

LDK 6000 mk II

Flexible, Multi-Format High-Definition Camera

Grass Valley™ products from Thomson offer the most comprehensive, multi-format solutions for acquisition, production, storage and playback—and a strong foundation for centralized, proactive status and activity monitoring. These solutions include one of the broadest selections of standard- and high-definition (SD and HD) digital video cameras. With one of the best known imaging design teams in the world and six technical Emmy® awards, Grass Valley camera products continue to break ground with innovation and creative ideas. The LDK 6000 mk II is no exception.

The LDK 6000 mk II offers the highest quality picture available for everything from remote-controlled, portable hand-held, mobile and studio applications, to EFP uses for SD and HD productions—even digital cinematography.

With three 9.2-million pixel HD-DPM+™ CCDs, the LDK 6000 mk II is the only camera available that can capture true progressive HD images, natively, and switch instantly between multiple formats and frame rates. Coupled with an extensive feature set, format flexibility, and excellent performance, it's a perfect match for the intense demands of today's productions.

The LDK 6000 mk II camera head is available in two versions: Standard and WorldCam. The Standard version supports 1080i/720p HD formats in 50 and 59.94 Hz, and simultaneously provides high-quality SD output in either 50 or 59.94 Hz. The WorldCam version adds support for all recognized worldwide HD formats, including 24p for digital cinematography acquisition—and provides convenient built-in frame-rate conversion.



With a lightweight, ergonomic design, the LDK 6000 mk II speeds production workflows with focus-assist tools and smart cards that store image and operational settings. And its transmission system interfaces with standard triax- as well as fiber-based infrastructures for maximum flexibility.

For digital transition management, the LDK 6000 mk II features a compact, robust, and lightweight base station that can output SD and HD signals simultaneously. The camera can be equipped with a Grass Valley SuperXpander large lens adapter and an optional HD high-resolution viewfinder and turn it into a fully featured studio head.

CCDs Ensure Exceptional Output

Three 9.2-million pixel HD DPM+ CCDs inside the LDK 6000 mk II ensure exceptional image quality. These CCDs are based on frame-transfer technology so there is no lag or smear in the images you create. They also offer an extraordinary signal-to-noise ratio and sensitivity, high efficiency, and, through the use of on-chip amplifiers, a significant reduction in a signal's noise floor.

key features

- Captures true progressive HD images natively, in multiple formats and frame rates and outputs high-quality SD images in addition to the HD output
- Supports 1080i and 720p formats at 50 and 59.94 Hz
- Supports instant switching between 720p and 1080i for a wide variety of applications
- Unrivaled video processing architecture:
 - Three 9.2-million pixel HD-DPM+ CCDs
 - 12-bit A-to-D conversion
 - 22-bit digital signal processing
- Emmy award-winning dual skin contour circuit makes talent look its best
- Unique focus-assist tools:
 - Crawler, for creating motion on the edges of an object in focus
 - Instant push-button electronic zoom for focusing on small details
- Smart cards store picture, operational settings for easy recall
- Flexible HD transmission system
 - Supports standard triax up to 3,300 feet/1,000 meters
 - Supports hybrid fiber SMPTE 311 up to 13,200 feet/4,000 meters
- Small, robust base station with superior HD, SD outputs
- Lightest weight camera body in its class
- In triax mode, SuperXpander support enables configuration with studio lenses, accessories

The 12-bit analog-to-digital converters of the LDK 6000 mk II bring the camera's optimum picture quality to the digital domain. Two dedicated digital signal processors (DSPs) perform all major camera functions (i.e., knee, gamma, contour, and variable matrix) with higher than 22-bit precision. The DSPs also contain powerful features, such as digital cosmetics with independent, Emmy award-winning dual skin contour circuits to improve facial tones, as well as extensive colorimetry and color-matching capabilities.

