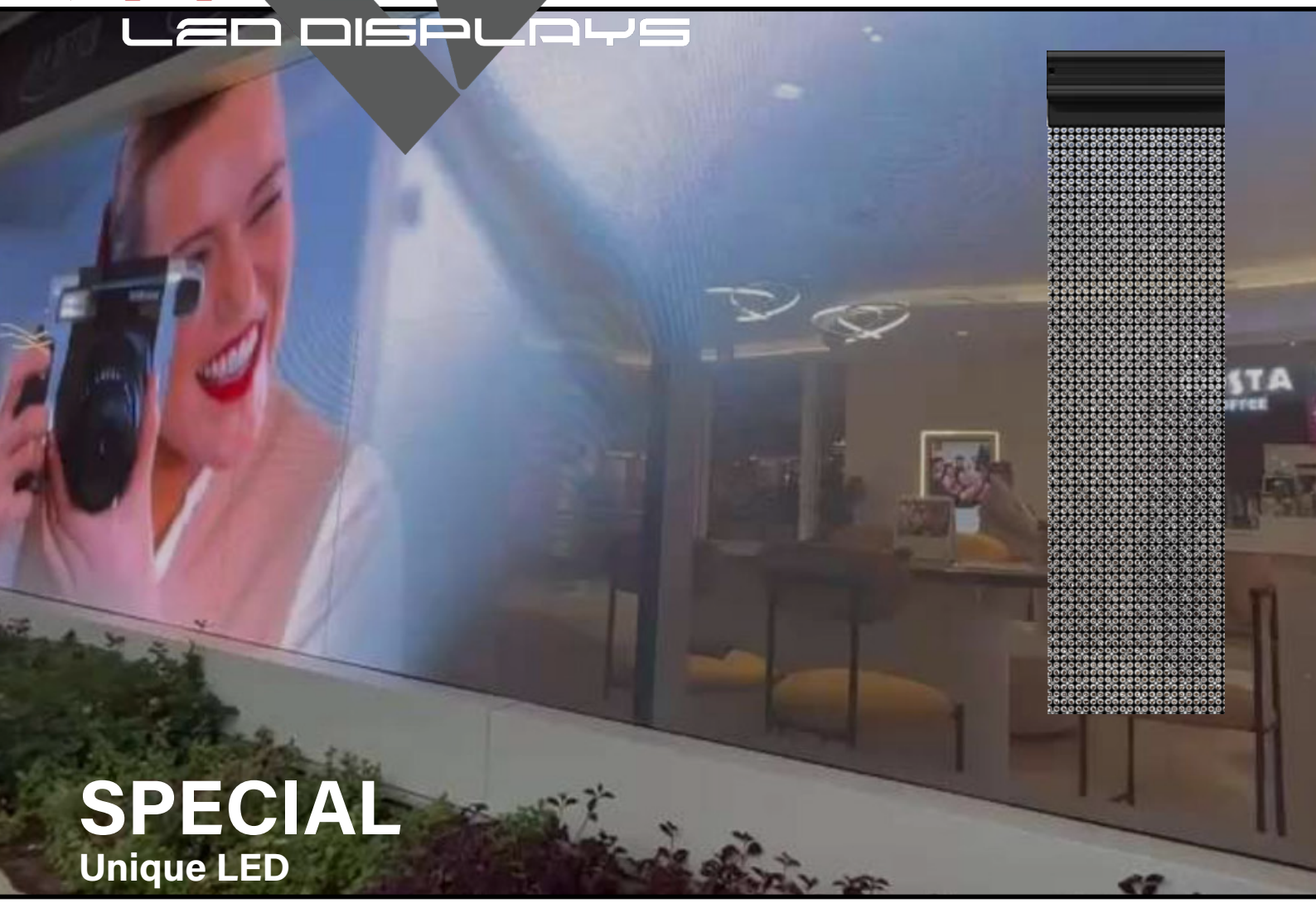
VANGUARD
LED DISPLAYS

Special

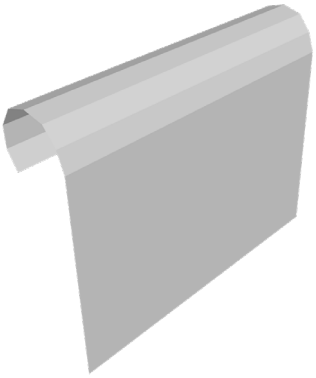
Unique LED

Cerium

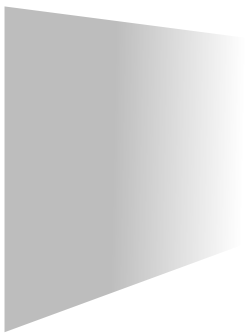
VANGUARD
LED DISPLAYS



SPECIAL
Unique LED



Rolling LED



Transparent

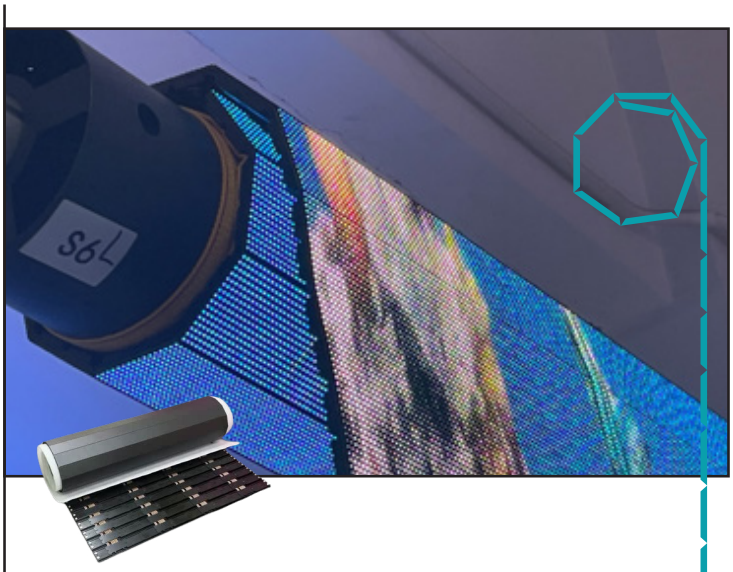
Floor displays

Visit our site to learn more!

