

# **Photron FASTCAM Viewer**

**for High Speed Digital Imaging**

**Release Notes**  
**Ver. 4.2.0.0 E**

**Photron**

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# 1

## Chapter 1. Release Summary

## 1.1. PFV4 Release Notes

### 1.1.1. PFV Version

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- PFV Ver. 4.2.0.0
- SDK (PDCLIB.DLL) Ver. 4.2.0.0

### 1.1.2. Contents of the installation data

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- PFV Setup64: PFV installer for 64bit Windows
- PFA: PFA (Photron FASTCAM Analysis) installer
- SDK: SDK components, documents, and samples
- LabVIEW and MATLAB: SDK for LabVIEW and MATLAB, documents, and samples
- Doc: Manuals of PFV, cameras, and others
- CheckerBoard: Image data of checkerboard for lens distortion correction
- ReleaseNotes: Release notes of PFV
- ReportSample: Sample data for Report output function
- Driver: Device drivers

# 2

## Chapter 2. New Functions

## 2.1. PFV4.2.0.0 New Functions

### 2.1.1. New Camera Support

N/A

### 2.1.2. Additional Function

Common to the all modes		
Item	Fixed / Modified Item	
[MENU]	[Configuration] – [Preference]	<p>You can now select the drawing update speed when moving the current frame cursor.</p> <ul style="list-style-type: none"> <li>• Unchecked: When the dragged cursor stops, the image is updated immediately.</li> <li>• Checked: When the dragged cursor stops, the image is updated 0.2 seconds later.</li> </ul> <p>If the drawing load is heavy due to a large number of cameras, etc., checking the checkbox will make the image update smoother. Default is unchecked.</p>
	[Export support file]	<p>MH6 and Mini CX operation logs are now output when outputting support files.</p> <p>File name: DeviceLog “device code” “IP address or USB serial number” “log file name”.log</p> <ul style="list-style-type: none"> <li>• MH6 (Firmware Ver. 1.12 or later)</li> <li>• Mini CX (Firmware Ver. 3.11.60 or later)</li> </ul>
[Special Effects]	[B/G Subtraction]	<p>Changed specifications to allow use of acquired background images in different modes.</p> <p>e.g. Background image acquired in LIVE mode can be used in MEMORY mode</p>

LIVE mode		
Item	Fixed / Modified Item	
[MENU]	[Configuration] - [Connection] - [Ethernet settings]	<p>Packet size is now adjustable with Mini CX.</p> <p>Communication settings can now be optimized with Mini CX. Only packet size is adjusted automatically.</p>
	[Configuration] - [Image Quality]	<p>The default value of the “Auto shading calibration when going into Ready state (only for cameras with mechanical shutter)” has been changed from “Disabled” to “Enabled”.</p> <p>Shading is now automatically executed when the camera enters to the Ready state for recording.</p>

LIVE mode		
Item	Fixed / Modified Item	
[MENU]	[Configuration] - [Trigger]	Supports recording flow control using serial communication (RTS/CTS) signals from external devices. The following three patterns of control are possible. <ol style="list-style-type: none"> <li>1. When a signal is received from an external device, the camera is shifted into the ready-to-record state</li> <li>2. When the camera is shifted into the ready-to-record state, sends a signal to an external device.</li> <li>3. When a signal is received from an external device, the camera is shifted into the ready-to-record state and sends a signal back to the external device.</li> </ol>
[Function panel]	[Lens control]	The accuracy of the autofocus function has been improved.
	[Resolution]	Corrected resolution list for Mini AX50. <ul style="list-style-type: none"> <li>• Deleted: 1,024 x 624</li> <li>• Added: 1,024 x 608</li> </ul> *The variable setting can be used to set the resolution to 1,024 x 624.
	[Trigger mode]	Rec On Cmd trigger is now supported for the following cameras. <ul style="list-style-type: none"> <li>• Nova S6 / S9 / S12 (Firmware Ver. 18.5.8 or later)</li> <li>• Nova S16 (Firmware Ver. 10.2.8 or later)</li> <li>• Nova S20 (Firmware Ver. 5.2.8 or later)</li> <li>• Nova R5 / R3 (Firmware Ver. 6.3.8 or later)</li> </ul>
	[Live update speed]	To improve the update speed of live images, a function to display the amount of image data in a thinned-out format has been added.
[Add-ons]	[MCAT]	By activating the function when adjusting the angle of view, etc., the live image can be adjusted with a small update time lag. <ul style="list-style-type: none"> <li>• Nova R5 / R3 (Firmware Ver. 6.3.8 or later)</li> </ul>
	[PFV4 Mobile]	

FILE mode		
Item	Fixed / Modified Item	
[Open]	Faster loading speed for GRAW format files.	

