Easy3D

3D image processing library

**At a Glance**

- Point cloud processing and management
- Flexible ZMap generation
- 3D processing functions for cropping, decimating, fitting and aligning point clouds
- Compatible with many 3D sensors
- Interactive 3D display with the 3D Viewer

**Benefits**

**Easy3D Description**

- Easy3D is a set of software tools enabling the development of 3D machine vision inspection applications.
- The Easy3D license is available separately. Easy3D is required for all 3D developments and is included in the Easy3DlaserLine and Easy3DOBJECT licenses.

**Point Cloud processing**

After calibration, the 3D point cloud contains distortion-free data using a real-world 3D coordinate system. Process 3D point clouds using Easy3D functions such as coordinates transformation, point cloud cropping and decimation, plane finding and fitting or part alignment.

**ZMap generation**

A ZMap is the projection of a point cloud on a reference plane, where distances are stored as pixel gray scale values. ZMaps are distortion free, with a metric coordinate system. Easy3D provides functions to generate such ZMaps. More importantly, you can apply all Open eVision 2D processing functions to ZMaps: filtering and thresholding with EasyImage, blob analysis with EasyObject, sub-pixel measurement with EasyGauge, pattern matching with EasyFind and EasyMatch...

**Compatibility with 3D sensors**

The Easy3D library is able to import data from third-party 3D sensors from Automation Technology, LMI, Chromasens and others. Point Clouds and ZMaps are managed efficiently and allow 3D processing and analysis to be performed.

**3D Viewer**

Use the 3D Viewer class of Easy3D to create an interactive 3D display. The 3D Viewer can display point clouds and 3D objects. It uses the OpenGL interface and requires a compatible display device.

**Easy 3D Studio**

Open eVision also includes the Easy3D Studio application, which drastically simplifies the configuration of 3D laser line inspection systems.
Specifications

Software

<table>
<thead>
<tr>
<th>Host PC Operating System</th>
<th>• Open eVision is a set of 32-bit and 64-bit libraries that require a processor compatible with the SSE2 instruction set.</th>
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<tbody>
<tr>
<td></td>
<td>• Deep Learning Bundle is only available in the 64-bit Open eVision library.</td>
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<td>• Open eVision can be used on the following operating systems:</td>
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<tr>
<td></td>
<td>− Windows 10 (32- and 64-bits)</td>
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<tr>
<td></td>
<td>− Windows 8 (32- and 64-bits)</td>
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<tr>
<td></td>
<td>− Windows 7 (32- and 64-bits)</td>
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<tr>
<td></td>
<td>• Since Open eVision 2.6, discontinued support of:</td>
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<tr>
<td></td>
<td>− Windows Vista 32-bits Service Pack 1</td>
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<tr>
<td></td>
<td>− Windows XP 32-bits Service Pack 3</td>
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<tr>
<td></td>
<td>− Windows Embedded Standard 2009 32-bits</td>
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<td>• The Open eVision installer does not allow installation on virtual machines.</td>
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<td>• Minimum requirements:</td>
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<td>− RAM: 8 GB</td>
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<td>− Display size: 800 x 600. 1280 x 1024 recommended.</td>
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<td>− Color depth: 16 bits. 32 bits recommended.</td>
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<td></td>
<td>− Between 100 MB and 2 GB free hard disk space for libraries, depending on selected options.</td>
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</tbody>
</table>
• Supported Integrated Development Environments and Programming Languages:
  – Microsoft Visual Studio .NET 2003 SP1 (C++)
  – Microsoft Visual Studio 2005 SP1 (C++, C#, VB .NET, C++/CLI)
  – 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)

• Since Open eVision 2.6, discontinued support of:
  – Microsoft Visual Studio 6.0 SP6 (C++, Basic)
  – Borland C++ Builder 6.0 update 4 (C++)
  – CodeGear C++ Builder 2009 (C++)
  – CodeGear Delphi 2009 (Object Pascal)
  – Embarcadero RAD Studio XE4 (C++, Object Pascal)
  – Embarcadero RAD Studio XE5 (C++, Object Pascal)

<table>
<thead>
<tr>
<th>Ordering Information</th>
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<tbody>
<tr>
<td><strong>Product code - Description</strong></td>
</tr>
<tr>
<td>4181 - Open Easy3D for USB dongle</td>
</tr>
<tr>
<td>4231 - Open Easy3D for PAR dongle</td>
</tr>
<tr>
<td>4281 - Open Easy3D for soft-based licensing</td>
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<tr>
<th>Optional accessories</th>
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<tbody>
<tr>
<td>6512 - eVision/Open eVision USB Dongle (empty)</td>
</tr>
<tr>
<td>6513 - eVision/Open eVision Parallel Dongle (empty)</td>
</tr>
</tbody>
</table>
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