

LDX Image Acquisition Solutions: *The Power of Choice*

LDX 86^N / Native 4K Pixels When Resolution Counts

LDX 86 / Better Pixels When You Need Them

With the two complementary LDX Series of cameras (the LDX 86 Series and the LDX 86^N Series), deciding which you should purchase comes down to the old adage “the right tool for the right job.”

The LDX 86 Series is a family of five cameras with a unique upgrade path allowing daily, weekly or perpetual upgrades to higher resolution, higher frame rate or both.

The LDX 86^N Series is similar to the LDX 86 Series in camera models (World-Cam, 4K, HiSpeed, XtremeSpeed and Universe), upgradeability, features and accessories. The difference becomes apparent when you consider how 4K UHD will impact your future (if it hasn’t already) and how you acquire those images.

Both the LDX 86 Series and the LDX 86^N Series acquire and output HD, 3G and high-speed images. The difference is in 4K acquisition and processing.

Two cameras in each series deliver a 4K UHD signal: the 4K and the Universe.

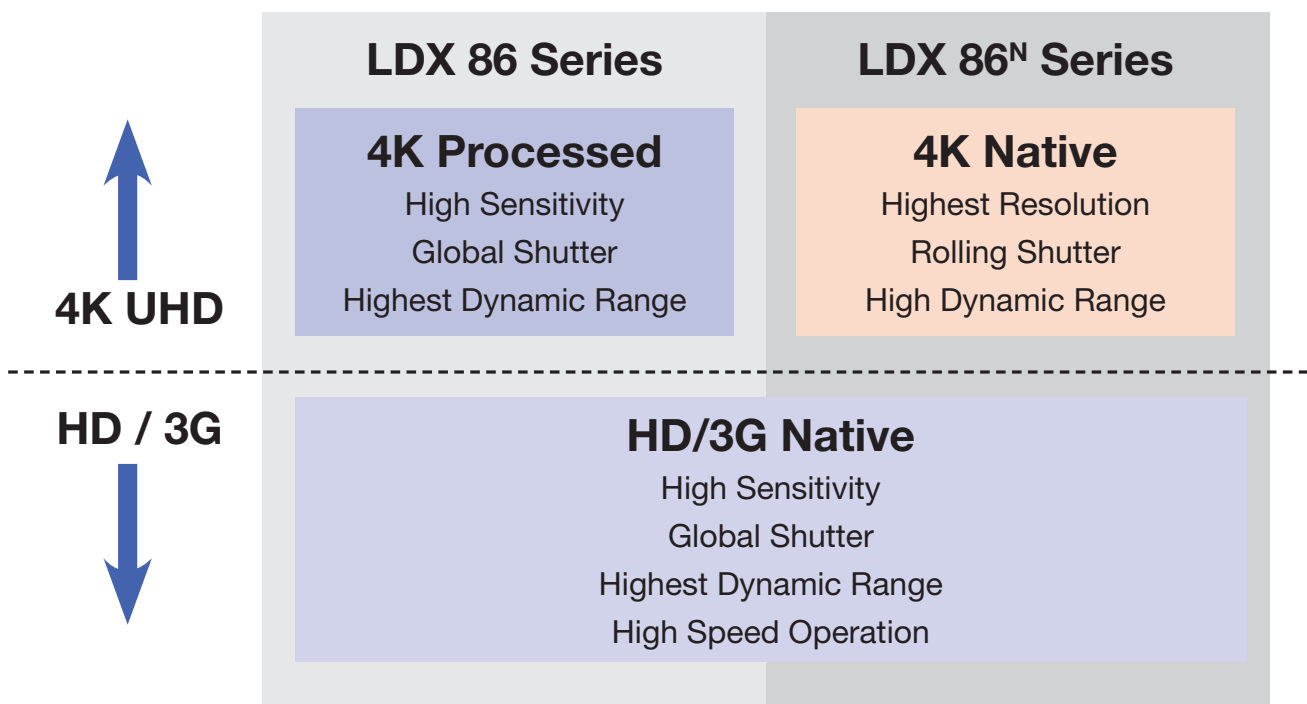
The LDX 86 Series of 4K cameras uses a unique closed-system process for 3840x2160 UHD where all of the processing takes place within the camera system. The benefits of acquiring 4K in this way mean high sensitivity (especially significant in low lighting situations), a global shutter similar to CCDs and the highest dynamic range available.

However, Grass Valley recognizes that native 4K has its place in the market as well, to deliver the sharpest images available. The LDX 86^N Series of five cameras is based on a new imager — a native 4K Xensium^{HAWK} CMOS imager that support full native 4K resolution as well as native HD resolution. This new 3840x2160p 4K Xensium^{HAWK} CMOS imager offers a unique pixel technology called DPM^{Ultra} (dynamic pixel management) functionality. With DPM^{Ultra}, the camera provides native 1920x1080 HD acquisition (by combining two horizontal and two vertical adjacent pixels) without the intrinsic downsides of 4K acquisition and downconversion, such as rolling shutter and decreased sensitivity, while delivering the resolution of native 4K when needed — and without having to zoom in on the image like other 4K “native” cameras are required to do to output UHD.

The LDX 86^N Series gives you the best of both HD/3G and 4K UHD worlds, along with the ability to purchase a native HD or high-speed camera today and upgrade it (on a daily, weekly or perpetual basis) to a native 4K camera.

Both the LDX 86^N Series and the LDX 86 Series offer optional HDR for single-speed operation via weekly and perpetual GV-eLicenses.

The choice is yours — you know your business best, and with either the LDX 86^N Series or the LDX 86 Series, you can be assured of getting the best images possible.



For Single-Speed Drama & Live Broadcast

Both the LDX 86^N Series and the LDX 86 Series are designed for flexibility, with the ability to be used for both dramatic productions and live broadcasts, especially sports. This is in stark contrast to other 4K camera solutions designed for dramatic productions and requiring the use of cinema-type PL mount lenses.

