# COB-ULTRA SERIES

## Innovative Flip Chip COB LED Display

Available pixel pitches: P0.78 • P0.93 • P1.25 • P1.56



- **IP54 Protection**
- **16:9 Aspect Ratio**
- **Seamless Connection**
- **3840–7680 Hz Refresh Rate**
- **Wide Viewing Angle**
- **Die-Cast Aluminum**
- **Easy Front Maintenance**
- **Common Cathode**

# Slim & Lightweight Cabinet

Precision die-cast aluminum construction

The COB-Ultra series uses a die-cast aluminum cabinet engineered to combine structural strength, low weight and dimensional precision. At 4.4 kg per panel, its lightweight construction supports easier handling and installation while maintaining a robust cabinet structure.

The display surface features a deep, mirror-like black finish with a bright appearance comparable to an LCD screen, helping the screen blend into premium indoor environments.

- Cabinet dimensions: 600 (W) × 337.5 (H) mm
- Thickness: 32 mm
- Cabinet weight: 4.4 kg per panel
- Available pixel pitches: P0.78, P0.93, P1.25 and P1.56

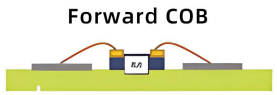


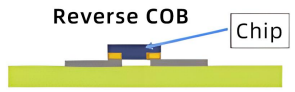
# RGB Full Flip Chip Technology

A chip-level COB architecture for high-definition display

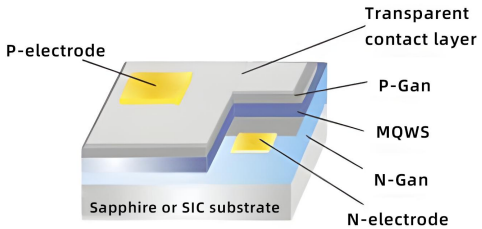
COB-Ultra adopts advanced RGB Full Flip Chip COB technology. The flip-chip structure simplifies the manufacturing process and eliminates gold-wire bonding.

- Simplified structure: A streamlined flip-chip design with no gold wire.
- Thermal performance: The structure is designed for improved heat dissipation.
- Protection and reliability: The COB construction supports higher protection and product reliability.
- RGB color mixing: Designed to deliver an effective RGB light-mixing result.
- Fine pixel spacing: Chip-level micro-spacing supports ultra-high-definition images and a softer, less dazzling light source.

