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PHOMI®
econiclay

PHOMI HOLDING
material science that shapes the future

eDisplay

**Creator of the econiclay Display (eDisplay),
Global Industry Leader**

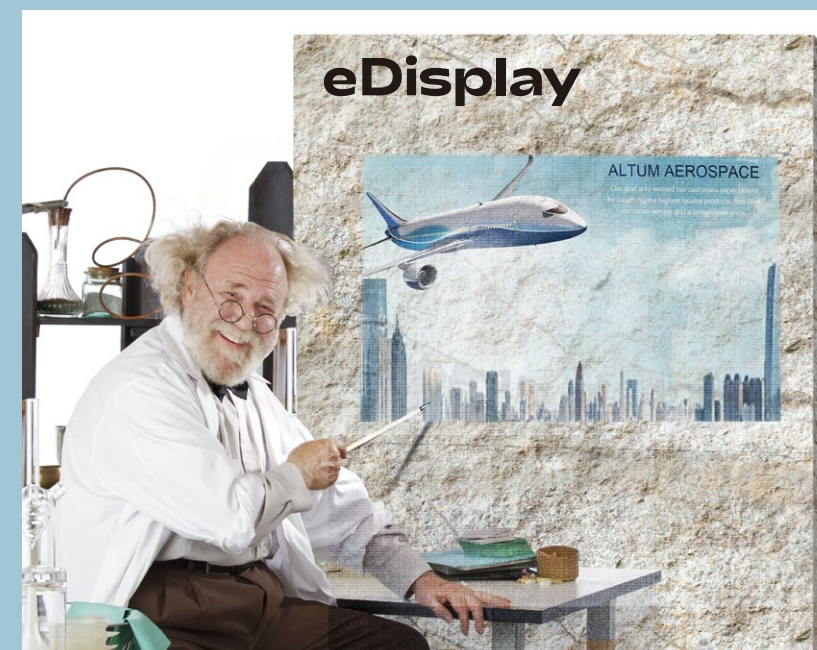
Winner of the Gold & Ehrenpreis Award at the 76th
Nuremberg International Invention
ARCA Award at the International innovation Exhibition



