Release Notes for IDS Software Suite 4.90

Contents

Introduction

These release notes describe the new features of the IDS Software Suite 4.90, which supports numerous new camera models. This version also introduces new functions and improvements.

New products

New camera families

GigE uEye SE Rev. 4

Having stood the test of time in industrial applications for more than a decade now, the completely redesigned 4th generation of our Gigabit Ethernet “Standard Edition” of the uEye SE camera series is now even more versatile and powerful featuring top-of-the-line sensors and new hardware. All models are available with the IDS Software Suite or GigE Vision standard.

It is consistently designed to hold even large-format, high-resolution CMOS sensors and fully exploit the bandwidth of the GigE interface. It is also compact, robust and extremely dust-tight due to the special sensor seal. It is available as a housing or boardlevel camera with various lens holder options.

At a glance	
Interface	Gigabit Ethernet
Sensors	CMOS sensors from Sony, ON Semiconductor, and e2v
Size	44 x 34 x 47 mm (housing version)
Connections	RJ45 for Gigabit Ethernet and 8-pin I/O Hirose connector (2 GPIO, trigger, flash)
Special features	PoE (Power-over-Ethernet), integrated image memory

uEye SE USB 3.1 Gen. 1

The USB version of our "Standard Edition" also truly sets new standards: robust, fast and versatile with a wide range of sensors and variants. It is available as a housing or boardlevel camera with various lens holder options. OEM versions are available on request. In addition to the screwable USB Type-C, the uEye SE has an 8-pin Hirose connector for trigger and flash (optically decoupled) as well as two GPIOs, which offer many possibilities for industrial applications. The uEye SE offers a variable power supply at the I/O port with USB Power Delivery, which can be used to supply power to external devices, e. g. LED illumination or a light barrier.

At a glance	
Interface	USB 3.1 Gen 1
Sensors	CMOS sensors from Sony
Size	44 x 34 x 47 mm (housing version)
Connections	USB Type-C and 8-pin I/O Hirose connector (2 GPIO, trigger, flash)
Special features	supports USB Power Delivery, integrated image memory

New camera models

UI-3131LE VU, UI-3132LE VU & UI-3134LE VU

- Vertical Type-C connector (model variant -VU)
- Global shutter CMOS sensor ON Semiconductor PYTHON 480
- Resolution of 0.49 MP (808 x 608 px), aspect ratio 4:3
- 135 fps at full resolution
- With 2x subsampling the sensor reaches up to 420 fps
- Very large and sensitive pixels: 4.8 µm
- Optical class: 1/3.6"

- Quadruple multi AOI
- 10 bit per pixel
- Long exposure up to 5 seconds
- Available as color or monochrome version

UI-3271LE VU, UI-3272LE VU & UI-3274LE VU

- Vertical Type-C connector (model variant -VU)
- Global shutter CMOS sensor Sony IMX265
- 1/1.8" area sensor with a pixel size of 3.45 µm
- Aspect ratio 4:3 (2048 x 1536 px)
- Full resolution with up to 57 fps
- Long exposure up to 30 seconds
- 12 bit per pixel
- Available as color or monochrome version

UI-3861LE VU, UI-3862LE VU & UI-3864LE VU

- Vertical Type-C connector (model variant -VU)
- Rolling shutter CMOS sensor Sony IMX290
- 1/3” sensor with 2.9 µm pixel size
- Aspect ratio 16:9 (1936 x 1096 px)
- Full resolution (2,12 MP) with up to 135 fps
- 12 bit per pixel
- Long exposure up to 120 seconds
- Very light-sensitive BSI sensor
- Available as color or monochrome version

UI-3881LE VU, UI-3882LE VU & UI-3884LE VU

- Vertical Type-C connector (model variant -VU)
- Rolling shutter CMOS sensor Sony IMX178
- 1/1.8” sensor with 2.4 µm pixel size
- Aspect ratio 3:2 (3088 x 2076 px)
- Full resolution (6.41 MP) with up to 60 fps
- Very light-sensitive BSI sensor
- 12 bit per pixel
- Long exposure up to 120 seconds
- Available as color or monochrome version

