AVCHD Memory Card Camera Recorder

Geared for the Mobile Shooter
A New Dimension in Low-Light Shooting and Professional Functions.

- Built-in LED video light with a diffusion filter and a color conversion filter.
- 29.5 mm wide-angle* and 20x zoom lens.
- 5-axis hybrid O.I.S.+(Optical Image Stabilizer).
- Intelligent AF achieves superior focus speed, excellent stability and high tracking performance.
- 3.0-type slide-retractable LCD with touch operation.
- Supports AVCHD progressive recording PS mode.
- Supports MP4/MOV FHD 50Mbps high bit rate recording.
- Dual SD Memory Card slots achieves relay and simultaneous recording to dual memory cards.
- Professional designed of sturdy handle, tiltable viewfinder with eyecup and three manual rings.
- Two-channel XLR audio input terminals.

* 35mm camera equivalent

AG-AC30 Optional Accessories

- **AG-VBR89G** Battery Pack (8,850 mAh)
- **AG-VBR59** Battery Pack (5,900 mAh)
- **AG-BRD50** Battery Charger
- **VW-VBD58** Battery Pack (5,800 mAh)
- **AG-B23** Battery Charger
- **AG-MC200G** XLR Microphone
- **SDHC/SDXC Memory Card**
### AG-AC30

#### General
- **Power Supply:** DC 7.2 V (Battery) / DC 12 V (AC Adaptor)
- **Power Consumption:** 11.7 W (Recording) / 27.4 W (Charging)
- **Weight:** Approx. 1500 g (33.1 lb) without battery and SD Memory Cards
- **Dimensions:** 170 mm (W) x 170 mm (H) x 335 mm (D) (6.69 inches x 6.69 inches x 13.2 inches)

#### Lens
- **F Value:** F1.8 (WIDE)/F3.6 (TELE)
- **Zoom:** Optical Zoom: 20x
- **Digital Zoom:** 2x / 5x / 10x
- **Focal Length:** 4.08 mm to 81.6 mm
- **35 mm Film Camera Equivalent:** (Motion Image/Still Image) 29.5 mm to 612 mm [16:9]
- **Filter Diameter:** 49 mm

#### Camera Section
- **Image Sensor:** 1/3.1-type BSI MOS Sensor
- **Effective Pixels:** 6.03 megapixels [16:9]
- **Standard Illumination:** 1400 lx
- **Minimum Illumination:**
  - [59.94 Hz model]: 1.4 lx (Super Gain 36 dB, Shutter 1/30)
  - [50 Hz model]: 1.2 lx (Super Gain 36 dB, Shutter 1/25)
- **White Balance:** Auto/3200 K/5600 K/VAR (2000 K to 15000 K) / Ach Fixed / Bch Fixed
- **Shutter Speed:**
  - [59.94 Hz model]: 60p/60i: 1/8 to 1/8000, 23.98: 1/6 to 1/8000
  - [50 Hz model]: 50p/50i: 1/8 to 1/8000, Super Slow: 1/120 to 1/8000
- **Super Slow Recording:**
  - [59.94 Hz model]: Shooting Frame Rate: FHD 120 fps, Slow Motion Effect: 1/2 speed, 1/4 speed, 1/5 speed
  - [50 Hz model]: Shooting Frame Rate: FHD 100 fps, Slow Motion Effect: 1/2 speed, 1/4 speed

#### Recording Section
- **Recording Media:** SDHC/SDXC Memory Card
- **Recording Format:** MOV/MP4/AVCHD: AVCHD Progressive, MPEG-4 AVC/H.264
- **Audio Compression:** MOV: LPCM (2 ch)/MP4: LPCM (2 ch)/AVCHD: Dolby Digital (2 ch)
- **Thumbnail Display:** 20 thumbnails/page, 9 thumbnails/page, 1 thumbnail/page
- **Microphone:** Stereo Microphone
- **Speaker:** Dynamic Type

