

ABSEN EDUCATION · 2026

Smart Education Display Solutions Whitepaper

Make knowledge visible. Make learning truly happen — from device procurement to learning-space infrastructure, Micro LED ultra-HD fine pitch, energy-saving cold screens and Absen iCon smart All-in-One technology are reshaping learning worldwide.

Four Forces Reshaping Education Displays

01

Flexible • Hybrid & Flexible Teaching

Hybrid teaching is the norm: high refresh, flicker-free, wide gamut, camera-friendly and scan-line-free — remote and on-site in sync.

02

Operation • Unified Campus Control

Devices are scattered and hard to manage across campuses; unified IoT, central control and fewer consumables make every campus screen manageable with one click.

03

Reliability • Safe Learning Spaces

Enclosed classrooms suffer screen heat and blue light; hardware-level low blue light, cool-touch screens, Class 1 efficiency and EMC Class B keep teachers and students safe.

04

Carbon-free • Green & Low-carbon Campuses

Universities worldwide are pursuing ESG and net-zero goals; energy-efficient operation makes display infrastructure part of the zero-carbon campus.

Key insight: the value of education displays has moved from “clear images” to “teachable, controllable, healthy, durable” — where the five-dimension matrix begins.

Education Display Five-Dimension Matrix

01

Eye Health

TÜV hardware-level low blue light · flicker-free
Nano anti-glare · EMC Class B

02

Spatial Interaction

Instant wireless casting · 4-screen split
Multi-party interactive whiteboard

03

Green & Low-carbon

Flip Chip COB saving · IC dynamic saving
Black-screen standby saving

04

Unified IoT

Creston / Extron / Q-SYS
Remote firmware & power management

05

Industrial Reliability

Flip Chip COB · panel-level packaging
Signal & power dual backup

Six core technologies behind the five dimensions

Cool-touch Screen & Green Saving

Class 1 efficiency: cool to the touch, never “roasting your face”

High Protection & Wear-resistant Finishing

Polymer optical resin encapsulation — impact-proof, wipe-clean

Ultra-HD & Camera-friendly

≥3840Hz · 16-bit gray scale · scan-line-free on camera

Eye Health & Environment-friendly

Filters 415–455nm blue light · 160° glare-free view

Campus-wide Unified Control

Open APIs connect campus platforms for batch control & publishing

Open Protocols

Compatible with mainstream control, recording, conferencing and LMS platforms

From Standard Classrooms to Immersive Spaces



Standard Smart Classroom · 50–80m²

SMART CLASSROOM



E V2 Series



iCon X Series

E130 V2 / E158 Pro V2 All-in-Ones: 10s boot, plug-and-cast, triple split-screen; larger rooms can use X Series, cross-space use X136F.

Class 1 efficiency · TÜV low blue light · casting · 10s boot



Lecture Hall & Auditorium · 150–500 seats

AUDITORIUM



KLCOB V3



CL Pro V3

800nits & 7680Hz, 100,000h life, 40%+ saving; premium option CL Pro V3 (Micro MIP).

P0.7–P1.5 · 7680Hz · 800nits · 40%+ saving · 100,000h



Virtual Simulation Training · XR / CAVE

XR / CAVE



KLCOB V3



PL V3

KLCOB V3 wall (premium CL Pro V3 Micro MIP) + AbsenLive PL V3 virtual production, with IR tracking & camera filming.

DCI-P3 · 16-bit · virtual production

From Seminar Rooms to Sports & Arts Centers



Hybrid Seminar Room · Conference

CONFERENCE ROOM



X V2 Series



X Series 4K

X136 V2 / X136 Pro V2 / X163 V2 and the X Series 4K models are conference-ready (the multifunction meeting room in the product literature).

conference-ready · wireless casting · optional iCon Solution Kit

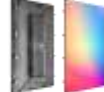


Smart Campus Digital Signage

CAMPUS SIGNAGE



A25



CPS

Outdoor gates/plazas: A25 (R version); indoor corridors/lobbies/IOC: CPS + cloud CMS for unified publishing.

