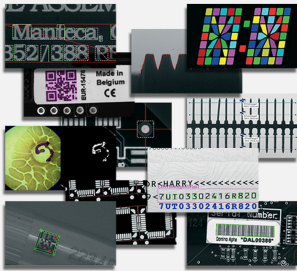


# Full Bundle

Bundle of all Open eVision libraries



## At a Glance

- Cost effective bundle of all eVision libraries
- Includes EasyImage, EasyGauge, EasyFind, EasyMatch, EasyObject, EasyColor, EasyOCR, EasyOCR2, EasyOCV, EasyBarCode, EasyMatrixCode and EasyQRCode

## Benefits

### Open eVision Studio development and prototyping tool

Open eVision Studio is the development and prototyping tool of Open eVision. It includes a scripting function that generates code (C++, C# and Visual Basic ActiveX) using easy to understand menus and dialog boxes. The generated code can then be copied and pasted into your application's source code.

### EasyImage Description

- EasyImage includes operations usually performed as pre-processing steps to improve the image quality and obtain a good contrast between the background and the objects to be inspected.
- EasyImage supports gray-level and color images. Selected morphology functions are also optimized for binary (1-bit per pixel) and bi-level images.
- EasyImage includes numerous image processing functions, such as enhancement and restoration by linear or non-linear filtering, arithmetic and logic operations, geometric transformations for image registration, histogram analysis for thresholding, projection, ...

### EasyGauge Description

EasyGauge is a cutting-edge measurement and dimension control library for use in gauging and metrology applications. By relying on proven sub-pixel edge detection and shape fitting algorithms, it allows determining the dimension, position, curvature, size, angle or diameter of manufactured parts with an excellent accuracy.

Robustness is ensured by powerful edge-point selection mechanisms that are intuitive and easy to tune, allowing measurement in cluttered images.

In addition, EasyGauge also supports the automatic measurement of parallel sides, thus providing means of measuring the thickness of flat or bent objects, as well as the precise location of corners.

## EasyObject Description

The EasyObject library handles image segmentation, i.e. the decomposition of images into separate objects, also called blobs.

Once the objects have been constructed, they can be handled as independent entities. Various geometric parameters or features, such as area, width, or ellipse of inertia, can be computed for each object.

Objects of interest can be selected by means of their position or of their computed features.

EasyObject also supports the inspection of holes in defined objects. Holes are managed as the objects themselves, benefiting from the same geometrical features. EasyObject manages the relationship between objects and holes, defining parent objects for holes.

## EasyColor Description

EasyColor includes a set of optimized color systems transformation functions and color analysis functions.

The color systems supported are RGB, XYZ,  $L^*a^*b^*$ ,  $L^*u^*v^*$ , YUV, YIQ, ISH, LSH, VSH, LCH and YSH.

EasyColor provides efficient means to convert images between these systems and to transform color images into gray level images and vice versa.

## EasyMatch Description

EasyMatch is a gray-level and color pattern matching library. It lets you train the system on a reference pattern and afterwards locate its occurrences in other images.

This tool is very convenient when the position of a given part is unknown in the field of view, or if the presence of parts must be controlled. The library works by using normalized correlation method, i.e. measuring discrepancies between the pattern and the target image.

## EasyFind Description

Based on an innovative feature-point technology, EasyFind is designed to rapidly find one or more instances of a reference model in the image.

Compared to normalized correlation, EasyFind features faster processing and improved robustness. It shows excellent performances when handling instances that are highly degraded due to noise, blur, occlusion, missing parts or unstable illumination conditions.

## EasyBarcode description

EasyBarcode is a library designed to automatically locate and read bar codes. Bar codes encode short character string and are widely used for marking and identifying goods.

EasyBarcode is able to identify and read a wide range of standard commonly-used symbologies as well as special symbologies. EasyBarcode automatically locates the bar code symbol in the image and supports code rotation. Moreover for prototyping or special cases, an advanced manual location mode is also available.

