Panasonic
ideas for life

BT-LH2170

LCD Video Monitor

High Performance and Rugged Durability with a Full-HD IPS Panel and 3D-LUT Picture Quality
A 55 cm (21.5 inches) LCD Monitor with Excellent Cost-Performance for Broadcast Use

The BT-LH2170 LCD Video Monitor incorporates the 3D-LUT (Look Up Table) Color Correction and other high-quality imaging engine features that are unique to Panasonic's LH Series into a 55 cm (21.5 inches) IPS Panel with Full-HD resolution and a wide viewing angle. It also offers excellent operability for outdoor field acquisition due to its rugged aluminum diecast body and DC power capability, together with versatile assist functions such as a Y MAP display, Zebra display, and dual-window display. Newly enhanced 3D assist functions support 3D image production. These and other functions allow the BT-LH2170 to meet a wide range of image production and broadcast needs.

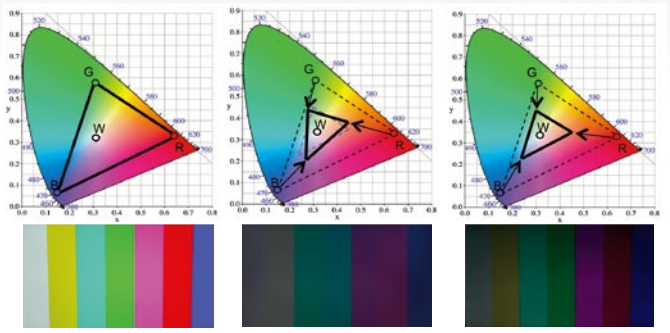
Front Control Panel

High Resolution, Wide Viewing Angle Full-HD IPS Panel

The 55 cm (21.5 inches) IPS (In-Plane Switching) LCD panel has Full-HD (1920 x 1080) resolution. It combines high intensity, high contrast and a wide 178° viewing angle in both horizontal and vertical directions. Easy viewing is ensured by reducing color changes due to the viewing angle.

High-Quality Imaging Engine with 3D-LUT Color Correction

3D-LUT and 6-Axis Color Correction: Eliminates color phase shifts (drift) in the LCD panel caused by changes in luminance. By providing a look-up table for each luminance level and applying 10-bit image processing to each RGB color, it balances the six coordinate poles of the three primary colors (RGB) and their complementary colors (CMY). This helps to reproduce the intermediate shades of extremely fine colors.



100% of luminance level

Matrix (2D) :
10% of luminance level

3D-LUT:
10% of luminance level

Short Latency: A high-performance I/P converter circuit minimizes the delay between the input signal and monitor output to less than a field in length.
Diagonal Line Compensation: Reproduces smooth images by suppressing noise in the diagonal direction.
Gradation: Individual RGB corrections are made on every monitor that is shipped, to reproduce rated gamma properties (γ= 2.2) and ensure gradation suitable for broadcasting.
Color Temperature: 9300 K/6500 K/5600 K selectable, or 3000 K to 9300 K variable.

Advanced Assist Display Functions (2D)

Y MAP: Allows luminance to be visually checked via color displays for each luminance level with a simple distribution bar.
Zebra: Displays a zebra pattern to show image areas internal and/or external the set brightness range.

Y MAP

ZEBRA

Focus-in-Red: Emphasizes sharply focused image areas.
R/G/B Color: Turns the display on/off of each individual R/G/B color.
Waveform Monitor (WFM): Displays the waveform of Y, R, G or B signals in a sub-screen.
Vectorscope Display: Allows the color gamut to be checked in a sub-screen.
Audio Level Meter: Up to 8 channels can be simultaneously displayed. A peak hold function is included. For 3G-SDI input, 1-8 channels or 9-16 channels can be selected.
HV Delay: Displays the video blanking period.
Mono Mode: Switches the display to black-and-white.
Pixel-to-Pixel Display: Displays the actual pixels without resizing.

Dual Window Display with Picture Assist Functions

Still/Motion Image Display: An image from any desired part of moving picture from the same source can be displayed as a still image in a sub-screen. Useful for matching the images.
2 Motion Image Display: Allows use as a video monitor for two SDI inputs. Status and audio level meters can also be displayed for each of the two inputs.
Picture Assist (Image Adjustment): Image adjustment on the monitor and the results of assist functions from the same source can be displayed side-by-side with the original images for comparison.

2-Input Motion Image Dual Window Display

Picture Assist (Y MAP)

Cine-gamma and Black Mode

The BT-LH2170 is equipped with a cine-gamma (F-Rec) compensation function and serves as a monitor for a Varicam camera recorder. The black mode also makes dark image areas in low-gradation scenes easier to see. It helps to produce movies as well as film-like HD programs and commercials.

Various Markers and Grid

Aspect Marker (16:9): 4:3, 13:9, 14:9, CNSCO2.39, CNSCO2.35, 2:1 or VISTA, with background brightness control of Black (0%), Half (50%) or Normal (100%).
Safe Area Marker (16:9/4:3): 95%, 93%, 90%, 88%, 80% or variable.
Center Marker: Can be displayed together with another marker.
Cross Hatch Overlay: Can be displayed to check the tilt of the camera.

