



# TrafficClair Monthly Updates

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# Introducing the ClairGeo-AP Geomagnetic Parking Sensors

## Multi-band Connectivity for Global Market



Built for international deployment, every sensor in the ClairGeo-AP family supports **multi-band connectivity**

- **LoRaWAN**

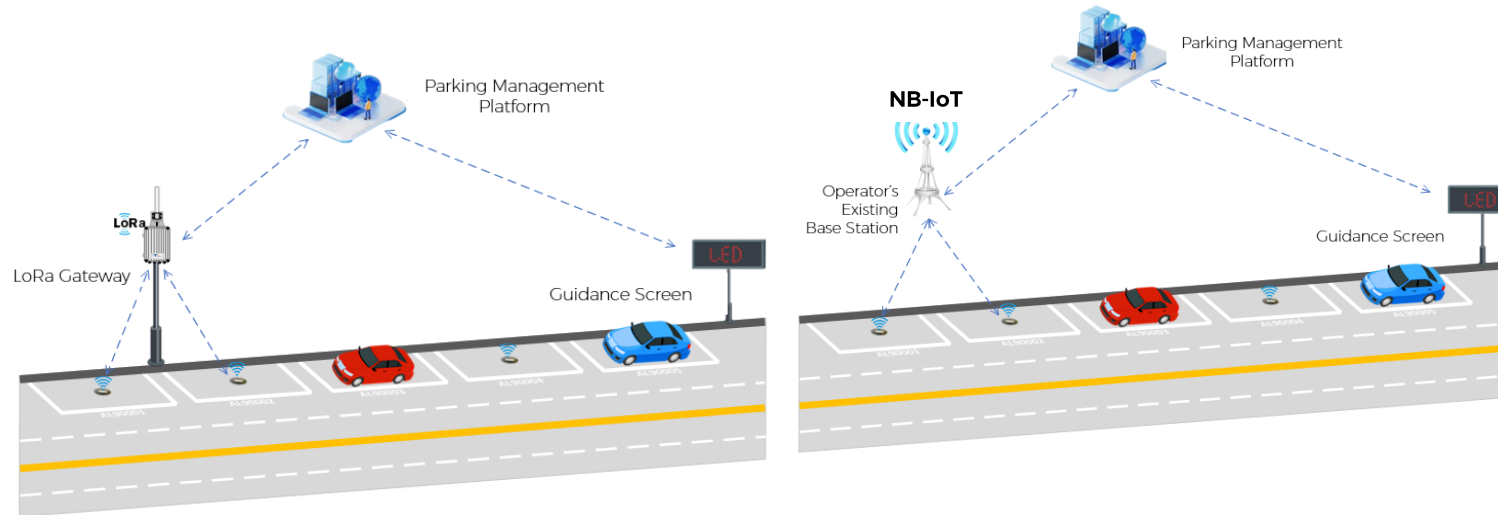
Full support for CN470, EU868, AS923, US915, AU915, KR920, IN865 and more—compliant with LoRaWAN v1.0.3 Class A for long-range, low-power operation.

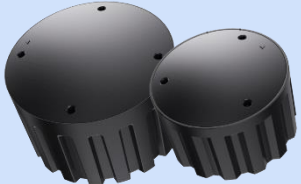
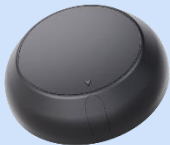
- **NB-IoT**

Comprehensive multi-band coverage across B3, B5, B8, B28 and other licensed spectra, enabling reliable cellular IoT connectivity wherever NB-IoT is deployed.

