NUCLEUS

antelope
CAMERA SYSTEMS

NUCLEUS SYSTEM – UHD HDR Slow Motion

Discover the Antelope Nucleus System, the comprehensive solution for all broadcast high-speed and slow-motion applications. Offering unmatched flexibility and image quality, the Nucleus system is the ideal choice for demanding productions.

The Nucleus System captures stunning UHD HDR 12-bit images at up to 250 fps in UHD resolution or 480 fps in Full HD, providing exceptional detail and visual impact.

The **Nucleus Server** supports a variety of camera heads: From the ultra-compact, motorized **Nucleus Pico** camera head, to the **Nucleus Dirtcam**, designed for unique low-angle perspectives close to the ground, the system offers unparalleled adaptability. The **Nucleus Pico 90°**, with its slim vertical profile, is ideal for goalpost installations, while the robust **Nucleus Compact**, featuring a B4 mount, excels in rail system or large-lens setups. The Nucleus system offers unmatched adaptability, seamlessly integrating into any production environment.

The system's intuitive **Operation Control Panel** (OCP) and **Nucleus Control Panel** (NCP) ensure easy integration and control for picture engineers and slow-motion operators alike.

With the Nucleus system, you'll never miss a moment, empowering your production with the most advanced high-speed and slow-motion technology.

NUCLEUS SYSTEM – UHD HDR Slow Motion

High-Speed Performance

With an impressive 250 frames per second in UHD and 480 frames per second in FHD, Antelope cameras ensure no single moment is ever missed. Deliver breathtaking, never-before-seen shots that captivate your audience and elevate their viewing experience to new height.

Connectivity & Integration

The camera's integrated LC fiber connectivity ensures reliable signal transmission across your entire production site, reaching the OB van with ease. For productions utilizing the SMPTE standard, our optional **Cobra Fiber Link System** provides seamless integration, offering live view and intercom communication for camera operators.

Versatility & Customization

Antelope cameras are designed to adapt to any situation or position, offering a wide range of housing options, lenses, and mounts. Need a custom solution? With our custom development capabilities, your most ambitious camera shot ideas can become a reality.