Houdini transparent

Invisible curtain

- Up to **5000 nits**
- Up to **90% transparency**
- **1.8mm total thickness**
- **2.5 – 6.3mm** pitch range
- **Repairable** using same technique as standard SMD



Sidewinder roll-up

- **Rolling gate** and portable hanging display options (up to 10M x 10M)
- Design in **250mm** units
- **13mm** thick floor solution

Cerium sphere

- **Sphere-shaped** display
- Ideal for **simulation**
- Up to **360°** field of view
- **Configurable** size

VANGUARD LED DISPLAYS

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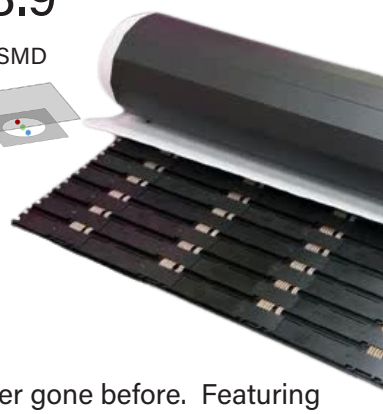
max brightness
600 nits

IP rating
IP63 (IP21 rear)

weight
15 kg/square meter
3 lbs/square foot

Sidewinder **roll-up**

pitch	0.7	0.9	1.2	1.5	1.9	2.6	3.9
pixel tech	SMD	SMD	SMD	SMD	SMD	SMD	SMD



ideal for

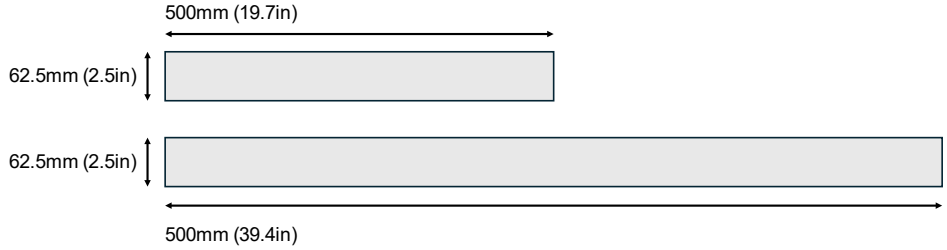
Mobile or fixed hanging, rolling gate, floor

summary

The Sidewinder roll-up is the innovative application to bring LED where it has never gone before. Featuring roll-able panels which are only 13mm thick in total, Sidewinder roll-up panels are comprised of slats. Each slat is only 62.5mm tall, and slats are hinged at the face. Slats are combined to produce displays of every size and need. SIdewinder is also ***UL2043 certified and Plenum rated!***

Sidewinder roll-up panels come standard with a protective epoxy coating, making it the fine-pitch, high-durability display you can trust. Sidewinder roll-up supports several unique applications, including a rolling gate which turns a blocked pathway into a rich and immersive display.

dimensions



special configuration

HIGH BRIGHT

PRODUCTION

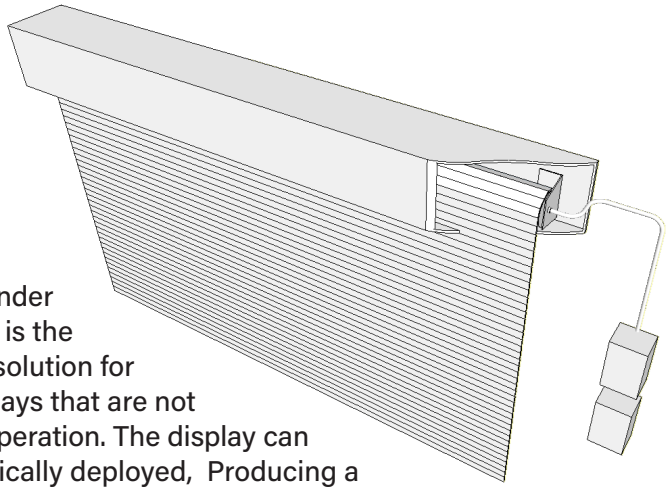
Sidewinder roll-up is configured in 500x62.5mm units to create any size or resolution display. All pitches can achieve a true 16:9 display at standard resolutions.

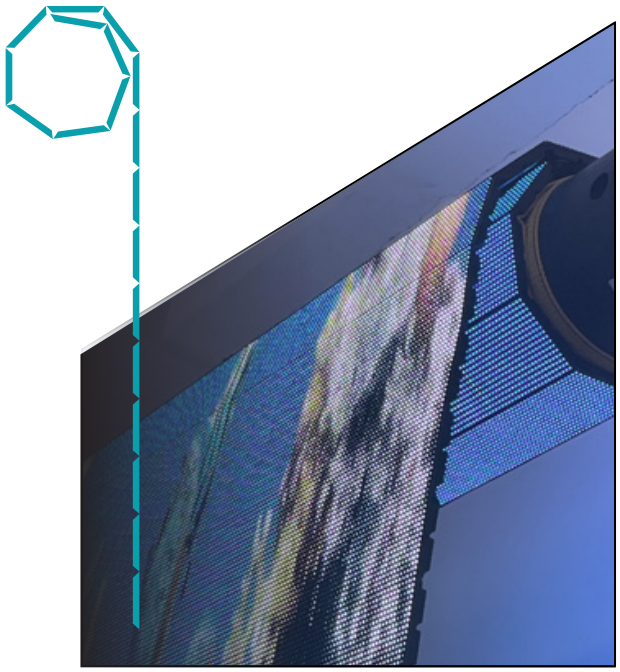
optional

- Motorized spool with housing
- Headers for static hanging (non-motorized)
- Wall-mount trim/frame
- Flight cases
- Floor edge trim

