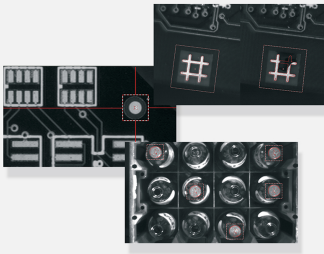


# EasyFind

Geometric pattern matching library



## At a Glance

- Pattern matching using a feature point technology
- Learn from image or DXF vector model
- 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 24.02

EasyFind : Significant speed increase, without any loss of accuracy.

EasyImage

- New Gabor filtering function to help with texture analysis and edge detection.
- New inverse circle warp function, providing conversion between polar and cartesian coordinates.

Easy: Improved off-screen rendering on all platforms.

Admin: Simplified version upgrade procedure with version numbers removed from filenames.

### 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.

### New in Open eVision 23.12

Import of standard datasets into Deep Learning Studio

- Import of COCO Json dataset for EasyLocate or EasySegment Supervised
- Import of YOLO TXT annotations for EasyLocate
- Import of Pascal VOC XML annotations for EasyLocate

EasySpotDetector (Beta release, contact us for more information)

- A single API and license for the alignment of region of interest, surface defect detection (particles, scratches,...) and classification with a custom trained Deep Learning classifier.
- Realtime processing for inline surface inspection

### **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.

### **Training on vector patterns**

In this mode, the learning is done on collections of 2D geometrical shapes rather than on rasterized patterns.

The learning model is constructed using the new class EVectorModel either by loading it from a DXF file or, programmatically, by using Open eVision EShape objects.

This extension is well- suited to find objects with a known geometry.

### **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**

- Microsoft Windows 11, 10, 8.1, 7 for x86-64 (64-bit) processor architecture
- Linux for x86-64 (64-bit) and ARMv8-A (64-bit) processor architectures with a glibc version greater or equal to 2.18

## **Applications**

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

- PCB Alignment
- Pick and place machines
- Wire bonding and Die bonding
- PCB inspection
- LED inspection

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

- Presence / Absence check

# Specifications

## Software

Host PC Operating System	<ul style="list-style-type: none"><li>• Open eVision is a set of 64-bit libraries that require an Intel compatible processor with the SSE4 instruction set or an ARMv8-A compatible processor.</li><li>• Open eVision can be used on the following operating systems:<ul style="list-style-type: none"><li>– Microsoft Windows 11, 10, 8.1, 7 for x86-64 (64-bit) processor architecture</li><li>– Linux for x86-64 (64-bit) and ARMv8-A (64-bit) processor architectures with a glibc version greater or equal to 2.18</li></ul></li><li>• Remote connections<ul style="list-style-type: none"><li>– Remote connections are allowed using remote desktop, TeamViewer or any other similar software.</li></ul></li><li>• Virtual machines<ul style="list-style-type: none"><li>– Virtual machines are supported. Microsoft Hyper-V, Oracle VirtualBox and libvirt hypervisors have been successfully tested.</li><li>– Only the Neo Licensing System is compatible with virtualization.</li></ul></li><li>• Minimum requirements:<ul style="list-style-type: none"><li>– 2 GB RAM to run an Open eVision application</li><li>– 8 GB RAM to compile an Open eVision application</li><li>– Between 100 MB and 2 GB free hard disk space for libraries, depending on selected options.</li></ul></li></ul>
APIs	<ul style="list-style-type: none"><li>• Supported Integrated Development Environments and Programming Languages:<ul style="list-style-type: none"><li>– Microsoft Visual Studio 2017 (C++, C#, VB .NET, C++/CLI)</li><li>– Microsoft Visual Studio 2019 (C++, C#, VB .NET, C++/CLI)</li><li>– Microsoft Visual Studio 2022 (C++, C#, VB .NET, C++/CLI)</li><li>– QtCreator 4.15 with Qt 5.12</li></ul></li></ul>

## Ordering Information

Product code - Description	<ul style="list-style-type: none"><li>• 4008 - EasyFind for USB dongle</li><li>• 4058 - EasyFind for PAR dongle</li><li>• 4108 - EasyFind for board licensing</li><li>• 4158 - Open EasyFind for USB dongle</li><li>• 4208 - Open EasyFind for PAR dongle</li><li>• 4308 - Open eVision EasyFind</li></ul>
Optional accessories	<ul style="list-style-type: none"><li>• 6512 - eVision/Open eVision USB Dongle (empty)</li><li>• 6513 - eVision/Open eVision Parallel Dongle (empty)</li><li>• 6514 - Neo USB Dongle (empty)</li></ul>

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