

ClairSaf FogGuide

Inductive Fog Light for Adverse Weather Highway Driving



Designed for installation on highways prone to fog, heavy rain, and low visibility, the FogGuide provides synchronous flashing, rear-end collision warnings, red-and-blue strobe alerts, and speed limit displays. It helps drivers spot vehicles ahead in poor weather, reducing rear-end collisions and other accidents.

Powered by solar energy with no external wiring required, the FogGuide uses high-brightness, long-life LEDs and features reflective film on the frame for combined active and passive visibility. Built with industrial-grade components and wireless coordination, the system delivers stable and reliable performance in demanding environments.

■ Key Features

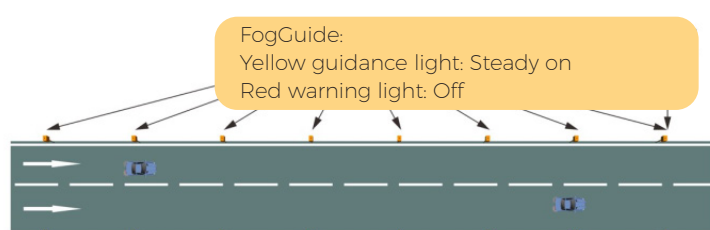
- **Easy Installation** – Secures with either a socket base or U-shaped bracket. The solar-powered version requires no external wiring or power connection.
- **Synchronous Flashing** – Wirelessly synchronized flashing with a fast sync time of less than 10 ms. Flash frequency is adjustable.
- **Strobe Function** – In addition to standard induction functions, the device features red-and-blue strobe warning capability.
- **Rear-End Collision Prevention** – Equipped with vehicle detection functionality, with an adjustable red warning zone length to alert following vehicles and prevent rear-end collisions.
- **Automatic Dimming** – Luminous intensity automatically adjusts to ambient light levels, optimizing energy efficiency.
- **Accurate Detection** – Uses radar detectors to sense vehicles. The detection area features a wide-angle sector-shaped detection zone, ensuring accurate performance unaffected by environmental conditions.
- **Strong Warning Effect** – The front face features both LEDs and reflective film, combining active illumination with passive reflectivity for maximum visibility.
- **High Brightness** – Equipped with high quality LED chips, delivering high brightness and excellent impact resistance.
- **Stable Performance** – Built-in protection circuits against overcharge, over-discharge, and surges ensure reliable and stable operation.
- **Long Service Life** – LED lifespan ≥ 80,000 hours; solar panel service life of 15 years.
- **Durable Construction** – Integrated sheet-metal body with baked paint finish, resistant to aging and corrosion. The solar panel is molded from specialized polymer material for enhanced shatter resistance.
- **Extended Operation Time** – A full charge supports up to 120 hours of continuous flashing operation and provides 5 days of autonomy in overcast or rainy conditions.

