CINEMATIC MOMENTS

AU-EVA1
COMPACT CINEMA CAMERA
The AU-EVA1 is a new cinema camera positioned between the Lumix GH5 4K mirrorless camera and the VariCam LT 4K cinema camera.

Create cinematic imagery thanks to both the newly-developed 5.7K Super 35 mm sensor and color science inherited from VariCam cinema cameras.

A native EF mount with electronic connectivity has been utilised, and opens up the choice of lenses for EVA1 to a great extent – be it cine, fixed focal, macro or zoom lenses depending on the nature of the shoot.

EVA1 records internally onto SD memory card at up to 4:2:2 10 bit, thus reducing the outlay on media costs.

Compact and lightweight 1.2 kg (2.65 lb) body.
A single 4K sensor has limitations in achieving a 4K image. Because a single sensor utilizes a Bayer pattern color filter array, the camera must take the limited color and resolution information and extrapolate a full 4K RGB image. This results in a loss of resolving power as well as color data.

The solution is to utilize a greater native number of photosites on the sensor that will yield more resolution and color information in the finished image. To deliver a full 4K finished image, a 5.7K Bayer pattern sensor is required. This is the new sensor design in the EVA1.

Panasonic’s mission is to offer cinematographers innovative technology to capture cinematic images that will engage audiences on multiple viewing platforms. EVA1’s newly developed Super 35 sensor offers high resolution and wide dynamic range that is future-proofed for all types of productions.

EVA1 contains a Super 35 (24.60 mm x 12.97 mm) sensor that captures 5.7K resolution. With an active resolution of 5720 x 3016, the EVA1 delivers more than 17.25 million photosites, nearly double the 8.8 million for 4K DCI (4096 x 2160). By starting at a higher native resolution, the 5.7K sensor yields a higher resolving image when down-sampled to 4K, UHD, 2K, or even 720p. Additionally, the increased color information results in a finer, more accurate finished image.

Dynamic range measures the luminance range that a digital camera can capture. The EVA1 delivers 14 stops of Dynamic Range, enabling fine gradation in exposure from bright to dark image areas.
CINEMATIC IMAGERY
Another unique feature of EVA1 is the dual-native ISO sensitivity, the technology that was first introduced in the flagship VariCam line-up of cinema cameras. It utilizes a process that allows the sensor to be read in a fundamentally different way, extracting more information without degrading the image. This results in a camera that can switch from a standard sensitivity to a high sensitivity with almost no increase in noise or other artifacts. Dual Native ISO gives cinematographers a greater variety of artistic choices as well as the ability to use less light on set, saving both time and money. The EVA1’s Dual Native ISOs are 800 and 2,500, which will allow cinematographers to shoot in almost any lighting environment.

The ability to capture accurate colors and rich skin tones is a must for any filmmaker. EVA1 imports the renowned colorimetry of the VariCam lineup of cinema cameras. The EVA1 contains V-Log/V-Gamut capture to deliver high dynamic range and broad colors. V-Log delivers a very flat image whilst maintaining all of the color information within the image. This means that there is a greater level of play when the images are put through post-production processes.

The Super 35 mm sensor achieves a wide color gamut known as V-Gamut, which is EVA1’s optimum color space and achieves a color space that is wider than BT.2020. V-Log has log curve characteristics that are somewhat reminiscent of negative film and V-Gamut delivers a color space even larger than film.
In camera recording, the EVA1 can capture in 4K (4096 x 2160), UHD (3840 x 2160), 2K (2048 x 1080), Full HD (1920 x 1080), and HD (1280 x 720). In a future firmware upgrade, EVA1 will offer ALL Intra compression (400 Mbps) for in camera recording and 5.7K RAW output to third party recorders.

