

# VANGUARD LED DISPLAYS



Tungsten Pro



Zirconium

# House of Worship DISPLAYS



Visit our site to learn more!

- **Engaging Visual Communication:** Bring sermons, songs, music, and live events to life with clarity and focus
- **Sharp, Deep, Colors:** Delivering crisp, high-resolution visuals not impacted by ambient light, shadows, or entertainment lighting.
- **Designed for Reverence and Reach:** Fine pixel pitch displays visible from front pew to back row without visual noise or distraction
- **Seamless Integration with Worship Spaces:** Low-profile, front-radiating panels fit gracefully into traditional and modern sanctuaries
- **Volunteer-Friendly Operation:** Compatible with common worship software and intuitive control systems for simple content management

# House of Worship Displays



In faith communities across the country, dvLED video displays have become a powerful tool for enhancing worship, fostering connection, and reaching wider audiences. Colors are sharp and deep and not impacted by ambient light, shadows or entertainment lighting. Vanguard LED Displays supports houses of worship with high-performance visual systems designed to elevate the worship experience without overwhelming the message.

Whether supporting sermons, lyrics, prayer readings, live video, or special events, our fine-pitch LED displays ensure visibility from every seat in the sanctuary—helping congregations stay engaged and connected. Designed with subtlety and reverence in mind, our panels blend into both traditional and contemporary worship spaces, maintaining the atmosphere of sacred environments while adding modern capability.

Our systems are compatible with popular church production software and designed for ease-of-use by volunteer AV teams. With scalable configurations for sanctuaries, fellowship halls, and multipurpose spaces, Vanguard LED solutions empower faith leaders to communicate with clarity—whether in-person or livestreaming to congregants across the globe.

Trusted by growing churches and historic congregations alike, Vanguard brings visual excellence to spiritual settings, helping communities share their message with impact, beauty, and faith-driven intention.





## Axion Pro

- 27" diagonal, native 16:9 panel for true aspect ratio and resolution displays
- Dual/**redundant power** and **remote power** options
- Dual/**redundant receiving card** support



## Zirconium

- Design in **250mm** units
- **1.9 - 5.2mm** pitch range
- **6** unique panel frame sizes
- **Universal modules** for all panel sizes



## Wave

- Configurable curving
- **Concave, convex, or flat**
- Fine-pitch down to **1.25mm**
- Configurable as true **16:9, 2K, 4K**, and more



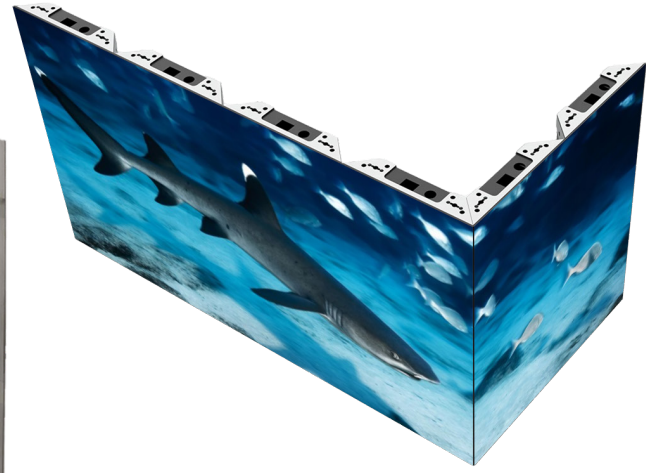
## Tungsten

- **500 x 500mm** panel
- **500 x 1000mm** panel
- Panel-to-panel **curving**
- Integrated **corner protection**



## Axion Mobile

- **600 x 337.5mm** panel
- **16:9** aspect ratio
- **Fine-pitch** options available



# Axion Pro

pitch	0.9	1.2	1.5	1.8	2.5	3.7
pixel tech	SMD	SMD	SMD	SMD	SMD	SMD



ideal for

## Indoor, fixed 16:9 displays

summary

Axion Pro is the best solution for indoor, fixed 16:9 displays. Covering the industry's most popular pitches for this application, Axion Pro utilizes SMD pixels as standard, and can have an optional epoxy masking or coating applied to provide enhanced durability. Gold bonding wire is also available.