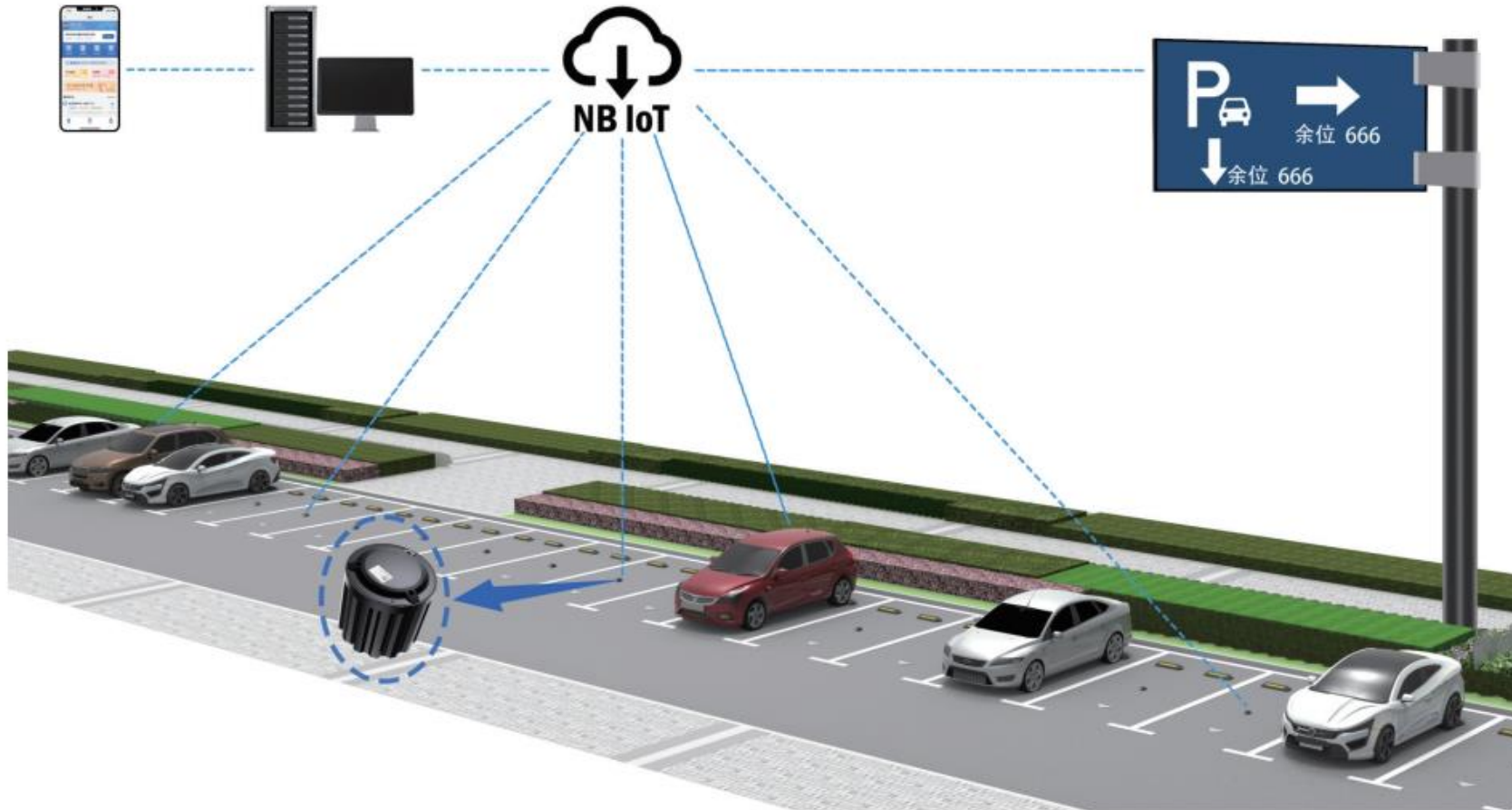
This flexible, future-proof architecture ensures optimal performance in all major markets—enabling reliable, real-time parking data across cities, campuses, and commercial hubs around the world. No matter the region, frequency plan, or network preference, the ClairGeo-AP series delivers the accuracy, reliability, and deployment versatility that modern parking management demands.

[Product Webpage](#) [Datasheet](#)



| Model        | Product                                                                             | Sensor Mode                                                                                                                     | Communication Mode                                                         | Installation                     |
|--------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------|
| ClairGeo-AP2 |   | <ul style="list-style-type: none"> <li>✓ Radar Sensor</li> <li>✓ Geomagnetic Sensor</li> </ul>                                  | <ul style="list-style-type: none"> <li>✓ LoRa</li> <li>✓ NB-IoT</li> </ul> | ✓ In-Ground                      |
| ClairGeo-AP3 |   | <ul style="list-style-type: none"> <li>✓ Radar Sensor</li> <li>✓ Geomagnetic Sensor</li> <li>✓ Photosensitive Sensor</li> </ul> | <ul style="list-style-type: none"> <li>✓ LoRa</li> <li>✓ NB-IoT</li> </ul> | ✓ In-Ground                      |
| ClairGeo-APS |  | <ul style="list-style-type: none"> <li>✓ Radar Sensor</li> <li>✓ Geomagnetic Sensor</li> </ul>                                  | ✓ LoRa                                                                     | ✓ Surface-mount for indoor usage |

# Application Scenario



Based on dual detection and calibration technology utilizing geomagnetic signals and radar, the accuracy of parking space status detection reaches over 99%. Data is reported to the parking service cloud platform via NB-IoT or LoRaWAN network.

Combined with management through fee collectors' handheld PDAs, it enables precise parking billing, reduces manual labor, and improves parking fee collection efficiency.