Continuous Recording

The ultra-fast NVMe SSD RAID ensures seamless recording, while triggerless slow-motion recording eliminates the traditional limitations of slow-motion capture.
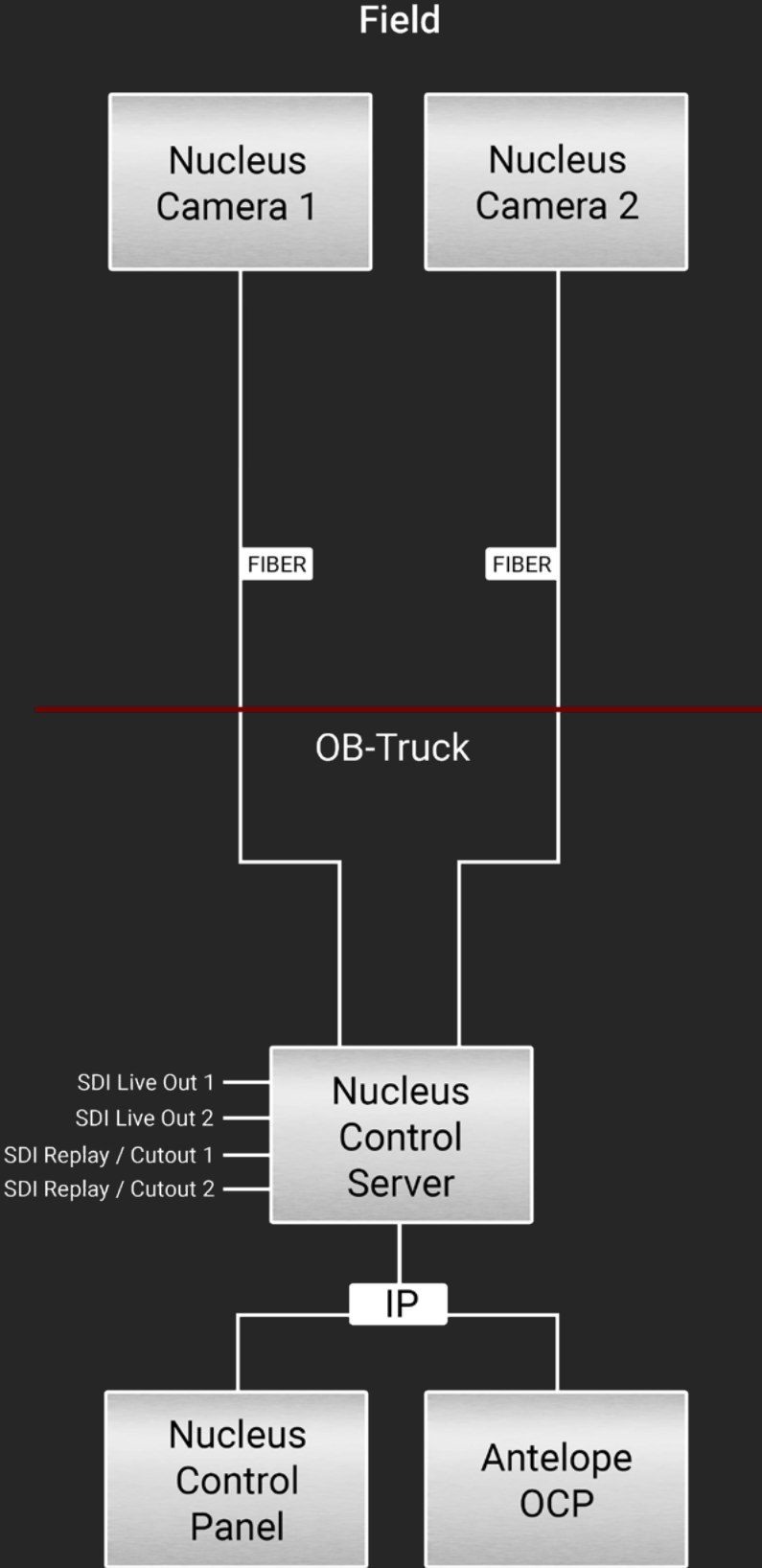
Integrated Clip Management