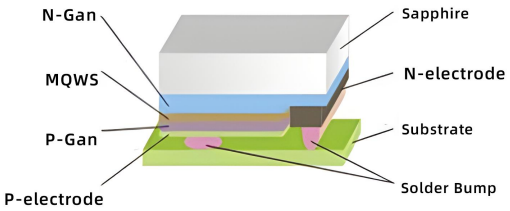


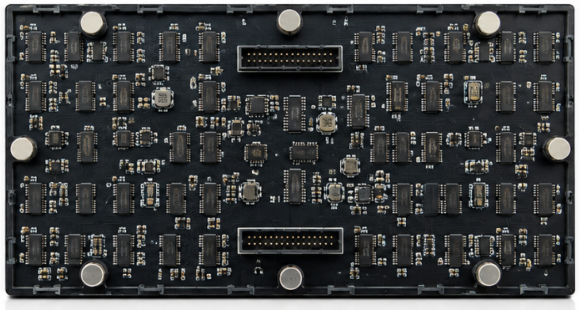

Structure diagram of LED front-facing chip




Structure diagram of LED flip chip





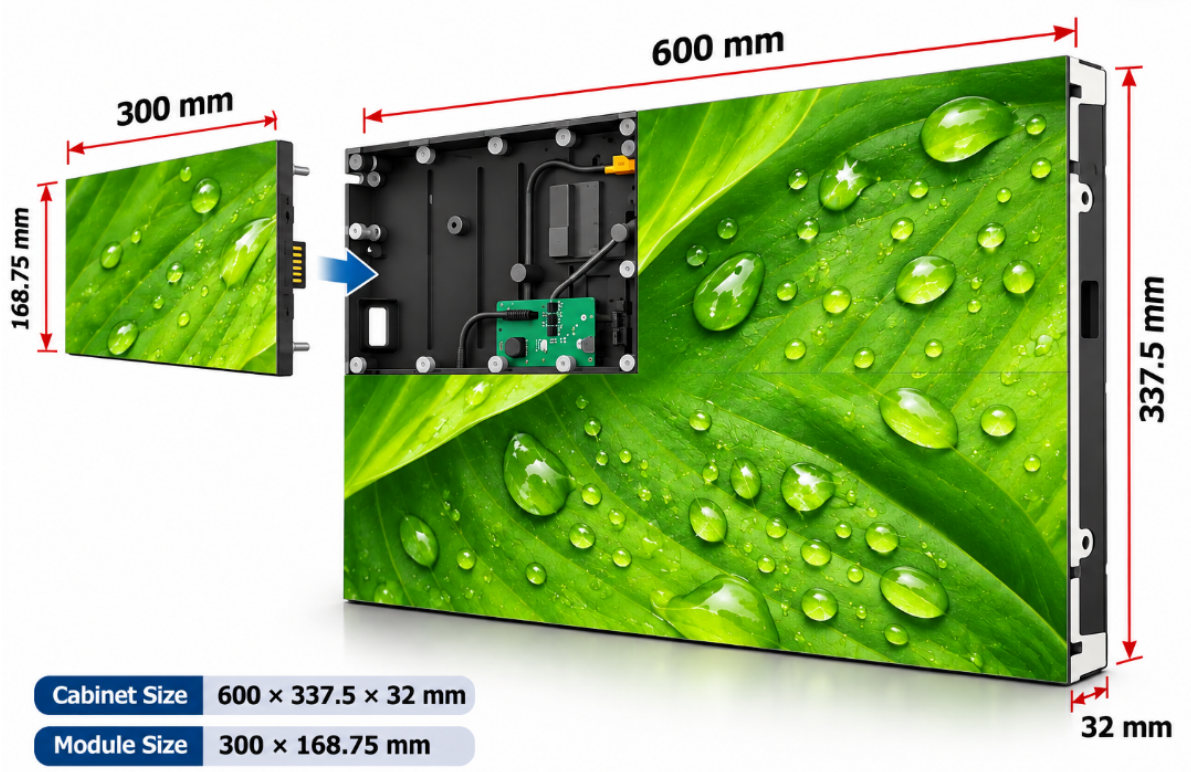
# Magnetic Front Access & Easy Maintenance

Designed for convenient front-side module servicing

Each LED module can be installed and removed entirely from the front of the cabinet, enabling full front maintenance without requiring access to the rear of the display.

For cabinet installation, the upper, lower, left and right connections are secured and leveled using dedicated connecting pieces. This arrangement helps installers align adjoining cabinets and achieve a neat, consistent display surface.

- Front service: Modules are accessed from the display side.
- Magnetic module design: Supports convenient removal and replacement.
- Cabinet alignment: Connecting pieces help lock and level adjacent cabinets.