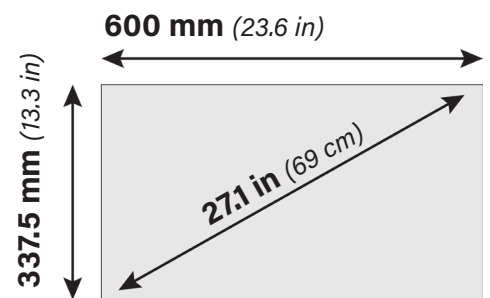
Axion Pro is available with standard 600x337.5 panels, and 300x337.5 half-width panels allowing for smaller design units, and narrower facets for curved displays.

special configurations



Visit our site to learn more!

dimensions



aspect ratio

16:9

weight

7.7 kg (17 lbs)

max brightness

1,200 nits

IP rating

IP41

optional

- Epoxy masking or coating
- IMD or MIP
- Protective edge trim
- 45-degree edges for corners
- Connecting plates
- Headers for hanging/flying
- Embedded controller
- Mobile cart, up to 5x5 array
- Flight cases
- Hydrophobic treatment
- Dual receiving cards
- Dual power supplies
- Remote AC>DC power conversion

# Axion Pro

SERIES NAME

MAXIMUM BRIGHTNESS (NITS)	up to 1,200	
DIMENSIONS	WIDTH	up to 600 mm (23.6 in)
	HEIGHT	337.5 mm (13.3 in)
	DEPTH	58 mm (2.3 in)
PANEL ASPECT RATIO	16:9, 8:9	
PANEL WEIGHT	up to 7.7 kg (17 lbs)	
MODULES PER PANEL	up to 4 per panel	
VIEWING ANGLE	HORIZONTAL	160°
	VERTICAL	160°
LED LIFETIME* (HRS)	100,000	
CONTRAST	up to 6,000:1	
DRIVERS	ICN 1069, ICN 2153 (depending on pitch)	
SCAN RATE	1/15, 1/27, 1/30, 1/60 (depending on pitch)	
PROCESSING DEPTH (BITS)	14 default (8-16 range)	
REFRESH RATE (HZ)	3,840 default (3,840 range)	
FRAME RATE	60 default (50, 60 options)	
COLOR TEMPERATURE	7,500 default (2000-12000 range)	
COLOR GAMUT	2.8(1.0-4.0)	
BONDING WIRE	Copper	
POWER COMMON	Anode, Cathode (depending on pitch)	
WATTS PER PANEL	55-138W max (19-48W average)	
WATTS PER SQ M	540-680W max (189-238W average)	
MAX AMPS PER CASCADE	10	
OPERATING VOLTAGE	100-240V AC, 50/60 Hz	
OPERATING TEMPERATURE	-10°C - +40°C	
MAXIMUM HEAT	187-471 BTU/hr (depending on pitch and panel size)	
HUMIDITY	10% - 80%, non-condensing	
IP RATING	IP41	
FRAME MATERIAL	Die-cast Aluminium	
HANGING AND STACKING	15 hanging max   30 stacking max	
REAR BOLT THREADING	M8	
POWER CONNECTORS	C13/C14	
DATA CONNECTORS	RJ45	
SERVICE ACCESS	Front	
WARRANTY	3 year (up to 5 available)	
CERTIFICATIONS	EMC-A, CCC, FCC, ETL, LVD, CE, RoHS, CB, PSE	



Visit our site to learn more!



# Zirconium

pitch	1.9	2.6	3.1	3.9	5.2
pixel tech	SMD	SMD	SMD	SMD	SMD

ideal for

Unique shapes and non-standard aspect ratios

summary

Zirconium is a freeform series that enables configuration in units of 250mm both vertically and horizontally. Zirconium has three panel widths and two heights. Panel sizes are used dynamically to get extremely close to any target dimensions. All panels use the same, interchangeable modules.