Streamline your workflow with our all-in-one solution. Create, manage, and access highlights directly on the **Nucleus server** through our intuitive user interface, eliminating the need for external replay systems.
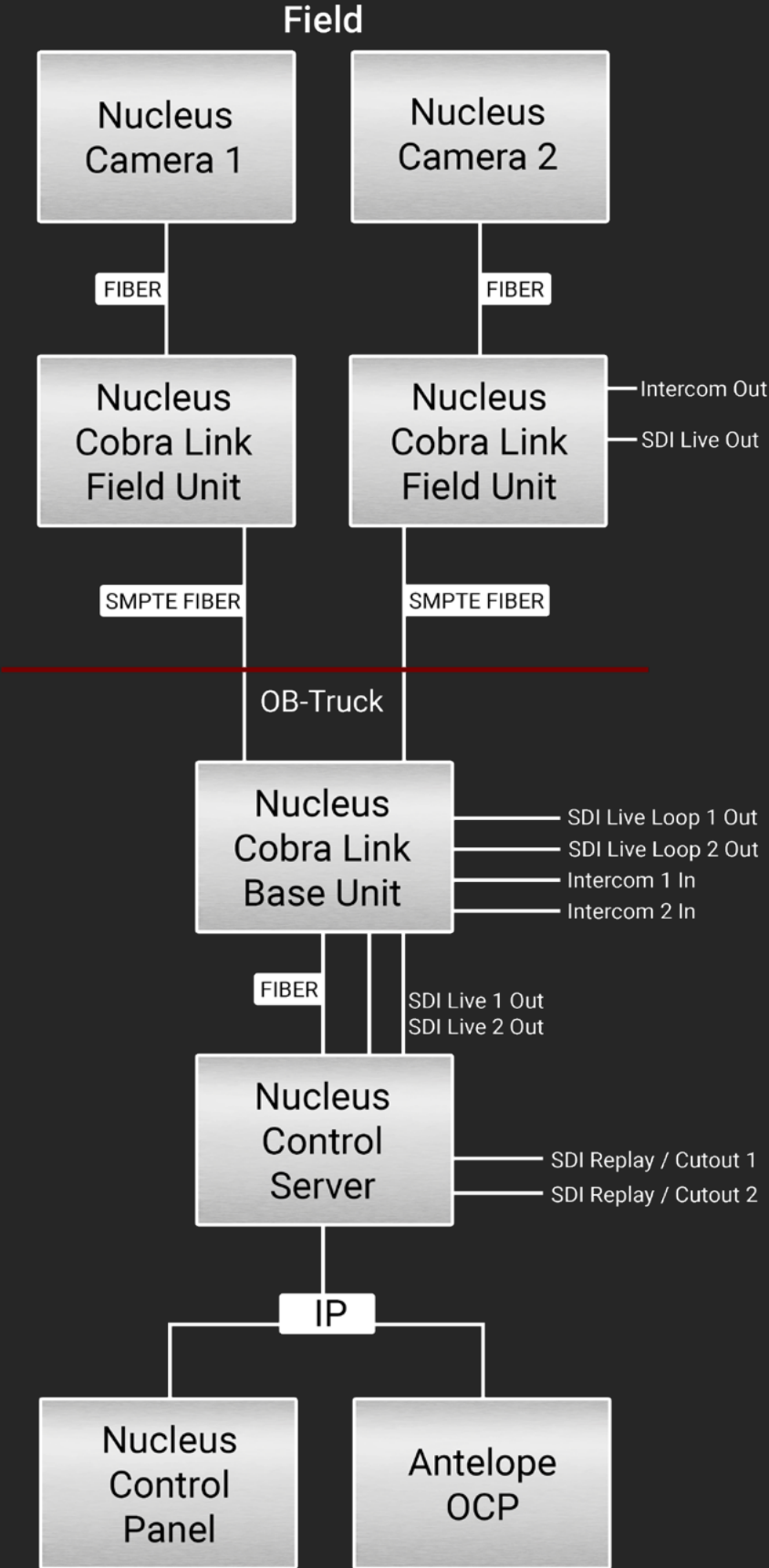
Zoom Motion: Redefining Slow-Motion Replay

Experience digital live zoom and reframing like never before. With the Nucleus System, effortlessly create stunning slow-motion zooms and digital pans during playback. Capture the entire frame in every recording, allowing you to add zooms and pans during replay — without the help of camera operators. Save clips with motion data or revise them later.

NUCLEUS BASIC SETUP

Field

Nucleus
Camera 1

Nucleus
Camera 2

FIBER

FIBER

OB-Truck

SDI Live Out 1
SDI Live Out 2
SDI Replay / Cutout 1
SDI Replay / Cutout 2

Nucleus
Control
Server

IP

Nucleus
Control
Panel

Antelope
OCP

NUCLEUS COBRA LINK SETUP

Field

Nucleus Camera 1

Nucleus Camera 2

FIBER

FIBER

Nucleus Cobra Link Field Unit

Nucleus Cobra Link Field Unit
- Intercom Out
- SDI Live Out

SMPTE FIBER

SMPTE FIBER

OB-Truck

Nucleus Cobra Link Base Unit
- SDI Live Loop 1 Out
- SDI Live Loop 2 Out
- Intercom 1 In
- Intercom 2 In

FIBER

SDI Live 1 Out
SDI Live 2 Out

Nucleus Control Server
- SDI Replay / Cutout 1
- SDI Replay / Cutout 2

IP

Nucleus Control Panel

Antelope OCP

NUCLEUS PICO – The Allrounder

UHD Version

- Sony CMOS sensor
- 4128x3008 - 12.4MP - 2.74 µm
- 250FPS @ UHD
- Global shutter - 5µs-1s
- 74dB Dynamic range HDR
- SFP 28 - 25 GigE
- Lens Motor control
- 12V - 800mA
- 105x65x50mm - 500g