# Common Cathode Energy-Saving Technology

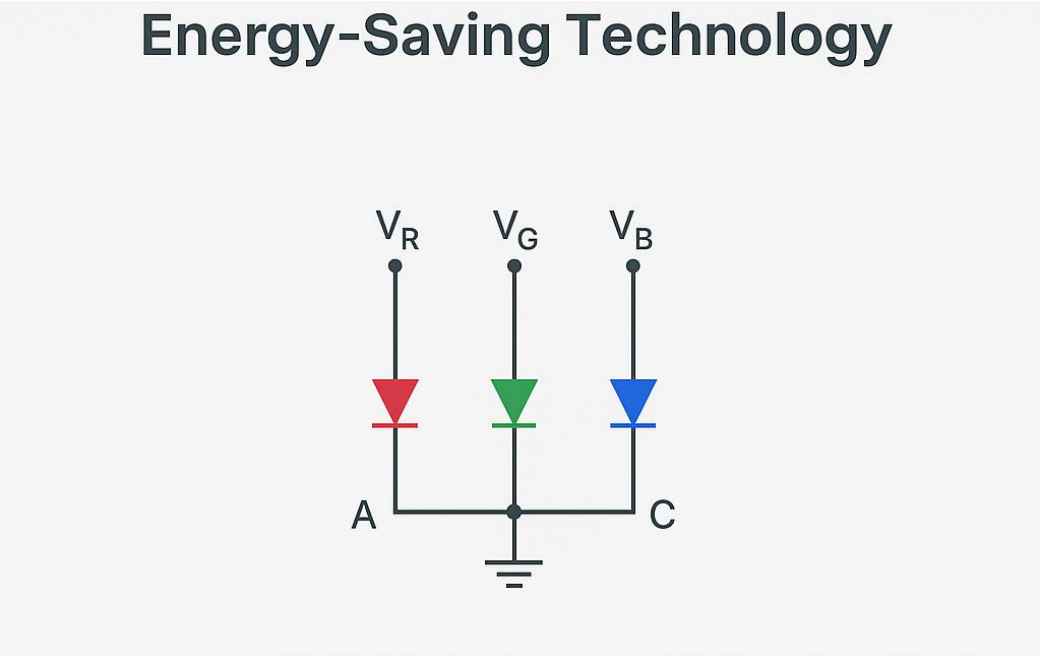
Independent RGB voltage control

Common cathode technology supplies the red, green and blue LEDs independently. This enables precise current control and reduces unnecessary power loss.

Compared with traditional common-anode designs, the source specification states up to 30% lower energy consumption. Reduced power loss also helps limit heat generation, supporting longer screen life and improved operating stability.

## Maximum Power Consumption

- P0.9: ≤ 275 W/m²
- P1.25: ≤ 215 W/m²
- P1.56: ≤ 205 W/m²



# IP54 Protection for the LED Module

A robust surface designed for demanding indoor use

Compared with ordinary indoor LED products, COB-Ultra adopts an IP54 protection level for the module, providing an added layer of protection for everyday operating conditions.

- Surface cleaning: The source product description states that the surface can be cleaned with water.
- Impact resistance: Designed with higher resistance to knocks and impact.
- Water and static protection: The stated protection features include water resistance and anti-static performance.
- Surface care: The module is described as resistant to scrubbing.



# High Contrast

Deep blacks and clear image reproduction

COB-Ultra specifies a 20,000:1 contrast ratio. High contrast improves the readability of text, graphics and video content, helping important visual details stand out.

By reducing the gaps between pixels, the COB structure supports deeper black levels and a more immersive viewing experience. The product description highlights applications such as control rooms, broadcasting and high-end commercial environments where image clarity is critical.

The source specification also states that contrast remains consistent across wide viewing angles without color shift.

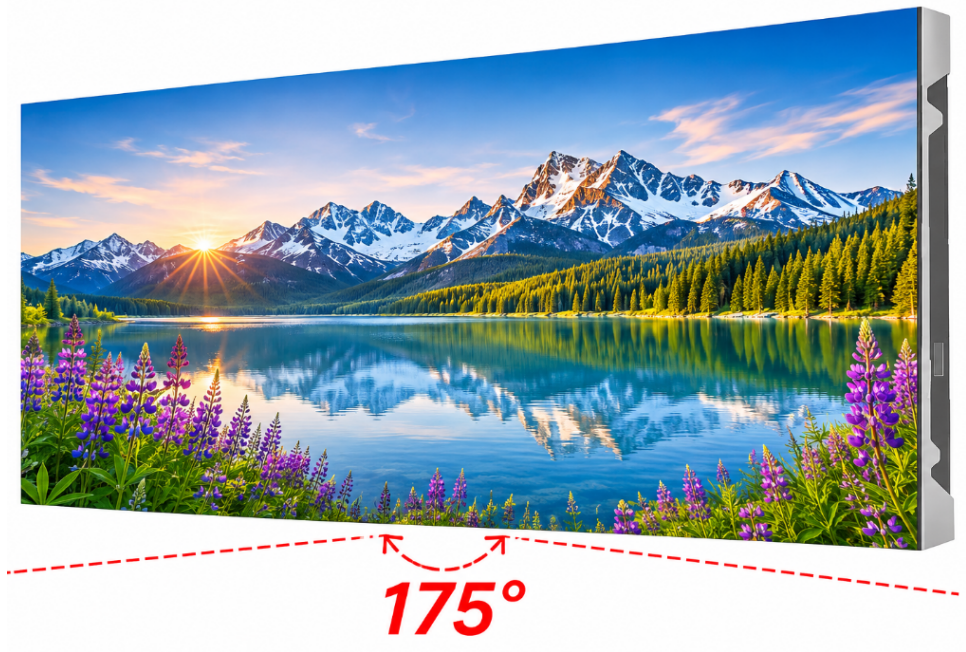


# Ultra-Wide Viewing Angle

Designed for clear viewing from multiple positions

The COB-Ultra series provides a wide viewing angle of 175° horizontally and 175° vertically, allowing viewers in different positions to enjoy clear, engaging on-screen content.

Whether viewed from the front or from an angle, the screen is designed to maintain an engaging visual presentation and help audiences experience the displayed content across a wider viewing area.