MCAT		
A warning is now displayed when the frequency of the signal generator differs from the camera's frame rate.		



# 3

## Chapter 3. Bug Fix and Other Changes

## 3.1. PFV4.2.0.0 Fixed Bugs and Changes

Common to the all modes		
Item	Fixed / Modified Item	
[Assistance]	[Image Overlay]	Although image overlaying between files in the same group was not allowed, file selection was possible. This bug is fixed. With this correction, files in the same group are no longer displayed in the list of overlaying files.
		When overlaying and playing back images while the Sobel filter was being applied, there were times when the filter application was canceled and the image flickered. This bug is fixed.
		When the image overlay was performed and the save window was opened and closed, the current frame position of the file to be overlaid was moved to the start frame (frame No. 0). This bug is fixed.
		When background subtraction was performed on the overlaid image while the overlaying was being reflected and synchronized playback was performed on the original image, the overlaid image would be displayed with no background subtraction reflected. This bug is fixed.
		An overlaying warning was displayed in duplicate. This bug is fixed.
	[S/W image trigger]	When the virtual trigger was set and the software image trigger was enabled and the playback/reverse play button was clicked, the number of differential frames between the original trigger point and the virtual trigger point would be added to the following values. This bug is fixed. <ul style="list-style-type: none"> <li>• Frame number in the information display column</li> <li>• Current frame number in the recording playback panel</li> </ul>
		When using the software image trigger, the layout of the settings screen was corrupted when scrollbar was displayed on the settings screen, for example, when the display size was small. This bug is fixed.
		When using a monochrome camera, PFV4 crashed when clicking the [Capture] button in the Software Image Trigger menu while the Background Subtraction tool was registered in the Effect status bar. This bug is fixed.
		When background acquisition is executed while the graph was displayed, the acquired background image could not be loaded. This bug is fixed.
	[Edit]	[Trimming]
[Special Effects]	[B/G Subtraction]	When background acquisition is executed while the graph was displayed, the acquired background image could not be loaded. This bug is fixed.
	[Cycle View]	When the selected area was replayed and the cycle view was updated again, PFV4 crashed. This bug is fixed.

LIVE mode		
Item	Fixed / Modified Item	
[Function panel]	[Camera Controls] - [Save/Load camera control settings]	When a pcsx file was saved after performing the following operations with Nova S/R5/R3, incorrect values were written to “xPos” and “yPos” in the automatic exposure control settings in the pcsx file. This bug is fixed. <ol style="list-style-type: none"> <li>1. Change the resolution.</li> <li>2. Restart PFV4.</li> <li>3. Reconnect the camera.</li> </ol>
		When using a camera that supports IRIG synchronization, the saved range was not properly reflected when a PCSX file was loaded. This bug is fixed.
[MENU]	[Configuration] - [Image Quality]	The following problems with the software pixel gain function have been corrected. <ul style="list-style-type: none"> <li>• Correction was not applied to the entire image (Nova S/R, Mini R5)</li> <li>• After “Apply software pixel gain” was checked, the setting was not maintained when the camera was disconnected and reconnected (Nova S/R, Mini R5, MH6).</li> <li>• When “Apply software pixel gain” was checked and then the setting information is loaded, the setting was not maintained (Nova S/R, Mini R5, MH6).</li> </ul>
[Show info]	When synchronizing a camera that did not support the synchronization status display function, a warning would be displayed even if the camera was synchronized normally. This bug is fixed. <ul style="list-style-type: none"> <li>• Cameras that do not support the synchronization status display function: SA-Z, SA-X2, SA1, SA4, SA5, etc.</li> </ul>	
Other	When “Live stop” was enabled, certain operations, such as closing the settings screen, could cause the live image to be refreshed. This bug is fixed.	

LIVE/MEMORY mode	
Item	Fixed / Modified Item
[Save]	When “Auto save after recording” was enabled, the following save settings were not reflected if recording was performed without displaying the save settings window even once. This bug is fixed. <ul style="list-style-type: none"> <li>• Info save</li> <li>• Apply image processing</li> <li>• Save scaling</li> </ul>

