration of all hardware and software components into a comprehensive, yet easy-to-implement vision solution for automated picking and scanning applications.

Links:

<https://www.baslerweb.com/en/>

<https://www.baslerweb.com/en/industry-applications/warehouse-automation/>

Fast Scanning of Multiple Barcodes with software on cameras or smartphones

Booth: Hall 8 E60.18

Targeted end-user applications

Scanning many items and barcodes in one scan enables autonomous inventory scanning and pallet scanning in the warehouse, and also the ability to sort and find parcels with smartphone apps in lastmile parcel applications.

For the warehouse, OEMs can build autonomous inventory scanning solutions using camera-equipped robots and drones. One such customer is doks.innovation <https://doks-innovation.com/en/>

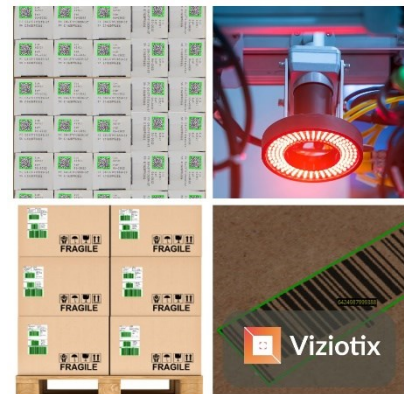
What you will see at our booth:

We will show scanning of many barcodes in single large resolution images using Viziotix software and an industrial camera running from a PC. We will also demonstrate this with smartphones. We will show hundreds of barcodes being scanned in a few milliseconds to enable solutions such as autonomous inventory scanning, pallet-scan gates, and forklift-mounted scanners. We will demonstrate how the speed of scanning can be used in fixed camera solutions, such as on conveyors, on robotics and on AMRs.



Viziotix

Viziotix
David Downey,
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Technological benefits

The ability to scan many barcodes in a few milliseconds enables solutions that automate previously manual tasks, where an operator had to use a handheld scanner to scan individual barcodes one by one. Whole pallets can be scanned in seconds by fixed or moving cameras. This replaces manual warehouse counts and keeps the WMS system accurate and up to date. Warehouse operational costs are reduced, inventory carrying costs reduced and customer service improved.

The technology can also be integrated in smartphone lastmile delivery apps to capture many barcodes on parcels, to allow the software to be used to search and sort parcels for delivery. Delivery personnel can sweep over parcels in a van to find parcels with certain barcodes for instance.

The Innovation

Viziotix has designed this software for industrial automation and it is uniquely able to scan hundreds of barcodes in a few milliseconds from large (20MP+) camera sources. Before this software was available, OEMs were having to pre-process or crop images, or process images overnight. Now, these solutions can run in real-time on common platforms such as Jetson, Raspberry Pi and Linux/Windows workstations. This real-time processing option transforms the business case of automated vision solutions.

Links:

[Viziotix Website: https://www.viziotix.com/expert-barcode-scanning-cmpgn1/](https://www.viziotix.com/expert-barcode-scanning-cmpgn1/)

[Scanning Barcodes on Pallets: https://www.viziotix.com/2024/07/01/scanning-barcodes-on-pallets/](https://www.viziotix.com/2024/07/01/scanning-barcodes-on-pallets/)

Theia's TL410 motorized lens with 300lp/mm in Vis & NIR for OCR & more

Targeted end-user applications:

Theia's TL410 can be used for its 300 lp/mm resolution in postal and logistics to image barcodes and other OCR imaging tasks, offering a wide angle of view for wide coverage from close distances, as well as sorting, tracking and monitoring movement of goods. Motorized zoom and focus allows for remote set up and adjustment of field of view and focus, enabling situational awareness and navigation of AMRs inside a warehouse environment or adjustment of focus position for variable object distances.

What you will see at our booth:

Theia will showcase their TL410 lens demonstrating the motorized zoom and focus capabilities as it relates to imaging in pick and sort or warehouse environments with variable object distance recognition requirements. The demonstration will also showcase excellent resolution performance imaging barcodes and items with fine detail.

