# JVC

# GY-LS300
## 4K Super 35 camcorder

A handheld 4K Super 35 professional camcorder that offers filmmakers the flexibility
to use high-end cinema lenses or affordable glass to capture 2K/4K footage

# GY-LS300
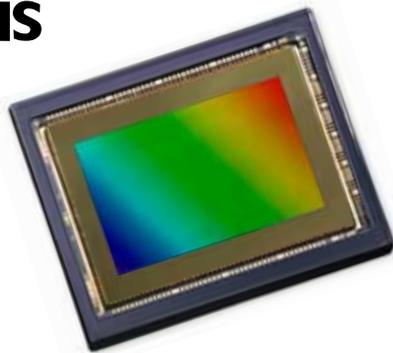
4K Super 35 camcorder



# Cinematic Excellence

Compact, convenient, and ultra high definition, JVC's new GY-LS300 is equipped with a 4K Super 35 CMOS sensor and uniquely accommodates a wide range of cinema and photographic lenses and adapters for dazzling cinematic effects. Create hours of pristine recordings on SDHC/SDXC media in a variety of image formats including 4K Ultra HD, Full HD with 4:2:2 sampling, SD and web friendly proxy formats. Its dual codec design allows you to make 2 copies of your program simultaneously. You can even stream live HD over the internet to content delivery networks such as USTREAM while recording full HD.

Conventional DSLR cameras simply can't match the high reliability, long recording time and ergonomics provided by JVC's GY-LS300. No other removable lens video camera offers this much flexibility in such a compact, easy-to-handle form factor.

# 4K Super 35 CMOS image sensor

## Super 35

## Super 35 Optical Format

The GY-LS300 features a JVCKENWOOD AltaSens 4K CMOS Super 35 image sensor, a premium solution for uncompromised cinema production, ultra-clear broadcast video, as well as full resolution 4K video. The Super 35 sensor coupled with the camera's Micro Four Thirds mount offers professionals unprecedented flexibility in achieving creative photographic effects, such as the above illustrated shallow depth of field "bokeh" effect.

**AltaSens**
*A JVCKENWOOD Company*

# Professional Versatility

## Micro Four Thirds Lens Mount

The matching of our Super 35 sensor and Micro Four Thirds (MFT) lens mount makes for a brilliant marriage between high-end cinematic imagery and affordable glass.  Dozens of high quality Micro Four Thirds lenses are readily available and require no adapter.

Thanks to the short flange focal distance (slightly less than 20mm) most cinema lenses can be adapted for use.  Various mount adapters are available, including PL mount, Canon EF mount, Nikon, and C-Mount.  The mount's electrical connections are compatible with many auto focus, iris and power zoom lenses—even when using an adapter.

One important difference from most Micro Four Thirds cameras is that the GY-LS300 uses a Super 35 imager—approximately 35% larger than a standard MFT imager.  JVC's mount provides full coverage of the imager meaning that Super 35 lenses may be used without worry of vignetting.  In fact, a number of S35 lenses are available that do not require an adapter.  For the professional on a budget, having a camera this versatile can literally save thousands of dollars in avoided new lens purchases.

*Rokinon Super 35 lenses with integrated MFT mount*

## Unparalleled Flexibility

Most people would assume that the Super 35 sensor (large) and an MFT mount (small) is a mismatch being the MFT sensor is 26% smaller than the Super 35 sensor.  But, where the JVC GY-LS300 is concerned that is simply *not true!* How?  It's easy, the GY-LS300 is compatible with a wide array of lens mounts enabling photographers the ability to choose just the right lens, with the perfect aperture, and choice field of view for any scene.  And then, JVC's unique Variable Scan Mapping technology maintains the native angle of view for any and all compatible lenses!

*Optional adapters like these from Metabones enable the GY-LS300 to utilize a plethora of PL and EF Lenses*

# Variable Scan Mapping

## Native Field of View for Any Lens

Imagine having a 4K video camera that could utilize any number of lenses, of various formats and sizes, and the camera just knew how to properly map the pixels on the sensor chip to properly frame your lens of choice. Now, stop imagining.  Thanks to the revolutionary technology we call Variable Scan Mapping, VSM for short, the GY-LS300 lets you choose the lens you want as it enables the camera to maintain the native angle of view for a large variety of lenses including many popular Super 35, MFT and Super 16.

