Luminatii·LED Dome & Spherical Display Specifications

1 · Product Lines

LED dome screen (inner dome)	Immersive theaters, flying theaters, planetariums. Delivered diameters 5 m – 60 m; larger diameters on request.
Spherical LED display (outer sphere)	Science museums, commercial landmarks, tourism sites. Delivered diameters 2 m – 26 m; other diameters on request.
Project track record	20+ large LED dome projects delivered, 5 m to 60 m diameter, including the 5,300 m^2 60 m dome on Kongtong Island — the largest immersive LED dome in Asia.

2 · Display Performance

Brightness (screen surface)	1,200 nit
Contrast ratio	10,000 : 1
Color gamut	NTSC 90%+
Brightness uniformity deviation	≤ 5%
Chromaticity deviation	≤ 2 ΔE
Gray-scale processing	16-bit, high gray-scale design
Refresh rate	7,680 Hz (high refresh)
Maximum resolution delivered	8K (5,300 m^2 Kongtong Island dome)
LED lifetime	> 100,000 hours
Pixel pitch (delivered projects)	P1.9 – P4, selected per viewing distance

3 · Acoustically Transparent Dome

Perforation (open area)	50%
Sound transmission loss	< 5% across speech and music bands
Audio–video sync deviation	< 0.02 seconds
Screen weight	8.5 kg/m^2 (60 m Kongtong dome); industry norm 15 – 25 kg/m^2
Speaker placement	Surround speakers mounted behind the perforated screen

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4 · Structure & Protection

Module geometry	Triangular + trapezoidal modules with independently adjustable angles for seamless spherical splicing
Connection hardware	XY bidirectional adjustable joints absorb structural tolerance during installation
Design detail	Narrow-border design; higher overall screen transparency
Outdoor protection	IP65 — moisture, dust and salt-fog resistant
Maintenance	Front and rear access; single-person maintenance
Driver design	Parallel drivers — a failed LED does not affect neighboring pixels
Power supply unit	Aluminum-profile enclosure with large snap-fit design for fast heat dissipation and servicing
Cabling	AC power and network cables routed inside the cabinets — no exposed wiring at the screen face
Steel structure	Calculated per site for dead load, wind and seismic conditions; welds NDT-inspected with witnessed sampling of welding consumables

5 · Power Consumption

Screen (full-white peak, 1,200 nit)	150 W/m²
Lifting floor screen (full-white peak)	210 W/m²

6 · Certifications

CE — EMC Directive 2014/30/EU (EN 55032 / 55035)

CE — LVD Directive 2014/35/EU (IEC 62368-1)

FCC — Part 15, USA (CNAS / A2LA accredited lab)

UL / IEC 62368-1 — audio-video & IT safety

CCC — China Compulsory Certification

RoHS — Directive 2011/65/EU & (EU) 2015/863

ISO 9001:2015 · **ISO 14001:2015** · **ISO 45001:2018** — management systems (IAF-accredited assessment)

7 · R&D Credentials

- National high-tech enterprise (China)
- 70+ invention and utility model patents
- 6 software copyrights (control, data processing, system optimization)
- 50+ R&D engineers
- Key dome patents incl. application 202522090593.1 (curved-surface splicing & stability, 60 m dome) and granted publications CN119152803A, CN119383406B

Contact for tenders and technical queries

Queries are answered by the engineering team, not a call center. Send diameter, ceiling height, intended use and target opening date — the reply comes back with a configuration and an itemized quotation within one business day.

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All figures are taken from delivered project documentation. Custom diameters, pitches and structures are quoted item by item against your drawings. Certificate scans and full test reports are available on request.