

VALENTE LED DISPLAYS



COMPLIANT

Supporting all branches of the U.S. Military with **100+ CONUS and OCONUS** installations.

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MILITARY PRODUCTS BROCHURE

We are pleased to
announce our new

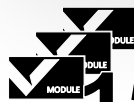
TAA Axion

configuration for our TAA-
compliant fine-pitch Axion series!



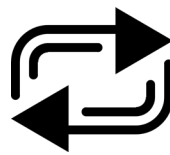
10 Year
Warranty

Protect your investment
and ensure peak system
performance long past the
lifespan of any other display
technology.



15%
15%
Spares included

Maintain the display with
ease with 15% spare parts
for all components of the
display.



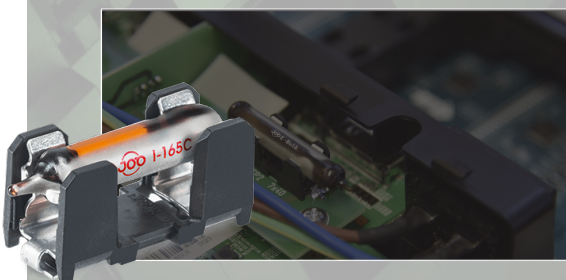
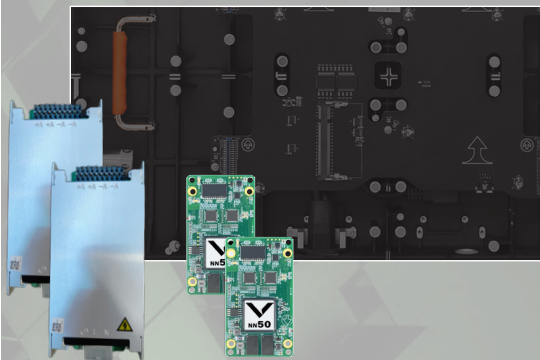
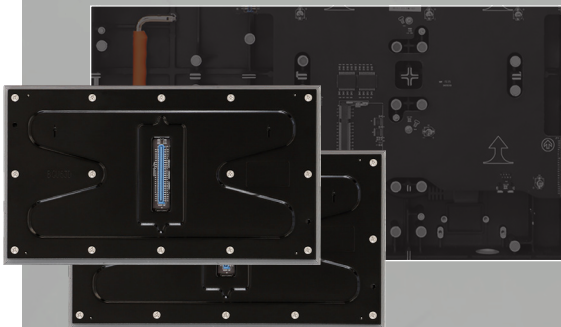
Backup
Power and Data

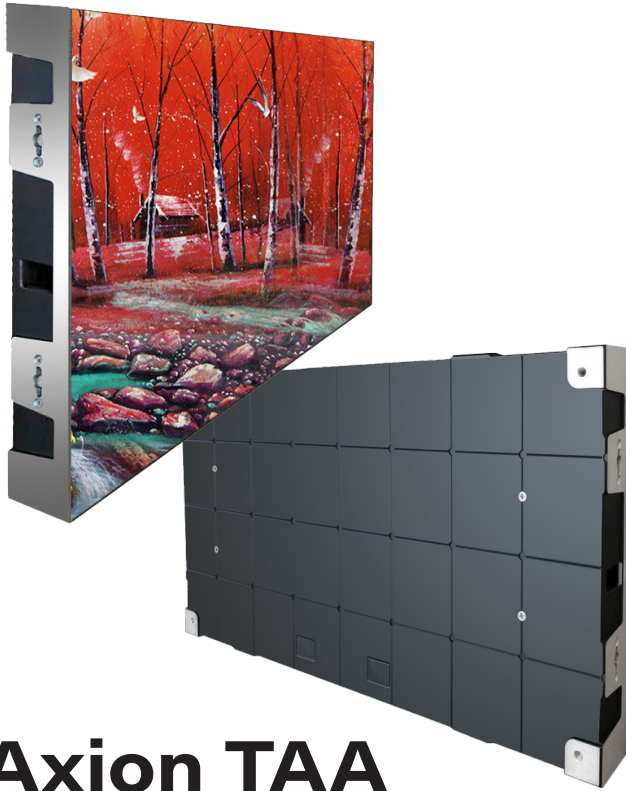
Guarantee system
performance in mission
critical operations with
redundancies throughout the
data and power paths.



E-Bulb
Fire Extinguisher

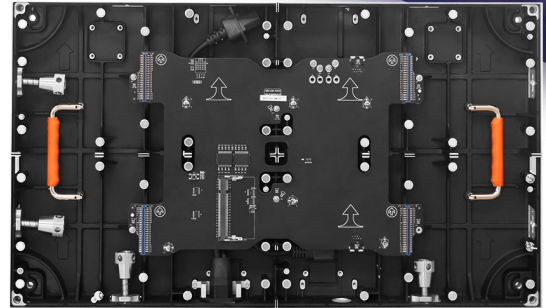
The best technology is now
the safest with integrated
fire-suppression and line
disconnection.





Axion TAA SMD *series*

- Available in **0.7, 0.9, and 1.2mm** pitches
- Redundancy for power and data components
- Dual/**redundant receiving card** support
- E-Bulb **Fire Extinguisher** included
- **10-year** warranty
- **15%** spare parts



Axion TAA Flip- chip COB *series*

- Available in **0.7, 0.9, and 1.2mm** pitches
- Redundancy for power and data components
- Dual/**redundant receiving card** support
- E-Bulb **Fire Extinguisher** included
- **10-year** warranty
- **15%** spare parts



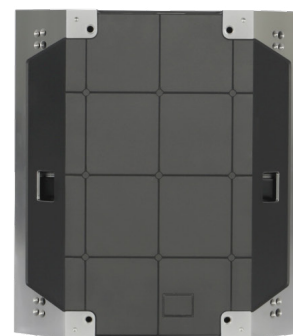
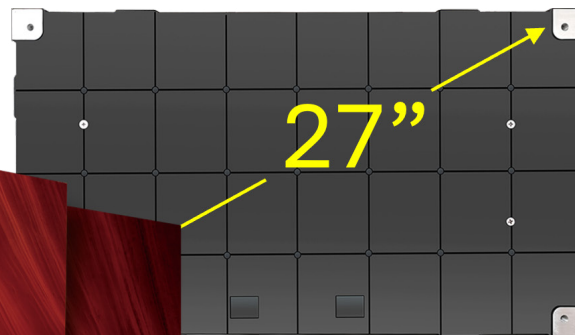
D-TOC *series*

- **81" FullHD 2K** display
- Designed for **easy transport, rapid setup and strike**
- Durable **epoxy coat** standard



Cerium *series*

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



Axion TAA SMD Series

| | | | | |
|------------|-----|-----|-----|-----|
| pitch | 0.6 | 0.7 | 0.9 | 1.2 |
| pixel tech | COB | COB | SMD | SMD |

ideal for

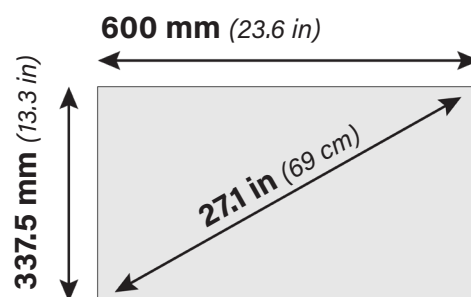
**Government, military,
command & control**

summary

Axion TAA SMD is the best solution for indoor, fixed 16:9 displays in government and military applications. Axion TAA SMD uses a combination of SMD pixel encapsulation and epoxy coating to produce a durable display with exceptional image quality at fine pitches. Also available with gold bonding wire.

