

Overview

Glaz UI is a stand-alone user interface to configure and take measurements with *Glaz LineScan* cameras. It is also a useful tool to test camera performance and script files.

Installing Glaz UI

The installer for *Glaz UI* can be downloaded from the Synertronic Designs web page. Download and run the installer.

If the target PC is not connected to the internet, it is advisable to pre-install the USB device driver. The USB device driver can be downloaded from the Synertronic Designs web page.



Home page

When starting the application, the **Home** page is displayed. The application can be used in several modes:

Single device Use this mode

Use this mode to connect with a single device. This is a quick way to do basic measurements, test device functions and perform calibrations.

• Run script

This mode requires a script file and can be used to test scripts and perform more complex multicamera measurements.

• Application

This mode offers several application-specific extensions. See the application-specific documentation on the Synertronic Designs web page.

🤓 Glaz			_		\times
Home					
Mode					
Single device	O Run script	Application			
Devices Glaz-I-S10453			•	Connec	t
					P
					S

Single device mode

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Mode Single device	🔿 Run script	Application			
Devices Glaz-I-S10453			•	Conne	ct
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- 1. Select the **Home** page.
- 2. Select Single device mode.
- 3. Select the *Glaz* device in the **Devices** drop-down.
- 4. Click **Connect**.

After successfully connecting to a device, a **Measurements** tab is added. Click on the **Measurements** tab to switch to the measurement page.

Measurements page

Glaz Measurements 511639-01			
Acquisition Mode Trigger settings Trigger source Internal Internal trigger [Hz] 100.0 Trigger delay [us] 0 Measurement settings		16300 16200 16100	
HW Averaging 1 Resolution 16-bit Integration time [us] 2 Binning No binning Loop	Amplituc	16000 15900	mulum mulum mulum
		15800	950 1000 1050 1100 Pixel

Acquisition	Mode	
Trigger setti	ngs	
Trigger sour	се	Internal 🔻
Internal trig	ger [Hz]	100.0
Trigger dela	y [us]	0
Measureme	nt settings	5
HW Averagi	ng	1 🔹
Resolution		16-bit 🝷
Integration	time [us]	2
Binning		No binning 🔹
Loop		

The Acquisition parameters are grouped into Trigger settings and Measurement settings.

The following Trigger settings are provided:

Trigger source

Set the trigger source. The following options are provided:

- o Internal The camera generates its own trigger at the specified internal trigger frequency.
- External The camera is triggered by an external signal on the TRIG port.
- **External burst** The camera waits for an external trigger on the TRIG port and then generates its own trigger at the specified internal trigger frequency.
- Internal trigger [Hz] Set the internal trigger frequency in Hz.
- Trigger delay [us] Set the trigger delay in µs.

Supported trigger settings for different LineScan models:

	LineScan-I-Gen2	LineScan-II	LineScan-LS	LineScan-NMOS
Trigger source	Internal	Internal	Internal	Internal
	External	External	External	External burst
	External burst	External burst		
Internal trigger [Hz]	Yes	Yes	Yes	Yes
Trigger delay [µs]	Yes	Yes	Yes	Not available

The following Measurement settings are provided:

- Hardware averaging Set the number of scans for hardware averaging.
- **Resolution** Set the resolution in number of bits.
- Integration time [us] Set the integration time of the camera in µs.
- Binning Sets the level of pixel binning.

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• Loop

When unchecked, the application will only take one measurement when clicking the button. When checked, the application will keep taking measurements, until the button is clicked.

Supported measurement settings for different LineScan models:

	LineScan-I-Gen2	LineScan-II	LineScan-LS	LineScan-NMOS
Hardware averaging	1 to 256	1 to 256	1	1
Resolution	10, 12, 14, 16	10, 12, 14, 16	12 (fixed)	16 (fixed)
Integration time [us]	Yes	Yes	Yes	Not available
Binning	Yes	Yes	Yes	Yes

Mode tab

Acquisition	Mode	
Operating m	ode	
Camera mo	de Interleaved (TimeFill)	•
Sync function	n Busy	-
Sync active	low 🗸	
Aux function	Trigger	•
Aux active I	w 🗌	
Cycle count	2	•

The Mode parameters are grouped into Operating mode.