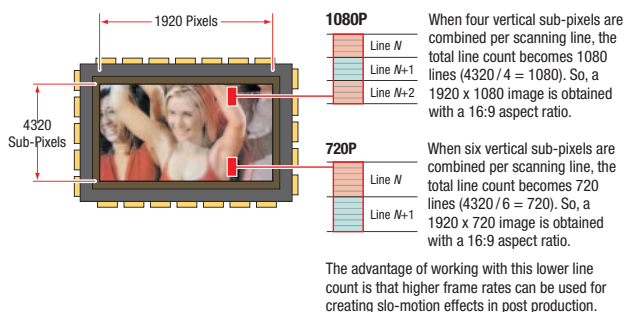
Easy, Native HD Format Switching

The LDK 6000 mk II enables easy HD format switching via a simple menu on the camera or the camera control system. The camera's CCDs group the pixels on the sensors to create the correct number of video lines necessary for a chosen format, minimizing unnecessary electronic processing.

The result? No quality degradation when switching formats.

Dynamic Pixel Management

By grouping the 4320 vertical sub-pixels on the CCDs to map to the desired line rate, all popular video formats can be acquired without compromising image quality.



Two Versions Available

The LDK 6000 mk II camera head is available in two versions: Standard and WorldCam.

The Standard version supports 1080i/720p HD formats in 50 and 59.94 Hz, and simultaneously provides high-quality SDTV output in either 50 or 59.94 Hz. The WorldCam version provides all the functionality of the Standard version as well as support for digital cinematography formats in 1080p and 720p. These formats provide an impression of motion (motion portrayal) comparable to that of film cameras running at the same speeds.

The WorldCam version of the LDK 6000 mk II also provides convenient built-in frame-rate conversion for easy connection to existing HD peripherals. As a result, you get cost-effective monitoring and recording combined with the motion portrayal of film cameras.

The 1080p23.98 format, for example, can be converted using 3:2 pull-down to 1080i59.94 right inside the camera. A similar effect is available through frame repeats for the 720p formats at lower frame rates. For example, the 720p23.98 format can generate 720p59.94 format and the 720p25 format can generate 720p50.

For 24p productions, the WorldCam makes slow motion at 2.5X speeds possible. Material acquired in the 720p59.94 format, will provide 2.5X slow motion when the 59.94 Hz recording is played back at 23.98 Hz.

Convenient Assist Tools Speed Production

The LDK 6000 mk II includes a number of features to speed the production process, from focus-assist tools to smart cards.

For precise focusing, which is especially crucial in the high-resolution HD environment, the camera includes a patented "crawler" that creates a motion effect on the edges of an object in sharp focus; the contrasting motion helps a camera operator fine tune that focus quickly. The camera also features a unique electronic viewfinder zoom function that instantly enlarges an image with a simple press of a button; it's ideal for focusing on small details.

It's also easy to pre-configure the LDK 6000 mk II for a variety of different settings—from sports and drama applications to studio settings—by storing operational and image settings on low-cost smart cards. Not only can the camera recall these settings quickly, you can transfer the cards between cameras for fast reconfiguration.

What's more, with its true progressive digital cinematography formats, the LDK 6000 mk II WorldCam can address applications such as episodics or sitcoms, which often require the special motion portrayal of dedicated digital cinematography cameras.