Axion TAA displays come standard with a **10-year warranty**, with **15% spare parts** to ensure maximum operational uptime. In the highly unlikely event of a fire within a panel, Vanguard includes an **E-Bulb fire extinguisher** to immediately cut power to the affected panel and suppress any fires within the panel.

dimensions



aspect ratio

16:9

weight

7.7 kg (17 lbs)

max brightness

1,200 nits

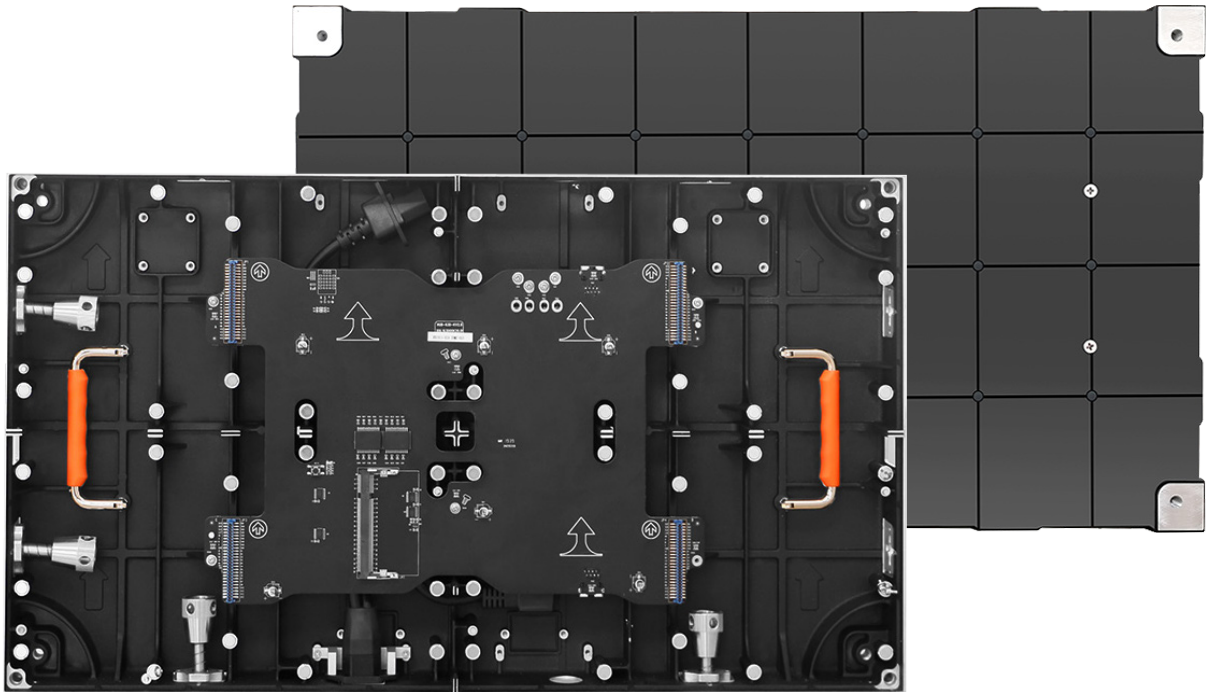
IP rating

IP41

optional

- Protective epoxy masking or coating
- IMD or MIP pixels at select pitches
- Cosmetic/protective edge trim
- 45-degree edges for corner displays
- Connecting plates
- Headers for hanging/flying
- Embedded controller
- Mobile cart, up to 5x5 panel array
- Flight cases
- Hydrophobic treatment
- Dual receiving cards for data redundancy
- Dual power supplies for power redundancy
- Remote AC>DC power conversion

PANELS Indoor, fixed installation



| | | | | |
|---------------------------|------------|---|-----------------------|--|
| series name | | Axion (AX) | | |
| maximum brightness (nits) | | up to 1,200 | bonding wire | Copper |
| dimensions | WIDTH | up to 600 mm (23.6 in) | power common | Anode |
| | HEIGHT | 337.5 mm (13.3 in) | watts per panel | 55-138W max (19-48W average) |
| | DEPTH | 58 mm (2.3 in) | watts per sq m | 540-680W max (189-238W average) |
| panel aspect ratio | | 16:9, 8:9 | max amps per cascade | 10 |
| panel weight | | up to 7.7 kg (17 lbs) | operating voltage | 100-240V AC, 50/60 Hz |
| modules per panel | | up to 4 per panel | operating temperature | -10°C - +40°C |
| viewing angle | HORIZONTAL | 160° | maximum heat | 187-471 BTU/hr (depending on pitch and panel size) |
| | VERTICAL | 160° | humidity | 10% - 80%, non-condensing |
| led lifetime* (hrs) | | 100,000 | ip rating | IP41 |
| contrast | | up to 6,000:1 | frame material | Die-cast Aluminium |
| drivers | | ICN 1069, ICN 2153 (depending on pitch) | hanging and stacking | 15 hanging max 30 stacking max |
| scan rate | | 1/15, 1/27, 1/30, 1/60 (depending on pitch) | rear bolt threading | M8 |
| processing depth (bits) | | 14 default (10-16 range) | power connectors | C13/C14 |
| refresh rate (hz) | | 3,840 default (3,840 range) | data connectors | RJ45 |
| frame rate | | 60 default (50, 60 options) | service access | Front |
| color temperature | | 7,500 default (2000-12000 range) | warranty | 3 year (up to 5 available) |
| color gamut | | N/A | certifications | EMC-B, CCC, FCC, ETL, LVD, CE, RoHS, CB, PSE |

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

supported controllers



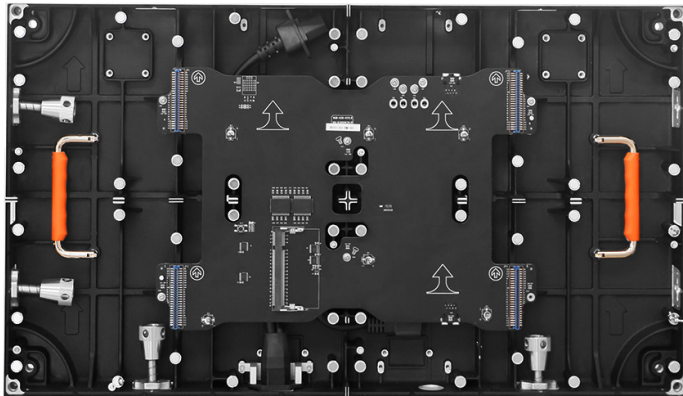
1G 5G



1G 5G



1G 5G



| | | | |
|------------|-----|-----|-----|
| pitch | 0.7 | 0.9 | 1.2 |
| pixel tech | COB | COB | COB |
| | | | |



ideal for

Government, military,
command & control

Axion TAA

COB Flip-chip Series

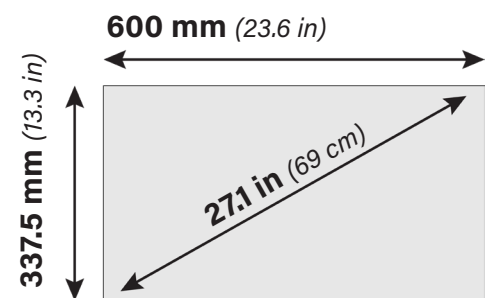
summary

Axion TAA COB Flip-chip is the best solution for government/military Command and Control centers. Axion TAA COB Flip-chip features the latest generation of COB technology which brings several advantages. **Featuring XM 11202G IC drivers and common cathode flip-chip technology**, Axion TAA COB Flip-chip displays draw significantly less power, and produce no noticeable heat. Even at high operation, the display only nears the temperature of the human body.