## Dual-membrane design

IP68 protection



## Radar Algorithm

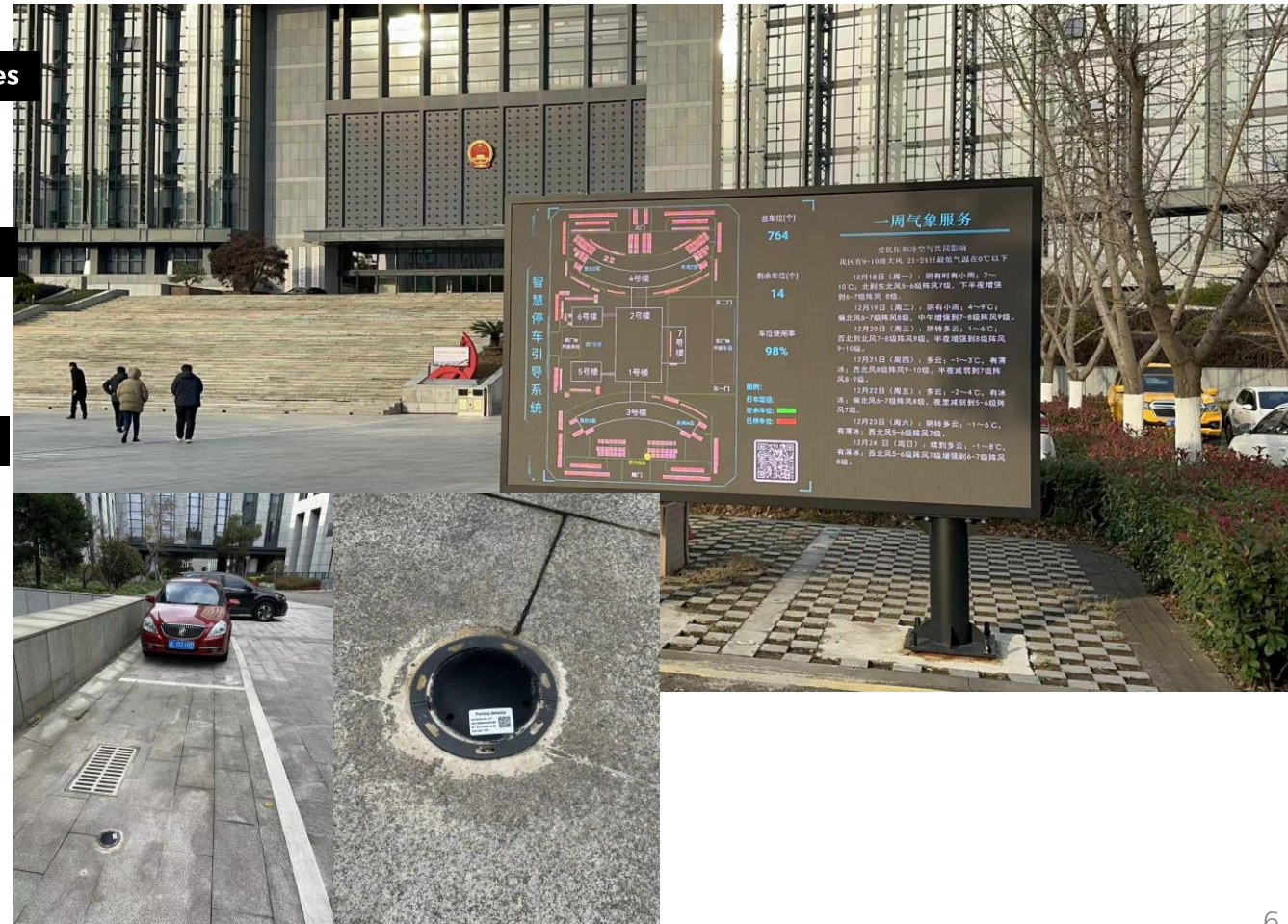
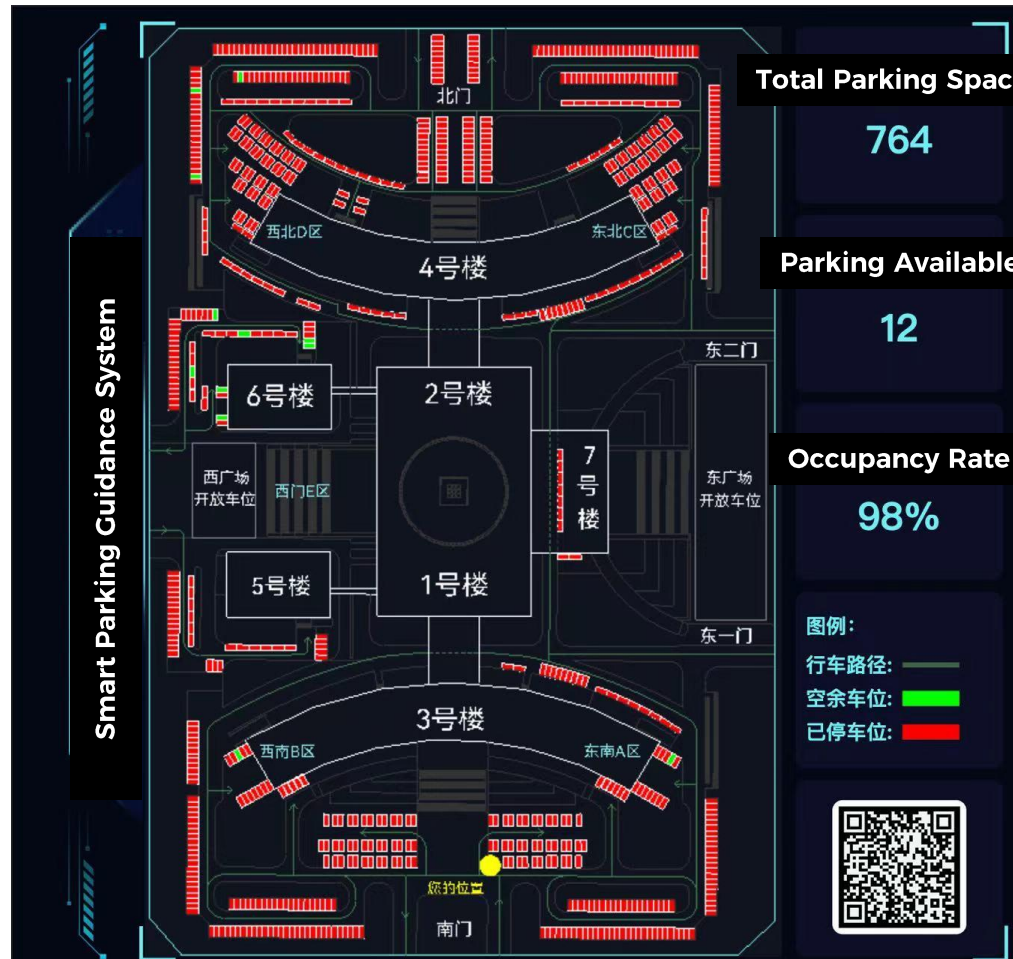
## Flood Coverage Detection