How does it work?  With the right third-party adapter and lens, VSM intelligently remaps the pixels on the sensor chip in accordance with the native field of view of the lens so that the pixels fill the entire picture frame—thereby eliminating vignetting.  And that means, thanks to VSM, professional cinematographers can actually use high-end, large format cinema 35 lenses on a handheld camera that will correctly frame those lenses!

The images below illustrate how VSM maximizes the pixels on the sensor chip to accommodate common lens sizes and maintain their original field of view.
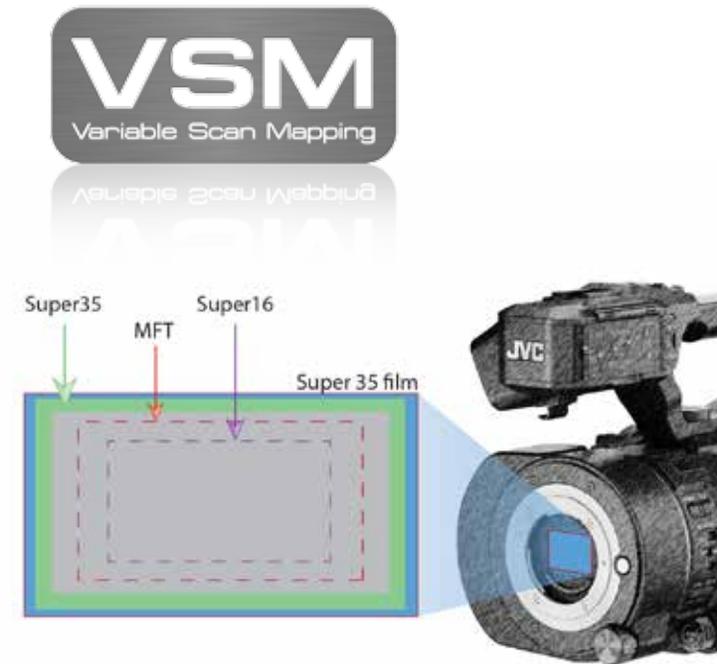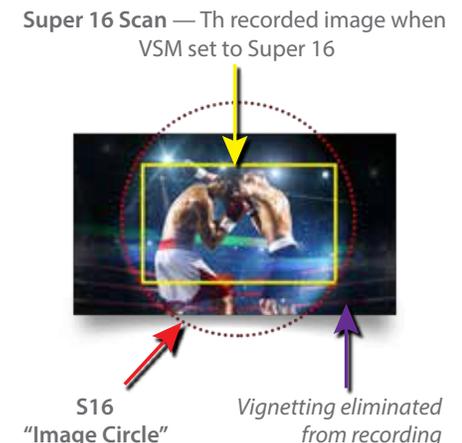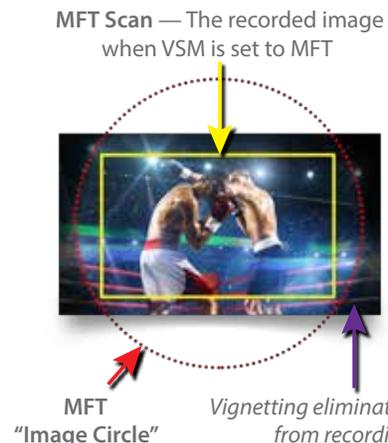
## *JVC Exclusive Variable Scan Mapping Eliminates Vignetting*
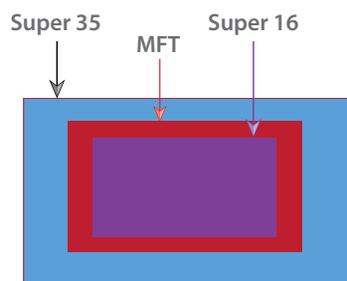
*Scan Mapping can be adjusted to accommodate any lens eliminating vignetting while maintaining the original FOV (Field of View)*

*A Super 35 lens records just as the image would appear on Super 35 film*

**MFT Scan** — The recorded image when VSM is set to MFT

**MFT "Image Circle"**  *Vignetting eliminated from recording*

**Super 16 Scan** — Th recorded image when VSM set to Super 16

**S16 "Image Circle"**  *Vignetting eliminated from recording*

# Ultra HD 4K Recording at 150Mbps and Live Output

The GY-LS300 was built to deliver stunning, life-like 4K Ultra HD (3840 x 2160) video in a compact form-factor, making it versatile for a wide range of applications.  With 4x the resolution of Full HD, the video quality of this 4K camera is better in every way—it achieves greater detail, truer colors, and overall amazing footage.  And now, working with 4K has never been easier! Insert an SDHC/SDXC (UHS-I Speed class 3) memory card and record hours of 4K material.  Recordings are made using the Quicktime (.MOV) file format and are compatible with many popular editing systems.  Connect a 4K Ultra HD monitor with a single HDMI cable, and view the camera's live 4K signal. You can also play back recorded files directly from the camera.

