

LDK 300

Multi-Functional 12-Bit Digital 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 and engineering Emmy® awards for camera-related technologies, Grass Valley camera products continue to break ground for innovation and creative ideas.

Grass Valley continues to bring superior digital acquisition to a broad range of broadcast applications with the LDK 300 camera, designed for broadcasters that require pristine SD image quality.

LDK 300 Sensors

The LDK 300 is available either as a switchable 16:9/4:3 camera head or 4:3 only. In either case, the ultra-low smear IT sensors feature a high sensitivity of F14 at 2000 lux, enabling you to obtain exceptional results in low-light and high-contrast situations.

Digital Signal Processing

The output from the CCD sensors of the LDK 300 is converted into digital form through 12-bit analog-to-digital converters, without any nonlinear analog processing. These signals are then passed to the digital signal processing (DSP) unit.

The DSP at the heart of the LDK 300 processes at 18 MHz and 36 MHz and uses 22 bits. This processing takes place using two specialized application-specific integrated circuits (ASICs), which control all the camera parameters and deliver a typical signal-to-noise performance of 63 dB.

As with other LDK series cameras, you make all LDK 300 adjustments in the digital signal domain, giving you complete repeatability. These parameters include highlight handling, contrast and gamma control (with preset and variable gamma settings), variable matrix for colorimetry adjustments, flare, white/black shading, leaking pixel concealment, gain, and contour.

The contour processing of the LDK 300 operates in five bands and includes dual skin-tone circuits. These circuits can work on automatically detected colors and can be used to apply separate levels of contour to each. Although the most common use is for skin tones, the circuits are not limited to those colors.

A further example of the flexibility offered by the DSP in the LDK 300 is in the camera's gain controls. User-defined preset gains can be set from -6 dB to +48 dB in steps of 3 dB. Additionally there is a variable stepless master gain with an adjustment range of -6 dB to +17.9 dB.

key features

- Compact design based on popular LDK series camera head
- 12-bit A-D conversion
- High sensitivity: F14/2000 lux
- Excellent signal-to-noise ratio: 63 dB typical
- Switchable 16:9/4:3 design for flexibility
- Single manual or remote-controlled dual-filter wheel configuration
 - Neutral density
 - Optical effects
- Electronic color-correction filters
- Variable master color temperature
- Dual skin-tone circuits
- Unique operation features:
 - Optional handgrip zoom control
 - Wide angle viewfinder lens
 - Adjustable orthopedic shoulderpad
- Compatible with a variety of Grass Valley transmission systems
 - Analog triax system
 - Digital triax system
 - Digital wireless triax system
 - DigiLink system
- Full studio functionality using LDK 5430 triax adapter
 - Teleprompter with power
 - Reverse Teleprompter
 - Dual return video
 - Tracker communications
- Use with SuperXpander enables flexible configuration with studio lenses and accessories

Three Levels of Filters

The LDK 300 is available with either one manual or two motorized filter wheels. The first (standard) wheel contains neutral-density filters, while the second (optional) wheel has effects filters: 4-point and 6-point star plus soft focus.

The camera's color-correction filters are electronic with presets of 3200°K, 4700°K, 5600°K, and 7200°K. Additionally, there is a variable master color temperature control with a range of 2200°K to 7500°K in 100°K steps. The camera also features two autowhite presets, as well as a setting for fluorescent light and continuous autowhite.

LDK 300 – Compact, Lightweight, Ergonomic

In common with other Grass Valley LDK series cameras, the LDK 300 had a compact and lightweight docking design, based on a camera body renowned for its robustness and ergonomics. These features make the camera suitable for a very wide range of applications, from simple hand-held configurations to full studio uses.

