About Samsung Electronics Co., Ltd.

Samsung Electronics Co., Ltd. inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, cameras, digital appliances, medical equipment, network systems, and semiconductor and LED solutions. For the latest news, please visit the Samsung Newsroom at news.samsung.com.

For more information

For more information about Samsung SMART Signage, visit www.samsung.com/business or www.samsung.com/displaysolutions

Samsung
Control Room Display Solutions

See the full picture in complete detail with superior picture quality

The Wall | LED Signage | Video Wall | QLED 8K Signage | SMART Signage | Business Monitor | Color Expert

SAMSUNG

SAMSUNG

Keep the control room humming with the best-in-class visual display technology

For many years, control rooms have acted as critical information hubs for various organizations around the globe. A crucial element of any properly-functioning control room is the latest in display technology. In order to monitor multiple information streams efficiently decision makers must be equipped with clear information, and display technology that features the industry's best picture quality, reliability operational efficiency can make all the difference.

Image uniformity and picture quality

From large video walls, to individual work stations, control room displays must be able to show even the most minute details to ensure nothing is missed. Samsung's control room display solutions feature cutting-edge picture quality with unmatched brightness, contrast and stunning 8K resolution to ensure leaders don't miss any important details.

Reliability

The highly sensitive nature of information in control rooms requires them to be operational around the clock. Working in this environment, you simply cannot afford any downtime. Samsung displays are built for 24/7 use, maintaining both picture quality and uniformity. The displays are even reliable in harsh environments including varied temperature, humidity and dust. They also feature power redundancy, protecting against any interruptions resulting from unexpected disruption in power availability.

Operational excellency

Samsung has maintained its position as the global leader in digital signage for a decade thanks to superior visual display technology, but that goes beyond technical specifications. Samsung displays also feature industry-leading operational excellency with easy installation and maintenance. The displays also feature low power consumption and a lifetime guarantee.
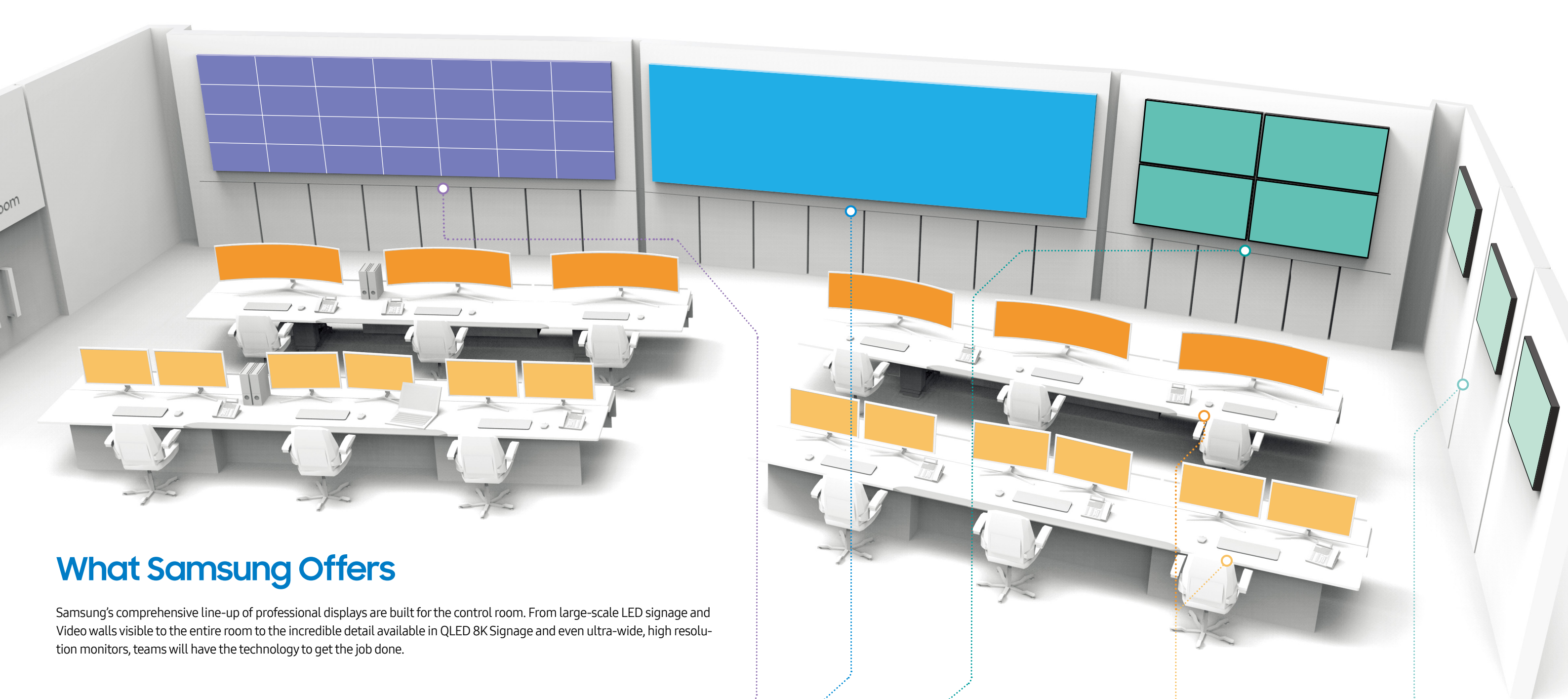
What Samsung Offers