SPECIAL Unique LED

rolling gate



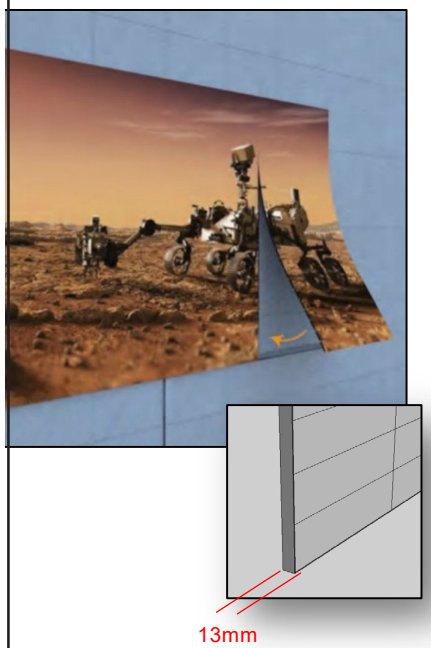


The Sidewinder rolling gate is the innovative solution for public displays that are not always in operation. The display can be electronically deployed, Producing a seamless and high-resolution image, then stored safely when inactive. The rolling gate can be configured up to a maximum width and/or height of 10 meters. The top of the image can be set at any height using blank frames with a cover.

Featuring impressive durability with a GOB epoxy protective coating, Sidewinder rolling gates can create a display at the entrance of a closed store or to replace the function which used to be filled with projectors and motorized screens.

Rich with all the value of direct-view LED, Sidewinder rolling gates can be used for several applications where you don't want to see the display when it is inactive.

attach to a wall

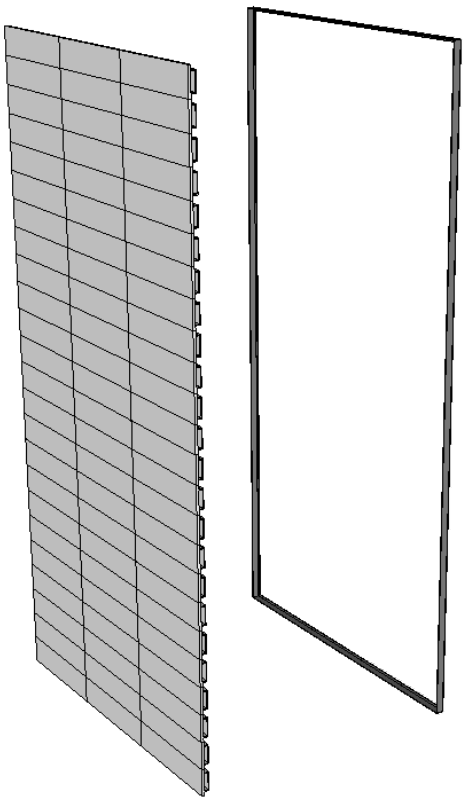


When you want to put a display on the wall with the slimmest profile possible, Sidewinder is the way to go.

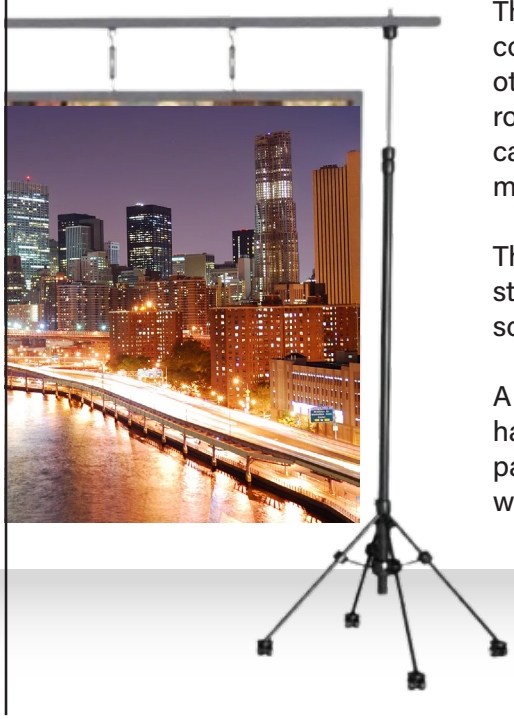
With no need for an expensive and thick wall-mount system, Sidewinder is held into a sleek and thin magnetic frame.

Sidewinder rolls lay flat on the wall. With a total dept of 13mm, Sidewinder is entirely ADA compliant without needing to be recessed into the wall.

A highly-convenient and easy to install solution, Sidewinder can quickly transform any wall into a beautiful digital landscape.



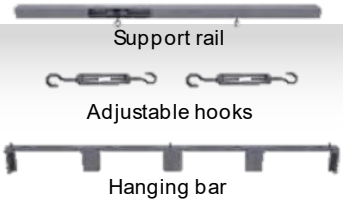
roll-up, roll-down display



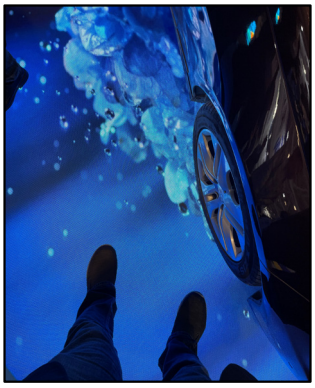
The Sidewinder portable display combines the storage and transportation convenience of Sidewinder rolls with the needs for portable displays. Unlike other mobile direct-view LED displays, Sidewinder quickly disassembles into rolls which are then easily packed into a special case. The collapsing display can be configured to a desired size up to a maximum height and/or width of 10 meters.

The system includes hanging bars the hanging rail and can be paired with any standard speaker stands. Including a Novastar TU20, the system has an on-screen interface which is controller with an included remote control.

A dvLED display you can put in your truck, the Sidewinder portable display is handled and transported as light-weight rolls. Setup and strike are quick and painless, making the Sidewinder Portable Display a solution you can easily take with you on the go!