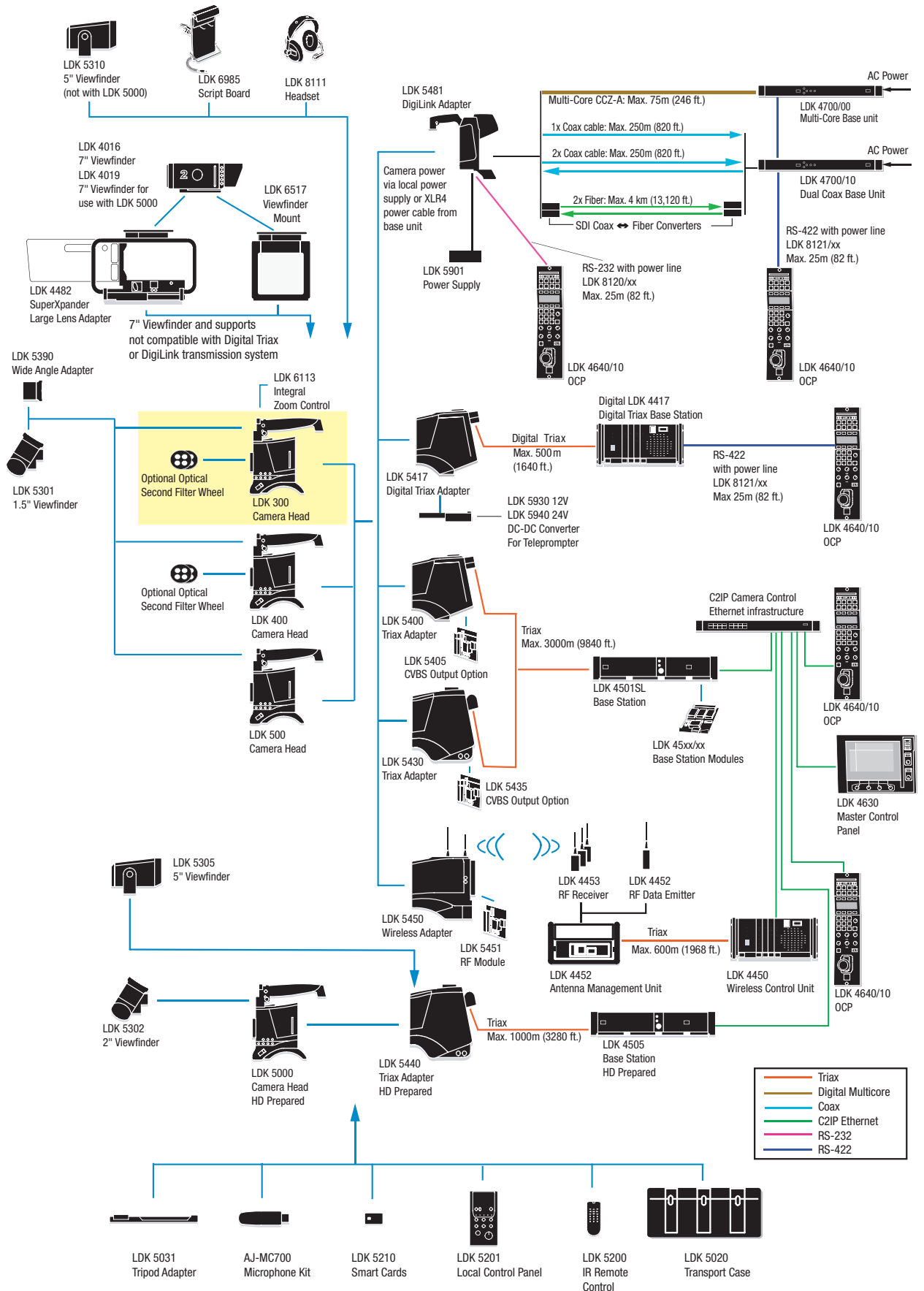
Docking adapters make the LDK 300 part of a future-proof system. Currently, adapters are available for analog or digital triax, digital multi-core, or wireless operation. With these adapters, you can easily change from a handheld camera to one suited for studio operation.