# Extraordinary Visual Performance

High refresh rate and fine grayscale reproduction

With a specified refresh rate of 3840–7680 Hz and grayscale performance of 14–22 bits, the COB-Ultra series is designed to deliver stable, detailed visual output.

The source description highlights clearer, more stable images and a softer light appearance that is more comfortable for viewers. These characteristics support applications where image quality and visual consistency are important.



# Application Fields

Versatile applications across professional and commercial environments

The COB-Ultra high-precision LED display is designed for a range of installation environments. Its reliable operation and high-quality image presentation make it suitable for spaces where clear, engaging visual communication is required.

## Typical application environments

- Meeting rooms: Presentations, collaboration and corporate communication.
- TV studios: Studio backgrounds and broadcast visual content.
- Exhibition centers: Brand presentations and event displays.
- Shopping malls: Advertising and digital visual experiences.
- Airports: Passenger information and public communication.
- Cinemas: High-impact visual display environments.



# Technical Specifications

COB-Ultra Series | Pixel pitch comparison

| Item | P0.78 | P0.93 | P1.25 | P1.56 |
|---|---|---|---|---|
| Pixel Pitch | 0.78 mm | 0.93 mm | 1.25 mm | 1.56 mm |
| LED Type | Flip COB | Flip COB | Flip COB | Flip COB |
| Module Resolution | 384 × 216 dots | 320 × 180 dots | 240 × 135 dots | 192 × 108 dots |
| Module Pixels | 82,944 dots | 28,800 dots | 16,200 dots | 10,368 dots |
| Module Size | 300 × 168.75 mm | 300 × 168.75 mm | 300 × 168.75 mm | 300 × 168.75 mm |
| Cabinet Size | 600 × 337.5 × 32 mm | 600 × 337.5 × 32 mm | 600 × 337.5 × 32 mm | 600 × 337.5 × 32 mm |
| Cabinet Resolution | 768 × 432 dots | 640 × 360 dots | 480 × 270 dots | 384 × 216 dots |
| Pixel Density | 1,638,400 dots/m² | 1,137,777 dots/m² | 640,000 dots/m² | 409,600 dots/m² |
| Minimum Viewing Distance | 0.78 m | 0.93 m | 1.25 m | 1.56 m |
| Brightness | ≥600 nits | ≥600 nits | ≥600 nits | ≥600 nits |
| IP Grade | IP54 | IP54 | IP54 | IP54 |
| Refresh Rate | 3840–7680 Hz | 3840–7680 Hz | 3840–7680 Hz | 3840–7680 Hz |
| Gray Scale | 14–22 bits | 14–22 bits | 14–22 bits | 14–22 bits |
| Viewing Angle | H:175° / V:175° | H:175° / V:175° | H:175° / V:175° | H:175° / V:175° |
| Maximum Power Consumption | 275 W/m² | 245 W/m² | 215 W/m² | 205 W/m² |
| Average Power Consumption | 135 W/m² | 120 W/m² | 105 W/m² | 100 W/m² |
| Screen Lifespan | ≥100,000 hours | ≥100,000 hours | ≥100,000 hours | ≥100,000 hours |
| Input Voltage | AC 100–240 V, 50/60 Hz | AC 100–240 V, 50/60 Hz | AC 100–240 V, 50/60 Hz | AC 100–240 V, 50/60 Hz |
| Operating Temperature | −20°C to 60°C | −20°C to 60°C | −20°C to 60°C | −20°C to 60°C |
| Operating Humidity | 10%–90% | 10%–90% | 10%–90% | 10%–90% |
| Cabinet Material | Die-cast aluminum | Die-cast aluminum | Die-cast aluminum | Die-cast aluminum |
| Cabinet Weight | 4.4 kg/panel | 4.4 kg/panel | 4.4 kg/panel | 4.4 kg/panel |
| Operating System | NovaStar, Colorlight, Huidu, etc. | NovaStar, Colorlight, Huidu, etc. | NovaStar, Colorlight, Huidu, etc. | NovaStar, Colorlight, Huidu, etc. |
| Signal Source Compatibility | DVI, HDMI 1.3, DP 1.2, SDI, HDMI 2.0, etc. | DVI, HDMI 1.3, DP 1.2, SDI, HDMI 2.0, etc. | DVI, HDMI 1.3, DP 1.2, SDI, HDMI 2.0, etc. | DVI, HDMI 1.3, DP 1.2, SDI, HDMI 2.0, etc. |