

LDK 4000

Single-Format Camera for Affordable HD Production



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-definition (SD) and high-definition (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 for innovation and creative ideas.

As an integral part of the Grass Valley HD camera family, the LDK 4000 model offers the highest picture quality available, in fact the same quality as the popular LDK 6000 mk II WorldCam, but it is designed for small- to medium-sized broadcasters, digital production studios, and media-creation companies that have decided on a single format for their HD productions.

In some areas of the world only 1080i is used and the 720p format is not supported and therefore a camera head with switchable formats is not required. Some production companies know they will only use 720p and in these cases the LDK 4000 offers a more cost-effective acquisition solution.

The LDK 4000 is available as either a 720p or 1080i camera head. In each case, the operating frequency is switchable between 50 Hz and 59.94 Hz enabling its use in making programmes for overseas consumption.

Three 9.2-million pixel HD-DPM+™ CCDs within the LDK 4000 camera ensure the highest quality image capture, and 12-bit analog-to-digital conversion takes that quality to the digital domain. Two dedicated digital signal processors (DSPs), utilizing

22-bit processing, perform all major camera functions such as gamma, knee, contour, and variable matrix. The camera also contains powerful colorimetry and color matching capabilities.

The DSPs also contain two independent skin-contour circuits. These circuits allow you to select any two color values and adjust contour processing in those areas, thus allowing improvement in the appearance of facial tones, or indeed of any selected tone.

The LDK 4000 camera has a magnesium-alloy body that not only gives it a high degree of durability but makes it the lightest weight camera in its class—one that is ideal for hand-held operation. And with a rotary HD Triax connector and optional integrated hand grip zoom control it makes those difficult low-level shots much easier to achieve.

You can also mount the LDK 4000 camera in a SuperXpander large lens adapter for the use of box-style studio lenses and a high-quality 7" viewfinder and to give a camera operator the feel of a full-size studio camera.

As part of the Grass Valley HD camera system, the LDK 4000 model readily integrates into a studio or mobile production environment. The camera head is a docking design and, depending on your existing or future infrastructure, a range of adapters and options enables the use of either HD Triax or Fiber connectivity whether in hand-held or studio configurations.

key features

- **Single-format HD camera supports two configurations:**
 - 1080i only
 - 720p only
- **Camera package includes:**
 - Camera head
 - Base station
 - HD triax cable adapter*
 - Choice of a 2- or 5-inch viewfinder
- **Low power consumption**
- **Emmy® award-winning and patented HD-DPM+ image sensor technology**
- **Optional features, control panels, and signal-transmission systems also available**