## Full HD 4:2:2 Recording at 50Mbps

The ability to record H.264 4:2:2 24-60p at 50 Mbps makes the GY-LS300 an ideal camera for broadcasting and cinematic production houses alike. The color accuracy of 4:2:2 enables the GY-LS300 to deliver exceptional color resolution even when images are in sharp contrast to the background which is particularly useful when strong colors are in contrast to bright backgrounds or in green screen uses.

**4:2:2 60p 50Mbps**

## Virtually Lossless H.264 50Mbps Recording

The GY-LS300 is also equipped with the H.264 Extreme-High Quality (XHQ) 50Mbps (MOV) recording mode used in HD SLRs. MPEG-4 AVC/H.264 offers approximately twice the compression efficiency of conventional codecs, and offers superior motion prediction, so even at the same bit rate it provides a smooth and detailed picture with virtually no block noise even when recording rapid action sequences. Added to this, the 50Mbps bit rate is high enough to support full HD 1920 x 1080 encoding in 24-60p or 50i/60i, resulting in stunningly detailed HD images.

**H.264**

## Web-friendly (Proxy) File Formats

Lower resolution H.264 files (480 x 270p, 960 x 540p, 720/480i, 720/576i) may be recorded simultaneously with full HD. These files are significantly smaller than HD files, and thus are very suitable for immediate posting to the web. A file recorded in the 960 x 540 mode is approximately 1/10th the size of a full HD file recorded at 35 Mbps, and therefore takes a fraction of the time to FTP from the camera and to post. The smaller files may be quickly imported to an iPad for easy editing using iMovie or Pinnacle Studio. Transporting video to the web or back to the studio has never been faster. With the GY-LS300, it is also possible to create SD and HD files simultaneously.

# Recording Capabilities

## Dual SDHC/SDXC Card Slots

The GY-LS300 is designed to create hours of recordings on affordable non-proprietary SDHC/SDXC media in 4K Ultra HD, Full HD with 4:2:2 sampling, and SD and web friendly proxy formats.  Its dual codec design also allows you to make two copies of your program simultaneously.  Or, with relay recording mode, you can shoot continuously and seamlessly over multiple cards.  When one card is full, the camcorder switches seamlessly and automatically to the other card.  And, because cards are hot swappable, you can literally shoot until you run out of cards!

*You can record up to 100 minutes of 4K or 540 minutes of AVCHD video on a single 128GB card.*

## Streaming and Cloud Services

While the GY-LS300 can record high quality video/audio onto SDHC/SDXC cards, it is also capable of streaming LIVE video/audio via network.  Coupled with the superior mobility of the camera, this wireless capability enables faster delivery of LIVE video in mission-critical ENG applications.  Stream backhaul LIVE to the newsroom using either Wi-Fi or 4G-LTE network, whichever is more stable and cost-effective in your area.

## Advanced IP Network Communication and Streaming

The GY-LS300 features JVC's latest IP communications engine, giving you remote control and monitoring of vital camera functions from a tablet, smartphone, or computer anywhere in the world.  Live streaming is possible in HD or lower resolutions, depending on available bandwidth.  JVC's Advanced Streaming Technology (AST) includes Zixi powered Forward Error Correction with ARQ, delivering high quality streams even under challenging conditions.  Connect your GY-LS300 to an optional Wi-Fi or LTE modem and share your program with an audience anywhere in the world via content delivery networks such as USTREAM and YouTube.  Just press one button and you're streaming HD to the world!

# Advanced Streaming Capabilities

## F.A.S.T.

### Fluent Adaptive Streaming Technology

## ① ROUTING

With F.A.S.T. the GY-LS300 is able to stream to the ProHD Broadcaster (BR-800) which can route streams from multiple cameras to various destinations including decoders, content delivery networks (e.g. USTREAM) or other servers. The camera can also be remotely monitored.

## ② ROBUST ERROR CORRECTION

The optional Broadcaster BR-800 actively monitors the quality of the incoming stream(s) and instructs the camera(s) to repeat packets (ARQ) and/or apply forward error correction (FEC). Up to 30% packet loss is corrected, delivering a robust, reliable HD stream in most cases. Stream status is provided to the camera operator with an indication in the viewfinder.