Technological benefits:

Theia's versatile TL410 motorized zoom and focus lens has a 4-10mm varifocal range replacing up to 4 prime lenses, allowing precise adjustment of the HFOV from 44 - 112 degrees on a 1/1.7" sensor. The flexible lens offers a working distance of 10cm to infinity to image products with variable sizes & heights or from different distances.

Made for a 1.55 μ size pixel, the lens provides 300 lp/mm resolution in visible and NIR light suitable for imaging barcodes and other OCR tasks. With NIR correction from 435 - 940nm it enables excellent image quality in multi-spectral applications. At F/1.4 the lens provides superior light gathering ability in challenging light conditions.

Its motorized zoom, focus, and iris enable remote operation to minimize manual intervention and costly line downtime. The Precise iris (P-iris) version uses a stepper motor to select the F/# and optimize the depth of field and image quality. Available in C, CS or D25 board mount options.

The Innovation:

The motorized TL410 comes with optional integrated Near IR cut, bandpass or long pass filters in a variety of wavelengths for multi-spectral applications not available with other comparable performance motorized lenses. Currently available are models in 850 and 940nm; other wavelengths are also possible.

The lenses are compact and lightweight at only 52mm from the mounting plane (<64mm TTL) to fit into tight envelopes. While the lens weighs only 78 grams, it can withstand shock up to 50G in each of the $\pm Z$ axes as well as vibration up to 200Hz at 10G.

Theia also offers a separate motor control board accessory with software application, user interface and USB connection to easily integrate into the imaging system and control the lens. In addition to USB, i2C and UART communication protocols are also available. The modular lens & board system allow flexible configuration inside the hardware envelope.

Links:

www.theiatech.com/tl410

Booth: Hall 10, A47

Theia[®]
TECHNOLOGIES

Andrea Van Landingham,
avanlandingham@theiatech.com

Motorized Zoom & Focus



AI-based Robotic Depalletization of Boxes Powered by 3D Vision

Booth: Hall 10, C40

Targeted end-user applications

Robotic depalletization of cardboard boxes randomly placed on the pallet.

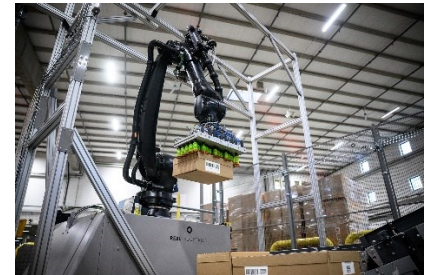
- * 3D camera provides high-resolution Color and 3D data of the scene.
- * AI algorithm trained to handle thousands of different boxes robustly detects the position of axis robotic arm picks the box avoiding collision with other objects

What you will see at our booth:

Real-life robotic depalletization of boxes with 3D camera, AI software, and industrial robot.



Photoneo
sales@photoneo.com



Technological benefits

Rebl Industries' depalletization solution utilizes Photoneo 3D camera to deliver a high-performance solution for the intralogistics sector. Offering a scalable and user-friendly approach, it easily adapts to specific operational needs through a robot-as-a-service model. Leveraging Photoneo advanced technology, precise object recognition enables the handling of various box types, sizes, and weights. Among several workmates deployed, one colleague "Clipson", operates tirelessly around the clock in Jönköping, Sweden, efficiently unloading incoming goods.

The Innovation

Unlike similar solutions, robots for unknown depalletization can handle <1300 packages per hour depending on sizes and weights. This advanced robot efficiently removes packages from pallets and sorts them with precision, greatly enhancing the speed and accuracy of material handling processes. By automating this traditionally labor-intensive task, the robot reduces the physical strain on workers, minimizes the risk of injuries, and improves overall workplace safety. Additionally, the increased efficiency and reliability provided by the robot lead to higher productivity and allow employees to focus on more complex and value-added tasks, thereby fostering a more positive work environment.

