# ClairSaf LS

## Laser Signal Smart Crosswalk Warning System

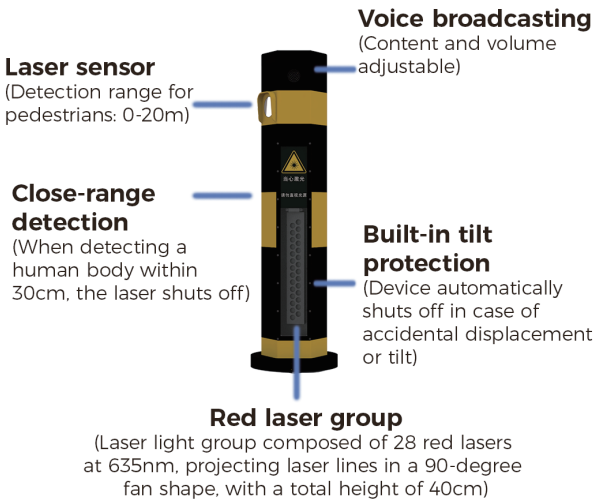


The ClairSaf-LS smart crosswalk warning system is primarily used at pedestrian intersections where there are no traffic signals at night or when the traffic lights are flashing yellow. By installing intelligent laser warning devices at both ends of the crosswalk, when pedestrians are about to enter the crosswalk, the devices project 28 red laser lines onto the shins of the crossing pedestrians, forming a red area projection. This allows drivers to receive red warnings and detect pedestrian movements from a distance, especially in situations with insufficient lighting, lack of concentration, or impaired visibility (such as oncoming headlights, rainy or foggy weather). Drivers can then react promptly. At the same time, the red light attracts the attention of pedestrians, alerting even those distracted by mobile devices to the safety of crossing, thereby reducing the occurrence of traffic accidents.

### Key Features

The smart crosswalk warning system solution effectively alerts drivers and pedestrians under various weather, road, and lighting conditions, increasing the distance at which drivers can detect pedestrians by over 100 meters. Especially in situations where drivers' visibility is hindered due to rain, snow, fog, or haze, the laser lines are particularly effective.

- Reducing safety hazards at intersections without traffic lights at night, addressing the challenge of insufficient distance for drivers to yield to pedestrians when traveling at higher speeds.
- Eliminating safety hazards at poorly illuminated intersections, addressing the difficulty of vehicles recognizing pedestrians in low visibility conditions during adverse weather.
- Alerting pedestrians crossing the crosswalk, thereby addressing safety concerns associated with distracted pedestrians.



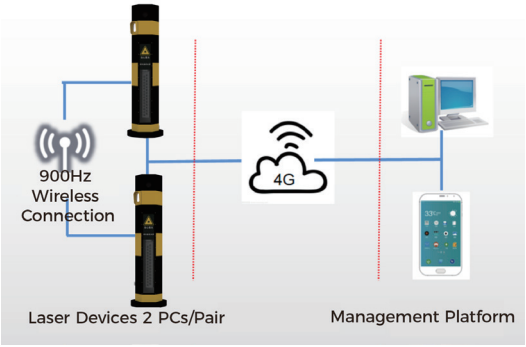

### Application Scenarios

- **Urban arterial roads (two to four lanes in each direction):** High pedestrian traffic, high demand for crosswalks, increased risk during nighttime due to fatigue and reduced alertness among drivers.
- **Roads with multiple lanes or safety islands in the middle:** High vehicle speeds, inadequate distance for vehicles to yield to pedestrians, resulting in longer crossing times.
- **Intersections between national or provincial highways and local roads:** Poor lighting, driver visibility affected by oncoming vehicle high beams, and low pedestrian awareness.
- **Suburban roads:** High vehicle speeds, moderate lighting conditions, pedestrians crossing the crosswalks unexpectedly.

## Specification

| Model | ClairSaf-LS |
|---|---|
| **Visible Laser** | Projection sector angle greater than 90°.<br>Shape: 28 linear light bands.<br>Wavelength: 635 nm. |
| **Detection Range** | Laser sensor detection range: 20 meters. |
| **Device Response Time** | 1. Laser response time: within 0.2 seconds (from the moment a pedestrian enters the crosswalk to the laser projection time).<br>2. Device synchronization time: within 0.2 seconds (from the laser projection of one device to the laser projection of devices in the same group). |
| **Operating Voltage** | AC220V 50Hz (optional 12V solar power supply) |
| **Laser Beam Operating Time** | The laser beam operates for 0-60 seconds (adjustable) before stopping; during the startup period, if another person passes by, the illumination time is delayed, and after the last pedestrian passes the laser sensor, the device stops emitting light after 0-60 seconds (adjustable). |
| **Voice Function** | Adjustable voice operation time; customizable voice content. |
| **Power Consumption** | Maximum power: 25 W, Standby: 4 W. |
| **Dimension** | Diameter: 185mm; Height: 850mm |
| **Wireless Communication** | Supports 4G IoT module for remote upgrades; wireless monitoring, configuration, and switching. |
| **Protection Class** | IP67, triple waterproof power interface. |
| **Surge Protection & Lightning Protection** | Common Mode 4KV |
| **Operating Temperature** | -30 to +45°C |
| **Protective Functions** | 1. Overload, leakage, short-circuit protection module; equipped with lightning protection and grounding device.<br>2. Close-range protection: Laser light turns off when a human body is detected within 30 centimeters.<br>3. Tilt protection: Laser light turns off when the device tilts. |
| **Extended Capabilities** | 1. Display screen (After pedestrians enter the crosswalk, the display screen on the side facing approaching vehicles lights up, reminding drivers to slow down and yield to pedestrians crossing the road (editable text)).<br>2. Linked with traffic lights signals.<br>3. Solar powered.<br>4. Wired network connection. |

## Architecture




## Management Platform

- Account management, administrator configuration, permission settings, add/delete devices.
- View front-end device locations, operational status, abnormal alerts, and operational data.
- Configure front-end device parameters: operation time, duration of laser light group illumination, brightness, etc.

## Ordering Information

**ClairSaf-LS:** Smart crosswalk warning system composed of one pair of laser devices and one management platform.