Axion TAA COB Flip-chip comes with a **standard 10-year warranty**, to ensure full functionality for the life of the display. **Data and power redundancy** are standard for systems and pathways with dual receiving card and power supply integration, guaranteeing performance for mission critical applications.

Axion TAA COB Flip-chip includes **15% spare parts standard**, which includes modules, power supplies, and all field serviceable spares.

dimensions



aspect ratio

16:9

weight

4.6 kg (10 lbs)

max brightness

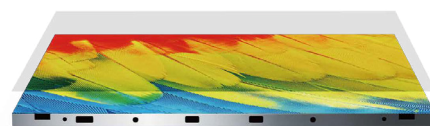
2,000 nits

IP rating

IP65 (front)
IP30 (rear)

Axion TAA COB Flip-chip series

| | |
|---------------------------|---|
| series name | |
| maximum brightness (nits) | up to 2,000 |
| dimensions | WIDTH up to 600 mm (23.6 in) |
| | HEIGHT 337.5 mm (13.3 in) |
| | DEPTH 35 mm (1.4 in) |
| panel aspect ratio | 16:09 |
| panel weight | up to 4.6 kg (10 lbs) |
| modules per panel | 8 per panel |
| viewing angle | HORIZONTAL 160° |
| | VERTICAL 160° |
| led lifetime* (hrs) | 100,000 |
| contrast | 15,000:1 |
| drivers | XM11202G |
| scan rate | 1/27, 1/36 (1/15 also available for 1.2mm) |
| processing depth (bits) | 16 default (10-22 range) |
| refresh rate (hz) | 3,840 default (up to 7,680 for 1.2mm) |
| frame rate | 60 default (50, 60 options) |
| color temperature | 7,500 default (2000-12000 range) |
| color gamut | N/A |
| bonding wire | Flip-chip (no bonding wire) |
| power common | Cathode |
| watts per panel | 33-38W max (11-13W average) |
| watts per sq m | 165-190W max (55-65W average) |
| max amps per cascade | 10 |
| operating voltage | 100-240V AC, 50/60 Hz |
| operating temperature | -20°C - +60°C |
| maximum heat | 113-130 BTU/hr (depending on pitch) |
| humidity | 10% - 95%, non-condensing |
| ip rating | IP65 front, IP30 rear |
| frame material | Die-cast Aluminium |
| hanging and stacking | hanging, stacking, and wall-mount |
| rear bolt threading | M8 |
| power connectors | C13/C14 |
| data connectors | RJ45 |
| service access | Front |
| warranty | 10 years |
| certifications | EMC-A, CE, ETL, FCC, RoHS, CCC |



Axion TAA COB Flip-chip features a **nano-imprinted matte surface** treatment which significantly reduces screen reflections caused by ambient light, without affecting the pixel's efficiency.

This eliminates the unwanted glare created in any room or space with ambient light.



Axion TAA COB Flip-chip features an integrated fire suppression and power disconnect within every panel. The E-Bulb Fire Extinguisher is a vial of pressurized liquid through which the main power runs into each panel.

In the unlikely event of a fire within a panel, the heat will cause the vial to burst, dispersing fire suppressant and severing the power into the panel.

supported controllers

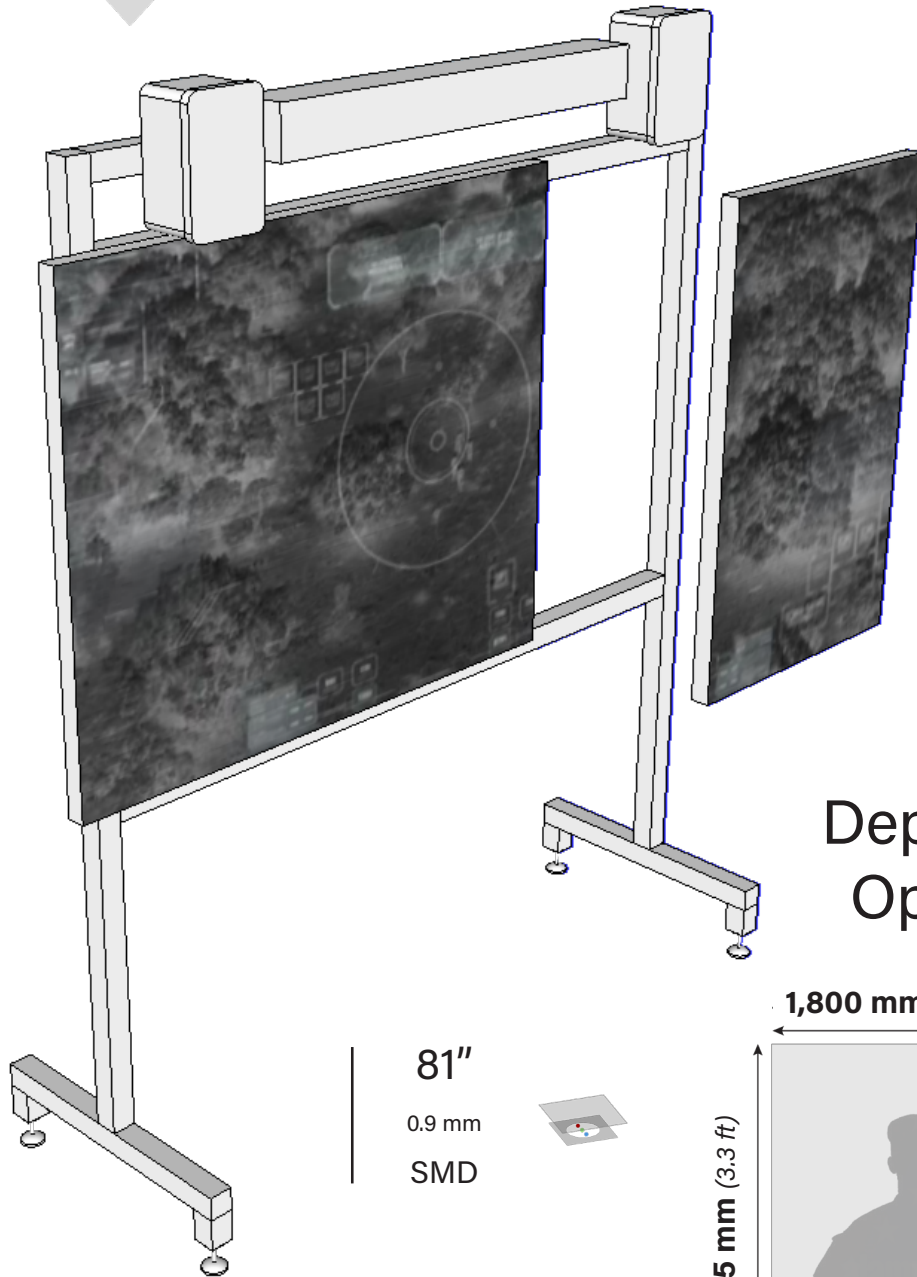


1G

5G



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ideal for
Highly-mobile
FullHD displays