You can mount the camera in a SuperXpander large-lens adapter with a high-resolution 7" viewfinder, or use 5" or 1.5" viewfinders. You can also configure a full studio system to include Teleprompter video and power, a private data channel, return video channels, and, of course, a full intercom system.

In handheld operation, the LDK 300 camera is ergonomically well balanced and options such as a built-in handgrip zoom control, wide-angle viewfinder adapter, and rotary triax connector make it easy for you to reach difficult low-level shots.



SD Camera Family



Transmission Options

| Adapter Model | LDK 5481 DigiLink | LDK 5417 Digital Triax | LDK 5400 Triax | LDK 5430 Enhanced Triax | LDK 5450 Wireless Triax |
|-----------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--|
| Maximum Cable Length ¹ | Dual fiber 4 km (13,120 ft.) | 13 mm triax 500m (1,640 ft.) | 14 mm triax 3 km (9,840 ft.) | 14 mm triax 3 km (9,840 ft.) | 11 mm triax 600m (1,968 ft.) base unit to antennae |
| | Dual coax 250m (820 ft.) | 8 mm triax 250m (820 ft.) | 11 mm triax 2 km (6,560 ft.) | 11 mm triax 2 km (6,560 ft.) | |
| | Multi-core 75m (246 ft.) | | 8 mm triax 1.5 km (4,920 ft.) | 8 mm triax 1.5 km (4,920 ft.) | 150m (492 ft.) wireless range |
| I/O at Camera Head | | | | | |
| Front microphone in | ✓ | ✓ | ✓ | ✓ | ✓ |
| Viewfinder | ✓ | ✓ | ✓ | ✓ | |
| Lens | ✓ | ✓ | ✓ | ✓ | ✓ |
| RS-232 control | ✓ | ✓ | ✓ | ✓ | ✓ |
| I/O at Camera Adapter | | | | | |
| Rear microphone in | | ✓ | ✓ | ✓ x2 | ✓ |
| Intercom headset | ✓ | ✓ | ✓ | ✓ | ✓ |
| CVBS out | ✓ | | ✓ ⁶ | ✓ ⁶ | |
| SDI out | ✓ | | | | ✓ |
| Teleprompt out | ✓ | ✓ | | ✓ | |
| Viewfinder (monitoring) out | ✓ | ✓ | ✓ | ✓ | ✓ |
| External video out | ✓ | ✓ | ✓ | ✓ | |
| Ref in (Genlock) | ✓ | | ✓ ⁶ | ✓ ⁶ | |
| DC power in | ✓ | | ✓ | ✓ | ✓ |
| Utility DC power out | ✓ | ✓ | ✓ | ✓ | ✓ |
| Script light power out | ✓ | ✓ | ✓ | ✓ | |
| Tally out | ✓ | | | ✓ | |
| Tracker connector | | | | ✓ | |
| Private data | ✓ | | ✓ | ✓ | |
| Triax connector | | ✓ | ✓ | ✓ | |
| Fiber connector | optional | | | | |
| Multi-core 26P EBU N21 | ✓ | | | | |
| Coax operation | ✓ | | | | |
| I/O at Base Station | | | | | |
| | LDK 4700 | LDK 4417 | LDK 4501 | LDK 4501 | LDK 4450 |
| Power requirement | AC Mains | AC Mains | AC Mains | AC Mains | AC Mains |
| Audio 1 out | ✓ | ✓ | ✓ | ✓ | ✓ |
| Audio 2 out | | | | ✓ | ✓ |
| Intercom | ✓ | ✓ | ✓ | ✓ | ✓ |
| Control bus RS-422 | ✓ | ✓ | | | |
| Control bus C2IP | | | ✓ | ✓ | ✓ |
| Control bus Series 9000 | | | ✓ | ✓ | |
| SDI out | ✓ x2 | ✓ x3 | ✓ x6 | ✓ x6 | ✓ x3 |
| YUV out | ✓ ⁴ | | ✓ | ✓ ⁵ | |
| RGB out | ✓ ⁴ | | | ⁵ | |
| CVBS out | ✓ x2 | ✓ x2 | ✓ | ✓ | |
| Teleprompter in | ✓+loop-thru | ✓+loop-thru ³ | ✓+loop-thru | ✓+loop-thru | |
| External video 1 in | ✓+loop-thru | ✓+loop-thru | ✓+loop-thru | ✓+loop-thru | |
| External video 2 in | | ✓+loop-thru ³ | | ✓+loop-thru | |
| Ref in | ✓+loop-thru | ✓+loop-thru | ✓+loop-thru | ✓+loop-thru | ✓+loop-thru |
| Monitoring out | | | ✓ | ✓ | |
| Private data | ✓ | | ✓ | ✓ | |

