# PLANAR

# Planar MGM SERIES
## LED Video Wall Displays



The Planar® MGM Series is the premium line of fine-pitch MicroLED Videowall displays that uses Flip-Chip LEDs. The product features a very high standard of performance and delivers exceptional clarity up to 8K resolution. The wide viewing angle and color gamut results in outstanding image quality in terms of color, brightness, and contrast.

## The Perfect Resolution

The MGM Series cabinets come in the ideal 16:9 aspect ratio that enables the various pixel pitch models to be easily configured in Full HD and UHD (4K) resolutions. The displays can also be configured to form Videowalls with non-standard configurations for a wider range of applications. With the finest pixel pitch, the installation can have a minimum viewing distance of under 2 meters.
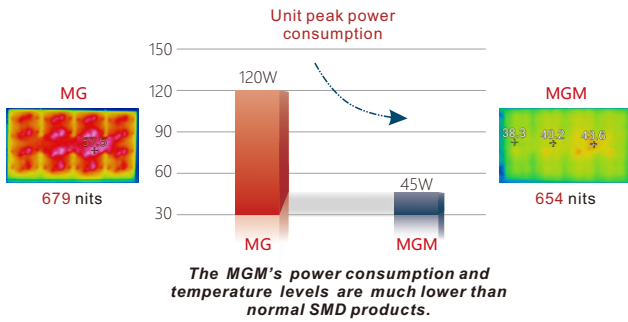
## Slim is In

The Planar® MGM Series 27" cabinet features front installation and service, enabling users to mount them directly on the wall. This results in an installed depth under 10cm, making it a viable option when a slim mounted profile would look best.
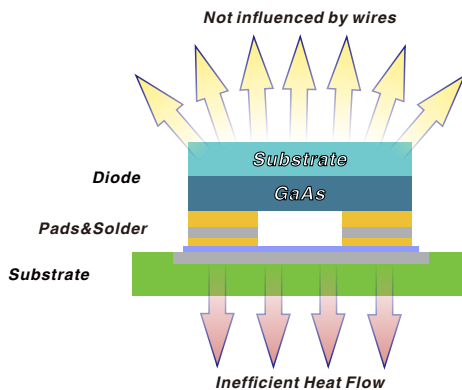
### KEY FEATURES

• Available in 0.9, 1.2, 1.5 and 1.8 pixel pitches

• Flip-Chip (wireless) MicroLED; new driver IC; single package;

• 27" diagonal cabinets; 16:9 aspect ratio

• Wall-mounted, full front access and service

• Standard data and power connectors

## Lower power consumption



Unit peak power consumption

MG — 679 nits

MGM — 654 nits

*The MGM's power consumption and temperature levels are much lower than normal SMD products.*

The MGM series uses micro technologies, improved chip integration and efficiency - resulting in lower power consumption. Under the energy-saving mode, users can attain the typical brightness at just 30% of the usual energy consumed. In deep sleep mode, power consumption goes below 20 watts per sqm.

## MicroLED Schema



Not influenced by wires

Diode

Pads&Solder

Substrate

Substrate

GaAs

Inefficient Heat Flow

Unlike the normal chip, the Flip-Chip is directly connected to the substrate, eliminating the need for the welding wire. Flip-Chip offers the following advantages:

1. Eliminate welding wire failure; improve stability
2. Heat dissipation performance improves.
3. Improved quality of light since there is no welding line shielding
4. 5 sides of light can be realized by adding a reflective layer at the bottom. Light efficiency is higher than the normal COB.
5. There is a polymer material that completely fills the gap in between the Flip-Chip and the substrate. This eliminates the risk of moisture seeping in and causing a short-circuit. This also solves the caterpillar problem that happens in the display industry.

The traditional package solution uses a common resin-plugging method which contains two materials: resin and metal. The resin and metal layers tend to leak outside the package after encapsulation, thereby resulting in resin shedding. This results in water pressure entering under the environment and causing a short circuit.

The new package solution is optimized to solve this anomaly by adopting the innovative technology of embedded holes and integrating it into the packaging process. This mitigates the risk of water vapor seeping, thus eliminating the possibility of "caterpillars".

## Advanced Image Technology

The combination of HDR control and the unique black surface technologies results in a Videowall that delivers ultra-high contrast and true HDR effect. The screen brightness can be increased up to 1500nits while the power consumption level remains constant. Under half-power conditions, the viewing angle remains at over 170°.

The powerful video-processing and data correction capabilities can reveal more details and textures, enhance the low-grayscale content, and highlight the intricacies of images. It also performs image noise reduction, sharpening, color optimization and color temperature adjustment.