The following **Operating mode** options are provided:

• Camera mode

Set the camera mode. The following options are provided:

- **TimeFill** Sensor integration and readout are interleaved. Use this option to maximise the temporal fill factor.
- PulseSync Sensor integration and readout are performed sequentially. Use this option when multi-camera synchronisation is critical or when combining measurements with the Glaz-PD.

• Sync function

Set the Sync port function. The following options are provided:

- **Busy** Active while the camera is running a measurement.
- Integration window Active while the camera is integrating.
- **Trigger** Equal to the <u>delayed</u> trigger signal.
- **Trigger cycle start** Pulse at the start of a cycle. See the device manual for more information about cycle counting.
- **Trigger cycle running** Active after a cycle started. See the device manual for more information about cycle counting.
- **Sync active low** Set the *Sync* port polarity. When checked, the *Sync* port is active low.

• Aux function Set the Aux port function. The following options are provided:

- Input The port is used as a high-impedance digital input.
- **Busy** Active while the camera is running a measurement.
- o Integration window Active while the camera is integrating.
- **Trigger** Equal to the <u>delayed</u> trigger signal.
- **Trigger cycle start** Pulse at the start of a cycle. See the device manual for more information about cycle counting.
- **Trigger cycle running** Active after a cycle started. See the device manual for more information about cycle counting.

• Aux active low Set the Aux port polarity. When checked, the Aux port is active low.

• Cycle count

Set the number of triggers in one cycle. See the device manual for more information about cycle counting.

	LineScan-I-Gen2	LineScan-II	LineScan-LS	LineScan-NMOS
Camera mode	TimeFill	TimeFill	TimeFill (fixed)	TimeFill (fixed)
	PulseSync	PulseSync		
Sync function	Busy	Busy	Busy	Busy
	Integration window	Integration window	Integration window	Integration window
	Trigger	Trigger	-	_
	Trigger cycle start	Trigger cycle start		
	Trigger cycle run	Trigger cycle run		
Sync active low	Configurable	Configurable	Active low (fixed)	Active low (fixed)
Aux function	Input	Input	Not available	Not available
	Busy	Busy		
	Integration window	Integration window		
	Trigger	Trigger		
	Trigger cycle start	Trigger cycle start		
	Trigger cycle run	Trigger cycle run		
Aux active low	Configurable	Configurable	Not available	Not available
Cycle count	Yes	Yes	Not available	Not available

Supported operating mode options for different LineScan models:

Buttons

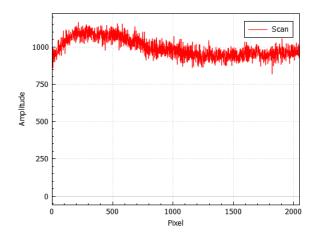
The functions of the buttons:

- Starts a measurement. When a measurement starts, the button changes to the stop button .
- Stops the measurement.
- Performs a noise analysis with the current camera settings. See "Noise analysis" for more information.
- Export the plotted data to a CSV (comma separated values) file.

Perform a measurement

- 1. Set the relevant Trigger settings and Measurement settings.
- 2. Click b to start the measurement.
- 3. The start button \blacktriangleright changes to a stop button \blacksquare .

- 4. Wait until the measurement is finished or click 🖲 to abort the measurement.
- 5. When the measurement is completed or was aborted, the stop button [■] changes back to the start button [▶].
- 6. The result is displayed in the 2D graph.

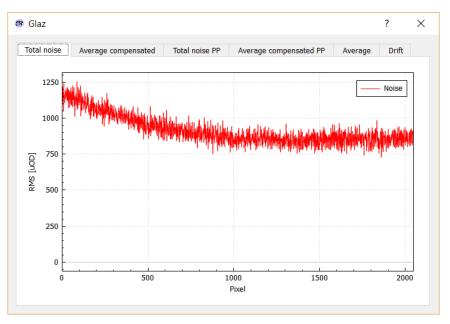


Noise analysis

- 1. Set the relevant Trigger settings and Measurement settings.
- 2. Click 🕅 to open the Noise analysis dialog.
- 3. You are instructed to prepare the sensor illumination, before starting the noise analysis.
- 4. Click Next to start the noise analysis or Cancel to abort the analysis.
- 5. After clicking **Next**, the camera starts taking measurements. A progress dialog is displayed. Wait until the measurement is completed.