MEMORY mode		
Item	Fixed / Modified Item	
[Show info]	[Edit info] - [Current frame time]	PFV4 crashed when the time code for the current frame time setting of data recorded with the REC ON CMD trigger was set to “User settings” and the Edit Display Info screen was closed. This bug is fixed.
[Layout save]	Automatic layout did not work correctly when “Specific resolution” was checked on the Layout Settings window. This bug is fixed.	
	When the resolution of the monitor used was 1,366 x 768 or 1,280 x 768, the Layout Settings menu was not displayed correctly. This bug is fixed.	
[Save]	The items on the progress window of “Auto-conversion after saving” were not displayed correctly. This bug is fixed. <ul style="list-style-type: none"> <li>• The file name was displayed as “camera”.</li> <li>• Partition information was displayed.</li> </ul>	
	If the “Record while saving” and the partition function were enabled, a warning would appear if the number of partitions was small. This bug is fixed.	
	When using the Mini CX and not all possible frames had been recorded (e.g., when the trigger was input immediately after shifting to the endless recording state with the Center trigger), it took time to download the data. This bug is fixed.	
[Save]	[Save waveform in CSV]	When waveform data (CSV format) was output with IRIG time stamp enabled, the value of IRIG_Day was output as “0”. This bug is fixed.
Other	When a playback range was specified in the recording playback panel and a virtual trigger was set outside the playback range, the following actions would move the position of the specified virtual trigger. This bug is fixed. <ol style="list-style-type: none"> <li>1. Open the save window.</li> <li>2. Close the save window by clicking the [Cancel] button.</li> </ol>	

MEMORY/FILE mode		
Item	Fixed / Modified Item	
[Dimensions]	[Manual tracking]	Moving to a tracking point from the tracking point list with virtual trigger enabled did not move to the intended frame. This bug is fixed.
[Show info]	The current time of data recorded with REC ON CMD trigger was not displayed correctly. This bug is fixed.	

FILE mode		
Item	Fixed / Modified Item	
[Batch converter]	When multiple still image files were converted to video using the batch data conversion function, all frames of the output video became the first image. This bug is fixed.	
Other	When data recorded with REC ON CMD trigger was opened, the current frame cursor was set to the second trigger position. This bug is fixed.	

Other		
When double-clicking a pcsx file to start PFV4, the splash screen appeared multiple times. This bug is fixed.		

<b>MCAT</b>
Cameras other than the currently selected group could not be selected on the I/O setting screen. This bug is fixed.
In the MCAT table's Record plug-in tab, plug-in settings for cameras that were not selected could not be deleted. This bug is fixed.
Pressing the [Tab] key followed by the [Enter] key during recording standby and recording state would cause unintended operation. This bug is fixed.
Duplicate text displayed in tooltips when hovering over an alert message. This bug is fixed.
PFV4 crashed in the following case. <ul style="list-style-type: none"> <li>When a warning was displayed on the MH6 head during recording standby, click the [Ready] button or the [Cancel] button after closing the warning message.</li> </ul>

<b>PFV4 Mobile</b>
When the spin button of the lens control menu was pressed and held, PFV4 crashed. From PFV4.2.0.0, when the spin button is pressed and held, the setting value is changed by one step only.
When resetting Color Correction settings, settings were not reset to default values. This bug is fixed.
No warning was displayed when changing locked multi-head camera settings from PFV4 mobile. This bug is fixed.

# 4

## Chapter 4. The Contents of SDK

## 4.1. The Contents of SDK

### 4.1.1. New Camera Support

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N/A

### 4.1.2. Additional Function / Improvement

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N/A

### 4.1.3. Bug Fix

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N/A

# A

**A. Appendix**



## A.1. Cache Storing Specification Change

Starting with PFV4.0.6.0, cache data is stored in the PC to speed up the startup process.

### ■ Target model

PFV (SDK): Ver. 4.0.6.0 or later

Camera: Nova S/R series, Mini R5, MH6, and cameras to be released in the future

### ■ Expected Benefits

#### Faster connection between PFV and camera

When connecting to a camera, correction data was loaded from the camera.

This loading process took a long time for the connection.

By storing the cache data in the PC, the data loading time from the camera can be reduced and the connection speed can be improved.

### ■ Storing Location

Cache data is stored in the following folder.

C:\Users\User Name\AppData\Roaming\Photron\PDCLIB\Devices\Camera Name\XXXXXXXX

\* “User Name” is the user’s local folder name.

\* “XXXXXXXX” is a non-duplicate alphanumeric string based on camera and head information.

e.g. C:\Users\User Name\AppData\Roaming\Photron\PDCLIB\Devices\Nova

S12\978C95093DC3BC7EDAEAFEAB771CA6F2

### ■ Contents of Data

Cached data includes camera correction data (pixel gain, shading, and missing pixel).

### ■ Details

The camera’s MAC address (Serial number) is used to link to the cached data.