Ideal for indie filmmakers, the EVA1 records to readily-available, lower-cost SD memory cards. With two SD memory card slots, you can capture footage either with Simul Rec (simultaneous dual record) or Relay Rec (continuous record). Loop Rec and Background Rec will be available with the future firmware update. There’s also Pre Rec, One Shot Record, which enables single frame video for stop motion capture, and Interval which are also available in the future upgrade.
Weighing only 1.2kg (2.65 lb, body-only) with a compact form factor [135 mm (W) x 133 mm (H) x 170 mm (D) | (5-5/16 inches x 5-1/4 inches x 6-11/16 inches) whilst there are a multitude of mounting holes across the camera body for building the camera up. The top-handle can also be removed, whilst the hand-grip can be repositioned or taken off completely to create a compact form factor ideal for rigging the camera into drones, gimbals and jibs.
The EVA1 offers high-speed Super 35 mm capture up to 59.94 fps/50 fps for 4K/UHD or up to 120 fps/100 fps for 2K/Full HD. Higher speed capture is possible up to 240 fps/200 fps by cropping the image area (4/3-type).
EVA1 offers dual balanced XLR audio inputs with Dolby Audio™ encoding. The HDMI and SDI video outputs are both 4K capable and each can be adjusted separately, allowing a HD feed to a viewfinder or an external monitor for example whilst a 4K feed can be sent to an outbound recorder or monitor. Timecode in and out are also supported. In a future firmware upgrade, EVA1 will offer 5.7K RAW output to 3rd party recorders.
**IR CINEMATOGRAPHY**

The EVA1 allows the infrared (IR) filter to be removed and replaced with a clear filter for extreme low-light conditions as a simple end-user configuration. Unique photographic effects and night vision imagery are possible with this control over infrared. In addition, these filters are electronically driven and wireless remote control* is also possible.

**EIS**

Electronic Image Stabilization (EIS) within the camera will counterbalance camera shake and blurring enabling smooth movement for handheld shooting.
REMOTE OPERATION

EVA1 will have a remote-control app for a tablet (iOS, Android) that enables users to control an EVA1 when the camera is on a camera crane, or remote location.*

* The optional AJ-WM50 Wireless Module is required. Other optional wireless modules will be updated accordingly on the website <http://pro-av.panasonic.net/en/>.
## GENERAL SPECIFICATION

**Power:**
- DC 7.28 V (Battery Operation)
- DC 12 V (AC adapter operation)

**Power Consumption:**
- 19 W (when LCD monitor is used)

**Operating Temperature:**
- 0 °C to 40 °C (32°F to 104°F)

**Operating Humidity:**
- 10% to 80% (relative humidity)

**Storage Temperature:**
- –20 °C to 60 °C (–4°F to 140°F)

**Weight:**
- Body: Approx. 1.2 kg (2.65 lb) (excluding accessories)
- Shooting: Approx. 2.05 kg (4.52 lb) (with accessories)

**Dimensions:**
- 135 mm (W) x 133 mm (H) x 170 mm (D) (5-5/16 inches x 5-1/4 inches x 6-11/16 inches)

## CAMERA UNIT

**Image Sensor:**
- Super 35 mm, MOS sensor

**Number of Pixels:**
- Total pixels: Approx. 20.49 megapixels, 6340 (H) x 3232 (V)
- Effective pixels: Approx. 17.25 megapixels, 5720 (H) x 3016 (V)

**Sensor Area and Max Frame Rate:**
- S35: 4K/UHD 60 fps/50 fps
- 2K/HD 120 fps/100 fps
- 4/3-type: 2K/HD 240 fps/200 fps

**Latitude:**
- 14 stop

**Log:**
- V-Log

**Gamma:**
- eV-Look Gamma (2 types)
- Video Gamma
- Hybrid Log Gamma (HLG)

**Gamut:**
- V-Gamut (V-Log) BT.2020 (HLG)

**EI Settings:**
- [ISO] mode:
  - NATIVE ISO: 800, 2500
  - 800 Base: 200 to 2000
  - 2500 Base: 1000 to 25600
- [dB] mode:
  - (Normal) –12 dB to 8 dB
  - (High) –8 dB to 20 dB

**Shutter Speed:**
- [deg] mode: 3.0 deg to 357.0 deg [0.5 deg step]
  - 12 presets
- [sec] mode: 1/24 to 1/8000 sec
  - 23.98p
  - 12 presets

