

EC-20™



Martin®

Creative LED never looked better!



The EC-20 is a new generation LED panel that is brighter, lighter and faster! Built to the highest standards, the EC-20 is designed for those who place value on solid, dependable performance and superior image quality.

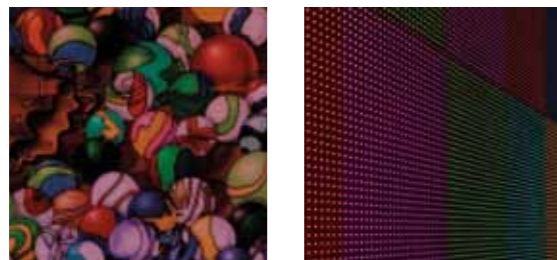
By combining the image quality and precision of conventional high resolution screens with the creativity and low weight of mesh type screens, the EC-20 provides new design possibilities for all manner of indoor and outdoor staging, as well as permanent installations.

The EC-20 features a 20 mm pixel pitch and delivers an impressive 4,000 nits of brightness. Designed for rapid setup and teardown in combination with maximum flexibility, color and brightness is calibrated for each individual pixel for maximum image quality.

The EC-20 offers several advantages over other types of LED panels:

- Innovative P3 technology platform for no-hassle video signal processing and distribution
- Superior color and brightness uniformity ensures outstanding image quality
- Integrated curving system for curved screens and circles
- Low weight and transparency expands the field of applications
- Fast to assemble, no tools, no cables
- True IP65 protection for outdoor use

Radiant Imaging color and brightness calibration technology has been fully integrated in the P3-100 system hardware.



Outstanding image quality

Using high efficiency Nichia LEDs, the EC-20 offers visual performance at the highest level. Pinpoint 48-bit color processing ensures uncompromised color depth at any brightness setting.

Each pixel is color and brightness calibrated for maximum color and brightness uniformity and consistency from pixel to pixel and panel to panel. This superior uniformity not only makes for an improved image quality but also means that no more "bins" or "batches" need to be considered when adding more panels to inventory.

4000 nits of brightness

A high level of brightness - 4000 nits (cd/m²) - is more than sufficient for any indoor use and bright enough for virtually any outdoor application.

Creative features

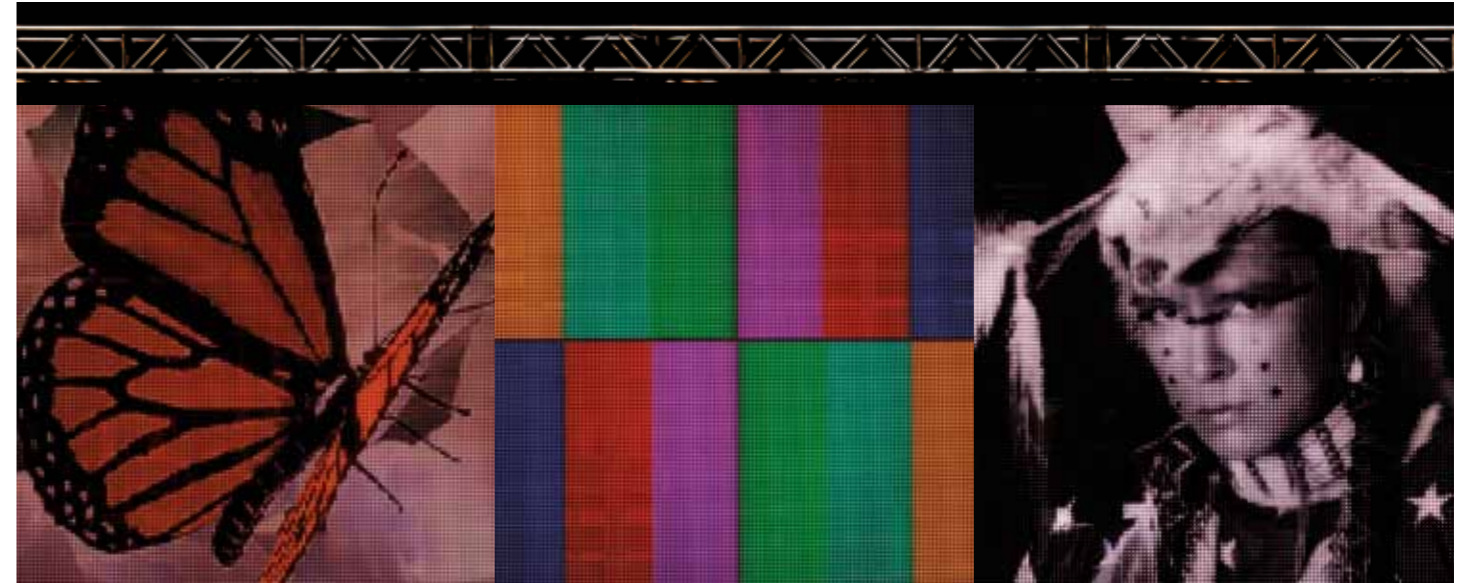
An optional integrated curving system enables a panel to panel angle of +/- 20° with maintained pixel pitch. This makes it easy to create curved screens and circles with a radius of only 1.5 m (5 ft) without visible gaps.

