



Flip Chip-On-Board LED

THE NEXT GENERATION OF LED DISPLAY

VSI, a pioneer in creating and delivering one of the world's first COB LED display walls for indoor application, launches the new generation of COB LED cabinet with 16:9 aspect ratio Flip COB. Flip COB LED chips are directly encapsulated on the PCB (Printed Circuit Board) with COB (Chip On Board) technology. Together with the patented dark film coating surface offers unrivaled comfortable viewing experience and the highest reliability.

Flip COB

Latest trend for 24/7 Command Control center for its special characteristics

Smooth Surface with Coating Material

- » Offer softer images
- » Reduced light radiation
- » Reduced moiré and glare effect
- » No dust contamination
- » Fingerprint-resistant
- » Easy maintenance

Higher Availability and Durability

- » 10 times less dead pixel rate
- » Long lifetime of more than 100,000 hours
- » Flip COB Encapsulation enables longevity of the LED chips
- » Avoid oxidization inside the chips

Lower Power Consumption and Heat Dissipation

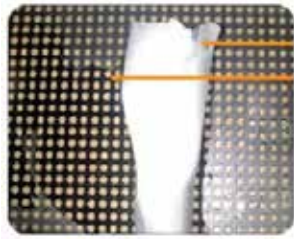
- » Less energy consumption and Low temperature
- » It is decreased by 62% and 20% respectively
- » This ensures longer lifetime

PATENTED DARK FILM COATING SURFACE

VSI created a unique Flip Chip-On-Board LED module with patented proprietary coating material, this unique dark coating offers softer images, reduced light radiation, moiré and glare, yet displays fine image details in unprecedented clarity with highly smooth finishes and a surface that has excellent strength. It has no dust contamination, is fingerprint-resistant, and offers an improved visual experience.



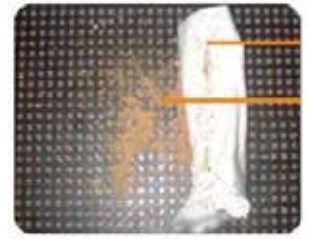
CONVENTIONAL LED
Water trapped in LED gaps causing dead pixels easily



FLIP COB
Water resistant, dry the surface with cloth



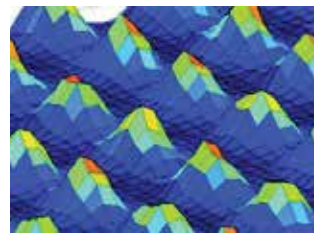
CONVENTIONAL LED
Dust filled in the LED gaps and cannot be



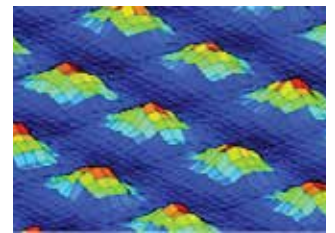
FLIP COB
Dust off effortlessly with a cloth

Flip COB is VSI's forth generation COB LED module, it is arranged in high filling rate optical design forming a surface of light source and hence a more uniform image without glares. Delivering an excellent viewing experience with seamless screen quality which are necessities in large venues such as control rooms, TV studio backdrops, corporate conference rooms, auditoriums and houses of worship etc.

THE DISTRIBUTION OF PIXEL LUMINESCENCE



Conventional LED Light Concentration at tiptop causing eye discomfort



Flip COB LED Light Is flat offering visual comfort



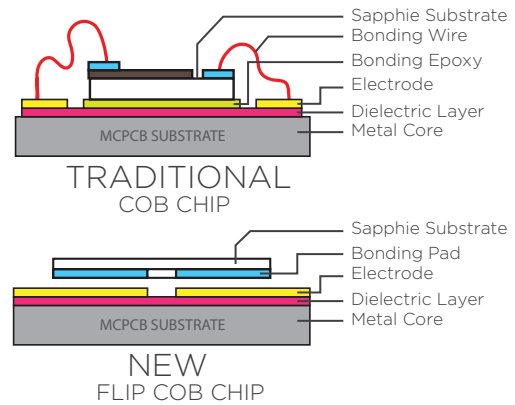
WIDE VIEWING ANGLE

Flip COB LED technology offers more than 160° horizontal and 160° vertical viewing angles, and hence a very wide display coverage in your space. Despite where the viewer stands, Flip COB LED video wall gives a clear and consistent image.

TRULY SEAMLESS CANVAS

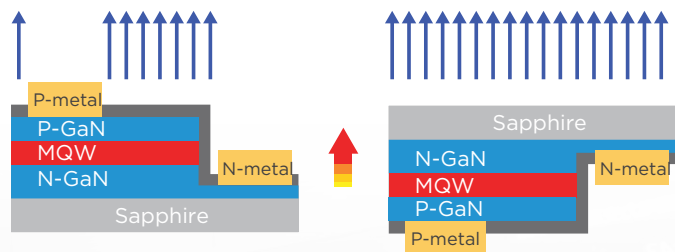
Thanks to high filling rate optical design, each Flip COB LED cabinet is composed of high density of LED lights. Flip COB LED offers perfect cabinet-to-cabinet alignment, each cabinet can be tiled together snugly to form a seamless imagery. Flip COB LED video wall is able to deliver high definition image with fine details without pixel loss.