D-TOC

Deployable Tactical Operations Center

summary

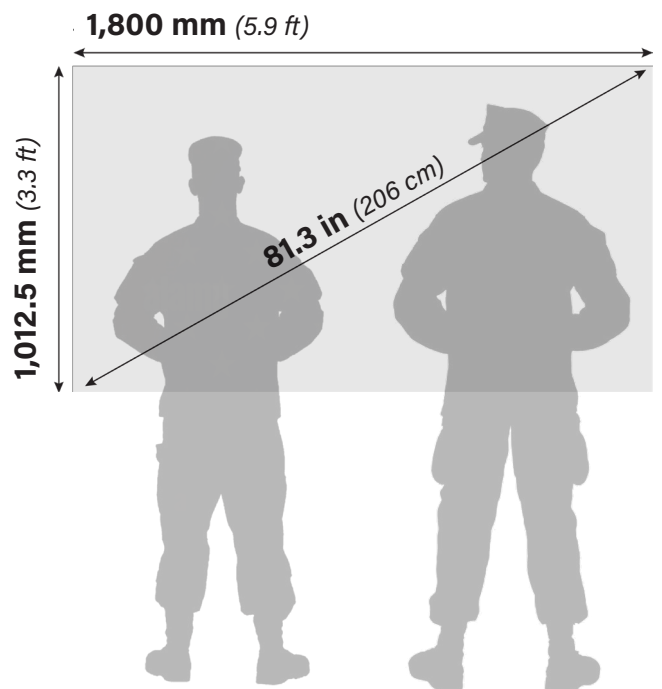
D-TOC (*Deployable Tactical Operations Center*) is a special type of mobile display which is purpose-designed for tactical military operations. Based on durable Beryllium panels, D-TOC is a FullHD display with a native aspect ratio of 16:9 and a true resolution of 1920x1080. D-TOC has a rugged epoxy coating (GOB) to ensure maximum pixel protection and performance.

Producing an 81" diagonal display, D-TOC can **quickly disassemble down to convenient carrying cases**, making D-TOC the ideal display solution when mobility and ease are the biggest considerations. Ideal solution for C5ISR applications.

81"

0.9 mm

SMD



maximum watts
1,314 W

maximum heat
4,480 BTU/hr

aspect ratio
16:9

weight
275 kg (606.3 lbs)

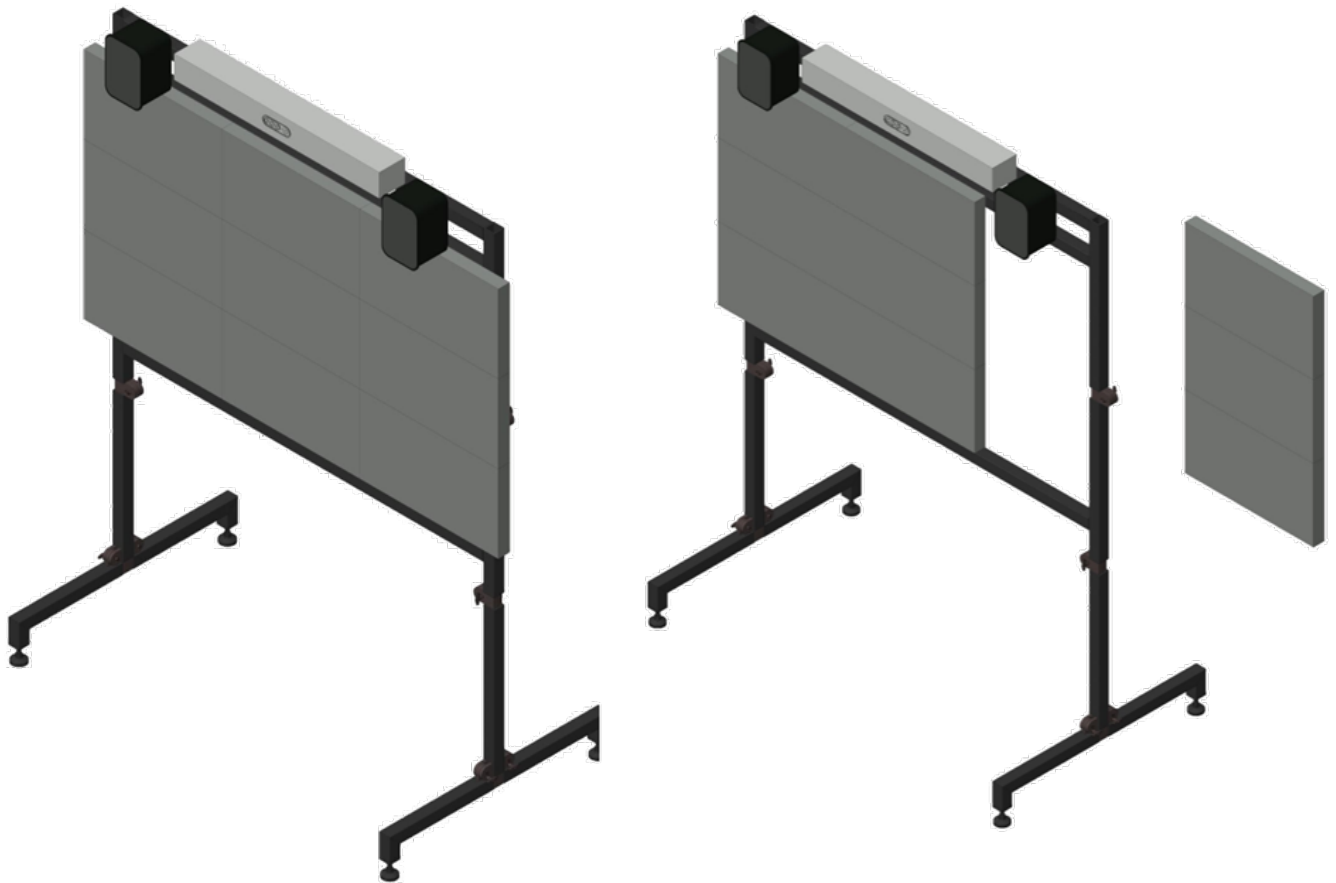
max brightness
800 nits

IP rating
IP50



Built to serve all your **C5ISR** needs.

Command
Control
Communication
Computers
Cyber
Intelligence
Surveillance
Reconnaissance



D-TOC forms a seamless videowall enabling the user to present up to 24 different video and audio sources in support of various operational requirements. The user can define the information to be displayed using several pre-defined and custom layouts. Supplement with a VTC system for complete audio and video conferencing.

