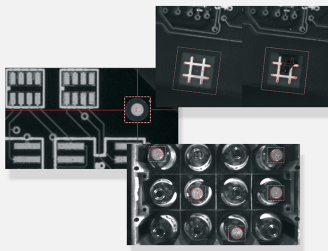




# EasyFind

Geometric pattern matching library



## At a Glance

- Pattern matching using a feature point technology
- Fully automatic, fast and robust
- Invariant to rotation and scaling
- High tolerance to pattern degradation
- Support of "don't care" areas

## 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.

### 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.

### Sub-pixel accuracy

With an adjustable accuracy up to sub-pixel level, EasyFind reports very precise information about the instances found, such as their location, rotation angle, scale and matching score.

### **“Don’t-care” areas**

EasyFind supports “don't-care” areas. This feature allows the creation of complex pattern shapes.

### **Fast Processing and Improved Robustness**

EasyFind is based on a novel feature-point technology. Instead of comparing the reference model to the sample image pixel-wise, it carefully selects salient features in the model. This method allows EasyFind to match only the areas that convey valuable information, resulting in faster processing and much improved robustness.

### **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
- PCB Alignment
- Pick and place machines
- Wire bonding and Die bonding
- PCB inspection
- LED 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
- Presence / Absence check

### **Machine Vision for the Printing Industry**

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

### **Video Acquisition and Recording**

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

# Specifications

## Software

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### 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.

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### 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)
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## Ordering Information

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### Product code - Description

- 4008 - EasyFind for USB dongle
  - 4058 - EasyFind for PAR dongle
  - 4108 - EasyFind for board licensing
  - 4158 - Open EasyFind for USB dongle
  - 4208 - Open EasyFind for PAR dongle
  - 4258 - Open EasyFind for soft-based licensing
  - 4308 - Open eVision EasyFind
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### Optional accessories

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