Zirconium panels can be edge-chamfered to 45 degrees on either the left side, right side, or both. This allows Zirconium to make faceted convex curves or outside 90-degree corners.

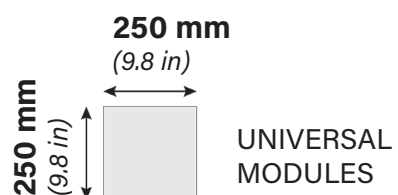
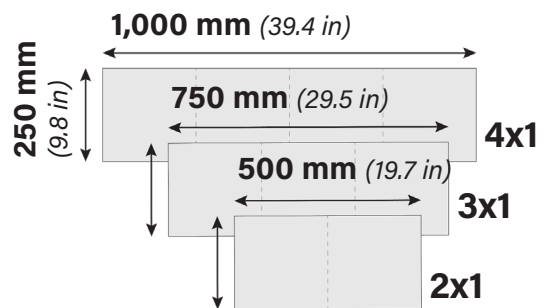
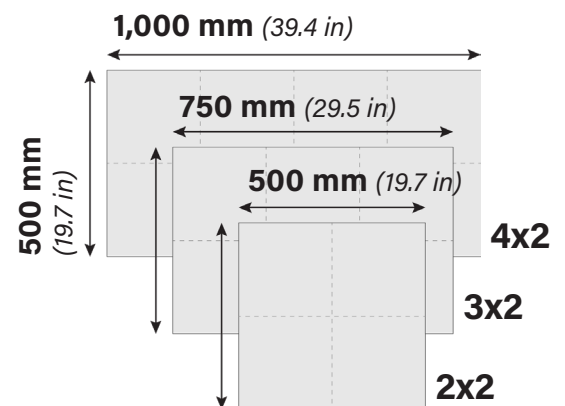
special configurations



optional

- Protective edge trim
- 45-degree edges for corners
- Connecting plates
- Reduced magnets for transit stations
- Dual receiving cards for data redundancy
- Hydrophobic treatment
- Flight cases

panel dimensions



IP rating  
IP30

max brightness  
1,000 nits

# Zirconium

SERIES NAME

MAXIMUM BRIGHTNESS (NITS)	up to 1,000	
DIMENSIONS	WIDTH	up to 1000 mm (39.4 in)
	HEIGHT	up to 500 mm (19.7 in)
	DEPTH	42 mm (1.7 in)
PANEL ASPECT RATIO	1.5:1, 1:1, 2:1, 3:1, 4:1	
PANEL WEIGHT	up to 11 kg (24.3 lbs)	
MODULES PER PANEL	up to 8 per panel	
VIEWING ANGLE	HORIZONTAL	160°
	VERTICAL	160°
LED LIFETIME* (HRS)	50,000	
CONTRAST	8,000:1	
DRIVERS	ICN2055, ICN2150, ICN2165 (depending on pitch)	
SCAN RATE	1/16, 1/32, 1/64 (depending on pitch)	
PROCESSING DEPTH (BITS)	14 default (8-16 range)	
REFRESH RATE (HZ)	3,840 default (3,840 range)	
FRAME RATE	60 default (60 options)	
COLOR TEMPERATURE	8,500 default (2000-9300 range)	
COLOR GAMUT	1.0 - 4.0	
BONDING WIRE	Copper	
POWER COMMON	Anode	
WATTS PER PANEL	59-290W max (21-102W average)	
WATTS PER SQ M	475-580W max (166-203W average)	
MAX AMPS PER CASCADE	20	
OPERATING VOLTAGE	100-240V AC, 50/60 Hz	
OPERATING TEMPERATURE	-20°C - +50°C	
MAXIMUM HEAT	203-991 BTU/hr (depending on pitch and panel size)	
HUMIDITY	10% - 90%, non-condensing	
IP RATING	IP30	
FRAME MATERIAL	Die-cast Aluminium	
HANGING AND STACKING	no hanging   no stacking	
REAR BOLT THREADING	M6	
POWER CONNECTORS	C13/C14	
DATA CONNECTORS	RJ45	
SERVICE ACCESS	Front	
WARRANTY	3 year (up to 5 available)	
CERTIFICATIONS	EMC-B, CCC, FCC, ETL, LVD, CE, RoHS, UKCA, CB, BIS, KC, PSE	

