



A SAMSUNG DISPLAY COMPANY

SXGA096-ULT Microdisplay - Sample

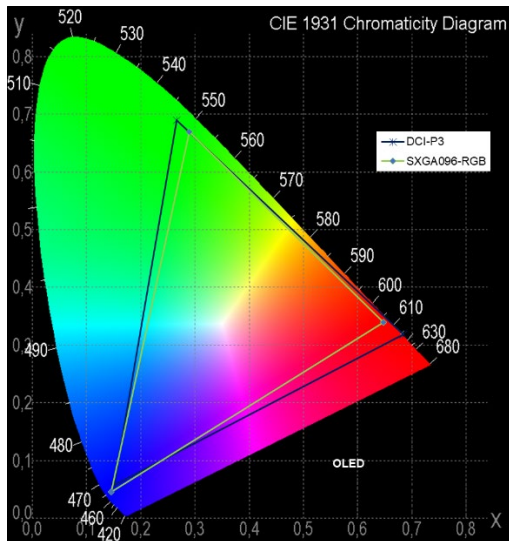
SXGA096-ULT Direct Patterned MICRODISPLAY CAPABILITIES

The SXGA096-ULT microdisplay from eMagin Corporation is an active-matrix organic light emitting diode (AMOLED) microdisplay intended for near-to-eye applications that demand high resolution, high luminance, high quality imaging, compact size, and low power. The SXGA096 microdisplay is built on a single crystal silicon backplane and features eMagin's proprietary dPd™ technology offering significant improvements in efficiency and luminance performance versus white OLED with color filters.

Each of the three OLED emission layers are directly patterned to form the primary colors of the display; color filters are not required, improving luminous efficiency significantly.

Luminance levels upwards of 10,000 nits are readily achievable.

The dPd technology also provides rich and deep colors with an 88% coverage of the DCI-P3 color gamut.



The SXGA096-ULT microdisplay leverages eMagin's SXGA096 backplane and readily mechanically and electrically compatible with other eMagin Corporation's SXGA096 microdisplay products.



SXGA096-ULT MICRODISPLAY ADVANTAGES

- Compact, lightweight, HD emissive display
- Very high luminance (Max > 10,000 nits)
- Very low power
- High contrast
- D65 White
- Wide viewing angle
- Instant on at low temperatures/no heaters
- Integrated temperature sensor
- Low power LVDS interface
- Rolling shutter illumination
- High commercial/military ruggedness

APPLICATIONS

- Immersive 3D HD Gaming/Video Headsets
- Augmented reality HMDs
- HD Resolution Electronic Viewfinders
- Computer-based 3D Simulation & Training
- Night vision/thermal imaging devices
- Medical/Scientific imaging
- Fixed and Rotary Wing aircraft HMDs

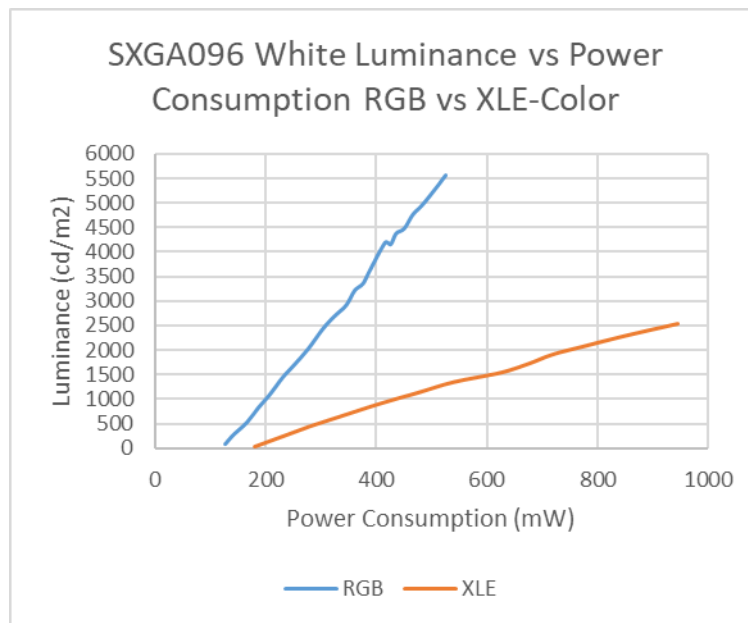
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GENERAL OPERATING CHARACTERISTICS

OPTICAL CHARACTERISTICS (At 5,000 nits, room temperature)

| Symbol | Parameter | Min. | Typ. | Max. | Unit |
|-----------------|---|---------|----------|------------|-------------------|
| LMAX | Front Luminance @ max gray level, all pixels on | 0 | 5,000 | >10,500 | cd/m ² |
| | Variability (display to display) | 0 | 3 | 5 | % |
| LMIN | Minimum display luminance @ max. gray level | 0.3 | 0.5 | - | cd/m ² |
| CR | White to Black Contrast Ratio | 1,000:1 | 10,000:1 | > 50,000:1 | |
| CIE White | CIE-X (1931 Standard) | 0.270 | 0.300 | 0.320 | |
| | CIE-Y (1931 Standard) | 0.320 | 0.331 | 0.340 | |
| CIE Red | CIE-X (1931 Standard) | 0.600 | 0.640 | | |
| | CIE-Y (1931 Standard) | 0.310 | 0.330 | 0.345 | |
| CIE Green | CIE-X (1931 Standard) | 0.190 | 0.300 | 0.330 | |
| | CIE-Y (1931 Standard) | 0.640 | 0.660 | | |
| CIE Blue | CIE-X (1931 Standard) | 0.130 | 0.145 | 0.158 | |
| | CIE-Y (1931 Standard) | 0.035 | 0.050 | 0.085 | |
| GL | Gray Levels | - | 256 | 256 | levels |
| F _R | Refresh Rate | 30 | 60 | 85 | Hz |
| Fill Factor | Emissive Area/Total Sub-pixel Area | | 0.64 | | |
| U _{LA} | End to end large-area uniformity | 80 | 90 | | % |
| S _{VH} | Pixel spatial noise at ½ luminance (1STD) | | | 5 | % |
| T _{ON} | Time to recognizable image after application of power | | | 0.5 | sec |

POWER CONSUMPTION (all pixels on)



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