Samsung's comprehensive line-up of professional displays are built for the control room. From large-scale LED signage and Video walls visible to the entire room to the incredible detail available in QLED 8K Signage and even ultra-wide, high resolution monitors, teams will have the technology to get the job done.
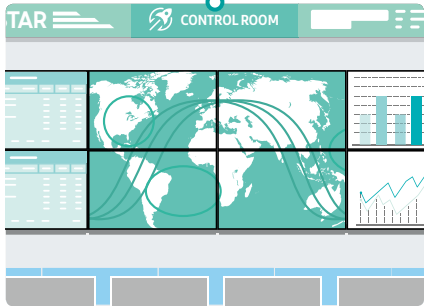
LED Signage

Samsung's large-scale indoor LED display options including The Wall and IF Series feature a unique customizable design for control rooms of any size or shape and ensure optimal and uninterrupted picture quality for indoor environments.
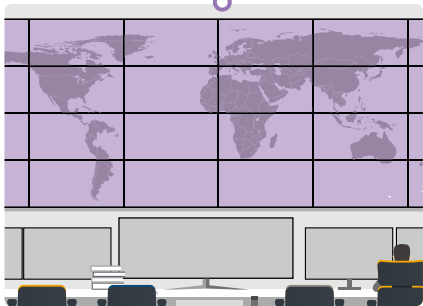
Video Wall

With extremely narrow bezels, Samsung's Video walls are a versatile solution to create seamless video walls and reliably deliver flexible and dynamic information around the clock in a variety of formats.

QLED 8K Signage

An innovative breakthrough in display technology, Samsung's QLED 8K Signage delivers an unmatched, crystal-clear picture with AI upscaling technology supporting 8K-level picture quality.

UHD Signage

Samsung's UHD signage are premium-grade displays with exceptional picture quality that feature high-brightness allowing for a clear picture regardless of ambient light and 24/7 seamless operation.
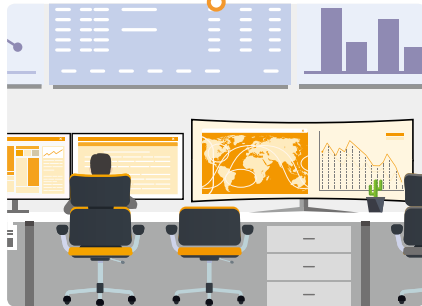
Business Monitor

Ultra-wide, high-resolution monitors from Samsung feature best-in-class picture quality and a unique curvature allowing for a more comfortable viewing experience for extended periods of time ensuring all team members are able to work efficiently.
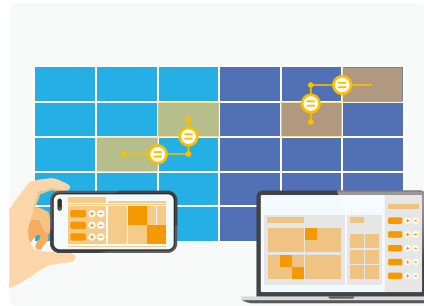
Calibration Solution

Samsung's leading calibration tools, Color Expert LED and Color Expert Pro ensure displays are showcasing color and visuals exactly as intended.

LED Signage

Unmatched image detail and contrast that's built to last

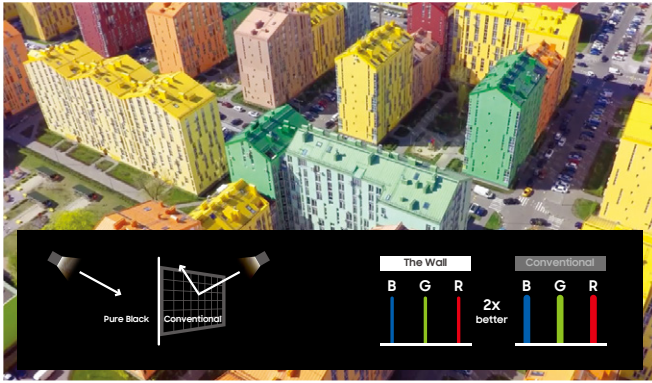Large-scale indoor LED display options from Samsung provide a perfect view of critical information, unique customizable design, easy installation and guaranteed performance to keep the control room operational at all times.
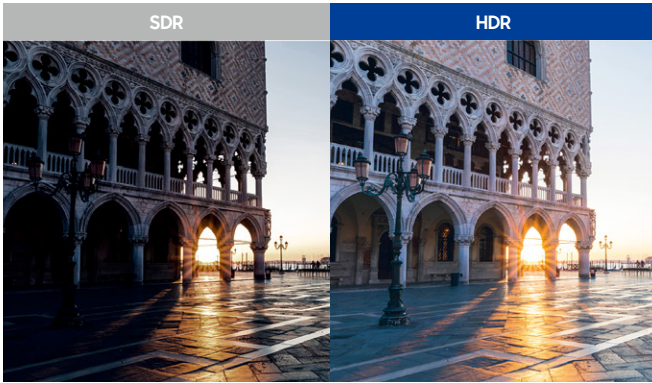

The Wall

Black seal & Ultra chroma technology

The Wall supports every control room builds its display walls as intended. Black Seal technology showcases unparalleled contrast and immaculate detail. Ultra Chroma technology produces vibrant and natural colors. The Wall's narrower wavelength of color results in higher color purity.