UI-3000SE, UI-3001SE & UI-3002SE

- Global shutter CMOS sensor IMX253 from Sony (Pregius series)
- 1.1” area sensor with a pixel size of 3.45 µm
- 12.3 MP (4104 x 3006 px)
- Aspect ratio 4:3
- Full resolution with up to 36 fps (USB 3.1 Gen.1)
- Sequencer, binning, overlap trigger
- Long exposure up to 30 seconds
- IDS line scan mode for use as a cost-effective alternative for line scan cameras

- Sequencer mode for parameter change in real time
- Available as color or monochrome version

UI-3080SE, UI-3081SE & UI-3082SE

- Global shutter CMOS sensor Sony IMX250
- Resolution 2456 x 2054 px (5 MP) with a pixel size of 3.45 µm
- Compact 2/3" area sensor
- Very high dynamic range
- Full resolution with up to 86 fps
- Multi AOI, IDS line scan mode
- Long exposure up to 30 seconds
- Available as color or monochrome version

UI-3090SE, UI-3091SE & UI-3092SE

- Global shutter CMOS sensor IMX255
- 1” area sensor with pixel size 3.45 µm
- Optimized pixel of the 2nd generation of the Sony PREGUIS series
- Excellent sensitivity in the NIR range
- Resolution of 8.9 MP (4104 x 2174 px), aspect ratio 17:9
- Full resolution with 50 fps (USB 3.1 Gen.1)
- Sequencer, binning, overlap trigger
- Long exposure up to 30 seconds
- Available as color or monochrome version

UI-3200SE, UI-3201SE & UI-3202SE

- Global shutter CMOS sensor IMX304 from Sony‘s Pregius series
- 1.1” area sensor with a pixel size of 3.45 µm
- 12.3 MP with an aspect ratio of 4:3
- 24 fps @ 4104 x 3006 px
- Long exposure up to 30 seconds
- Available as color or monochrome version
- Sequencer, binning, AOI

UI-3290SE, UI-3291SE & UI-3292SE

- Global shutter CMOS sensor IMX 267 from Sony
- 1” area sensor with a pixel size of 3.45 µm
- Excellent sensitivity in the NIR range
- 8.9 MP (4104 x 2174 px)
- Aspect ratio 17:9
- Full resolution with 33 fps
- Long exposure up to 30 seconds
- Available as color or monochrome version

UI-5130FA, UI-5130SE Rev. 4, UI-5131SE Rev. 4 & UI-5132SE Rev. 4

- Global shutter sensor ON Semiconductor PYTHON 500
- Very fast sensor in SVGA resolution (800 x 600 px): 205 fps
- Even higher frame rates can be reached by horizontal or vertical partial reading (AOI)

- Very large and sensitive pixels: 4.8 µm
- Optical class: 1/3“
- Available as color or monochrome version
- Multi AOI, HDR mode

UI-5140FA, UI-5140SE Rev. 4, UI-5141SE Rev. 4 & UI-5142SE Rev. 4

- Global shutter sensor ON Semiconductor PYTHON 1300
- Compact 1/2" sensor, perfectly suited for C-mount lenses
- Large pixel: 4.8 µm
- The most common resolution class: 1280 x 1024 px (1.3 MP)
- Very fast sensor (88 fps @1280 x 1024 px)
- Even higher frame rates can be reached by horizontal or vertical partial reading (AOI)
- Available as color or monochrome version
- Multi AOI, HDR mode

UI-5200FA, UI-5200SE Rev. 4, UI-5201SE Rev. 4 & UI-5202SE Rev. 4

- Very light-sensitive global shutter CMOS sensor IMX304 from Sony
- Pixel size: 3.45 µm
- 12.3 MP (4104 x 3006 px)
- Aspect ratio 4:3
- Sequencer, binning, AOI
- Long exposure up to 30 seconds
- IDS line scan mode for use as a cost-effective alternative for line scan cameras
- Available as color or monochrome version

UI-5240FA & UI-5240CP-NIR Rev. 2

- Rolling/global shutter sensor e2v EV76C560
- Wide-angle 1/1.8" sensor with a pixel size of 5.3 µm
- Common resolution in the machine vision market: 1280 x 1024 px (1.31 MP)
- 60 fps @ 1280 x 1024 px
- Switch between different shutter modes
- Multi AOI, sequence AOI, Log mode
- Available as color, monochrome, or NIR version