■ Specification

Item	Specifications
	ClairSaf-FogGuide
Power Supply	Solar: DC12V & Mains: AC220V ±25%, 50Hz ±3Hz
Rated Power	≤5W
Operating Temperature	-20°C to +65°C
Operating Humidity	10%-95% RH (non-condensing)
Service Life	≥80,000 hours
Enclosure Protection Rating	IP54
Wind Load Resistance	≥1.5 kN/m ²
Light-Emitting Area Dimensions	202.69 × 163 mm
Number of LEDs per Signal Light	Red 35 pcs, Yellow 35 pcs, Blue 35 pcs
LED Wavelengths	Red: 625-630 nm; Yellow: 590-595 nm; Blue: 465-475 nm
LED Luminosity	Red: 4800-6800 mcd; Yellow: 4500-6500 mcd; Blue: 4000-5000 mcd
LED Viewing Angle	≥30°
LED Visibility Distance	≥300 m
Operating Mode	Continuous 24-hour operation, centrally controlled by the cloud platform controller
Flashing Modes	Yellow steady-on, yellow synchronous flashing, red anti-rear-end warning, red-blue strobe mode
Flashing Frequencies	30 times/min, 60 times/min, 120 times/min
Duty Cycle	1:2 & 1:4
Battery	Lithium-ion battery 11.1 V / 8.8 Ah (compliant with GB/T 22473 standard)
Solar Panel	16 V / 22.5 W & 16 V / 15.3 W monocrystalline silicon solar panel, service life ≥15 years (compliant with GB/T 29195 standard)
Vehicle Detector	24 GHz radar detector
Detection Range	0.2-15 m (adjustable, default 15 m)
Speed Measurement Range	0.5 m/s - 40 m/s (minimum speed adjustable, default 1 m/s)
Battery Endurance	Fully charged, continuous operation for over 120 hours, capable of lasting 5 rainy/overcast days
Protection Technologies	Moisture-proof, dust-proof, corrosion-proof, anti-static; also equipped with overcurrent, short-circuit, overvoltage, and undervoltage protection
Communication Method	LoRa wireless 433 MHz
Material & Surface Treatment	High-quality cold-rolled steel plate + powder coating
External Dimensions (mm)	244.7 × 244.7 × 190.8
Standard	All parameters comply with the relevant provisions of JT/T 1032-2016
	ClairSaf-FogGuide Controller
Power Supply	Solar: DC12V; Solar power: 300W, 200Ah Mains: AC220V ±25%, 50Hz ±3Hz
Rated Power	≤5W
Operating Temperature	-20°C to +65°C
Operating Humidity	10%-95% RH (non-condensing)
Enclosure Protection Rating	IP65
Operating Mode	Automatically switches operating modes based on the detection results from the meteorological detector; also subject to real-time control by the cloud platform management system.

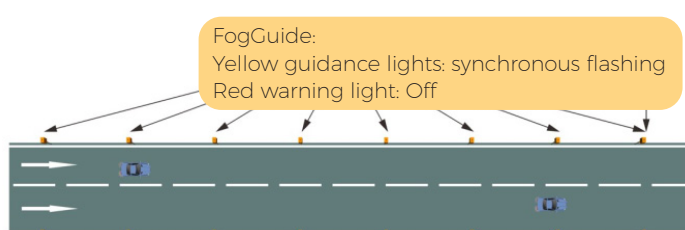
Item	Specifications
Flashing Modes	Yellow steady-on, yellow synchronous flashing, red anti-rear-end warning, red-blue strobe mode, speed limit and text warning mode.
Protection Technologies	Moisture-proof, dust-proof, corrosion-proof, anti-static, short-circuit protection.
Communication Method	Upward to the cloud platform management system: 4G/5G; downward to the multi-functional guidance and warning lamps: 433MHz LoRa Mesh.
Networking Topology	Star network with automatic relay
Encryption Method	AES encryption
Material & Surface Treatment	High-quality cold-rolled steel plate + powder coating.
External Dimensions (mm)	500 × 852.4 × 257 mm

■ Operation Mode



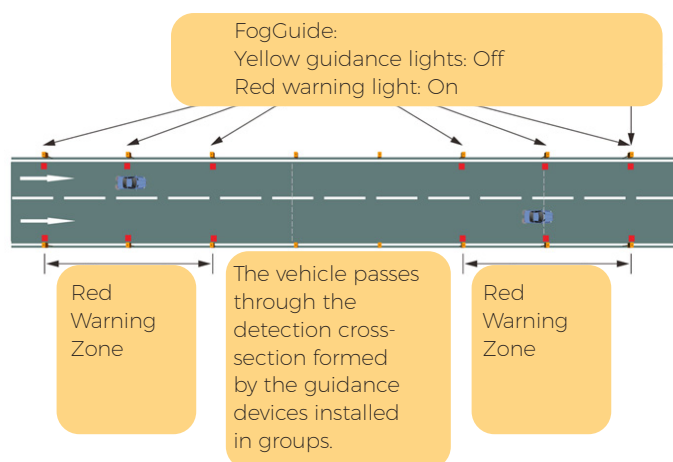
1. Roadway Delineation Mode

In the guidance and warning system, the yellow guidance light of the multi-functional guidance and warning lamp is in a steady-on state.