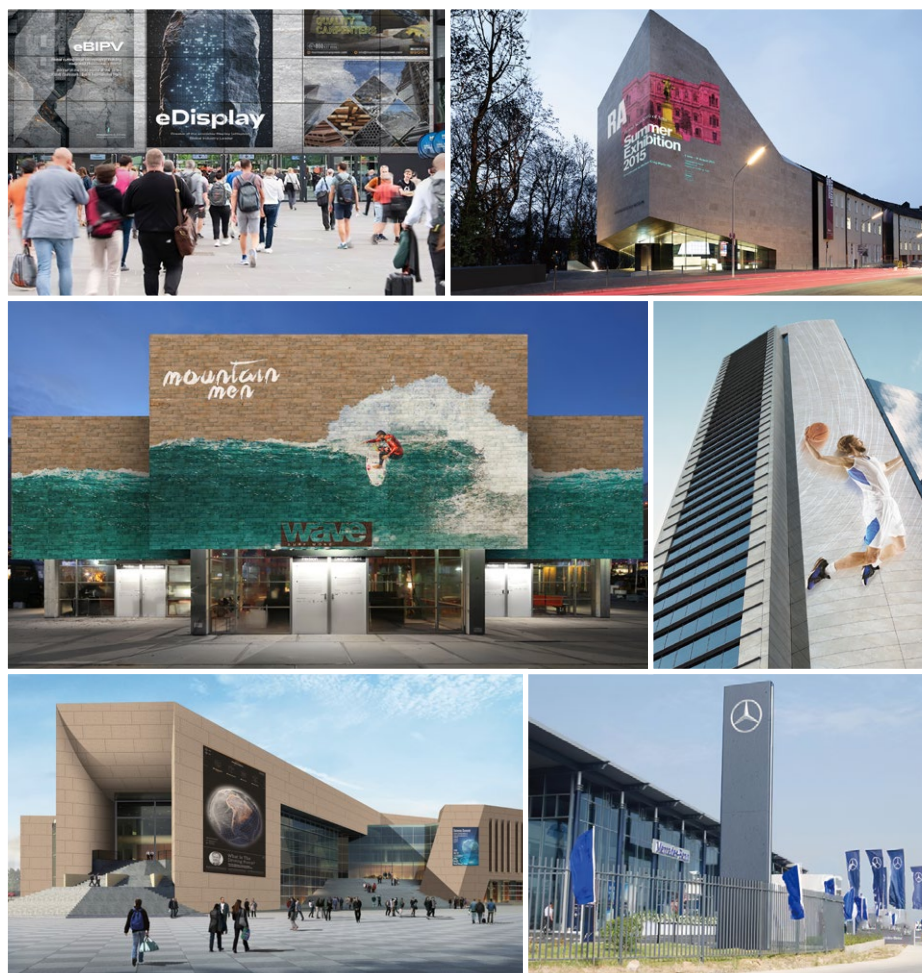
www.phomi.com

II 2024-12-6

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Outdoor eDisplay



eDisplay key advantages

1. Integration of architecture and display technology

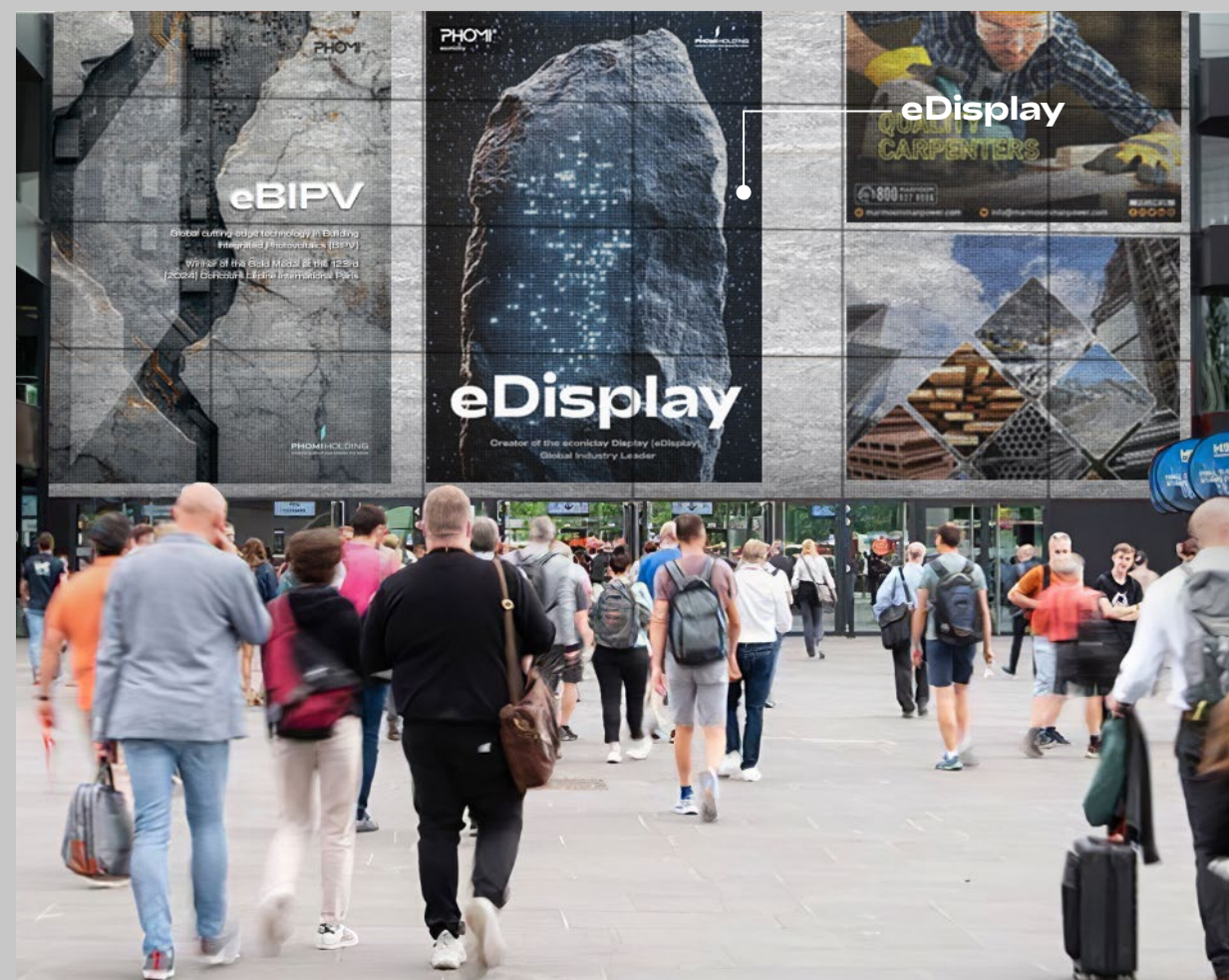
Revolutionarily integrating display technology with building materials, allowing for seamless switching between the natural textures of stone, wood, or brick walls and high-definition displays without the need for additional LED screens. When powered off, it restores the aesthetic beauty of the architecture.

2. Integration of photovoltaics and display

The eDisplay seamlessly integrates with the eBIPV system, powered by the eBIPV energy storage system. This innovation not only ensures the display quality of the eDisplay but also enhances the energy efficiency of the building, injecting green energy into smart cities.

3. Dual enhancement of durability and sustainability

The surface texture of eDisplay is formed using inorganic nanomaterials, offering excellent UV resistance, making it more durable than LED screens. Its components are recyclable, reducing resource extraction and minimizing waste disposal.



Application scenario: exhibition center entrance

Proposed eDisplay type: Marble Cloud Grey

Dimensions: 1254x754mm(customization)

Quantity: 16 pieces

Pixel pitch: P4.81

Proposed dry-hanging eCovering type: Marble Cloud Grey

Dimensions: 1254x754mm

Area: 4.5m²



Application scenario: exterior wall of an art museum

Proposed eDisplay type: Marble Loki Mountain Light Gray

Dimensions: 1254x754mm(customization)

Quantity: 100 pieces

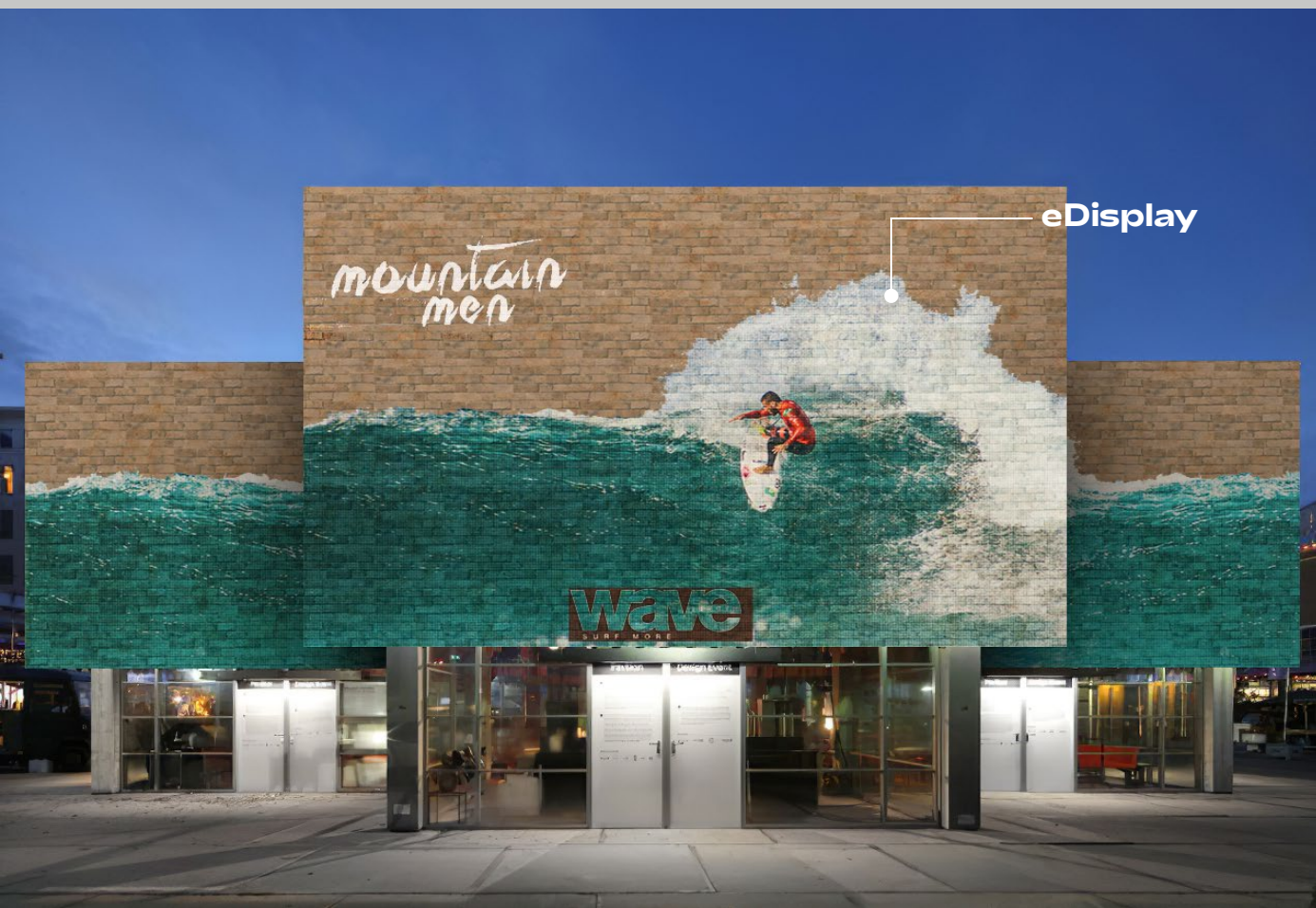
Pixel pitch: P4.81

Proposed dry-hanging eCovering type: Marble Loki Mountain Light Gray

Dimensions: 1254x754mm+customization

Area: 6,300m²





Application scenario: renovation of residential exterior walls for commercial use.