Each panel is made up of 18 pixel blocks, each one easily removable (3 captive screws) for creative design/shape flexibility, including the integration of different resolution pixel-blocks.

The EC-20 operates completely flicker free thanks to a 3000Hz LED refresh rate (3-8 times higher than other screens).

Semi-transparent

The EC-20 panels are transparent and allow light and effects to pass through (audio, smoke and air too), creating increased possibilities for multi-layered looks. Dim the panels and they seem to disappear, revealing objects or performers placed upstage. In architectural applications the panels can be placed behind windows to allow sunlight into interior spaces.



P3 processing

The EC-20 is driven by Martin's innovative and award-winning P3-100 System Controller, an ultra robust unit for advanced video signal processing and integration with lighting control.

- Simple - intuitive setup and use
- Creative - increased integration with lighting and scenery
- Reliable - tough and resilient

The P3 processing system makes setting up an LED screen a true "plug and play" experience. Based on Gigabit Ethernet and Cat5e wiring, P3 technology removes the limitations of video-type protocols for easy connectivity and speed of set up.

Included is a built-in graphical user interface, built-in scaling and de-interlacing and support for multiple video protocols and resolutions. It allows for direct DMX control of brightness, image rotation and position, color temperature and more.

The P3-100 also enables panels to be placed at any angle while maintaining the content at a right angle (a horizontal line stays horizontal for example).

Fast setup and tear down

A key feature of the modular EC-20 system is its ease of set up (and tear down) with no tools required for savings in time and hassle. The panels are low weight (each 480 mm x 720 mm unit weighs only 10.3 kg) for easy one man handling and the user-friendly design requires no separate rental structure.

Integrated power and signal connections have eliminated the need for cables between panels. This saves time, increases reliability, eliminates the risk of incorrect cables and gives the screen a much cleaner look. Also, integrated test functions enable local test at any panel.

Built to last, easy to service

Built of rugged materials with precise mechanics, the EC-20 features a true IP65 protection rating, fully protected LEDs, and a wide operating temperature range for use in all types of environments. Designed without compromise, each EC panel is made to last and will remain specification-ready 2-3 times longer than cheaper LED screens.

Essentially maintenance free, the EC-20 panels are completely convection cooled and use no fans which means no noise, fewer parts to fail, less cleaning, and greater reliability.

A robust cast aluminum housing for the electronics provides complete protection.

The panels are ultra quiet for use in noise sensitive environments and are CE/UL approved and Class B EMC certified.

Worldwide compatibility

Each unit contains a switch mode power supply that covers all worldwide voltages, so you are always ready to go - anywhere in the world. The panels operate between 200 - 240V 50/60 Hz.



Specifications

Physical

EC-20 Video Display Panel

Width: 480 mm (18.9 in.)

Depth: 100 mm (3.9 in.)

Height: 720 mm (28.3 in.)

Weight: 10.3 kg (22.7 lbs.)

EC-20 Single Header

Width: 480 mm (18.9 in.)

Depth: 85 mm (3.3 in.)

Height: 120 mm (4.7 in.)

Weight: 4.7 kg (10.4 lbs.)

EC-20 Double Header

Width: 960 mm (37.8 in.)

Depth: 100 mm (3.9 in.)

Height: 130 mm (5.1 in.)

Weight: 15.4 kg (34.0 lbs.)

EC-20 Triple Header

Width: 1440 mm (56.7 in.)

Depth: 100 mm (3.9 in.)

Height: 130 mm (5.1 in.)

Weight: 23.1 kg (50.9 lbs.)

Control/User Interface

Device status: Status indicator LED

Setup testing: Local test patterns

Video Processing

Video signal processor: Martin P3-100 System

Controller

Processor capacity: 500 000 pixels

Typical system latency: DVI none, analog 1 frame

Maximum system latency: DVI 1 frame, analog

3 frames

DVI video input: Up to 1280 x 1024, 50/60/75 Hz

Analog video input: Composite, component and

S-video, PAL, NTSC and SECAM

Frame synchronization to analog signal: Yes,

integrated in P3 System Controller

Image rotation: Yes, integrated in P3 System Controller

Scaling: Yes, integrated in P3 System Controller

De-interlacing: Yes, integrated in P3 System Controller

Gamma curve selection and adjustment: Yes,

integrated in P3 System Controller

Real-time panel content remapping: Yes, integrated in

P3 System Controller

P3 Signal Protocol

Signal type: Gigabit Ethernet

Protocol: Proprietary Martin P3

Hot pluggable: Yes, electrically isolated at all connections

Cable type: Ethernet, CAT 5e or better

Cable length: Up to 100 m (328.1 ft.) between any 2 devices, extendable with Ethernet switch

Latency between first and last panel: None

Photometric Data

Pitch (pixel center-to-center): 20 mm (0.8 in.)