## Bluetooth Debugging

## Simple Installation Easy Tuning

# Application Scenario



# ClairGeo-AP2 vs. ClairGeo-MP2

## In-Ground Dual-Mode Parking Sensors



|                    | ClairGeo-AP2                                                                                                                                                                  | ClairGeo-MP2                                                                                        |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Detection Method   | <ol style="list-style-type: none"> <li>1. Geomagnetic</li> <li>2. Microwave Radar</li> </ol>                                                                                  | <ol style="list-style-type: none"> <li>1. Geomagnetic</li> <li>2. Microwave Radar</li> </ol>        |
| Communication      | <ol style="list-style-type: none"> <li>1. LoRa Frequency: CN470, EU868, AS923, US915<br/>LoRaWAN V1.0.3 Class A</li> <li>2. NB IOT: B3, B5, B8, B28</li> </ol>                | <ol style="list-style-type: none"> <li>1. LoRa 433MHz</li> <li>2. NB-IOT</li> <li>3. LTE</li> </ol> |
| Detection Accuracy | 99%                                                                                                                                                                           | 99%                                                                                                 |
| Power Supply       | <ul style="list-style-type: none"> <li>• AP2LR-Big: 3.6V 38Ah</li> <li>• AP2LR-Small: 3.6V 19Ah</li> </ul>                                                                    | 3.6V 38Ah                                                                                           |
| Dimension          | <ul style="list-style-type: none"> <li>• AP2LR-Big: Diameter 130mm, Height 78mm</li> <li>• AP2LR-Small: Diameter 108mm, Height 68mm</li> </ul>                                | Diameter: 110mm<br>Height: 89mm                                                                     |
| Summary            | <ul style="list-style-type: none"> <li>• AP2 support multi-band LoRa and NB which is suitable for global market.</li> <li>• Two dimensions for flexible selection.</li> </ul> |                                                                                                     |



# ClairGeo-AP3 vs. ClairGeo-MP3

## In-Ground Triple-Mode Parking Sensors



|                    | ClairGeo-AP3                                                                                                                                                   | ClairGeo-MP3                                                                                                            |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Detection Method   | <ol style="list-style-type: none"> <li>1. Geomagnetic</li> <li>2. Microwave Radar</li> <li>3. Photosensitive</li> </ol>                                        | <ol style="list-style-type: none"> <li>1. Geomagnetic</li> <li>2. Microwave Radar</li> <li>3. Photosensitive</li> </ol> |
| Communication      | <ol style="list-style-type: none"> <li>1. LoRa Frequency: CN470, EU868, AS923, US915<br/>LoRaWAN V1.0.3 Class A</li> <li>2. NB IOT: B3, B5, B8, B28</li> </ol> | <ol style="list-style-type: none"> <li>1. LoRa 433MHz</li> <li>2. NB-IOT</li> <li>3. LTE</li> </ol>                     |
| Detection Accuracy | 99%                                                                                                                                                            | 99.9%                                                                                                                   |
| Power Supply       | 3.6V 38Ah                                                                                                                                                      | 3.6V 38Ah                                                                                                               |
| Dimension          | Diameter 110mm,<br>Height 100mm                                                                                                                                | Diameter: 110mm<br>Height: 89mm                                                                                         |
| Summary            | AP3 support multi-band LoRa and NB which is suitable for global market.                                                                                        |                                                                                                                         |



# ClairGeo-APS vs. ClairGeo-MPS

## Surface-Mount Parking Sensors



|                    | ClairGeo-APS                                                                              | ClairGeo-MPS                         |
|--------------------|-------------------------------------------------------------------------------------------|--------------------------------------|
| Detection Method   | 1. Geomagnetic<br>2. Microwave Radar                                                      | 1. Geomagnetic<br>2. Microwave Radar |
| Communication      | LoRa Frequency: CN470, EU868, AS923, US915, AU915, KR920, IN865<br>LoRaWAN V1.0.3 Class A | LoRa 433MHz                          |
| Detection Accuracy | 99%                                                                                       | 99%                                  |
| Power Supply       | 3.6V 17Ah                                                                                 | 3.6V 16Ah                            |
| Dimension          | Diameter 140mm,<br>Height 39.8mm                                                          | 152*152*28 (mm)                      |
| Summary            | APS support multi-band LoRa and NB which is suitable for global market.                   |                                      |



### Conclusion:

To ensure network compatibility, select the ClairGeo-AP multi-band series for a dedicated LoRa or NB-IoT band that matches your regional specifications.

# Redefining Urban Mobility with Smart, Aesthetic Pedestrian Signal Solutions

## ClairSaf-VEX Integrated Traffic Light



ClairSaf-VEX redefines the traditional pedestrian signal by seamlessly integrating modular features—such as dynamic countdown displays, red-light violation capture, audio guidance for the visually impaired, multimedia screens, and smart crosswalk controls—into a single, aesthetically advanced unit. This innovative system not only enhances traffic safety and efficiency but also contributes to urban beautification through its modern design and multifunctional capabilities.