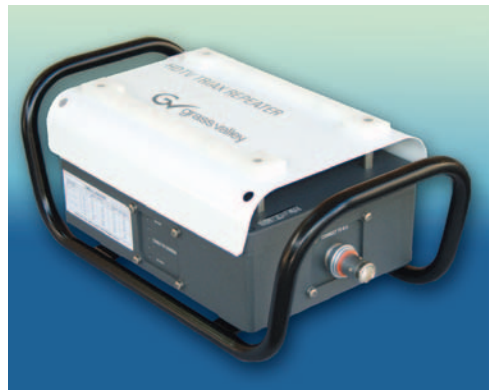
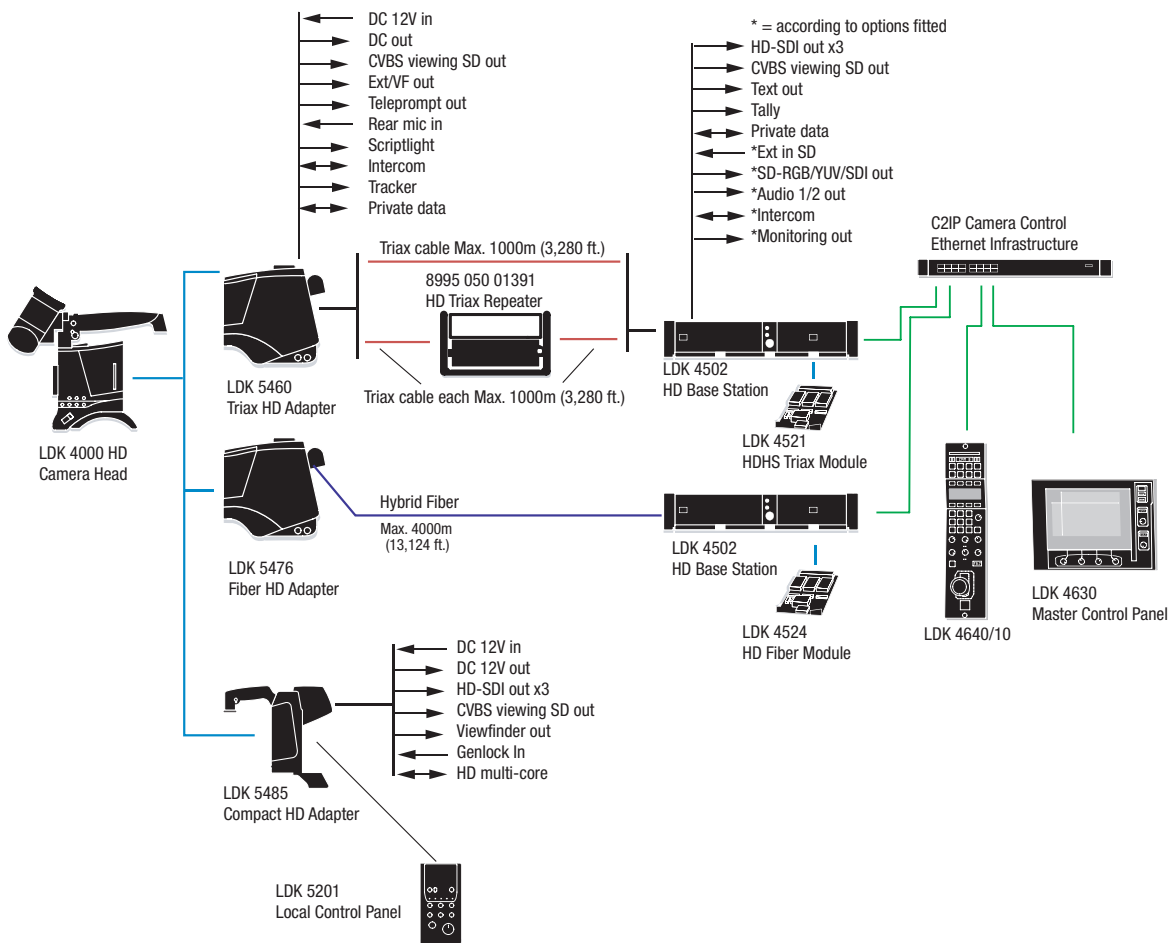
* Optional fiber optic adapter available

The camera adapter, base stations, and system components of the LDK 4000 camera are the same as those of the LDK 6000 camera, ensuring that if you need to temporarily add a different Grass Valley HD camera to your system, there would be complete compatibility in connectivity, operation, and picture quality.