Only the use of compact 2/3-inch lenses with a B4 mount gives you the large zoom range, speed and depth of field which is required for demanding live and many dramatic productions. With both the LDX 86^N Series and LDX 86 Series, you can shoot HD, 3G or 4K — the same way you shoot today — without advanced technology getting in the way of storytelling.

LDX 86^N Series cameras are based on a new generation of native 3840x2160p 4K Xensium^{HAWK} CMOS imagers that support full native 4K resolution as well as native HD resolution. Each of the three 4K Xensium-HAWK CMOS imagers in the LDX 86^N Series offers a unique pixel technology called DPM^{Ultra} (dynamic pixel management) functionality. With DPM^{Ultra}, the camera provides native 1920x1080 HD acquisition (by combining two horizontal and two vertical adjacent pixels) without the intrinsic downsides of 4K acquisition, such as rolling-shutter and heavily decreased sensitivity, while delivering native 4K crispness when needed.

LDX 86 Series cameras are all built around three extremely powerful and Grass Valley-designed Xensium-FT imagers, which are the latest generation of native HD camera imagers offering all the advantages of CMOS imaging technology — high sensitivity in all video modes, high dynamic range, low power consumption and fast readout possibilities. They also include global shutter behavior which was previously only possible with CCD imagers. Xensium-FT imagers deliver unmatched sensitivity and picture quality — even in the most demanding of applications.

LDX 86^N Series and the LDX 86 Series, up to 15 F-stops of dynamic range is available from the Xensium-FT imagers in all 50/59.94 Hz formats with weekly and perpetual GV-eLicenses. This makes the LDX 86^N Series and the LDX 86 Series the first native HDR acquisition solutions available for even the most challenging live applications.

Unlike other 4K cameras, what looks like “in focus” in the viewfinder actually is “in focus” in all Grass Valley 4K cameras. As was learned in the transition from SD to HD, keeping focus in higher resolutions on a small viewfinder can be challenging for operators. Grass Valley has put significant effort to make sure that operators can focus in 4K quickly and accurately.

Your Challenges — Your Solution

| Requirement | Importance | | | Solution | | | | |
|---|------------|-------------|---------|--|------------------------|---------------------|-------------------------------------|----------------------------------|
| | HD/3G | 4K Close-up | 4K Wide | LDX 82 Series in HD/3G | LDX 86 Series in HD/3G | LDX 86 Series in 4K | LDX 86 ^N Series in HD/3G | LDX 86 ^N Series in 4K |
| CMOS Imaging Technology | | | | YES | YES | YES | YES | YES |
| Full Digital Imagers | | | | YES | YES | YES | YES | YES |
| High Dynamic Range | | | | YES | YES | YES | YES | YES |
| Global Shutter | | | | YES | YES | YES | YES | NO |
| Highest Sensitivity in All Formats | | | | YES | YES | YES | YES | NO |
| Native Acquisition | | | | YES | YES | NO | YES | YES |
| Highest Resolution Possible | | | | YES | YES | NO | YES | YES |
| | | | | LDX 82 Series the ultimate HD/3G camera system | | | | |
| | | | | LDX 86 Series for highest sensitivity and flexibility | | | | |
| | | | | LDX 86 ^N Series when resolution counts most | | | | |

BUSINESS CASE

- The LDX 86^N Series and LDX 86 Series allows you the flexibility of purchasing the camera you need today (as CAPEX), secure in the knowledge that you can upgrade the camera (as OPEX) at any time to the formats you might need tomorrow
- LDX 86^N Series and LDX 86 Series cameras give you the flexibility to start with either a standard single-speed HD/3G camera or a 3X high-speed camera and combine their functionality in a single camera capable of switchable 1X/3X/6X HD, 1X/3X/6X 3G and 1X 4K operation with either a 1-day, 7-day term or perpetual GV-eLicense
- LDX 86^N Universe and LDX 86 Universe cameras can operate as either an HD, 3G, 4K or high-speed camera for the ultimate in camera operation
- LDX 86^N Series and LDX 86 Series cameras offer optional HDR for single-speed operation via weekly and perpetual GV-eLicenses
- LDX 86^N Universe and LDX 86 Universe cameras allow directors and producers to make any single-speed camera position a high-speed camera position with a simple menu selection (appropriate slow-motion replay control system required)
- LDX 86^N Universe and the LDX 86 Universe integrates with the K2 Dyno or LiveTouch Replay Systems, optimized for 6X super slow-motion or 4K to dramatically expand the ability to tell a compelling story during replays
- The LDX 82 Series is identical to the LDX 86 Series when used for HD/3G (but it does not support, nor is it upgradeable to 4K UHD operation)

For High-Speed Slow-Motion Sports & Entertainment

To capture fast-paced action and emotion at unrivaled quality levels, high frame rates and with instant time-to-air, the LDX 86^N HiSpeed/LDX 86 HiSpeed (1X/3X) and the LDX 86^N XtremeSpeed/LDX 86 XtremeSpeed (1X/3X/6X) cameras give you the tools you need for engaging content that keeps viewers glued to the screen.

With LDX 86^N/LDX 86 high-speed cameras, all captured frames are output to the XCU base station instantaneously, offering an instant time-to-air replay without a cumbersome double-action memory buffer in the camera. This makes the difference between being able to bring a shot to air, or missing the moment. Since all the images can be permanently recorded, they can be used at any time and not a single moment will be missed or lost.