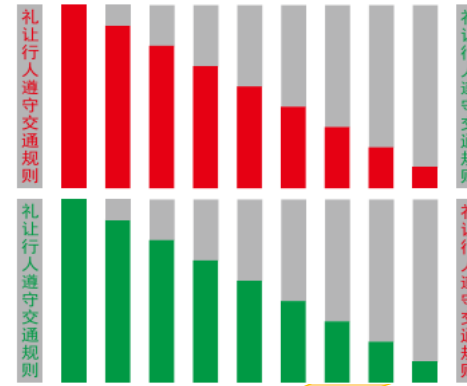
- Audio Guidance System for the Visually Impaired
- 24-inch Wide-Temperature Multimedia Display
- Red-Light Violation Capture (8-megapixel camera)
- Pedestrian Waiting Zone Detection Unit (camera-based)
- Smart Crosswalk Controller
- Vehicle Signal Countdown Light Strip
- Dual-Color LED Display
- Single-Post Pedestrian Crossing Violation Audio Alert
- Pedestrian Crossing Request Button (Optional)

[Product Webpage](#) [Datasheet](#)

# Features

## Countdown Light Bar

The signal light is equipped with countdown light bars on both sides, constructed from P8 full-color LED modules (Dimensions: 128\*1280mm, Pixel Configuration: 16\*128 dots). Its innovative design ensures a visually striking and intuitive display, characterized by smooth transition effects.



## Red-Light Violation Capture Unit (for Pedestrians)

## Modular Pedestrian Signal

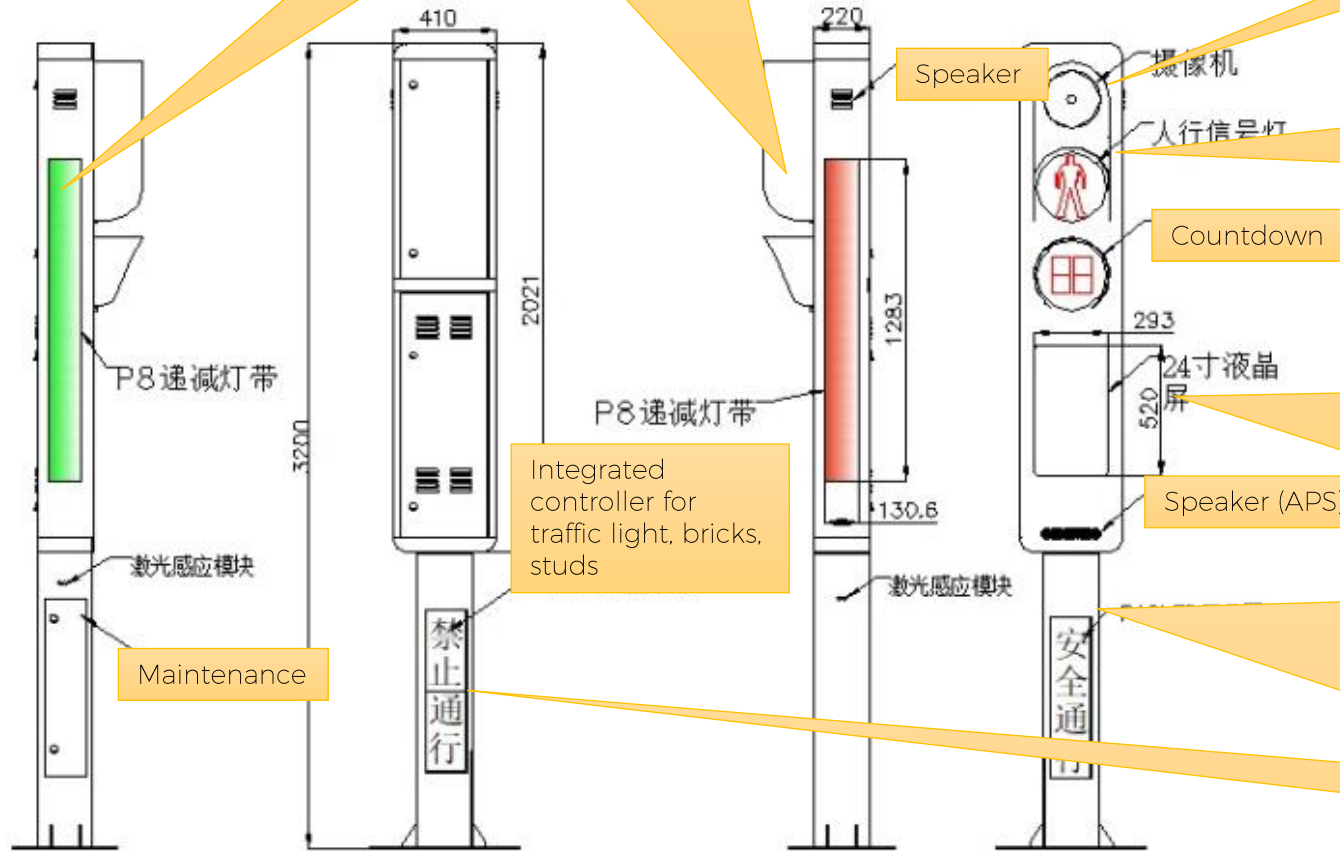
300mm diameter static or dynamic pedestrian signal lights.