FHD Version

- Sony CMOS sensor
- 1936x1464 - 2.8MP - 4.5 µm
- 480FPS @ FHD
- Global shutter - 5µs-1s
- 74dB Dynamic range HDR
- SFP 28 - 25 GigE
- Lens Motor control
- 12V - 800mA
- 105x65x50mm - 500g

The **Nucleus Pico** miniature slow motion and live broadcast camera system captures UHD images at an amazing 250 FPS and 480 FPS in FHD. The system is not only optimized for highest broadcast image quality, but also for its amazingly small size. This not only allows the Nucleus Pico camera head to be hidden very close to the action, but together with the extreme slow motion replay also offers new angles and never seen before details

The **Nucleus Pico** uses a newly developed durable flanged mounting system positive lock (PL) mount. The traditional C-mount has a number of limitations when working with lens motors and miniature cameras, and the Antelope PL C-mount has been developed to specifically address those limitations. The new mount is robust and reliable while guaranteeing a precise flange focal distance. Any C-mount lens can be easily adapted to the new Antelope C-mount.

NUCLEUS PICO 90° – The Slim

UHD Version
- Sony CMOS sensor
- 4128x3008 - 12.4MP - 2.74 µm
- 250FPS @ UHD
- Global shutter - 5µs-1s
- 74dB Dynamic range HDR
- SFP 28 - 25 GigE
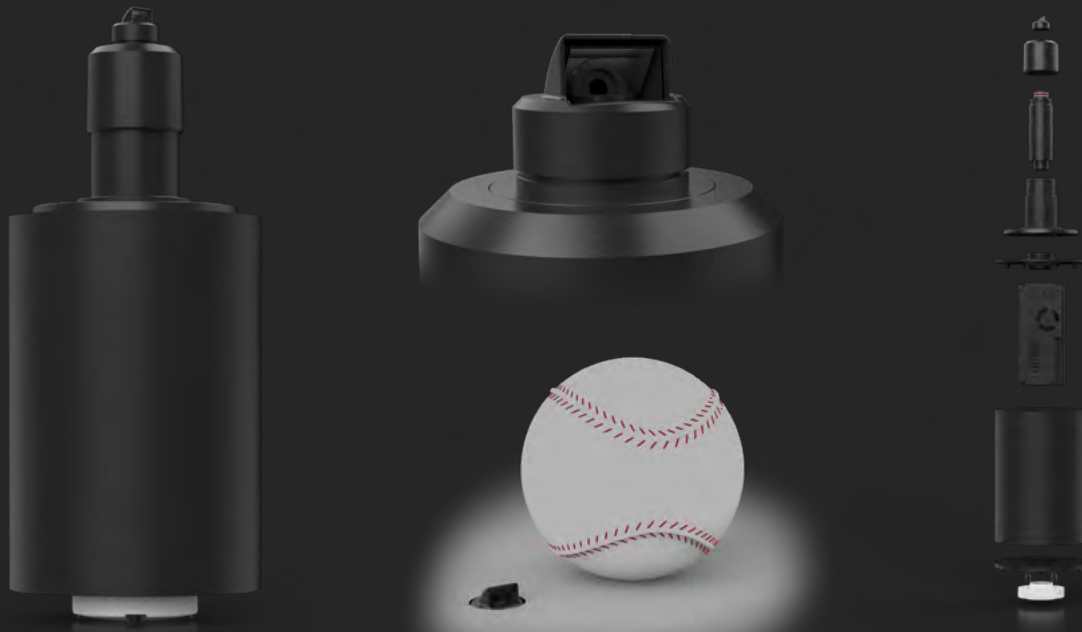- Lens Motor Control
- 12V - 800mA
- 60x36x164mm - 410g

FHD Version
- Sony CMOS sensor
- 1936x1464 - 2.8MP - 4.5 µm
- 480FPS @ FHD
- Global shutter - 5µs-1s
- 74dB Dynamic range HDR
- SFP 28 - 25 GigE
- Lens Motor Control
- 12V - 800mA
- 60x36x164mm - 410g