The system design includes **NAIP-** and **DoDIN** approved equipment (where applicable). All core equipment is **TAA-compliant** and non broadcasting (radio). These certifications, coupled with our knowledge of **TEMPEST** and other security measures ensures that your system will be accepted and accredited by your command's **Information Assurance Team**.

**IMPORTANT NOTE: The D-TOC system is compliant for the certifications and protocols listed above. A complete NAIP or DodIN system will require additional equipment (such as Extron, Crestron or certain Cisco products) which are not provided by Vanguard LED.*

supported controllers





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

Cerium

pitch

0.9

1.5

pixel tech

SMD

SMD



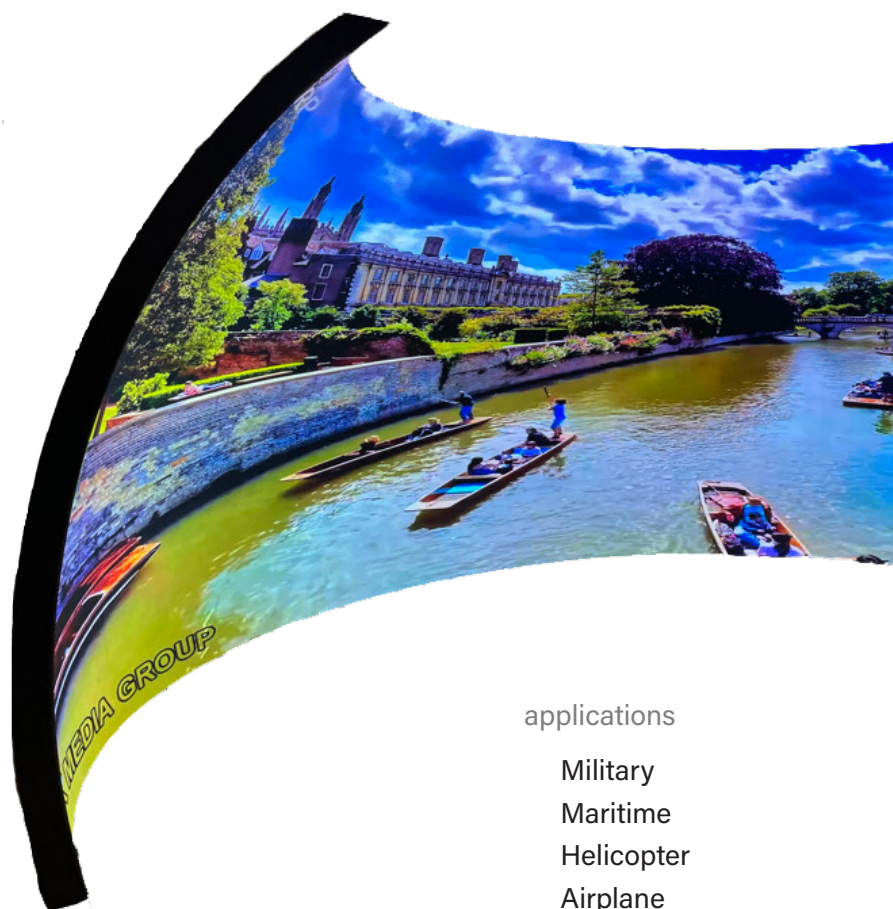
ideal for

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



ALL-IN-ONE Indoor, fixed installation

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 arcminutes** — 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.

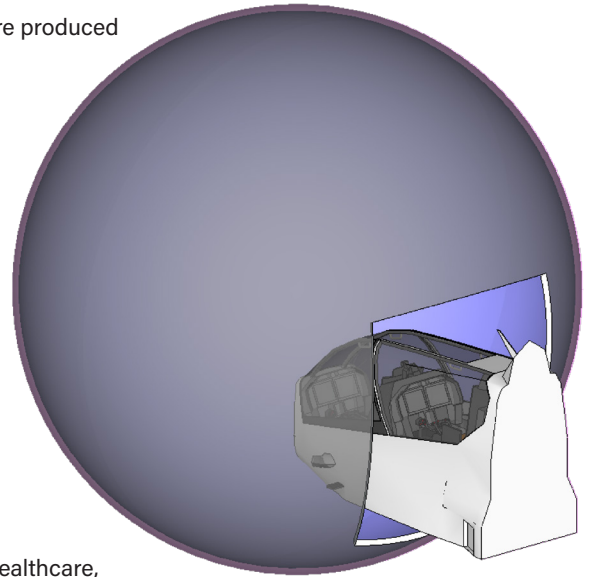
FOOTPRINT | dvLED requires no space for projector throw — only the footprint of the display itself.

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.



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INFINITY ULTRA



Expansive capabilities with secure
command and control in mind

ideal for

Command and control

summary

Vanguard LED is proud to announce our latest **next generation in video processing LED controllers**, the Infinity Ultra series. Available in three chassis sizes, 9, 15, and 20 RU, Infinity Ultra has expansive options input/output cards to support any application.

Infinity Ultra is managed entirely via a human-friendly and **intuitive web-based** interface enabling a diverse range of compatibility for the operating system of the control computer. The web interface enables easy configuration of a high volume of inputs as well as non-video source elements like background images, subtitles, and logos.

Infinity Ultra supports **dual 4K UltraHD preview and monitoring**. In combination with dynamic system health monitoring with email alert functionality, Infinity Ultra is the processing and control solution which exceeds the requirements of the most demanding applications like secure command and control centers. **Pair Infinity Ultra with the VE4K to centralize up to 160 workstations.**

inputs

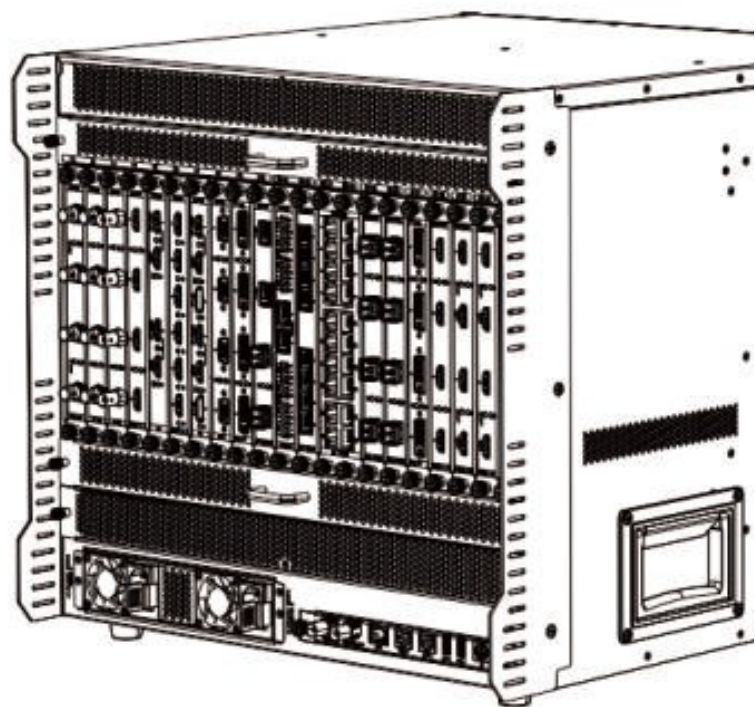


compatible control OS



optional

- Light sensor for automatic brightness
- Multi-function card for various sensors
- Back-up power supply
- VE4K encoder