## EasyMatrixCode Description

Data Matrix codes are widely used for parcel tracking and part identification in the semiconductor, pharmaceutical and mechanical industries.

EasyMatrixCode is a fully automatic reader of 2D Data Matrix codes. It recognizes symbols of any size, contrast, location and orientation in a single operation. Error detection and correction algorithms are used to provide a reliable reading.

EasyMatrixCode is fully compatible with the ANSI/AIM BC11-1997 standard.

## EasyQRCode Description

QR codes are 2D bar codes. They are widely used for their fast readability, high reliability and their large storage capacity compared to ordinary barcodes.

EasyQRCode is a robust QR code reading library for industrial applications such as part identification and product or time tracking. These applications typically require the fast and reliable decoding of variable-content QR codes.

## EasyOCR Description

EasyOCR is a font-dependent printed character reader based on a template matching algorithm. It has been designed to read any kind of short text (part numbers, serial numbers, expiry dates, manufacturing dates, lot codes,...) printed on labels or directly on parts.

## EasyOCR2 Description

EasyOCR2 is a font-dependent printed character reader. It has been designed to read short texts such as part numbers, serial numbers, expiry dates, manufacturing dates, lot codes, ... printed on labels or directly on parts.

## EasyOCV Description

EasyOCV is an optical character verification tool used for mark inspection. It provides automatic training of the model, adjustable acceptance levels and a robust gray-scale analysis. EasyOCV is suitable for various mark inspection and label printing verification applications. It can detect blurred, misaligned, distorted or double marks, extra or missing ink, missing characters or reversed marks as well as contrast problems.

## Choose the most suitable Licensing System

- Open eVision Dongle-based Licenses: Dongle-based Licenses offer the flexibility to be transferred from a PC to another. To purchase a Dongle-based License, select one of the Euresys dongles (USB or Parallel) plus the license(s) to be stored on this dongle. Licenses are delivered as activation codes, which are stored on the dongles.
- Open eVision Software-based Licenses: Software-based licenses do not require any dongle, they are linked to the PC on which they have been activated. Licenses are delivered as activation codes and can be managed online.

## Applications

### MACHINE VISION FOR THE ELECTRONIC MANUFACTURING INDUSTRY

#### High speed image acquisition for inspection machines.

The Coaxlink and Grablink cards are dependable industrial frame grabbers that provide robust and stable image acquisition from the fastest digital cameras available. They feature precise camera control and synchronization functions.

- AOI (Automated Optical Inspection) machines
- 3D SPI (Solder Paste Inspection) machines
- 3D lead/ball inspection machines

#### Very high resolution line-scan image acquisition for inspection machines

The Coaxlink and Grablink cards are dependable industrial frame grabbers that provide robust and stable image acquisition from the fastest digital cameras available. They feature precise line-scan camera control and synchronization functions.

- Flat Panel Display inspection
- Solar cell inspection

#### Alignment

EasyFind and EasyMatch are able to quickly and reliably locate PCB and other fiducial marks in the image.

#### Pick and place

EasyFind and EasyMatch are able to quickly and reliably locate fiducial components in the image.

#### Wire bonding and Die bonding

EasyFind and EasyMatch are able to quickly and reliably locate fiducial marks in the image.

#### Lead inspection

EasyGauge provides sub-pixel measurement functions for lead inspection.

#### PCB inspection

#### Mark inspection

#### LED inspection

#### 3D image acquisition for electronic inspection machines

## **MACHINE VISION FOR THE GENERAL MANUFACTURING INDUSTRIES**

### **High frame rate image acquisition for inspection machines**

Glass inspection: bottles, vials

### **Line-scan image acquisition for surface inspection machines**

The Coaxlink and Grablink cards are dependable industrial frame grabbers that provide robust and stable image acquisition from the fastest digital cameras available. They feature precise line-scan camera control and synchronization functions.