The **Nucleus Pico 90°** offers all the features of the **Nucleus Pico**, in a new, extremely thin design. The housing of the **Nucleus Pico 90°** has a depth of only 36 mm. This opens up new possibilities for hiding the camera on the playing field or in TV studio sets. The **Nucleus Pico 90°** became widely known as 'Doink Cam' after ten **Nucleus Pico 90°** cameras were used simultaneously at the 2024 NFL Superbowl, providing unprecedented live ultra slow motion footage.

The new design of the **Nucleus Pico 90°** allows it to be concealed in goalposts, pylons, net posts, etc., allowing camera viewpoints to be much closer to the action. For more control, an optional lens motor unit can be attached.

NUCLEUS DIRTCAM – The Field Eye

UHD Version

- Sony CMOS sensor
- 4128x3008 - 12.4MP - 2.74 µm
- 250FPS @ UHD
- Global shutter - 5µs-1s
- 74dB Dynamic range HDR
- SFP 28 - 25 GigE
- 12V - 800mA
- 105x65x50mm - 500g

FHD Version

- Sony CMOS sensor
- 1936x1464 - 2.8MP - 4.5 µm
- 480FPS @ FHD
- Global shutt er - 5µs-1s
- 74dB Dynamic range HDR
- SFP 28 - 25 GigE
- 12V - 800mA
- 105x65x50mm - 500g

The **Nucleus DirtCam** is purpose-built for easy integration into the playing field.
This ultra-compact slow-motion camera is installed directly into the ground, featuring a discreet periscope lens and an angled mirror that rises just 7mm above the surface — making it virtually undetectable during gameplay. Built with durability in mind, the **DirtCam** is designed to safely submerge into the ground without damage, even when stepped on by players.

NUCLEUS COMPACT – The Work Horse

UHD Version

- Sony CMOS sensor
- 4128x3008 - 12.4MP - 2.74 µm
- 250FPS @ UHD
- Global shutter - 5µs-1s
- 74dB Dynamic range HDR
- SFP 28 - 25 GigE
- B4 Lens Control
- Accessory Power Output
- Tally Output
- 12V - 800mA
- 225x112x112mm - 2.1Kg

FHD Version

- Sony CMOS sensor
- 1936x1464 - 2.8MP - 4.5 µm
- 480FPS @ FHD
- Global shutter - 5µs-1s
- 74dB Dynamic range HDR
- SFP 28 - 25 GigE
- B4 Lens Control
- Accessory Power Output
- Tally Output
- 12V - 800mA
- 225x112x112mm - 2.1Kg

The **Nucleus Compact** is a state-of-the-art B4 mount slow-motion camera, designed for track and robotic shooting, cranes, tripod setups, and large lens applications.

The enhanced design introduces new features such as an integrated display and increased adaptability, enabling seamless integration with cranes, speed rails or large lens adapters connected to big zoom lenses. The Nucleus Compact offers full remote control of B4 mount lenses, including zoom, focus, and iris adjustments.

Weighing just 2.1 kilograms it is the perfect B4 mount slow-motion camera for dynamic shooting scenarios.When paired with fast-moving rail systems or cranes, the Nucleus Compact delivers breathtaking, unprecedented imagery and unlocks limitless creative possibilities.

NUCLEUS COBRA LINK – Fiber Connection

BASE UNIT
- Up to 2 camera connections
- 12G SDI input with loop output
- IP media converter for network connectivity
- ST fiber output to server for signal transmission
- SMPTE fiber connection to field unit

FIELD UNIT
- ST fiber connection to camera
- IP media converter for network connectivity
- SDI output
- Switchable power input - SMPTE or AC
- Additional Power 15V/6A output
- 230x46x120mm - 1Kg

At the heart of the fiber link system is the 19-inch 1U base unit, capable of supporting up to two Nucleus cameras. Equipped with a 12G SDI input and loop-through, an integrated IP media converter and an ST fiber connection, this unit ensures reliable data and power transmission. Housed in a rack-mountable enclosure, it seamlessly integrates into any professional broadcast setup.

