

System Requirements

To use an Ensenso Camera, your system should meet the following requirements:

	Recommended	Minimum
CPU	4 x 3.0 GHz supporting AVX2 instruction set ¹	2.0 GHz supporting SSE4.1 and POPCNT instructions ²
RAM	32 GB in dual-channel or quad-channel configuration ³	8 GB ³
Operating System	<ul style="list-style-type: none">• Windows 10 (64 bit) ⁴• Windows 11 (64 bit) ⁴• Debian 9 / Ubuntu 18.04 or later ⁴	<ul style="list-style-type: none">• Windows 10 (64 bit) ⁴• Windows 11 (64 bit) ⁴• Linux (64 bit) (Kernel >= 2.6, glibc >= 2.18) ^{4 5}
CUDA	For using GPU accelerated depth computation: <ul style="list-style-type: none">• A CUDA-compatible device with Compute Capability 5.0 or higher• An up to date version of the Nvidia driver ⁶• At least 8GB of RAM on the GPU ³	
Graphics	A dedicated GPU with OpenGL 4.0 compatible driver	For PartFinder, 3D visualization and virtual cameras: <ul style="list-style-type: none">• OpenGL 4.0 compatible graphics card and driver• Linux: EGL 1.5
For Ethernet cameras	A dedicated Ethernet port for each camera on a PCIe adapter based on an Intel chipset	

¹ For Intel CPUs the instruction set and actual number of CPU cores of your model can be checked on <http://ark.intel.com>. The corresponding specs are denoted by "Instruction Set Extensions" and "# of Cores". All 4th Gen Intel i7 processors (i7-4xxx) support AVX2 instructions. Please note that stereo processing in NxLib cannot efficiently use Hyperthreading technology, as on these CPUs two cores share their arithmetic units and can thus not process SSE or AVX instructions in parallel. Therefore it is not sufficient to check if your Windows TaskManager shows 4 separate CPUs, because this number also includes the Hyperthreading cores. The number of cores including hyperthreads is denoted by "# of Threads" on Intel's website, but NxLib performance will only scale with "# of Cores".

² We also provide versions of the Ensenso SDK for Nvidia Jetson systems with AArch64 CPU. This version relies on CUDA to perform most computations and some CPU-only functionality might not be implemented for AArch64. Please check the documentation of the individual features for more information.

³ (1,2,3) The RAM usage for stereo matching highly depends on the current parameters (e.g. the resolution of the sensor, the matching algorithm and the depth range). We recommend at least 8GB of RAM to make sure that all available settings

work, but matching might be possible with less RAM if the settings are restricted.

- 4 (1,2,3,4,5,6) Using the NxLib in a 32 bit process is not supported even on 64 bit systems.
 - 5 The minimum version of glibc is satisfied on Debian 8 / Ubuntu 14.04 and later. If you want to check the version on your system note that glibc is installed in the package `libc6` on Debian and Ubuntu.
 - 6 The CUDA runtime used in the NxLib requires at least version 452.39 (Windows) or 418.39 (Linux) of the Nvidia driver. Your specific GPU model might require a later version.
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