**Color Temp:**
- ATW, AWB, 2000 K to 15000 K ±10.0 GMg
  - 12 presets

**Lens Mount:**
- EF mount

**Image Stabilization:**
- Electric Image Stabilization (EIS)

**Auto Focus:**
- One push auto focus

**ND Filter:**
- CLEAR, 0.6ND, 1.2ND, 1.8ND, Electrical driven

**IR Cut Filter:**
- USER assignable IR shooting [filter ON/OFF]

## MEMORY CARD RECORDER

**Recording Media:**
- SDHC memory card (4 GB to 32 GB)
- SDXC memory card (32 GB to 128 GB)

**Recording Slot:**
- SD memory card slot x 2

**Recording Resolution:**
- 4096 x 2160 (4K), 3840 x 2160 (UHD), 2048 x 1080 (2K), 1920 x 1080 (FHD), 1280 x 720 (HD)

**Recording System Frequency:**
- 59.94p, 50p, 29.97p, 25p, 24p, 23.98p
- 59.94p, 50p, 29.97p, 25p, 24p, 23.98p

**Other Rec Functions:**
- Simul Rec, Relay Rec, Loop Rec*1, Background Rec*

**Audio Input/Output**

**Internal Mic:**
- Stereo microphone

**INPUT1/2:**
- XLR (3-pin) x 2 (INPUT1/2), input high impedance, LINE/MIC/MIC +48 V (menu switchable)
- MIC: –40 dBu/–50 dBu/–60 dBu (menu switchable)
- LINE: –4 dBu/0 dBu (menu switchable)

**SDI OUT:**
- Linear PCM 2 CH

**HDMI:**
- Linear PCM 2 CH

**PHONES:**
- 3.5 mm stereo mini jack x 1

**Speaker:**
- 20 mm diameter, round x 1

## MEMORY CARD RECORDER

**Recording Media:**
- SDXC memory card (4 GB to 32 GB)
- SDXC memory card (32 GB to 128 GB)

**Recording Slot:**
- SD memory card slot x 2

**Recording Resolution:**
- 4096 x 2160 (4K), 3840 x 2160 (UHD), 2048 x 1080 (2K), 1920 x 1080 (FHD), 1280 x 720 (HD)

**Recording System Frequency:**
- 59.94p, 50p, 29.97p, 25p, 24p, 23.98p
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**Other Rec Functions:**
- Simul Rec, Relay Rec, Loop Rec*1, Background Rec*

## DIGITAL VIDEO

### Quantizing:
- MOV: 4:2:2 10 bit/4:2:0 8 bit
- AVCHD: 4:2:0 8 bit

### Video Compression Format:
- H.264/MPEG-4 AVC High Profile

## DIGITAL AUDIO

### Recording Audio Format:
- MOV: 48 kHz/24 bit, 2 CH, Linear PCM
- AVCHD: 48 kHz/16 bit, 2 CH, Dolby Audio™

### Headroom:
- 18 dB/20 dB (menu switchable)

## OUTPUT

### SDI OUT:
- BNC x 1, SDI REC REMOTE is supported
- 0.8 V [p-p] to 4.0 V [p-p], 10 kΩ
- 2 Slots Functions: Simul Rec, Relay Rec, Loop Rec*1, Background Rec*
- Other Rec Functions: Pre Rec, Interval Rec*1, One Shot Rec*1

### SDI OUT:
- 4096 x 2160: 59.94p, 50p, 29.97p, 25p, 24p, 23.98p
- 3840 x 2160: 59.94p, 50p, 29.97p, 25p, 24p, 23.98p
- 1920 x 1080: 59.94p, 50p, 29.97p, 25p, 24p, 23.98p
- 1280 x 720p: 59.94p, 50p
- 720 x 480: 59.94p
- 720 x 576: 50p

### HDMI:
- HDMI x 1, TypeA, HDMI REC REMOTE is supported, Viera Link is NOT supported
- 0.8 V [p-p] to 4.0 V [p-p], 10 kΩ
- 2 Slots Functions: Simul Rec, Relay Rec, Loop Rec*1, Background Rec*
- Other Rec Functions: Pre Rec, Interval Rec*1, One Shot Rec*1