*low-gray local details of the screen are improved*

## MicroLED is Big in Power

MicroLEDs are less than half the size of the smallest standard LEDs but it delivers up to three times the brightness, excellent visual performance, and color uniformity. MicroLEDs are highly energy efficient – requiring less power and emitting less heat at a given brightness. They deliver more vivid colors while leaving more space for a black canvas, providing greater detail with dark images and better overall contrast. The MicroLED design has a smaller footprint, thus reducing light blockage and ambient-light reflection. The tiny size of the LED makes it possible to attain the highest resolution possible for LED Video walls of all sizes.

## Greatly improved Contrast Ratio
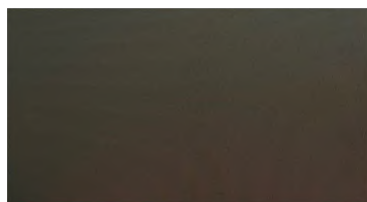
**SMD Low contrast, yellow display**
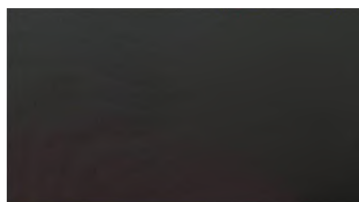
**Micro High contrast, extreme black display**

The areas of the MicroLED outside the crystal/bond wire areas are covered with ink. With a smaller pixel area and the pixels' interiors blackened, the increased proportion of the product's black areas results in ultra-high contrast levels.

### PLANAR MGM SERIES SPECIFICATIONS

| Planar Model | MGM0.9 | MGM1.2 | MGM1.5 | MGM1.8 |
|---|---|---|---|---|
| Pixel Pitch | 0.9375mm | 1.25mm | 1.5625mm | 1.875mm |
| Module Resolution | 160 × 360 | 150 x 337.5 | 96 × 216 | 80 × 180 |
| Cabinet Resolution | 640 x 360 | 480 x 270 | 384 x 216 | 320 x 180 |
| Pixel density | 1137778dot/m² | 640000dot/m² | 409600dot/m² | 284444dot/m² |
| Peak brightness(after calibration) | 2000nits | 1600nits | 1600nits | 1600nits |
| Contrast Ratio | 15000:1 | 20000:1 | 20000:1 | 20000:1 |
| Power Consumption, Max | 95w/unit; 470w/m² | 92w/unit; 455w/m² | 90w/unit; 445w/m² | 90w/unit; 445w/m² |
| White Balance 100% White Brightness (calibration) | 1200-1500 nits | | | |
| Color temperature | 3000-10000K（Adjustable） | | | |
| Deviation of LED luminance Center | <3% | | | |
| Brightness Uniformity | ≥ 97% | | | |
| Chromaticity Uniformity | ±0.003Cx,Within the Cy | | | |
| NTSC gamut coverage | 125% | | | |
| Color Depth | 16-bit | | | |
| Flatness | ≤ 0.1mm | | | |
| Curvature installation up to | 5° | | | |
| Cabinet Size | 600 x 337.5 x 53mm | 23.62 x 13.29 x 2.09in | | |
| Cabinet Diagonal | 688.4mm | 27.1in | | |
| Cabinet Area | 0.2025m² | 2.18ft² | | |
| Modules/Cabinet (WxH) | 4 x 1 | | | |
| Module Size | 150x337.5mm | 5.91x13.29in | | |
| Line Voltage | 100-240V AC, 50/60Hz | | | |
| Drive Mode | Constant current PWM drive | | | |
| Cabinet Weight (per display) | 6kg | 13.2277lbs | | |
| Cabinet Weight (per m²) | 30kg | 66.12lbs | | |
| LED Refresh Rate | ≥ 3840Hz | | | |
| Frame Rate | 50, 60Hz | | | |
| 3D （100/120Hz） | Optional | | | |
| Color Temperature, Adjustable (k) | 3,000 - 10,000 | | | |
| Viewing Angle, Horizontal, Vertical | 170° H, 170° V | | | |
| Installation | Front / Rear | | | |
| Service Access | Front | | | |
| Environment | Indoor | | | |
| Operating Temperature/Humidity | -20° to 40° C | 10-90% (non-condensing) | | |
| Storage Temperature/Humidty | -30° to 60° C | 10-80% (non-condensing) | | |
| LED Lifetime: Typical | 100,000hrs | | | |
| Runtime Duty Cycle (Hours/Day) | 24/7 | | | |

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