

# LDK 8300

## LIVE SUPER SLOMO CAMERA

In 1998, the LDK 23 camera set the standard in standard-definition super slow-motion (slo-mo). Now, a decade later, Grass Valley is again setting the standard with high-definition super slo-mo with the introduction of the LDK 8300 Live Super SloMo camera. At major sporting events in 2008, athletes scoring goals and winning gold medals were captured with the LDK 8300 and played back in stunning slo-mo for millions of viewers worldwide.

One of the best-known imaging design teams in the world has proven themselves again with the design of this unique multi-format and multi-speed Live Super SloMo camera. Based on the same leading imaging and video-processing technologies as our popular LDK 8000 multi-format HD camera, the LDK 8300 camera is an HD Live Super SloMo camera which is perfect for almost any mobile application.

### Native Format Switching

The ability to instantly switch between 720p and 1080i modes is made possible by three Emmy® Award-winning, next-generation 9.2-million pixel High Definition Dynamic Pixel Management (HD DPM+™) sensors, which capture true HD images natively. These are the same sensors used in our LDK 8000

Elite series of HD cameras, which are renowned for their high picture quality performance.

### Operating at the Speed You Need

Unique to the LDK 8300 camera is its ability to operate at 1x, 2x, and 3x speeds. Directors/producers can choose to select the most suitable speed for slo-mo replays for the event they are covering. In a fast sporting event, such as basketball, the selection can be double-speed; while covering soccer, triple-speed is the standard. And, when no live slo-mo capture is needed, the LDK 8300 camera performs in single-speed exactly the same as every other LDK 8000 camera. This versatility keeps the total cost of operation of the LDK 8300 camera at a minimum.

### AnyLight Flicker Reduction

In stadiums, sports arenas, and the like, lighting conditions are often not ideal for triple-speed acquisition. A visual “flicker” is perceived as changes in light levels due to the mismatch between the camera scanning frequency and the mains power frequency of artificial lights. The unique AnyLight feature compensates for this mismatch and helps reduce flicker automatically. There are five presets for different lighting conditions available in the LDK 8300 camera. These presets can be accessed from the operational control panel or the base station. The various presets allow the camera to reduce the flickering in the most effective way based on the lighting situation and scanning frequency.



## KEY FEATURES

- 1x, 2x, 3x speed selectable
- Multi-format support 720p or 1080i:
  - 1080i50/59.94 (1x)
  - 1080i100/119.88 (2x)
  - 1080i150/179.82 (3x)
  - 720p50/59.94 (1x)
  - 720p100/119.88 (2x)
  - 720p150/179.82 (3x)
- Unique AnyLight anti-flicker feature
- High-quality HD acquisition
- Signal-to-noise ratio for HD broadcast requirements: >57 dB
- Enhanced cooling system
- Robust digital fiber transmission and communication
- High-quality, simultaneous SD output available during HD recording
- Same controls, look, and feel as LDK 8000 Standard and WorldCam cameras
- Supports third-party digital disk device for recording and storing HD images

## No Compromise Performance

In triple-speed mode, the Grass Valley™ LDK 8300 Live Super SloMo camera captures video at 150 and 180 images per second—three times the 50 and 60 images per second rate of traditional HD camera—with a superb signal-to-noise ratio, resulting in stunning slo-mo replays. A new, specially developed fiber interface delivers the camera's extremely high data rate to the servers flawlessly.

## A True Family Member

The LDK 8300 camera is a member of the successful LDK 8000 camera family and has the same controls, look, and feel, making it intuitive to operators while providing the same high picture quality to viewers. The LDK 8300 camera is fully compatible with studio production facilities and the operational control panels (OCPs) and master control panels (MCPs) of the Grass Valley C2IP Ethernet-based camera control system. Image reproduction, colorimetry, and video processing are similar to those found in the LDK 8000 family, to meet the exacting demands of producers and directors worldwide.