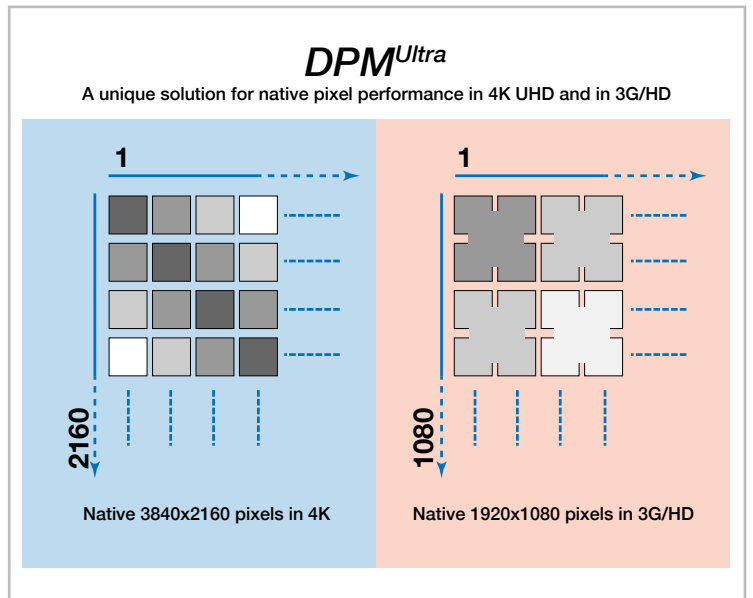
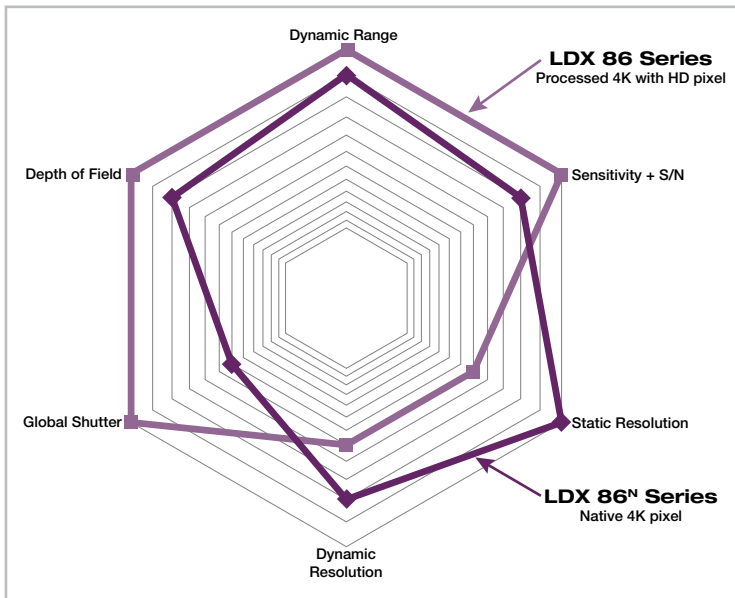
The LDX 86^N HiSpeed/LDX 86 HiSpeed cameras are designed for all 3X speed applications in 1.5G HD acquisition formats. However, they are the first super slow-motion camera system available which offers a double upgrade path: First to a fully featured super slow-motion camera system with up to 6X speed 3G operation. And second, to a 1X speed 4K acquisition system, with the LDX 86^N Series providing native 4K acquisition. This increase

in flexibility offers a much more future-ready solution than any other 3X or 6X speed camera system previously available.

The LDX 86^N XtremeSpeed/LDX 86 XtremeSpeed provides up to 6X speed operation, permitting the user to choose the speed which offers the best compromise between sensitivity, noise performance, additional motion resolution and the replay time needed for a wide variety of applications in live broadcast.

As the LDX 86^N and LDX 86 high-speed cameras are part of the LDX range, they integrate seamlessly and offer easy matching with all the other camera positions of the same series.

To make images look their best, LDX incorporates TrueTexture — a unique feature to preserve texture throughout all processing parameters. Another imaging innovation is ArtTouch, an intuitive interface between the operator and hardwired controls, which significantly enhances artistic possibilities within a live broadcast. Looking back at the last few years in broadcasting, a lot has changed with respect to the way productions are being managed



LDX 86^N UNIVERSE/LDX 86 AND LIVETOUCH & K2 DYNO UNIVERSE INTEGRATED REPLAY SYSTEM

The LDX 86^N Universe or LDX 86 Universe combined with the K2 Dyno or LiveTouch Replay System provide an integrated capture and replay system that's switchable between spatial resolution (4K) or temporal resolution (6X), while also supporting both SDI and IP connectivity.

For the ultimate in super slow-motion replay control, K2 Dyno and LiveTouch Replay Systems are available in multiple different configurations optimized for all kinds of replay applications.

With this wide range of replay systems, all 4K and all 6X workflows are now possible, with no reduction in the number of cameras and no requirement for more operators (in comparison to HD).



from an artistic point of view. To an increasing extent, there is a close collaboration between creative directors and the camera shaders, who adjust each camera feed to perfection. With all LDX cameras, a completely new level of artistic camera control is included, to support today's and tomorrow's requirements for live shading flexibility. By using the full latitude of both types of Xensium CMOS imagers, control of every aspect of the image is available, so any degree of creative touch can be applied.

All high-speed camera operations face a unique challenge caused by most artificial light sources. In stadiums, sports arenas and the like, lighting conditions are often not ideal for high-speed acquisition. A visual flicker is perceived as changes in light levels due to the mismatch between the camera scanning frequency and the power frequency of artificial lights. With the unique AnyLightXtreme feature for LDX 86^N/LDX 86 high-speed camera systems, there is compensation for this mismatch that helps to automatically reduce flicker, with several presets for different lighting conditions available in the cameras. These presets can be accessed from the operational control panel (OCP) or Creative Grading panel and app. The various presets permit the camera to reduce the flickering in the most effective way based on the lighting situation and scanning frequency.

Productions need freedom, flexibility and adaptability. Grass Valley understands the value of being able to choose the right solution to fit specific requirements. Since LDX 86^N/LDX 86 high-speed camera systems enable operation in a variety of different modes — which includes single speed (1X) operation with full performance — they can be used without any compromise in nearly all applications.