Noise analysis	? × Prepare sensor	8 Noise analysis	Analysis result	?	×
	Prepare sensor		Analysis result		
	A noise analysis can be performed with any level of illumination. Ensure that the sensor is evenly		Running analysis		
	illuminated before running the analysis.			2	27%
	Next > Cancel			<u>F</u> inish	

6. After completing the measurements, the result dialog is displayed:



- 7. Click \times in the top right corner of the dialog to close the dialog.
- 8. Click Finish on the Noise Analysis dialog.

The noise analysis is performed on 100 scans using the current measurement settings. The following results are shown:

- Total noise: A graph of the RMS noise level for each pixel. This RMS noise graph includes the effect of drift.
- Average compensated: A graph of the average compensated RMS noise level for each pixel. To compensate for drift, the average of each scan is subtracted from each pixel reading.
- Total noise PP: A graph of the total peak-peak noise level for each pixel. The noise levels include the effect of drift.
- Average compensated PP: A graph of the average compensated peak-peak noise level for each pixel. To compensate for drift, the average of each scan is subtracted from each pixel reading.
- Average: A graph of the average sensor reading for each of the 100 scans.
- Drift: A graph of the difference of the average of each of the 100 scans relative to the average of the first scan.



Script mode

3 Glaz			-		×
lome					
Mode					
Single device	Run script	Application			
Script file C:/Users/Timo/Docu	ments/Synertronic Designs/Testing/GlazScripts	s/SYBP018010002.gsc ∨		Open	
				[ſ
					/
					~
					1

- 1. Select the **Home** page.
- 2. Select Run script mode.
- 3. Select a script file by using one of the following methods:
 - Click to open a file dialog to select a script file.
 - Type the script file name into the Script file line edit.
 - Use the Script file drop-down to select a previously entered script file.
- 4. Click **Open** to load the script file.

After successfully loading the selected script, a **Script** tab is added. Click on the **Script** tab to switch to the script page.

Script page

ne Script			
			X = 1 X = 1 X X = 1 X X = 1 X
cquisition Save	Mode Plot	Scan	
Trigger settings		Averages	
Trigger	Internal 👻	·	
Internal trigger [Hz]	2500.0	-	Camera on (avg)
Trigger delay [us]	0	16075 -	
Measurement settings		-	
Scan count	40	16070	
HW Averaging	1 🔹	all at diffe	وبالجراغ الأراب الملتان والمتعادية والمتعارب والمتعارب والمتعارب والمتعادية والمتعاطية
Resolution	16-bit 👻		
Integration time [us]	5	16065 -	en an
	1		
Lambda min [nm]			
Lambda min [nm] Lambda max [nm]	2	16060	
	2	16060	
Lambda max [nm]	2	16060	
Lambda max [nm] Loop Last run info	2	16060	
Lambda max [nm] Loop	0.081		
Lambda max [nm] Loop Last run info Duration [s]	0.081		200 400 600 800 10

Acquisition	Save	Mode	Plot	
Trigger setti	ngs			
Trigger	[Internal		•
Internal trig	ger [Hz]	2500.0		
Trigger dela	y [us]	0		
Measureme	nt settings			
Scan count	-	40		
HW Averagi	ng	1		▼
Resolution		16-bit		•
Integration f	time [us]	5		
Lambda mir	n [nm]	1		
Lambda ma	x [nm]	2		
Loop				
Last run info)			
Duration [s]		0.081		
Transfer rat	e [lines/s]	494		
Compressio	n ratio	0.199		

The Acquisition parameters are grouped into Trigger settings, Measurement settings and Last run info.

