



# BRIGHTSIDE™

Technologies Inc



## World's First Extreme Dynamic Range Display

BrightSide introduces the DR37-P, a spectacular breakthrough in display technology. The DR 37P uses an array of individually modulated LED backlights to provide 10 times the brightness and 100 times the contrast of existing televisions and computer monitors. BrightSide's Extreme Dynamic Range display delivers more vibrant images and allows you to see your data in vivid detail.

- ◆ Extreme Dynamic Range
- ◆ Over 3000 cd/m<sup>2</sup> Brightness
- ◆ 0.015 cd/m<sup>2</sup> Black Level
- ◆ Contrast Ratio > 200,000:1
- ◆ High Definition 1920x1080
- ◆ 37" Screen
- ◆ 16 bits per color
- ◆ IMLED – Individually Modulated Array of LED backlights

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**DR37-P      DETAILED PRELIMINARY SPECIFICATIONS – V2.0**

**1. DISPLAY**

1.1 Display Resolution:	1920 x 1080 (HDTV-I format)				
1.2 LCD Panel Size:	Panel Size (in)	Resolution	Aspect Ratio	Dot Pitch (mm)	Response time (ms)
	37"	1920 x 1080	16:9	0.427	8 gray-to-gray at 25 C
	Display area 32.26" x 18.15"				
1.3 Viewing Angle:	TBD. The viewing angle of the LCD panel in the DR37-P is quoted by the manufacturer at 170 degrees.				
1.4 Luminance:	3000 cd/m <sup>2</sup>				
1.5 Contrast Ratio:	200,000:1 (see note below)				
Note: For comparison purposes, Dynamic Range is often quoted by manufacturers as contrast. The industry standard practice is to optimize this number by various techniques. This has limited usefulness in the real world and is only provided as a comparison specification with many alternative devices.	<p>Note: The DR37-P is capable of putting out a completely black image by not illuminating the individually modulated LEDs in the backlight when presented with a black signal. There is no residual light produced by the display, therefore the lowest amount of light it can display is zero which gives a meaningless contrast ratio of infinity. In practice, the measured contrast ratio in a dark room is determined by the second addressable step of the display (i.e. step 2 out of 65025) which is the first non-zero luminance level. In the absence of ambient light and nearby bright image areas this second addressable step produces a luminance of approximately 0.015 which yields a contrast ratio of 200000:1 using this metric.</p> <p>25,000:1 using ANSI 9 point checkerboard pattern (VESA contrast ratio standard)</p> <p>In normal usage, the display will be in a room with some ambient light which will introduce front surface reflection and raise the effective black level of the display somewhat. The DR37 uses high end anti-reflective coatings to suppress this effect as much as possible.</p>				
1.6 LCD Screen Type:	TFT active matrix LCD				
1.7 Display Colors:	Much greater than 16.7 million colors in traditional displays and more than enough to give a perceptual smooth color scale to human eye				
1.8 Color Space	TheDR37-P has an improved color space over other displays in that it can maintain any saturated color over a much wider range of luminance.				

## 2. CONTROL/INTERFACE

2.1 Input Signals:	<ul style="list-style-type: none"> <li>• Single link HD-SDI (SMPTE 292M serial digital video)</li> <li>• Dual link HD-SDI (SMPTE 372M serial digital 4:4:4 dual link)</li> <li>• DVI-D Single link (DVI specification revision 1)</li> <li>• DVI-D Dual Link (DVI specification revision 1)</li> </ul>
2.2 Input Receptacle(s):	<ul style="list-style-type: none"> <li>• 2 female BNC – for single and dual link HD-SDI</li> <li>• Two female DVI-D for single and dual link implementations, using up to two output streams from one or two GPU cards.</li> <li>• Port for programming FPGA/DSP, setting options, calibration, etc. (serial, TBD)</li> </ul>
2.3 Control Interface:	<ul style="list-style-type: none"> <li>• Power ON/OFF</li> <li>• Bi-directional USB interface.</li> </ul>
2.4 Color Calibration:	<ul style="list-style-type: none"> <li>• TBD</li> </ul>
2.5 Operating Modes:	<ul style="list-style-type: none"> <li>• Display Based Image Rendering - Real time rendering of HDR still images and moving images.</li> <li>• PC Based Image Rendering – Off line or real time based rendering of HDR still and moving images in Personal Computer based graphics card.</li> </ul>
2.6 Luminance Control:	<ul style="list-style-type: none"> <li>• Individual LED brightness factory calibrated.</li> </ul>
2.7 Graphics Environments (PC based image rendering operating mode):	<ul style="list-style-type: none"> <li>• Open GL</li> <li>• Direct-X 9</li> </ul>

## 3. ELECTRICAL

3.1 Electrical	100-240V AC, 50-60 Hz 1680 W peak (14A @120V, 60 Hz)
3.3 LED drive	LEDs are driven such that the brightness is controllable in equal increments and driven by a linear 8-bit value.

## 4. PHYSICAL AND ENVIRONMENTAL

4.1 Overall Dimensions:	46.5" x 33.5" x 5.5"
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4.2 Weight:	Less than 72 kg for the monitor.
4.3 Display Case and Frame Color:	Black
4.5 Environmental:	<ul style="list-style-type: none"> <li>• Ambient Temperature: 10 °C to 35 °C</li> <li>• Storage Temperature: -40 °C to 45 °C</li> <li>• Ambient Humidity: 20% to 80% non-condensing</li> <li>• Maximum operating altitude: 10,000 ft (3050 m)</li> </ul>
4.6 Noise	<ul style="list-style-type: none"> <li>• Maximum sound level 50 dBA (measured at 1 m)</li> </ul>

**Note – Specifications are preliminary and subject to change.**