## SPECIFICATIONS

### HD Camera Head

#### Camera

**Pickup device:** 3-CCD 2/3"-type 16:9 HD-DPM+ CCDs

**Picture elements:** 9.2 million pixels 1920x4320

**Operating modes:** 1x, 2x, and 3x speed

#### Temporal frequencies:

- 720p: 50/59.94 Hz
- 100/119.88 Hz
- 150/179.82 Hz
- 1080i: 50/59.94 Hz
- 100/119.88 Hz
- 150/179.82 Hz

#### Sensitivity

**1x speed (normal):** F8.0 at 2000 lux (1080i)

**2x speed (double):** F5.6 at 2000 lux (1080i)

**3x speed (triple):** F4.5 at 2000 lux (1080i)

**S/N ratio:** 57 dB on combined output; 54 dB on phases 1, 2, 3

**Modulation depth:** 55% at 27 MHz (typical 1080i mode, single-speed only)

**Dynamic range:** >600%

**Exposure control:** TBD

**Gain selection:** -6 to +18 dB in 3 dB steps (user-definable presets) + continuous

**Smear level:** no vertical smear

**Clean scanning (in single-speed):** 50.8 to 125 Hz (at 50 Hz temporal frequency); 61 to 150 Hz (at 59.94 Hz temporal frequency); V-shift

#### General

**Spectrum system:** F1.4 prism system

**Optical filter wheels:** 2x servo filter controls

**Optical filters on first wheel:** Clear, 4p star, 6p star, soft focus

**Optical filters on second wheel:** Clear, 1/4 ND, 1/16 ND, 1/64 ND

**Weight:** 5.5 kg (11 lbs., including 2" viewfinder, camera head, and adapter)

**Dimensions (HxWxL, approx.):** 241 x 164 x 373 mm (9.5 x 6.5 x 14.7 in.)

**Operating temperature:** -20 to +45°C (-4 to +113°F)

**Storage temperature:** -20 to +60°C (-4 to +140°F)

**Typical cable length fiber:** Hybrid fiber (SMPTE 311): up to 4,000m (13,123 ft.) in portable mode; up to 2,500m (8,202 ft.) in full studio mode

### HD Fiber Adapter

#### Input Connectors

**Front mic:** XLR-3-31 type (female) balanced, +48V, ch1

**Audio 1:** XLR-3-31 type (female), selectable phantom +48V, mic/line switch

**Audio 2:** XLR-3-31 type (female), selectable phantom +48V, mic/line switch

**DC (12V):** XLR-4 pin type (male)

#### Output Connectors

**HD-SDI VF:** BNC type, 1.0 Vp-p, 75Ω

**HD-SDI (EXT):** BNC, SMPTE 292M, 1.5 Gb/s, 0.8 Vp-p, 75Ω

**Scriptlight DC (12V/0.25A):** 3-pin Fischer

**DC (12V/1.5A) and tally indicators:** 4-pin Hirose

### Input/Output Connectors

**Adapter (to base station):** Fiber communication (2x) plus power connection

**Lens (to camera):** 12-pin Hirose

**Viewfinder (to camera):** 20-pin Hirose (and HDMI connector)

**Intercom (to headset):** XLR 5-pin (female)

**Video reference (input)/teleprompter (output):** BNC type, 1.0 Vp-p, 75Ω

**Auxiliary/data (private data):** 11-pin (female)

**Tracker:** 11-pin (female)

**Serial I/O communication:** 9-pin RS-232

**Camera settings:** SmartCard

**VF monitor/external output (analog)/AES-EBU input:** BNC type, 1.0 Vp-p, 75Ω

## ORDERING INFORMATION

Please contact your authorized Grass Valley representative.

## CUSTOMER SUPPORT & PROFESSIONAL SERVICES

Our customer support and professional services offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock, commissioning, professional training courses, and technical maintenance programs and service agreements.

[www.grassvalley.com/support](http://www.grassvalley.com/support)