Links:

www.photoneo.com

One-stop-shop for image sensors in smart factories and logistics

Booth: Hall 10, C41

Targeted end-user applications

Imaging solutions are now ubiquitous in factories and warehouses, from quality inspection to parcel tracking through automated guided robots. While some use cases require pure image capture for barcode decoding or goods inspection, others require additional information to perform object detection, distance or volume measurement, or more complex environment mapping. This diversity in machine vision applications calls for a variety of imaging solutions to best address each use case's requirements.



STMicroelectronics
Ha Lan Do Thu,
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What you will see at our booth:

ST is demonstrating 3 main image sensor technologies for warehouse and logistics applications:

- Global shutters sensors: Barcode reading with automatic wake up at parcel detection.
- iToF sensors: 3D information for people mapping and positioning. iToF+RGB camera: 3D rendering and accurate complex 3D mapping.
- dToF sensors: smart presence detection, gesture and hand posture recognition for production efficiency and safety; and robotics for cliff, small object, and floor type detection.



Technological benefits

Global shutters products:

- Ability to accurately detect and decode barcodes even in challenging lighting conditions.
- Smart wake-up system embedded in the sensor, enabling the elimination of power-hungry 24/7 operation: the image sensor wakes up the full system only when a parcel is detected; the rest of the time it is in a very low power consumption mode of typically 1mW.

iToF products: High performance, cost effective iToF sensor dedicated to industrial applications.

- Unparalleled resolution of 672x804 pixels with a tiny die size and lower power consumption.
- Excellent depth precision while multifrequency operation provides long-distance ranging.
- High spatial resolution enabling excellent angular resolution, offering large field-of-view scenes captured within a very compact die size (4.5 x 4.9 mm) for a very cost-effective system.

ST has been a pioneer in offering dToF technology to the market with more than 2 billion units sold so far. ST offers a wide portfolio from single to multi-zone devices. These solutions are fast and accurate and come with all-in-one dToF devices.

The innovation

Based on ST's proprietary technologies, ST introduces industrial-grade imaging products from 2D to 3D that leverage state-of-the-art pixel technologies, which have enabled the company to reach billions of units in sales from demanding top players. These solutions, developed by STMicroelectronics in its own wafer foundry in Europe, enable smart vision solutions and more accurate vision solutions such as superior barcode detection, a unique patented auto-wake-up feature, and state-of-the-art 3D depth map precision and accuracy.

Links: <https://www.st.com/en/imaging-and-photonics-solutions.html>

Euresys - Automatic Various Code Reading and 3D volume measurement

Targeted end-user applications

Traceability of parcels and optimization of packaging

What you will see at our booth:

Parcels are moving on a conveyor belt.

At stage1 the Euresys Easy3DObject software library in combination with a 3D sensor computes and report the volume of a parcel.

At stage2, the Euresys code reader library detects automatically various code like data matrix codes, QR codes and bar codes printed on parcels, reads them and reports the decoding strings.

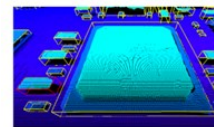
Booth: Hall 10, D24



Euresys

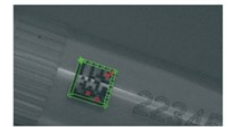
Sandrine Deleersnijder,

sandrine.deleersnijder@euresys.com



Easy3DObject

3D OBJECT EXTRACTION AND MEASUREMENT LIBRARY



EasyMatrixCode

2D DATA MATRIX CODE READING LIBRARY



EasyQRCode

QR CODE READING LIBRARY



EasyBarCode

BAR CODE READING LIBRARY

Technological benefits

A single tool is used to automatically detect and decode multiple type of code data matrix codes, QR codes and bar codes reducing the integration and development time.