There are 5 metal wires and 10 welding points for each pixel unit of wire bond for COB. For Flip COB, there are no wire bonding but 6 metal bonding points for each pixel unit, which avoid the issue of physical problem of the wire such as expansion/contraction, oxidization due to the retanted water vapor etc. This effectively solves the hidden risk which lead to dead pixel within short period of time.



UNSHIELDED LUMINESCENCE & HIGHER UNIFORMITY

With the same current, brightness is higher because of bigger luminous area of LED wafer, uniform current distribution, and unshielded surface.



MORE UNIQUE ADVANTAGES OF FLIP COB LED

VSI's Flip COB LED has the advantage of the first and second generation COB LED which includes better surface protection of the LED light and is water-resistant. VSI's Flip COB has enhanced circuit, optical and thermal design, making the dead pixel rate extremely low. Unlike conventional LED adopting surface mounted devices, Flip COB has no stent, eliminating the process of electroplating, reflow soldering, mounting, and hence greatly improves the stability of LED performance. It features easy dust control, suitable for heavy-duty 24/7 operations. It is built with the latest patented surface material which enhances the durability, has no dust contamination, is fingerprint-resistant, and offers an improved visual experience.

LOW HEAT DISSIPATION AND ELECTRICAL STABILITY

Flip COB LED come with low heat dissipation and electrical stability with sophisticated circuit design and optical design. There is no electrode welding wire, allowing for a reduction in thermals and resistance. There is less heat dissipation, thus extending the lifetime of LED chips. At the same level of brightness, compared with the wire bonding COB, the energy consumption and temperature of Flip COB is decreased by 62% and 20% respectively. This low heat rate not only enhances the reliability and durability of the overall systems, but also contributes to energy savings from decreased expenditures on cooling and ventilation facilities.



COMPATIBLE WITH VSI'S SIGNAL PROCESSING AND WINDOWING FOR IMAGE RESIZING AND SCALING.



VSI pioneered this latest generation of Flip COB LED with the signal processing functions. These are features on VSI LED displays. In the past, many LED Wall customer are just having large images sowing over the whole LED display for advertising and signage purposes. With wider application of LED displays especially for indoor use, in conference rooms, control rooms, command centers, and even the backdrop solution for TV stations, customers required video processing functions for image resizing, scrolling banner, individual windows naming, built-in clock, weather information, etc. All these features come with VSI's LED displays, which bring much added-value to our customers.

*Options: VSI provides wide range of professional display wall processors for different venues.



TECHNICAL SPECIFICATIONS

VTRON VLED FCOB SERIES

Features	VLED-P07 IIIH	VLED-P09 IIIH	VLED-P12 IIIH	VLED-P15 IIIH
CABINET				
Pixel pitch (mm)	0.78	0.9375	1.25	1.56
Cabinet resolution (W x H)	768 x 432	640 x 360	480 x 270	384 x 216
Cabinet dimension (W x H x D) (mm)	600 x 337.5 x 45.6	600 x 337.5 x 35	600 x 337.5 x 35	600 x 337.5 x 32.5
Weight (kg)	6.8	5.1	5.1	4.2
Area (m ²)	0.2025			
Pixel density (pixels/ m ²)	1,638,400	1,137,778	640,000	409,600
Flatness (mm)	≤ 0.15			
Gap (mm)	≤ 0.15			
Serviceability	Front			
Brightness (nits)	0 to 600			
Point-by-point chroma / brightness calibration	Support			
Colour temperature (K)	3,000 to 10,000 (adjustable)			
DISPLAY CAPABILITIES				
Brightness / colour conformity	≥ 97%			
Colour gamut	105% NTSC	110% NTSC	110% NTSC	105% NTSC
Colour	256 trillion colours			
Contrast ratio	≥ 10,000:1	≥ 7,000:1	≥ 7,000:1	≥ 7,000:1
Horizontal viewing angle	≥ 160°			
Vertical viewing angle	≥ 160°			
Gray scale	16 bit			
PROCESSING PERFORMANCE				
Driving mode	Constant current drive			
Refresh rate (Hz)	≥ 3,000			
Frame rate (FPS)	60			
ELECTRICAL PARAMETERS				
Power supply	AC 100 to 240V, 50/ 60Hz (Redundant power supply for option)			
Peak power consumption (W/ m ²)	546	385	328	480
Typ. power consumption (W/ m ²)	182	128	109	160
Lifetime (typ.)	100,000 hrs			
OPERATING PARAMETERS				
Operating temperature	-10°C to 40°C; 22 ± 5°C (Recommended)			
Operating humidity (RH)	10% to 90% (Non-condensation)			
Storage temperature	-40°C to 60°C			
Storage humidity (RH)	10% to 90% (Non-condensation)			
Ingress protection	IP65 (Front screen)			