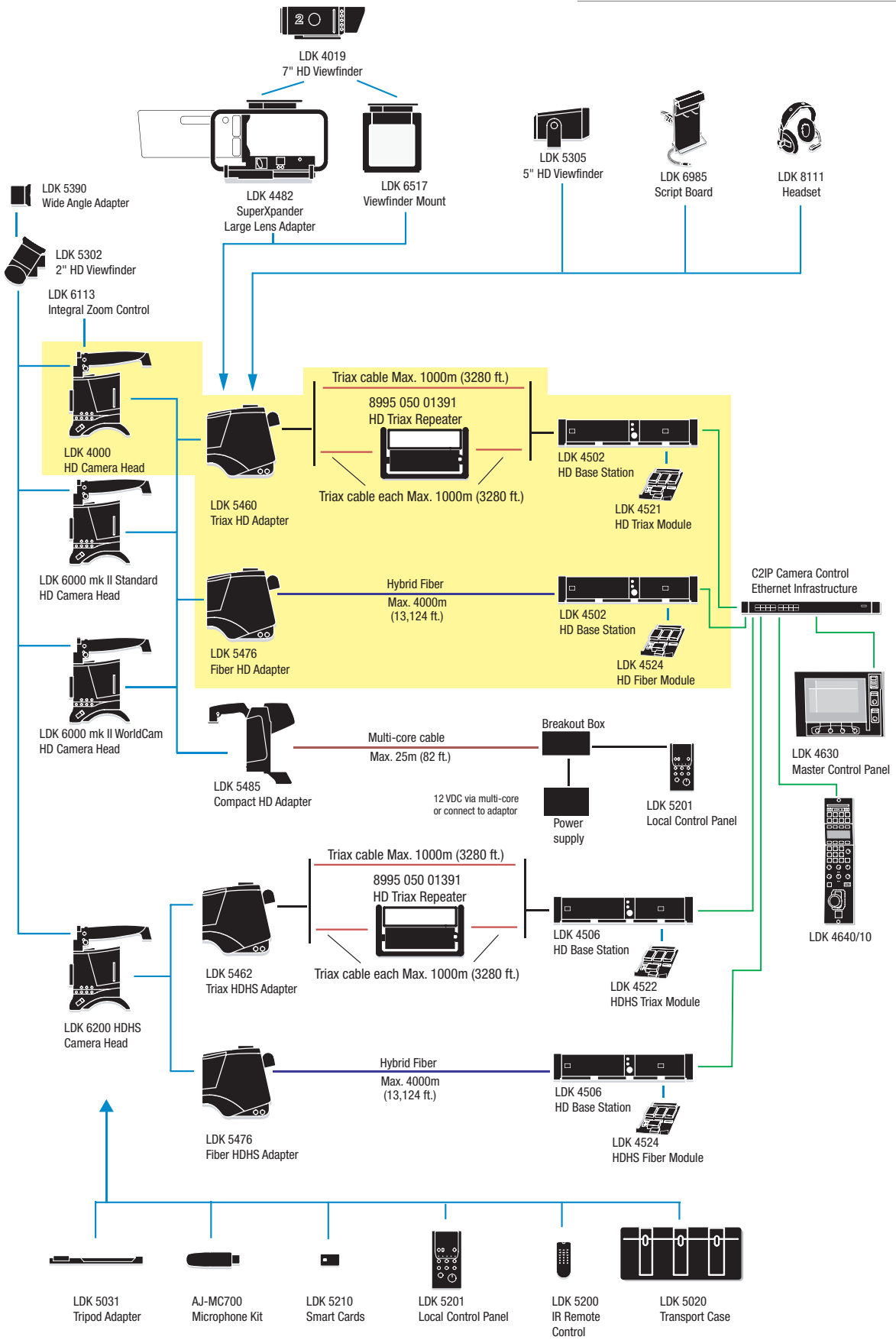
The LDK 4000 system is also fully compatible with studio production facilities and utilizes the same operational control panels as other Grass Valley LDK series cameras using the C2IP camera control system.

The Grass Valley C2IP control system allows simple connection of all elements of camera control using standard Ethernet components. Up to 99 cameras can be connected into a single system, allowing sharing of control room facilities and centralized operations. All cameras operate from the same type of operational control panel or master control panel and settings can be easily transferred between cameras.