The Innovation

Using a single tool to detect and decode several types of code i.e. data matrix codes, QR codes and bar codes simultaneously

Links:

<https://www.euresys.com/en/Products/Machine-Vision-Software/Open-eVision-Libraries/Easy3DObject>

<https://www.euresys.com/en/Products/Machine-Vision-Software/Open-eVision-Libraries/EasyMatrixCode>

<https://www.euresys.com/en/Products/Machine-Vision-Software/Open-eVision-Libraries/EasyQRCode>

<https://www.euresys.com/en/Products/Machine-Vision-Software/Open-eVision-Libraries/EasyBarCode>

EFFILUX - Efficient LED lighting solutions for Logistics.

Booth: Hall 10, D56

Targeted end-user applications

The logistics industry is facing unprecedented challenges due to the rapid growth of e-commerce. With increasing demand, minimal delays, and zero tolerance for errors, efficient warehouse management has become crucial. High-speed control over inbound and outbound goods, as well as precise item placement, are now essential for staying competitive.

Effilux's powerful and stable lighting systems provide the perfect solution by enabling cameras to capture intricate details of products, labels, QR codes, and more—ensuring our end-users achieve the accuracy and speed they need.

What you will see at our booth:

At our booth, you'll experience a live demonstration of how our lighting systems can effectively read multiple barcodes simultaneously, even in challenging conditions such as glares or high-speed conveyors.

With the help of our rotating platform and sample boxes, you'll easily visualize how this setup can be seamlessly integrated into your own operations, offering a practical solution to your industrial challenges.

Technological benefits

The performance of an automation system in warehouses is highly dependent on the quality of images provided by the vision system. Unfortunately, many systems rely on low-quality lighting, which can diminish image clarity, especially on high-speed conveyors or when dealing with reflective surfaces like blister packs. These issues can introduce artifacts and compromise performance.

Effilux solves this problem with stable, powerful, and highly adapted lighting solutions. A prime example is the EFFI-FLEX-LG, specifically designed for logistics applications. It offers powerful strobes that perform flawlessly at any conveyor speed, optimized low power consumption, and a range of optical options to combat glare and image artifacts—ensuring peak system performance.

The Innovation

Beyond delivering high-end lighting for industrial applications, Effilux products are designed with flexibility in mind. You can easily adapt our lighting solutions on-site to meet the specific needs of your environment—all with complete autonomy. We are committed to ensuring that our products are not only reliable but also cost-effective, providing long-term value and performance.

Links:

<https://www.afilux.com/en/products/logistic>



Effilux
Alexandre Cottereau,
a.cottereau@afilux.fr



Viewworks_Postal & Logistics

Booth: Hall 10, E30

Targeted end-user applications

We target customers in the postal & logistics industry, including postal services, logistics firms, courier services, and automation providers. They require machine vision technology for tasks such as parcel sorting, address recognition, animation. Viewworks offers high speed, high resolution cameras ideal for these applications, enhancing operational efficiency and accuracy in package handling and delivery. Our solutions help streamline processes and reduce errors.

What you will see at our booth:

We have two demos related to the postal & logistics industry. There are demos featuring low resolution area scan cameras and line scan cameras, all with GigE interfaces for ease of use.

First demo is 5M area scan camera in compact housing for easy use and fast detection speed.

We also have a demo of 4k line scan camera which is widely used in the industry.

Technological benefits

Viewworks offers a diverse range of interface options. Not only CXP and CoF interfaces to cater to high speed and high resolution cameras, we also provide a lineup of user-friendly GigE and USB cameras. Our area scan cameras are available with GigE and USB interfaces from 0.4 megapixel to 20 megapixel resolution, and we also offer GigE line scan cameras.

Our GigE interface cameras support Power over Ethernet (PoE), ensuring ease of use. GigE cameras eliminate the need for costly frame grabbers, allowing for a cost-effective and convenient choice for your operations.

