TraffiClair

ClairEye iSeries

DYMEC AMERICAN INDUSTRIAL

3 Watts AI Traffic Sensor for Premium Video Quality



Overview

The ClairEye iSeries is an advanced HD traffic video detector, leveraging cutting-edge neural network processing technology to ensure dependable traffic monitoring even in intricate urban settings. With its sleek and compact design, it allows for effortless installation while maintaining energy efficiency by consuming less than 3 watts. ClairEye offers real-time insights into vehicle presence, traffic flow, occupancy, road user identification, and event detection, empowering cities to optimize traffic control efficiently and effectively.

AI & neural networks processing technology

- The embedded AI algorithm leverages machine learning and deep learning techniques using extensive real traffic data, ensuring accurate detection and automated decision-making.
- Real-time traffic data output includes presence, traffic flow, occupancy (detecting both entering and exiting the detection zone), and road user identification.
- Identification of 80 different targets including truck, car, motorbike, bicycle, pedestrian, and scenarios like fog, fire, accident, traffic jam etc.

Cutting-edge vision with premium video quality

- With a 0.0001Lux starlight CCD, there's no need for Infrared fill light in low-light and challenging weather conditions, while Digital WDR technology further enhances the suppression of intense light.
- Video sensor: 1080P, 1920*1080, 5 megapixel large scene coverage.

3 watts power consumption & compact size

- Ultra-low power consumption less than 3 watts.
- Compact size at 85mm*80mm*218mm (W*D*H) and a weight of 700g, with an IP67 protection rating.
- Easy installation on all kinds of existing mast and roadside structures.



- Rich communication methods for data collection and device management including Ethernet, IO, and optional Wi-Fi, 4G/5G.

Ready-to-use solution for signal control optimization

- Offer a supplementary edge computing box equipped with algorithm software to enable real-time traffic optimization.
- Supports GB20999, NTCIP and user-defined protocol. It can provide real-time traffic data directly to any kind of traffic controllers or management platform.