Proposed eDisplay type: Stone Brick Copper Rust Red

Dimensions: 1254x754mm(customization)

Quantity: 16 pieces

Pixel pitch: P4.81



Application scenario: exterior wall of a shopping mall

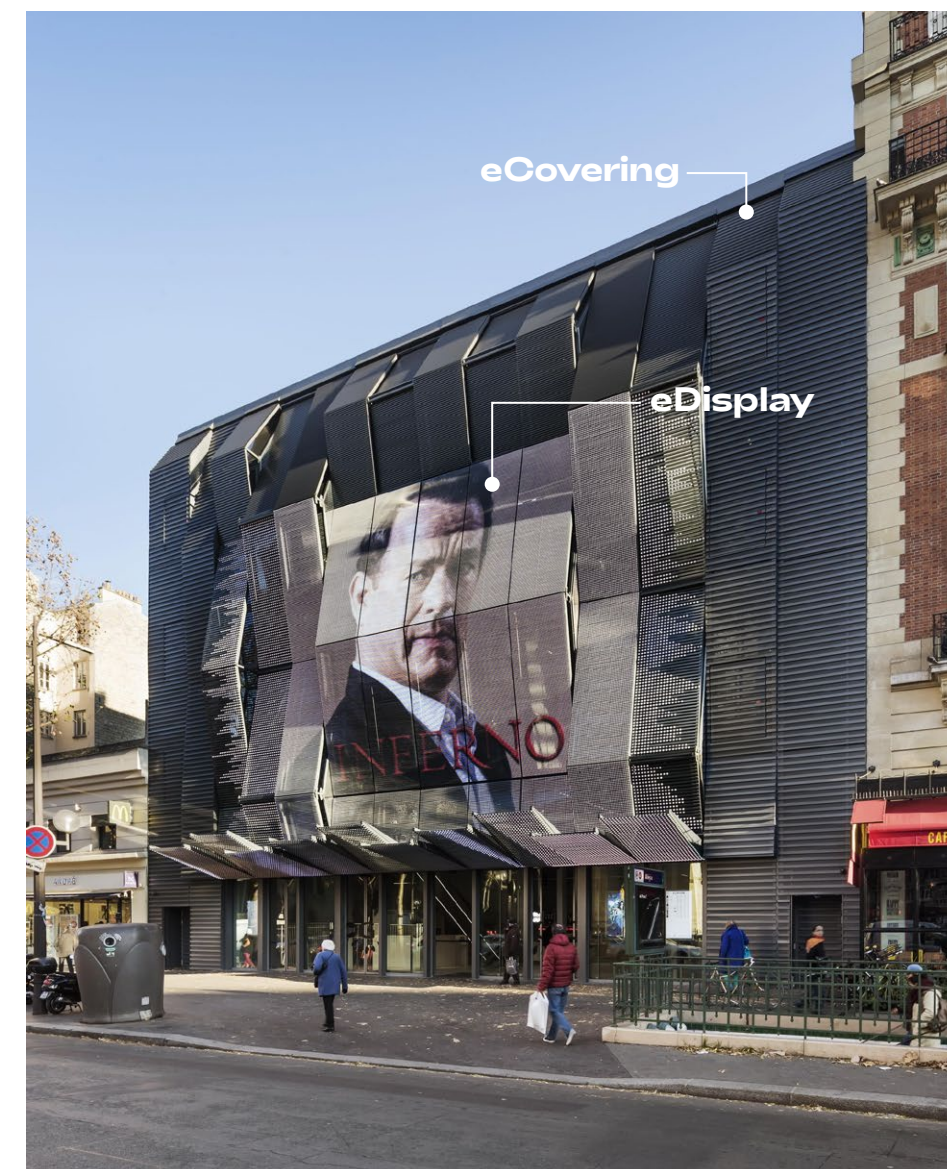
Proposed eDisplay type: Marble Loki Mountain Light Gray

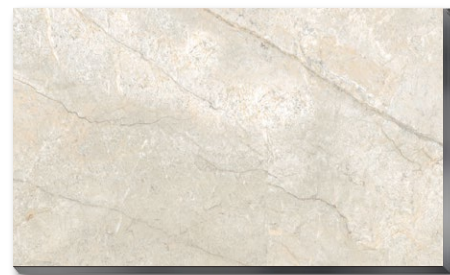
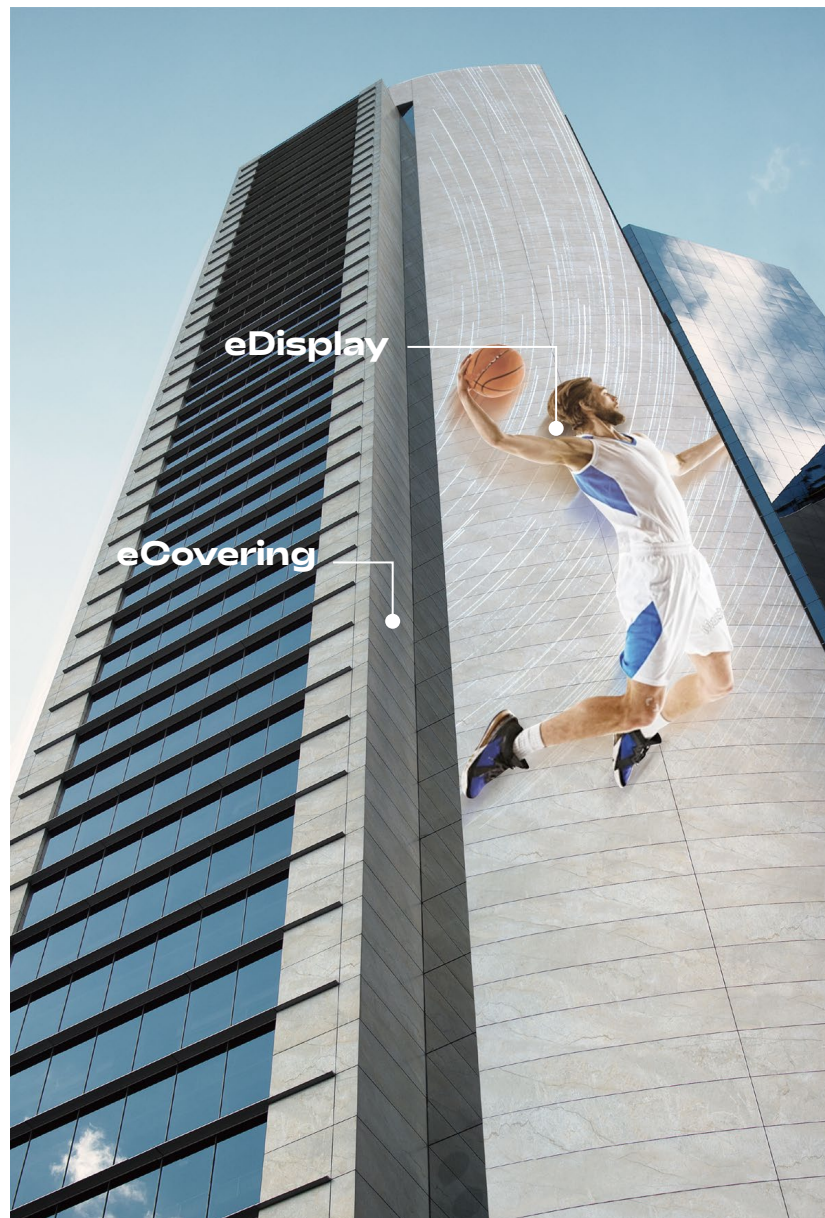
Dimensions: 1254x754mm(customization), 20 pieces