Color resolution: 16 bits per color

Resolution, one panel: 24 x 36 pixels

Pixels per panel: 864

Construction

Panel frames: Aluminum

LED modules per panel: 18

Color: Matt black

Protection rating: IP65, NEMA 4

Installation

Orientation: Individually mounted panel any angle; suspended column vertical only

Max. suspended in one column: Max. sixteen EC-20 panels

Panel interlocking: Quick-release mounting system

Connections

Power input to Header: 1.5 m (4.9 ft.) cable tail w/o power plug

P3 data input to Header: Accepts an Amphenol IP67-rated Ethernet cable connector

Panel power and data interconnection: Integrated connector system

Electrical

AC power: 200-240 V nominal, 50/60 Hz

Power supply unit: Integrated, auto-sensing multi-voltage

Main fuse: 2 x 3.15 AT

Peak power consumption (approx., at full intensity, full white): 270 W per panel

Typical power consumption (with typical video content): 100 W per panel

Thermal

Cooling: Convection

Maximum ambient temperature (at full intensity, full white): 40° C (104° F)

Minimum ambient temperature (T_a min.): 0° C (32° F)

Approvals

EU safety: EN 60950-1

EU EMC: EN 55022, EN 55024, EN 61000-3-2,

EN 61000-3-3

US safety (pending): ANSI/UL 60950-1

Canadian safety (pending): CAN/CSA 60950-1-03

Included Items

Included with EC-20 panel:

1 x EC-20 video display panel

Included with 8-unit EC-20 Flightcase:

EC-20 Safety and Installation Guide

Included with Single Header:

1 x EC-20 Header

1 x 5.0 m (16.4 ft.) Ethernet patch cable with IP67-rated RJ-45 connectors

1 x EC Series Header Installation & Safety Guide

Included with Double Header:

2 x EC-20 Headers assembled in Double Header Connection Bracket

1 x Header joining set (2 x joining plates and 16 x M12 bolts)

2 x 5.0 m (16.4 ft.) Ethernet patch cable with IP67-rated RJ-45 connectors

Double Header flightcase

1 x EC Series Header Installation & Safety Guide

Included with Triple Header:

3 x EC-20 Headers assembled in Triple Header

Connection Bracket

1 x Header joining set (2 x joining plates and 16 x M12 bolts)

3 x 5.0 m (16.4 ft.) Ethernet patch cable with IP67-rated RJ-45 connectors

Triple Header flightcase

1 x EC Series Header Installation & Safety Guide

Accessories

1.5 m (4.9 ft.) Ethernet CAT 5e data cable with IP67-rated RJ-45 connectors: P/N 11840147

2.5 m (8.2 ft.) Ethernet CAT 5e data cable with IP67-rated RJ-45 connectors: P/N 11840148

5 m (16.4 ft.) Ethernet CAT 5e data input cable with IP67-rated connectors: P/N 11840152

30 m (98.4 ft.) Ethernet CAT 5e data input cable with IP67-rated connectors: P/N 11840145

Martin® P3-100® System Controller Installation and Safety Manual: P/N 35000226

Martin® P3-100® System Controller User

Documentation CD: P/N 35005008

All EC-20 and P3-100 System Controller user documentation is also available for download free of charge from the Product Support area at www.martin.com

Ordering Information

1 x EC-20® Video Panel, calibrated (supplied in separately ordered flightcase): P/N 90354230

Flightcase, 8 x EC-20 panels (flightcase and panels are ordered separately): P/N 91515008

EC Series Single Header in Cardboard Box: P/N 90354240

EC Series Double Header in Flightcase: P/N 90354250

EC Series Triple Header in Flightcase: P/N 90354260

EC Series Curving Installation Kit (50 locking knobs, 25 'bananas') in cardboard box: P/N 90354270

Martin® P3-100® System Controller: P/N 90721010

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Founded in 1987 and headquartered in Aarhus, Denmark, Martin lighting solutions are industry standard on tours and events, theatres, nightclubs, and major television studios around the world, as well as indoor and outdoor architecture and commercial applications. We maintain a presence in the USA, UK, Germany, Denmark, France, Italy and Singapore with associated companies in Japan, the Middle East, Hong Kong and Argentina. We operate the industry's most complete and capable distributor network with local partners in nearly 100 countries. Martin's parent company, Schouw & Co, is an industrial conglomerate with 2009 revenue of approximately 1.5 billion USD. For more information please visit www.martin.com

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The logo for Martin Professional A/S, featuring the word "Martin" in a bold, black, sans-serif font. A yellow triangle is positioned above the letter "i". A registered trademark symbol (®) is located to the upper right of the word.