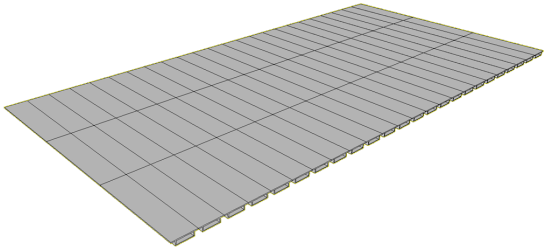
super-thin floor



Create a stunning visual effect for audiences with an LED floor. With a total depth of only 13mm, the Sidewinder floor is the thinnest direct-view LED floor solution on the market. Display high-definition video using a product that lays on the floor like a rug. With a tightest pitch of 0.78mm, any viewing distance can be considered.

Sidewinder floors can be easily placed and moved, requiring very little effort for installation and causing almost no disruption to any active space.

With modules featuring a steel internal structure, Sidewinder floors can support the weight of a car making it an exciting prospect for any space.



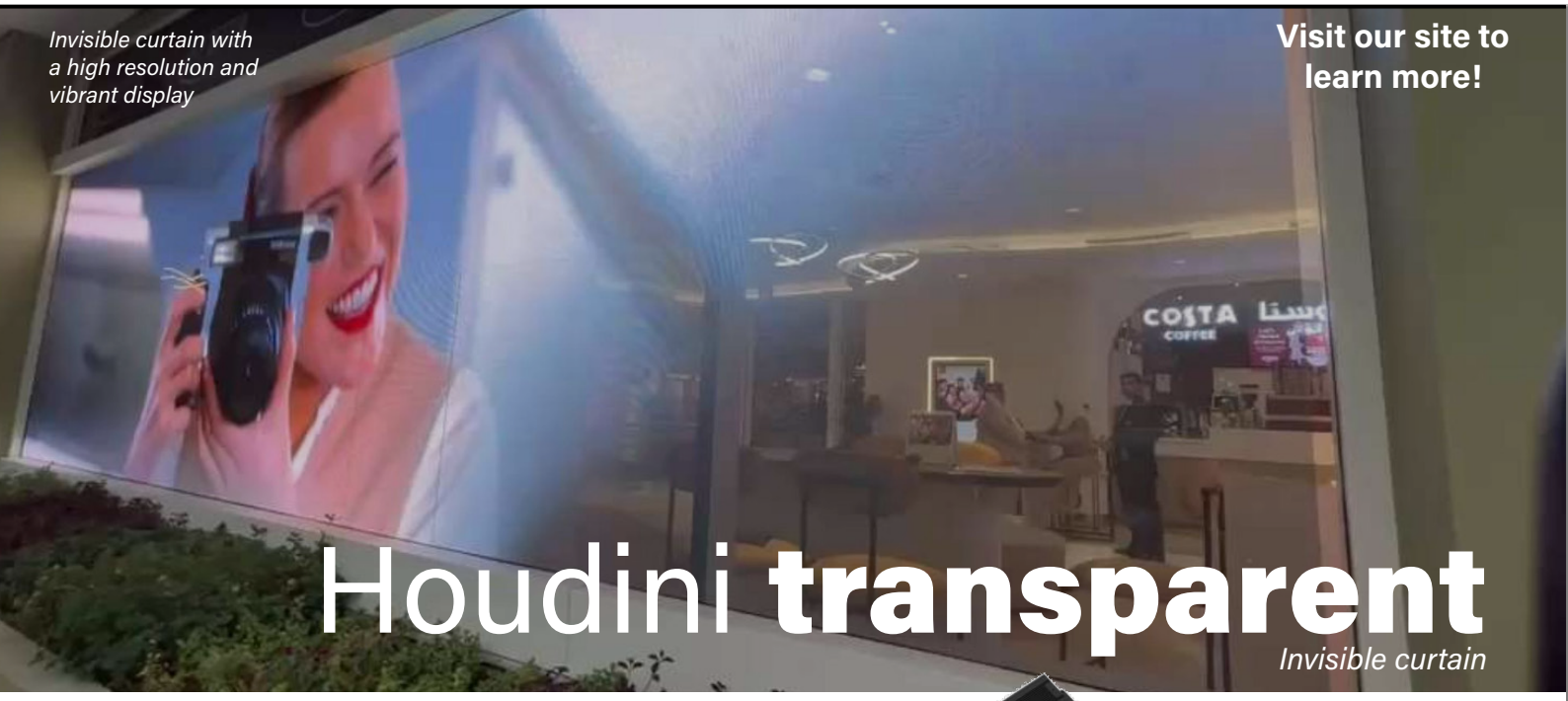
Sidewinder

SERIES NAME		
MAXIMUM BRIGHTNESS (NITS)	up to 800	
DIMENSIONS	WIDTH	up to 1000 mm (39.4 in)
	HEIGHT	62.5 mm (2.5 in)
	DEPTH	13 mm (0.5 in)
PANEL ASPECT RATIO	16:1, 8:1	
PANEL WEIGHT	up to 9 kg (19.8 lbs)	
MODULES PER PANEL	up to 4 per panel	
VIEWING ANGLE	HORIZONTAL	140/
	VERTICAL	/140
LED LIFETIME* (HRS)	100,000	
CONTRAST	5,000:1	
DRIVERS	ICN 1065s, ICN2076, ICN2260 (depending on pitch)	
SCAN RATE	1/16, 1/24, 1/32, 1/40, 1/50, 1/64, 1/80 (depending on pitch)	
PROCESSING DEPTH (BITS)	14 default (08-16 range)	
REFRESH RATE (HZ)	3,840 default (3,840 range)	
FRAME RATE	60 default (50,60 options)	
COLOR TEMPERATURE	7,500 default (6500-9500 range)	
COLOR GAMUT	N/A	
BONDING WIRE	Copper	
POWER COMMON	Anode	
WATTS PER PANEL	16-32W max (6-11W average)	
WATTS PER SQ M	512-512W max (179-179W average)	
MAX AMPS PER CASCADE	4.7	
OPERATING VOLTAGE	100-240V AC, 50/60 Hz	
OPERATING TEMPERATURE	-10°C - +40°C	
MAXIMUM HEAT	55-109 BTU/hr (depending on pitch and panel size)	
HUMIDITY	10% - 60%, non-condensing	
IP RATING	IP63/IP21	
FRAME MATERIAL	Die-cast Aluminium	
HANGING AND STACKING	no hanging | no stacking	
REAR BOLT THREADING	M1x4	
POWER CONNECTORS	XT90	
DATA CONNECTORS	RJ45	
SERVICE ACCESS	Rear	
WARRANTY	3 year (up to 5 available)	
CERTIFICATIONS	EMC-B, CCC, FCC, LVD, CE, RoHS, UKCA, BIS, PSE	

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

specs dated: 2025.12.23

VANGUARD LED DISPLAYS



Invisible curtain with a high resolution and vibrant display

Visit our site to learn more!