UI-5250FA, UI-5250SE Rev. 4, UI-5251SE Rev. 4 & UI-5252SE Rev. 4

- Rolling/global shutter sensor e2v EV76C570
- Wide-angle 1/1.8" sensor with 4.5 µm pixel size
- Resolution: 1600 x 1200 px with 52 fps
- Switch between rolling shutter and global shutter
- Long exposure up to 10 seconds
- Multi AOI, sequence AOI, Log mode
- Available as color or monochrome version

UI-5260SE Rev. 4, UI-5261SE Rev. 4 & UI-5262SE Rev. 4

- Global shutter CMOS sensor Sony IMX249
- Large 1/1.2" area sensor
- Optical class: 1/1.2"

- Resolution of 2.35 MP (1936 x 1216 px), pixel size: 5.86 µm
- Aspect ratio 16:10
- 47 fps at full resolution
- 12-Bit pro Pixel
- Long exposure up to 30 seconds
- Available as color or monochrome version

UI-5270FA

- Global shutter CMOS sensor Sony IMX265
- 1/1.8" area sensor with a pixel size of 3.45 µm
- High resolution of 3.17 MP (2056 x 1542 px)
- Aspect ratio 4:3
- Full resolution with up to 36 fps
- Long exposure up to 30 seconds
- 12 bit per pixel
- Available as color or monochrome version

UI-5290FA, UI-5290SE Rev. 4, UI-5291SE Rev. 4 & UI-5292SE Rev. 4

- Global shutter CMOS sensor Sony IMX267
- 1” area sensor with a pixel size of 3.45 µm
- Optimized pixel of the 2nd generation of the Sony PREGUIS series
- 8.9 MP (4104 x 2174 px), aspect ratio 17:9
- Available as color or monochrome version
- Long exposure up to 30 seconds
- IDS line scan mode for use as a cost-effective alternative for line scan cameras
- Sequencer, binning

UI-5480FA, UI-5480SE Rev. 4, UI-5481SE Rev. 4 & UI-5482SE Rev. 4

- Rolling shutter sensor ON Semiconductor MT9P031
- Global start shutter
- Pixel size: 2.2 µm
- High-resolution sensor: 2560 x 1920 (5 MP) with 15 fps
- Common sensor size for C-mount lenses: 1/2"
- Very low-noise
- Monochrome version

UI-5580FA, UI-5580SE Rev. 4, UI-5581SE Rev. 4 & UI-5582SE Rev. 4

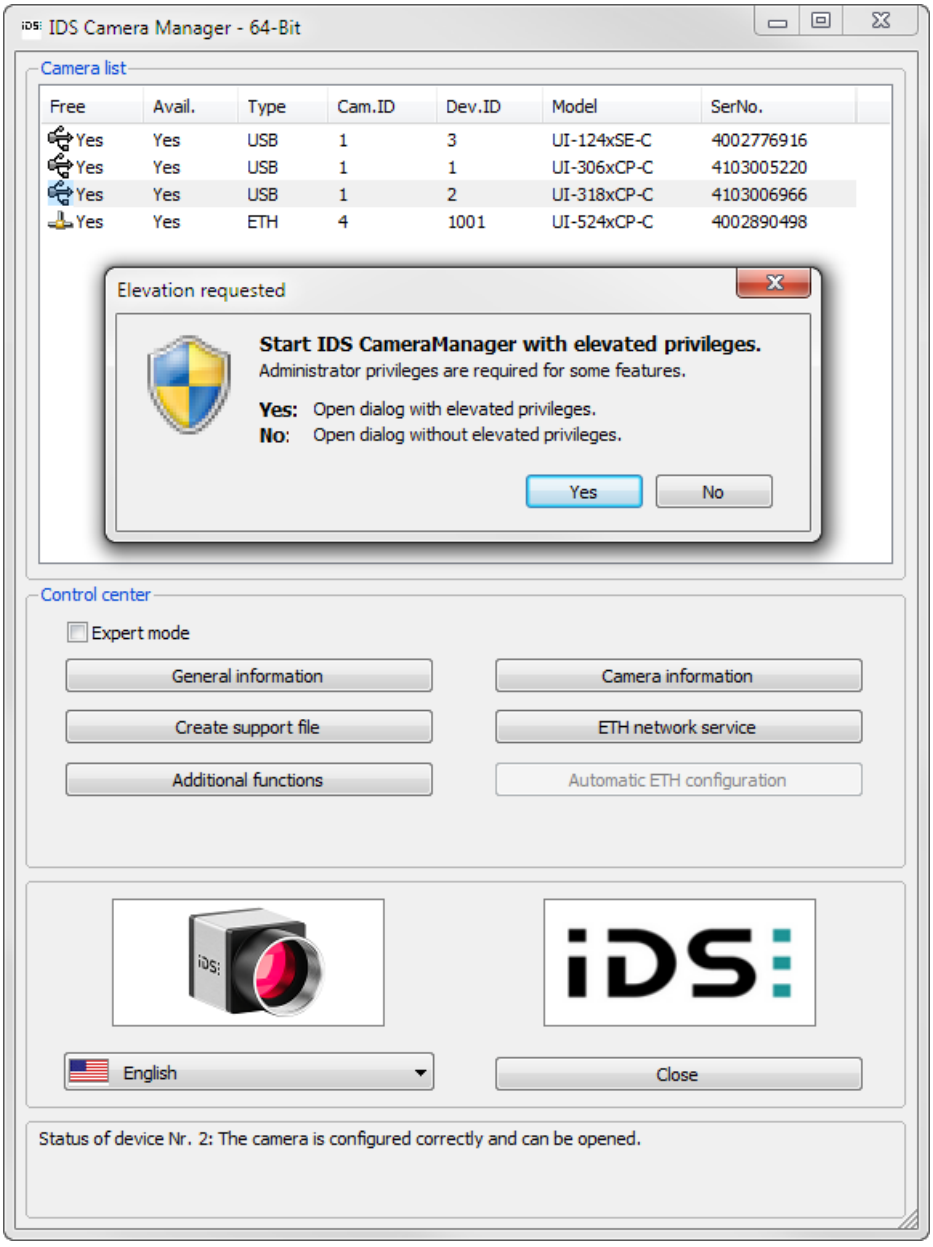
- Rolling shutter sensor ON Semiconductor MT9P006
- Global start shutter
- Pixel size: 2.2 µm
- High-resolution sensor: 2560 x 1920 (5 MP) with 15 fps
- Common sensor size for C-mount lenses: 1/2"
- Very low-noise, natural colors
- Color version