### Audio Input/Output

**Internal Mic:**
- Stereo microphone

**INPUT1/2:**
- XLR (3-pin) x 2 (INPUT1/2), input high impedance, LINE/MIC/MIC +48 V (menu switchable)
- MIC: –40 dBu/–50 dBu/–60 dBu (menu switchable)
- LINE: –4 dBu/0 dBu (menu switchable)

**SDI OUT:**
- Linear PCM 2 CH

**HDMI:**
- Linear PCM 2 CH

**PHONES:**
- 3.5 mm stereo mini jack x 1

**Speaker:**
- 20 mm diameter, round x 1

## OTHER INPUT/OUTPUT

**TC IN/OUT:**
- BNC x 1 for IN/OUT (menu switchable)
- 1.0 V [p-p] to 4.0 V [p-p], 10 kΩ
- OUT: 2.0 V [p-p] ±0.5 V [p-p], low impedance

**LCD:**
- 40-pin (for connecting LCD monitor)

**REMOTE:**
- 2.5 mm Super Mini Jack

**USB 2.0 [HOST]:**
- Type-A, 4-pin for Wireless Module [AJ-WM50]

**EF Mounting Contact:**
- 8-pin

**DC IN 12 V:**
- DC 12 V EIAJ type 4

## LCD MONITOR

**Size:**
- 3.5-type LCD monitor (approx. 1,150,000 dots)

**Touch panel:**
- MENU control, Shooting assist functions

**Switches:**
- MIRROR (OFF, B/T, ROTATE)

## HAND GRIP

**Mounting Mechanism:**
- One touch rotatable/Detachable

**Switches:**
- REC, MENU, MULTI dial, User switch x 2

## INCLUDED ACCESSORIES

**Accessories:**
- Battery (5900 mAh), Battery charger, AC adapter, AC cable, Shoulder strap, Microphone holder, Microphone holder adapter, LCD monitor (with hood and mounting attachment), Handle, Grip, Grip belt, Mount cap

*1: Functions to be supported by firmware update.

* Dolby, Dolby Audio, and the double-D symbol are trademarks of Dolby Laboratories.

* Specifications are subject to change without notice.
## Recording Format and Recording Time