For our area scan GigE cameras, we have the VZ series, which features a compact housing size of 29 mm x 29 mm. This compact design allows for versatile use in various applications, making it ideal for the dynamic and space-constrained settings often found in the postal & logistics industry.

The Innovation

In the postal & logistics industry, line scan cameras are widely used for sorting. We take pride in our advanced GigE interface line scan cameras, which are ideal for these applications.

Viewworks offers a comprehensive lineup of line scan resolutions: 2k, 4k, 8k, and 16k, available in both monochrome and color. Utilizing high resolution cameras such as the 8k and 16k allows to consolidate multiple cameras into one, eliminating the need of synchronization and enhancing efficiency. Viewworks TDI line scan cameras also prove well-fitted for the postal & logistics industry, where obtaining high brightness values during inspection is difficult due because objects move quickly on conveyor. By using a Viewworks TDI camera, you can achieve high brightness values even at high speeds because the brightness values of 256 stages are accumulated. We have TDI cameras with GigE Interface for easy use and integration.

Links:

vision.viewworks.com



Viewworks

Julie Rha, julierha@viewworks.com



Latest Helios2 Time-of-Flight Cameras for Logistics and Material Handling

Booth: Hall 10, E40

Targeted end-user applications

LUCID's Helios2 ToF cameras are widely used in a variety of end-user applications including:

- De-/Palletizing
- AGVs/AMRs (e.g. autonomous driving forklifts)
- Volume estimation e.g. for packages, suitcases etc.
- Parcel logistics
- Material handling

Technological benefits

Wide range of ToF camera include the Helios2+ (HDR and High-Speed Mode), Helios2 Wide (108° angle-of-view), Helios2 Ray (outdoor camera), and Helios2 Narrow (Horizontal FoV: 31°).

- Easiest way to get a point cloud.
- No need for extra protective housing.
- All Factory Tough features available, IP67 housing and ruggedized connectors.
- Fast installation and no calibration necessary.
- Best price performance for a 3D ToF camera.

The Innovation

The Helios2 Wide ToF camera integrates Sony's DepthSense IMX556PLR back-illuminated image sensor paired with a wide-angle lens, providing an expansive 108° angle-of-view. Specifically designed for applications with a close working distance atonal area, such as full-size palettizing applications, the camera delivers a depth resolution of 640 x 480 at up to an 8.3 meter working distance and operates at a frame rate of 30 fps. The Helios2 Narrow ToF camera, offering a 31° x 24° narrow FoV, produces a tighter point cloud and reduces the likelihood of multipath error, making it ideal for applications requiring precise 3D depth measurement in confined spaces.

The Helios2+ Time-of-Flight camera offers two on-rocessing modes: High Dynamic Range (HDR) and High-Speed Mode. The HDR Mode combines multiple exposures in the phase domain, ensuring accurate depth information in high-contrast, complex scenes. The High-Speed Mode enables depth perception uphase measurement, allowing for faster acquisition speed and higher frame rates suitable for moving object perception. All Helios2 cameras offer Factory Tough IP67 housing and ruggedized connectors. Plug & play, no calibration needed.

Links:

[Helios2 Time of Flight 3D Camera - LUCID Vision Labs \(thinklucid.com\)](https://www.thinklucid.com/helios2-time-of-flight-3d-camera)

[3D Time-of-Flight \(ToF\) Cameras: Helios2 3D Cameras Compared \(youtube.com\)](https://www.youtube.com/watch?v=...)