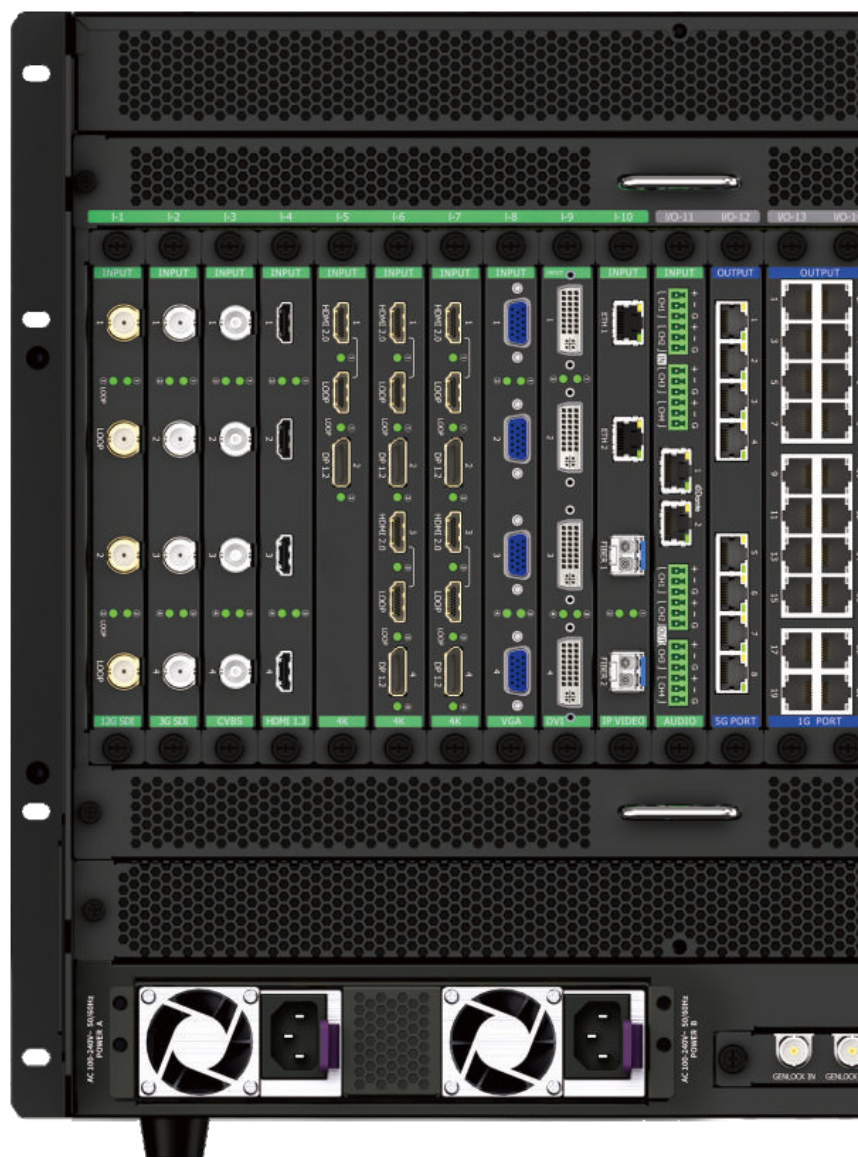


Chassis sizes

| | |
|----------------|--|
| model name | Infinity ULTRA 9RU |
| input | up to 18 cards (20 total i/o slots) |
| output | up to 10 cards (20 total i/o slots) |
| output windows | 160 x 2K or 40 x 4K (per controller) 16 x 2K or 4x 4K (per card) |
| dimensions | WIDTH 482.6mm (19") HEIGHT 399.3mm (15.7") DEPTH 535.2mm (21.1") |
| weight | 27kg (59.5lbs) |

| | |
|----------------|--|
| model name | Infinity ULTRA 15RU |
| input | up to 30 cards (40 total i/o slots) |
| output | up to 20 cards (40 total i/o slots) |
| output windows | 640 x 2K or 160 x 4K (per controller) 16 x 2K or 4x 4K (per card) |
| dimensions | WIDTH 482.6mm (19") HEIGHT 666mm (26.2") DEPTH 488.2mm (19.2") |
| weight | 48.6kg (107.14lbs) |

| | |
|----------------|---|
| model name | Infinity ULTRA 20RU |
| input | up to 40 cards (60 total i/o slots) |
| output | up to 30 cards (60 total i/o slots) |
| output windows | 960 x 2K or 240 x 4K (per controller) 16 x 2K or 4 x 4K (per card) |
| dimensions | WIDTH 482.6mm (19") HEIGHT 889mm (35") DEPTH 488.2mm (19.2") |
| weight | 66.8kg (147.3lbs) |

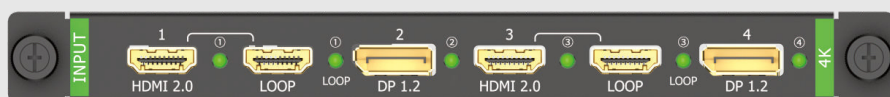


Optional input/output cards

| | | | |
|-------------|---|--------------|---|
| input cards | 2 HDMI2.0, 2 DP1.2 1 HDMI2.0, 1 DP1.2 2 12G SDI 1 12G SDI 4 3G SDI 4 HDMI1.3 6 HDMI 1.3 4 VGA 2 VGA, 2 CVBS 4 AUDIO 4 DVI 4 CVBS | output cards | 20 1G RJ45 8 5G RJ45 4 10G Fiber 2 HDMI2.0 1 HDMI2.0 4 HDMI1.4 6 HDMI1.3 4 DVI |
|-------------|---|--------------|---|

| | |
|------------|--|
| main board | 2 genlock I/O 2 RJ11 RS-232 2 USB 2.0 1 Ethernet/LAN 1 3D port |
|------------|--|

| | |
|------------------------|----------------|
| preview and monitoring | 2 HDMI2.0 (4K) |
|------------------------|----------------|





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INFINITY



Limitless Capabilities to Create an all-encompassing Data Wall

ideal for

Large displays, complex inputs

summary

Infinity controllers utilize a card/chassis. This allows for the optimal customization to any LED display system. By combining Infinity with Vanguard displays there is no need for expensive switcher/multi-window processors which will result in significant savings.

Ample input and output options guarantee that Infinity controllers can support an ideal data wall, exceeding the requirements of the most complex direct view LED system.

Infinity controllers can also be paired with the Vanguard LED VE4K encoder to enable dynamic screen sharing from a high volume of connected machines.