# Wave



pitch	1.2	1.5	1.8	2.5
pixel tech	SMD	SMD	SMD	SMD

ideal for

## Smooth, curving displays

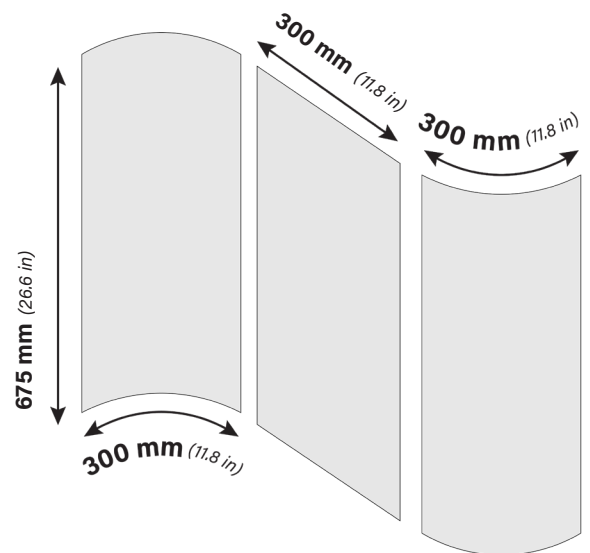
summary

Creating faceted curves with flat panels will soon be a thing of the past. Introducing the Wave series, a leap forward in the evolution of curving fine-pitch LED. Design, installation, and service are made easier with a single panel size and universal flexible modules.

Wave panels have a 4:9 aspect ratio enabling a true 16:9 aspect ratio, which can be configured to true FullHD 2K or UltraHD 4K resolutions.

- Axion Pro series, 1,920 x 1,080 px | 4x4, 1.2mm
- Wave series, 1,920 x 1,080 px | 8x2, 1.2mm

dimensions



aspect ratio

4:9

weight

7.7 kg (17 lbs)

max brightness

800 nits

IP rating

IP41

optional

- Epoxy masking or coating
- MIP - High-contrast pixels
- Cosmetic/protective edge trim
- Embeddable controller
- Mobile cart
- Flight cases
- Remote AC>DC power conversion

# Wave

SERIES NAME

MAXIMUM BRIGHTNESS (NITS)	up to 800	
DIMENSIONS	WIDTH	300 mm (11.8 in)
	HEIGHT	675 mm (26.6 in)
	DEPTH	58 mm (2.3 in)
PANEL ASPECT RATIO	0.4:1	
PANEL WEIGHT	5.8 kg (12.8 lbs)	
MODULES PER PANEL	4 per panel	
VIEWING ANGLE	HORIZONTAL	160°
	VERTICAL	160°
LED LIFETIME* (HRS)	100,000	
CONTRAST	6,000:1	
DRIVERS	ICN1065S, ICN1069 (depending on pitch)	
SCAN RATE	1/27, 1/30, 1/60 (depending on pitch)	
PROCESSING DEPTH (BITS)	14 default (8-16 range)	
REFRESH RATE (HZ)	3,840 default (3,840 range)	
FRAME RATE	60 default (50, 60 options)	
COLOR TEMPERATURE	7,500 default (2000-12000 range)	
COLOR GAMUT	2.8 (1.0-4.0)	
BONDING WIRE	Copper	
POWER COMMON	Anode, Cathode (depending on pitch)	
WATTS PER PANEL	122-138W max (43-48W average)	
WATTS PER SQ M	600-680W max (210-238W average)	
MAX AMPS PER CASCADE	10	
OPERATING VOLTAGE	100-240V AC, 50/60 Hz	
OPERATING TEMPERATURE	-10°C - +40°C	
MAXIMUM HEAT	415-471 BTU/hr (depending on pitch and panel size)	
HUMIDITY	10% - 80%, non-condensing	
IP RATING	IP41	
FRAME MATERIAL	Die-cast Aluminium	
HANGING AND STACKING	15 hanging max   30 stacking max	
REAR BOLT THREADING	M8	
POWER CONNECTORS	C13/C14	
DATA CONNECTORS	RJ45	
SERVICE ACCESS	Front	
WARRANTY	3 year (up to 5 available)	
CERTIFICATIONS	EMC-A, CCC, FCC, ETL, LVD, CE, RoHS	



