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PC Recommendation for

ORCA-Flash4.0 V3 / LT3

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Hamamatsu Photonics K.K.

This document provides the recommended PC configuration for Hamamatsu ORCA-Flash4.0 series cameras.

- [C13440-20CU](#) : ORCA-Flash4.0 V3
- [C11440-42U40](#) : ORCA-Flash4.0 LT3
- Notice
 - Optimum performance can be achieved under the conditions describe in this document, but it is not guaranteed.

Single Camera with CameraLink

Items	Recommended
Camera	C13440-20CU (V3)
Model	Dell Precision™ 5860 Tower Workstation
CPU	Intel Xeon W3-2435
OS	Windows 11 / 10 Professional 64-bit Operation confirmed Linux Ubuntu22.04.02, Debian11 amd64 kernel v5.x
RAM	32 GB or more
Frame Grabber	Active Silicon AS-FBD-1XCLD-2PE4L-F installed in SLOT2, 3, 4 or 5
Drivers	DCAM-API v2x.x or later

- To achieve full speed recording at max resolution and max 25,000+ fps speed at small regions.
- These BIOS settings may need to be adjusted:
 - Disable (uncheck) Intel Speed Shift Technology under the Power section.
 - Enable (check) Intel Trusted Execution Technology(TXT) under the Virtualization Support section.
 - Disable (uncheck) SpeedStep and C-State under the Performance section.
 - Enable (check) Turbo Boost and Hyper-Threading under the Performance section.
 - Disable (uncheck) VT for Direct I/O under Virtualization Support. (Debian)

Single Camera with USB 3.0 (USB 3.1 Gen1)

Items	Recommended
Camera	C13440-20CU (V3) or C11440-42U40 (LT3)
Model	Dell Precision™ 5860 Tower Workstation
CPU	Intel Xeon W3-2435
OS	Windows 11 / 10 Professional 64-bit Operation confirmed Linux Ubuntu22.04.02, Debian11 amd64 kernel v5.x
RAM	16 GB or more
Interface connector	USB 3.2 Gen1 interface connector
Drivers	DCAM-API v2x.x or later

- To achieve full speed recording at max resolution and max 25,000+ fps speed at small regions with frame bundle.
- These BIOS settings may need to be adjusted:
 - Disable (uncheck) Intel Speed Shift Technology under the Power section.
 - Enable (check) Intel Trusted Execution Technology(TXT) under the Virtualization Support section.
 - Disable (uncheck) SpeedStep and C-State under the Performance section.
 - Enable (check) Turbo Boost and Hyper-Threading under the Performance section.

