OMIS High Gain Optical Microcrystalline Cinema Projection Screen

White Screen for Reduced RGB Speckling

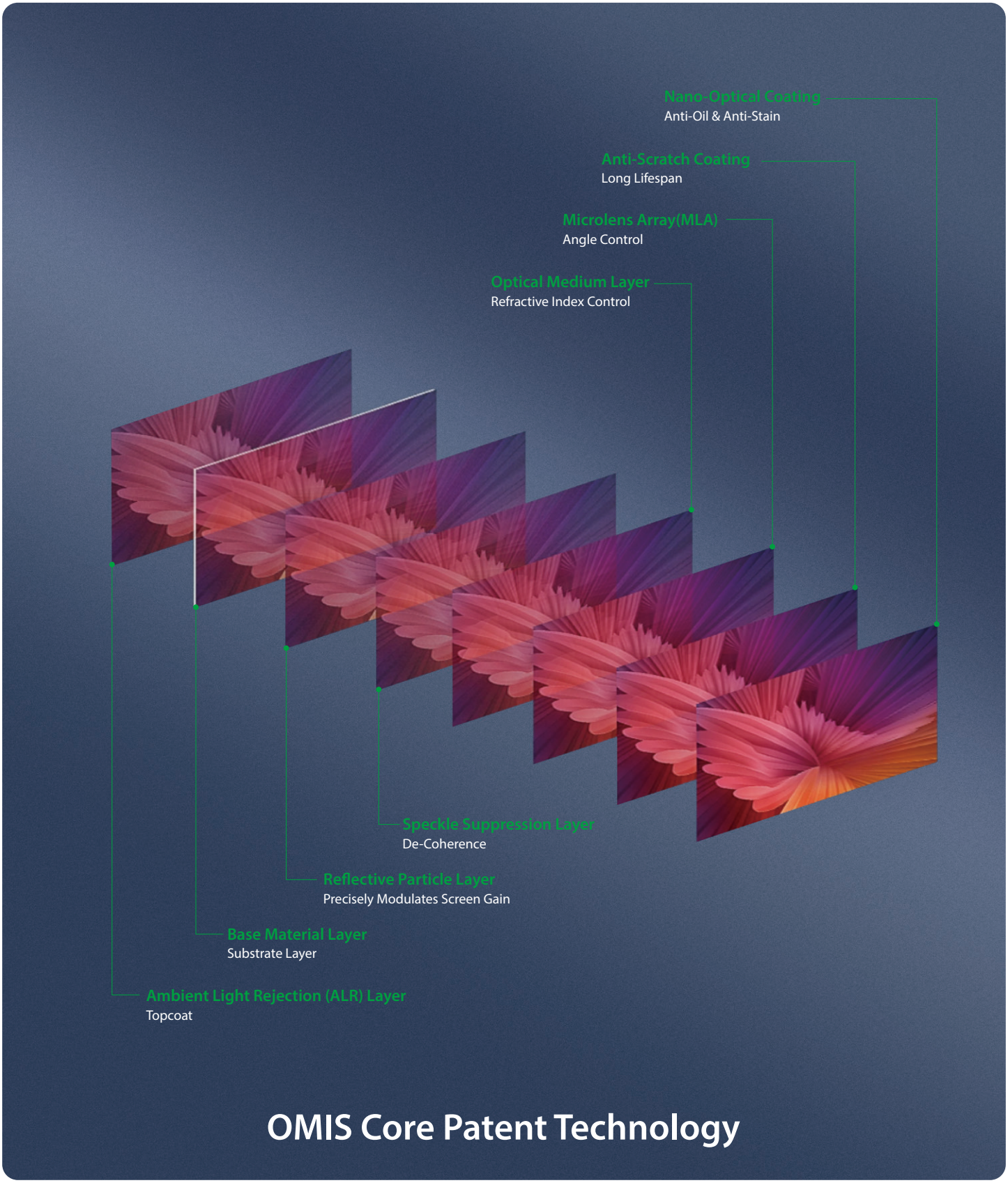
Key Features

Ultra-Low Speckle	3.5% ultra-low speckle contrast maximizes the brightness, contrast, and image uniformity of RGB lasers, ensuring accurate color reproduction
Wide Viewing Angle	Supports 160-degree viewing and wide-angle projection
Cleanable Surface	Anti-oil and Anti-stain: Resists permanent markers with an easy-to-clean finish. Resistant to soft drinks and popcorn oil
No Solar Effect	Eliminates harsh specular reflections and dead zones to ensure highly uniform light distribution
High Screen Gain	2.2 gain optical-grade white screen
Anti-Ambient Light Interference	Ambient occlusion rate of 55%, effectively minimizing stray light interference
Stable Performance	Exceptionally long service life with zero yellowing over time

Technical Principles

Utilizing Stacked Multi-layer Microlens Array (MLA) technology and multi-stage particle reflection pathways, the screen effectively destabilizes laser coherence to suppress speckle at its source.

It achieves a precision-engineered synergy between high gain, speckle mitigation, luminance uniformity, and color fidelity.