Visit our site to learn more!



pitch	1.5	1.9	2.6	3.9
pixel tech	IMD	SMD	SMD	SMD

ideal for

## Indoor rental and production

summary

Tungsten is an excellent choice for most rental applications with a stout 500x500mm and 500x1000 mm panel, combined with fine-pitch options typically only seen with fixed installation products.

Tungsten has column-to-column curving options up to -6 degrees to +6 degrees. Column-to-column curving set by a rotating bracket with fixed angles, reducing the need to precisely set an angle for every panel. Panels feature a flip-out metal shield which protects the corner pixels during handling, reducing damages.

special configurations

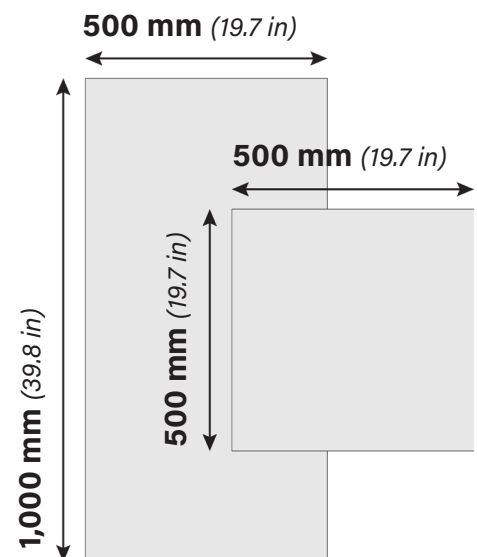


optional

- Epoxy masking or coating
- Protective/cosmetic edge trim
- Flight cases
- Alternate column-to-column angle brackets