### **Line-scan image acquisition for textile inspection**

#### **Image enhancement**

EasyImage is used to enhance the quality of printed characters or codes before recognition.

#### **Presence / Absence check**

EasyImage gray-scale analysis functions are used for simple presence/absence checks

#### **Surface analysis**

EasyImage is used to reveal the surface defects, and the blob analysis functions of EasyObject is able to segment and measure them.

#### **Checking dimensional accuracy**

#### **Assembly inspection**

#### **Object positioning for pick and place**

#### **Product identification for traceability**

#### **Code quality verification**

For label printing machines.

#### **Product identification for traceability**

- Serial number / part number / expiry date verification
- Lot mixing verification

#### **Color inspection**

#### **False color rendering**

#### **Color inspection in the pharmaceutical industry**

#### **Image acquisition for robots**

#### **3D image acquisition for inspection machines**

## **MACHINE VISION FOR THE PRINTING INDUSTRY**

### **High speed line-scan image acquisition for printing inspection machines**

- Printing inspection for packages
- Printing inspection for labels

#### **Label and packaging inspection: Verification of the printing color**

#### **Label and packaging inspection: Inspection of the quality of the printing of characters and codes**

## **MACHINE VISION FOR THE FOOD INSPECTION INDUSTRY**

### **Food inspection and sorting**

## **LIFE SCIENCES & MEDICAL**

### **Noise reduction for Xray imaging**

EasyImage contains spatial and temporal noise reduction functions.

#### **Scientific research**

CoaXPress hyperspectral imagers can be installed in aircrafts or unmanned aerial vehicles for environmental or agriculture monitoring, land analysis or airborne remote sensing.

## **VIDEO ACQUISITION AND RECORDING**

### **High-frame-rate video acquisition for motion analysis and recording**

## **ITS (INTELLIGENT TRANSPORTATION SYSTEM) & TRAFFIC MANAGEMENT**

### **Video acquisition from multiple cameras**

## **MILITARY & DEFENSE**

### **Transmission and acquisition of high-definition video over long coaxial cables**

CoaXPress is a recent powerful standard providing a high speed interface between the camera and the PC frame grabber. On a highway, high speed cameras can take images in a burst. The sharper images will enhance license plate recognition accuracy.

High frequency real time triggering and exposure time adjustment to the low light situations can be accommodated.

### **Airborne ISR**

Vision systems often integrate high resolution and high speed CoaXPress cameras for airborne Intelligence, surveillance and reconnaissance missions.

### **Camera turrets for airborne surveillance or gun turrets**

CoaXPress cameras can easily be integrated in 360° rotating stations with slip rings to allow continuous panning. High resolution video provides sharper images and a larger viewing area thereby potentially reducing the number of cameras required.

### **Unmanned applications, vehicle-based video capture**

The CoaXPress standard allows video transfer to the PC in a few milliseconds. The very low latency of the system will allow the control of land vehicles or remote control of UAVs.

## **VIDEO MONITORING, SURVEILLANCE & SECURITY**

### **Transmission and acquisition of high-definition video over long coaxial cables for traffic surveillance, monitoring and control**

#### **Transport, security**

Thanks to a high resistance to extreme temperatures, shocks, vibrations and humidity, the Coaxlink Duo PCIe/104 board is particularly well suited for embedded security systems for rail and road transportation, police vehicles equipment or any mobile or outdoor video-surveillance applications.