- Black Seal Technology
- Ultra Chroma Technology
- Perfect Black & Color
- Non-glare

Quantum HDR technology

The Wall renders true-to-life imagery necessary in a control room. Advanced HDR technologies, including LED HDR and HDR10+ support, optimize picture quality scene-by-scene, while an extremely accurate grayscale expression allows for more precise and natural imagery.

- Quantum Processor Flex
- Quantum HDR Technology
- LED HDR10+
- Multi-link HDR
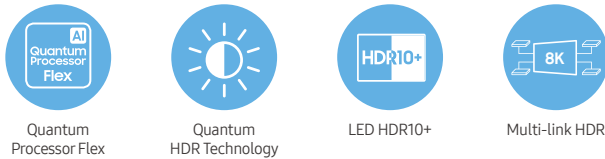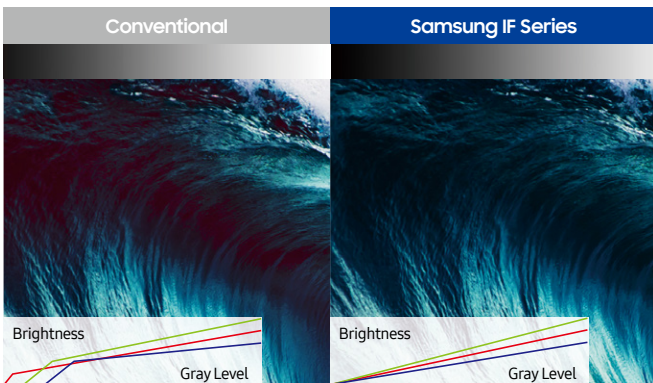
IF series

*Note: Here, "Conventional LED Display" refers to displays that do not contain integrated low grayscale correction technology.
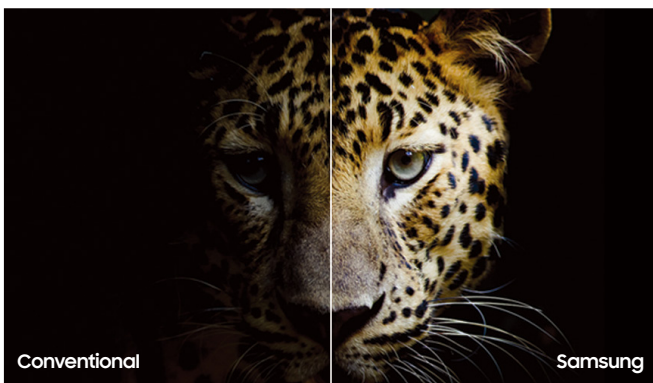
Accurate color expression

A unique grayscale management algorithm empowers the IF Series displays to deliver consistent red, green and blue hues without distortion, even in low grayscale settings. This color stability ensures optimal and uninterrupted picture quality for viewing precise information in control room environments.

- Linear Grayscale
- Gamma Correction
- White Balance
- 18bit + Processing
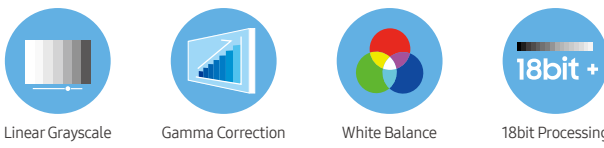
Brightness and contrast

Samsung's IF Series displays deliver a uniform picture and comfortable long-term viewing with Scene Adaptive HDR technology. This includes specialized inverse tone mapping algorithms that analyze and optimize gradation and brightness levels within individual content scenes.

- Fine-tune Uniformity
- Color Management
- Dyanmic Peaking
- LED HDR
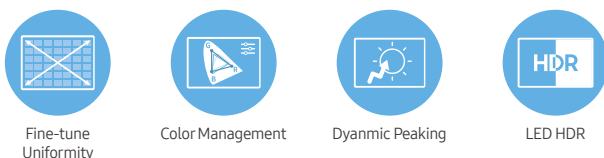
Light weight & easy installation

For added flexibility, the IF Series displays offer front* access to critical signage components, simplifying installation and eliminating the need for additional space around the display which allows for close adherence to neighboring surfaces. The IF series' light weight also simplifies design and eliminates the need for investment in a frame or wall.
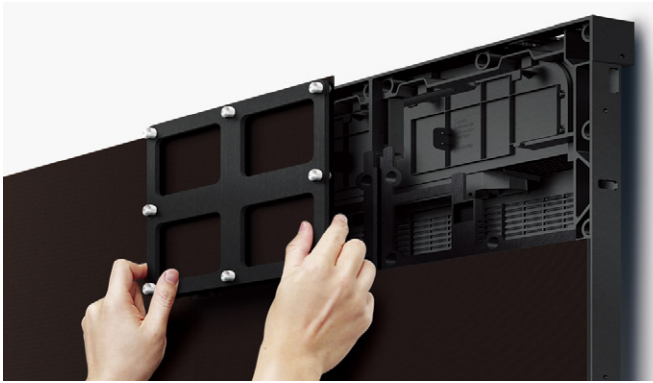
*IFJ / IF-D / IF-DL Series: Power supply and main board can be accessed from the front or rear of a cabinet.