¹ Maximum triax cable lengths specified using Nokia cable. Coax cable lengths using Belden 1694A or equivalent. Multi-core CCZ-A.

² Reference In via multi-core

³ Either External 2 or teleprompter is available

⁴ Either YUV or RGB available

⁵ Either YUV, RGB, or 3x CVBS available

⁶ With optional encoder board

Specifications

| General | LDK 300 | |
|--|--|---------------------|
| Power requirements | Triax or DC 12V | |
| Power consumption | 12W excluding viewfinder & triax 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 | 2.1 kg (4.6 lbs.) not incl. viewfinder & triax adapter 5.0 kg (11 lbs.) incl. 1.5" viewfinder & triax adapter | |
| Dimensions | 214 mm (H) x 125 mm (W) x 241 mm (L) with compact adapter 205 mm (H) x 125 mm (W) x 357 mm (L) with triax adapter | |
| Camera | | |
| Optical system | F1.4 prism | |
| Optical filter wheels | 1x or (optional) 2x motorized filter wheels | |
| Optical filters on first wheel | Clear, 1/4 ND, 1/16 ND, 1/64 ND | |
| Optical filters on second wheel | Clear, 4-point star, 6-point star, soft focus | |
| Color correction filters | Electronic 3200°K, 5600°K, 7500°K, FL, 2 AWB presets, Continuous auto-white, Variable color temperature: 2200°K to 7500°K in 100°K steps | |
| Pickup device number & size | 3 x 2/3" CCDs | |
| Pickup device | ITW | IT |
| Picture elements (H x V) | | |
| PAL 16:9 | 1008 x 591 | N/A |
| PAL 4:3 | 756 x 591 | 756 x 591 |
| NTSC 16:9 | 1020 x 505 | N/A |
| NTSC 4:3 | 765 x 505 | 765 x 505 |
| Resolution in 16:9 4:3 | 750 TV lines 750 TV lines | N/A 750 TV lines |
| Smear | -140 dB (typical) | |
| Sensitivity 2000 lux | F14 | |
| S/N ratio (typical) PAL NTSC | 61 dB 63 dB | |
| Vertical resolution | 480 lines (PAL), 400 lines (NTSC) | |
| Modulation depth | 70% @ 5 MHz (typical) | |
| Digital quantisation | 12 bits A to D | |
| Digital signal processing | >22 bits, 18 MHz & 36 MHz | |
| Gain | -6 dB to +42 dB in 3 dB steps (user-defined presets) | |
| Variable master gain | -6 dB to +17.9 dB stepless | |
| Exposure control | Down to 1/2000 sec | |
| Clean scanning PAL NTSC | 51 to 103 Hz 61 to 151 Hz | |
| Memory card | Smart card, store & recall scene & operator files | |
| 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 | Operator's manual camera rain cover 1 x owner card 2 x user cards shoulder strap | |
| Optional Viewfinder 1.5" Viewfinder | Model No. LDK 5301 | |
| Resolution | CRT >600 TV lines (center) | |



Ordering Information

Please contact your authorized Grass Valley representative.

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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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