# Tungsten

dimensions

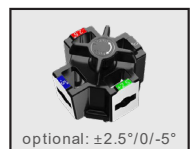


max brightness  
1,200 nits

IP rating  
IP30



Standard:  $\pm 3^\circ/0/+6^\circ$

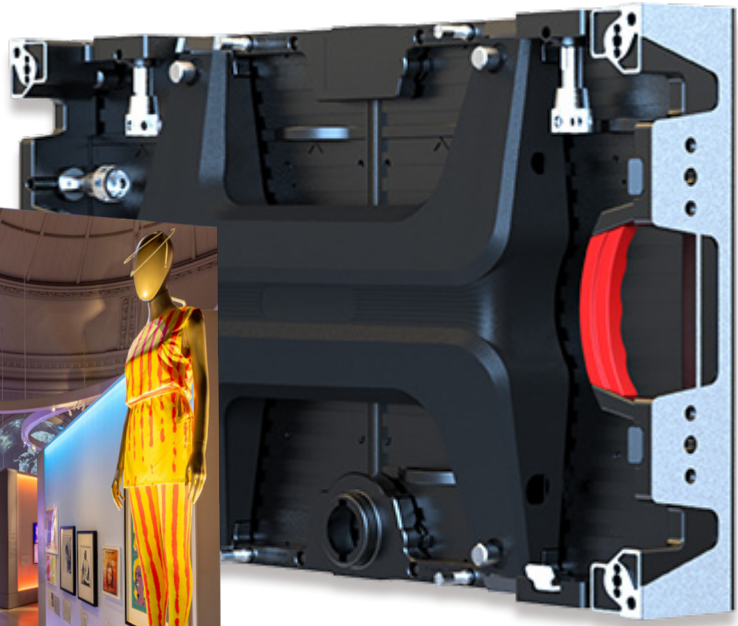


# Tungsten

SERIES NAME

MAXIMUM BRIGHTNESS (NITS)	up to 1,000	
DIMENSIONS	WIDTH	500 mm (19.7 in)
	HEIGHT	up to 1000 mm (39.4 in)
	DEPTH	72.5 mm (2.9 in)
PANEL ASPECT RATIO	0.5:1, 1:1	
PANEL WEIGHT	8 kg (17.6 lbs)	
MODULES PER PANEL	up to 8 per panel	
VIEWING ANGLE	HORIZONTAL	160°
	VERTICAL	160°
LED LIFETIME* (HRS)	50,000	
CONTRAST	8,000:1	
DRIVERS	ICN1065, ICN1069, ICN2055 (depending on pitch)	
SCAN RATE	1/16	
PROCESSING DEPTH (BITS)	14 default (8~14 range)	
REFRESH RATE (HZ)	7,680 default (7,680 range)	
FRAME RATE	60 default (60 options)	
COLOR TEMPERATURE	8,500 default (2000-9300 range)	
COLOR GAMUT	2.8(1.0 - 4.0)	
BONDING WIRE	Copper	
POWER COMMON	Anode, cathode (depending on pitch)	
WATTS PER PANEL	150-400W max (53-140W average)	
WATTS PER SQ M	600-800W max (210-280W average)	
MAX AMPS PER CASCADE	20	
OPERATING VOLTAGE	100-240V AC, 50/60 Hz	
OPERATING TEMPERATURE	-20°C - +50°C	
MAXIMUM HEAT	513-1,367 BTU/hr (depending on pitch and panel size)	
HUMIDITY	10% - 90%, non-condensing	
IP RATING	IP30	
FRAME MATERIAL	Die-cast Aluminium	
HANGING AND STACKING	no hanging   no stacking	
REAR BOLT THREADING	M10	
POWER CONNECTORS	Seetronic Powercon	
DATA CONNECTORS	Seetronic Ethercon	
SERVICE ACCESS	Front and Rear	
WARRANTY	3 year (up to 5 available)	
CERTIFICATIONS	EMC-A, CCC, FCC, ETL, LVD, CE, RoHS, UKCA, CB, BIS, KC, PSE	

*\*the above specifications reflect a standard configuration of the modules and panels*



# Axion Mobile

pitch	0.9	1.2	1.5	1.8	2.5
pixel tech	IMD	SMD	SMD	SMD	SMD



Visit our site to learn more!

ideal for

**Indoor rental for 16:9 and 32:9 displays**

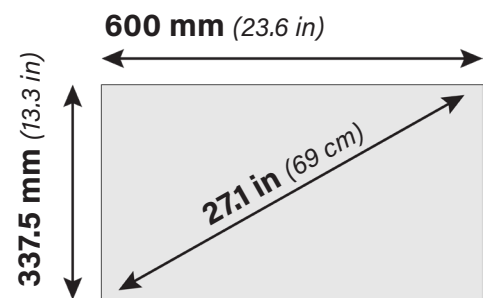
summary

Axion Mobile offers the ease of 16:9 LED displays in a rental panel. Axion Mobile panels are the popular size for fixed 16:9 displays at 600 x 337.5 mm, the same as our Axion Pro and Axion COB series.

Available in the most popular 16:9 pixel pitches, Axion Mobile is optimized for native 16:9 displays at 2K, 4K, 8K, and more!

Axion Mobile's 16:9 panel aspect also makes it easy to make dual displays with a 32:9 aspect ratio.

dimensions



aspect ratio

16:9

weight

7.5 kg (16.5 lbs)

max brightness

800 nits

IP rating

IP50

special configurations



optional

- Epoxy masking or coating
- Connecting plates
- Flight cases
- Headers for hanging/flying
- Footers for stacking

# Axion Mobile

SERIES NAME

MAXIMUM BRIGHTNESS (NITS)

up to 1,200

DIMENSIONS

WIDTH 600 mm (23.6 in)

HEIGHT 337.5 mm (13.3 in)

