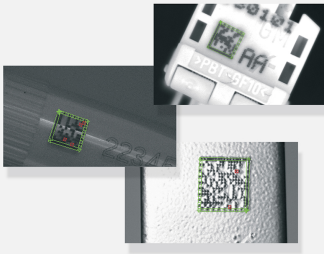


# EasyMatrixCode

2D data matrix code reading library



## At a Glance

- Automatic detection of the code in the image
- Decodes ECC200, ECC000, ECC050, ECC080, ECC100 and ECC140 codes
- Computes quality indicators as per ANSI/AIM, ISO/IEC 15415, ISO/IEC TR 29158 and SEMI T10-0701 standards
- Very fast operation
- Impressive robustness to noise, blur and distortion
- Support of GS1 Data Matrix codes
- Efficient reading of codes in grid layout
- Multiple codes reading

## Benefits

### New in Open eVision 22.08

- EasyLocate Interest Point : New working mode (alternative to EasyLocate Axis Aligned Bounding Box) simplifying the annotation of the dataset and the configuration of the tools when all objects have the same size. A single click is enough to annotate an EasyLocate Interest Point object.
- EasyGauge : New Polygon Gauge in addition to Point, Line, Rectangle, Circle and Wedge gauges.
- Deep Learning tools now supporting GPU processing on NVIDIA Jetson.
- Faster compilation time with simplified C++ headers and reduced calling cost to the Open eVision API.

### New in Open eVision 22.04

All Open eVision libraries are now also available for embedded ARM devices.

### Open eVision Studio: Evaluation, prototyping and development tool

Open eVision Studio is the evaluation, prototyping and development tool of Open eVision. Its intuitive graphical user interface allows you to call and immediately see the result of any of eVision's 2D image processing functions. A scripting functionality generates the corresponding code, which can then be copied and pasted into your application.

Open eVision Studio is free (when using Open eVision 2.0 and above) and does not require any license.

Just click on [DOWNLOAD OPEN EVISION STUDIO](#) and install Open eVision. Sample images, manuals and sample programs are included.

### 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.

### **Automatic recognition**

As an automatic library, a learning phase is not required, but it is optional. Some characteristics of the matrix code may be set manually in order to restrict the search and accelerate the process. These characteristics are: the family of the matrix code, the number of cells, the cells color, whether flipping is allowed or not.

### **Impressive robustness to noise, blur and distortion**

EasyMatrixCode can be used in the most demanding situation. It has been designed to fulfill the most difficult application cases such as:

- Bad illumination conditions: non-uniform contrast, under- or over-exposed images
- Bad images resulting from printing or optical defects: blurred Data Matrix codes, anisotropic and non-uniform scaling, noisy images, skewed images
- Hard-to-detect codes: small-size codes, codes on a textured background, resulting from dot peening, laser marking, ink jet printing or electro-chemical etching on various materials.

### **Print quality verification**

EasyMatrixCode inspects the quality of the data matrix code and computes the indicators as defined by the ANSI/AIM, ISO/IEC 15415, ISO/IEC TR 29158 and SEMI T10-0701 standards.

### **Grid reading**

EasyMatrixCode2 supports the definition of a grid to improve reading regularly positioned Data Matrix Codes. When possible, using a grid substantially improves both the reliability and reading speed.

### **Neo Licensing System**

- Neo is the new Licensing System of Euresys. It is reliable, state-of-the-art, and is now available to store Open eVision and eGrabber licenses.
- Neo allows you to choose where to activate your licenses, either on a Neo Dongle or in a Neo Software Container. You buy a license, you decide later.
- Neo Dongles offer a sturdy hardware and provide the flexibility to be transferred from a computer to another.
- Neo Software Containers do not need any dedicated hardware, and instead are linked to the computer on which they have been activated.
- Neo ships with its own, dedicated, Neo License Manager, which comes in two flavours: an intuitive, easy to use, Graphical User Interface and a Command Line Interface that allows for easy automation of Neo licensing procedures.

### **All Open eVision libraries are available for Windows and Linux**

- Windows 7 to Windows 10 x86 (32-bits) and x86-64 (64-bits)
- Windows 11 x86-64 (64-bits)
- Linux 64 bits (x86-64 and ARMv8-A) with a glibc version 2.18 or newer

## **Applications**

### **Machine Vision for the Electronic Manufacturing Industry**

- High speed image acquisition for AOI, 3D SPI, 3D lead/ball inspection machines.
- Very high resolution line-scan image acquisition for Flat Panel Display inspection and solar cell inspection
- Mark inspection

### **Machine Vision for the General Manufacturing Industries**

- High frame rate image acquisition for inspection machines
- Line-scan image acquisition for surface inspection machines
- Line-scan image acquisition for textile inspection
- Product identification for traceability

- Code quality verification for label printing machines

## Machine Vision for the Printing Industry

- High speed line-scan image acquisition for printing inspection machines
- Label and packaging inspection: Inspection of the quality of the printing of characters and codes