## ③ RECORDING

The BR-800 records incoming streams automatically or at a preset time. Streams may be downloaded, or set for automatic playback later. Zixi error control ensures outstanding image quality. Recorded video streams may also be tagged for video-on-demand (VOD) playback. The VOD menu provides URLs in various streaming formats for outside playback.

## ④ REMOTE CONTROL

A single click on the server console brings up the remote control for the connected GY-LS300. Control functions include lens (zoom, focus, iris) and camera settings (gain, shutter, WB, paint, LoLux, etc.) Zoom presets may be registered and triggered remotely. Recording and live streaming may also be triggered remotely — invaluable for minor adjustments when a single reporter is operating the camera.

# GY-LS300

## 4K Super 35 camcorder



## An Exquisite, Full-featured 4K Super 35 Video Camera

Compact, convenient, and ultra high definition. The GY-LS300 was designed to create hours of pristine recordings on affordable non-proprietary SDHC/SDXC media in a variety of image formats including 4K Ultra HD, Full HD with 4:2:2 sampling, and SD and web friendly proxy formats. Its dual codec design also allows you to make 2 copies of your program simultaneously and even stream live HD over the internet to content delivery networks such as USTREAM while recording full HD. No other removable lens video camera offers this much flexibility in such a compact, easy-to-handle form factor.

- Newly developed 4K Super 35 CMOS image sensor
- Micro Four Thirds System Lens Mount
- Variable Scan Mapping
- Adapters available for PL and EF mount lenses
- 4K Ultra HD recording (150 Mbps) to SDHC/SDXC (UHS-I Speed class3) cards
- 4:2:2 Full HD recording at 50Mbps
- 3 position ND filter (1/4, 1/16 and 1/64)
- HD-SDI (3G) and HDMI outputs (4K output via HDMI only)
- 2-channel XLR audio inputs with phantom power
- Built-in stereo microphone
- Dual SDHC/SDXC slots enable Dual, Backup and Continuous recording
- Advanced JVC streaming engine compatible with USTREAM, Zixi and Wowza Streaming Engine
- IP Network Remote Control, Remote Viewing, Metadata editing, FTP clips
- 0.24-inch color viewfinder (1.56M pixel) with smart focus assist function
- Wired remote control supported
- 10 user button assignable functions
- Includes handle unit and SSL-JVC50 7.4V battery, AC Adapter

# Full Specifications

| GENERAL SPECIFICATIONS | |
|---|---|
| Power | DC 12V (AC adaptor), DC 7.4V (Battery) |
| Power Consumption | Approx. 9.8W (4K), 9.1W (HD)（with VF in REC mode, default setting) |
| Weight | 3.75 lbs. (including battery) / (1.7 kg) |
| Dimensions | 135(W) x 191(H) x 359(D)mm |
| Operation temperature | 32°F to 104°F（0℃ to 40℃) |
| Storage temperature | 14°F to 122°F（-20℃ to 50℃) |
| Operating humidity | 30% to 80% |
| Storage humidity | under 85% |

| CAMERA | |
|---|---|
| Image Sensor | Super 35mm 13.5 M pixels progressive scan CMOS |
| Synchronizing | Internal synchronization |
| Lens mount | Micro Four Thirds system mount |
| Shutter speed | 1/6 〜 1/10000 |
| Gain | 0, 3, 6, 9, 12, 15, 18, 21, 24 dB, Lolux(30,36 dB), AGC |
| ND filter | none, 1/4, 1/16, 1/64 |
| LCD display | 3.5-inch 920 k pixels, 16:9 |
| Viewfinder | 0.24-inch 1.56 M pixel, 16:9 |