The following Trigger settings are provided:

• Trigger source

Set the trigger source. The following options are provided:

- o Internal The camera generates its own trigger at the specified internal trigger frequency.
- External The camera is triggered by an external signal on the TRIG port.
- **External burst** The camera waits for an external trigger on the TRIG port and then generates its own trigger at the specified internal trigger frequency.
- Internal trigger [Hz] Set the internal trigger frequency in Hz.
- Trigger delay [us] Set the trigger delay in µs.

Supported trigger settings for different LineScan models:

	LineScan-I-Gen2	LineScan-II	LineScan-LS	LineScan-NMOS
Trigger source	Internal	Internal	Internal	Internal
	External	External	External	External burst
	External burst	External burst		
Internal trigger [Hz]	Yes	Yes	Yes	Yes
Trigger delay [µs]	Yes	Yes	Yes	Not available

The following Measurement settings are provided:

• Scan count Set the number of scans (lines) per measurement run.

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- Hardware averaging Set the number of scans for hardware averaging.
- **Resolution** Set the resolution in number of bits.
- Integration time [us] Set the integration time of the camera in µs.
- **Binning** Sets the level of pixel binning.
- Lambda min [nm] The minimum wavelength. This must be set when using IFFT pre-processors.
- Lambda max [nm] The maximum wavelength. This must be set when using IFFT pre-processors.
- Loop

When unchecked, the application will only take one measurement when clicking the button. When checked, the application will keep taking measurements, until the button is clicked.

Supported measurement settings for different LineScan models:

	LineScan-I-Gen2	LineScan-II	LineScan-LS	LineScan-NMOS
Hardware	1 to 256	1 to 256	1	1
averaging				
Resolution	10, 12, 14, 16	10, 12, 14, 16	12 (fixed)	16 (fixed)
Integration	Yes	Yes	Yes	Not available
time [us]				
Binning	Yes	Yes	Yes	Yes

The following Last run info is provided:

- **Duration [s]** The duration of the last measurement run.
- **Transfer rate [lines/s]** The average line transfer rate from the camera to the PC.
- Compression ratio

The compression ratio of data sent from the camera to the PC. Only the LineScan-I-Gen2 and LineScan-II support data compression.

Save tab

Acquisition Sa	ve Mode	Plot	
Save settings Enable this optio save all scans to			
Enable Format	CSV -		
With timestamps File prefix	Scans		
Target directory	signs/Testing/	Glaz Data	

The Save parameters are grouped into Save settings.

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The following Save settings are provided:

- Enable When checked all scans are saved to a binary file.
- Format Select the file format. The following formats are supported:
 - **Binary:** Proprietary binary file format. See format description below.
 - **CSV:** Text file with comma-separated values.
- With timestamps When checked timestamps for each line are also saved to the binary file.
- File prefix

The binary filename will start with this prefix. The date and time are appended to the prefix to generate the full filename.

• Target directory

The target directory where the binary files will be saved. Click to open a file dialog to select a target directory.



The binary file uses Big-Endian encoding.

The binary file format without timestamps:

uint16 uint16	number of scans, Ns number of pixels, Np
Np x uint16	1. scan
Np x uint16	2. scan
 Np x uint16	Ns. scan

The binary file format with timestamps:

4 x uint8 uint8 uint16	preamble consisting of 4 bytes: 0x00, 0x00, 0xA5, 0xC3 version: 0x01 number of scans, Ns
uint16	number of pixels, Np
uint32	timestamp for 1. scan
Np x uint16	1. scan
uint32	timestamp for 2. scan
Np x uint16	2. scan
•••	
uint32	timestamp for Ns. scan
Np x uint16	Ns. scan

Mode tab

Acquisition	Save	Mode	Plot			
Operating mode						
Camera operating mode Interleaved (TimeFill)						
Sync functio	n	Integr	ation wir	ndow 👻		
Sync active	\checkmark					
Aux function	Integr	ation wir	ndow 👻			
Aux active low						
Cycle count		2		-		

The Mode parameters are grouped into Operating mode.