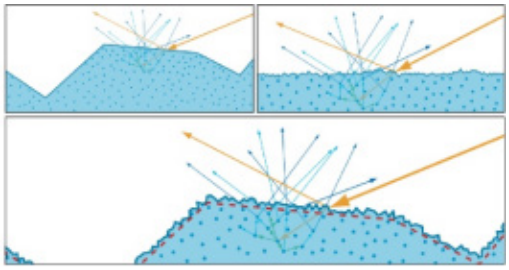
OMIS Core Patent Technology

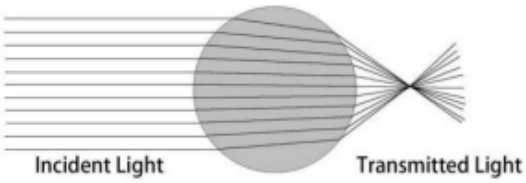
Optical Micro-Mirror Array: Core Technology

01

Professional Optical Design:

Features micrometer-scale optical micro-mirror structures, engineered with precision optical modeling and ray-tracing simulations to accurately control beam shape and propagation paths. Widely applied in imaging and beam-shaping applications.





02

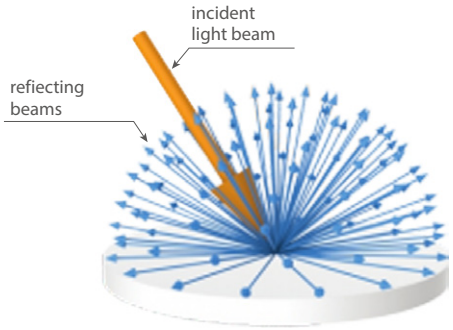
Precise Light-Field Control:

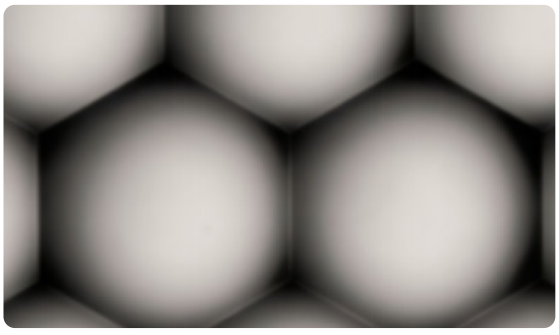
Utilizes a microlens array randomly distributed across a spherical reflective structure to enable controlled, continuous, uniform, and high-gain diffuse reflection, optimizing image quality and brightness consistency.

03

Complex Light-Field Manipulation:

Employs parallel micro-optical modulation to homogenize light beams for improved illumination uniformity and simultaneously enhances imaging performance through extended depth of field and higher resolution.





04

Mass-Scale Micro-Mirror Industrialization:

Mastered the design and mass production of large-format optical films embedded with ultra-high-density microlens arrays. A proprietary manufacturing ecosystem, supported by in-house developed equipment, ensures a closed-loop, end-to-end production capability.

OMIS Optical White Screen Specifications

No.	Specification	Parameter	Description
1	Brightness Uniformity	≥ 95%	Optimized viewing-angle compensation design, delivering an optimal viewing experience from every seat in the auditorium
2	System Speckle Contrast(%)	<3.5%	Compatible with RGB laser projection, with speckle nearly visible to the naked eye
3	Ambient Light Rejection Rate (30°)	26.9%	Suitable for viewing in moderately low-light environments
4	Resolution (Sharpness)	≥ 145 line pairs	Supports 8K ultra-high-definition display
5	Water Contact Angle	>90°	Anti-oil and Anti-stain: Resists permanent markers with an easy-to-clean finish. Resistant to soft drinks and popcorn oil
6	Temperature Resistance	-70℃~120℃	Engineered to perform reliably in even the most demanding environments
7	Surface Hardness	4H	Resistant to daily wear and nail scratches
8	Surface Adhesion	4B	Withstands over 100 cleaning cycles
9	Acoustic Perforation Diameter	0.18mm	Complies with GB/T 13982-2011 "Reflective and Transmissive Projection Screens" electroacoustic requirements
10	Environmental Performance	Odorless	Non-toxic and eco-friendly; ready for immediate operation post-installation without off-gassing

Technical Specifications Comparison

Parameter	OMIS Optical White Screen	Conventional White Screen	Metallic Silver Screen
Material	Multi-Layer PET Polymer	PVC	PVC
Core Technology	Stacked Microlens Array (MLA) & Laser Speckle Mitigation Technology	Spray-Coating	Spray-Coating
Gain(dB)	2.2^	0.8-1.2	2.4-3.0
Horizontal Viewing Angle	Wide Viewing Angle	Wide Viewing Angle	35°-40°
Color Temperature Deviation	<50K	<100K	<200K
Oil Resistance	Anti-Oil & Anti-Stain, Cleanable	Non-Cleanable	Non-Cleanable
RGB Speckle Performance	Speckle-Free (3.5%)	Speckle-Free	Severe Speckle (>16%)
Optical Stability	Zero Decay	Linear Decay	Fast Decay
Service Life	>10 Years	5 Years	5 Years

^ DYT 4-2020 "Technical Requirements and Measurement Methods for Giant Metal Screens"