#### **Mobile embedded digital video recorder (DVR)**

Video surveillance on trains, busses

## Specifications

### Software

---

Host PC Operating System	<ul style="list-style-type: none"><li>• Open eVision is a set of 32-bit and 64-bit libraries that require a processor compatible with the SSE2 instruction set.</li><li>• Open eVision can be used on the following operating systems:<ul style="list-style-type: none"><li>– Windows 10, 8 and 7 (32- and 64-bits)</li><li>– Windows Vista 32-bits Service Pack 1</li><li>– Windows XP 32-bits Service Pack 3</li><li>– Windows Server 2008 32-bits</li><li>– Windows Server 2008 R2 64-bits</li><li>– Windows Server 2003 32-bit Service Pack 1</li><li>– Windows Embedded Standard 2009 32-bits</li></ul></li><li>• The Open eVision installer does not allow installation on virtual machines.</li><li>• Minimum requirements:<ul style="list-style-type: none"><li>– Display size: 800 x 600. 1280 x 1024 recommended.</li><li>– Color depth: 16 bits. 32 bits recommended.</li><li>– Between 20 MB and 300 MB free hard disk space for libraries, depending on selected options.</li><li>– Between 60 MB and 400 MB free hard disk space for development tools, depending on selected options.</li></ul></li></ul>
--------------------------	--

---

APIs	<p>Supported Integrated Development Environments and Programming Languages:</p> <ul style="list-style-type: none"><li>• Microsoft Visual Studio 6.0 SP6 (C++, Basic)</li><li>• Microsoft Visual Studio .NET 2003 SP1 (C++)</li><li>• Microsoft Visual Studio 2005 SP1 (C++, C#, VB .NET, C++/CLI)</li><li>• Microsoft Visual Studio 2008 SP1 (C++, C#, VB .NET, C++/CLI)</li><li>• Microsoft Visual Studio 2010 (C++, C#, VB .NET, C++/CLI)</li><li>• Microsoft Visual Studio 2012 (C++, C#, VB .NET, C++/CLI)</li><li>• Microsoft Visual Studio 2013 (C++, C#, VB .NET, C++/CLI)</li><li>• Borland C++ Builder 6.0 update 4 (C++)</li><li>• CodeGear C++ Builder 2009 (C++)</li><li>• CodeGear Delphi 2009 (Object Pascal)</li><li>• Embarcadero RAD Studio XE4 (C++, Object Pascal)</li><li>• Embarcadero RAD Studio XE5 (C++, Object Pascal)</li></ul>
------	---

---

### Ordering Information

---

Product code - Description	<ul style="list-style-type: none"><li>• 4017 - Full Bundle for USB dongle</li><li>• 4067 - Full Bundle for PAR dongle</li><li>• 4117 - Full Bundle for board licensing</li><li>• 4177 - Open Full Bundle for USB dongle</li><li>• 4227 - Open Full Bundle for PAR dongle</li><li>• 4277 - Open Full Bundle for soft-based licensing</li></ul>
----------------------------	---

---



## AMERICA

### **Euresys Inc.**

27126-B Paseo Espada - Suite 704  
San Juan Capistrano, CA 92675 - United States  
Phone: +1 949 743 0612  
Email: sales.americas@euresys.com

## EMEA

### **Euresys SA**

Liège Science Park - Avenue du Pré-Aily, 14  
4031 Angleur - Belgium  
Phone: +32 4 367 72 88  
Email: sales.europe@euresys.com

## ASIA

### **Euresys Pte. Ltd.**

750A Chai Chee Road - #07-15 Viva Business Park  
Singapore 469001 - Singapore  
Phone: +65 6445 4800  
Email: sales.asia@euresys.com

## CHINA

### **Euresys Shanghai Liaison Office**

17F, Unit AB, N. 588 Yan An Dong Road - Huangpu District  
CN-200001 Shanghai - China  
Euresys上海联络处  
上海黄浦区 延安东路588号17楼AB座  
200001  
Phone: +86 13817814488  
Email: sales.china@euresys.com

## JAPAN

### **Euresys Japan K.K.**

Expert Office Shinyokohama - Dai 2 Ueno Building, Shinyokohama 3-7-18  
Kouhoku-Ku, Yokohama-Shi 222-0033 - Japan  
〒222-0033  
神奈川県横浜市港北区新横浜3-7-18 第2上野ビル エキスパートオフィス新横浜  
Phone: +81 45 594 7259  
Email: sales.japan@euresys.com

More at [www.euresys.com](http://www.euresys.com)