Pixel pitch: P4.81

Proposed dry-hanging eCovering type: Marble Loki Mountain Light Gray

Dimensions: 1254x754mm+customization





Application scenario: exterior wall of a commercial office building

Proposed eDisplay type: Marble Castol Yellow

Dimensions: 1254x754mm(customization)

Quantity: 100 pieces

Pixel pitch: P4.81

Proposed dry-hanging eCovering type: Marble Castol Yellow

Dimensions: 1254x754mm+customization

Area: 12,000m²

Application scenario: science museum or shopping center

One-stop solution

Exterior wall: eDisplay+eBIPV+eCovering dry-hanging system

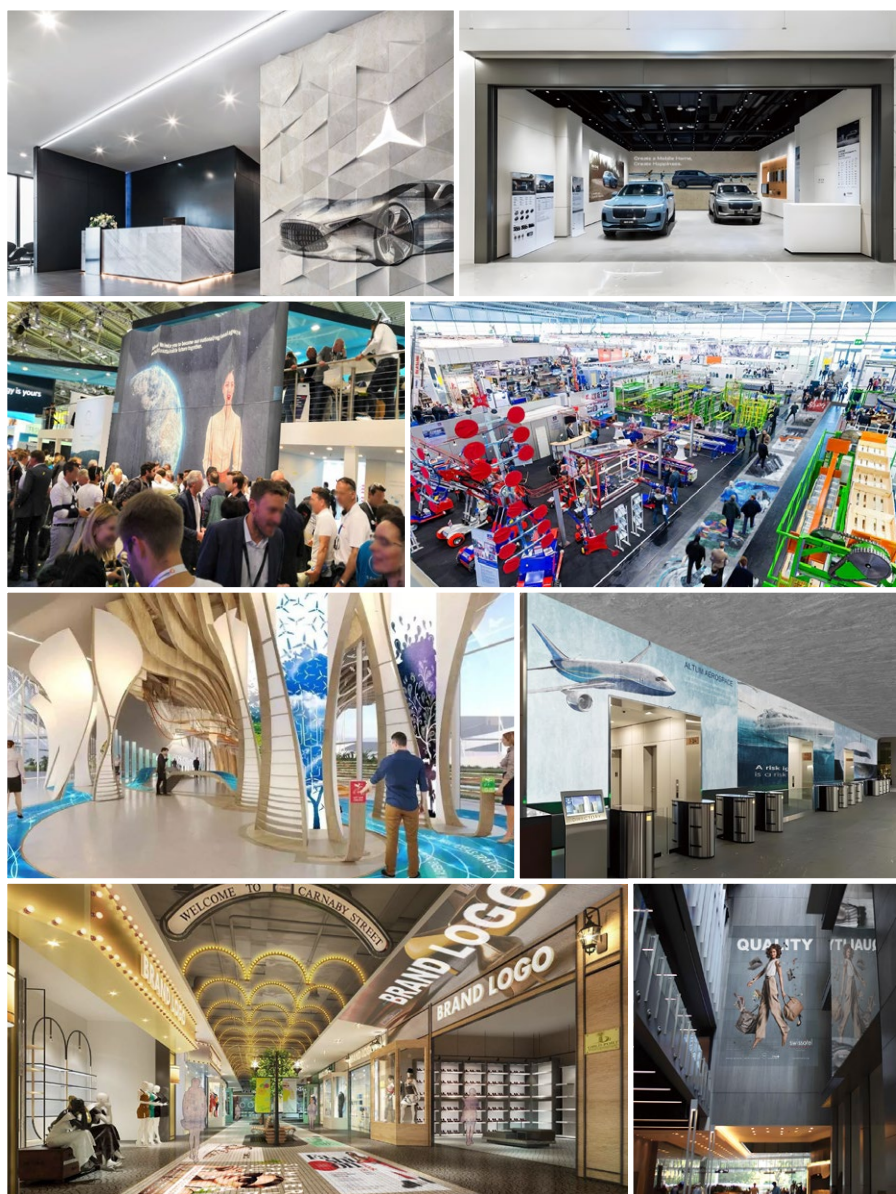
Square: eDisplay+econiclay flooring

Interior wall, and ceiling (non-glass area): DIY eCovering+eDisplay

This comprehensive solution not only elevates the technological image and visual aesthetics of architecture to new levels but also effectively reduces carbon emissions through the efficient use of solar energy and the widespread application of low-carbon decorative materials. It sets a benchmark for achieving green living and promoting sustainable development. Whether it's the exploration journey at the science museum or the leisure time at the shopping center, one can experience the perfect blend of futuristic architecture and environmental concepts.