The field unit, crafted from durable aluminum, complements the base unit perfectly. Delivering 15V power to the camera, it features ST fiber connectivity, 12G SDI return signal transmission, and an optional IP connection for enhanced versatility. Additionally, it includes an external 15V/6A power output, providing ample power for monitors or remote jib arms.

The Nucleus Cobra Link offers flexible power options, including SMPTE hybrid or AC power, ensuring reliable camera operation. With its robust ST fiber connectivity, dependable SDI output with loop-through, and IP media conversion, this system delivers everything you need for demanding production environments.

NUCLEUS CONTROL SERVER - NCS

- 16TB SSD RAID
- 90min(UHD)/360min(FHD) ring buffer recording (expandable)
- 2 TB SSD for clip recording
- Clip creation and management
- 8bit 4:2:0/ 10bit 4:2:2/ 12bit 4:4:4
- Rec 709/ BT2020
- 2x SFP28 25 GigE
- 4x free configureable 12G SDI Outputs

- 2x Nucleus Cameras per Server
- Dual Server tethering option
- Opt. 4x additional SDI Camera input and Recording
- Remote Control Vision and Replay via IP
- Live digital oom and motion Control
- 4U 19 Inch - 20 Kg

The **Nucleus Control Server** is a versatile, all-in-one solution, combining the functionality of a Camera Control Unit (CCU) and a media server into a single, streamlined system. Designed to meet the evolving demands of modern live productions, it offers flexibility and scalability.

This powerful server not only manages camera operations with precision but also handles media workflows efficiently, ensuring your production stays smooth, reliable, and ahead of the curve. With the **Nucleus Control Server**, you're investing in a solution that adapts with you, delivering unmatched performance for years to come.

ANTELOPE OCP – Operation Control Panel

- Remote Shading Control
- Remote Painting Control

- IP Connection
- 4Pin XLR or PoE Power

The **Antelope OCP** is a versatile and precision-engineered control panel designed for seamless operation with all Antelope cameras. It offers fast and intuitive access to all camera functions, making it an essential tool for professional live production and broadcast environments.

The control panel provides direct access to key adjustments through dedicated encoders, allowing operators to easily manage settings such as RGB Gain, RGB Pedestal, Master Pedestal, Saturation, and precise iris control. This intuitive interface ensures smooth and efficient workflows, enabling rapid adjustments in dynamic production scenarios.

With the **Antelope OCP** is supporting both IP and RS422 serial port connections for seamless integration into various setups. The device is powered via a 12-18V input using a standard 4-pin XLR connector, offering compatibility and convenience across different power configurations.

With its robust design and user-friendly functionality, the **Antelope OCP** empowers operators with precise control and adaptability, ensuring best performance in any production setting

NUCLEUS CONTROL PANEL – NCP

- IP Connection
- High precision jog wheel
- Replay Speed control Lever

- Control 2 camera heads
- Intuitive design
- Easy clip creation

The **NCP** is a dedicated control panel for the **Nucleus server system**, designed to provide fast and efficient access to all essential functions for precise control of slow-motion playout.

With IP control capabilities, the **NCP** seamlessly integrates into your workflow, ensuring maximum flexibility and connectivity in any production environment. Operators can manage up to two camera heads simultaneously, delivering full control over every slow-motion shot with precision and ease.