With the unique GV-eLicense program, where users have the choice of upgrading their cameras with a 1-day, 7-day or perpetual term, the LDX 86^N/LDX 86 HiSpeed can be upgraded to the LDX 86^N XtremeSpeed/LDX 86 XtremeSpeed, which offers additional flexibility. The LDX 86^N XtremeSpeed/LDX 86 XtremeSpeed can be further upgraded to the LDX 86^N Universe/LDX 86 Universe, offering “universal format” support with switchable 1X/3X/6X HD, 1X/3X/6X 3G and 1X 4K from a single camera for ultimate flexibility and equipment utilization, with native 4K acquisition in the LDX 86^N Universe.

An enhancement to the 7-day term licenses is the B.O.W.L. (bunch of weekly/daily licenses) licensing option, where users can preorder any number of 1-day or 7-day licenses and activate them whenever needed — without the need to go through an order process.

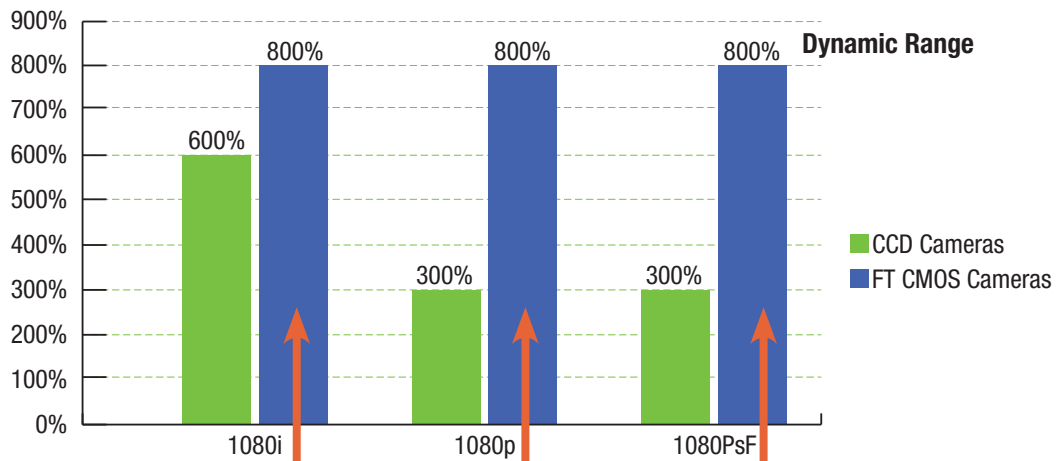
Dynamic Range

Poor lighting conditions are very likely the largest challenge to a broadcast camera in all outdoor applications because the lighting conditions are not under control.

To minimize lighting issues, we need an imager with a high dynamic range, and we also need signal processing which uses the additional dynamic range in the best way possible.

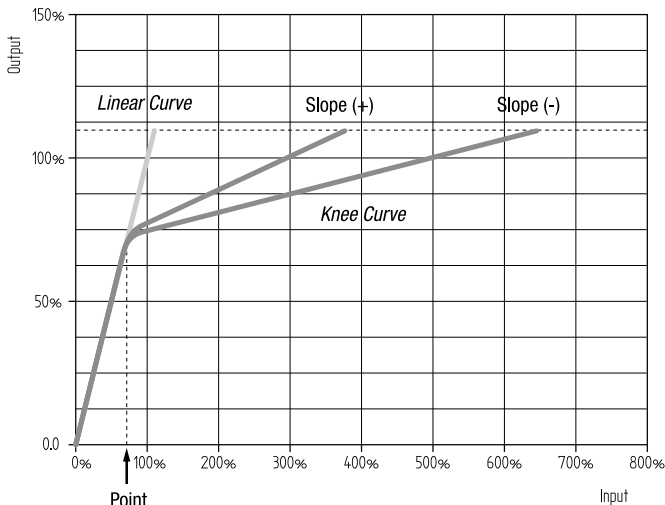
The charts below refer to the superior standard dynamic range of the Grass Valley Xensium FT CMOS imagers used in the LDX 82 and LDX 86 cameras. Additional XDR — Extended Dynamic Range — operation providing up to 15 F-stops of light exposure is available as an optional upgrade to all LDX 82, 86 and 86^N Series cameras for 50/59.94 Hz operation.

High scene contrast between sunlit and shadowy areas

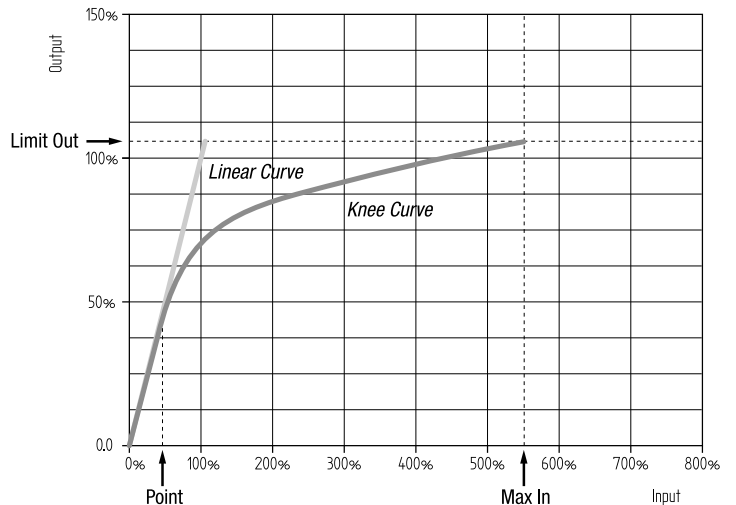


In interlace formats, CMOS imagers deliver 200% more dynamic range

In progressive formats, CMOS imagers deliver nearly 3 times the performance of CCDs