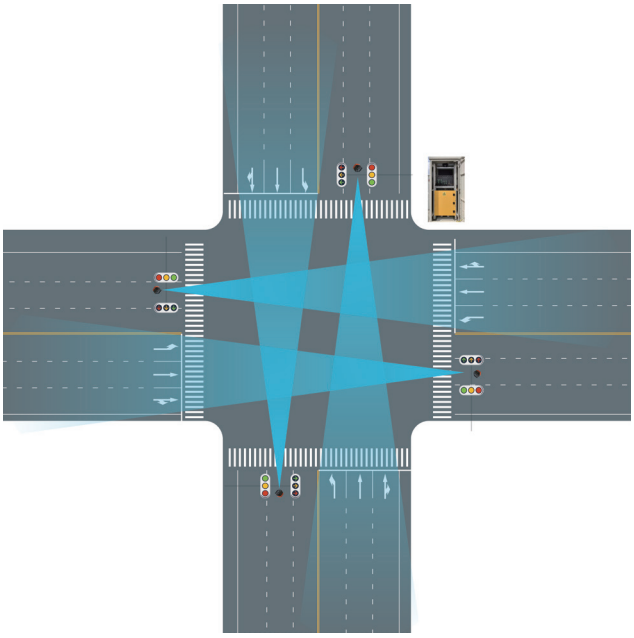
Specification

Detection objectives	· Stop bar vehicle detection · Road users identification · Traffic event identification · Traffic data collection · HD video surveillance	
Traffic data output	· Vehicle presence, traffic flow, occupancy, and road user identification · Identification of 80 different targets including truck, car, motorbike, bicycle, pedestrian · Event identification like fog, fire, illegal reversing on expressway, road congestion, vehicle abnormal driving event and accident detection	
Video	AI chip	NPU
	Sensor	1/1.8 inch, 5 megapixel large scene coverage
	Resolution	1080P, 1920*1080
	Lens	2.8-12mm
	Frame rate	10-25FPs
	Encoding formats	H.264, H.265
Functional indicators	Detection distance	150m
	Detection zone	Up to 32 detection zones and 32 virtual detectors
	Fill light mode	None
	Installation	Use of the existing pedestrian traffic light poles, vehicle traffic light poles, street light poles and any roadside structures
	Management	Automatic reset, operation status monitoring, embedded logging, remote batch upgrade, etc.
	Communication	RJ45*1, I/O*2 Optional RS485, Wi-Fi, 4G/5G
	Protocols	UDP/TCP
General features	Power supply	POE or DC12-24V
	Power consumption	3W Max
	Operating temperature	-35°C to +70°C
	Operating humidity	0%-95%
	Dimension	85mm*80mm*218mm (W*D*H, including mounting bracket)
	Weight	700g (including mounting bracket)
	IP class	IP67

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Applications

Intersection Adaptive Traffic Signal Control





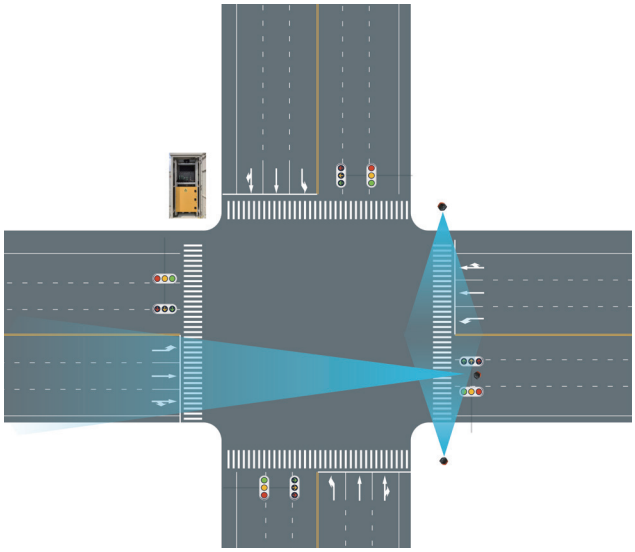
Function Overview

It integrates the information of motor vehicle, special vehicle, non-motorized vehicle and pedestrian traffic demand at intersections. Automatically calculates and generates signal optimization plans in real time according to different traffic demands. Identifies and responds to traffic scenarios and sudden special traffic events. Realizes intersection adaptive traffic control without excessive human intervention, and effectively solves traffic congestion problems.

Technical Highlights

- AI video analysis algorithm, accurate identification of people, vehicles, and objects.
- Automatic traffic event analysis and alarm.
- Definable traffic scene recognition logic.
- Traffic signal adaptive control

Adaptive Control of Pedestrian Crossing



Function Overview

Video recognition technology detects the pedestrian status in the pedestrian waiting area and crosswalk area in real time, including the number of people in the waiting area, the comprehensive waiting time, the pedestrian walking speed in the crosswalk, and the detention situation. Combined with the traffic flow demand of road vehicles and the coordinated control demand of upstream and downstream, it realizes the optimal control of non-contact automatic pedestrian traffic signals.

Technical Highlights

- AI video detection of pedestrian crossing demands.
- Active video detection for a variety of scenarios.
- Automatic cancellation of requests for pedestrian departures.
- Pedestrian crossing adaptive control.

Event Detection



Detection of Pedestrian / non motor vehicle intrusion

Through the pedestrian / non motor vehicle detection model, the objects within the video ROI range are detected. Warn pedestrians or non motor vehicles in time.



Mass fog

Through the visibility model of expressway, the visibility of Expressway in the video is analyzed (divided into 6 levels), and if it is lower than level 3, it will be warned immediately.



Fire

Through the fireworks detection model, the fireworks in the video are identified and warned.