#### Recording Mode of 59.94 Hz Model

<table>
<thead>
<tr>
<th>Recording Mode</th>
<th>Recording Video Format</th>
<th>Bit Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOV/MP4 FHD</td>
<td>1920 x 1080/59.94p/29.97p/23.98p/59.94i</td>
<td>50 Mbps</td>
</tr>
<tr>
<td>PS</td>
<td>1920 x 1080/59.94i</td>
<td>25 Mbps</td>
</tr>
<tr>
<td>PH</td>
<td>1920 x 1080/59.94/23.98p</td>
<td>21 Mbps</td>
</tr>
<tr>
<td>HA</td>
<td>1920 x 1080/59.94</td>
<td>17 Mbps</td>
</tr>
<tr>
<td>HE</td>
<td>1440 x 1080/59.94</td>
<td>5 Mbps</td>
</tr>
<tr>
<td>PM</td>
<td>1280 x 720/59.94</td>
<td>8 Mbps</td>
</tr>
<tr>
<td>SA</td>
<td>720 x 480/59.94 (SIDE CROP/SQUEEZE)</td>
<td>9 Mbps</td>
</tr>
</tbody>
</table>

#### Recording Mode of 50 Hz Model

<table>
<thead>
<tr>
<th>Recording Mode</th>
<th>Recording Video Format</th>
<th>Bit Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOV/MP4 FHD</td>
<td>1920 x 1080/50.00p/25.00p/50.00i</td>
<td>50 Mbps</td>
</tr>
<tr>
<td>PS</td>
<td>1920 x 1080/50.00i</td>
<td>25 Mbps</td>
</tr>
<tr>
<td>PH</td>
<td>1920 x 1080/50.00/1080/30.00i</td>
<td>21 Mbps</td>
</tr>
<tr>
<td>HA</td>
<td>1920 x 1080/50.00i</td>
<td>17 Mbps</td>
</tr>
<tr>
<td>HE</td>
<td>1440 x 1080/50.00i</td>
<td>5 Mbps</td>
</tr>
<tr>
<td>PM</td>
<td>1280 x 720/50.00p</td>
<td>8 Mbps</td>
</tr>
<tr>
<td>SA</td>
<td>720 x 576/50.00i (SIDE CROP/SQUEEZE)</td>
<td>9 Mbps</td>
</tr>
</tbody>
</table>

#### Recording Time

<table>
<thead>
<tr>
<th>Recording Mode</th>
<th>Bit Rate</th>
<th>32 GB Memory Card*</th>
<th>64 GB Memory Card*</th>
<th>128 GB Memory Card*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOV/MP4 FHD</td>
<td>50 Mbps</td>
<td>Approx. 1 hour 20 min.</td>
<td>Approx. 2 hours 40 min.</td>
<td>Approx. 5 hours 20 min.</td>
</tr>
<tr>
<td>PS</td>
<td>25 Mbps</td>
<td>Approx. 3 hours 20 min.</td>
<td>Approx. 5 hours 20 min.</td>
<td>Approx. 11 hours</td>
</tr>
<tr>
<td>PH</td>
<td>21 Mbps</td>
<td>Approx. 3 hours 30 min.</td>
<td>Approx. 5 hours 30 min.</td>
<td>Approx. 12 hours</td>
</tr>
<tr>
<td>HA</td>
<td>17 Mbps</td>
<td>Approx. 4 hours 10 min.</td>
<td>Approx. 8 hours 30 min.</td>
<td>Approx. 17 hours</td>
</tr>
<tr>
<td>HE</td>
<td>5 Mbps</td>
<td>Approx. 13 hours 40 min.</td>
<td>Approx. 27 hours 30 min.</td>
<td>Approx. 56 hours</td>
</tr>
<tr>
<td>PM</td>
<td>8 Mbps</td>
<td>Approx. 8 hours 30 min.</td>
<td>Approx. 17 hours 10 min.</td>
<td>Approx. 35 hours</td>
</tr>
<tr>
<td>SA</td>
<td>9 Mbps</td>
<td>Approx. 8 hours</td>
<td>Approx. 16 hours 30 min.</td>
<td>Approx. 34 hours</td>
</tr>
</tbody>
</table>