Traditional knee curve



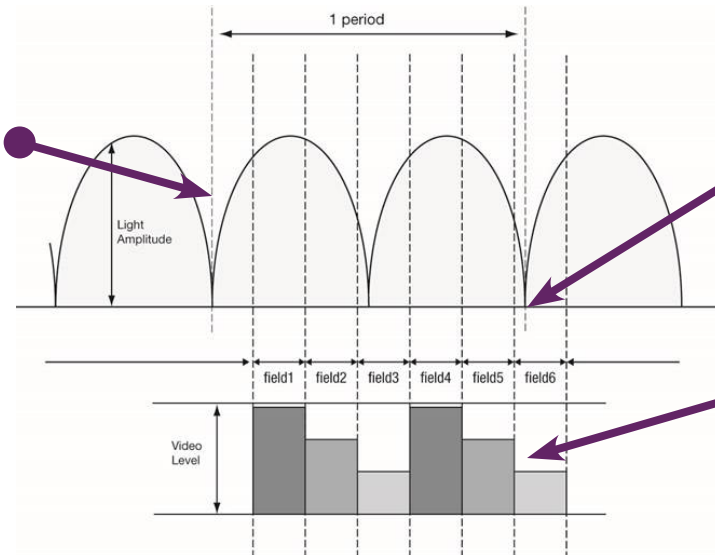
Knee power curve

The knee power curve above is for illustration purposes only. The maximum dynamic range is up to 800% for the LDX 82 Series and LDX 86 Series cameras in regular SDR (non-HDR) operation.

AnyLightXtreme

Artificial light flickering during replay is one of the largest limitations for Super Slow-Motion applications.

Most artificial light sources are “flashing” with the AC frequency

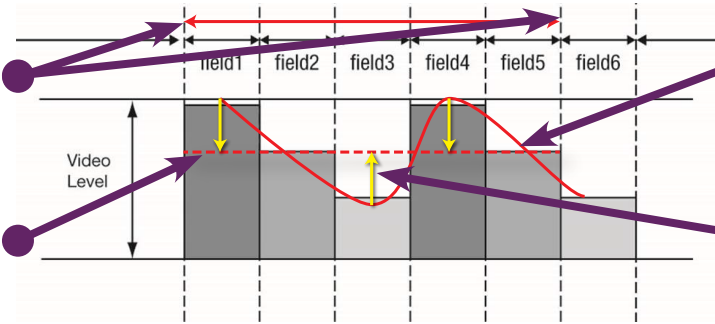


The exposure time of each high-speed frame is shorter than a light “flash”

From frame to frame the output signal varies depending on the light level

Flicker caused by artificial AC light sources.

1. AnyLightXtreme flicker reduction measures each pixel’s output signal over several frames



2. Any variation of the output signal will be analyzed

4. Almost any flicker can be removed from the output

3. A correction signal is applied to each pixel



All indoor sports arenas use artificial lighting. The same is true for evening events at outdoor stadiums, studio and show productions, etc.

LDX 86^N Series

Native HD/3G/4K/High-Speed HDR System Camera Solutions

Native 4K Pixels When Resolution Counts

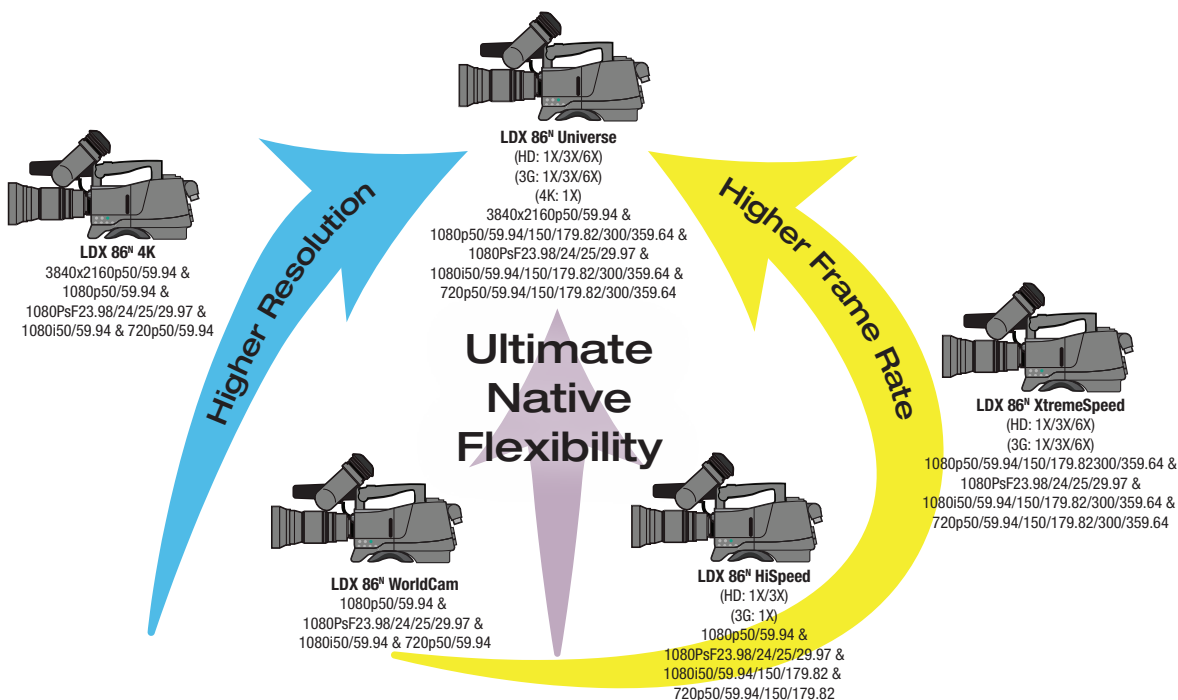


The LDX 86^N Series cameras takes the LDX 86 Series to a new level with native 4K (3840x2160) and native HD (1920x1080) image capture, using three unique 3840x2160p 4K Xensium^{HAWK} CMOS imagers with DPM^{Ultra} (dynamic pixel management) functionality. In addition, the LDX 86^N gives you the same familiar GV-eLicense upgrade path so that you can always have the camera that you need, with the ability to use standard B4 2/3-inch HD lenses or the new B4 2/3-inch 4K lenses. So whether it's HD or 3X super slow-motion today, 3G or 6X super slow-motion tomorrow, or 4K UHD down the road, you'll be ready for whatever your productions demand.

