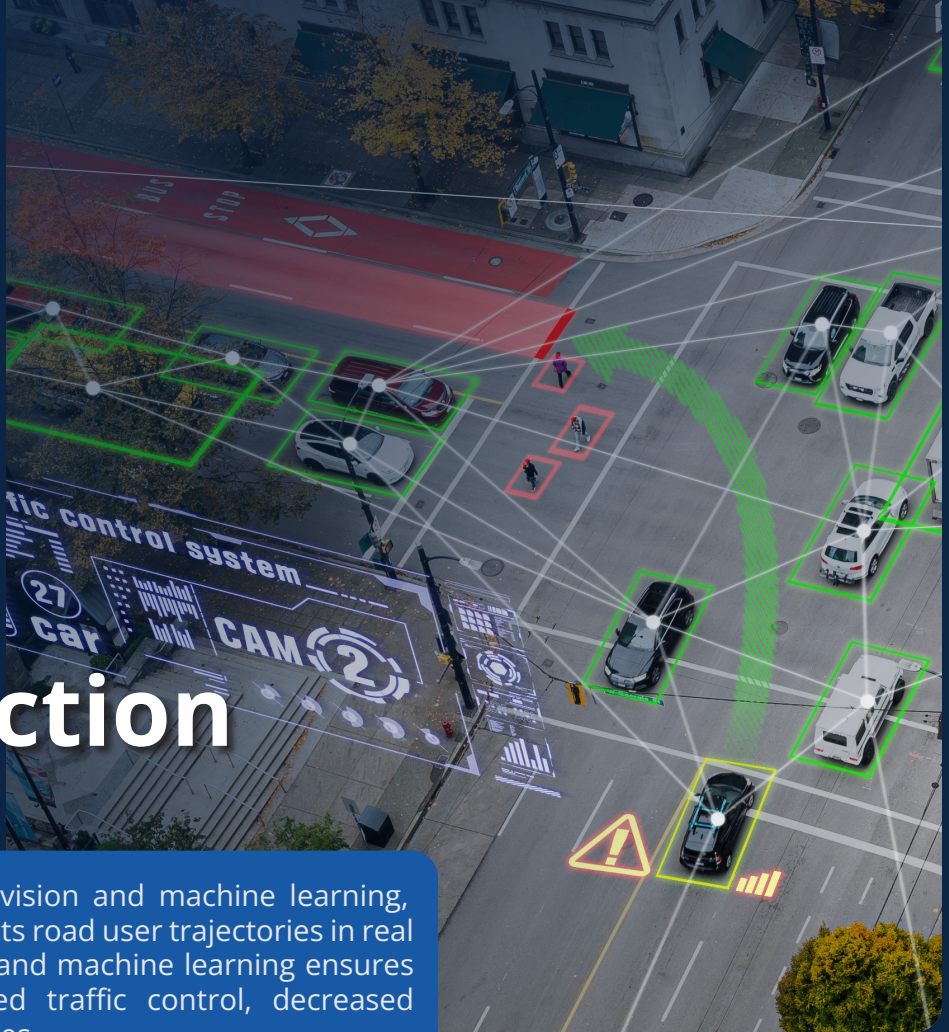




AI-Powered Traffic Detection

Powered by award-winning computer vision and machine learning, Derq SENSE identifies, tracks, and predicts road user trajectories in real time. Derq's patented computer vision and machine learning ensures industry-leading accuracy for improved traffic control, decreased congestion, reduced fatalities, and injuries.



Cutting-Edge AI

- >99% detection accuracy of vehicle, pedestrian, and bicycle detection*
- Extended detection range with support for advanced detection
- Customizable detection across entire field of view and range
- Sensor fusion for precise localization and occlusion handling
- Road user movement and intent prediction
- Hi-res video streaming

Effortless Setup

- Quick and easy installation
- Retrofit existing video detection systems (fisheye or bullet)
- Compatible with all modern traffic controllers
- Digital PTRZ for customized coverage and monitoring

Flexible and Modular

- User-friendly interfaces
- Certified secure platform
- Built-in system health monitoring
- Offline or remote system operation
- Optional add-on modules for safety and traffic insights and connected vehicles

* From FDOT APL 2024-2025 testing results.

Multimodal Detection

Detect and classify all road user types—not just cars. Everyone on the road deserves to be seen.

