# LV5330 Multi-SDI Monitor

# **Built As Recommended By Industry Leaders**



Equipped with the latest innovations in pro-video monitoring and test, the LV5330 represents a revolutionary solution for production and studio professionals. The instrument was developed specifically to address the needs of both creative and technical talent, providing information in a variety of easy to use and easy to understand displays.

On-Picture measurements as well as true-color and false-color displays allow unprecedented understanding over picture levels and improve collaborative work between creative and technical while providing the direction needed for the post production process.

Various multi-display combinations allow for complete and easy monitoring while full-screen presentations provide a wealth of information and enable detailed review of the material.

Picture, waveform, vector, 5-bar, audio, status as well as CINELITE and CINEZONE displays provide all of the features needed in the field and in the rack. USB drive connectivity allows you to capture pictures for documentation purposes, personalize presets and perform software updates.

# LV5330 Multi-SDI Monitor

- Monitors 2 HD/SD-SDI Sources And Displays Picture, CINELITE, CINEZONE, Waveform, Vector, 5-Bar, Audio and Status Displays In Various Combinations.
- Built-In, 6.5 inch TFT-LCD XGA Display (1024 x 768) For Superb, Crisp Waveforms And Picture Representations.
- CINELITE On-Picture Measurements, CINEZONE false color displays and peaking function facilitate quick camera focus and exposure setups.
- Effortlessly Monitors R,G,B Levels & Composite Gamut With Innovative 5-Bar Display.
- Time-Code Referenced Gamut Error Logs Facilitate Material Q/A And Improve Work Flows.
- User Settable Error Levels & Alarms Facilitate Worry-Free Monitoring.
- Embedded Audio Is Displayed And 2 Audio Channels (User Selectable) Are Fed To A Headphone Monitoring Output.
- Pictures And Waveform Representations Can Be Captured, Reviewed And Compared To Live.
- USB Connector Allows The Use Of A Jump-Drive For Storing Captured Screens, Presets And Software / Firmware Updates.
- Various Display Adjustments Facilitate Monitor Matching Within A Production Or Studio Environment.
- 30 Presets Permit Quick Access To Setups; USB Storage Of Presets Allows Each User To Personalize The Instrument.
- Provides HD/SD-SDI Switched Output Of The Selected Source.
- Accepts Black-Burst As Well As Tri-Level Sync For External Reference And Facilitates System Timing.
- Rack-mounts In A Half-Rack Wide By 3 Rack High Space.
- Mounts on tripod (top and bottom mounts).
- Lightweight & Compact; 2.9 lbs, 8.5(W) x 5.5(H) x 2.6(D) inches.
- 10 18 Vdc Operation (XLR); AC Adaptor sold separately.
- Battery Attachment Plate Is Optional.



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#### **Video Formats and Standards**

SMPTE 274M/292M	SMPTE 296M, 292M
1080i/60	720p/60
1080i/59.94	720p/59.94
1080i/50	720p/50
1080p/30	720p/30
1080p/29.97	720p/29.97
1080p/25	720p/25
1080p/24	720p/24
1080p/23.98	720p/23.98
<b>SM</b> PTE RP211, 292M	SMPTE 259M
1080PsF/30	525i/59.94
1080PsF/29.97	625i/50
1080PsF/25	

# 1080PsF/23.98 Other Standards

1080PsF/24

Ancillary Data Standard: SMPTE 291M

Embedded Audio Standard: SMPTE 299M
(HD-SDI), SMPTE 272M (SD-SDI)

# **Format Setting**

Format Setting: Auto or manual setting for the supported formats

Sampling Frequency: 74.25 MHz (HDTV), 74.25/1.001 MHz (HDTV), 13.5 MHz (SDTV)

**External Synchronization:** Auto setting for

the supported formats

# **Input/Output Connectors**

## **SDI Input**

**Input Connector:** Two BNC connectors (switching between A and B)

# **External Reference Input**

**Input Signal:** Tri-level sync or NTSC/PAL black burst (auto-detected)

**Input Connector:** One pair of BNC connectors (15  $k\Omega$  passive loop-through)

# **SDI Output**

Output Connector: One BNC connector (reclocks and transmits the selected SDI input signal)

Output Voltage:  $800 \text{ mVp-p} \pm 10 \% (75 \Omega)$ 

# **Headphone Output**

Output Signal: Extracts and outputs the embedded audio signal.

**Sampling Frequency:** Supports 48 kHz (must be synchronized to the video signal)

Output Connector: One stereo miniature jack, 32  $\Omega$  (16 to 600  $\Omega$ )

## **USB Memory**

**Function:** Stores screen captures, error logs, preset data, and data dumps.

## **Remote Control**

Function: Recalls presets, transmits errors,

controls the tally indicator

Connector: D-sub 15-pin female

# **Ethernet (Optional)**

**Function:** Enables remote control from an external computer.

**Type:** 10BASE-T/100BASE-TX auto switching, one RJ-45 jack

# **Viewfinder Input**

Function: Monitors composite video signals;

picture display only.

Input Signal: NTSC/PAL VBS signal Input Connector: One BNC connector

# **Picture Display**

HDTV Display: Displays by sampling pixels SDTV Display: Displays by interpolating pixels

Display: Color or black and white selectable

Frame Rate: Displays by converting the frame rate using the internal sync signal Marker Display: Center marker, aspect marker, safe title marker, safe function marker

Adjustment: Brightness, contrast, chroma,

# **CINELITE Display**

aperture

**f-STOP:** Displays relative luminance measurements in f-stop readings.

Measurement points: Three points

specified using the cursor

Reference: Uses an object with an 18 % reflectance as reference

**%DISPLAY:** Displays luminance percentage (LEVEL%), RGB percentage

(RGB%), and RGB numeric values



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# Detailed Specifications - PRELIMINARY







CINELITE "On-Picture" measurements display permits spot measurements in R,G,B, Y% as well as f-stops.