Time Code/Closed Caption Display

A time code can be displayed for SDI input. VITC/UB or LTC/UB values are shown simultaneously on two lines. When an NTSC video signal is input, the closed caption (32 characters x 15 lines) can be displayed. It is compliant with EIA/CEA-608 and 708 standard and can display up to 8 windows of the closed captions.

Rear Connector Panel

(when AC Power Supply)

Professional Specs Include Durability, DC Drive and SDI IN

Aluminum Diecast Body

- Reliability and durability are ensured by a rugged aluminum diecast body.
- Runs on AC/DC power.
- SDI (SDI1 (3G)/SDI2) inputs, HDMI input, DVI-I input.
- RS-485 (RJ-45), RS-232C (9-pin) and GPI (9-pin) remote inputs.
- Tally lamp (red/green/amber).
- Speakers and headphone jack on the front panel.
- Stand included as standard equipment (detachable).
- Low power consumption and mercury-free LED backlight help protect the environment.

Broadcast and Image Production Functions

- Key Lock function disables front panel operation/control functions, except for the power switch, menu operation and sound level adjustment.
- Functions can be allocated to five function keys for one-touch operation.
- A fanless drive with quiet operation, ideal for use in MA (Multi Audio) rooms.
- Auto power down with no operation nor signal input.
- Built-in calibration function enables PC-less calibration.*

* Use the Panasonic-designated probe sensor and display color analyzer. Konica Minolta CA-310 Display Color Analyzer with CA-PU32/PU35 or CA-PSU32/PSU35 Standard Measurement Probe. For more information about the Konica Minolta calibration system, please see the following website: <http://www.konicaminolta.com/instruments/index.html>

Diverse 3D Camera Assist Functions

The BT-LH2170 lets you check 3D images using the left-eye and right-eye video signals from a 3D camera on its 2D display. Functions have been improved from previously equipped models.

MIRROR: With the left-eye and right-eye images displayed side-by-side, the left and right images can be independently flipped in the horizontal or vertical direction.

SHIFT: The right-eye image can be moved horizontally or vertically in the overlay display.

COMPARISON: Simplifies checking for differences in the frame edges of the left-eye and right-eye images. In addition to side-by-side display, a top & bottom display is now possible.

CONVERGENCE: Switches left-eye or right-eye images displayed on the full screen (manually or automatically).

COLOR: Combines left-eye and right-eye images and displays them in a checkerboard pattern to check brightness and color variance.

ZOOM FOCUS: Enlarges and displays left-eye and right-eye images side-by-side to check variance in focus and zoom. A new dual-window FOCUS-IN-RED display is also provided.

VERTICAL: A horizontal line marker allows inspection of vertical misalignment between the left-eye and right-eye images.

OVERLAY: Left-right disparity can be checked by superimposing a marker (in 3%, 2%, or 1% selectable intervals) on the overlay display, difference image between right and left in black-and-white display, or difference image between right and left in color display.

Signal Format for BT-LH2170

[2D mode]

(√: Supported)

Input Signal Formats/Status	VIDEO	SDI 1 (3G SDI)	SDI 2	HDMI	DVI-I ANALOG YPBPR	DVI-I DIGITAL VIDEO
NTSC	√					
PAL	√					
480/59.94i		√	√	√	√	√
480/59.94p				√	√	√
576/50i		√	√	√	√	√
576/50p				√	√	√
720/50p		√	√	√	√	√
720/59.94p		√	√	√	√	√
720/60p		√	√	√	√	√
1035/59.94i*1		√	√	√	√	√
1035/60i*2		√	√	√	√	√
1080/23.98PsF		√	√		√	
1080/24PsF		√	√		√	
1080/25PsF*3		√	√		√	
1080/50i		√	√	√	√	√
1080/59.94i		√	√	√	√	√
1080/60i		√	√	√	√	√
1080/23.98p		√	√	√	√	√
1080/24p		√	√	√	√	√
1080/25p		√	√	√	√	√
1080/29.97p		√	√	√	√	√
1080/30p		√	√	√	√	√
1080/50p		√		√		√
1080/59.94p		√		√		√
1080/60p		√		√		√

*1: When 1035/59.94i signal is input, displayed as 1080/59.94i. Other various marker displays will also use the 1080/59.94i marker. *2: When 1035/60i signal is input, displayed as 1080/60i. Other various marker displays will also use the 1080/60i marker. *3: When 1080/25PsF signal is input, displayed as 1080/50i. Other various marker displays will also use the 1080/50i marker.

[PC]

(√: Supported)

Input Signal Formats/Status	HDMI*4	DVI-I ANALOG RGB-COMP.	DVI-I DIGTIAL COMP.
640 × 480	√	√	√
800 × 600	√	√	√
1024 × 768	√	√	√
1280 × 768	√	√	√
1280 × 1024	√	√	√
1920 × 1080	√	√	√

*4: HDMI 1920 x 1080 PC signals are displayed as 1080/60p video signals.