Its intuitive design allows slow-motion operators to access all critical functions quickly and efficiently, enabling smooth and reliable playout in demanding live production environments.
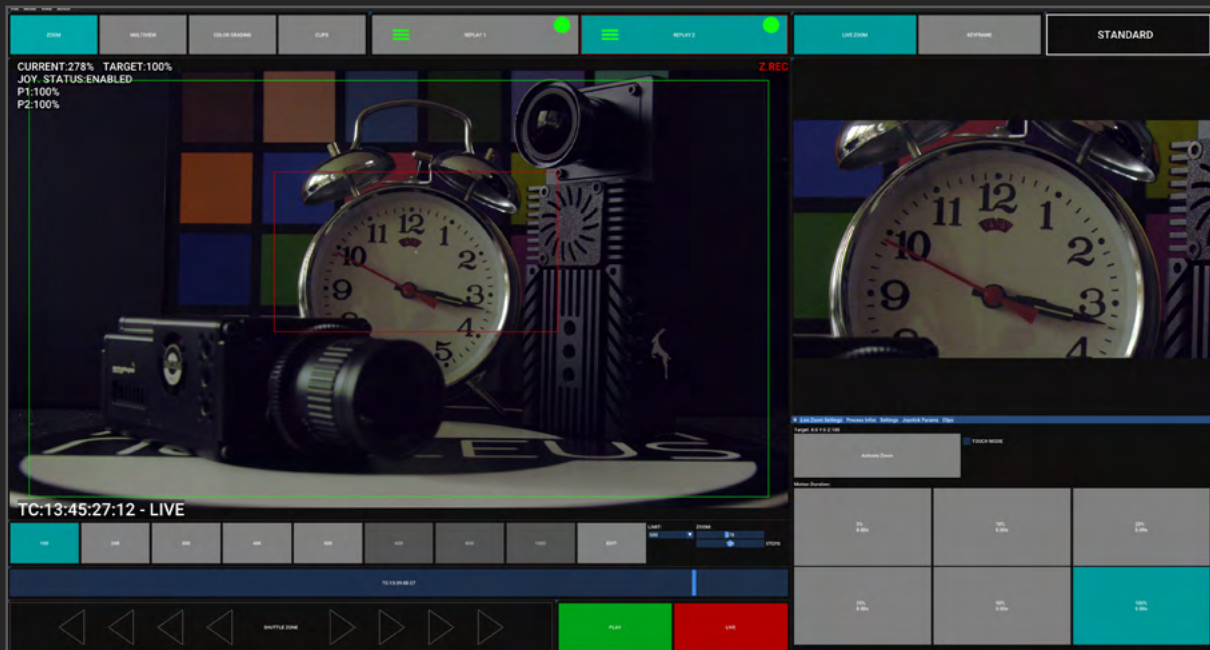
NUCLEUS CONTROL UI
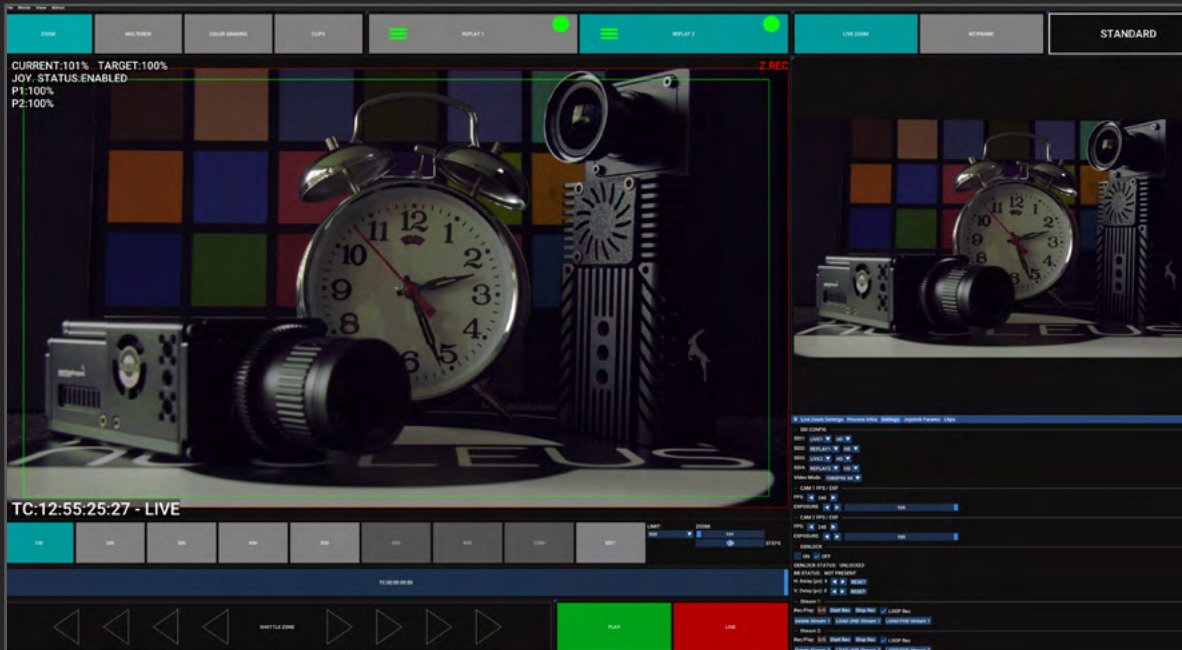
■ OCP and NCP Functionality
■ Multiview
■ Clips Management Menu
■ Camera, Fiber and IP Status