DEPTH 73 mm (2.9 in)

PANEL ASPECT RATIO

16:9

PANEL WEIGHT

7.7 kg (17 lbs)

MODULES PER PANEL

up to 4 per panel

VIEWING ANGLE

HORIZONTAL 160°

VERTICAL 160°

LED LIFETIME\* (HRS)

100,000

CONTRAST

up to 6,000:1

DRIVERS

ICN 1069, ICN 2153 (depending on pitch)

SCAN RATE

1/15, 1/27, 1/30, 1/60 (depending on pitch)

PROCESSING DEPTH (BITS)

14 default (8-16 range)

REFRESH RATE (HZ)

3,840 default (3,840 range)

FRAME RATE

60 default (50, 60 options)

COLOR TEMPERATURE

7,500 default (2000-12000 range)

COLOR GAMUT

2.8 (1.0-4.0)

BONDING WIRE

Copper

POWER COMMON

Anode, Cathode (depending on pitch)

WATTS PER PANEL

109-138W max (38-48W average)

WATTS PER SQ M

540-680W max (189-238W average)

MAX AMPS PER CASCADE

20

OPERATING VOLTAGE

100-240V AC, 50/60 Hz

OPERATING TEMPERATURE

-10°C - +40°C

MAXIMUM HEAT

374-471 BTU/hr (depending on pitch and panel size)

HUMIDITY

10% - 80%, non-condensing

IP RATING

IP41

FRAME MATERIAL

Die-cast Aluminium

HANGING AND STACKING

15 hanging max | 30 stacking max

REAR BOLT THREADING

M8

POWER CONNECTORS

Neutrik PowerCon

DATA CONNECTORS

Neutrik EtherCon

SERVICE ACCESS

Front and Rear

WARRANTY

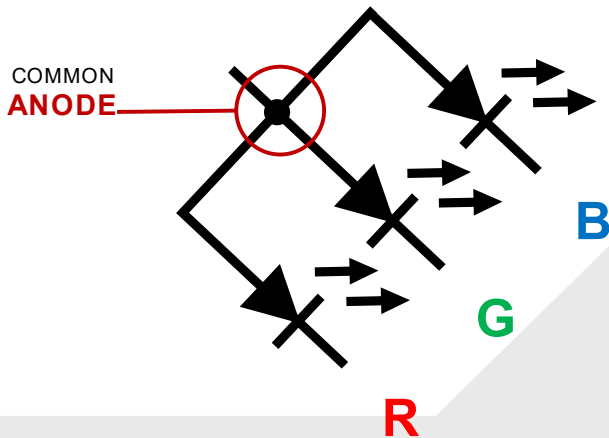
3 year (up to 5 available)

CERTIFICATIONS

EMC-B, CCC, FCC, ETL, LVD, CE, RoHS, CB, PSE

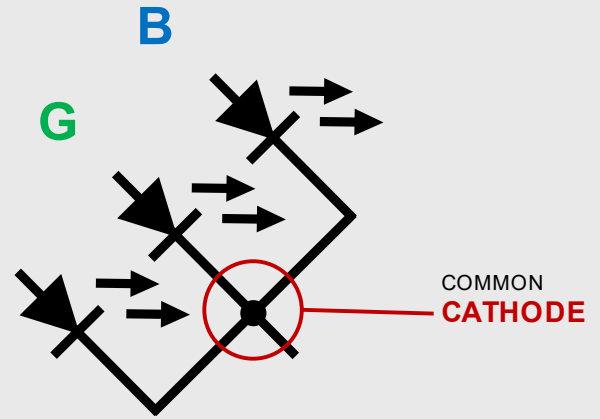
# cathode and anode

## COMMON ANODE



Full power into each sub-pixel

- **PRO** - Full range pixel performance
- **CON** - Significant heat and power inefficiency for G and B



