

Release Notes for IDS Software Suite 4.82

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Introduction

These release notes will give you an overview of the new features in IDS Software Suite 4.82 which introduces new camera models and new functions as well as further improvements.

New camera family

uEye LE USB 3.1 Gen 1



Our uEye LE USB 3.1 Gen 1 is the first USB 3.1 Gen 1 industrial camera with a pioneering, reversible USB Type-C connector which supports USB Power Delivery for the first time. The board-level versions also have a 10-pin I/O SMD connector for GPIO, trigger and flash. Via USB Power Delivery, it is possible to provide a variable peripheral power supply to the camera's I/O connector.

In addition to small device construction, they are ideal for applications in microscopy, medical technology, traffic monitoring and in classic machine vision applications. The industrial cameras will be available in different versions – as a single board camera without a lens holder, as a single board camera with an S-mount or CS-/C-mount, or as a housing version with a C-/CS-mount.

At a glance	
Interface	USB 3.1 Gen 1
Sensors	CMOS sensors from Sony and ON Semiconductor
Size	47 x 46 x 26.3 mm (housing version), 36 x 36 mm (single board version)
Connections	USB Type-C (housing version), single board version also has a 10-pin I/O SMD connector (2 GPIO, trigger, flash)
Special features	supports USB Power Delivery

New camera models

UI-3130LE, UI-3131LE, UI-3132LE, and UI-3134LE

- Global shutter CMOS sensor ON Semiconductor PYTHON 480
- Resolution of 0.49 Megapixel (808 x 608 px), aspect ratio 4:3
- 135 fps at full resolution
- With 2x subsampling feature, the sensor reaches up to 420 fps
- Very large and sensitive pixels: 4.8 µm
- Optical class: 1/4"
- 4x Multi AOI
- 10-bit per pixel
- Long exposure of up to 5 seconds
- Available as color or monochrome version

UI-3270LE, UI-3271LE, UI-3272LE, and UI-3274LE

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

UI-3860LE, UI-3861LE, UI-3862LE, and UI-3864LE

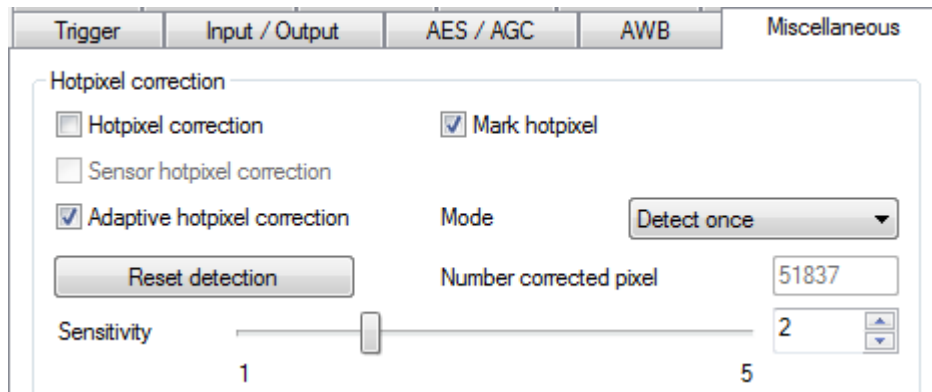
- Rolling shutter CMOS sensor Sony IMX290
- 1/3" sensor with 2.9 µm pixel size
- Aspect ratio 16:9 (1936 x 1096 px)
- Full resolution (2.12 MP) with up to 135 fps
- 12-bit per pixel
- Long exposure of up to 120 seconds
- Very light-sensitive BSI sensor
- Available as color or monochrome version

UI-3880LE, UI-3881LE, UI-3882LE, and UI-3884LE

- 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 of up to 120 seconds
- Available as color or monochrome version

New and changed functions**Adaptive hot pixel correction**

The adaptive hot pixel correction can determine hot pixels dynamically and correct them adaptively in the current image. Thus, hot pixels can be corrected better which for example result from an increased temperature. In addition, the adaptive hot pixel correction can be executed directly in live operation, thus permitting the best possible optimization on the application conditions.



The API functions for the adaptive hot pixel corrections are implemented in the **is_Hotpixel** function and the **AdaptiveCorrection** .NET class.

USB Power Delivery (PD) via USB Type-C connector

USB Power Delivery (PD) expands the USB system with a very flexible power supply management which is implemented in addition to the data connection via the same cable. The distribution of roles in power supplier and consumer with limited voltage and current thus no longer exists. PD-capable devices negotiate their capabilities and requirements concerning supply voltage over a standardized protocol.

IDS Imaging Development Systems GmbH introduces USB Power Delivery for the first time with the camera families with USB Type-C connectors. The PD-capable camera requests as a PD consumer more power than it needs for itself. The additional voltages are used, for example to power an LED light via the camera's I/O connector.

The prerequisite is that the host PC also supports USB Power Delivery and correspondingly provides more power. Note that power transmission via USB Power Delivery is only possible with "Full Featured" USB Type-C cables. For very high power transfers, the USB Type-C cables must be designed

accordingly. An electronic marking of the cables can limit the power transfer and protects the system against damage.

With the **is_PowerDelivery** API function or the **PowerDelivery** .NET class, you query which USB Power Delivery profiles are supported by the camera in combination with the host PC and set the appropriate profile.

Flash settings for sequencer mode

With the sequencer mode, you are able to define various sequencer sets with different parameters for image acquisition. The sequencer mode can be very useful for applications where image series with different parameters are to be captured in a very short preset time period and manual parameter changes are too time-intensive.