2. Active Driving Guidance Mode

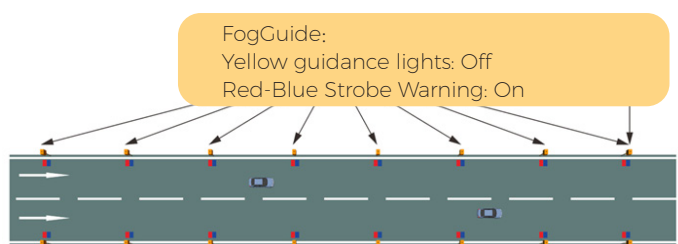
In the guidance and warning system, the yellow guidance lights of the multi-functional guidance and warning lamps flash synchronously at a specific frequency.



3. Anti-Rear-End Warning Mode

In the guidance and warning system, the light-emitting display modules of the multi-functional guidance and warning lamps convey safe following distance information to vehicles ahead and behind via changes in operating status.

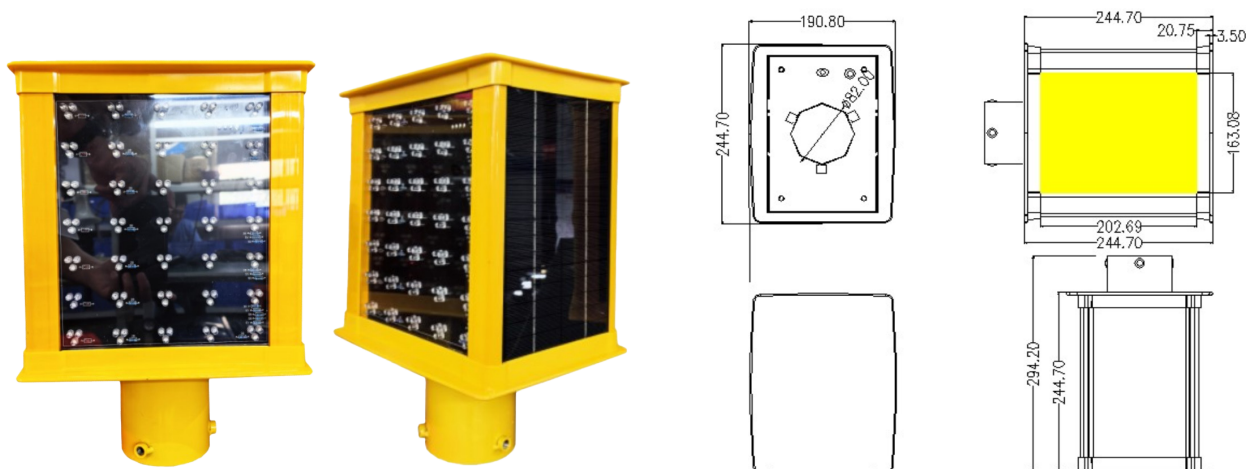
Upon vehicle detection, the red lights of upstream guidance fog lamps are activated to create a red trailing effect, warning following vehicles of the preceding vehicle's presence and the need to keep a safe distance. At the same time, the yellow lights of the remaining guidance fog lamps flash synchronously. As the vehicle progresses to the next set of lamps, the red trailing effect advances accordingly in real-time synchronization with the vehicle's movement.



4. Red-Blue Strobe Warning Mode

In the guidance and warning system, the multi-functional guidance and warning lamp is in red-blue strobe operating mode.

Mechanical Drawings



Installation & Implementation

Step	Description
1. Site Selection	Choose controller location near section center; check conduits/communications; ensure good sunlight for solar options
2. Power Supply	AC remote supply preferred for stability; solar requires sufficient local sunshine
3. Layout	Install devices every 3 guardrail posts (~21m) on both highway sides; stagger on opposite carriageways
4. Mounting	Anti-theft design mounts on guardrail posts; extra posts needed for bridges—confirm quantity/type when ordering
5. Cabling	AC-powered systems require 2.5 mm ² cables between devices; solar systems need no inter-device cabling
6. Communication	4G wireless or fiber optic between controller and cloud—specify at order
7. Grounding	Ground resistance $\leq 4\Omega$; essential for AC-powered systems
8. Optional Add-ons	Induction broadcasting units and visibility detectors available for system integration

Ordering Information

Model	Description
ClairSaf-FogGuide	A wirelessly synchronized, solar-powered warning light with radar vehicle detection, red-blue strobe, adjustable warning zone, and up to 120 hours of flashing on a full charge.
ClairSaf-FogGuide-Controller	Controller for FogGuide including LoRa gateway, 4G/5G router and solar power.