- Light Weight
- Slim Depth
- Easy Installation
- Catwalk Space Free
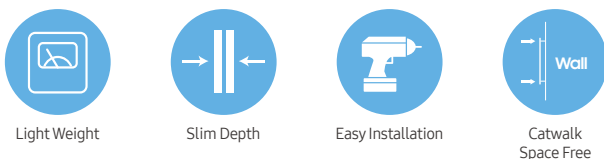
24/7 support & long lifetime

The Samsung IF series is a professional grade display that is designed to be operational 24/7, ensuring critical information is always available and avoiding any down-time in the control room. The displays also include an operational stability lifetime guarantee of 100,000 hours.

- 24/7 Operation
- Long Lifetime
- Durability
- Operational Efficiency
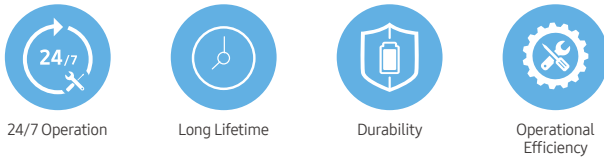
Video Wall & Business Monitor

Immersive, uninterrupted viewing with brilliant picture quality

A video wall is often at the heart of a control room, providing clear visibility for efficient monitoring and maintenance. Samsung's displays offer optimal brightness, high resolution, an immersive curved design, and long-lasting performance in any environment.

Samsung's video wall and monitor configuration at ISE 2019

Video Wall Display: UHF, VMR-U, UDE series

Fine-tune factory calibration

Samsung's multi-step factory calibration process tunes video wall displays to the optimal uniform brightness and color across multiple displays to fit any control room requirements. Every video wall display presents fine-tuned picture quality whether used as a single display or as multiple screens.
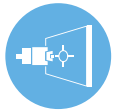
Factory Calibration | ACM Chipset | White Balance | Gamma Correction

Long-term performance

To provide consistent display clarity and uninterrupted content in any environment, Samsung's video wall panels undergo rigorous performance testing. The panel prevents screen darkening, light leakage and deterioration, ensuring the long-term delivery of brilliant content.

Heat & Dust Resistant | 24/7 Operation | Non-glare Panel | ISTA-certified

Business Monitor: Ultra-wide & High resolution series

High resolution

Samsung's video wall provides high resolution image display which gives maximum visibility within the control room. Increased visibility ensures efficient monitoring and enables critical decision making within the control room environment.

High Resolution | UHD | WQHD | QD

Curved & Wide

Samsung's curved monitors create a more immersive, seamless video wall that gives users the full picture. Optimized for a single person's workload, Samsung's displays always enable the maintenance of a clean desk and efficient working.

Curved | 32:9 | Picture-by-picture | Picture-in-picture

QLED 8K Signage

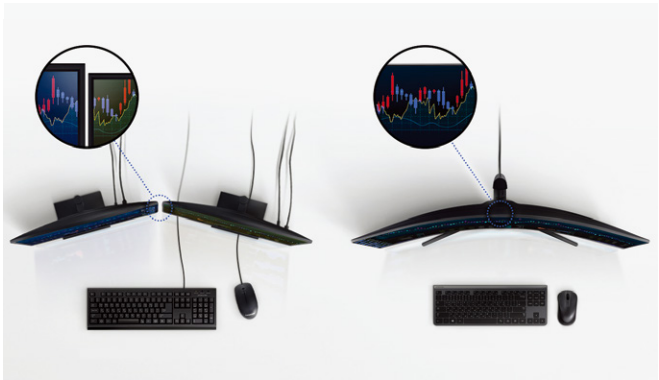## Clear delivery of critical information

Samsung's video wall and QLED 8K Signage deliver crystal clear picture ensuring control room staff are seeing all the critical information they need to on one, uniform screen, in the highest resolution.
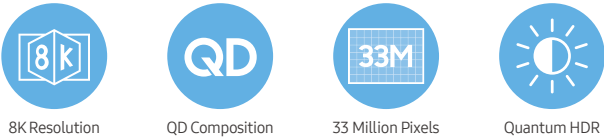

QPR-8K series

True 8K resolution

Samsung QLED 8K offers super high resolution with more than 33 million pixels, 4 times higher than 4K UHD content and 16 times higher than FHD. Monitors have a more accurate view and greater control without interference between displays.

8|k|	QD	33M	☼
8K Resolution	QD Composition	33 Million Pixels	Quantum HDR

8K AI upscaling

Samsung QLED's Quantum Processor 8K uses AI-powered machine learning to compare data from millions of images to reduce noise and refine details, delivering improved resolution. With AI-powered upscaling, control room staff are able to recognize precise detail even in low resolution.
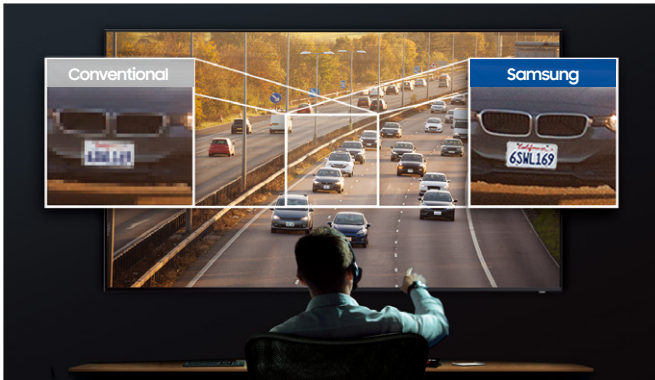
AI	100%	4000 nit	FEATURE
AI Upscaling	100% Color Volume	Peak Brightness	No Burn-in

UHD Signage

Capturing customer attention with impactful welcome

Vibrant digital signage welcomes every visitor to the stadium, entertaining and informing with dynamic content and promotions. Visually engaging content from multiple brands, encourages interactions and purchases once they get into the stadium.