Lightweight, Ergonomic Design Ensures Comfort

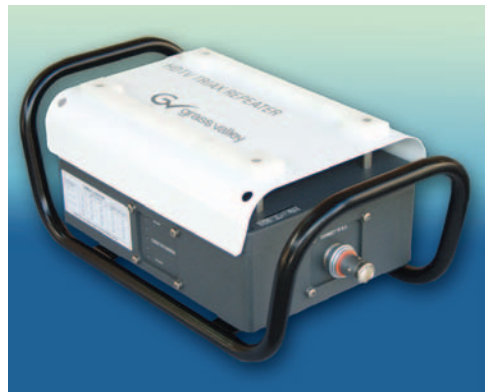
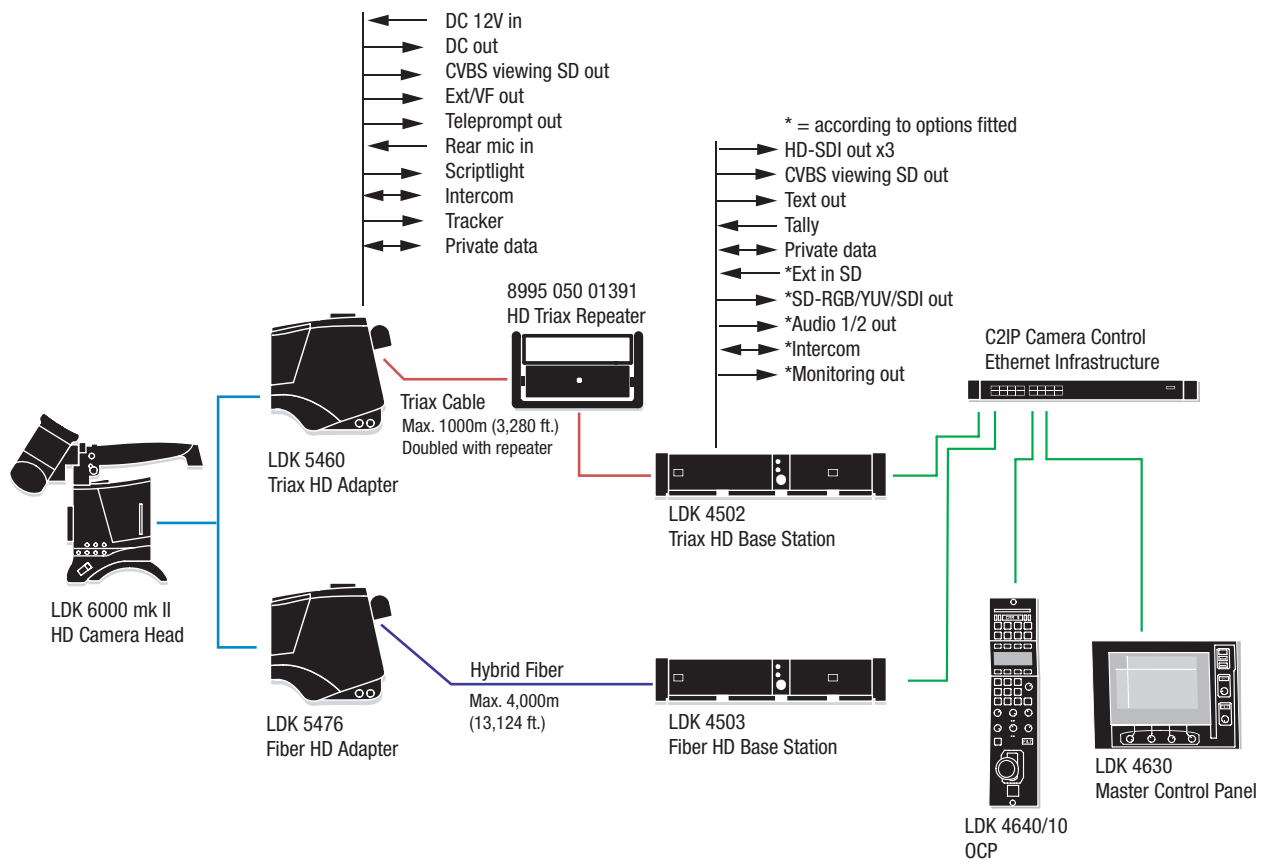
The LDK 6000 mk II features a lightweight, balanced design for maximum comfort and freedom of movement. A magnesium-alloy body provides a high degree of durability, yet helps keep the camera the lightest in its class. An optional zoom-control on the top handle makes awkward ground-level shooting easier, while a rotary TriaxHD connector ensures that its cable does not get in the way.