## Video Acquisition and Recording

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

## Specifications

### Software

---

#### Host PC Operating System

- Open eVision is a set of 32-bit and 64-bit libraries that require an Intel compatible processor with the SSE4 instruction set or an ARMv8-A compatible processor.
  - The Deep Learning Bundle is only available in the 64-bit Open eVision library.
  - Open eVision can be used on the following operating systems:
    - Windows 11 (64-bits)
    - Windows 10 (32- and 64-bits)
    - Windows 8 (32- and 64-bits)
    - Windows 7 (32- and 64-bits)
    - Linux 64 bits (x86-64 and ARMv8-A) with a glibc version greater or equal to 2.18
  - Since Open eVision 2.6, discontinued support of:
    - Windows Vista 32-bits Service Pack 1
    - Windows XP 32-bits Service Pack 3
    - Windows Embedded Standard 2009 32-bits
  - Remote connections
    - Remote connections are allowed using remote desktop, TeamViewer or any other similar software.
  - Virtual machines
    - Linux virtual machines are supported. Microsoft Hyper-V and Oracle VirtualBox hypervisors have been successfully tested.
    - Windows virtual machines are not supported.
  - Minimum requirements:
    - 2 GB RAM to run an Open eVision application
    - 8 GB RAM to compile an Open eVision application
    - Between 100 MB and 2 GB free hard disk space for libraries, depending on selected options.
-

## APIs

- Supported Integrated Development Environments and Programming Languages:
  - Microsoft Visual Studio 2008 SP1 (C++, C#, VB .NET, C++/CLI)
  - Microsoft Visual Studio 2010 (C++, C#, VB .NET, C++/CLI)
  - Microsoft Visual Studio 2012 (C++, C#, VB .NET, C++/CLI)
  - Microsoft Visual Studio 2013 (C++, C#, VB .NET, C++/CLI)
  - Microsoft Visual Studio 2015 (C++, C#, VB .NET, C++/CLI)
  - Microsoft Visual Studio 2017 (C++, C#, VB .NET, C++/CLI)
  - Microsoft Visual Studio 2019 (C++, C#, VB .NET, C++/CLI)
  - Microsoft Visual Studio 2022 (C++, C#, VB .NET, C++/CLI)
  - QtCreator 4.15 with Qt 5.12
- Since Open eVision 2.5.1, discontinued support of:
  - Borland C++ Builder 6.0 update 4 (C++)
  - CodeGear Delphi 2009 (Object Pascal)
  - CodeGear C++ Builder 2009 (C++)
  - Microsoft Visual Studio 6.0 SP6 (C++, Basic)
  - ActiveX API
- Since Open eVision 2.4.1, discontinued support of:
  - Embarcadero RAD Studio XE4 and XE5 (C++, Object Pascal, 32 bits only)

---

## Ordering Information

---

### Product code - Description

- 4007 - EasyMatrixCode for USB dongle
- 4057 - EasyMatrixCode for PAR dongle
- 4107 - EasyMatrixCode for board licensing
- 4157 - Open EasyMatrixCode for USB dongle
- 4207 - Open EasyMatrixCode for PAR dongle
- 4257 - Open EasyMatrixCode for soft-based licensing
- 4307 - Open eVision EasyMatrixCode

---

### Optional accessories

- 6512 - eVision/Open eVision USB Dongle (empty)
  - 6513 - eVision/Open eVision Parallel Dongle (empty)
  - 6514 - Neo USB Dongle (empty)
-



## EMEA

### **Euresys SA**

Liège Science Park - Rue du Bois Saint-Jean, 20  
4102 Seraing - Belgium

Email: [sales.europe@euresys.com](mailto:sales.europe@euresys.com)

## EMEA

### **Sensor to Image GmbH**

Lechtorstrasse 20  
86956 Schongau - Germany

Email: [sales.europe@euresys.com](mailto:sales.europe@euresys.com)

## AMERICA

### **Euresys Inc.**

27132-A Paseo Espada - Suite 421  
San Juan Capistrano, CA 92675 - United States

Email: [sales.americas@euresys.com](mailto:sales.americas@euresys.com)

## ASIA

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

750A Chai Chee Road - #07-15 ESR BizPark @ Chai Chee  
Singapore 469001 - Singapore

Email: [sales.asia@euresys.com](mailto:sales.asia@euresys.com)

## CHINA

### **Euresys Shanghai Liaison Office**

Unit 802, Tower B, Greenland The Center - No.500 Yunjin Road, Xuhui District  
200232 Shanghai - China

Euresys上海联络处

上海市徐汇区云锦路500号绿地汇中心B座802室  
200232

Email: [sales.china@euresys.com](mailto:sales.china@euresys.com)

## CHINA

### **Euresys Shenzhen Liaison Office**

Room 1202 - Chinese Overseas Scholars Venture Building  
518057 Shenzhen - China

Euresys深圳联络处

深圳南山区留学生创业大厦1期1202  
518057

Email: [sales.china@euresys.com](mailto:sales.china@euresys.com)

## JAPAN

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

Expert Office Shinyokohama - Nisso Dai 18 Building, Shinyokohama 3-7-18, Kohoku  
Yokohama 222-0033 - Japan

〒222-0033

神奈川県横浜市港北区新横浜3-7-18 日総第18ビル エキスパートオフィス新横浜

Email: [sales.japan@euresys.com](mailto:sales.japan@euresys.com)

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