QMR series

FHD panel 2M pixels — UHD panel 8M pixels

Intelligent UHD upscaling

Samsung's cutting-edge intelligent UHD upscaling technology – which is based on Samsung's proprietary intelligent UHD engine – performs edge restoration and noise reduction to deliver UHD-level picture quality for control room's use, even with lower resolution content.

UHD			☼
Intelligent UHD engine	Noise Reduction	Edge Restoration	HDR+

Conventional glare panel — Non-glare panel
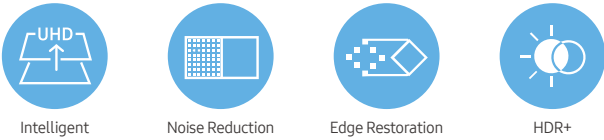
Non-glare & 24/7

Samsung UHD signage has non-glare panels to ensure that all control room staff can see the same picture with no interference due to reflection of light. In addition, 24/7 professional grade operation capabilities support the mission critical workloads common within control rooms.

24/7			
24/7 Operation	Non-glare Panel	Slim Depth	Long Life Cycle
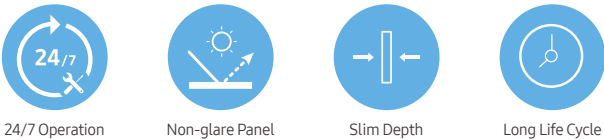
Calibration Solution

Precise and refined picture quality

Samsung's leading calibration tools, Color Expert LED and Color Expert Pro, offer full criteria customization and color calibration. Mobile calibration also offers a simplified tuning process and uniformity down to the pixel-level, meaning colors and visuals are presented exactly as intended.

Samsung Color Expert technology

Factory Calibration

Multi-step factory fine tune for uniform brightness and colors

- Hardware Calibration

ACM Chipset

- 15x15 Calibration (Color Expert Pro)
- 18 bit color processing (Color Expert LED)

Calibration Software

- Color Expert Pro / Color Expert LED
- Color Expert Pro Mobile / Color Expert LED Mobile

Samsung calibration process

STEP 1	STEP 2	STEP 3	STEP 4
Aging	Local Uniformity	Gamma	White Balance

Color Expert LED / Color Expert LED Mobile

Pixel-level uniformity

Samsung's Color Expert LED provides pixel-level uniformity, resulting in more precise and refined picture quality than module-level calibration. Using professional calibration devices, images are accurate and flawless, enhancing even the subtlest details.