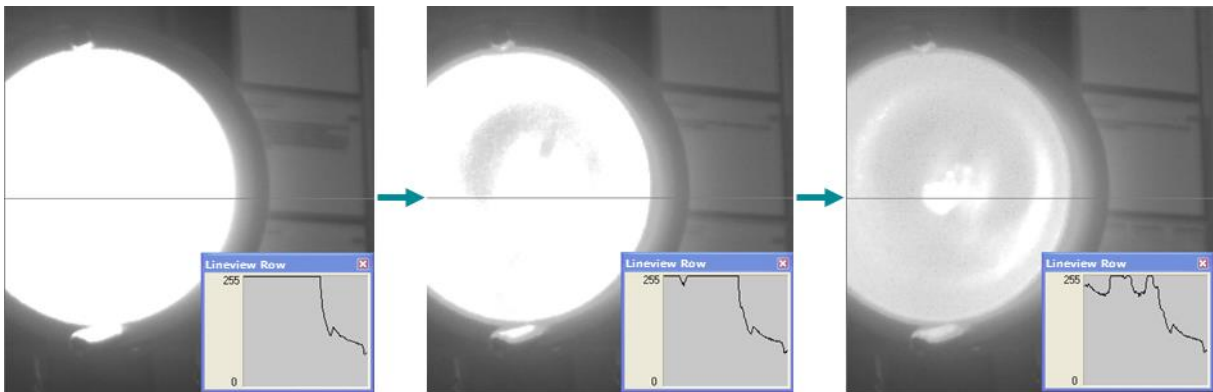
Each sequencer set includes the following settings:

- Exposure time
- Gain (master, red, green, and blue)
- X and Y position of the image section (AOI)
- **New from 4.82 on:** Settings for flash

You configure the sequencer mode with the **is_Sequencer** API function or the **Sequencer** .NET class.

HDR mode with kneepoints for UI-3130CP and UI-3140CP

The models UI-3130CP and UI-3140CP can now be used in HDR mode with kneepoints. In knee point mode the exposure time is divided into sections. After each section, excessively light pixel values are reduced to a limit value and briefly post exposed. This prevents overexposure and increases the dynamics.



For color models, the HDR mode can only be used with RAW color formats. Additionally, it is recommended that you disable the RGB gains and perform a manual color correction.

You find more information on the HDR mode in the application notes of the two sensors in the uEye manual.

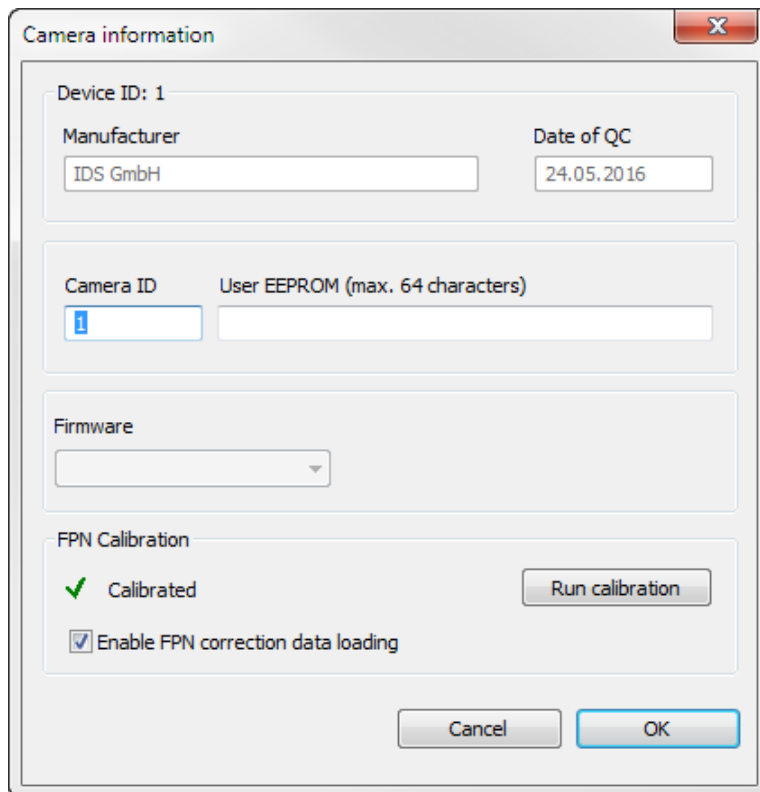
Extended long exposure for UI-386x and UI-388x

Long exposure allows the realization of application with low light conditions. Due to the extended exposure time it is not necessary to increase the gain. Thus, too much image noise can be avoided. For the both camera models UI-386x (Sony IMX290) and UI-388x (Sony IMX178), you can set a long exposure of up to 2 minutes (120 000 ms) from IDS Software Suite 4.82 on.

Enhanced FPN correction for UI-313x, UI-314x, UI-316x, and UI-318x

The FPN correction reduces visible vertical lines in the image. These lines are caused by the sensor.

For the models UI-313x, UI-314x, UI-316x, and UI-318x, it takes longer to open the calibrated camera than without calibration because of loading the FPN correction data. Via the “Enable FPN correction data loading” option, you can define for each camera if loading of the FPN correction data is enabled or disabled.



The screenshot shows a 'Camera information' dialog box with the following fields and options:

- Device ID: 1
- Manufacturer: IDS GmbH
- Date of QC: 24.05.2016
- Camera ID: 1
- User EEPROM (max. 64 characters): [Empty]
- Firmware: [Dropdown menu]
- FPN Calibration: Calibrated
- Run calibration: [Button]
- Enable FPN correction data loading:
- Cancel: [Button]
- OK: [Button]

The FPN correction is configured via the `is_DeviceFeature` API function or the `FpnCorrection` .NET class.

General improvements

- Stability improvements for the UI-3590CP-C camera model
- For the camera models UI-313x, UI-314x, UI-316x, and UI-318x, you can set a manual offset for black level correction if the FPN correction is disabled.

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