The LDX 86^N Series of cameras from Grass Valley provides for native 4K, 3G and HD acquisition when you want the sharpest and clearest images possible, with any native single speed HD, 3G and native 4K (3840x2160p) format — as well as 3X or 6X native HD/3G speed — with the LDX 86^N Universe, a single camera that can easily switch between all these spatial and temporal formats. Plus the ability for any of the lower camera models to be upgraded in the field with GV-eLicenses — on a 1-day, 7-day or perpetual basis — to any of the higher models of the range. Optional HDR for single-speed operation is available via a weekly or perpetual GV-eLicense.

The LDX 86^N Series delivers a combination of unique multiformat native acquisition benefits not found in any other camera system:

- Parallel spatial and temporal upgrade paths:
 - LDX 86^N native HD/3G cameras are upgradable to native 4K, and/or upgradeable to high-speed native HD/3G
 - LDX 86^N high-speed cameras are upgradable from 3X native HD to 6X native HD/6X 3G, and further upgradable to 1X native 4K
- Standard B4 2/3-inch lens mounts on all LDX 86^N cameras — including 4K cameras — to accommodate HD lenses already purchased and on-hand, or 2/3-inch 4K lenses
- Three 3840x2160p4K Xensium^{HAWK} CMOS imagers with DPM^{Ultra}:
 - Native 4K UHD 3840x2160 acquisition
 - Native HD/3G 1920x1080 acquisition
 - Extended color gamut supporting the ITU-R BT.2020 standard
 - No sensitivity to fast camera movements with short exposure time in all HD/3G modes including high-speed operation modes with global shutter (similar to CCDs)
 - No sensitivity to short light flashes
 - Optional native HDR for single-speed operation



For increased flexibility, all the LDX 86^N Series camera systems use the same high performance XF Fiber transmission solutions. This allows you to mix and match all the different LDX 86^N cameras inside one production environment, including LDX 86 Series cameras. The unique and patented cradle concept of the XF Fiber XCU lets you relocate camera base stations quickly and safely, while built-in memory inside the cradle ensures that all camera/XCU settings and configurations will be automatically updated for the correct production environment.

Special processing is implemented in the LDX 86^N 4K and LDX 86^N Universe camera heads for judging the focus in 4K, which means that all current viewfinders can be used for 4K production. CLASS (chromatic lens aberration and sharpness solution) is implemented in all LDX 86^N Series cameras, and the use of CLASS/ALAC (automatic lens chromatic aberration) compatible lenses is highly recommended for 4K productions.

In addition, most of the LDX 86 Series camera accessories are identical to those used by the LDX 80 Series and the latest LDX 82 Series cameras so that a high level of interchangeability between these different product lines can be achieved.

The LDX 86^N Series

The LDX 86^N Series provide you with two parallel upgrade paths: One based on higher resolution (HD/3G/4K) and one based on higher frame rates (3X/6X). Both paths start with the LDX 86^N WorldCam as their base.

LDX 86^N Native Higher Resolution Upgrade Path

LDX 86^N WorldCam — Offers all the production formats of the LDX 82 WorldCam and LDX 86 WorldCam (HD/PsF/3G) plus an upgrade path via GV-eLicenses directly to native 4K (LDX 86^N 4K) as well as directly to 3X HD (LDX 86^N HiSpeed) or 6X HD/6X 3G (LDX 86^N XtremeSpeed), and then to all LDX 86^N formats (LDX 86^N Universe).

LDX 86^N 4K — Adds native 4K (3840x2160p) acquisition to the LDX 86^N WorldCam, and can be upgraded to 6X HD and 6X 3G high-speed (LDX 86^N Universe).

LDX 86^N Universe — Offers “universal format” support with switchable 1X/3X/6X native HD, 1X/3X/6X native 3G and 1X native 4K from a single camera for ultimate flexibility and equipment utilization.

LDX 86^N Native Higher Frame Rate Upgrade Path

LDX 86^N WorldCam — Offers all the production formats of the LDX 82 WorldCam and LDX 86 WorldCam (HD/PsF/3G) plus an upgrade path via GV-eLicenses directly to native 4K (LDX 86^N 4K) as well as directly to 3X HD (LDX 86^N HiSpeed) or 6X HD/6X 3G (LDX 86^N XtremeSpeed), and then to all LDX 86^N formats (LDX 86^N Universe).

LDX 86^N HiSpeed (HS) — Offers 1X/3X native HD acquisition for super slow-motion acquisition, as well as all the production formats of the LDX 86^N WorldCam. It can be upgraded to 1X/3X/6X HD and 1X/3X/6X 3G (LDX 86^N XtremeSpeed) as well as adding 1X native 4K (LDX 86^N Universe).

LDX 86^N XtremeSpeed (XS) — Adds 6X HD and 6X 3G acquisition to the LDX 86^N HiSpeed for super slow-motion acquisition, and can be upgraded to include 1X native 4K (LDX 86^N Universe).

LDX 86^N Universe — Offers “universal format” support with switchable 1X/3X/6X native HD, 1X/3X/6X native 3G and 1X native 4K from a single camera for ultimate flexibility and equipment utilization.

