HDI Laser Projector Specification

Attribute	Specification
Product:	**HDI 2/3D Laser projection System**
System Type:	HDI Front Projection
Screen Size:	120” 200” 300” Laser Silver Screen
Aspect ratio:	16 : 9
Light Source Type:	Laser
Picture Resolution:	1920x1080p
2D/3D:	Built-in 3D Optical Engine Design allows seamless change from 2D to 3D
Imagers:	Dual Panel LCOS (x2) (Two Imagers provide 4M White Pixels)
Imager Native Resolution:	1920Hx1080V 2M Physical Pixels/Imager (x2)
Picture Brightness:	Minimum 40FL in 2D 20FL in 3D
Picture Contrast Ratio:	1500:1

Laser Light Module

Lasers:	HDI RGB Laser Modules
White Laser Power (Optical):	20W
RGB Laser Lifetime:	20,000 hours
Color Primaries:	635nm, 532nm, 446nm
Color Primary Passbands:	< 2nm

Optical Engine

Light Source:	Fiber coupled HDI Diode Laser Modules (RGB)
Imagers Size:	0.81” Diagonal 16 : 9
Sequential Color Switching:	Field-Sequential Slit-scanned
Color Refresh Frames:	360 Hz.
Color Temperature:	6500° K - 9800° K
White point:	TBD
Color gamut:	TBD
Output Polarization:	$R_LG_LB_L$ = circular left $R_RG_RB_R$ = circular right
Lumen & Dark uniformity	95%, 95%
Image distortion & linearity	0.2% & 0.3%
Lateral color dispersion	_ pixel
Color convergence Error:	None

3D

3D Type:	Polarization-based Field-Continuous Parallel Stereo Pair
Separation Method:	Passive Glasses, Polarization Preserving Screen
Polarization Type:	Circular polarization
Active Components:	None
Stereo Resolution:	2M pixel left-eye Imager + 2M pixel right-eye Imager provides 4M pixel stereo without sequential switching.
Content Frames:	60 left content frames/sec. + 60 right content frames/sec. Left and Right content frames exposed simultaneously

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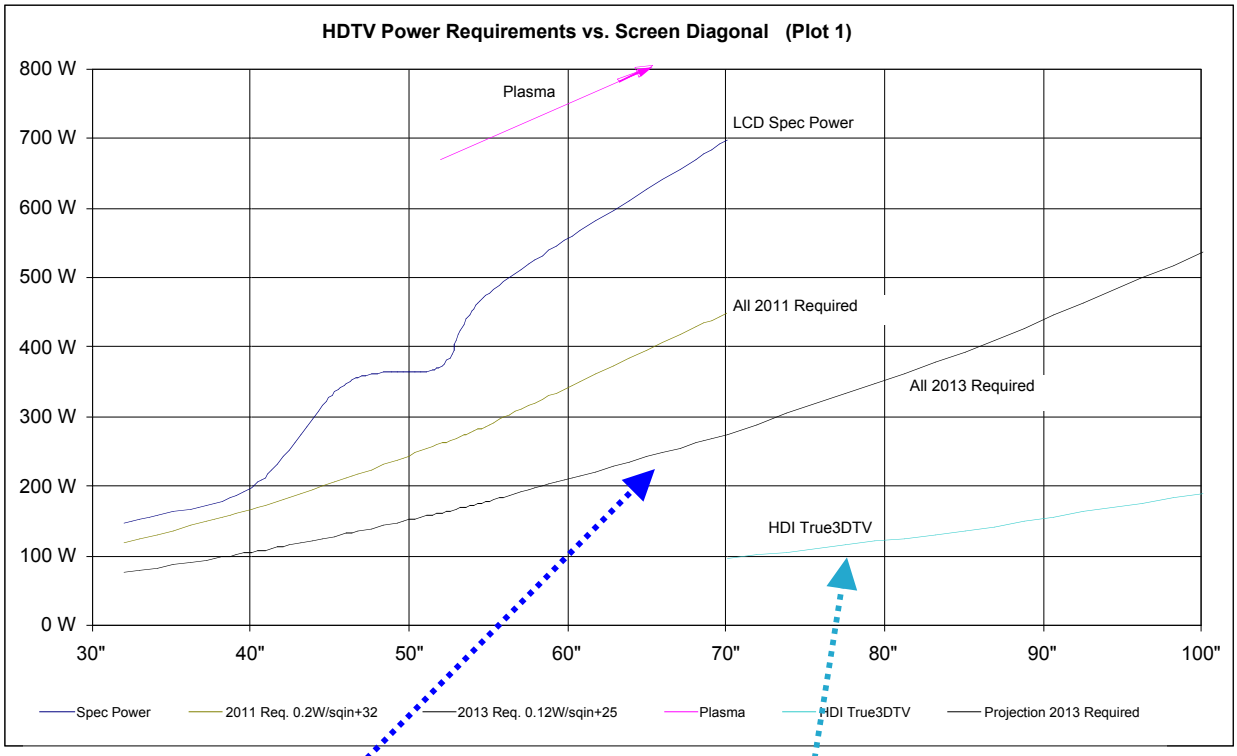
Power Consumption (See Plot 1 Below)