LDK 4000 HD System



HD Camera Family



LDK 4000 Camera Head Specifications

General	
Power requirements	Triax or DC 12V
Power consumption	44W incl. 2" viewfinder & Triax HD Adapter
Operating temperature	-20°C to 45°C (-4°F to 113°F)
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Weight	4.3 kg (9.6 lbs.) incl 2" viewfinder and compact adapter 5.0 kg (11 lbs.) incl 2" viewfinder and TriaxHD adapter
Dimensions	214 mm (8.43 in.) (H) x 125 mm (4.92 in.) (W) x 241 mm (9.29 in.) (L) with compact adapter 205 mm (8.07 in.) (H) x 125 mm (4.92 in.) (W) x 357 mm (14.06 in.) (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" HD-DPM+ CCDs
Picture elements	9.2 million pixels 1920 (H) x 4320 (V) effective
Smear	No vertical smear
Line standard	720p (LDK 4000/00) or 1080i (LDK 4000/10)
Aspect ratio	16:9
Temporal frequencies	50/59.94 Hz
Sensitivity	2000 lux @ F8 typical (59.94 Hz)
S/N ratio in Y signal	55 dB typical
Modulation depth	55% @ 27 MHz (typical)
Digital quantisation	12 bits A-to-D
Digital signal processing	>22 bits
Gain	-6 dB to 12 dB in 3 dB steps (user-definable presets)
Exposure control	Down to 1/2000s
Clean scanning	50.8 to 125 Hz (at 50 Hz temporal frequency) 61 to 150 Hz (at 59.94 Hz temporal frequency)
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

LDK 4000 Adapter Specifications

TriaxHD Adapter	Model No. LDK 5460
Triax connector	Trilock, Fischer, ARD, or Lemo
Triax cable length	1,000m (3,300 ft.) with 14 mm cable, Y/C transmission
Video out	1x BNC. CVBS, 1.0 Vp-p, 75 Ω , NTSC or PAL viewing quality only
Monitor out	1x BNC Viewfinder Y signal or External video. 1.0 Vp-p, 75 Ω
Teleprompter out	1x BNC 1.0 Vp-p 75 Ω
DC 12V In	XLR-4 male
DC 12V Out	4-pin Hirose. 12V 1.5A and Tally indication
Rear microphone in x2	2 x XLR-3 female, balanced +48V selectable
Scriptlight connector	Fisher 3-pin 12V 0.25A
Tracker	Fisher 11-pin communications and signaling
Auxiliary & data	Fisher 11-pin private data
Intercom	XLR-5 female ENG/PROD/PGM channels
FiberHD Adapter	Model No. LDK 5476/20
Fiber connector	Hybrid SMPTE standard (LEMO)
Fiber cable length	4,000m (13,200 ft.)
Video out	1x BNC. CVBS, 1.0 Vp-p, 75 Ω , NTSC or PAL viewing quality only
Monitor out	1x BNC Viewfinder Y signal or External video. 1.0 Vp-p, 75 Ω
Teleprompter out	1x BNC 1.0 Vp-p 75 Ω
DC 12V In	XLR-4 male
DC 12V Out	4-pin Hirose. 12V 1.5A and Tally indication
Rear microphone in x2	2 x XLR-3 female, balanced +48V selectable
Scriptlight connector	Fischer 3-pin 12V 0.25A
Tracker	Fischer 11-pin communications and signaling
Auxiliary & data	Fischer 11-pin private data
Intercom	XLR-5 female ENG/PROD/PGM channels
Compact HD Adapter	Model No. LDK 5485
HD video out	3x BNC. HD SDI, SMPTE 292M, 0.8 Vp-p, 75 Ω , 1.5 Gb/s
SD video out	1x BNC. CVBS, 1.0 Vp-p, 75 Ω , NTSC or PAL viewing quality only
Viewfinder video out	1x BNC. CVBS, 1.0 Vp-p, 75 Ω , NTSC or PAL viewing quality only
DC 12V in	XLR-4 male
DC 12V out	Hirose 4-pin female
Control	Fischer 12-pin female. RS-232 for LCP 100 connection
Genlock in	HD tri-level sync, 0.6 Vp-p, 75 Ω on 26-pin multi-core, or blackburst
HD multicore	D&H 26-pin male signals 3x HDSDI out, Audio out, CVBS out, VTR start/stop, Sensing Ref in, Tally in, Video in (Playback), Control RS-232, DC 12V in



Ordering Information

Please contact your authorized Grass Valley representative.

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- ServicePRO Comprehensive Software and Hardware Support
- 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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CAM-1020D-1

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