Flexible and Future Proof

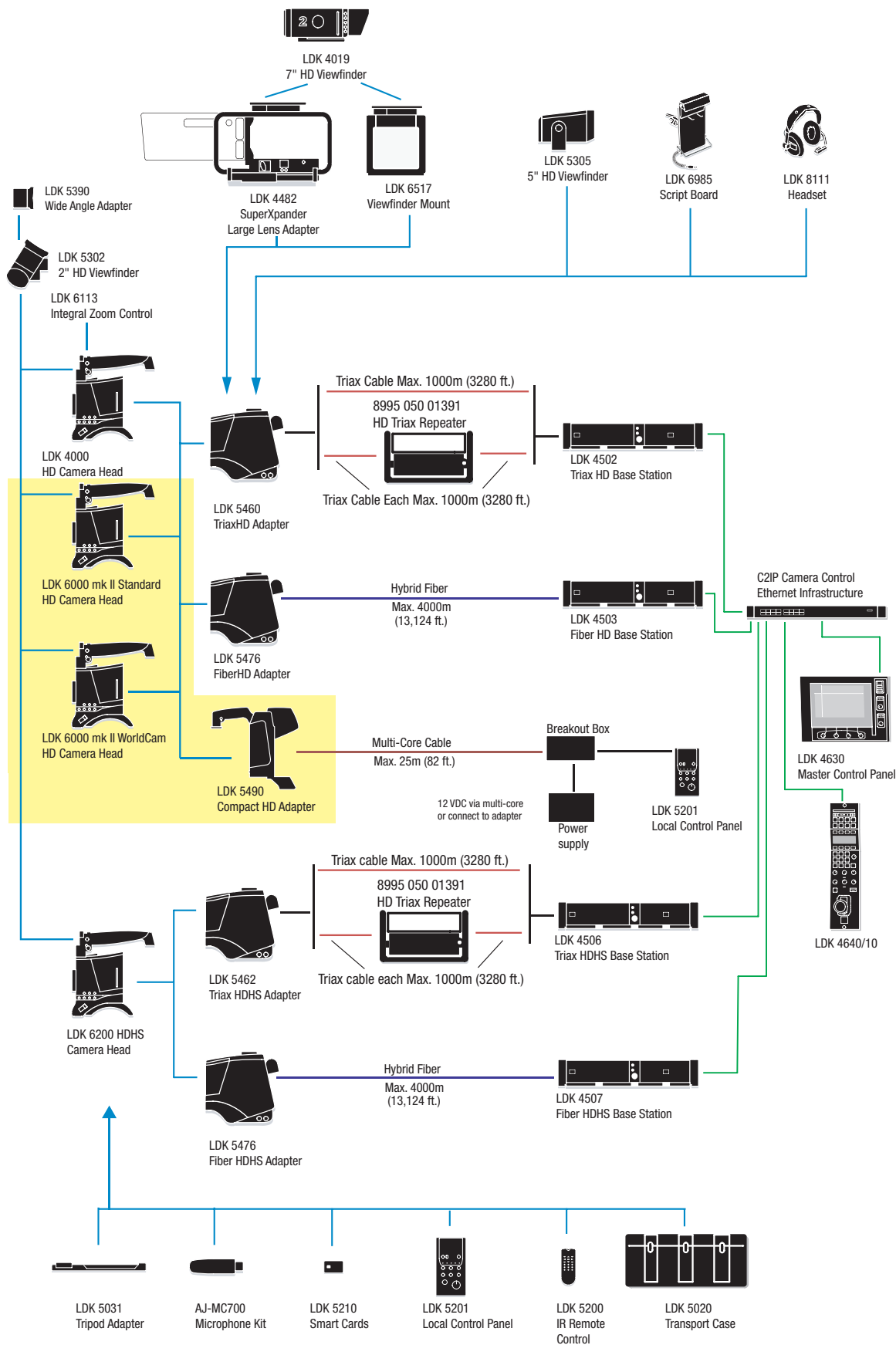
The LDK 6000 mk II was designed for flexibility and cost-effective compatibility. Its docking concept, for example, makes it suitable for all applications.