Total wall plug power: 350W 120" screen 500W 300" Screen

Wall watts / screen sqft. 6.5 W / Sqft.

Spec power comparison: LCD (70"): **700 W** Plasma (70"): **920 W**

Power / sqft. comparison: LCD (70"): **50 W/Sqft.** Plasma (70"): **83 W/Sqft.**



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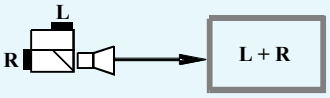
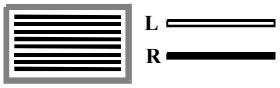
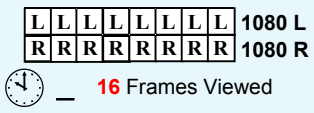
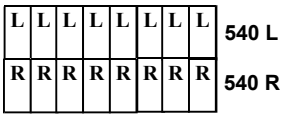
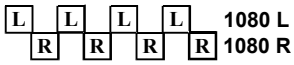
HDI 3DTV System
Competing 3D Systems Comparison

Attribute			
3D Product:	**HDI 3DTV System**	**Interleaved 3D LCD Panel**	**3D Plasma, LCD & DLP**
3D Technology:	L & R Continuous 3D (via HDI Peripheral Projection)	L & R Interleaved 3D (via structured panel polarizers)	L & R Sequential 3D (via electronic shutters)
	<u>Two</u> separate full-res imagers integrated as one projector 	Panel pixels divided into two interleaved L & R groups 	One sequential imager or flat panel switches to L then R image 
3D Native Resolution:	1920 x 1080p x 2 4M pixels continuous	1920 x 1080p 2M pixels continuous	1920 x 1080p 2M pixels sequential
3D Glasses:	Passive Polarized	Passive Polarized	Active Shuttered
3D Method:	Separate L & R images are continuously in view	Interleaved L & R images are continuously in view	L & R Images are sequentially switched into view
3D Performance Impact:	<u>No Loss</u> Full Resolution, Full Temporal	<u>Half Spatial Resolution Loss</u> Half Resolution, Full Temporal	<u>Half Temporal Resolution Loss</u> Full Resolution, Half Temporal
3D Content Density:	**Content Frames**  **16** Frames Viewed	**Content Frames**   **16** Frames Viewed	**Content Frames**   **8** Frames Viewed
3D Total Content Density:	248M 3D pixels/sec Viewed	124M 3D pixels/sec Viewed	124M 3D pixels/sec Viewed
		Physiological Factors	
3D Picture Brightness:	+50% No Polarization Loss	-50% Polarization Loss	-50% Sequential On-time Loss
3D Line Aliasing:	Minimal (1080 lines)	Significant (540 lines)	Moderate (1080 lines half-speed)
3D Frame Refresh:	360 Hz	120 Hz	120 Hz
3D Pair Timing Lag:	None	None	Significant (L-R Sequential Timing Lag)
3D Waste Spatial Frequency:	None	Interleaved image and panel structures	None
3D Physiological & Eye Strain Issues Summary:	None	High spatial frequency structures Line Aliasing Brightness Loss Slower frame Refresh	Sequential Timing Lag Line Aliasing Brightness Loss Slower frame Refresh

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