Indoor eDisplay



eDisplay for indoor: advantages

1. Design flexibility and aesthetic diversity

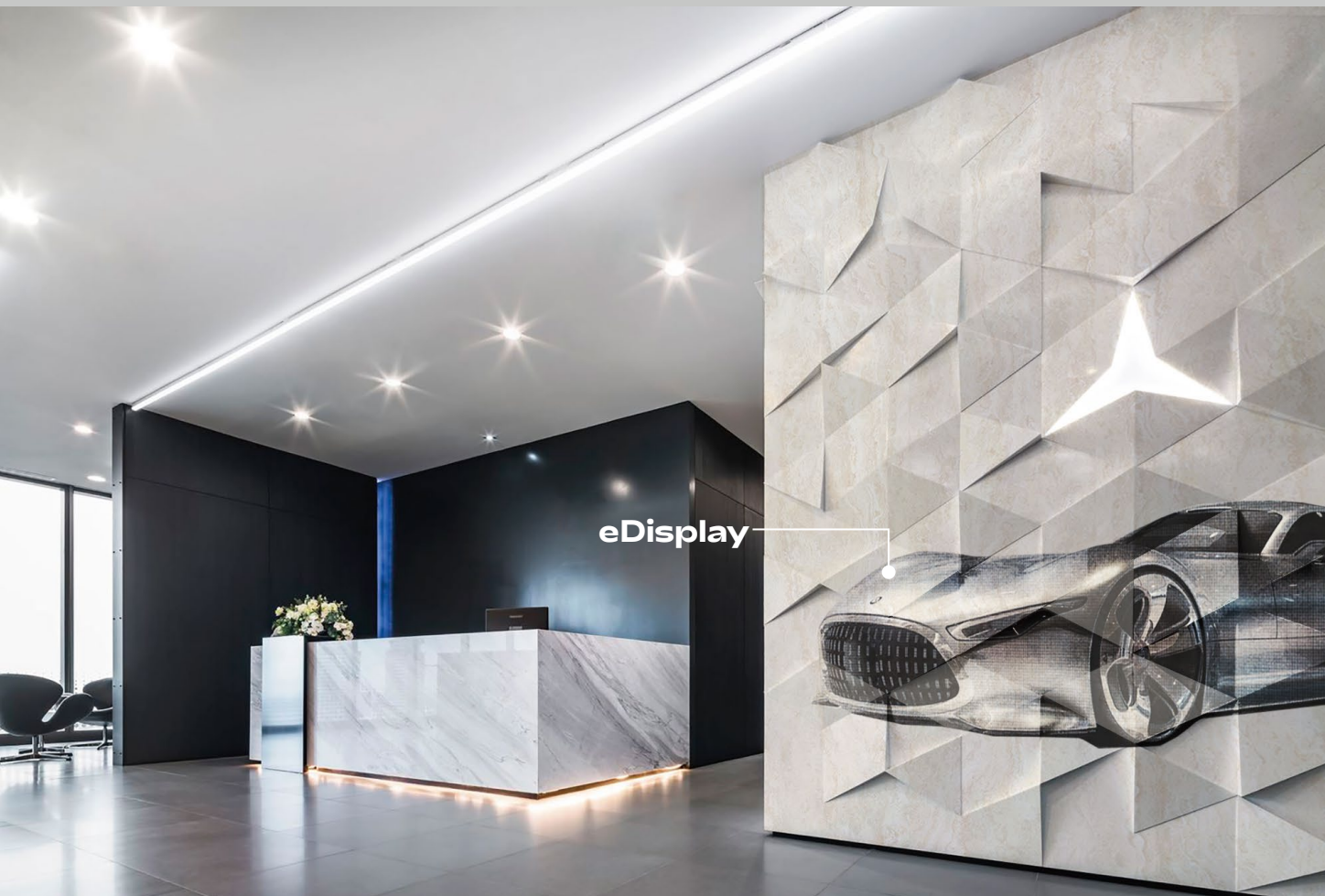
It easily accommodates a mix of different materials and colors to meet diverse aesthetic needs, allowing for personalized customization based on interior design styles and brand communication requirements. In contrast, traditional LED screens offer limited options in materials and colors, often appearing incongruous and failing to harmonize with the interior space's style.

2. Integration of application scenarios and spatial design

As part of the interior wall, ceiling, and flooring decorative materials, eDisplay seamlessly blends with the indoor environment, creating a clean, elegant, and stylish spatial atmosphere. This integration provides unique advantages for information display and brand communication in commercial and public building interiors.

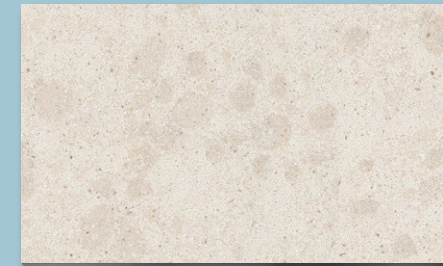
3. Sustainability

Used in combination with eCovering materials, this approach achieves information display while reducing carbon emissions, leading a new trend in sustainable interior space design and decoration.



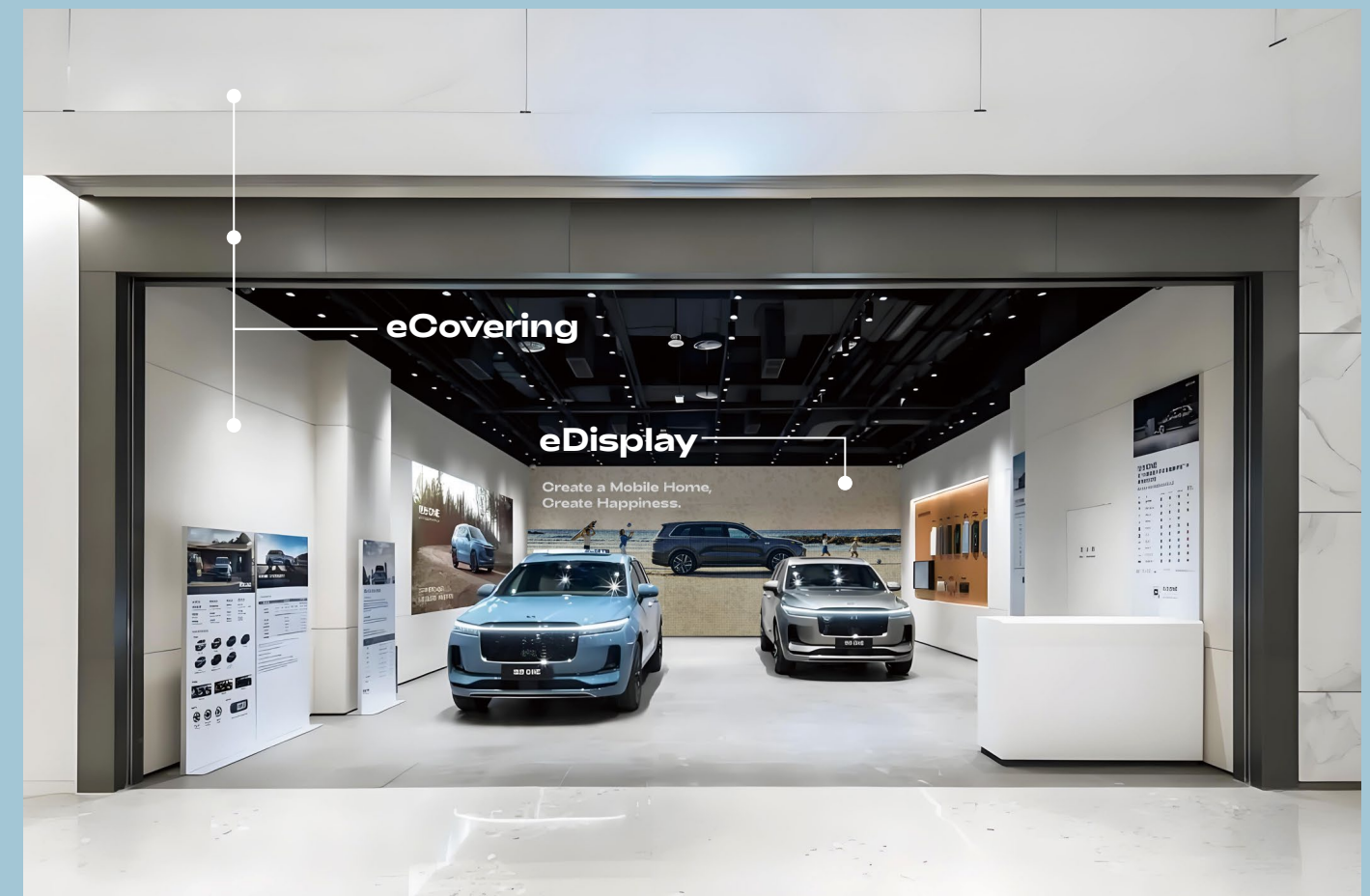
Application scenario: Mercedes-Benz dealership
Proposed eDisplay type: Marble Andes White(customization)
Dimensions: Diamond and triangle shapes
Quantity: 16 pieces per dealership
Pixel pitch: P2.6