■ Record Shuttle
■ Replay Control
■ Motion Zoom Control
■ Color Grading

The **Nucleus Control User Interface** is an intuitive software solution for managing all settings and features of the Nucleus System during live broadcasts. It provides full access to all **OCP** and **NCP** functions through a user-friendly interface, allowing seamless control of multiview displays, clip management, camera and fiber status, record shuttling, replay operations, motion zoom, and integrated color grading. Designed for live environments, the user inferface ensures efficient, precise, and reliable control for flawless on-air performance.

ZOOM MOTION CONTROL

- ■ Digital Live Zoom
- ■ Preselected zoom in/out
- ■ Free motion and reframing
- ■ Joystick support

The **Nucleus Control User Interface** revolutionizes live zoom and reframing, making the process seamless, intuitive, and more effortless than ever. It empowers operators to create stunning slow-motion following and zoom shots without the help of a cameraman. The entire frame is always recorded, ensuring no moment is missed.

Designed for modern production needs, operators can meticulously craft zooms and motion during playback, empowering precise control to perfect each shot. The capability to save clips with motion data or redefine it at a later stage provides flexibility to optimize and enrich visual outputs.

The **Nucleus Control User Interface** incorporates sophisticated functionalities, including digital live zoom, customizable motion constraints, predefined zoom settings, and unrestricted free motion and reframing capabilities. Integrated with joystick support, operators can execute precise and dynamic maneuvers, significantly enhancing the production standards of live broadcasts.

COLOR GRADING / SHADING

- ■ Multrimatrix Control
- ■ Exposure Control
- ■ Color Space Selection
- ■ Framerate Control
- ■ Live View

The Nucleus System offers professional grading and shading capabilities through the OCP hardware or intuitive software interface. Designed to meet modern broadcast standards, the system ensures that picture engineers can work efficiently and confidently, relying on familiar tools and workflows tailored to live production environments.

The Nucleus system provides full access to critical image control features, allowing engineers to fine-tune every aspect of the visual output. Operators can easily manage framerate adjustments, multrimatrix settings for precise color balancing, exposure control, real-time live view feedback and color space selection to suit the specific broadcast requirements.

CLIPS MANAGEMENT

- Clip Review
- Clip Renaming Options
- Live Motion Zoom
- Overwrite Motion Data

The Nucleus System offers a fully integrated clipping solution, designed to capture and save all critical moments with precision and ease. By eliminating the need for third-party devices, controllers, or additional personnel, the Nucleus system streamlines your workflow and reduces operational complexity without compromising on functionality.

With the intuitive **Nucleus Control User Interface**, users can create, delete, and play clips in real time. The user interface also includes advanced features for organizing and managing content, such as customizable clip naming. This ensures a smooth and efficient workflow, even during high-pressure live broadcasts.

Additional capabilities like clip review, renaming, live motion zoom, and the ability to redefine motion data provide unmatched flexibility and control. The Nucleus System empowers operators to refine and adapt their content with precision, ensuring every critical moment is captured and presented exactly as intended.