Houdini **transparent**

Invisible curtain

pitch	2.5	3.9	6.3
pixel tech	SMD	SMD	SMD

ideal for

Transparent hanging or window-mounted displays

summary

Vanguard's Houdini represents the next-generation of transparent LED display. With pitches from 2.5 up to 6.3mm, Houdini is suitable for viewers near and far. Each pixel contains its own driver so there is no scan rate and no refresh rate!

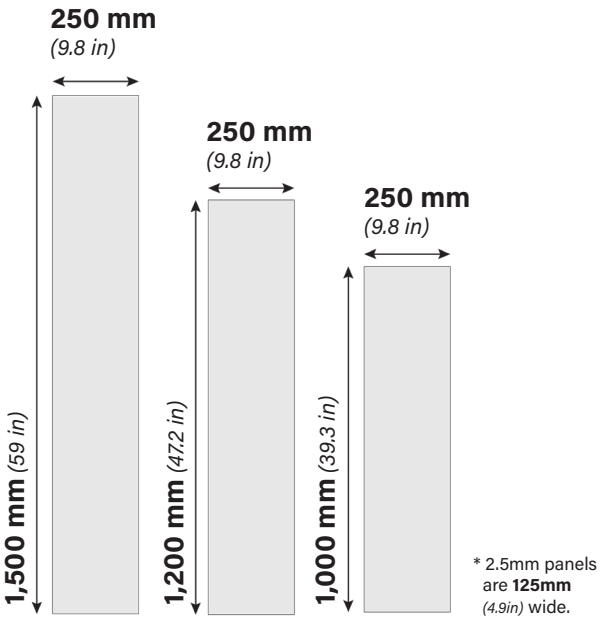
Featuring a soft and flexible fiberglass PCB, Houdini panels can be hung or adhered to either side of glass. With up to 90% rated transparency and no rear supporting structure, Houdini is nearly invisible from behind and allows clear visibility through the display.

Panels can interlock using invisible splicing and can be trimmed to exact size and so displays can be configured to completely fill almost any size space. With up to 5000 nit maximum brightness, Houdini is ideal for exterior facing windows.

optional

- Vertical or horizontal mounting
- Rear adhesive (for front of glass mounting)
- Front adhesive (for behind glass mounting)

dimensions

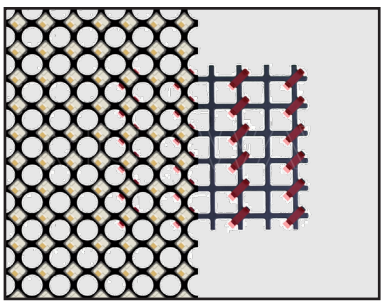


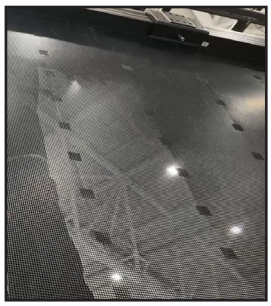
max brightness	IP rating
5,000 nits	IP20

hanging

Houdini can be hung and displayed without being mounted to glass. In this application air can pass freely through the display.

Configure a visually stunning open-air display with all the richness of a standard LED display. When configured for hanging, displays can either be a maximum of 3 meters wide or 3 meters tall with no structure of any kind behind the pixels.!





Houdini panels are spliced together using a special connection piece which does not interfere with the transparency of the display. When installed, the splices are nearly invisible, unless viewed from behind the display and only at certain angles.

behind glass

Houdini modules can be directly adhered to the back side of the glass, with the LEDs shining through the glass.

This application is ideal for retail applications where the display is physically inside the store while the display is only visible from outside.

With a maximum brightness of 5000 Nits (6.3mm), Houdini works well for exterior-facing windows.

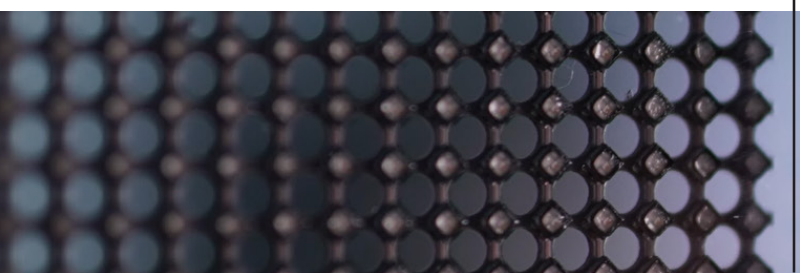
The film adhesion to the glass is not permanent. If module repair is needed, individual modules can be removed, serviced, and re-installed.

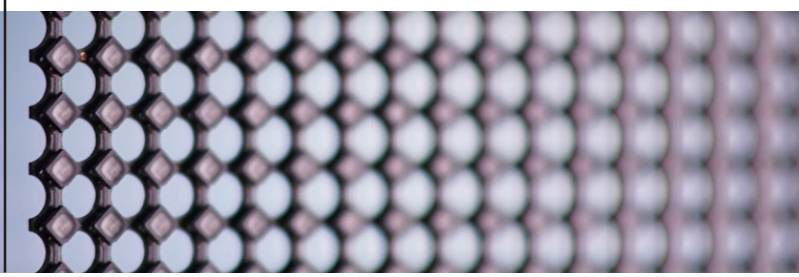
in front of glass

Houdini modules can also be adhered (from the rear of the module) to the front side of the glass, having the LEDs shine away from the glass.

