

CHRONOS 4K12 HIGH-SPEED CAMERA

Slow-motion video serves to captivate audiences, analyze issues, gather new data, and enhance creative visualizations. The Chronos 4K12 high-speed camera revolutionizes slow-motion video capture while maintaining a compact body and a built-in touchscreen.

Its user-friendly design and portability make it an ideal choice for a wide range of use cases, from research and development to professional cinematography and media creation. Delivering 1,397 frames per second in 4K, the Chronos 4K12 establishes itself as the world's fastest 4K camera.



MAIN FEATURES

ULTRA HIGH-RESOLUTION

Up to 1,397 FPS @ 4096 x 2160

FLEXIBLE WINDOWING

Adjustable up to 29,002 FPS @ 128 x 32

STANDALONE OPERATION A built-in 5" touchscreen and 1 TB solid-state drive allow for easy recording and review. Additional external battery required for field work (not included).



RAW OR COMPRESSED Save files as CinemaDNG (Raw) or MPEG-4 (Compressed) formats

INTERCHANGEABLE LENS MOUNTS

C, E, EF, F, and MFT lens mount plates available

REMOTE CONTROL APP & API Available iOS and Android Apps for remote control and REST API for automation. Network connection via USB-C to Ethernet or WiFi adapter.

APPLICATIONS

Academic Research Sports / Biomechanics
Media Production Engineering / R&D
Industrial / Manufacturing Wildlife

RESOLUTION & FRAME RATES

| CAPTURE RESOLUTION | 8-BIT 16.7 Million Colors | 10-BIT 1.07 Billion Colors | 12-BIT 68.7 Billion Colors |
|-----------------------|------------------------------|-------------------------------|-------------------------------|
| 4096 x 2160 4K | 1,397 FPS | 1,006 FPS | 481 FPS |
| 3840 x 2160 | 1,491 FPS | 1,006 FPS | 481 FPS |
| 2048 x 2016 | 2,065 FPS | 1,082 FPS | 518 FPS |
| 1920 x 1080 HD | 3,651 FPS | 1,947 FPS | 942 FPS |
| 1280 x 1024 | 3,856 FPS | 2,060 FPS | 998 FPS |
| 1280 x 720 | 5,153 FPS | 2,793 FPS | 1,366 FPS |
| 800 x 600 | 6,059 FPS | 3,316 FPS | 1,633 FPS |
| 320 x 240 | 11,729 FPS | 6,847 FPS | 3,533 FPS |
| 1280 x 96 | 20,413 FPS | 13,268 FPS | 7,495 FPS |
| 320 x 96 | 20,413 FPS | 13,268 FPS | 7,495 FPS |
| 128 x 32 | 29,002 FPS | 21,231 FPS | 13,590 FPS |

CAMERA OVERVIEW

| CAMERA | |
|-------------|--|
| Imaging | 4096 x 2160 @ 1,397 FPS |
| Memory | 64GB, or 128GB |
| Record Time | 5.5 seconds (64GB), 11 seconds (128GB) at max resolution |
| Lens Mount | C, E, F, EF, MFT Plates Available |
| Backfocus | Field adjustable via included shim kit |
| IR Filter | 650nm, user removable |
| Display | 5" 800x480 touchscreen, 1000 nit daylight visible |
| Enclosure | Anodized CNC machined aluminum |
| Cooling | Active cooling, variable-speed fans |
| Dimensions | 188mm x 111mm x 53mm (7.40" x 4.37" x 2.08") w/o lens |
| Weight | 1.32 kg (2.91 lbs) without lens |

CAMERA SPECIFICATIONS - CHRONOS 4K12 HIGH-SPEED CAMERA

INPUTS/OUTPUTS

| | |
|-------------|---|
| Power Input | 12-24V 60W (5.5/2.5mm barreljack, positive tip) |
| Network | Gigabit Ethernet via USB-C Adapter WiFi via USB-C Adapter |
| Trigger | 3 trigger inputs / frame strobe outputs (4-pin 3.5mm TRRS Connector) Adjustable input threshold 0 to 6.6V. Included TRRS to BNC splitter cable accessory. |
| Video | HDMI output 4K @ 30 FPS or HD @ 60 FPS |
| USB | Dual USB Type C Ports USB-C Port 1: 3.2 Gen 1, 5 Gbps (PC or Peripheral) USB-C Port 2: 3.2 Gen 2x2, 20 Gbps (Peripheral, SSDs) |