- Pixel-level Uniformity
- 18 bit Processing
- White Balance
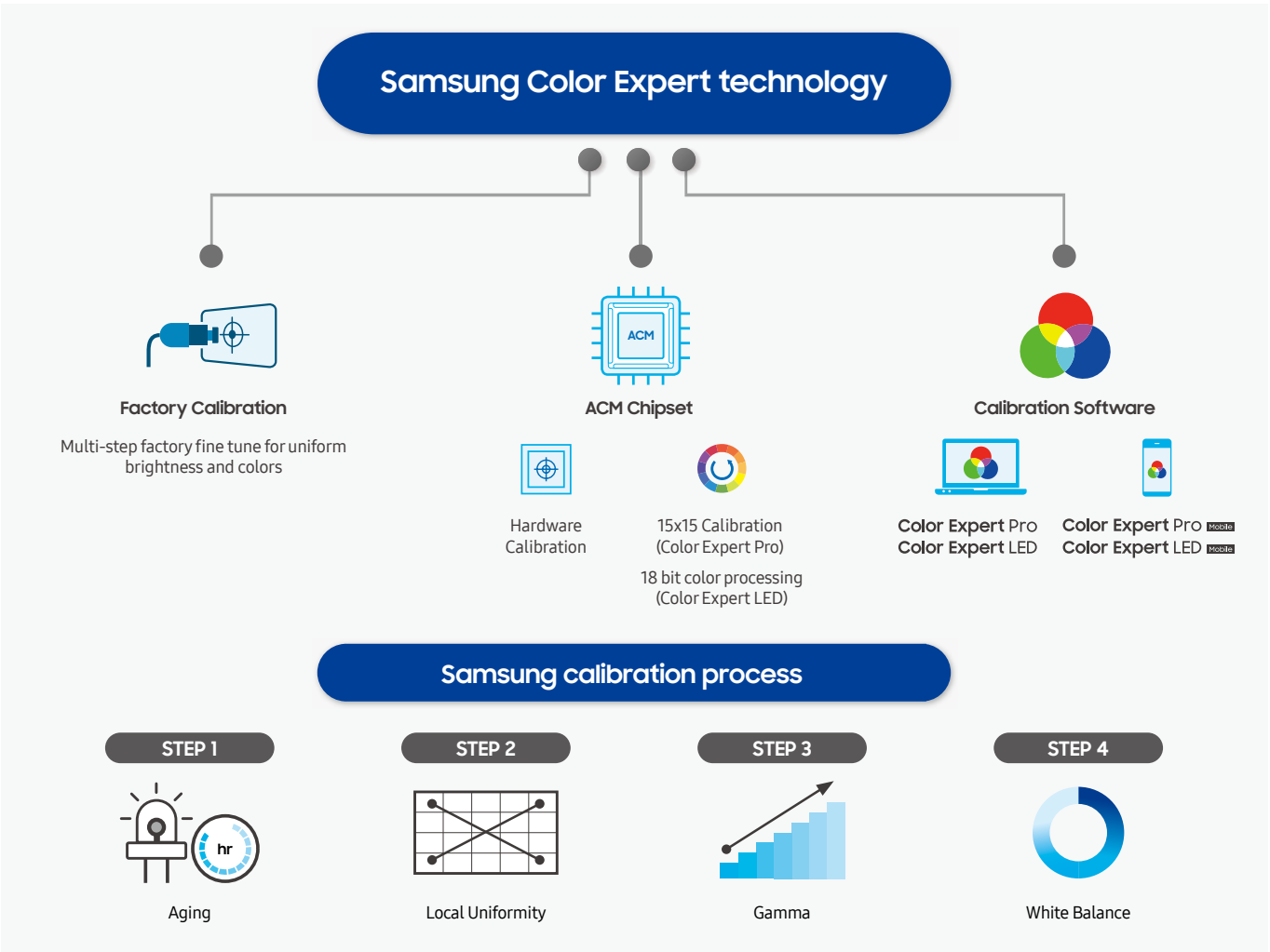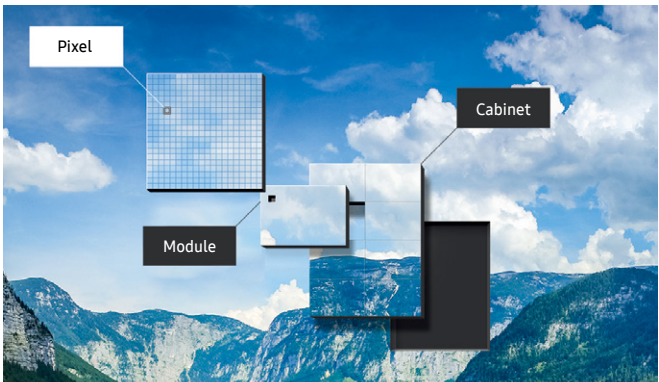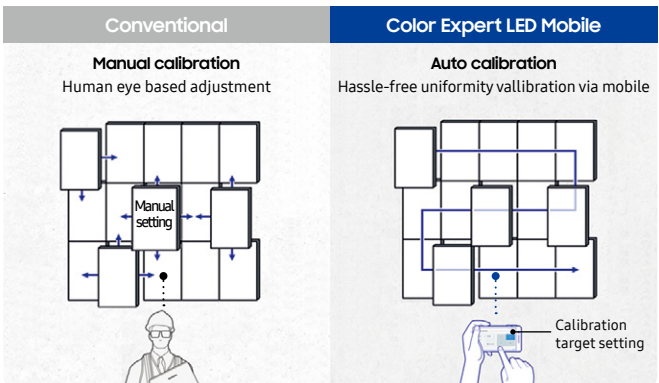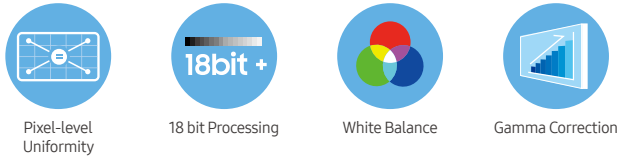- Gamma Correction

Automatic calibration

Color Expert LED Mobile offers dramatic timesaving capabilities over conventional manual calibration, which can take up to an hour. This simplifies onsite maintenance, ensuring issues are addressed quickly without impacting the production process.

- Quick & Easy Full Screen Calibration
- Intuitive UI
- Wireless
- Mobile Calibration

Color Expert Pro / Color Expert Pro Mobile

Local uniformity · White balance · Gamma calibration

- Calibrate for Consistent Luminance across Displays
- Accurate and Finely Tuned White Color
- Display of Subtle Differences in White-to-black Gradation
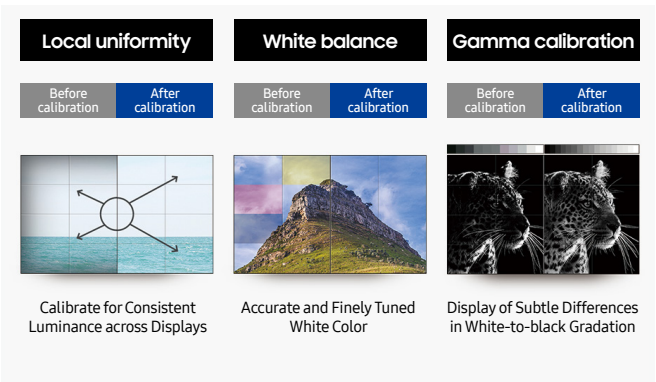
Enhanced picture quality for any setting

Color Expert Pro delivers stunning before-and-after results. White balancing options enable accurate white color, while users can also calibrate for consistent luminance and color uniformity across displays. Gamma and gray scale calibration bring out subtleties, detail and depth in white-to-black gradation.