The following **Operating mode** options are provided:

Camera mode

Set the camera mode. The following options are provided:

- **TimeFill** Sensor integration and readout are interleaved. Use this option to maximise the temporal fill factor.
- PulseSync Sensor integration and readout are performed sequentially. Use this option when multi-camera synchronisation is critical or when combining measurements with the Glaz-PD.

• Sync function

Set the Sync port function. The following options are provided:

- **Busy** Active while the camera is running a measurement.
- o Integration window Active while the camera is integrating.
- **Trigger** Equal to the <u>delayed</u> trigger signal.
- **Trigger cycle start** Pulse at the start of a cycle. See the device manual for more information about cycle counting.
- **Trigger cycle running** Active after a cycle started. See the device manual for more information about cycle counting.
- Sync active low

Set the Sync port polarity. When checked, the Sync port is active low.

• Aux function

Set the Aux port function. The following options are provided:

- Input The port is used as a high-impedance digital input.
- o Busy Active while the camera is running a measurement.
- o Integration window Active while the camera is integrating.
- **Trigger** Equal to the <u>delayed</u> trigger signal.
- **Trigger cycle start** Pulse at the start of a cycle. See the device manual for more information about cycle counting.
- **Trigger cycle running** Active after a cycle started. See the device manual for more information about cycle counting.

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- Aux active low . Set the Aux port polarity. When checked, the Aux port is active low.
- Cycle count ٠ Set the number of triggers in one cycle. See the device manual for more information about cycle counting.

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Supponed operating mode options for different LineScan models.						
	LineScan-I-Gen2	LineScan-II	LineScan-LS	LineScan-NMOS		
Camera mode	TimeFill	TimeFill	TimeFill (fixed)	TimeFill (fixed)		
	PulseSync	PulseSync				
Sync function	Busy	Busy	Busy	Busy		
	Integration window	Integration window	Integration window	Integration window		
	Trigger	Trigger				
	Trigger cycle start	Trigger cycle start				
	Trigger cycle run	Trigger cycle run				
Sync active low	Configurable	Configurable	Active low (fixed)	Active low (fixed)		
Aux function	Input	Input	Not available	Not available		
	Busy	Busy				
	Integration window	Integration window				
	Trigger	Trigger				
	Trigger cycle start	Trigger cycle start				
	Trigger cycle run	Trigger cycle run				
Aux active low	Configurable	Configurable	Not available	Not available		
Cycle count	Yes	Yes	Not available	Not available		

Supported operating mode options for different LineScan models:

Plot tab

Acquisition	Save	Mode	Plot
Visibility			
Camera on	\checkmark		
Zoom			
Disable aut	o-scale]	

The Plot settings are grouped into Visibility and Zoom.

The Visibility group lists all plotted traces. Check or uncheck the associated check box to turn traces on or off.

The following **Zoom** options are provided:

Disable auto-scale • When checked, the plot will not auto-scale when plotted traces are updated.

Buttons

The functions of the buttons:



Starts a measurement. When a measurement starts, the button changes to the stop button .

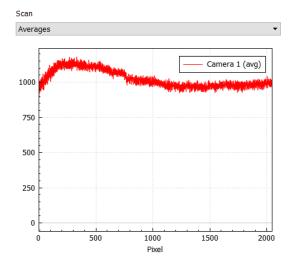
Stops the measurement.

Captures the background of each camera.

- 5)
- Displays the timestamps for each averaged scan. This is useful to check that cameras are running synchronously.
- Export the plotted data to a CSV (comma separated values) file.