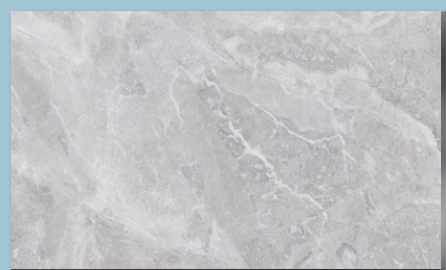
Proposed DIY eCovering type: Marble Andes White(customization)
Dimensions: 3000x1200mm+customization
Quantity: 26 pieces per dealership



Application scenario: Automotive/car dealership

Comprehensive solution: The exterior wall of the dealership integrates eBIPV and eDisplay design, while the interior walls and ceiling use DIY eCovering materials that are easy to apply and pair with eDisplay. This not only enhances the technological and visual image of the dealership but also significantly reduces carbon emissions by effectively utilizing solar power and employing cutting-edge low-carbon decorative materials, thereby increasing brand competitiveness.





Application scenario: The display background wall of an exhibition booth can be customized with textures or artistic patterns in materials like stone, wood, brick, or paint based on brand colors, highlighting brand identity and technological feel while delivering a strong visual impact

Proposed eDisplay type: Marble Loki Mountain Light Gray
Dimensions: 1254x754mm(customization)
Quantity: 16 pieces
Pixel pitch: P2.6

Application scenario: main passage floor of an exhibition

eDisplay can be innovatively applied to the main passage floor of the exhibition, creating an eye-catching paid communication platform specifically designed to serve exhibition content and information for attendees.

1. Dynamic display attracts attention: The flooring eDisplay technology showcases core exhibition content with dynamic, colorful visual effects, instantly capturing the attention of passing attendees and audience, stimulating their interest and enthusiasm for participation.

2. Core values are clearly visible: eDisplay effectively showcases exhibition highlights, special activities, and the latest product launches, allowing attendees to quickly grasp the core value of the exhibition and enhancing information retrieval efficiency.

3. Targeted delivery of customer information: The flooring eDisplay platform allows for paid display of exhibitor information, such as booth location, featured products, and contact details, enabling personalized and precise information dissemination to help exhibitors expand their business opportunities.

4. Industry innovation leading the future: eDisplay technology serves as a commercial innovation in the exhibition industry, breaking the constraints of traditional communication methods and opening up more diverse and efficient pathways for information dissemination. This advancement propels the exhibition industry towards a future of intelligence, digitization, and enhanced efficiency.





Application scenario: walls, ceilings, and floors of airport terminals, corridors, and retail stores

The design incorporates eDisplay technology for the replacement of traditional display screens, while non-glass areas use dry-hanging or DIY eCovering materials, creating a clean and simple spatial atmosphere. This design eliminates the need for protruding LED screens, allowing for real-time information display and providing an advertising platform for commercial brands. This approach not only enhances the technological aesthetic of the space but also highlights the building's commitment to sustainability.



Application scenario: exterior walls of science museums, museums, and hotel lobbies

Using various materials with the eBIPV + eDisplay dry-hanging system; eDisplay can be applied to any locations where LED screens can be installed on interior walls, ceilings, and floors; non-glass areas utilize dry-hanging or DIY eCovering materials. This creates a clean, simple, and aesthetically pleasing spatial atmosphere. In this design, there are no protruding LED screens; video content is displayed directly on the different materials of eCovering, enhancing the technological aesthetic of the space while significantly reducing carbon emissions, contributing to sustainability.





Application scenario: shopping malls

Interior overall solution: eDisplay technology can be installed at any locations where traditional display screens are needed, such as on the walls, ceilings, and floors of corridors, lobbies, and retail stores. Non-glass areas incorporate dry-hanging or DIY eCovering materials, creating a clean and simple spatial atmosphere that allows resident brands to highlight their individuality. This solution not only significantly enhances the technological aesthetic of the shopping center but also greatly reduces carbon emissions through the use of zero-carbon materials, contributing to sustainability and environmental protection.