GV-eLicense PROGRAM

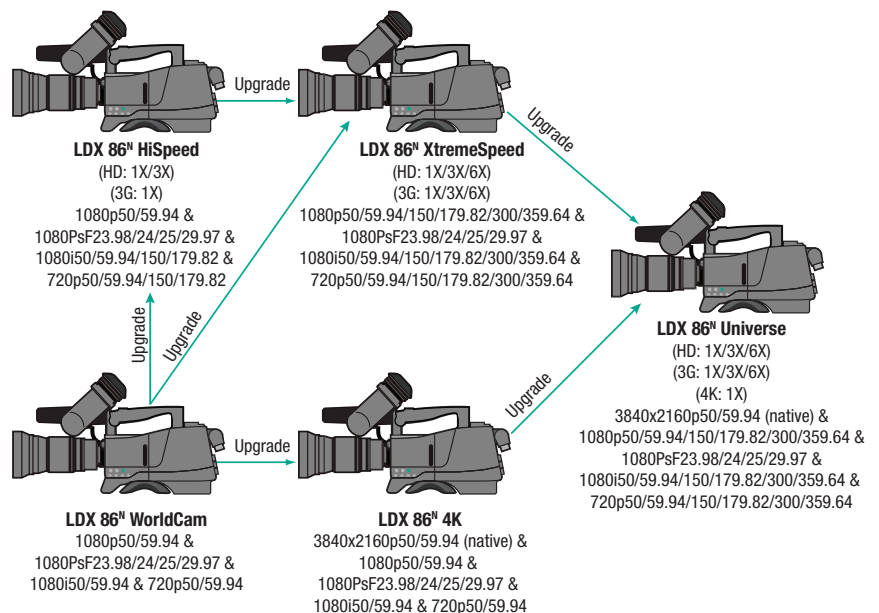
Perpetual license: Perpetual upgrade to the next camera in the range

7-day term license: 7-day (weekly) term upgrade to the next camera in the range

1-day term license: 1-day (24 hours) term upgrade to the next camera in the range. They are available in packs of 10 1-day licenses.

HDR weekly or perpetual license: 7-day or perpetual licenses for the addition of HDR operation in all single speed formats for all LDX 86^N Series camera heads is available. (1-day HDR licenses are not available.)

Multiple licenses may be purchased to upgrade cameras by more than one level (e.g., LDX 86^N XtremeSpeed or LDX 86^N 4K to LDX 86^N Universe). Multiple 1-day and 7-day term licenses may be purchased for extended term upgrades. The B.O.W.L. licensing system provides a way to preorder any number of 1-day or 7-day licenses and activate them whenever needed without having to place individual orders. No credit is given for the purchase of 1-day or 7-day term licenses towards the purchase of a perpetual license.



LDX 86^N SERIES KEY FEATURES (NATIVE HD/3G/4K)

- The LDX 86^N Series has the same spatial and temporal upgrade path as the LDX 86 Series, culminating in the LDX 86^N Universe for switchable 1X/3X/6X native HD, 1X/3X/6X native 3G and 1X native 4K
- The LDX 86^N WorldCam lets you buy native HD/3G acquisition today, and upgrade to native 4K and high-speed acquisition when you need to, either for 1-day (sold in packs of 10), 7-days or with a perpetual license
- The LDX 86^N 4K and LDX 86^N Universe are specifically designed for live broadcast 4K UHD in controlled lighting situations and/or wide angle camera positions, especially sports productions, where the use of traditional B4 mount HD/4K lenses instead of PL lenses enhances the producer's and director's ability to tell compelling and engaging stories, without any loss of sensitivity
- Optional HDR operation in all single speed formats
- The LDX 86^N Series now delivers wide color gamut
- LDX 86^N 4K and LDX 86^N Universe cameras are fully integrated with all the LDX 80 Series, LDX 82 Series and LDX 86 Series of cameras, so they share the same camera accessories and use the same camera control system, including full support with the C2IP for the best possible integration into external control systems
- Unique cradle connectivity to support dockable XCU (eXchangeable control unit)
- Built-in memory in XCU cradle stores settings
- Standard HD outputs for monitoring or any full performance live usage
- Extensive (analog/digital) audio connectivity
- Embedded audio
- Compact (2 RU), robust base station

LDX 86^N SERIES KEY FEATURES (HIGH-SPEED/HD/3G/4K)

- The LDX 86^N HiSpeed is the newest generation camera for 3X speed applications with improved performance. It is also the first 3X speed camera system to offer an upgrade path to a 6X super slow-motion and 4K camera system via GV-eLicenses
- The LDX 86^N XtremeSpeed 6X camera system sets a new standard for super slow-motion image acquisition by introducing a workflow with instant time-to-air without a cumbersome double-action memory buffer in the camera — so that not a single moment of the action will be missed or lost
- All high-speed cameras offer a live 1X standard-speed output in addition to the high-speed output
- All high-speed cameras offer the highest sensitivity and image performance across all of the different acquisition speeds, and the unique AnyLightXtreme flicker reduction system assure that no more irritating light flickering occurs in the replays
- The LDX 86 Series now delivers wide color gamut
- Grass Valley high-speed cameras are fully integrated with all the LDX 80 Series, LDX 82 Series and LDX 86 Series of cameras, so they share the same camera accessories and use the same camera control system, including full support with the C2IP for the best possible integration into external control systems
- Unique cradle connectivity to support dockable XCU (eXchangeable control unit)
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LDX 86^N CAMERA SERIES VIDEO FORMATS

| | | Upgrade Path | | | Upgrade Path | |
|----------------|--------------------------|-----------------------------|---------------------------------|------------------------------|------------------------|------------------------------|
| | | LDX 86 ^N HiSpeed | LDX 86 ^N XtremeSpeed | LDX 86 ^N Universe | LDX 86 ^N 4K | LDX 86 ^N WorldCam |
| 1X Speed HD/3G | 720p50/59.94 | X | X | X | X | X |
| | 1080i50/59.94 | X | X | X | X | X |
| | 1080PsF23.98/24/25/29.97 | X | X | X | X | X |
| | 1080p50/59.94 | X | X | X | X | X |
| High-Speed | 720p150/179.82 | X | X | X | — | — |
| | 1080i150/179.82 | X | X | X | — | — |
| | 1080p150/179.82 | — | X | X | — | — |
| | 720p300/359.64 | — | X | X | — | — |
| | 1080i300/359.64 | — | X | X | — | — |
| | 1080p300/369.64 | — | X | X | — | — |
| 4K | 3840x2180p50/59.94 | — | — | X | X | — |