## Multimedia Advertising LCD Screen

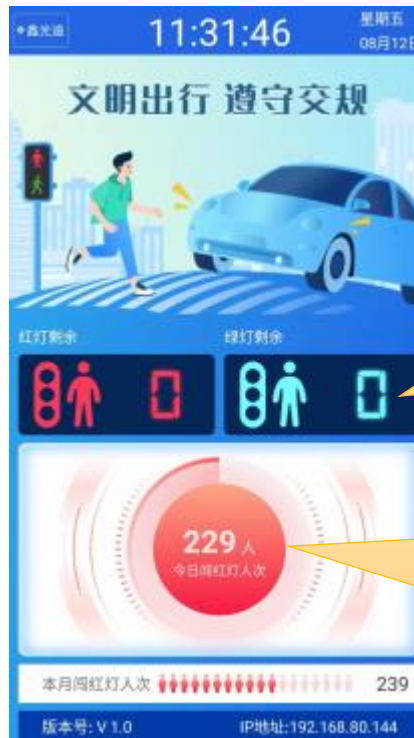
The multimedia advertising LCD screen features a 1920\*1080 resolution and 1500 nits high-brightness backlight

## Dual-Color Display Screen

A high-brightness outdoor P10 dual-color screen (Dimensions: 160\*640mm, Pixel Configuration: 16\*64 dots). It can broadcast traffic safety messages, and its content can switch according to the traffic light signal. Additionally, it is capable of displaying a numeric countdown for the final 9 seconds.



# Red-Light Violation Capture Unit (for Pedestrians)

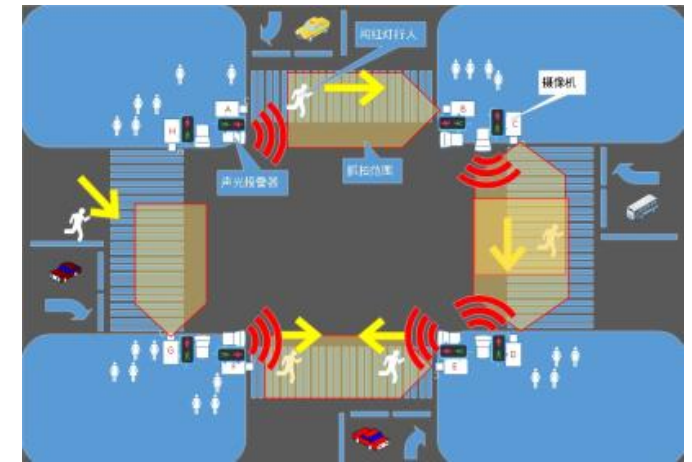


The remaining time for the red and green lights

The real-time data on pedestrian red-light violations, with the red circle indicating the number of violations recorded today.



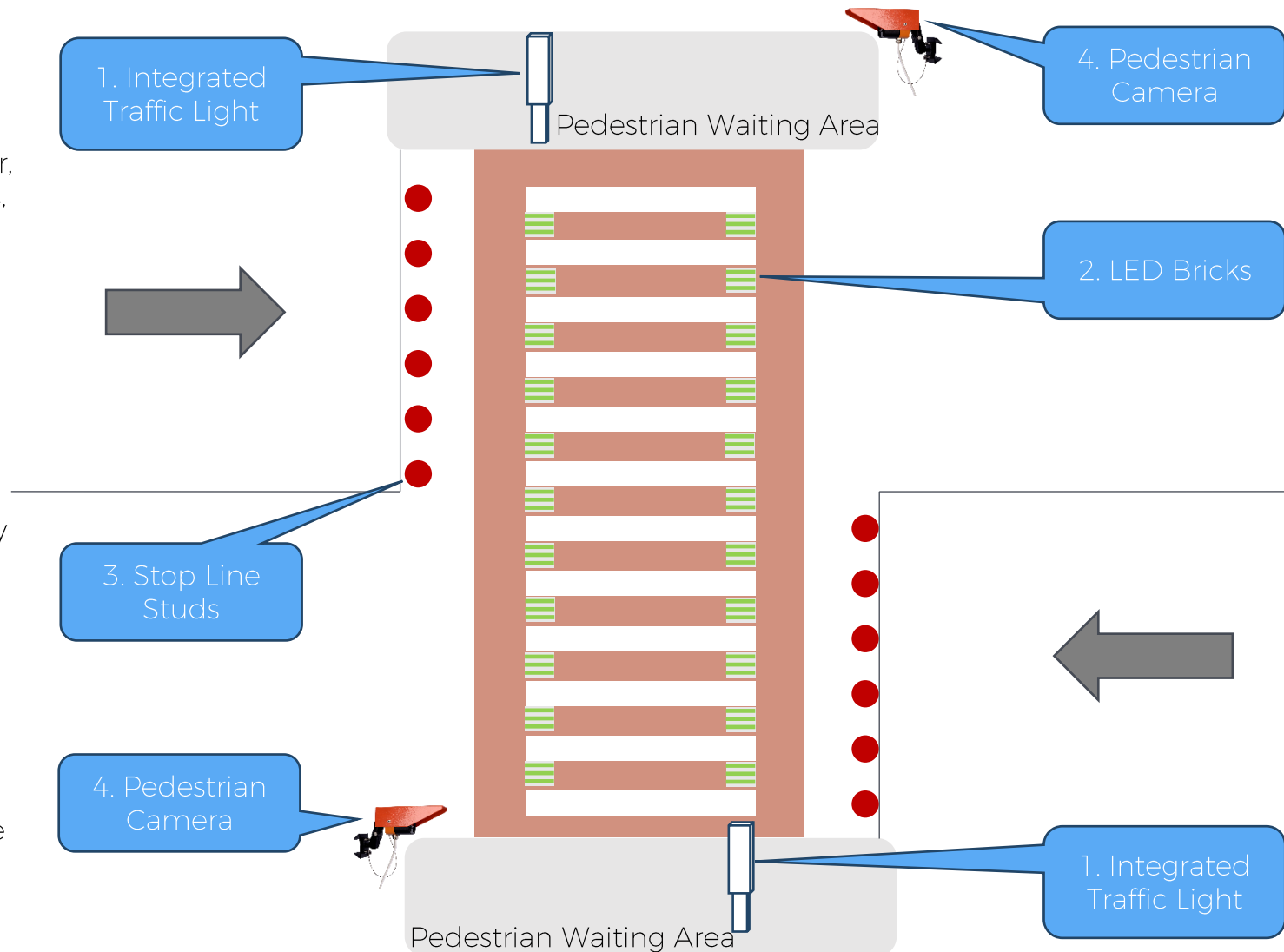
Upon detecting a pedestrian running a red light, the entire red rotary area will display the captured image of the violation for a duration of 6 seconds. If a new violation is detected during this 6-second display period, the new image will override the previous one.