*These times are approximations. *A Class 4 or higher SDXC/SDHC Memory Card is required for AVCHD recording. A Class 10 or higher, or UHS Speed Class 1 or higher SDXC/SDHC Memory Card is required for MP4/MOV 50Mbps recording. A UHS Speed Class 3 or higher SDXC/SDHC Memory Card is required for Super Slow recording. (The use of a Panasonic SDXC/SDHC Memory Card is recommended.)
AG-UMR20
Memory Card Portable Recorder

“POVCAM” with a Compact, Lightweight, Free Style Shooting and IP Networking Capability

• Light weight, handy size. Improved recorder operation with a touch-panel monitor and large buttons.
• Capable of battery drive and DC12V power supply. (Equipped with an AC adaptor.)
• LAN terminal for IP streaming and IP control. Recorded image files can be transferred to an FTP server.
• High quality FHD/4K (UHD)*1 image acquisition are supported.
• Equipped with double SD Memory Card Slots, enabling Relay Recording with two memory cards to extend the recording time (SDXC/SDHC Memory Card supported).*2
• Two remote terminals provide fingertip control of Rec Start/Stop, Zoom, focus and iris.
• 3G-SDI input/output, HDMI output and a USB 2.0 connector.
• Time stamp and repeat playback.
• Waveform Monitor (WFM) and Vector Scope display (LCD only).

AG-UCK20GJ
Compact Camera Head (Special Option for the AG-UMR20)

Angle Free, High Quality Shooting with 29.5 mm Wide-Angle Optical 20x Zoom Lens

• Compact, lightweight design and remote operation*3 allow the camera to be installed in places and angles where it previously couldn’t, for free-style operation.
• Equipped with a 29.5 mm wide-angle 20x optical zoom lens.
• 16-axis independent color correction function allows the fine color adjustment required in image production applications.
• Five-axis hybrid (optical and electronic) image stabilizer (HD mode only).
• The optical ND filter can be manually switched.
• Equipped with an Infrared (IR) Shooting mode.
• Equipped with a built-in microphone for recording both images and sounds.
• Scan Reverse mode (horizontal/vertical inversion) is equipped for shooting with a ceiling-mount.

*1: 4K acquisition is possible only when connected to Compact Camera Head. 4K refers to UHD (3840 x 2160) resolution. The maximum resolution in 4K shooting mode via HDMI/SDI output is FHD (1920 x 1080) 59.94i/50i. *2: Regardless of the memory card and recording mode, continuous recording that exceeds 10 hours is stopped and automatically restarted, causing the recording to stop for several seconds. *3: Requires the Camera Head Option Cable AG-C20003G/C20020G. *4: Audio input can not be used when a compact camera head is connected.
**Surgical Image Recording System (medical specifications)**

**AG-MDR25**
Memory Card Portable Recorder

**AG-MDC20GJ**
Compact Camera Head (Special Option for the AG-MDR25)

- **Compact Portable Recorder System Suitable for Recording High-Quality Medical Video**
  - Compact, lightweight, free-style shooting inherited from the 1st generation POVCAM.
  - Excellent network operation through IP remote and IP streaming.
  - High-quality, high-resolution image production for medical recording.

**Medical Functions**
*(add with full functions of black model AG-UMR20/UCK20GJ)*
- Recorder controls are covered with a membrane sheet for easy cleaning with an ethanol disinfectant.
- Surgical light mode for recording under surgical lamps, and 16-axis independent color correction function.
- Optical ND filter ideal for bright surgical lights (manual switchable).
- Lens protector (MC Protector/Accessory) for the front panel Compact Camera Head is included.