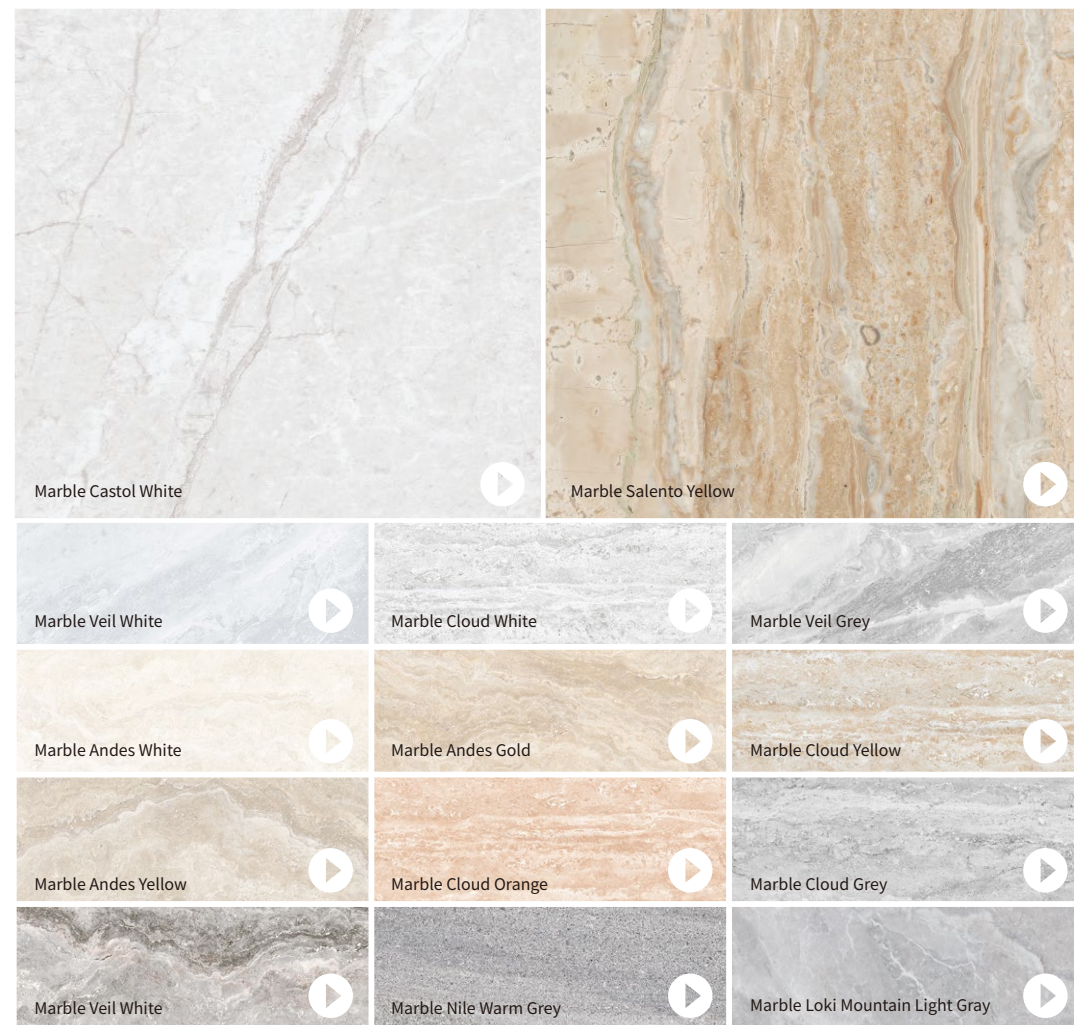
Application scenario: central wall of a commercial complex
Proposed eDisplay type: Marble Nile Warm Grey
Dimensions: 1254x754mm(customization)
Quantity: 16 pieces
Pixel pitch: P2.6

Proposed dry-hanging eCovering type: Marble Nile Warm Grey
Dimensions: 1254x754mm+customization
Area: 20m²



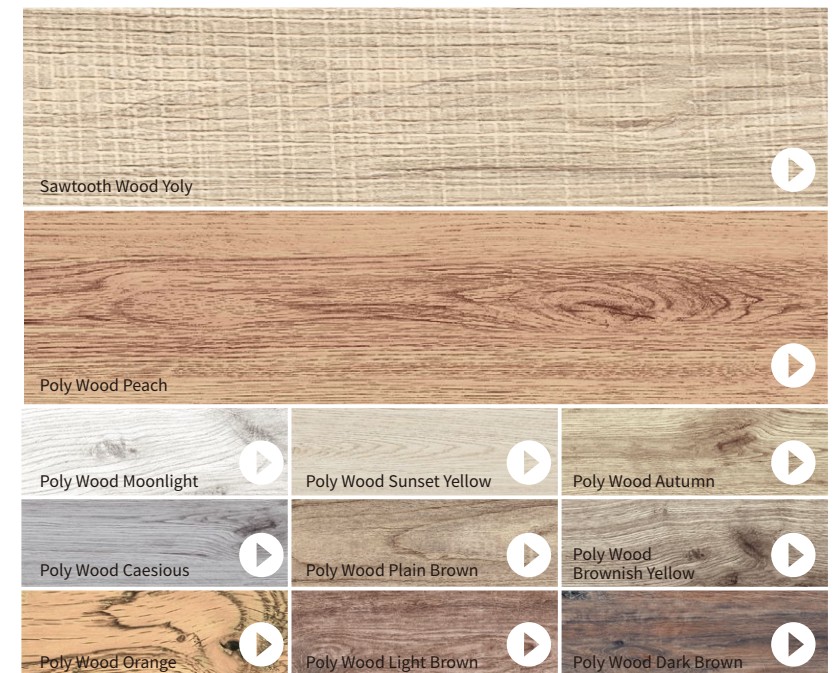
eDisplay Best Sellers

eDisplay Stone Series



Other customized textures and patterns are available.

eDisplay Wood Series



Other customized textures and patterns are available.

eDisplay Brick Series



Other customized textures and patterns are available.

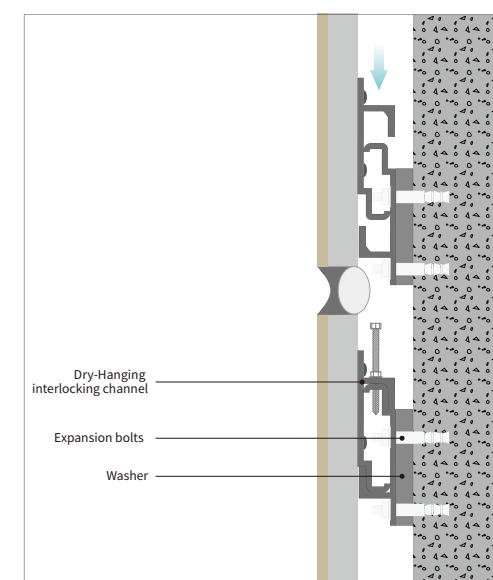
Installation

Dry-hanging installation

- 1. Measuring the wall:** Use measuring tools to determine the wall dimensions and installation locations, marking the positions for brackets and mounting hardware.
- 2. Install brackets:** Mount the brackets securely on the wall. They should be sturdy enough to support the weight of the eDisplay components.
- 3. Secure the eDisplay components:** Hang the eDisplay components onto the brackets, ensuring they are aligned and leveled. Use screws and other tools to fasten them securely.
- 4. Seal joints:** Use matching colored caulk or trim to ensure a sealed finish.
- 5. Connect power and signal cables:** Connect the power and signal cables of the eDisplay to the appropriate ports, ensuring secure and reliable connections.
- 6. Debug and test:** After installation, perform debugging and testing to ensure the eDisplay functions correctly and displays images as intended.

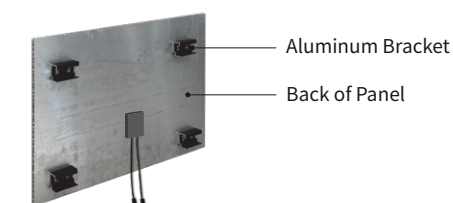
Precautions

- Safety First:** Ensure personnel safety during installation by wearing necessary protective gear.
- Accurate Measurement:** Perform precise measurements before installation to ensure the eDisplay components fit perfectly against the wall or frame and remain leveled.
- Choose the Right Installation Method:** Select an appropriate installation method based on the installation environment, eDisplay component specifications, and weight to ensure safety and stability.
- Secure Fixing:** Ensure the eDisplay components are securely fastened during installation to avoid any wobbling or risk of falling, and regularly check the installation status.