When the intelligent analysis terminal detects via Camera B that a pedestrian has entered the crosswalk at Point A during a red light, it triggers a customizable voice alert through the integrated smart pedestrian units at both Locations A and B. The system captures the violation as they cross a virtual trigger line. The sequence of images is then displayed on the smart pedestrian unit at Location B.

# Smart Crossing Solution

- Integrated traffic light integrates a traffic controller, managed all the LED bricks, stop line studs and traffic lights in one system.
- Pedestrian camera will monitor the number of pedestrians within the waiting area, providing output to the controller.
- Signal controller will smartly shorten the pedestrian waiting time according to the counting data provided by the pedestrian camera.
- Red light violation capture unit will dramatically improve the performance for pedestrians to follow the discipline, reduce the accident.



- The integrated traffic light system is equipped with an APS (Audible Pedestrian Signal), which provides essential auditory guidance for visually impaired pedestrians.
- Tactile paving tiles offer clear tactile guidance, enabling pedestrians to navigate the crossing safely.
- Meanwhile, stop-line studs and an integrated LED side bar deliver clear, highly visible commands to drivers, significantly enhancing safety for pedestrians.

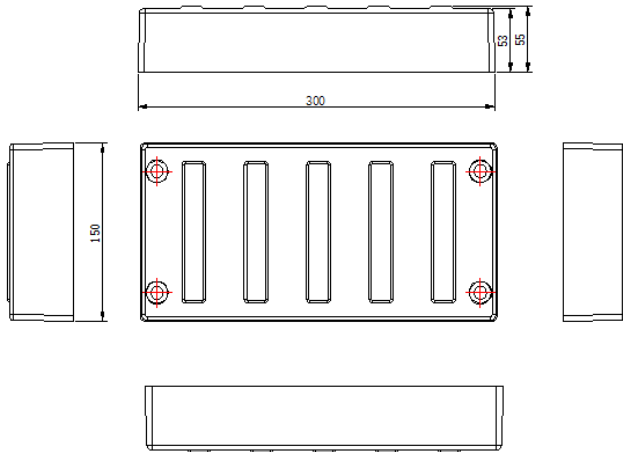
# Smart Crossing 3D Effect



# LED Bricks

## Technical Specifications:

1. Supply Voltage: DC 24V
2. Rated Power: Red < 4.5W, Yellow < 5W, Green < 6W
3. Ambient Temperature: -30°C to +70°C
4. Operating Humidity: 10% to 95% RH (Non-condensing)
5. Light-emitting Area Dimensions: 300 \* 150 mm
6. Light-emitting Area Pattern: Rectangular, full-area illumination
7. LED Type: 5mm Through-Hole (DIP)
8. LED Quantity: Red 98 pcs, Yellow 98 pcs, Green 98 pcs
9. LED Colors: Red/Yellow/Green tri-color, Red/Green dual-color, or single red, single green, single yellow, single white, etc.
10. LED Wavelength: Red: 620-625nm; Yellow: 590-595nm; Green: 503-506nm
11. LED Luminance: Red  $\geq 4800$  mcd, Yellow  $\geq 4500$  mcd, Green  $\geq 8500$  mcd
12. LED Viewing Angle:  $\geq 120$  degrees
13. Material & Surface Treatment: PC + Polymer Material
14. Service Life: > 80,000 hours
15. Protection Rating: IP68
16. Pressure Resistance:  $\geq 50$  Tons
17. Overall Dimensions: 300 \* 150 \* 55 mm (excluding embedded parts)
18. Net Weight: 2.85 kg (excluding embedded parts)