Recommended DIY PC configuration for Single Camera

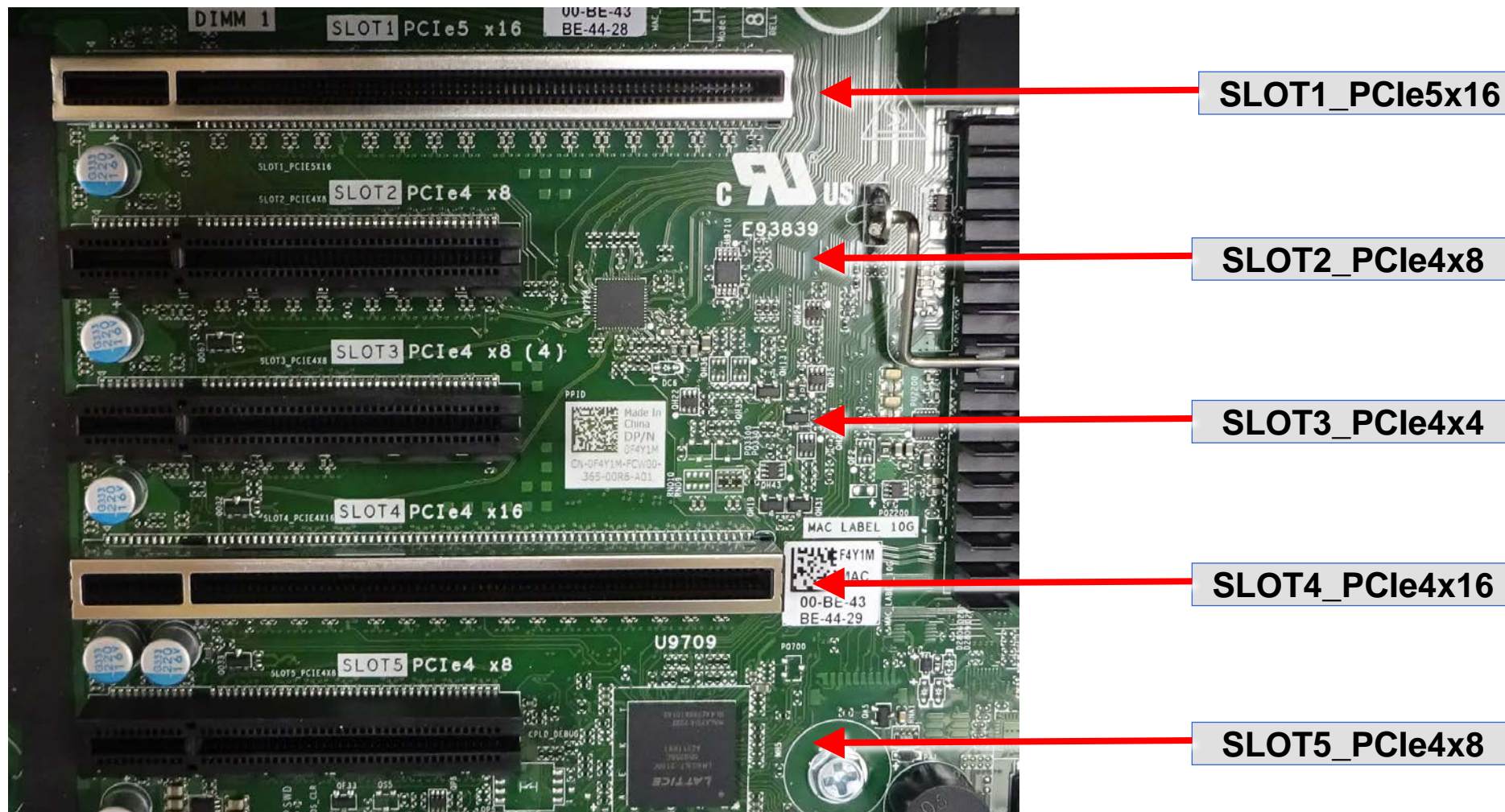
Camera Interface	Camera Link	USB 3.0	Note
CPU	Intel Xeon E5-1630 v4 or better		We recommend that you use at least a single 3.2Ghz Quad (or more) Core High End CPU with a CPU Mark equal or higher than the E5-1630 v4 from this benchmark table: High End CPU's - Intel vs AMD Frequency is more important than the number of CPU cores.
OS	Windows 11 / 10 Professional 64-bit		32-bit Edition is not recommended because of performance and memory size limitations
RAM	32 GB or more	16 GB or more	DDR4 2400MHz or higher-speed
Chipset	Intel C610 series chipset or newer		e.g. C612, C236, C422
Free Slot	PCIe2+ x4 wired	PCIe2+	PCIe Gen2 is mandatory, but faster Gen should cover Gen2.
BIOS	Latest		PCIe slot performance sometimes is improved in the latest BIOS. We highly recommend to adjust the following BIOS settings: <ol style="list-style-type: none"> 1. Disable Processor C-state_control to force C0 state for all processors. 2. Enable Intel Turbo Boost. 3. Disable Intel SpeedStep if allowed with Turbo Boost Enabled. Enable Turbo Boost may mutually exclude disabling SpeedStep. 4. Enable Intel Hyper-Threading. 5. Disable (uncheck) VT for Direct I/O under Virtualization Support. (Debian+CL) 6. Disable IOMMU for AMD CPU. (Linux+CL) 7. Disable Intel Speed Shift Technology.

Storage Size vs. Number of Recorded Images

Free space	Number of Recorded Images ⁽¹⁾	Time in seconds ⁽²⁾ (Approx.)		
		30 fps ⁽³⁾	40 fps ⁽³⁾	100 fps ⁽³⁾
8 GB	1,024	34	25	10
16 GB	2,048	68 (~1 min)	51	20
32 GB	4,096	136 (~2 min)	102 (~1 min)	40
64 GB	8,192	273 (~4 min)	204 (~3 min)	81 (~1 min)
128 GB	1,6384	546 (~9 min)	409 (~6 min)	163 (~2 min)
256 GB	3,2768	1,092 (~18 min)	819 (~13 min)	327 (~5 min)
512 GB	65,536	2,184 (~36 min)	1,638 (~27 min)	655 (~10 min)
1 TB	131,072	4,369 (~72 min)	3,276 (~54 min)	1,310 (~21 min)

1. In case of 1x1 binning, full size.
2. Numbers are rounded down.
3. Depends on storage writing speed and application writing to storage performance. Writing frame rate is sometimes slower than camera capturing speed.

Dell Precision™ 5860 Tower Workstation Slot Configuration



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