- Local Uniformity
- 15x15 Calibration
- White Balance
- Gamma Correction
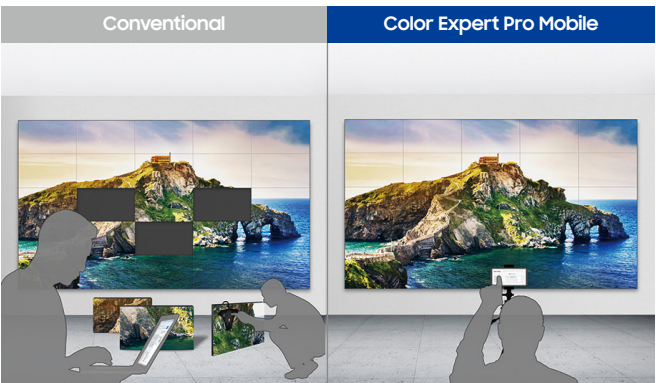
Convenient and cost-effective refinement

Color Expert Pro Mobile uses a smartphone camera to quickly and easily calibrate without a professional calibrator physically connected to the video wall. This highly cost-effective solution can calibrate up to 25 sets (5x5) of displays at once, dramatically faster than one-by-one calibration methods.

- Quick & Easy Full Screen Calibration
- Intuitive UI
- Wireless
- Mobile Calibration

Specification

The Wall

Project	Pixel Pitch	Diode Type	Brightness (Peak/Max)	Contrast Ratio	Certification	Cabinet Size	Weight	Service	IP Rating
IWJ	P0.84	Chip on Board (CoB)	1,600 / 500 nit	10,000:1	EMC Class B, Safety 60950-1	806.4x453.6x72.2mm (LxHxD, per cabinet)	12.5kg/cabinet	Front only[1]	IP20
IWR	P0.84	Chip on Board (CoB)	1,600 / 500 nit	10,000:1	EMC Class B, Safety 60950-1	806.4x453.6x29.9mm (LxHxD, per cabinet)	11.4kg/cabinet	Front only[1]	IP20

[1] Front Service : Modules accessible through the front in groups of six

LED signage

	Project	Pixel Pitch	Diode Type	Brightness [1] (※ Dynamic Peaking applied)	Contrast Ratio	Certification	Cabinet Size	Weight	Service [2]	IP Rating
Indoor	IFJ	P1.2	Surface Mount Device	1,200 nit	4,000:1	EMC Class B, Safety 60950-1	806.4x453.6x76.7mm (LxHxD, per cabinet)	11.8kg/cabinet	Front and Parts Rear	IP20
	IFJ-E	P1.2	Surface Mount Device	1,200 nit	4,000:1	EMC Class B, Safety 60950-1	806.4x453.6x76.7mm (LxHxD, per cabinet)	11.8kg/cabinet	Front and Parts Rear	IP20
	IFH	P1.5, 2.0, 2.5	Surface Mount Device	1,600 nit (P1.5) 2,400 nit (P2.0, 2.5)	5,000:1	EMC Class A, Safety 60950-1	480x540x65mm (LxHxD, per cabinet)	5.8kg/cabinet	Front and Rear	IP20
	IFH-E	P1.5, 2.0, 2.5	Surface Mount Device	1,200 nit (P1.5) 2,000 nit (P2.0, 2.5)	5,000:1	EMC Class A, Safety 60950-1	480x540x65mm (LxHxD, per cabinet)	5.8kg/cabinet	Front and Rear	IP20
	IFH-D	P2.5, 4.0, 6.0	Surface Mount Device	2,400 nit (P2.5) 1,700 nit (P4.0) 1,800 nit (P6.0)	5,000:1	EMC Class A, Safety 60950-1	480x720x65mm (LxHxD, per cabinet)	7.4kg/cabinet	Front and Parts Rear	IP20

[1] Peak Value according to IDMS (Information Display Measurement Standard)
[2] Front Service : Front Service to Power Supply and Main Board on a cabinet level / Parts Rear Service : Power Supply and Main Board can be accessed from the rear

Video wall display

Project	Screen Size	Resolution	Brightness	Contrast Ratio	Operation Hour	B-to-B (mm)	Bezel Width	Connectivity
UHF-E/UHN-E	46"(UHN-E) 55"(UHF-E)	1920 x 1080	700 nit	4,000:1	24/7	1.7mm	1.15mm(U/L), 0.55mm(R/B)	In: Analog D-SUB, DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack Out: DP1.2(Loop-out), Stereo Mini Jack Ext: RS232C(In/Out), RJ45
UMH-E/UMN-E	46"(UMN-E) 55"(UMH-E)	1920 x 1080	500 nit	4,000:1	24/7	1.7mm	1.15mm(U/L), 0.55mm(R/B)	In: Analog D-SUB, DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack Out: DP1.2(Loop-out), Stereo Mini Jack Ext: RS232C(In/Out), RJ45
VMR-U	46"	1920 x 1080	500 nit	3,500:1	24/7	3.5mm	2.3mm(U/L) 1.2mm(R/B)	In: DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack Out: HDMI, Stereo Mini Jack Ext: RS232C(In/Out), RJ45
UHF5	46"	1920 x 1080	700 nit	4,000:1	24/7	5.5mm	3.4mm(U/L), 2.0mm(R/B)	In: DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack Out: DP1.2(Loop-out), Stereo Mini Jack Ext: RS232C(In/Out), RJ45(In)