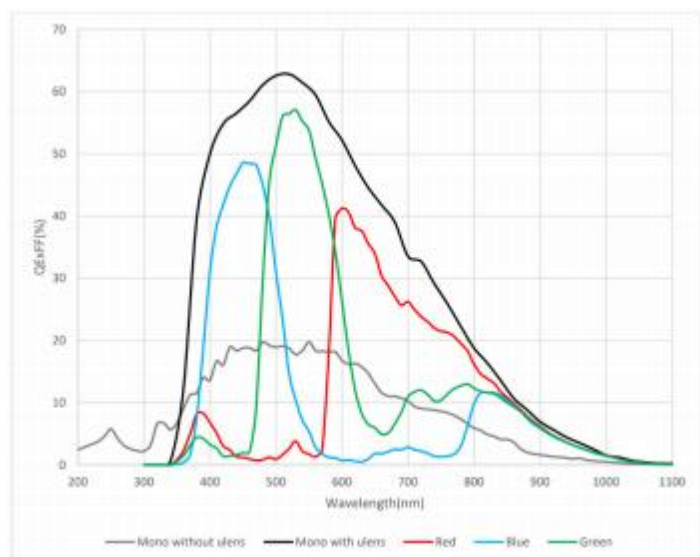
VIDEO FORMATS

| | |
|-----------------|---|
| Compressed | Standardized H.264 AVC, or H.265 HEVC MPEG-4 Video Files |
| RAW | Standard Adobe CinemaDNG raw files |
| TIFF | Standard TIFF raw files with timestamps |
| Storage Devices | Internal 1 TB NVMe SSD, SD Card, USB-C SSD, or SMB/NFS network drives |

IMAGE SENSOR

| | |
|-------------------|--|
| Resolution | 4096 x 2160 @ 1,397 FPS Maximum 128x32 @ 29,002 FPS Minimum |
| Speed | 11.8 Gigapixels per second |
| Dimensions | 20.74mm x 9.79mm (4/3" format, 10-Megapixel, 2x Crop Factor) |
| Pixel Pitch | 4.5um |
| Sensitivity (ISO) | Color - ISO 100 to 400 Mono - ISO 200 to 800 |
| Shutter | Electronic global shutter, 1/fps to 1us (1/1,000,000 s) |
| Dynamic Range | 11.3 stops (68 dB) in 12-bit mode |
| Bit Depth | 8-bit, 10-bit, or 12-bit User Selectable |

IMAGE SENSOR - QUANTUM EFFICIENCY



TRIGGER MODES

| | |
|-------------------|--|
| End Trigger | Records until a defined delay after trigger |
| Toggle | Starts and stops with button press |
| Exposure Trigger | External signal sets synchronization frame-rate |
| Shutter Gating | External signal sets the exposure synchronization and frame-rate |
| Frame Sync Output | Outputs a signal indicating its frame rate and exposure |

SOFTWARE

| | |
|---------|---|
| Control | Desktop, iOS, and Android Apps coming soon. Connect via optional Ethernet or WiFi adapters. |
| Stream | Live or Playback Mode network streaming via RTSP stream. |
| APIs | HTTP REST Interface |

NETWORK CONTROL

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|-----------------|--|
| Network Control | Through control apps or REST API via optional Ethernet or WiFi adapters. |
|-----------------|--|

RECORDING MODES

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|-------------|---|
| Normal | Records into the ring buffer. Once a trigger occurs, video can be reviewed and saved. |
| Segmented | Video memory is divided into segments, each recording as in the Normal mode above. Number of segments is user selectable. |
| Gated Burst | Frames are captured while trigger is active |

ASSISTIVE

| | |
|-----------|---|
| Focus Aid | Highlights sharp edges to aid focusing |
| Zebra | Rolling diagonal lines indicate clipped (overexposed) areas |
| Histogram | Graphically represent brightness and distribution of light in the image |
| Overlay | Displays frame and time information on top of footage |

ENVIRONMENTAL

| | |
|-----------------------|-----------------------------------|
| Operating Temperature | 0 °C to +40 °C (32 °F to +104 °F) |
|-----------------------|-----------------------------------|

REGULATORY COMPLIANCE

| | |
|--------------------|---|
| USA | FCC - 47 CFR Part 15 |
| Canada | ISED ICES-Gen Iss.1 & ICES-003 Iss.7 |
| EU / UK / AUS / NZ | CE EN IEC 61000-6-3:-2021, 61000-6-2:2019 |
| Korea | KS C 9610-6-3:2017, 9610-6-2:2019 |
| Japan | VCCI-CISPR32:2016 |

SERVICE & SUPPORT

Standard 1 year warranty. Optional 1 and 2 year extensions available. Chronos high-speed cameras benefit from free software updates, which offer continuous additions and improvements to in-camera features.

Support, tutorials, and software updates are available online at support.krontech.ca