Outdoor 10,000nit · 7×24 · role-based publishing



Campus Multipurpose Sports & Arts Center

SPORTS & ARTS



A25 Series



NX Series

A25 (outdoor) and NX (indoor) professional displays, scoring-compatible — scores & live info in one view.

10,000nit · 7680Hz · dual backup

The Absen iCon Portfolio



Absen iCon X Series

X108 / X136 / X163 / X 4K / X136 F

MicroLED, 15000:1 contrast · 90% BT.2020 · optional 4K
Optional foldable & lift design · fits commercial elevators
· ready to use once unfolded
MicroLED · P1.25–P1.87 · 108"–163"

Scenarios: premium meeting rooms · lecture halls · auditoriums
· showrooms



Absen iCon E Series

E130 V2 · E158 Pro V2

Rich interfaces · plug and play · physical panel interaction
· multi-device collaboration
· Vertical shipping fits standard elevators

Scenarios: K12 / university smart classrooms · auditoriums · meeting rooms
· commercial spaces

Micro LED vs. Traditional Teaching Displays

Dimension	Laser projector	IFPD panel	Absen Micro LED
Size limit	Unlimited; suits large classrooms and auditoria	Caps around 115"; larger spaces need tiling and show seams	Seamless tiling, flat joint-free wall
Daylight performance	Poor — blinds required	High, but surface glare	Excellent — high contrast with lights on, anti-glare
Eye health / low blue light	Dim image, eye fatigue	Low blue light certified	TÜV hardware-level low blue light
Heat and surface temp.	Average cooling, noisy	Good cooling, noticeable heat	Good cooling, cool to the touch
Durability & maintenance	Optical engine fades in 2–3 years	Impact damage means full-panel replacement	Impact-resistant, module-level front service
Upfront cost (CapEx)	Lower	Medium	Medium-high · higher upfront hardware investment
8-year running & maintenance	High · engine replacement, filter cleaning	Medium-high · full-panel replacement	Low · zero consumables + module-level front service

Laser projector

Best for: large rooms on a budget, long viewing distances, controllable light

Main limit: sensitive to ambient light, engine degrades

IFPD panel

Best for: small and mid-size rooms built around close-range writing

Main limit: caps around 115"; larger spaces need tiling

Absen Micro LED

Best for: mid-to-large rooms and auditoria in heavy daily use

Main limit: higher upfront investment

Education display is not “buying a screen” — it is choosing learning-space infrastructure for an 8–10 year asset cycle. Each technology has its own boundary; Micro LED’s combined value only emerges once room scale, ambient light and daily runtime pass a certain threshold.

Open Integration that Eliminates “Private-Protocol Lock-in”

Absen Open Display Hardware

Standard API · open protocols — one screen joins the campus ecosystem

Control Systems · ProAV

- Crestron Connected, native
- Extron certified integration
- Q-SYS plugin ecosystem
- AMX by HARMAN protocol support

Unified Collaboration · UC

- Microsoft Teams Rooms ready
- Zoom Rooms certified
- Cisco Webex ecosystem
- Barco ClickShare casting

Learning & Recording · LMS

- Canvas native
- Blackboard ready
- Panopto compatible
- Kaltura cloud video

Whole-life Value: Every kWh & Every Ton of Carbon, Accounted For

35–40%

5-year electricity saving

Flip Chip COB saving + IC dynamic saving

3.8 t

Carbon cut per classroom over 5 years

Supports university ESG ratings & net-zero campus

0 Consumables

Zero disposable parts

Magnetic front-service modules · hot-swap pixels

Baseline

50 lecture halls (≈136" each) × 5 years × 250 days × 8h/day

Model: ≈3,000 kWh saved per classroom (150,000+ kWh for 50 halls) · ≈3.8 t CO₂ per classroom; ⚠ estimates based on official materials — actual per project survey.