Three chassis sizes allow for the perfect configuration of inputs, outputs, and optimal functionality.

inputs



optional

- Light sensor for automatic brightness
- Multi-function card for various sensors
- Back-up power supply
- VE4K encoder



Chassis sizes

| | |
|----------------|--|
| model name | Infinity 11 RU |
| input | up to 16 cards, 64 channels |
| output | up to 18 cards, 117 million pixels |
| output windows | 72 x 1080p |
| dimensions | WIDTH 483mm (19") HEIGHT 488mm (19.2") DEPTH 475.2mm (18.7") |
| weight | 38kg (83.8lbs) |



| | |
|----------------|--|
| model name | Infinity 7 RU |
| input | up to 8 cards, 32 channels |
| output | up to 8 cards, 52 million pixels |
| output windows | 32 x 1080p |
| dimensions | WIDTH 483mm (19") HEIGHT 276.8mm (10.9") DEPTH 406.1mm (16") |
| weight | 19.3kg (42.5lbs) |



| | |
|----------------|---|
| model name | Infinity 4 RU |
| input | up to 4 cards, 16 channels |
| output | up to 4 cards, 26 million pixels |
| output windows | 16 x 1080p |
| dimensions | WIDTH 483mm (19") HEIGHT 177.8mm (7") DEPTH 406.1mm (16") |
| weight | 12.5kg (27.5lbs) |



Optional input/output cards

| | |
|-------------|--|
| input cards | 1 HDMI2.0 (4K) 1 DP1.2 (4K) 1 12GSDI (4K) 1 HDMI2.0 (4K), 1 DP1.2 (4K) 4 DL-DVI (2K) 4 HDMI1.4 (2K) 4 VGA (2K) 2 VGA (2K), 2 CVBS 4 3G-SDI (2K) 2 RJ45 (4K) |
|-------------|--|

| | |
|--------------|---|
| output cards | 8 1G RJ45 10 1G RJ45 4 5G RJ45 2 10G fiber 1 HDMI2.0 (4K) 4 DL-DVI (2K) 4 HDMI1.4 (2K) |
|--------------|---|

| | |
|------------|--|
| main board | 2 genlock I/O 1 RS-232 serial port 1 USB 3.0 1 Ethernet/LAN 1 3D port |
|------------|--|

| | |
|------------------------|-----------------------|
| preview and monitoring | 1 HDMI1.4 (2K) |
|------------------------|-----------------------|





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Sentinel

ideal for

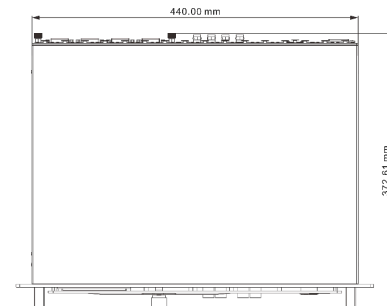
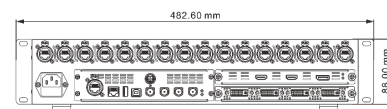
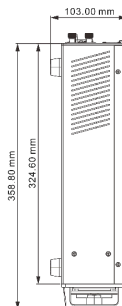
Small to medium displays, simple inputs

summary

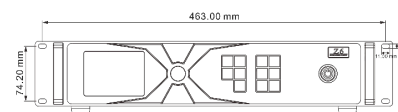
Sentinel controllers by Vanguard LED offer an ideal and refined solution for content and processing support for displays up to 4K resolution.

Offering full 4K input capability and up to 8.8 million pixels out, Sentinel can be a great fit for displays up to a 4K resolution. Sentinel is a video splicer, processor, and controller all in one.

Sentinel has 4K video input capability, supporting up to UltraHD resolution and HDR image processing and transmission.



inputs



optional

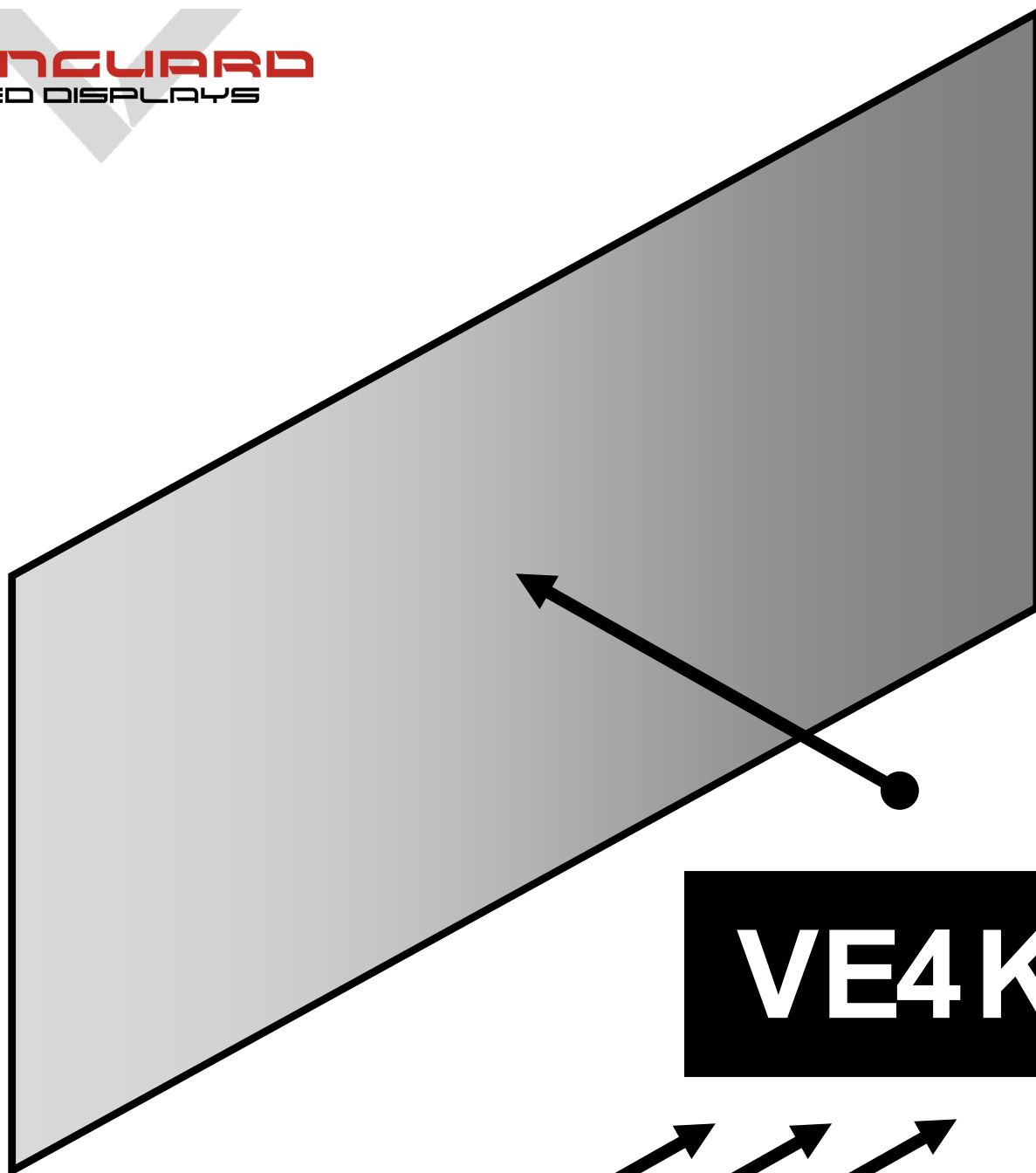
- Light sensor for automatic brightness
- Multi-function card for various sensors

| | | | |
|-------------------|--|--------------------|--|
| model | Sentinel | | |
| category | 4K | | |
| output ports | 16 - 1G RJ45 | | |
| loading capacity | 8.8 million pixels | | |
| input ports | 2 - 3G SDI 1 - HDMI 2.0 (and HDMI loop) 1 - DP 1.2 4 - DL-DVI | | |
| control | 1 - LAN 1 - USB I/O 1 - Genlock I/O 1 - RS232 | | |
| scaling | Yes | | |
| image rotation | No | | |
| genlock | Yes | | |
| dimensions | RACK | 2 RU | |
| | WIDTH | 482.6 mm (19 in) | |
| | DEPTH | 372.6 mm (14.7 in) | |
| | HEIGHT | 88 mm (3.5 in) | |
| weight | 9 kg (19.8 lbs) | | |
| operating voltage | 100 - 240 V AC, 50/60 Hz | | |
| maximum watts | 70 W | | |
| humidity | 0 - 90% RH, non-condensing | | |
| certifications | CCC, CE, FCC, IC, CB, cTUVus, EAC, RoHS | | |