QLED 8K signage

Project	Screen Size	Resolution	Brightness	Operation Hour	Connectivity	SoC	S/W
QPR - 8K	82"	7680 x 4320	500 nit	16/7	In: HDMI 2.0(4, Including 8K 60p input support 1), USB 2.0(3) Out : Optical(Digital Audio Out) Ext: RS232C(In), RJ45	SSSP 7	MagicInfo S7

UHD signage

Project	Screen Size	Resolution	Bright-ness	Contrast Ratio	Opera-tion Hour	Panel Type	IP Rating	Connectivity	SoC	S/W
QHH	55", 65"	3840 x 2160	600 nit	6,000:1	16/7	-	-	In: DP1.2, HDMI 2.0(2), HDCP 2.2, USB2.0(2) Out: HDMI #1 ARC support Ext: RS232C(In/Out), RJ45	SSSP 5	MagicINFO Player S5
QMR	43",49",55", 65",75"	3840 x 2160	500 nit	6,000:1(75") 4,000:1 (43",49",55",65")	24/7	Non-Glare	IP5X Validated	In: DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack, USB2.0(2) Out: HDMI 2.0(Loop-out), Stereo Mini Jack Ext: RS232C(In/Out), RJ45	SSSP 6	MagicINFO Player S6
QMN	85", 98"	3840 x 2160	500 nit	4,000:1(98") 3,000:1(85")	24/7	Non-Glare	-	In: DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack, USB2.0(2) Out: HDMI 2.0(Loop-out), Stereo Mini Jack Ext: RS232C(In/Out), RJ45	SSSP 6	MagicINFO Player S6
QBR	43",49",55", 65",75	3840 x 2160	350 nit	5,000:1(43") 4,700:1(49",55") 4,000:1(65",75")	16/7	-	IP5X Validated	In: DVI-D, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack, USB2.0(2) Out: Stereo Mini Jack Ext: RS232C(In/Out), RJ45	SSSP 6	MagicINFO Player S6
QEN	82"	3840 x 2160	300 nit	5,000:1	16/7	-	-	In: DVI-D, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack, USB2.0(2) Out: Stereo Mini Jack Ext: RS232C(In/Out), RJ45	SSSP 6	MagicINFO Player S6

Business monitor

	Project	Screen Size	Flat/Curved	Aspect Ratio	Resolution	Brightness	Viewing angle	Connectivity	Eye Saver Mode
Ultra Wide	CJ89	43", 49"	Curved	32:10(43") 32:9(49")	3840 x1200(43") 3840 x1080(49")	300 nit	178°(H)/178°(V)	DP1.2, HDMI 2.0, USB Type-C(2), USB Hub(3.0 x1, 2.0 x 2)	Yes
	CHG90	49"	Curved	32:9	3840 x 1080	350 nit	178°(H)/178°(V)	DP1.4, Mini DP1.4, HDMI 2.0(2), USB Hub 3.0	Yes
High Resolution (UHD/ QHD)	CH89	34"	Curved	21:9	3440 x 1440	300 nit	178°(H)/178°(V)	DP, HDMI, USB Type-C, USB Hub(3.0 x1, 2.0 x 2)	Yes
	UH85	32"	Flat	16:9	3840 x 2160	250 nit	178°(H)/178°(V)	DP1.2(1), HDMI(2.0 x 1,1.4 x 1), USB Hub 3.0	Yes
	SH85	24", 27"	Flat	16:9	2560 x 1440	350 nit(27") 300 nit(24")	178°(H)/178°(V)	DP, HDMI, DP Out(Daisy Chain), USB Type-C, USB Hub 2.0	Yes

Color Expert LED

Model	Technology Type	System Requirement	LED Signage Compatibility	Calibration Feature
Color Expert LED	PC softwareCalibration with ACM chipset	Windows 7 32bit/64bit, Windows 8 32bit/64bit, Windows10 32bit/64bitA calibrator is required to use the Samsung ColorExpert LED software. Customers must purchase thecalibrator separately.	The Wall Pro 0.84 IFJ 1.2 IFH 1.5, 2.5	White balance, Gamut mapping, Color temperature, Pixel-level uniformity
Color Expert LED Mobile	Mobile applicationCalibration with mobile camera	Samsung Galaxy phone only - Samsung Galaxy S7/S8/S9/S10, Galaxy Note8/9	The Wall Pro 0.84 IFJ 1.2 IFH 1.5, 2.5	White balance, Module & screen-level unniformity

Color Expert Pro

Model	Technology Type	System Requirement	Video Wall Compatibility	Calibration Feature
Color Expert Pro	PC softwareCalibration with ACM chipset	Windows 7 32bit/64bit, Windows 8 32bit/64bit, Windows 10 32bit/64bitA calibrator is required to use the Samsung Color Expert Pro software. Customers must purchase the calibrator separately.X-Rite i1 Display Pro is recommended.	UHN-E, UMN-E, UHF-E, UMH-E, UDE-A,UDE-B, UHF5	White balance, Gamma correction, Local uniformity
Color Expert Pro Mobile	Mobile applicationCalibration with mobile camera	Samsung Galaxy phone only - Samsung Galaxy S7/S8/S9, Galaxy Note8/9	UHN-E, UMN-E, UHF-E, UMH-E, UDE-A,UDE-B, UHF5 (with PC) 2019 video wall models (PC-less)	White balance