New and changed functions

Starting IDS Camera Manager without administrative privileges

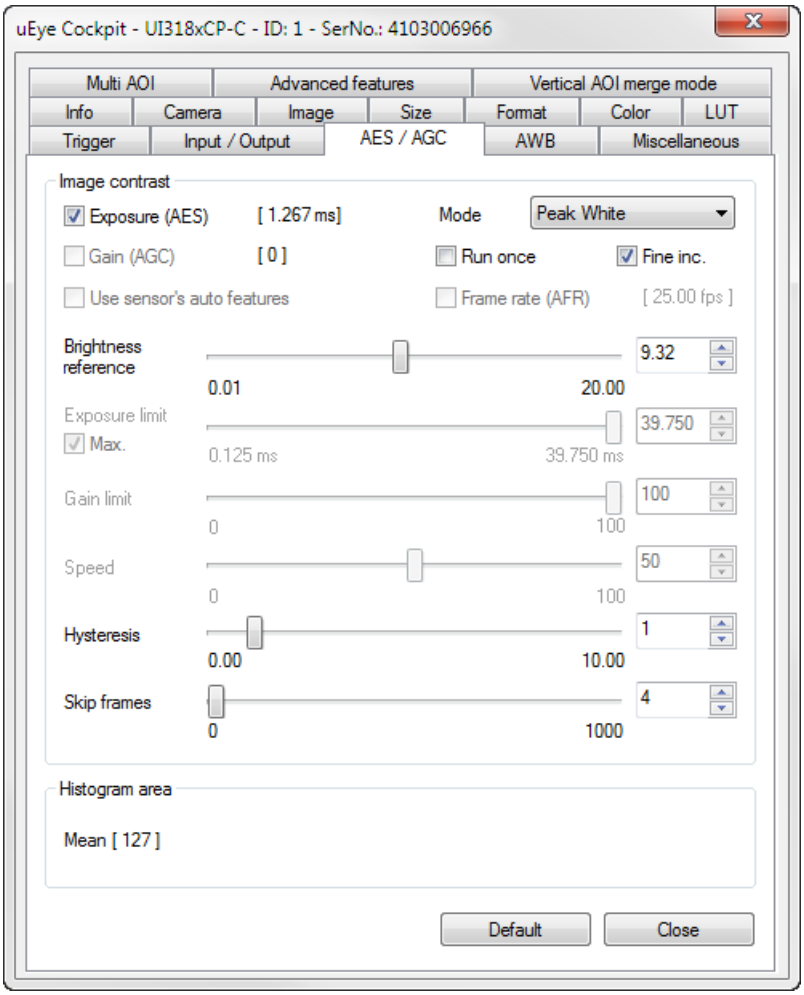
From version 4.90 on, the IDS Camera Manager no longer needs administrative privileges at startup. Administrative privileges are still required for some special functions. In this case, a hint is displayed. These special functions are:

- Adjusting network settings
- Configuring CPU idle states
- Configuring image memory (nur USB 3 uEye CP Rev. 2)
- Setting up virtual COM port
- Bulk transfer size



Enhanced peak mode

The peak mode for the automatic control of the exposure (AES – auto exposure shutter) has been enhanced to allow a finer granularity of the target value and the hysteresis. In addition, the API function `is_AutoParameter()` can be used to define which color channels are used to control the target value.



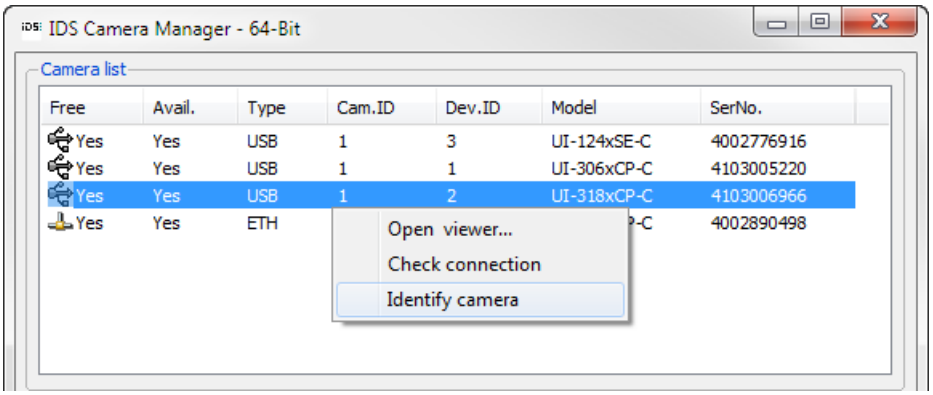
In peak mode, a reference ratio of pixels is specified in the image according to the selected mode to be controlled (e. g. at highest granularity of 0.01 … 20.00 %).

- The peak white mode controls the target value for all color channels (`RED|GREEN|BLUE`).
- The peak channel mode controls the target value of the most dominant color channel in saturation.

Identifying a camera by LED

In a multi-camera system, the camera families uEye LE USB 3.1 Gen 1, uEye SE USB 3.1 Gen 1, USB 3 uEye CP Rev. 2, USB 3 uEye CP, USB 3 uEye LE, and USB 3 uEye ML can be identified by LED flashing. The “Identify camera” function is available in the camera list of the IDS Camera Manager.

After calling the function, the LED of the camera blinks 3x fast, pauses and blinks 5x slowly. The pause can be up to 3 seconds depending on the camera model.



New uEye interface for Python

The programming language Python is very popular due to its clear syntax and simple structures. Thanks to the fast implementation of ideas Python enables rapid prototyping even for large projects. In addition, you benefit from the object-oriented approach of the programming language.

The PyuEye interface allows you to use uEye cameras with Python. Write and test small code snippets without the complex setup of a programming IDE with a toolchain. The PyuEye interface is ideal for prototyping uEye camera applications for all supported uEye platforms (Windows, Linux, Linux Embedded).

For more information about the PyuEye interface, please visit https://en.ids-imaging.com/ueye-interface-python.html

General improvements

- From driver 4.90 on, monochrome models can also transfer image heights of up to 8000 lines in IDS line scan mode (“AOI merge mode”).
- The issue of unstable black level offset, seen in the regular global shutter mode of cameras equipped with the EV76C560 sensor from e2v has been resolved. The resulting change in the offset has been accounted for by a remapping of the standard black level setting.
- The translation of the software graphical user interface was updated for all languages.

Known issues

- In IDS line scan, the GigE uEye CP Rev. 2 models may lose a line between two images with a pixel clock > 60 MHz.
- The models UI-386xLE and UI-388xLE can only be used with automatic flash.

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