Version: 260512

neural Labs
The traffic analytics company!

Neural Ghost AI

Dual camera for traffic control

Software + Hardware

Neural Ghost AI is an All-In-One intelligent camera designed to deliver advanced video analytics for vehicles. It performs license plate recognition (LPR) and identifies key attributes such as make, model[1], color, speed, and vehicle type — including cars, motorcycles, buses, trucks, and vans. In addition to license plate recognitions, Neural Ghost AI also detects vehicles without license plates and can propose sanctions for traffic violations, providing a comprehensive solution for smart traffic control and enforcement.

It reads multiple license plates in up to 2 lanes of vehicles traveling at up to 250 km/h[2] and supports license plates from several countries at the same time. It has long-lasting LED strobe lighting to capture vehicles at any time of the day.

It includes an ultra-sensitive CMOS camera that can be 3.2, 5 or 8.9 MP for license plate recognition and another color CMOS camera of up to 5MP to record evidence. The sensor and the lens of the cameras can be selected from several options according to the client's needs. Both cameras have motorized varifocal lenses.

Neural Ghost AI is an Intel® RFP Ready solution that features a multi-core Intel® processor and Intel® *AI (Artificial Intelligence)* accelerator for Deep Learning-based analytics.



Smart Cities e ITS

Traffic & Enforcements

→ Traffic violation detection, including red-light running, restricted access, illegal stopping, wrong-way driving, improper turns, Low Emission Zones, and license plate restriction

→ Speed violation detection

→ Automatic sanction proposal

→ Photo and video evidence recording

→ Face and plate masking for privacy compliance

Mobility

→ Vehicle Counting

→ Traffic statistics by vehicle type, flow, and average speed

→ High-speed license plate recognition across up to 2 lanes

Security

→ License plate recognition

→ ADR Hazard ID and IMO Diamond recognition

→ Vehicle identification based on make, model, color, and classification for forensic search

→ Alerts based on hotlists, including wanted or stolen vehicles

→ Detection of cloned plates

→ Detection of vehicles without or with unreadable plates

→ Recognition of mopeds across 2 lanes

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Neural Ghost AI Dual

Technical Specifications

Dual camera system	LPR and overview cameras within the same housing
Detected parameters	License plate, make, model [1], color, speed, lane, country and travel direction
Supported countries	Over 113. Consult sales representative
Max. vehicle speed	250 km/h

LPR camera sensor	Option 1: 3.2MP 1/1.8" mono CMOS	Option 2: 5MP 1/1.8" mono CMOS	Option 3: 8.9MP 1" mono CMOS
Overview camera sensor	Option 1: 1080p 1/2" color CMOS	Option 2: 3.2 MP 1/1.8" color CMOS	Option 3: 5 MP 2/3" 3 color CMOS
LPR lens	Option 1: 11-50mm	Option 2: 3.8-16mm	
Overview lenses	Option 1: 11-50mm	Option 2: 3.8-16mm	
LPR sensor filter	850nm Bandpass		
Overview sensor filter	IR-cut / Full spectrum		

CPU	Embedded Quad-core Intel® ATOM	
GPU	Integrated Deep Learning Engine INT8 4TOP	
Video encoding	H.264 4K@50fps, H.265 4K@50fps	
Storage	1 x 256GB M.2 SSD	64GB eMMC5.1 Flash for OS

Lighting	Stroboscopic infrared with 13 NIR LEDs at 850 nm
Maximum range	Up to 30 meters
Beam angle	20°
Light modes	Strobe or continuous

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Technical Specifications

Protocols	RTSP, RDP, NTP/STNP, SNMPV2, RS232, RS485
Time synchronization	NTP/STNP or GPS
Network port	1x Gigabit Ethernet with controller
Serial ports	1x RS232, 1x isolated RS485, 1x isolated RS422
USB port	1x rear panel USB2.0 port for maintenance

Optional accessories	Expandable storage up to 512 GB, 1 TB, or 2 TB
	Heating coil[3]
	4G Communication Module
	GNSS

Power supply	22-28VDC or 40-52VDC (48VDC strongly recommended)
Ingress protection	IP66 + IP68 | IK10
Operating temperature	-40°C to +85°C
Housing	Rugged extruded aluminum, fully fanless design

Warranty	3 years (extendable)*
Product dimensions	242x118x270mm
Product weight	6 kg.
Gross Weight	Approx. 6,3 kg
Packaging dimensions	320x180x320mm

[1] Availability may vary by country.
[2] Depending on camera model.
[3] In winter, snow and ice may form on the outer surface of the camera glass window, resulting in the AI camera not being able to image clearly. This option is highly recommended if the local winter is subject to frequent snowstorms.
* 3-year warranty in Spain; 2-year warranty in other territories.