Each individual Houdini model has a unique transparency level.

If a display cannot be directly accessed and touched by the public, installing on the face of the glass produces wider clear viewing angles as the audience is not looking through the depth of the glass to see the image.

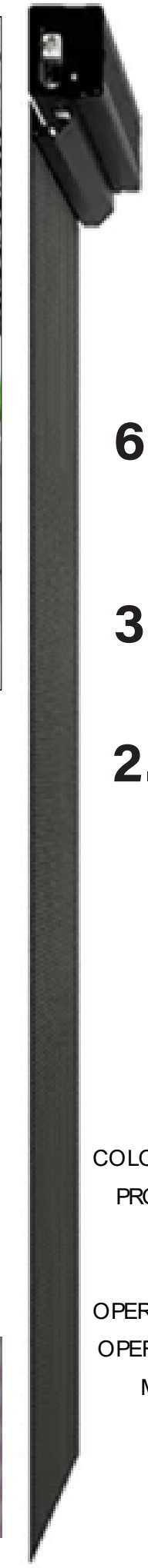




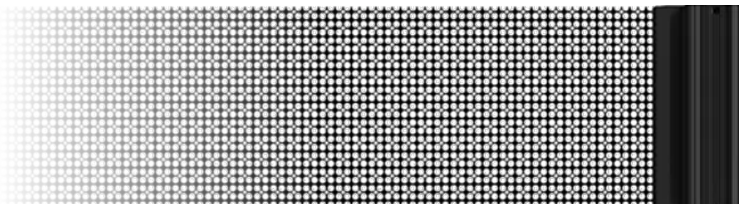
The above image shows Houdini mounted behind glass (LEFT) and in front of glass (RIGHT).

panel configurations

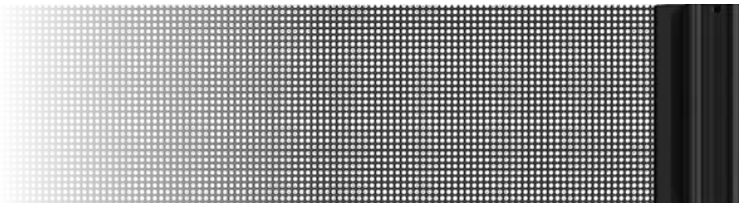
	2.5mm	3.9mm	6.3mm
TRANSPARENCY	70%	80%	90%
MAXIMUM BRIGHTNESS	1,200 Nits	3,000 Nits	5,000 Nits
MODULE WIDTH	125 mm	250 mm	250 mm
MODULE HEIGHT	1,500 mm	1,500 mm	1,500 mm



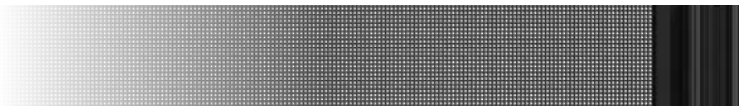
6.3mm

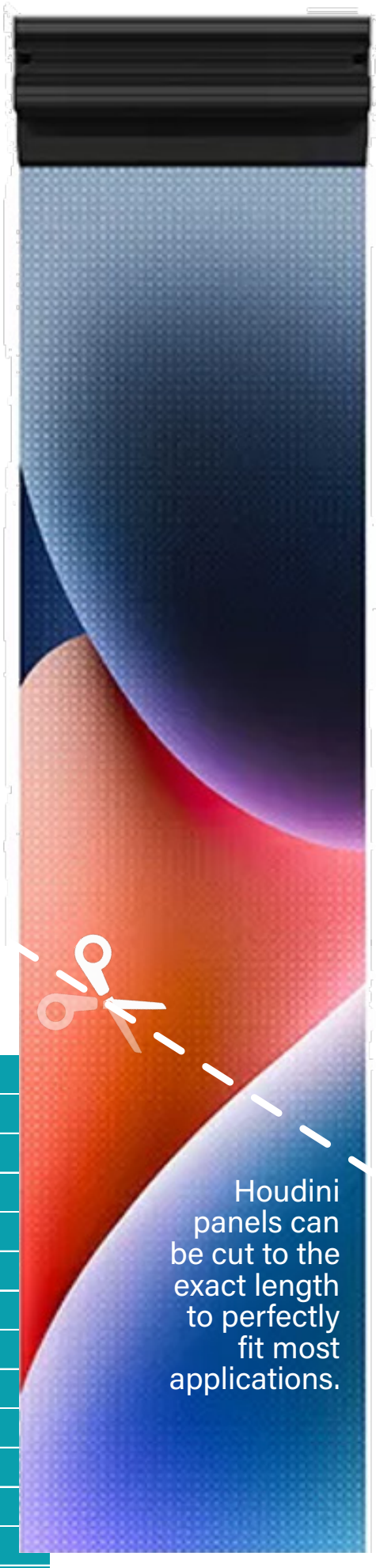


3.9mm



2.5mm





Houdini panels can be cut to the exact length to perfectly fit most applications.

general specifications

LED half-life*	100,000 hours
REFRESH RATE	3,840 Hz
FRAME RATE	50, 60, 120 Hz
COLOR TEMPERATURE	6,500 K default (3,000 - 9,000 K range)
PROCESSING DEPTH	Up to 16 bits
SCAN RATE	**No scan rate!** Static integrated IC drivers
TEMPERATURES	-20°C - +50°C
OPERATING HUMIDITY	20 - 85% RH, non-condensing
OPERATING VOLTAGE	100 - 240 V AC, 50/60 Hz
MAXIMUM WATTS	1,000 W / SqM
IP RATING	IP20
MAXIMUM HEAT	3,410 BTU/hr/SqM
SERVICE ACCESS	Front
WARRANTY	3-year default (up to 5-year available)
CERTIFICATIONS	EMC, ISO, CCC, ICC, CB, FCC, CE, ETL, RoHS

VANGUARD
LED DISPLAYS

Visit our site to learn more!

