PLANAR® TWA SERIES LED VIDEO WALLS

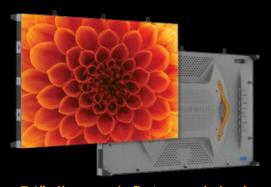
Product Overview – January 2020



Planar® TWA Series

Industry's First Flat-Panel LED Video Wall

- Family of LED video wall displays supporting even the closest viewing distances
- Delivers benefits of unique "flat panel" design
- Outstanding image quality with low power consumption
- Advanced design for reliability and ease of installation and service



54" diagonal, flat panel design Pitches: 0.9, 1.2, 1.8 and 2.5mm Hits Full HD, 4K, 8K exactly



Innovative "Flat Panel" Design Benefits

Slim 54" 16:9 Form Factor

- Self-contained units with std HDMI in / out no extra boxes, simpler cabling
 - Larger size means more of your wall is factory aligned
- Fewer seams to align in the field; more seams factory calibrated
- Reduced installation time by up to one half
- Less complex and expensive mounting frame
- Fewer panels means fewer points of service
- 16:9 form factor and HD and Ultra HD resolutions make content development and processing easier out of the box
- Compatibility with more existing installations and existing processors

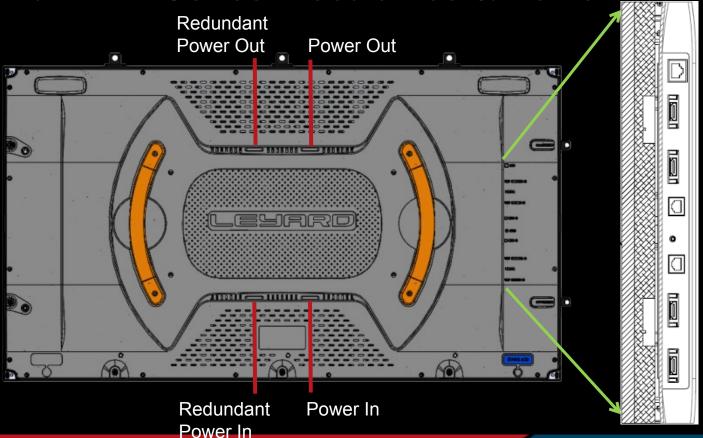


Planar TWA Series 16:9 Aspect Ratio Walls

Note: Full HD = 1920 x 1080 4K = 3840 x 2160 8K = 7680 x 4320



Planar TWA Series Electronics & Power



LAN (RJ45)

HDMI Out (redundant)

HDMI In (redundant)

Serial In (RJ25)

Serial Out (RJ25)

HDMI Out

HDMI In



Driving Different Planar TWA Models

Model	Pitch (mm)	Resolution	Full HD	4K	8K	Panels per processor output
Planar TWA0.9	0.9375	1280 x 720	N/A	3 x 3	6 x 6	1
Planar TWA1.2	1.25	960 x 540	2 x 2	4 x 4	8 x 8	4
Planar TWA1.8	1.875	640 x 360	3 x 3	6 x 6	12 x 12	9
Planar TW2.5	2.5	480 x 270	4 x 4	8 x 8	16 x 16	16



Designed for High Image Quality

- Outstanding black levels black LEDs and Planar® MicroGrid Shader™ and black solder implementations
- Wide viewing angles with excellent off-axis uniformity
- Advanced calibration for maximum full screen color and brightness uniformity
- Machine vision alignment of intra-panel LED boards
- Smooth and consistent grayscale even at low brightness
- Color control to optimize for particular applications



Planar TWA Series Low Power Consumption Design

	Measured Power	Measured Brightness	Watts/ Nit	Savings
Planar TW1.2	620W	600 pito*	1.033	
Planar TWA1.2*	360W	- 600 nits* -	0.600	42% Lower than TW

^{*} Maximum brightness is 800 nits



Reduced Standby Power

- With Direct View LED displays, "off" is more typically "display black"
- As a result, LED displays draw significant power even when "off"
- Planar TWA Series implements a Standby mode that greatly reduces power when the LED video wall is not in use

	Planar TWA	Planar TVH, DL1	Brand X 1.9
Display Black	85W / sq m	160W / sq m	190W / sq m
Standby Mode	42W / sq m	NA	NA