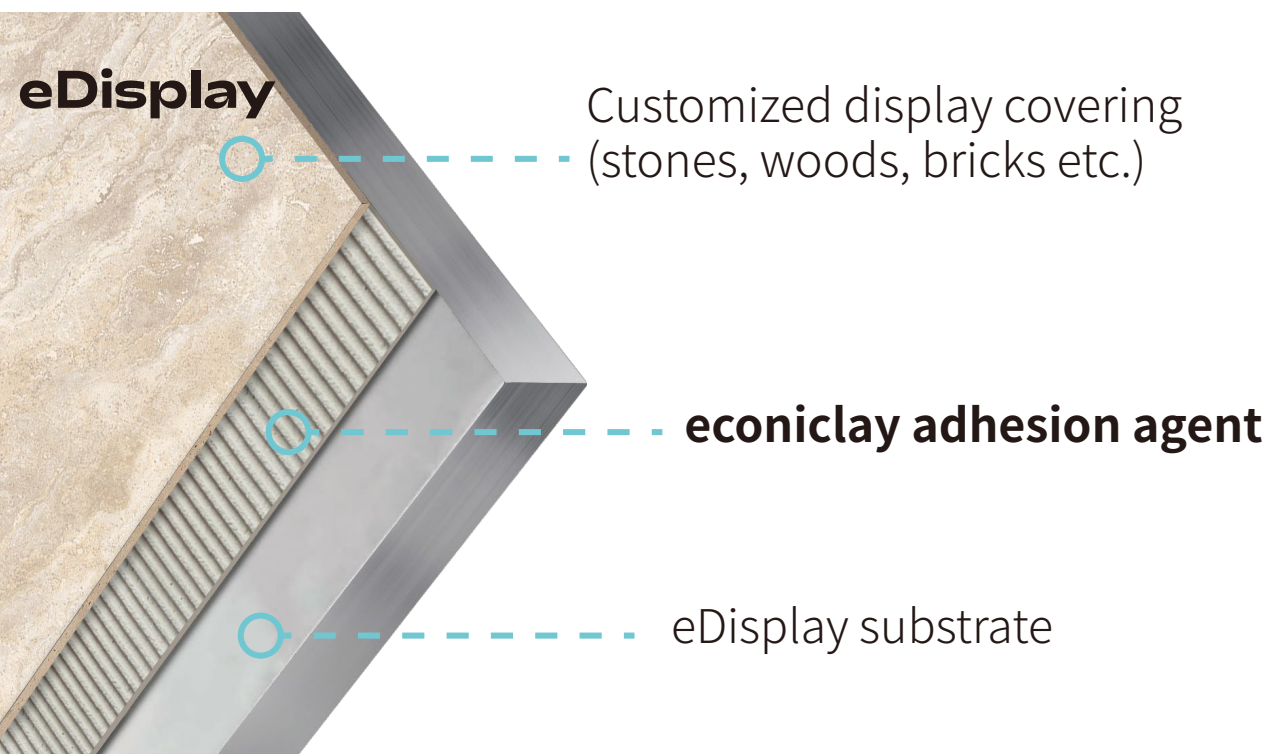
Schematic diagram of Dry-Hanging

- 1** Attach/Secure the aluminum brackets to the back of the panel with bolts and nuts.



- 2** Secure the aluminum rail with expansion bolts to the solid wall. Insert the aluminum brackets of honeycomb panel into the aluminum rail on the solid wall, then secure the brackets to the rail with screws (bolts and nuts).





eDisplay Specifications

Specifications			Outdoor	Indoor
Module Specification	Dimensions		1254x754 mm(customization)	
	Service Access		Rear	Front
Physical Parameters	Resolution		P4.81	P2.6
Image Processing Capabilities	Image frequency	Frame change frequency (Hz)	50&60	
		Refresh frequency(Hz)	1920	
Optics Parameters	Display uniformity	Color	$\Delta(Cx,Cy)\leq 0.003$	
	Contrast Ratio		3000:1	
	Viewing Angle	Horizontal(°)	140	
		Vertical(°)	140	
Electrical Specifications	Power Consumption (W)		Max.≤1200W/m ² , Avg.≤750W/m ²	Max.≤1000W/m ² , Avg.≤700W/m ²
Use Conditions	Operating ambient temperature(°C)		-20-55	
	Storage ambient temperature(°C)		-20-55	
	Operating Ambient Humidity(RH)		10-70%	
	Storage ambient humidity(RH)		10-70%	
	Service life(H)		100000H	

eDisplay technical principles

Phomi invented a covering material with one-way light guiding capability for display purpose - eDsplay. The core of this technology lies in precise manipulation of the microstructure of the covering material to achieve efficient unidirectional transmission of light. Through state-of-the-art technology, a specific optical channel network is constructed at the microscopic level, allowing the light generated by optoelectronic materials to propagate along a predetermined path and ultimately exit through specific areas of the covering material, forming a clear and coherent video signal output.

In addition to technological innovation, eDisplay also incorporates aesthetic design to simulate the natural texture of stone, the warm texture of wood or the rustic look of terracotta bricks through surface treatment, which is virtually unaffected by light conduction, ensuring that the eDisplay system can still present a pleasing visual effect while displaying video content. Moreover, eDisplay has a lower carbon footprint during its life cycle, which meets the requirements of green and sustainable development.

eDisplay is expected to become the mainstream choice in the field of display in the future, widely used in architectural decoration, information display and other fields, opening a new chapter in display technology.



eDisplay not only showcases technological innovation but also integrates aesthetic design by using surface treatment techniques to simulate textures like the natural patterns of stone, the warmth of wood, and the rustic appearance of clay bricks. These visual features remain largely unaffected during light transmission, ensuring that the eDisplay system delivers pleasant visuals while displaying video content. Additionally, eDisplay has lower carbon emissions throughout its lifecycle, aligning with green and sustainable development requirements.





About Phomi

Founded in 2008, focusing on the research, development and production of econiclay based materials, we are committed to providing carbon-neutral material solutions to the world. With start-up mentality we develop up-to-date, sustainable material solutions for new challenges of living on our planet.

Phomi is the creator of the MCM (econiclay) industry and has been the global leader and standard setter in this field. In 2023, it completed a technological iteration, and became the global groundbreaker in two cutting-edge products: eBIPV and eDisplay.

As a technical enabler, we give our material solutions and knowledge to partners to spread it worldwide. How to benefit the entire world with increasing application possibilities of econiclay products, is the responsibility we assume for society and human future.

Phomi has established manufacturing bases in multiple locations, and its products are used in over 120 countries and regions. Its service system covers Europe, North America, the Middle East, Asia, and Africa.

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