*1: 4K acquisition is possible only when connected to Compact Camera Head. 4K refers to UHD (3840 x 2160) resolution. The maximum resolution in 4K shooting mode via HDMI/SDI output is FHD (1920 x 1080) 59.94i/50i. *2: Requires the Camera Head Option Cable AG-C20003G/C20020G.*

**Note:** Regardless of the memory card and recording mode, continuous recording that exceeds 10 hours is stopped and automatically restarted, causing the recording to stop for several seconds. Audio input can not be used when a compact camera head is connected.

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**POVCAM-Compatible PC Software** *(Free of Charge)*

**PTZ Control Center**
Images from multiple LAN-connected POVCAMs can be controlled (Focus, Iris, Zoom, Gain, White Balance, Shutter, ND Filter, and Rec Start/Stop) while they are monitored on a PC screen.

**PTZ Virtual USB Driver**
This driver allows LAN-connected POVCAMs to be used as USB cameras. This is helpful for network distribution and conferences. Up to 5 POVCAMs can be registered.

Download Site: https://pro-av.panasonic.net/en/products/ptz_software/index.html

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**AG-UMR20/AG-MDR25 Optional Accessories**

- **AG-VBR118G**
  - Battery Pack (11,800 mAh)

- **AG-VBR89G**
  - Battery Pack (8,850 mAh)

- **AG-VBR59**
  - Battery Pack (5,900 mAh)

- **AG-B23**
  - Battery Charger

- **AG-BRD50**
  - Battery Charger

- **VW-VBD58**
  - Battery Pack (5,800 mAh)

- **AG-C20003G**
  - 3 m (9.84 ft)

- **AG-C20020G**
  - 20 m (65.62 ft)

- **SDXC/SDHC Memory Card**
AG-UMR20/AG-MDR25

**General**

- **Power:** DC 7.28 V (with battery), DC 12 V (with AC adaptor)
- **Power Consumption:** In stand-alone condition:
  - 1.1 A (with battery), 0.7 A (with AC adaptor)
  - 2.2 A (with battery), 1.4 A (with AC adaptor)
- **Operating Temperature:** 0 °C to 40 °C (32 °F to 104 °F)
- **Operating Humidity:** 10 % to 80 % (no condensation)
- **Weight:** Approx. 590 g (1.3 lbs)
- **Dimensions:** 100 mm (W) x 53.5 mm (H) x 140 mm (D)

**Memory Card Recorder**

- **Recording Media:** SDXC Memory Card (48 GB to 128 GB), SDHC Memory Card (4 GB to 32 GB)
- **Recording Slot:** 2 Slots
- **System Format:** 59.94 Hz / 50.00 Hz
- **Motion Recording:**
  - Recording system: MP4, AVCHD
  - Recording mode/Recording time: Please see page 60
  - "Recording Format" table
- **Still Picture Recording:**
  - Recording system: JPEG (DCF/Exif2.2)

**Digital Video/Digital Audio**

- **Output Video Signal:** 8 bit 4:2:2
- **Recording Video Signal:** 8 bit 4:2:0
- **Video Compression:** MP4: MPEG-4, AVCHD: AVC/H.264 High Profile
- **Audio Compression:** MP4: LPCM, AVCHD: Dolby Audio
- **Headroom:** 12 dB

**SDI IN:**

- BNC x 1, 0.8 V [p-p], 75 Ω, 3 G/1.5 G HD SDI supported
- Input format:
  - 1080/59.94p LEVEL-A/LEVEL-B
  - 1080/59.94p LEVEL-A/LEVEL-B
  - 1080/29.97p/25/23.98p/23.98p
  - 1080/59.94p/50, 720/59.94p/50

**SDI OUT:**

- BNC x 1, 0.8 V [p-p], 75 Ω, 3 G/1.5 G HD SDI supported
- Output format: same as input format

**HDMI OUT:**

- Type A connector x 1, VIERA Link not supported
- Output format:
  - 2160/29.97p/25/23.98p, 1080/59.94p/50p
  - 29.97p/25/23.98p/50p/29.97p/25/23.98p/50p
  - 720/59.94p/50, 480/59.94p, 576/50