# ...CINELITE continued....

Measurement points: Three points

specified using the cursor

Measurement sizes:  $1 \times 1$ ,  $3 \times 3$ ,  $9 \times 9$ 

## **GAMMA**

0.45: Reference gamma

USER 1-3: User-defined gamma

USER A-E: Gamma downloaded from USB

memory

**SEARCH:** Switches the screen to black and white and displays the set luminance level in green

## **CINEZONE Display**

Screen: Maps colors based on luminance

levels. Linear or step selectable.

**UPPER:** Can be set from -6.3 % to 109.4 %. Displays white when the level is above the

LOWER: Can be set from -7.3 % to 108.4 %. Displays black when the level is below the set level.

## **Display Form**

set level.

Display Size: 6.5-inch color XGA. Effective

area  $1024 \times 768$  dots

1 Screen Display: Picture display, CINELITE display, CINEZONE display, waveform display, vectorscope display, status display, viewfinder display. **2 Screen Display:** Picture and waveform displays, waveform and vectorscope displays, waveform and picture displays, waveform and audio level displays, audio numeric and bar displays

**4 Screen Display:** Audio level display or status display selectable in addition to waveform display, vectorscope display, and picture display

**NOTE**: The 5-Bar display can be shown in place of the vectorscope.

# Waveform Display Waveform Operation

**Display Modes:** Overlay and parade

**Timing Display:** Displays by calculating Y-CB and Y-CR. Uses bowtie signals

(authorized by Tektronix, Inc.)

EAV-SAV period: Show or hide selectable

**G, B, R Conversion:** Converts Y, CB, CR signals into G, B, R and displays the result

Pseudo-Composite Display: Digitally converts component signals into composite signals and displays the result

Channel Assignments: The G, B, R order or R, G, B order is selectable.

## **Vertical Axis**

**Gain:**  $\times$ 1,  $\times$ 5, or variable selectable

Variable Gain:  $\times$  0.2 to  $\times$  2.0 at the  $\times$ 1 setting,  $\times$  1.0 to  $\times$  10.0 at the  $\times$ 5 setting

**Amplitude Accuracy:** ≤ ±0.5 %



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## **Frequency Characteristics HDTV**

**Y Signal:**  $\leq \pm 0.5 \% 1$  to 30 MHz

**CB, CR signals:**  $\leq \pm 0.5 \% 0.5 \text{ to } 15 \text{ MHz}$ 

**Frequency Characteristics SDTV** 

**Y Signal:** ≤  $\pm 0.5 \% 1$  to 5.75 MHz

**CB, CR signals:**  $\leq \pm 0.5 \% 0.5$  to 2.75 MHz

**Horizontal Axis** 

**Line Magnification:**  $\times 1$  or  $\times 10$  selectable Field Magnification:  $\times 1$ ,  $\times 20$ , or  $\times 40$ 

selectable

Cursor Measurement

**Horizontal Cursors:** 2 (REF and DELTA)

Vertical Cursors: 2 (REF and DELTA)

**Amplitude Measurement: Measures in %** 

or V

Time Measurement: Measures in usec or

msec

Frequency Display: Displays the frequency

by assuming the interval between the

cursors to be one period

Marker Display, 75 % Marker: Indicates the

position corresponding to the peak

chrominance signal of the 75 % color bar.

**Vectorscope Display** 

Scale: 75 % or 100 % selectable

**Gain:**  $\times$  1,  $\times$  5, IQ-MAG, or variable

selectable

Variable Gain:  $\times 0.2$  to  $\times 2.0$  at the  $\times 1$ 

setting,  $\times$  1.0 to  $\times$  10.0 at the  $\times$ 5 setting

Amplitude Accuracy: ≤ ±0.5 %

IQ Axis: Show or hide selectable

Pseudo-Composite Display: Digitally converts and displays component signals into composite signals.

5 Bar Display

Bar Display: Displays the peak levels of Y.

R, G, B, and composite

**Embedded Audio Display** 

**Display Channels:** 8-channel simultaneous

display

Meter: 60 dB peak level or 90 dB peak level

Group Selection: Select any two groups

from groups 1, 2, 3, and 4

Channel Mapping: Mapping to L, R, SL(S),

SR, C, LFE, RL, RR

Viewfinder

Display Size: Full-screen display

Adjustment: Brightness, contrast, chroma,

aperture

Status

Data Dump Display: Dumps data by serial

data sequence or by channel

Event log: Stores up to 1,000 events

Data output: To USB memory or over an

Ethernet network

Screen Capture: Captures the displayed

screen

Presets: 30

**Other Display Features** 

LCD: 6.5-inch color LCD

Backlight brightness: High or low selectable

Screen Display: Format, color system, date,

time

Panel LED Illumination: Illuminates all keys

**Environmental** 

Operating Temperature: 0 to 40 ° C

Operating Humidity Range: ≤ 85 %RH (no

condensation)

**Operating Environment:** Indoors, or outdoors

with no rain

**Operating Altitude:** ≤ 2,000 m

Overvoltage Category: |

**Pollution Degree: 2** 

Power Requirements: 12 VDC (10 to 18 V),

18 Wmax.

**Dimensions and Weight:** 8.5 (W)  $\times$  5.5 (H)

× 2.6 (D) inches (excluding projections),

2.9 lbs

Accessories: Instruction manual.

Camera adapter: Included

Option Sold Separately: AC adapter LP 1960





SPECIFICATION CHANGES: LEADER ELECTRONICS CORP. reserves the right to discontinue the sale of instruments and/or change the specifications of instruments at any time without responsibility for the incorporation of new features in the instruments already sold.