TECHNICAL SPECIFICATIONS

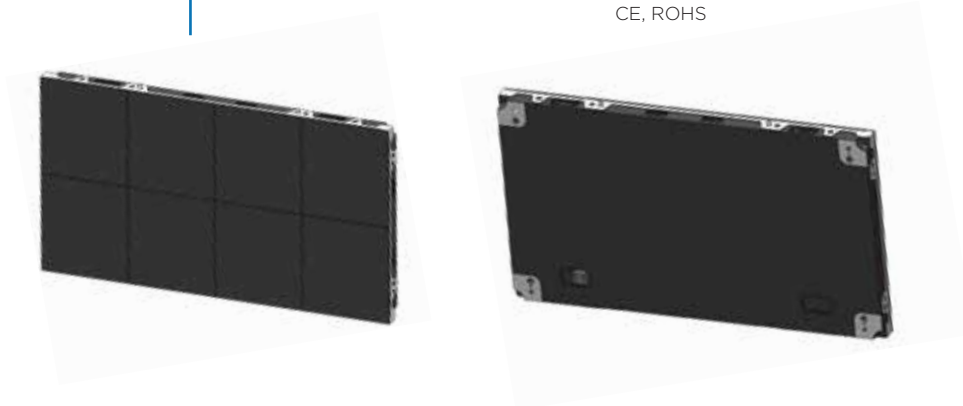
VTRON VLED FCOB SERIES

Features	VLED-P09 IIG	VLED-P11 IIG	VLED-P12 IIG
CABINET			
Pixel pitch (mm)	0.953	1.19	1.27
Cabinet resolution (W x H)	640 x 360	512 x 288	480 x 270
Cabinet dimension (W x H x D) (mm)	610 x 343 x 44.5	610 x 343 x 45.5	610 x 343 x 44.5
Weight (kg)	6.0	6.1	5.9
Area (m2)		around 0.209	
Pixel density (pixels/ m2)	1,101,180	704,756	619,414
Flatness (mm)		≤ 0.15	
Gap (mm)		≤ 0.15	
Serviceability		Front	
Brightness (nits)		0 to 600	
Point-by-point chroma / brightness calibration		Support	
Colour temperature (K)		3,000 to 10,000 (adjustable)	
DISPLAY CAPABILITIES			
Brightness / colour conformity		≥ 97%	
Colour gamut	105% NTSC≥	110% NTSC≥	105% NTSC≥
Colour		256 trillion colours	
Contrast ratio	≥6,000:1	≥10,000:1	≥6,000:1
Horizontal viewing angle		≥ 160°	
Vertical viewing angle		≥ 160°	
Gray scale		16 bit	
PROCESSING PERFORMANCE			
Driving mode		Constant current drive	
Refresh rate (Hz)		≥ 3,000	
Frame rate (FPS)		60	
ELECTRICAL PARAMETERS			
Power supply	AC 100 to 240V, 50/ 60Hz (Redundant power supply for option)		
Peak power consumption (W/ m2)	560	430	570
Typ. power consumption (W/ m2)	187	144	190
Lifetime (typ.)		100,000 hrs	
OPERATING PARAMETERS			
Operating temperature	-10°C to 40°C; 22 ± 5°C (Recommended)		
Operating humidity (RH)	10% to 90% (Non-condensation)		
Storage temperature	-40°C to 60°C		
Storage humidity (RH)	10% to 90% (Non-condensation)		
Ingress protection	IP65 (Front screen)		

TECHNICAL SPECIFICATIONS

VSI VSLED FCOB SERIES INDOOR LED VIDEO WALL DISPLAY

Features	VSI-LED-P151IH	VSI-VLED-P121IH	VSI-VLED-P091IH
CABINET			
LED Technology	Flip COB 1R1G1B		
Pixel pitch (mm)	1.5625	1.25	0.9375
Cabinet Resolution	384 × 216	480 × 270	640 × 360
Cabinet Dimension	600 × 337.5 × 29mm	600 × 337.5 × 29mm	600 × 337.5 × 36mm
Cabinet Weight (KG)	4.2	4.3	6.5
Area (㎡)	0.2025		
Gap (mm)	≤0.15		
Flatness	≤0.15		
Serviceability	Front		
LED chip lifetime (typical)	100,000 hours		
Pixel Density(pixels/㎡)	409,600	640,000	1,137,778
Color Temperature	3,000 - 10,000K adjustable		
DISPLAY CAPABILITIES			
Brightness	0-600cd/m ² adjustable		
Brightness Uniformity	≥97%		
Contrast Ratio	7,000:1		10,000:1
Colour gamut	105%(NTSC)		
Viewing Angle	Hor.≥160°, Ver.≥160°		
Gray Scale	16 bit		
PROCESSING PERFORMANCE			
Driving	Constant current drive		
Frame Rate	60 Hz		
Refreshing Rate	3840Hz		
Power Consumption(Peak)	400W/ m ²	420W/ m ²	600W/ m ²
Power Consumption(Typical)	134W/ m ²	140W/ m ²	200W/ m ²
OPERATIONS PARAMETERS			
Working Temperature	-10-40°C		
Working Humidity	10%~85%(Non-condensing)		
Protection Level	IP65 (Front screen)		
Certificate	CE, ROHS		



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