[3D assist mode]

(√: Supported)

Input Signal Formats/Status	SDI 1/2 (SIMUL)
720/50p	√
720/59.94p	√
720/60p	√
1035/59.94i*1	√
1035/60i*2	√
1080/23.98PsF	√
1080/24PsF	√

Input Signal Formats/Status	SDI 1/2 (SIMUL)
1080/25PsF*3	√
1080/23.98p	√
1080/24p	√
1080/50i	√
1080/59.94i	√
1080/60p	√

*1: When 1035/59.94i signal is input, displayed as 1080/59.94i. *2: When 1035/60i signal is input, displayed as 1080/60i. *3: When 1080/25PsF signal is input, displayed as 1080/50i.

Specifications

As of July , 2012

[General]

Power Supply:	AC 100 V – 240 V, 50 Hz/60 Hz
	DC 12V (11V – 17V)
Power Consumption:	AC 0.55 A – 0.25 A DC 3.8 A
Operating Temperature:	5°C to 35°C (41 °F to 95 °F)
Operating Humidity:	20% to 85 % (no condensation)
Storage Temperature:	–20 °C to 60 °C (–4 °F to 140 °F)
Weight:	Approx. 7.0 kg (15.43 lb) (including stand), Approx. 6.1 kg (13.45 lb) (monitor only, not including stand)
Dimensions: (W x H x D)	510 mm x 388 mm x 198 mm (20-1/16 inches x 15-1/4 inches x 7-13/16 inches) (including stand) 510 mm x 373 mm x 72 mm (20-1/16 inches x 14-5/8 inches x 2-13/16 inches) (monitor only, not including stand)

[LCD Panel]

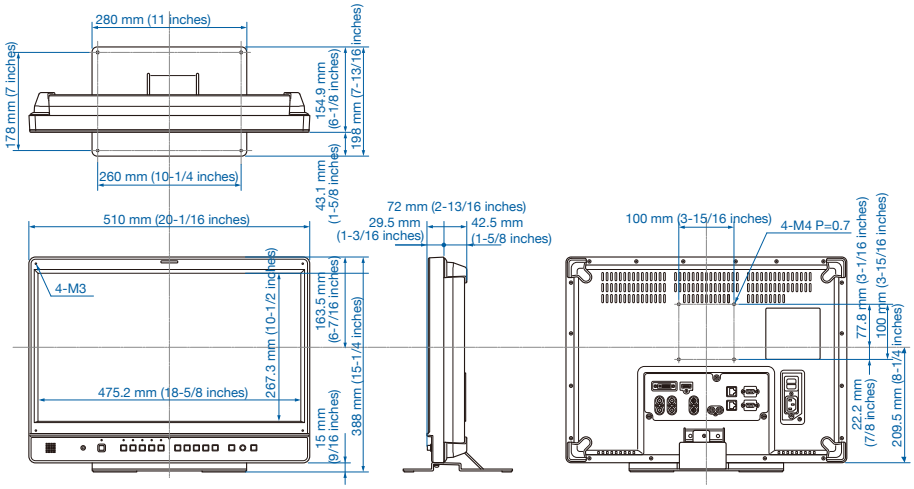
Panel Size:	55 cm (21.5 inches) (Effective display area)
Aspect Ratio:	16:9
Pixel Number:	1920 x 1080 (FULL HD)
Display Colors:	Approx. 16,770,000 colors
View Angle:	178° horizontal, 178° vertical (contrast > 10:1)

[Connectors]

VIDEO Input:	BNC x 1
SDI Input:	BNC x 2 SMPTE ST 424/274/296/259/ITU-R BT.656-4 standard Embedded Audio supported HD SDI: SMPTE ST 299 standard, 48 kHz, synchronous, 8 CH SD SDI: SMPTE ST 272 standard, 48 kHz, synchronous, 4 CH
HDMI Input:	HDMI x 1 (Type A terminal) HDCP supported, Embedded Audio supported, VIERA Link not supported
DVI-I Input:	DVI-I x 1, single link (HDCP supported)
AUDIO Input:	Pin jack x 2 (stereo), Input Signal Level: 0.31 Vrms
VIDEO Output:	BNC x 1 (through-out)
SDI Output:	BNC x 2 (active through-out)
GPI:	D-SUB, 9 pins x 1
RS-232C:	D-SUB, 9 pins x 1
RS-485:	RJ-45 x 2 (input, output)
Headphones:	Stereo mini jack M3 x 1, 32 Ω, level adjustable
Speaker Output:	Monaural 0.5 W
Tally Output (Display):	Red , Green, Amber

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Dimensions



* To install semi-permanently in a single location, it is recommended that the threaded hole on the bottom of the stand be used for securing purposes.

Please refer to the latest information, etc. at the following Panasonic web site.

http://pro-av.panasonic.net/

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Factories of Business Solutions Business Group have received ISO14001:2004-the Environmental Management System certification. (Except for 3rd party's peripherals.)