Elevate your training programs, empower your professionals, and redefine realism!

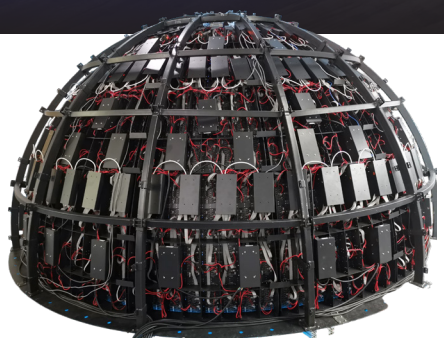
Cerium **sphere**

SPECIAL Unique LED

pitch	0.9	1.5
pixel tech	SMD	SMD

ideal for

Immersive simulation display



summary

Cerium represents the next evolution for simulation technology. Taking a huge leap from a simple curved display, Cerium can create a cylinder, dome, globe, tunnel, or sphere as an immersive space which is ideal for flight, pilot, and driver simulation.

Cerium creates a seamless display in a shape which only projection can achieve, but without the edge blending or vulnerability to ambient light or light paths. Cerium displays include a rugged Epoxy Coating (GOB) treatment for advanced pixel protection.

applications

- Military
- Maritime
- Helicopter
- Airplane
- Aerospace

Why dvLED technology is the best for simulation

RESOLUTION | At a diameter just under 5 meters (4.84m), a Cerium 0.9mm display achieves an angular resolution of **2.56 arc-minutes** — making it as sharp as projection.

CONTRAST | dvLED displays offer truly black blacks (thanks to diode-off pixels), achieving contrast levels not possible with LCD, OLED, or projection.

BRIGHTNESS | dvLED performance is unaffected by ambient light, cockpit instrumentation, classroom lighting, or theatrical lighting.

LIGHTING | Realistic lighting effects, including sun movement and shadows, are produced by the display itself and reflected accurately into the cockpit.

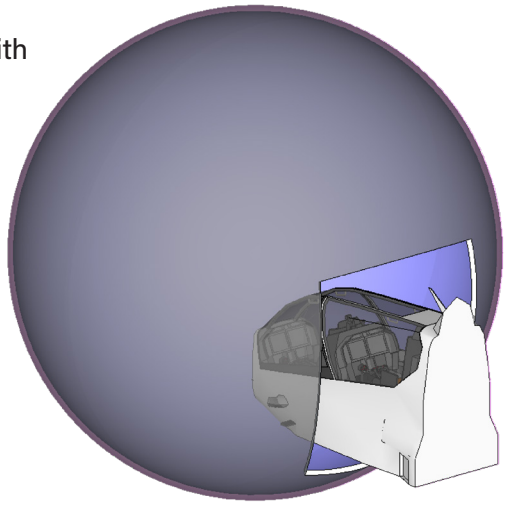
MAINTENANCE | No fans, filters, or bulbs. 5% spare parts are included with every dvLED system. No regular maintenance required.

FOOTPRINT | dvLED requires no space for projector throw — only the footprint of the display itself.

SHADOW-FREE | Individuals can stand directly in front of the display without casting shadows.

SEAMLESS IMAGERY | Unlike projection, dvLED displays are continuous and do not require edge blending.

NOISE | No moving parts = silent operation.



In the realm of immersive training experiences, the Cerium series simulation display stands as paragon of innovation and excellence. Whether it's aviation, healthcare, or military simulations, Cerium series simulation displays are the driving force behind creating life-like scenarios, enriching training environments, and ensuring optimal learning outcomes. Cerium series simulation displays transform training from flat and dull to dynamic and immersive.

The displays boast high resolution and advanced pixel technology to ensure crystal-clear visuals that mimic real-world scenarios with exceptional detail. Advanced LED technology ensures vibrant colors, high contrast ratios, and a seamless viewing experience, capturing every nuance of the simulated environment.

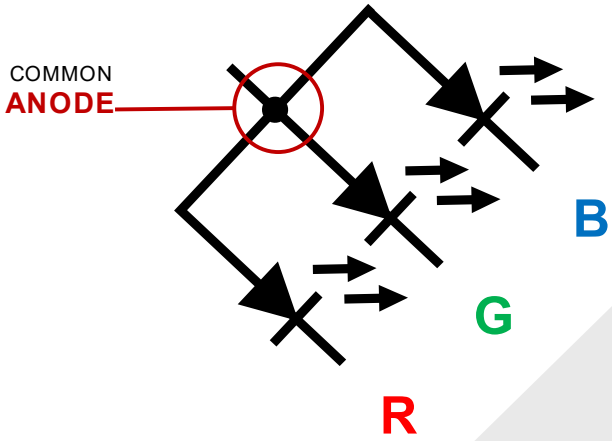
Cerium series displays incorporate dynamic features such as high refresh rates and low latency, ensuring that movements and interactions in the simulation are rendered in real time.

This level of responsiveness creates an environment where trainees can truly immerse themselves, fostering a more profound understanding of complex tasks and scenarios.

With aviation's high-demands for precision and responsiveness, Cerium can be custom tailored for your solution and is compatible with various simulation software, providing seamless integration and compatibility for an array of training applications.

Vanguard's Simulation LED Displays emerge as the unparalleled choice to meet the expectation where excellence is non-negotiable. Elevate your training programs, empower your professionals, and redefine realism with Vanguard's state-of-the-art displays.

