



A SAMSUNG DISPLAY COMPANY

## SXGA096 dPd<sup>TM</sup> Microdisplay

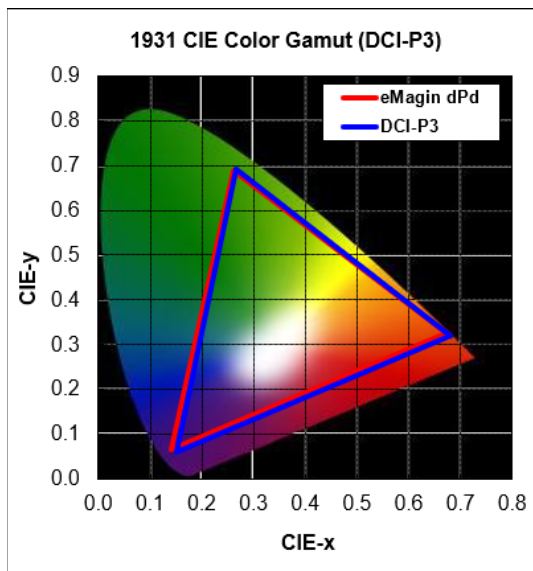
### SXGA096-dPd Direct Patterned MICRODISPLAY CAPABILITIES

The SXGA096-dPd 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<sup>TM</sup> 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-dPd microdisplay leverages eMagin's SXGA096 backplane and readily mechanically and electrically compatible with other eMagin Corporation's SXGA096 microdisplay products.



### SXGA096-dPd 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

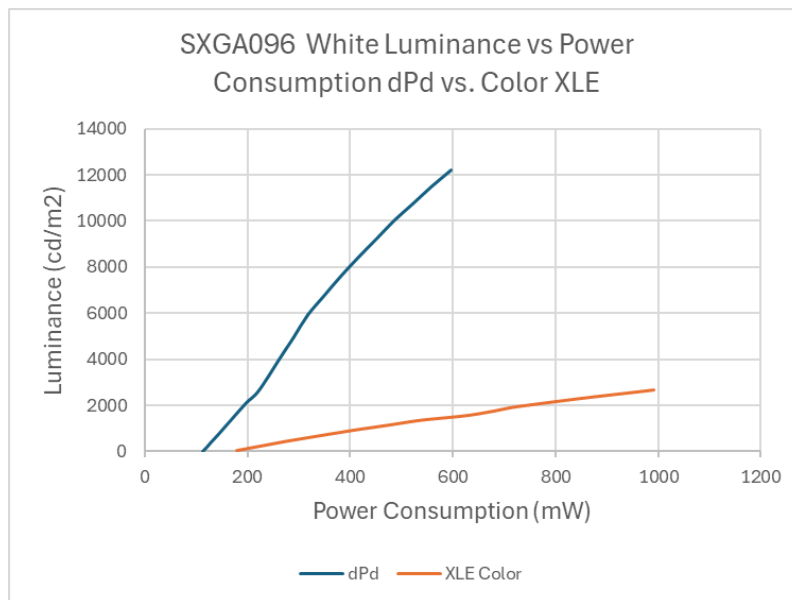
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## GENERAL OPERATING CHARACTERISTICS

### 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 <sup>2</sup>
	Variability (display to display)	0	3	5	%
LMIN	Minimum display luminance @ max. gray level	0.3	0.5	-	cd/m <sup>2</sup>
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 <sub>R</sub>	Refresh Rate	30	60	85	Hz
Fill Factor	Emissive Area/Total Sub-pixel Area		0.64		
U <sub>LA</sub>	End to end large-area uniformity	80	90		%
S <sub>VH</sub>	Pixel spatial noise at ½ luminance (1STD)			5	%
T <sub>ON</sub>	Time to recognizable image after application of power			0.5	sec

### POWER CONSUMPTION (all pixels on)



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