<table>
<thead>
<tr>
<th>Format</th>
<th>Pixel</th>
<th>Main Codec (bps)</th>
<th>Frequency Sampling Bitrate (average)</th>
<th>Recording Time (128 GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOV</td>
<td>4096 x 2160 (4K)</td>
<td>422ALL-I 400M</td>
<td>Update 29.97p, 24p, 25p, 23.98p</td>
<td>10 bit 400 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>422LongGOP 150M</td>
<td>Update 29.97p, 24p, 25p, 23.98p</td>
<td>10 bit 150 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>420LongGOP 150M</td>
<td>Update 29.94p, 50p</td>
<td>8 bit 150 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>420LongGOP 100M</td>
<td>Update 29.97p, 24p, 25p, 23.98p</td>
<td>8 bit 100 Mbps (VBR)</td>
</tr>
<tr>
<td>MOV</td>
<td>3840 x 2160 (UHD)</td>
<td>422ALL-I 400M</td>
<td>Update 29.97p, 24p, 25p, 23.98p</td>
<td>10 bit 400 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>422LongGOP 150M</td>
<td>Update 29.97p, 25p, 23.98p</td>
<td>10 bit 150 Mbps (VBR)</td>
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<td></td>
<td>420LongGOP 150M</td>
<td>Update 29.94p, 50p</td>
<td>8 bit 150 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>420LongGOP 100M</td>
<td>Update 29.97p, 25p, 23.98p</td>
<td>8 bit 100 Mbps (VBR)</td>
</tr>
<tr>
<td>MOV*</td>
<td>2048 x 1080 (2K)</td>
<td>422ALL-I 200M</td>
<td>Update 29.97p, 24p, 25p, 23.98p</td>
<td>10 bit 200 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>422All-I 100M</td>
<td>Update 29.97p, 24p, 25p, 23.98p</td>
<td>10 bit 100 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>422LongGOP 50M</td>
<td>Update 29.97p, 24p, 25p, 23.98p</td>
<td>10 bit 50 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>420LongGOP 100M</td>
<td>Update 29.94p, 50p</td>
<td>8 bit 100 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>420LongGOP 50M</td>
<td>Update 29.97p, 24p, 25p, 23.98p</td>
<td>8 bit 50 Mbps (VBR)</td>
</tr>
<tr>
<td>AVCHD</td>
<td>1920 x 1080 (FHD)</td>
<td>422ALL-I 200M</td>
<td>Update 29.94p, 50p</td>
<td>10 bit 200 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>422ALL-I 100M</td>
<td>Update 29.94p, 50p</td>
<td>10 bit 100 Mbps (VBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>422LongGOP 50M</td>
<td>Update 29.97p, 25p, 23.98p</td>
<td>8 bit 50 Mbps (VBR)</td>
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<td></td>
<td></td>
<td>420LongGOP 50M</td>
<td>Update 29.97, 25p, 23.98p</td>
<td>8 bit 50 Mbps (VBR)</td>
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<tr>
<td>AVCHD</td>
<td>1920 x 1080 (FHD)</td>
<td>PH</td>
<td>Update 23.98, 59.94i, 50i</td>
<td>8 bit 21 Mbps (VBR)</td>
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<td>HA</td>
<td>Update 59.94i, 50i</td>
<td>8 bit 17 Mbps (VBR)</td>
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<td></td>
<td>PM</td>
<td>Update 59.49m, 50p</td>
<td>8 bit 8 Mbps (VBR)</td>
</tr>
</tbody>
</table>

- **420** = Functions to be supported by firmware update. * SDXC memory card is required for MOV recording.
- **ALL-I** = Functions to be supported by firmware update.

## Available Memory Card

<table>
<thead>
<tr>
<th>Format</th>
<th>Memory Card Type</th>
<th>Bitrate/Recording Function</th>
<th>Speed Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOV</td>
<td>SDXC</td>
<td>400 Mbps</td>
<td>Video Speed Class V60 or faster</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200 Mbps</td>
<td>Video Speed Class V30 or faster</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 Mbps</td>
<td>UHS Speed Class 3 or faster</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 Mbps</td>
<td>UHS Speed Class 1 or faster</td>
</tr>
<tr>
<td>AVCHD</td>
<td>SDHC/SDXC</td>
<td>50 Mbps</td>
<td>UHS Speed Class 10 or faster</td>
</tr>
</tbody>
</table>

## Available Battery Pack

<table>
<thead>
<tr>
<th>Battery</th>
<th>Voltage/Capacity</th>
<th>Charge time*1</th>
<th>Continuous shooting time*2</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG-VBR59 (Bundled)</td>
<td>7.28 V 5900 mAh /43 Wh</td>
<td>Approx. 3 hour 20 min.</td>
<td>Approx. 2 hours 50 min.</td>
</tr>
<tr>
<td>AG-VBR89G</td>
<td>7.28 V 8850 mAh /64 Wh</td>
<td>Approx. 4 hours</td>
<td>Approx. 4 hours 15 min.</td>
</tr>
<tr>
<td>AG-VBR118G</td>
<td>7.28 V 11800 mAh /86 Wh</td>
<td>Approx. 4 hour 40 min.</td>
<td>Approx. 5 hours 40 min.</td>
</tr>
<tr>
<td>WW-VBD58</td>
<td>7.2 V 5800 mAh /42 Wh</td>
<td>Approx. 5 hour 20 min.</td>
<td>Approx. 2 hours 40 min.</td>
</tr>
</tbody>
</table>

- *1: When using bundled battery charger.
- *2: "Continuous shooting time" is when you use this machine in the following condition (Menu setting is factory preset, Have LCD monitor and grip attached, No cable is connected to outputs). Under other conditions, continuous shootable time becomes shorter.
- *Specifications are subject to change without notice.