| VIDEO/AUDIO RECORDING | | | |
|---|---|---|---|
| Recording media | | 2x SDHC/SDXC memory card (4K:UHS-1 U3, HD:50Mbps Class10, HD:35Mbps Class6, AVCHD/SD Class4) | |
| Video recording | | Video codec: MPEG-4 AVC/H.264 (4K/HD/SD/Proxy), AVCHD(HD/SD) ｜ File format: MOV(H.264), MTS(AVCHD) | |
| | 4K(H.264) | NTSC setting: 3840 x 2160/29.97p, 23.98p(150Mbps) | |
| | | PAL setting: 3840 x 2160/25p(150Mbps) | |
| | HD(H.264) | NTSC setting: YUV422 mode: 1920 x 1080/59.94p,59.94i,29.97p,23.98p(50Mbps) | |
| | | XHQ mode: 1920 x 1080/59.94p,59.94i,29.97p,23.98p(50Mbps),1920 x 1080/59.94i,29.97p,23.98p(35Mbps),1280 x 720/59.94p(35Mbps) | |
| | | PAL setting: YUV422 mode: 1920 x 1080/50p,50i,25p(50Mbps) | |
| | | XHQ mode: 1920 x 1080/50p,50i,25p(50Mbps),1920 x 1080/50i,25p(35Mbps),1280 x 720/50p(35Mbps) | |
| | AVCHD | NTSC setting: Progressive mode(Max 28Mbps): 1920 x 1080/59.94p | |
| | | HQ mode(24Mbps): 1920 x 1080/59.94i, SP mode(17Mbps): 1920 x 1080/59.94i | |
| | | LP mode(9Mbps): 1440 x 1080/59.94i(Web mode), EP mode(5Mbps): 1440 x 1080/59.94i(Web mode) | |
| | | PAL setting: Progressive mode(Max 28Mbps): 1920 x 1080/50p | |
| | | HQ mode(24Mbps): 1920 x 1080/50i, SP mode(17Mbps): 1920 x 1080/50i | |
| | | LP mode(9Mbps): 1440 x 1080/50i(Web mode), EP mode(5Mbps): 1440 x 1080/50i(Web mode) | |
| | SD(MOV/AVCHD) | NTSC setting: 720 x 480/59.94i(8Mbps) | |
| | | NTSC setting: 720 x 480/59.94i(8Mbps) | |
| | Proxy(H.264) | NTSC setting: HQ mode(3Mbps): 960 x 540/29.97p, 23.98p, LP mode(1.2Mbps):  480 x 270/29.97p, 23.98p | |
| | | PAL setting: HQ mode(3Mbps): 960 x 540/25p, LP mode(1.2Mbps):480 x 270/25p | |
| Audio recording | | LPCM 2ch, 48kHz/16-bit(4k/HD/SD MOV)), AC3 2ch(AVCHD), μlaw 2ch(Proxy) | |

| LIVE VIDEO STREAMING | |
|---|---|
| Protocol | RTMP, MPEG2-TS/UDP, MPEG2-TS/TCP, RTSP/RTP, ZIXI |
| Bitrate | 0.2 - 12 Mbps |
| Resolution | 1920 x 1080, 1280 x 720, 720 x 480, 480 x 270 |

| INTERFACE | |
|---|---|
| Video output | AV output (φ3.5mm mini jack x1) ｜ SDI output (BNC x1) ｜ HDMI output x1 |
| Audio input | XLR x2 (MIC,+48V/LINE), φ3.5mm mini jack x1 |
| Audio output | AV output (φ3.5mm mini jack x1) |
| Headphone | φ3.5mm mini jack x1 |
| Remote | φ2.5mm mini jack x1 |
| USB | HOST x1 (Network Connection), DEVICEx1 (Mass storage)<br>Supported devices: Verizon, AT&T 4G LTE modems, Wi-Fi and LAN adapters |

| INCLUDED ACCESSORIES | |
|---|---|
| | Handle unit, Battery (SSL-JVC50) x1, AC Adapter x1 |

*Design and specifications are subject to change without notice. All pictures on this brochure are simulated.*

| Feature / Model | GY-LS300 | GY-HM200 | GY-HM170 |
|---|---|---|---|
| Image sensor | Super 35mm | 1/2.3-inch | 1/2.3-inch |
| Lens included | | ✓ | ✓ |
| 4K Ultra HD Recording (24/25/30p) | ✓ | ✓ | ✓ |
| 4:2:2 50Mbps HD (24p-60p) | ✓ | ✓ | ✓ |
| SDHC/SDXC | ✓ | ✓ | ✓ |
| Dual codec recording | ✓ | ✓ | ✓ |
| Proxy recording | ✓ | ✓ | ✓ |
| Digial output | HD-SDI, HDMI | HD-SDI, HDMI | HDMI |
| XLR Audio input | ✓ | ✓ | |
| ND Filters | 3 | 2 | 2 |
| IP connectivity | ✓ | ✓ | |
| Live streaming | ✓ | ✓ | |
| Handle unit included | ✓ | ✓ | |
| Shotgun microphone | ✓ | Optional | |
| Battery | SSL-JVC50 | SSL-JVC50 | BN-VF823 |

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