As long as there is no camera with the same MAC address (Serial number), incorrect (from another camera) data will not be linked.



### CAUTION

When a camera is returned to Photron for maintenance or repair and the camera’s image quality is readjusted, the cache data remaining on the PC must be deleted so that the old cache data is not referenced.

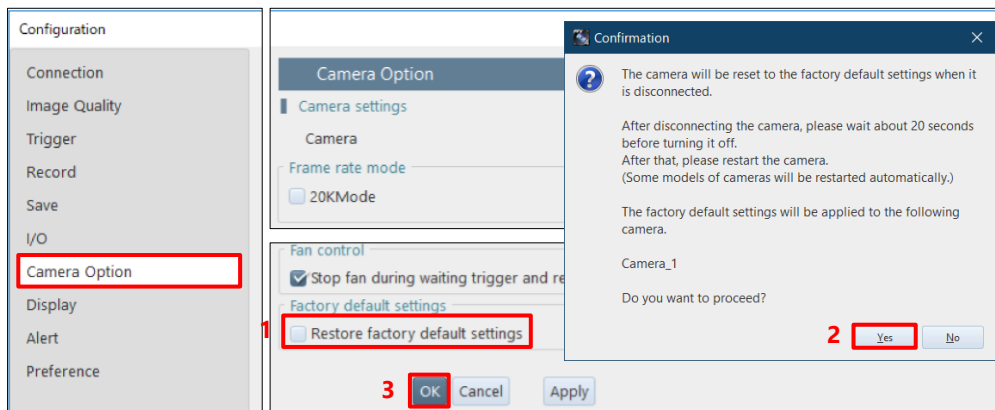
See “How to Delete Cache Data” on page 12 for detailed instructions.

\* If the camera is connected without deleting the old cache data, the camera will use the old correction data before image quality readjustment for its operation. In this case, the correction data inside the camera will not be overwritten.

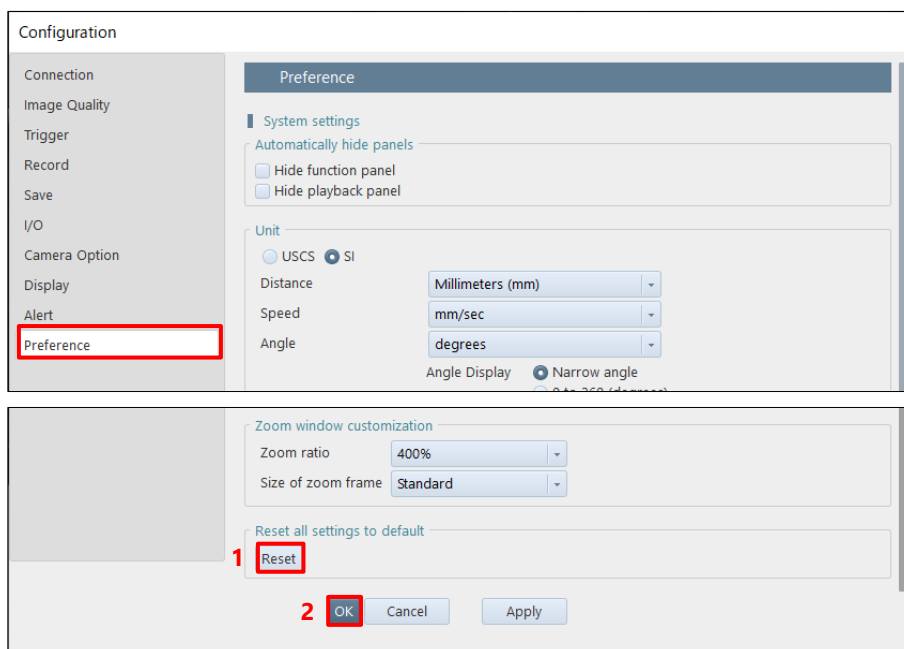
## ■ How to Delete Cache Data

- If using PFV4, do A), B), or C).
- If using SDK, do C) or D).

A) Initialize the camera from PFV4 to factory settings (after connecting the camera).



B) Perform PFV4 reset (before connecting the camera).



C) Delete cache data directly in the AppData folder (before connecting the camera).

C:\Users\User Name\AppData\Roaming\Photron\PDCLIB\Devices\Camera Name\XXXXXXXX

D) Execute the SDK function “PDC\_EraseCachedCorrectionData()” (before connecting the camera). For details, refer to the SDK Help file.

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F21, JINBOCHO MITSUI BUILDING,  
Kanda Jimbocho 1-105, Chiyoda-Ku, Tokyo  
101-0051, Japan