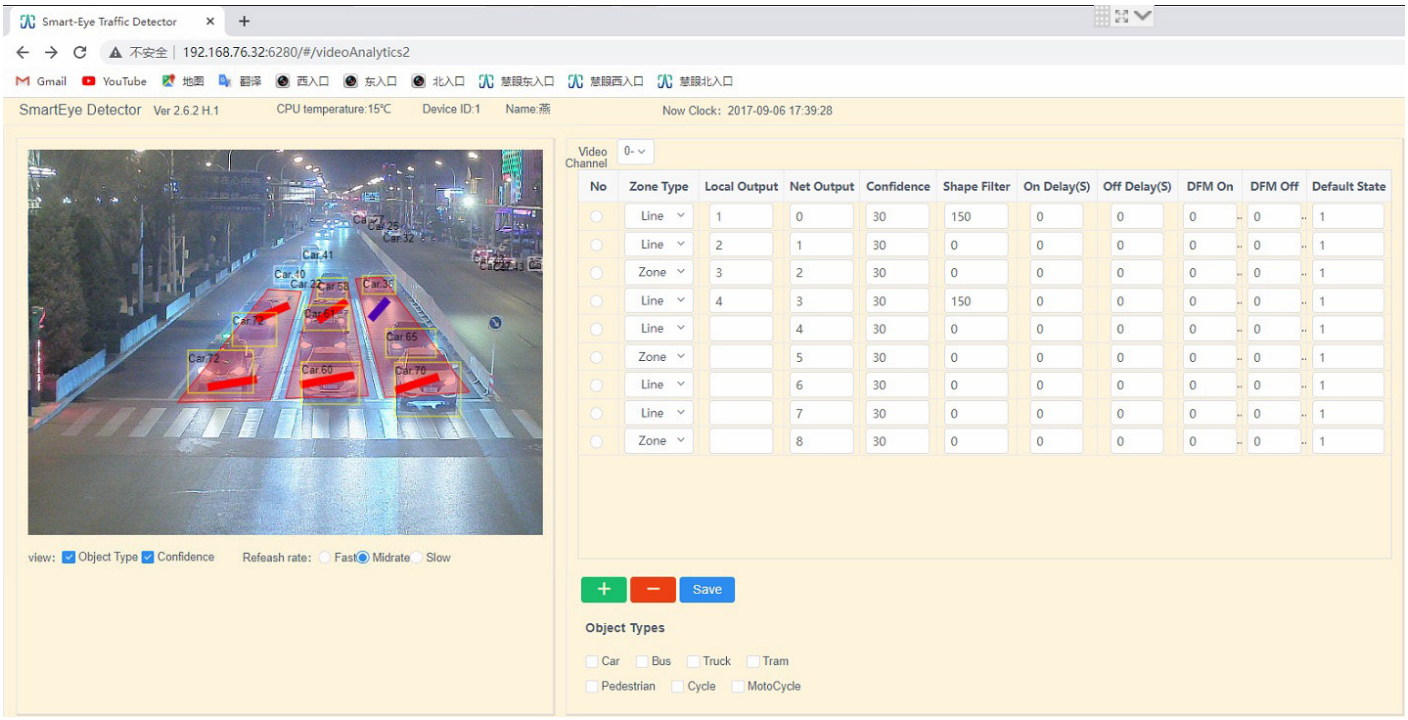
Detection of illegal reversing on Expressway



Road congestion event detection



Vehicle abnormal driving event detection



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Ordering Information

ClairEye-iFUN-LENS-COM-PS

i	FUN	LENS	COM	PS
i: iSeries	**PED**: Pedestrian detection **VEH**: Vehicle detection, default **EVE**: Event detection	**2.8**: Lens 2.8mm **4**: Lens 4mm **6**: Lens 6mm **8**: Lens 8mm **12**: Lens 12mm, default	**ETH**: Ethernet, default **EIO**: Ethernet and 2 I/O, for pedestrian crossing button **WIF**: Wi-Fi, conversion accessory is needed **4G**: 4G, conversion accessory is needed **5G**: 5G conversion accessory is needed	**12**: 12VDC power supply **24**: 24VDC power supply **POE**: POE power supply, default

Example:
ClairEye-iVEH-12-ETH-POE: iSeries for vehicle detection with 12mm lens and Ethernet port communication, POE power supply.

LENS Selection