Vehicles:

- Car
- Minibus van
- Pickup truck
- Bus
- Single unit truck
- Articulated truck
- Motorcycle

VRUs:

- Pedestrian
- Bicycle
- Mobility aid user
- Personal mobility device

Detect in Challenging Conditions

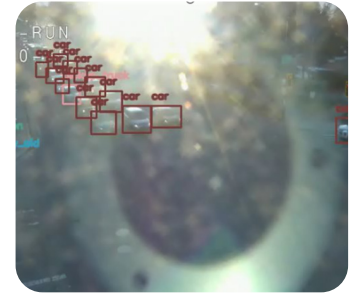
Low Visibility

- Night / Low light
- Occlusions
- Smoke and haze



All Weather

- Heavy rain and snow
- Sun glare
- Fog



State of the Art Detection Hardware

Part of Derq SENSE, our detection system uses ruggedized Edge processors and cameras to fuse live traffic data with AI.

Edge Processor



Ruggedized fanless in-cabinet processor with Nvidia Orin GPUs. Integrated controller interface and cellular modem (optional). Fully NEMA TS2 compliant. USA assembled.

Camera Support and Streaming Protocols	Rectilinear (up to 8 camera feeds), panoramic/fisheye, thermal; PTZ or fixed view; network or analog (using encoder); H.265/H.264/MJPEG/MPEG-4
Detection Zone Configuration	Unlimited number of zones in FOV, configurable by speed, presence duration, road user class, direction of travel, or traffic phase
Controller Interface (Integrated)	Network (SNMP, NTCIP 1202, NTCIP 1211, SAE J2735), Serial (25-pin SDLC for TS2, ATC, 2070 TEES), or hardware (37-pin I/O)
Connectivity	4 x gigabit PoE or 2 x gigabit PoE+ ports with 60W power budget 1x HDMI, 2x USB 3.0 ports 4-CH DI and 4-CH DO
Cellular Communications	5G SA integrated module - <i>optional</i>
Data Output	Live detection overlay (RTSP Stream), detection log with additional metadata, Insights/V2X APIs (add-on modules)
Configuration & Maintenance	Local and remote configuration management, over-the-air updates, temperature supervisor
Dimensions & Weight	7.6"(W) x 11.5"(D) x 3.5"(H) 9.9 lbs. (4.5 Kgs)
Power Supply	12VDC with option for 240W AC power adapter
Operating Temperature Range	-34°C to 74°C / -29°F to 165°F (dedicated heat dissipation)
Installation	Shelf-top or wall-mount or DIN assembly
Certifications	UL/CB/CE/FCC/BSMI/CCC; NEMA TS2 and TEES

Fisheye Camera



Complete coverage with no blind spots; 3008x3008 resolution, 30 fps; Nightvision with IR hard-coated dome cover for durability.

Dimensions & Weight	6.23"x2.84"; 2.58 lbs (1.17Kgs)
Power Consumption	PoE: Max 12.95W, typical 9.4W, 12VDC: Max 12.9W, typical 9.0W PoE+: Max 23.0W, typical 9.4W, 12VDC: Max 22.0W, typical 9.0W
Operating Temperature	-50°F to 165°F (-50°C to 74°C)
Certifications	IP66, IK10, NEMA 4X

Bullet Camera



Directional, long-range coverage; 4k resolution, 30 fps; Nightvision with IR hard-coated dome cover for durability.

Dimensions & Weight	3.68"x11.75"; 4.85 lbs (2.2 Kgs)
Power Consumption	PoE+: Max 22.5W, typical 17.9W, 12VDC: Max 20.0W, typical 15.6W
Operating Temperature	-50°F to 165°F (-50°C to 74°C)
Certifications	IP66/IP67, NEMA 4X, IK10

Complete specifications available upon request.

Optional Add-on Derq Modules

Add real-time insights and connected vehicle alerts to detect risks and prevent collisions.

Real-Time Safety Insights

- Network-wide safety scores
- Near-miss, crash, wrong way, red light violation, jaywalking, detection, and more
- Heat maps and videos to visualize risk

Traffic Insights and ATSPM

- Granular vehicle and VRU counts, classification, turning movements, speed, and more
- Automated Traffic Signal Performance Measures (ATSPM)

Connected Vehicle (CV)

- Real-time V2X alerts to operations centers, connected vehicles, and signage
- BSM, PSM, SDSM, TIM, RSA generator
- Pedestrian and cyclist protection applications