# Stop Line Studs

## ClairSRS Luminode Smart Studs



### Specification:

- 1.Power Supply Voltage: DC24V & DC12V
- 2.Rated Power: < 8W
- 3.Ambient Temperature: -30°C ~ +70°C
- 4.Operating Humidity: 10% ~ 95% RH (non-condensing)
- 5.Overall Dimensions: 140 \* 53.51 mm  
Pre-embedded Part Dimensions: 148 \* 114 mm (Diameter \* Height)  
Assembled Dimensions: 148 \* 117.8 mm  
The raised pavement marker shell and the display area are separable for easy maintenance.
- 6.Light-emitting Area Pattern: Disc/Circle
- 7.LED Type: 5mm True Round
- 8.LED Quantity: 21 pcs per color
- 9.LED Color: Red, Yellow, Green tri-color, or single red, single green, single yellow, single white, etc.
- 10.LED Wavelength: Red: 620-625nm; Yellow: 590-595nm; Green: 503-506nm
- 11.LED Color Temperature: White: 6500K
- 12.LED Luminosity: Red: 4800-6800 mcd; Yellow: 4500-6500 mcd; Green: 8500-10500 mcd; White: 16000 mcd
- 13.LED Viewing Angle: ≥ 120 degrees
- 14.LED Viewing Distance: ≥ 300 m
- 15.Material & Surface Treatment: Shell is cast aluminum, formed by a one-time molding process; Lamp is PC mold-formed (with frosted transparent surface, non-dazzling)
- 16.Service Life: > 50,000 hours
- 17.Pressure Resistance: ≥ 30 Tons (TMC test report available)
- 18.IP Rating: IP68 (TMC test report available)
- 19.Net Weight: 3.5 Kg

[\*\*ClairSRS-Luminode Webpage\*\*](#)

# Pedestrian Camera

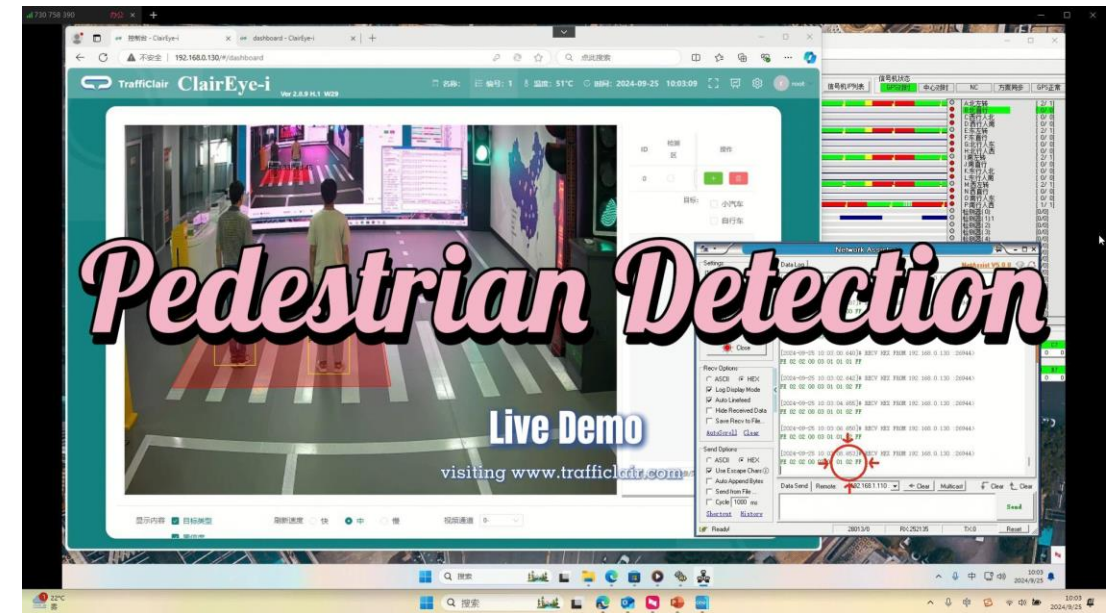
## ClairEye-i



ClairEye video detector can be mounted on the pole onsite or the top of integrated traffic light to monitor the pedestrian waiting area counting the pedestrian numbers. Its output can be used to optimize the traffic signals in order to improve the traffic efficiency.

[ClairEye Webpage](#)

This live demo showcases the ClairEye-I AI video detector's capabilities in pedestrian detection. Our approach targets the detection zone at foot level, counting each instance when a pedestrian's feet enter this zone.



 [View full video on Youtube](#)

# CE Approval for ClairLup-V8/V8F



## ClairLup-V8

8-Channel Inductive Loop Detector



- Supports cascading of up to 8 loop channels per device for flexible expansion
- Delivers <5ms response time for accurate traffic flow, enforcement, and security monitoring
- Features advanced anti-lock algorithms and hardware-based detection for long-term stability

[Webpage](#)

## ClairLup-V8F

8-Channel Flow Detection Inductive Loop Detector

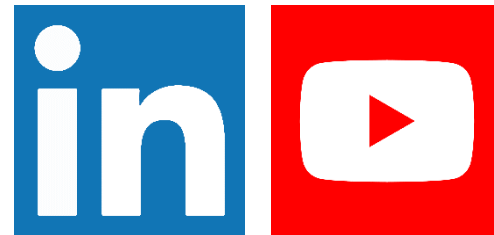


- Each device supports 8-channel loop input for 4-lane traffic flow statistics. With a sub-3ms response time, it delivers precise real-time data
- Employs intelligent anti-lock algorithms and auto-updating frequency tracking to ensure maintenance-free operation.
- Classifies vehicles into four customizable types (small/medium/large/unknown). Optional Ethernet connectivity supports flexible data transmission and remote device management.

[Webpage](#)

# Join the journey towards the future of mobility.

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[2025.08](#), [202509](#), [202510](#), [all previous issues...](#)



# Thanks

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