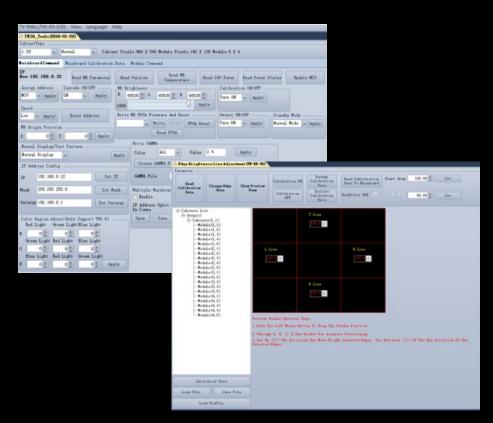
- Planar TWA uses 74 -78% less power in Standby or "off" mode than with typical LED displays
- For a video wall operating even 12 hours per day, the savings is substantial



Planar LED Tool Box Software

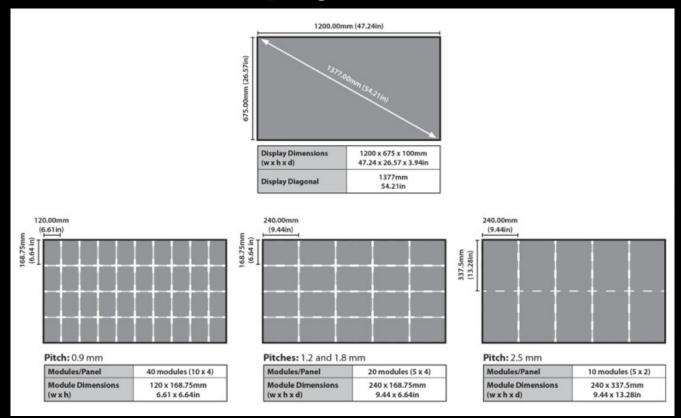
Video Wall Image Control

- Windows-based app for set-up and image control
- Brightness control
- RGB adjustment
- Gamma gray scale adjustment
- Switch between HDMI input and test patterns
- Electronic seam correction per edge control





Planar TWA Series Display and Module Construction

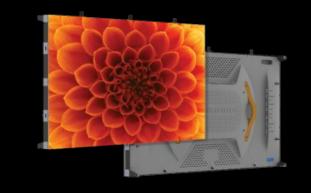




Planar TWA Series

Key Selling Points

- Wide range of fine-pitch LED displays in the industry
 - **0**.9, 1.2, 1.8, 2.5
- Easiest, fastest flat-wall install product available
- Lowest cost of ownership fewer points of service
- TW/TWA is industry's only seamless direct replacement for LCD
- Lowest power LED design in the industry
- Optimized for Full HD, 4K and 8K
- Attractive price/pixel position
- From the worldwide market leader in fine-pitch LED





Introducing Planar® LED MultiTouch

Industry's First Standard, Completely Seamless Interactive Fine-Pitch LED Video Wall

- High performance touch
 - 32 simultaneous touch points
 - Excellent tactile feel
 - Anti-static
- Visually superior
 - Uniform color and brightness
 - Anti-glare surface
 - No parallax error
- Easy to deploy and maintain
 - Lightweight, thin and unobtrusive
 - No additional structure or special reinforcement needed
 - Simplifies service



Available in 108", 151" and 196" diagonal LED video walls

Features Planar® PLTS™ (Pliable LED Touch Surface™) Technology, a specially formulated, lightweight and durable touch material



Planar[®] ERO-LED[™] Option

Extended Ruggedness and Optics for Planar LED Displays

- Proprietary coating applied to leading Planar fine pitch LED displays
- Provides ruggedness and protection
- Improves visual performance
- Enhances existing best-in-class LED display products at a reasonable cost
- Unlocks new applications for fine pitch LED displays
- Available for a range of Planar LED display products and pixel pitches

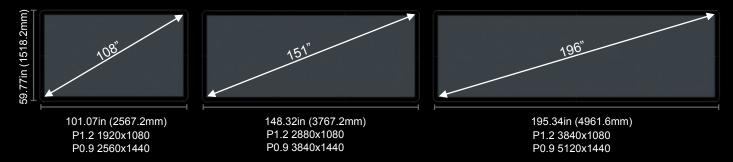


LED Display Product	Available Pitches (mm)
Planar TWA Series	0.9, 1.2, 1.8



Planar LED MultiTouch

Available Models



- Sleek multi-touch frame
 - 32-point IR touch technology
 - Installed Width x Depth: 3.16 x 4.6in (80.25 x 117.4mm)
- Planar PLTS (Pliable LED Touch Surface)
 - Unique and proprietary touch surface with numerous customer advantages
 - Installed in the field and serviceable
- Integrated with Planar® TWA Series in three configurations



THANK YOU