**Audio Input/Output**

- **MIC/LINE IN:**
  - 3.5 mm diameter, stereo mini jack (MIC IN and LINE IN)
  - MIC: –60 dBV (sensitivity –60 dBV equivalent, 0 dBV = 1/Pa/1 kHz), plug in power supported
  - LINE: –10 dBV
- **SDI OUT:**
  - 2 CH (LPCM), Gain: 0 dB/–6 dB/–12 dB (selectable menu)
- **HDMI OUT:**
  - 2 CH (LPCM)
- **Headphone:**
  - 20 mm diameter, stereo mini jack x 1

**External Terminal**

- **CAMERA:** 20 pin dedicated interface
- **LAN:** IP control LAN connector (RJ-45)
- **REMOTE:**
  - 2.5 mm diameter stereo mini jack x 1 (ZOOM, S/S)
  - 3.5 mm diameter mini jack x 1 (FOCUS, IRIS)
- **USB 2.0:**
  - Type Mini-B connector, mass storage (read/write)
- **DC IN 12 V:** DC 12 V (11.4 V to 12.6 V) EI AJ Type 4

**Monitor**

- **LCD Monitor:** 3.5-type LCD monitor, approx. 1,150,000 dots

**Network**

- **Video Compression:** Motion JPEG, MP4: MPEG-4, AVCHD: AVC/H.264 High Profile
- **Audio Compression:** AAC-LC (48kHz, 16 bit, 2 CH, 128 kbps)
- **Transfer Mode:**
  - Resolution 640 x 360:
    - Frame rate (59.94 Hz): 30 fps, 15 fps
    - Frame rate (50.00 Hz): 25 fps
  - Resolution 3840 x 2160/640 x 360:
    - Frame rate (59.94 Hz): 30 fps, 15 fps
    - Frame rate (50.00 Hz): 25 fps
  - Resolution 1920 x 1080/1280 x 720:
    - Frame rate (59.94 Hz): 60 fps, 30 fps
  - Frame rate (50.00 Hz): 50 fps, 25 fps

**Supported OS**

- **Windows:**
  - Microsoft® Windows 10 (32 bit/64 bit) Pro
  - Microsoft® Windows 7 (32 bit/64 bit)
  - Internet Explorer 11
- **Mac:**
  - macOS 10.12, OS X v10.11, Safari 10

**Supported Controller**

- **Controller:** AW-RP50, AW-RP120G, AK-HRP200G

**AC Adaptor**

- **Rated Input Voltage:** AC 100 V – 240 V, 50 Hz/60 Hz, 1.2 A
- **Input Capacitance:** 79 VA (AC 100 V), 99 VA (AC 240 V)
- **Rated Output:** DC 12 V, 3.0 A
- **Operating Temperature:** 0 °C to 40 °C (32 °F to 104 °F)
- **Operating Humidity:** 10 % to 90 % (no condensation)
- **Weight:** Approx. 225 g (0.496 lbs)
- **Dimensions:** 115 mm (W) x 37 mm (H) x 57 mm (D)

**Specs:**

- 1: AG-UMR20 option camera head is AG-UCK20GJ. AG-MDR25 option Camera head is AG-MDC20GJ.
- 2: By the conditions, the frame rate is lower than setting.
- 3: STP (Shielded Twisted Pair) recommend.
- 4: Windows XP Compatible Mode cannot be used.
- 5: Microsoft® Edge cannot be used.
- 6: Depending on a model, upgrade is required.
AG-UCK20GJ/AG-MDC20GJ

General

Power: DC 9 V (supplied from the Portable Recorder)

*AG-UCK20GJ is supplied from AG-UMR20.

*AG-MDC20GJ is supplied from AG-MDR25.