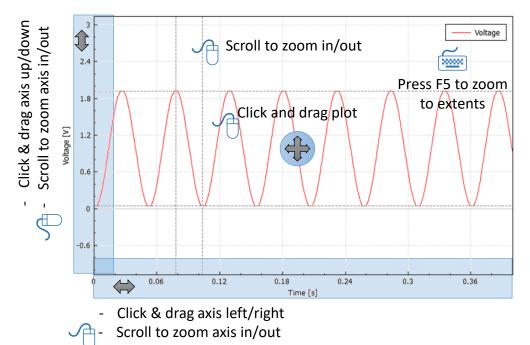
Perform a measurement

- 1. Set the relevant Trigger settings and Measurement settings.
- 2. Click b to start the measurement.
- 3. The start button \triangleright changes to a stop button \blacksquare .
- 4. Wait until the measurement is finished or click 🖲 to abort the measurement.
- 5. When the measurement is completed or was aborted, the stop button [●] changes back to the start button [▶].
- 6. The results are displayed in the 2D graph. There will be a trace for each camera.
- 7. Use the **Scans** drop-down to select the overall averaged result or individual scan results. Individual scan results are only available if keepscans was enabled in the script.
- 8. Use the **Scans** drop-down to select the *Glaz-PD* results. This will only be available, if *Glaz-PD* devices were used in the script.



Interacting with plots

The diagram below summarises the different keyboard (1) and mouse (1) plot interactions.



Zoom per axis	Place the mouse cursor over one of the axes and scroll up/down to zoom
	in/out on that axis.
Zoom graph	Place the mouse cursor over one of the plots and scroll up/down to zoom the
	whole plot in/out.
Zoom to extents	Press the F5 key.
Change y-axis range	Click on the y-axis and drag it up/down.
Change x-axis range	Click on the x-axis and drag it left/right.
Change plot ranges	Click on a trace and drag it left/right/up/down.

Launch the Glaz UI in developer mode

- 1. Open a cmd window:
 - a. On the keyboard click the **Windows** button or click on the **Windows start** icon to open the Windows start menu.
 - b. Type in *"cmd"* and then click **Command Line**:

All Apps Documents Email Web	Mor	e 🔻 Feedback …		
Best match				
Command Line				
Apps		Command Line		
Command Prompt	>	Арр		
s fuseRelaunch.cmd	>			
isim.cmd	>	📑 Open		
 VS2012 x64 Cross Tools Command Prompt 	>	Run as administratorOpen file location		
 VS2015 x86 ARM Cross Tools Command Prompt 	>	-™ Pin to Start -™ Pin to taskbar		
Search the web		Uninstall		
✓ cmd - See web results	>			
Documents (5+)				
Settings (1)				
רשל cmd				

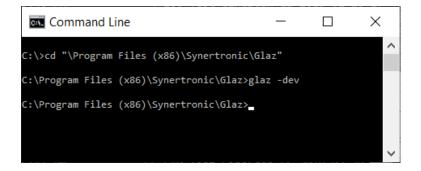
c. In the cmd window navigate to the *Glaz UI* program directory by typing in one if the following commands:

cd "\Program Files (x86)\Synertronic\Glaz"
cd "\Program Files\Synertronic\Glaz"

(on 64-bit operating systems) (on 32-bit operating systems)

d. Run the Glaz UI in developer mode by typing in:

Glaz -dev

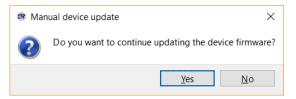


Firmware updates

- 1. Launch the Glaz UI in developer mode.
- 2. Select Single device on the Home page.
- 3. Connect to the target device.
- 4. Click *F* to open the **Global Settings** dialog.

Ø Global Settings	×
Updates	
Check for updates online	Use repository
Manually update device	Select package
Ok Cancel	

- 5. In the Updates group, click Select package.
- 6. Use the file dialog to navigate to and select the firmware package (*pkg* file) provided by Synertronic Designs.
- 7. You are queried if you want to continue with the update. Click Yes to continue or No to abort.



8. If Yes was selected the firmware update process is started.

🕫 Firmware update	×
Do not unplug the dev	/ice!
Updating secondary firmware. Busy uploading data.	
	11%
Writing page 148	

9. Wait for the update process to complete. Do not unplug the device!

! Under no circumstances, disconnect the device during a firmware update. If a firmware update fails due to a power or connection failure, the device must be returned to Synertronic Designs for reprogramming.