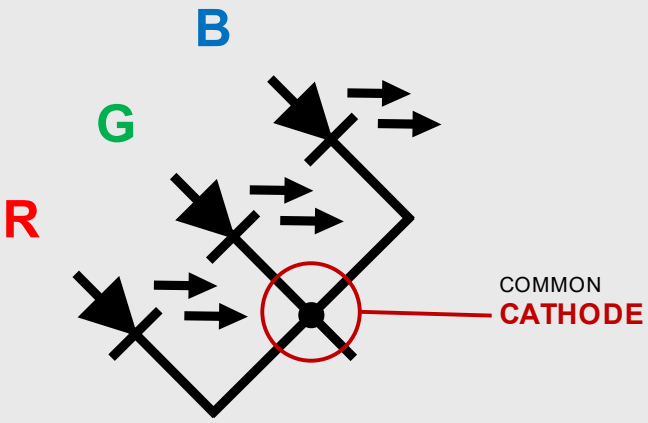
cathode and anode



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

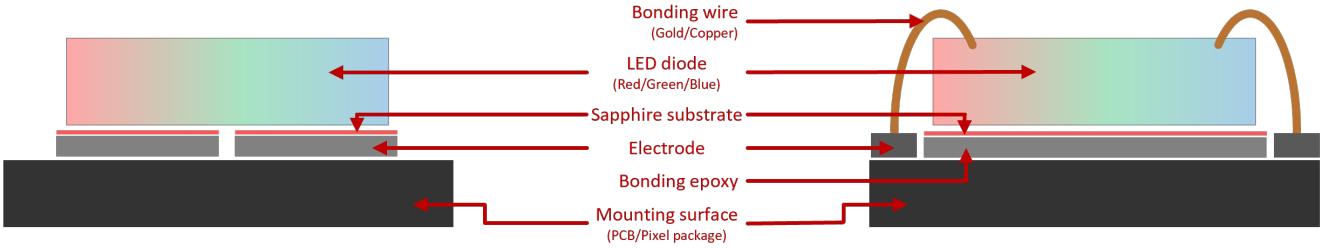
On-demand power into each sub-pixel

- **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

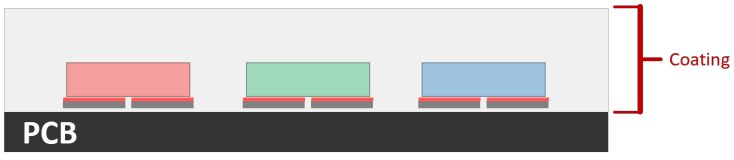
Flip-chip mounting

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**

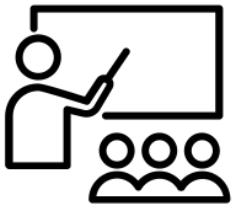
- Sub-pixels gathered in dedicated enclosure
- Minimized cross-talk to adjacent sub-pixels
- Superior color performance at any viewing angle

white glove services

installation

Vanguard LED 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

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

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

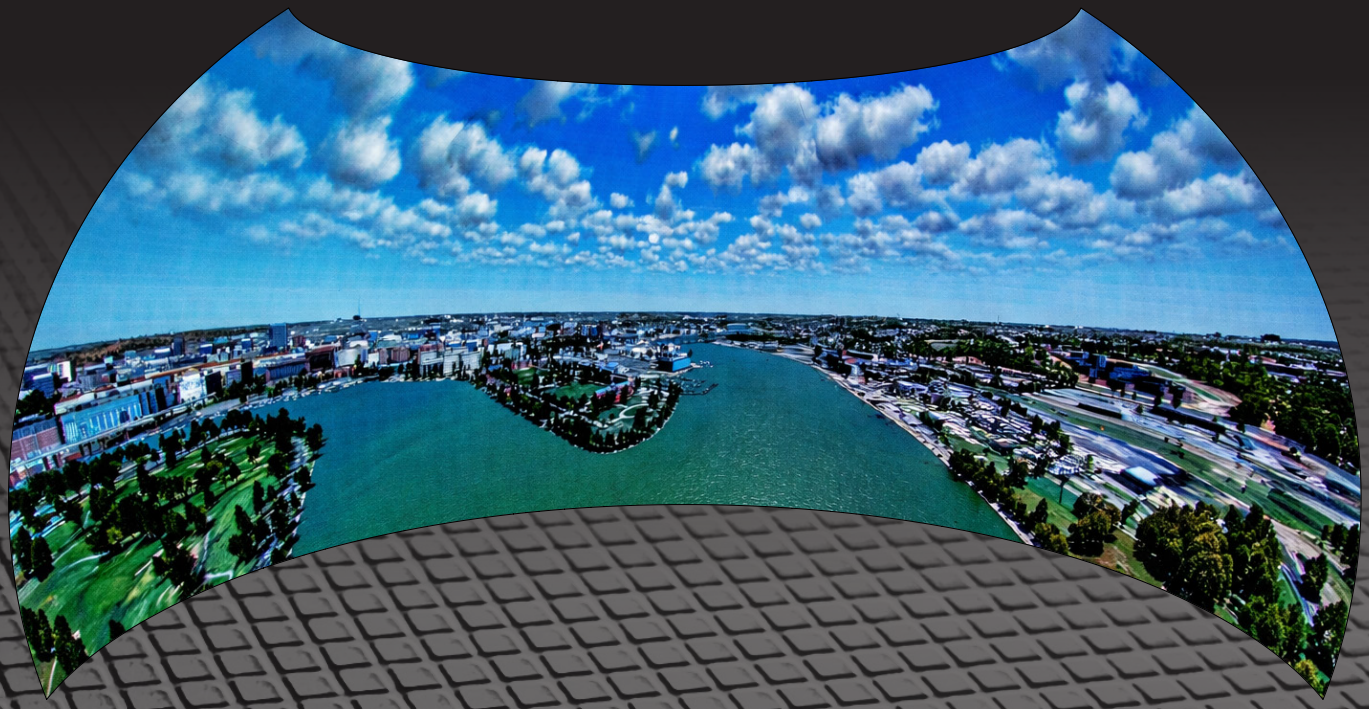
Track the status and progress of your repairs with our advanced RMA system. Feel secure in knowing that we support you and your Vanguard LED displays!

commissioning

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
- Selecting the best product for each unique application
- Designing the display the application needs
- Detailed design drawings
- Industry-leading warranty and repair support
- Clear and fast communication with a local resource
- Pre-aging to correct minor issues to ensure a flawless installation
- 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.

VANGUARD
LED DISPLAYS

Scan to contact us!