Power Consumption: 0.6 A

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

Operating Humidity: 10% to 80% (no condensation)

Weight: AG-UCK20GJ/AG-MDC20GJ:
approx. 325 g (0.717 lbs)
AG-MDC20GJ (including protector):
approx. 333 g (0.734 lbs)

Dimensions: AG-UCK20GJ/AG-MDC20GJ
(excluding protrusion):
64 mm (W) x 72 mm (H) x 131 mm (D)
(2-17/32 inches x 2-7/32 inches x 5-1/2 inches)
AG-MDC20GJ (including lens protector):
64 mm (W) x 72 mm (H) x 134.5 mm (D)
(2-17/32 inches x 2-7/32 inches x 5-5/32 inches)

Camera

Pickup Device: 1/2.3-type MOS solid state image sensor

Total pixels: 4168 x 3062
(approx. 12.76 megapixels)

Lens: Optical image stabilizer lens

Zoom: optical 20x motorized zoom

F value: F1.8 to F3.6,

Focal length: f= 4.08 mm to 81.6 mm

35 mm conversion: 29.5 mm to 612.0 mm

(Hybrid O.I.S. mode “OFF”)

Filter diameter: 49 mm,

ND filter (built-in): CLEAR, 1/4, 1/16, 1/64

Shortest shooting distance:
1.5 m (4.9 ft) at zoom range,
3 cm (0.1 ft) at wide angle

IR cut filter:
incorporates the ON/OFF control function

Zoom: i. Zoom: x30 (HD), x22 (4K)

Digital zoom: x1.4, x2, x4, x6, x8

Image Stabilizer: Optical image stabilizer (HD/4K)

5-Axis hybrid image stabilizer (HD)

Gain Setting: Automatic, manual 0 dB to 30 dB (1 dB step),
Super Gain 33 dB, 36 dB

*At auto mode, 3 dB to 30 dB (3 dB steps) can be selected with AGC limit setting.

White balance: ATW, ATW LOCK, AWB A, AWB B,
P3200K, P5600K, VAR (2000 K to 15000 K)

Recording Format (AG-UMR20/AG-MDR25 Memory Card Portable Recorder)

<table>
<thead>
<tr>
<th>Recording Mode</th>
<th>Image Size</th>
<th>Bit Rate</th>
<th>Frame Rate</th>
<th>Audio</th>
<th>Recording Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>59.94 Hz</td>
<td>50.00 Hz</td>
<td></td>
</tr>
<tr>
<td>MP4*1</td>
<td>4K</td>
<td>3840 x 2160</td>
<td>50 Mbps (VBR)</td>
<td>29.97p 23.98p</td>
<td>25p</td>
</tr>
<tr>
<td>PS</td>
<td>1920 x 1080</td>
<td>25 Mbps (VBR)</td>
<td>59.94p</td>
<td>50p</td>
<td>Dolby Audio 384 kbps</td>
</tr>
<tr>
<td>PH</td>
<td>21 Mbps (VBR)</td>
<td>59.94i</td>
<td>50i</td>
<td>Dolby Audio 256 kbps</td>
<td>Approx. 17 hours</td>
</tr>
<tr>
<td>HA</td>
<td>17 Mbps (VBR)</td>
<td>59.94i</td>
<td>50i</td>
<td>Dolby Audio 256 kbps</td>
<td>Approx. 56 hours</td>
</tr>
<tr>
<td>HE</td>
<td>1440 x 1080</td>
<td>5 Mbps (VBR)</td>
<td>59.94i</td>
<td>50i</td>
<td>Dolby Audio 384 kbps</td>
</tr>
<tr>
<td>PH</td>
<td>1280 x 720</td>
<td>21 Mbps (VBR)</td>
<td>59.94p</td>
<td>50p</td>
<td>Dolby Audio 384 kbps</td>
</tr>
<tr>
<td>PM</td>
<td>8 Mbps (VBR)</td>
<td>59.94p</td>
<td>50p</td>
<td>Dolby Audio 256 kbps</td>
<td>Approx. 35 hours</td>
</tr>
</tbody>
</table>

*1: When using optional Camera Head. *2: When continuous recording exceeds 10 hours, the recording is stopped and automatically restarted approximately each 10 hours, causing the recording to stop for several seconds.