LDX 86^N CAMERA SERIES COMMON SPECIFICATIONS

(Common to all LDX 86^N cameras — see below for Video Modes specifications for individual LDX 86^N camera series models)

General

Temperature range: -20° to +45°C (-4° to 113°F) (operating)
Weight: 2.1 kg (4.6 lbs.) (including handgrip and shoulder pad)
Dimensions: Width: 170 mm, depth: 200 mm, height: 180 mm (6.7 x 7.9 x 7.1 in.)
Power: Supplied through the transmission adapter

Camera

Pick-up device: 3x 2/3" 4K Xensium^{HAWK} CMOS imagers with DPM^{Ultra}
Smear: no vertical smear
Shutter: no mechanical shutter
Optical system: F1.4 prism
Lens mount: 2/3" Bayonet type
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, 4P-star, 5µ OLPF, cap-filter
Electronic color correction: 3200°K, 5600°K, 7500°K, FL, 2 AWB presets, Var, continuous auto white

Video Modes (switchable)

S/N ratio: 60 dB typical (HD)
Aspect ratio: 16:9
Modulation depth: 60% (typical) at 800 TV lines (27 MHz) in 1080i50/59.94 & 720p50/59.94 modes
Digital resolution: Floating point A/D-conversion with 16-bit performance and with 34-bit processing in RGB
Horizontal resolution: >1,000 TV lines (HD), >2,000 TV lines (4K UHD)
Gain selection: -6 dB to +12 dB in 3 dB steps (user-definable presets) or continuous master gain
Connectivity
 Front microphone input: XLR-3 female, balanced, phantom +48V selectable
 USB
 Ethernet RJ-45
 Lens connector: Hirose 12-pin
 Viewfinder connector: 20-pin and HDMI
Control Buttons
 PickMe
 Info

Menu control
 Intercom production/engineering
 Return A / Return B
 Filter wheel selection
 Standard file recall
 4x user assignable

Control Switches

On/off
 Color bar
 Gain selection
 Color temperature
 Exposure time
 White balance

Accessories

2" LCD viewfinder
 7" LCD viewfinder (economic)
 7" LCD viewfinder (native HD)
 7.4" OLED viewfinder

LDX 86^N CAMERA SERIES VIDEO MODES SPECIFICATIONS

LDX 86^N WorldCam

1080p50/59.94, 1080PsF23.98/24/25/29.97, 1080i50/59.94 & 720p50/59.94
 Sensitivity at 2000 lux:
 – F10.0 (1080i50, 720p50 & 1080p50)
 – F9.0 (1080i59.94, 720p59.94 & 1080p59.94)
 – F14.0 (1080PsF23.98/24/25)
 – F13.0 (1080PsF29.97)

LDX 86^N 4K

3840x2160p50/59.94

Sensitivity at 2000 lux:
 – F10.0 to F5.0 (50 Hz)*
 – F9.0 to F4.5 (59.94 Hz)*

1080p50/59.94, 1080PsF23.98/24/25/29.97, 1080i50/59.94 & 720p50/59.94

Sensitivity at 2000 lux:
 – F10.0 (1080i50, 720p50 & 1080p50)
 – F9.0 (1080i59.94, 720p59.94 & 1080p59.94)
 – F14.0 (1080PsF23.98/24/25)
 – F13.0 (1080PsF29.97)

LDX 86^N HiSpeed

1080p50/59.94, 1080PsF 23.98/24/25/29.97, 1080i50/59.94/150/179.82 & 720p50/59.94/150/179.82
 Sensitivity at 2000 lux:
 – F10.0 (1080i50, 720p50 & 1080p50)
 – F9.0 (1080i59.94, 720p59.94 & 1080p59.94)
 – F6.0 (1080i150 & 720p150)
 – F5.2 (1080i179.82 & 720p179.82)
 – F14.0 (1080PsF23.98/24/25)
 – F13.0 (1080PsF29.97)

LDX 86^N XtremeSpeed

1080p50/59.94/150/179.82/300/359.64, 1080PsF 23.98/24/ 25/29.97, 1080i50/59.94/150/179.82/300/359.64 & 720p50/59.94/150/179.82/300/359.64
 Sensitivity at 2000 lux:
 – F10.0 (1080i50, 720p50 & 1080p50)
 – F9.0 (1080i59.94, 720p59.94 & 1080p59.94)
 – F6.0 (1080i150, 720p150 & 1080p150)
 – F5.2 (1080i179.82, 720p179.82 & 1080p179.82)
 – F4.3 (1080i300, 1080p300 & 720p300)
 – F3.7 (1080i359.64, 1080p359.64 & 720p359.64)
 – F14.0 (1080PsF 23.98/24/25)
 – F13.0 (1080PsF29.97)

LDX 86^N Universe

3840x2160p50/59.94

Sensitivity at 2000 lux:
 – F10.0 to F5.0 (50 Hz)*
 – F9.0 to F4.5 (59.94 Hz)*

1080p50/59.94/150/179.82/300/359.64, 1080PsF23.98/24/25/29.97, 1080i50/59.94/150/179.82/300/359.64 & 720p50/59.94/150/179.82/300/359.64

Sensitivity at 2000 lux:
 – F10.0 (1080i50, 720p50 & 1080p50)
 – F9.0 (1080i59.94, 720p59.94 & 1080p59.94)
 – F6.0 (1080i150, 720p150 & 1080p150)
 – F5.2 (1080i179.82, 720p179.82 & 1080p179.82)
 – F4.3 (1080i300, 1080p300 & 720p300)
 – F3.7 (1080i359.64, 1080p359.64 & 720p359.64)
 – F14.0 (1080PsF23.98/24/25)
 – F13.0 (1080PsF29.97)

* Specifications depend on the selected sensitivity mode.
 Notes: All figures are valid for operation in native acquisition modes.