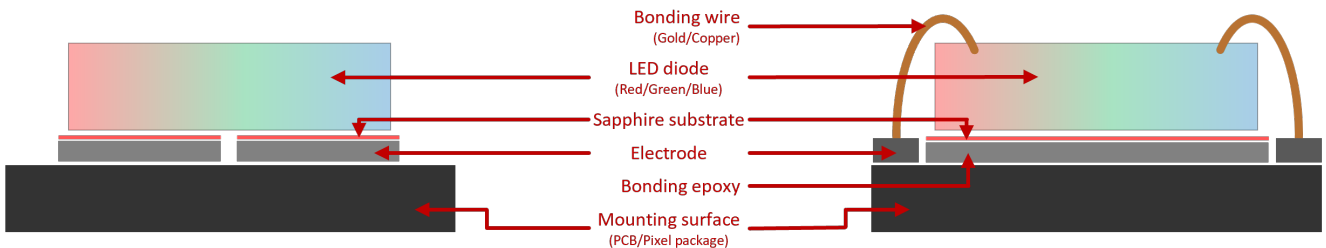
## COMMON CATHODE

On-demand power into each sub-pixel

- **PRO** - Eliminated inefficiency for G and B resulting in much less heat dissipation from the display
- **CON** - Slight reduction in high-end range

# LED diode/chip mounting

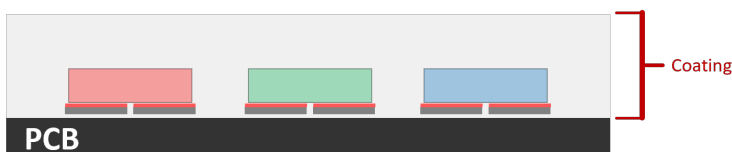
### Flip-chip mounting



### Standard mounting

# LED pixel protections

### Directly on PCB with coating



#### PIXEL TYPES: COB

- Diodes mounted directly to PCB
- Protective and potentially multi-layered coating in silicone or epoxy

### Packaged/encapsulated



#### PIXEL TYPES: SMD, IMD, MIP

- Sub-pixels gathered in dedicated enclosure
- Minimized cross-talk to adjacent sub-pixels
- Superior color performance at any viewing angle

# white glove services



## installation

*Vanguard LED can help with installation!*

*Vanguard LED Displays can support pre-installation planning through commissioning of the display.*

*Vanguard can provide the installation of cabinets and mounts at an additional cost.*



## training

*Training and certification, at a personal level.*

*Bring your team to our offices or we can come to you at your facility. We will provide all tools needed to train on any specific product or on the technology in general.*

*Vanguard LED will provide Certificates of Achievement for all individuals who participate and are present for the duration of the training.*



## repair

*Local pixel repair, by the skilled Vanguard LED team!*

*Vanguard LED has qualified in-house repair technicians. Technicians have received training direct from manufacturing engineers, ensuring both quality and timely repairs.*

*Track the status and progress of your repairs with our advanced RMA system. Feel secure in knowing that we support you and your Vanguard LED displays!*



## commissioning

*Vanguard LED can help with installation!*

*Our Commissioning Services encompass the supervision of an installation and the training of on-site staff to handle the LED display.*

# everyday services



Convenient solution demos



Industry-leading warranty and repair support



Selecting the best product for each unique application



Clear and fast communication with a local resource



Designing the display the application needs



Pre-aging to correct minor issues to ensure a flawless installation



Detailed design drawings



Prompt troubleshooting and service support

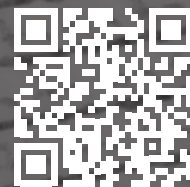
# Vanguard LED Displays

## summation

A leader in innovative digital LED display solutions, Vanguard offers an unrivaled range of products, technologies, and support.

Vanguard is an American-owned company, headquartered in Lakeland, Florida. Our mission statement - Complete customer satisfaction, defined by our core values of expertise, integrity, responsiveness, service, and value.

Our core values take many practical forms including Industry leading new technology, expert design advice at the outset of a project, timely quotes, the quickest lead times in the industry, helpful CADs and electrical drawings, professional commissioning, proficient on-site training, and stellar after-sales services.



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**VANGUARD**  
LED DISPLAYS