Setting the sensor type

- 1. Launch the Glaz UI in developer mode.
- 2. Select **Single device** on the **Home** page.
- 3. Connect to the target device.
- 4. Switch to the **Measurement** tab:

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Acquisition Mode				10000							
Trigger settings									Ŀ	Sci	an
Trigger source	Internal	-		8000							
Internal trigger [Hz]	2300.0	•									
Trigger delay [us]	0										
Measurement setting	js			6000							
HW Averaging	32	•	nde								
Resolution	16-bit	•	Amplitude	4000							
Integration time [us]] 10										
Binning	No binning	•		ŀ							
Loop				2000							
				ŀ							
				0							
				Ľ				,			40
				0	10	00	2000 Pixel	-	3000		40

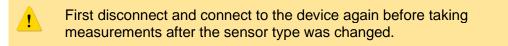
5. Click the Configure sensor type

ICON	
10011	1

6. The sensor type dialog is opened:

	?	×					
S	1639	\sim					
Bypass FIFO buffer 🔽							
Apply		ncel					
	ffer 🔽						

- 7. From the Sensor type drop-down select the relevant sensor.
- 8. For LineScan-II devices with firmware version 9.0 or above, the option for bypassing the FIFO buffer is available. Follow the instructions provided by Synertronic Designs regarding this setting.
- 9. Click Apply
- 10. Switch back to the Home tab and disconnect from the device.

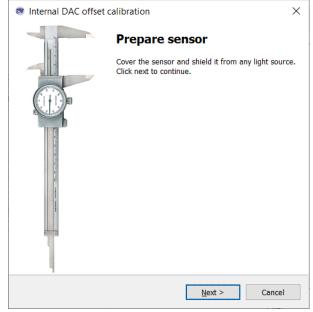


Perform sensor offset calibration

- 1. Launch the Glaz UI in developer mode.
- 2. Select Single device on the Home page.
- 3. Connect to the target device.
- 4. Switch to the Measurement tab:

Home Measurements S13496 Image: Constraint of the second of t	🕫 Glaz						_		×
Acquisition Mode Trigger settings Trigger source Internal trigger [Hz] 2300.0 Trigger delay [us] 0 Measurement settings HW Averaging 32 Resolution 16-bit Integration time [us] 10 Binning No binning Loop	Home Measurements								
Trigger settings	S13496					.00 ⊜.0	*	M	DAT
Trigger source Internal Internal trigger [Hz] 2300.0 Trigger delay [us] 0 Measurement settings HW Averaging 32 Resolution 16-bit Integration time [us] 10 Binning No binning Loop 2000	Acquisition Mode		10000						
Internal trigger [Hz] 2300.0 Trigger delay [us] 0 Measurement settings HW Averaging 32 Resolution 16-bit Integration time [us] 10 Binning No binning Loop	Trigger settings							Sci	an
Internal trigger [Hz] 2300.0 Trigger delay [us] 0 Measurement settings HW Averaging 32 Resolution 16-bit Integration time [us] 10 Binning No binning Loop 2000	Trigger source Internal -								
Measurement settings HW Averaging 32 Resolution 16-bit Integration time [us] 10 Binning No binning Loop 2000	Internal trigger [Hz] 2300.0		8000						
Measurement settings HW Averaging 32 Resolution 16-bit Integration time [us] 10 Binning No binning Loop	Trigger delay [us] 0								
HW Averaging 32 Resolution 16-bit Integration time [us] 10 Binning No binning Loop 2000	Measurement settings		6000						
Integration time [us] 10 Binning No binning Loop 2000		þ							
Integration time [us] 10 Binning No binning Loop 2000	5 5	mplit	4000						
Binning No binning Loop 2000		×	1000	-					
Loop 2000				- -					
			2000						
0			0	-					
0 1000 2000 3000 4000 Pixel			0)	1000		3000		4000
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jan and a second se									N .

- 5. Click the Calibrate internal DAC offset icon.
- 6. The offset calibration dialog is opened:



7. Shield the camera sensor from any incident light and click Next.

8. Wait for the calibration to finish:



9. Click Finish.

The dark measurement will now be calibrated to be between 1350 and 1450 counts.

IMPORTANT NOTICE

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