Global Access Certifications — Industrial-Grade Trust from the Factory



China Compulsory Certification

X V2 / iCon E V2 · CQC



EU Safety Access

X V2 / iCon E V2 · CE



US Access

X V2 / iCon E V2 · FCC



North America Safety

X V2 Series · Intertek



UK Access

X V2 Series · UKCA



Class 1 Energy Efficiency

iCon E V2 · 426W average power



Substance Limits

X V2 family · RoHS



Hardware-level Low Blue Light

iCon E Series · TÜV low blue light

Green manufacturing & corporate credentials

TÜV SÜD Carbon Footprint Verification

Dozens of products

National Green Factory

Huizhou Intelligent Manufacturing Center · MONDO-DR sustainability award

Integration Management System AAA

MIIT industrial-digital integration, AAA grade

From Portfolio to Classroom: Absen iCon, Delivered



FEATURED CASE · SINCLAIR COMMUNITY COLLEGE · DAYTON, OHIO

A US community college adds Absen iCon to campus

Project Absen iCon 3.0 C138S All-in-One display delivered to Sinclair Community College, Dayton, Ohio, in March 2024.

Impact One panel carries casting, annotation and conferencing; the Ethernet port keeps it inside the campus AV workflow.

Other sites Auburn University (iCon 3.0 C138) · Gateway Technical College (Absenicon 138S) · University of Virginia (iCon 2.0 C110)

Swinburne University of Technology · Immersive Virtual Universe



FEATURED CASE · SWINBURNE UNIVERSITY OF TECHNOLOGY

A curved LED universe for immersive learning

Solution KLCOB1.5 Pro V2 seamless curved LED wall spanning over 100m², built as a 3D “Virtual Universe” environment in Australia.

Experience Cosmic-scale visuals wrap the space instead of sitting in front of it, serving immersive teaching and digital art.

Technology Flip Chip COB delivers deep blacks and stable long-term performance for a space in continuous use.

From World-Class Universities to K-12, Delivered & Verified



University at Buffalo

KLCOB0.9 V2 at 4K resolution · Getzville, New York · 2024



Yale School of Managem

KLCOB1.2 V2 fine-pitch COB · New Haven, Connecticut · 2024



University of Kentucky

NX1.5 at the Joe B Craft Center · Lexington, Kentucky · 2024



University of Washington

NX1.8 campus display · Seattle, Washington · 2024



Auburn University

iCon 3.0 C138 All-in-One · Birmingham, Alabama · 2024



Renton School District

iCon 3.0 C138 · Washington State · K-12 · 2023

A Global Localized Service Network Is the Real Moat

5,400+

Global ACE-certified engineers

Absen-certified engineers for survey, structural design and delivery

165

Countries & regions service network

20 global subsidiaries with local parts & demo centers nearby

24–48h

Express on-site in key cities

on-site for major events, fast recovery

5 Years

Extended Factory Warranty

lifetime pixel calibration & firmware upgrades

From Survey to Inspection — Lifecycle Delivery

01

Site Survey & Sightline Analysis

Daylight, sightlines and structural load calculated before delivery.

02

Precision Steel Structure Engineering

Wall-mount, rigging and load-bearing floor — safety-first.

03

On-site Calibration & Lifecycle Inspection

Calibrated at delivery, inspected in operation — service across the lifecycle.

Start Your Learning-Space Transformation

Get a Free Professional Configuration Plan

For universities, international schools, K-12 and integrators — our global education team will contact you within 24 hours.



Free Whitepaper PDF

Get the full Smart Education Display Solutions Whitepaper



Global Showrooms / Demo Centers

Book a showroom or demo-center visit



One-on-One TCO Assessment

Education experts run site survey and whole-life cost modeling



Multi-language Support

CN / EN / DE / ES / FR / AR
global team

[Submit now · expert plan within 24 hours](#)