The lightweight LDK 6000 mk II is also perfectly suitable for hand-held operations. Alternatively, with the optional Grass Valley SuperXPander or large lens adapter and an optional seven-inch HD high-resolution viewfinder, users can turn the camera into a fully featured studio head in triax mode. The optional compact HD adapter provides 1.5 Gb/s HD-SDI output. By adding an LDK 5201 local control panel and an HD recorder, you can also create a cost-effective basic configuration for HD acquisition in the field.

LDK 6000 HD System



HD Camera Family



Specifications

HD Camera Head	LDK 6000 mk II	
General		
Power	Triax or DC 12V; 44W incl. 2" viewfinder & Triax HD Adapter	
Temperature range	Operating: -20°C to 45°C (-4°F to 113°F); Storage: -20°C to 60°C (-4°F to 140°F)	
Weight	4.3 kg (9.6 lbs.) incl. 2" viewfinder and CompactHD adapter; 5.0 kg (11 lbs.) incl. 2" viewfinder and TriaxHD adapter	
Dimensions	214 (H) x 125 (W) x 241 (L) with CompactHD adapter; 205 (H) x 125 (W) x 357 (L) with TriaxHD adapter	
Camera		
Optical system	F1.4 Prism	
Optical filter wheels	2x motorized wheels	
Optical filters on first wheel	Clear, 1/4 ND, 1/16 ND, 1/64 ND	
Optical filters on second wheel	Clear, four point star, six point star, soft focus	
Color correction filters	Electronic: 3200°K, 5600°K, 7500°K, FL, 2 AWB presets, continuous auto white	
Pickup device	3 x 2/3" 16:9 HD-DPM+ CCDs	
Picture elements	9.2 million pixels 1920 (H) x 4320 (V) effective	
Smear	No vertical smear	
Temporal Frequencies	Standard	WorldCam
720p mode	50/59.94 Hz	23.98/25/29.97/50/59.94 Hz
1080p mode	not available	23.98/24/25/29.97 Hz
1080i mode	50/59.94 Hz	50/59.94 Hz
Sensitivity 2000 lux	F9.0 typical (1080i mode)	
S/N ratio in Y signal	55 dB typical	
Modulation depth	55% @ 27 MHz (typical 720p59.94)	
Digital quantisation/processing	12 bits A/D and >22 bits processing power	
Gain	-6 dB to 12 dB in 3 dB steps (user-definable presets)	
Exposure control	Down to 1/1000s	
Clean scanning	50.8 to 125 Hz (at 50 Hz temporal frequency); 61 to 150 Hz (at 59.94 Hz temporal frequency); V-shift	
Front microphone input	XLR-3 female, balanced +48V selectable	
Lens connector	12-pin	
Control input	9-pin RS-232C compatible	
Viewfinder connector	20-pin	
Supplied accessories	Operators manual; camera rain cover; 1x owner card; 2x user cards; shoulder strap	
Options		
2" Viewfinder	Model No. LDK 5302	CRT >600 TV lines (center)
5" Viewfinder	Model No. LDK 5305	CRT >650 TV lines (center)
7" Viewfinder	Model No. LDK 4019	CRT >800 TV lines (center). Requires additional mounting hardware
CompactHD Adapter	Model No. LDK 5490	
Multi-core connector	23 + 3-pin	
HD-SDI out	3 x BNC, SMPTE 292M, 0.8 Vp-p, 1.5 Gb/s, 75Ω	
CVBS out	1x BNC. 1.0 Vp-p, 75Ω, NTSC or PAL viewing quality only	
Viewfinder out	1x BNC, Y-out, 1.0 Vp-p, 75Ω	
DC 12V in	XLR-4 male	
DC 12V out	4-pin Hirose. 12V 1.5A and Tally indication	
LCP connector	Hirose 12p for basic camera control	



Ordering Information

Please contact your authorized Grass Valley representative.

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- PartsPRO Advanced Exchange Hardware Support
- Critical Spares Kits for Most Products

For specific requests, our worldwide experienced Support Services & Training experts can build and assist you with customized solutions.

For more information contact your authorized Grass Valley representative or visit us online at www.thomsongrassvalley.com/support.

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