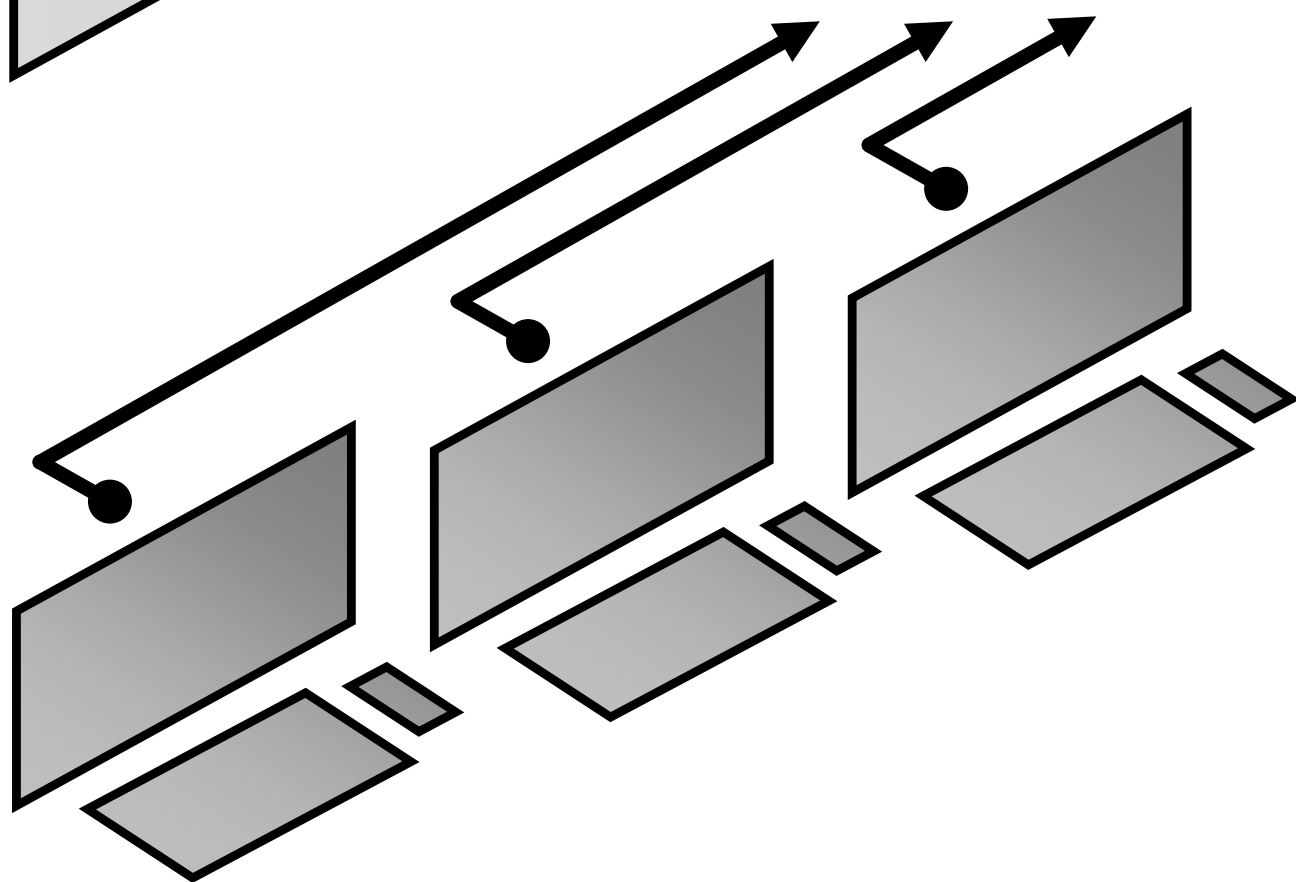


Display layouts for up to 3 layers with smooth scaling effect.





VE4K



secure and expansive control



actual size shown

VE4K

ideal for

Command and control

summary

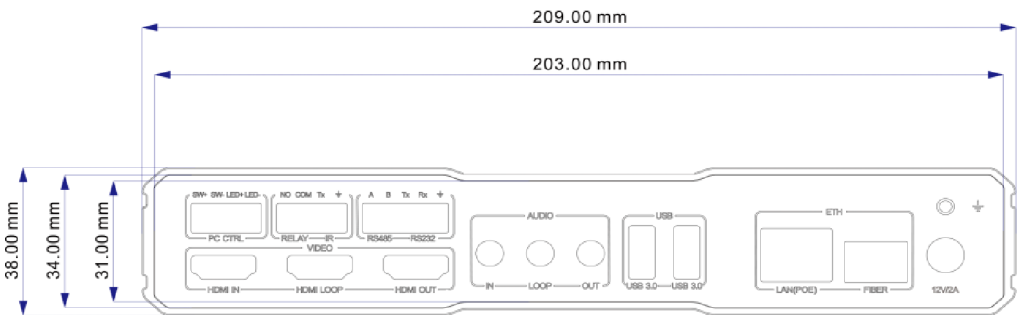
The VE4K (*Vanguard Encoder 4K*) is an optional peripheral for the Infinity and Infinity Ultra controller series.

An IP-based HDMI extender for management of workstations (up to 160) in a SCIF, watch floor, or command center. Coordinate and manage different categories of content. Mirror select stations to the data wall in real time or in combination with defined preset layouts.

The Infinity controller will receive a network cable from the switch and receive the signal from the workstation and apply it to the window of the user's choice on the wall.

connections

- 1 HDMI1.4 (2K) - in | out | loop
- 1 35mm Audio jack –in | out | loop
- 3 USB3.0
- 1 USB2.0
- 1 fiber
- 1 ethernet
- 1 control for PC, IR, RS232, RS485



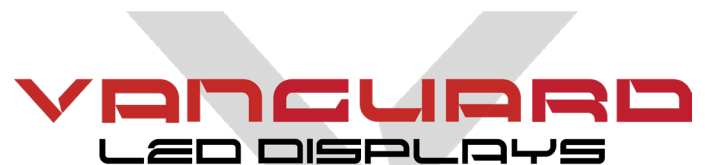


about Vanguard LED

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.



EXPERTISE | INTEGRITY | RESPONSIVENESS | SERVICE | VALUE