[LUCID Time of Flight Guidebook 2.0 - LUCID Vision Labs \(thinklucid.com\)](https://www.thinklucid.com/lucid-time-of-flight-guidebook-2.0)



LUCID Vision Labs

Renata Sprencz,

renata.sprencz@thinklucid.com



TKH Vision's cutting-edge vision solutions for Logistics and Robotics

Booth: Hall 10, F30

Targeted end-user applications

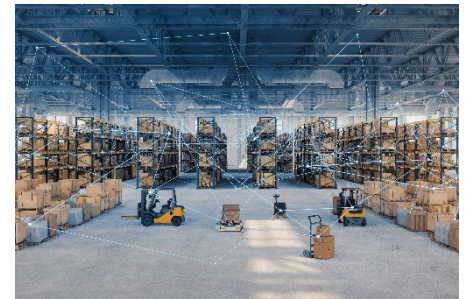
TKH Vision vision solutions are designed to enhance automation and efficiency in logistics and robotics applications. Our cameras are crucial for tasks such as automated sorting, package inspection, and real-time tracking in postal services and logistics operations. With high-resolution imaging and robust performance, they ensure accuracy and reliability in demanding environments.



TKH Vision
Claus Haselmeier
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What you will see at our booth:

- Forklift remote driving automation from enabl Technologies GmbH with Alvium FPD-Link III Cameras
- Simultaneous Localization and Mapping (SLAM) Demo from Kudan with 2 integrated 3D Nerian Ruby cameras on the Mobile Robot Development Kit.
- AI based Sorter on Teachable Edge Device with iam Smartcam from NET
- Postal sorting from Prime Vision with a customized LineScan System from Chromasens
- Solution for automated guidance by barcode reading and guidance for the next Pick. Including GMSL2 camera, special lens mount of M22 and lens alignment



Technological benefits

Our cameras offer unparalleled image quality and processing speed, enabling real-time data capture and analysis essential for logistics applications. They support advanced features like object recognition, barcode reading, and motion tracking, which are critical for efficient sorting and tracking systems. The durability of our cameras ensures reliable performance in varied environmental conditions, minimizing downtime and maintenance costs.

The Innovation

TKH Vision's innovation lies in the integration of high-resolution sensors and AI-driven image processing within compact, rugged designs. Our cameras stand out due to their ability to perform complex image analysis on-the-fly, which is essential in logistics and robotic applications. The flexibility of our systems allows seamless integration with existing automation infrastructure, offering unique customization options to meet specific operational needs.

Links:

www.tkhvision.com

USB3 Cameras – Now Extended to 100 Meters with Zero Latency

Booth: Hall 10, F80

Targeted end-user applications:

The world's first industrial-grade USB 3.0 extender product, converging multiple interfaces with data transfer rates of 5Gbps over a field-terminated Category cable, with zero latency and no frame loss for distances of up to 100 meters. On top of the USB3.0, the product converges power and triggers streamlining installations, including synchronization between multiple cameras and light sources. Ideal for any factory line and warehouses requiring simple plug & play high performance machine vision.



Valens Semiconductor
Moti Shtrobach
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What you will see at our booth:

Technology Performance & Cost Comparison:

- Side-by-side latency test of a direct USB3 Vision Camera connection and a 100m extended setup.
- The extension solution converges the power and triggers over a single category cable thus saving costs and streamlining the installation.

Multiple Camera and Light Synchronization:

- The Setup includes two extended USB3 Vision cameras mounted with LED lights, pointed at each other with an object in the middle. With a push of a button the cameras and lights are taken in and out of synchronization affecting the image.

Technological benefits

- **Distance:** 100 meters, zero latency USB3.2 Gen1 extension.
- **Convergence:** Data, Power, Triggers and UART over the extended channel for a streamlined installation.
- **Simplicity:** Out of the box, plug & play extension solution. All the benefits of a USB3 Industrial camera, now with a simple field terminated 100 extension option.
- **Preventive maintenance:** Advanced diagnostics to detect changes to cable quality.
- **Cost:** The convergence presents multiple cost saving opportunities such as removing the need for a dedicated power supply to the camera.

The Innovation

The Industrial USB3 Extender is an industry first for extending USB3.2 for distances of up to 100m over category cable with zero latency. Valens is in the process to formalize an extension category under the A3 USB3 Vision work group.

Links:

[Meet Us](#) | [EMC Technology Shootout](#) | [High-Performance Extension for Machine Vision Application \(paper\)](#)

