

Leddar™ d-tec

LiDAR-Based Stop-Bar Detection System for Any Traffic Types and Environmental Conditions



ITS



Overview

The Leddar d-tec is a LiDAR-based system that offers accurate stop-bar and advanced detection capabilities for all types of traffic (vehicles, bicycles, pedestrians...). This above-ground traffic detection solution, which includes sensor units and controller cards that communicate directly with the light control unit, is the perfect alternative to legacy induction loop detectors that were traditionally used in automated traffic light management applications.

Advanced Traffic Detection Capabilities

At the heart of the Leddar d-tec system lies the patented Leddar digital signal processing technology, which provides reliable detection, location, and measurement capabilities for all types of traffic. Its solid-state LiDAR sensor measures both distance and angular positioning for each detected target—in any environmental and lighting conditions. The system also uses direction of travel of vehicles, thereby preventing false calls to traffic signal controllers.

The d-tec's flash LiDAR uses LED sources to illuminate the entire sensor's field of view and provides complete coverage of the area of interest. By capturing the return echoes through 16 independent active detection elements at a high data acquisition rate, the Leddar d-tec continuously provides rapid and accurate detection and ranging in the entire beam. The returned signals are digitized and processed through innovative algorithms, allowing the reliable 24/7 detection and measurement of a wide range of objects under the most challenging environmental conditions such as rain, snow, and fog.

Low Installation Cost, Significant Time Savings

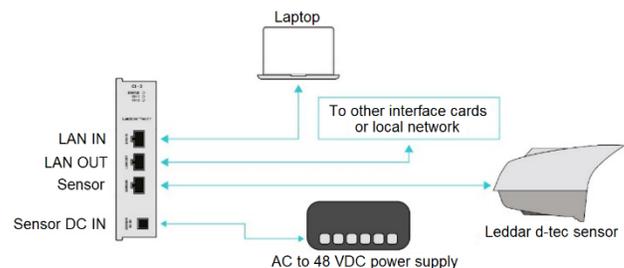
It only takes a few hours to install a complete intersection (2-4 hours for a typical setup) and as little as 15 minutes to configure the system. The onboard camera allows the Leddar d-tec to be easily configured remotely, providing rapid alignment with desired detection areas and simplifying maintenance operations.

Thanks to its robust solid-state design with no moving mechanical parts, the Leddar d-tec system provides high reliability and reduced maintenance costs compared with under-pavement induction loops. Housed in a resistant IP67-rated casing ensuring ingress protection, its LiDAR sensors are built for year-round operation over a very wide range of temperatures. The system uses industry-standard Power over Ethernet (PoE) technology with the same cabling to provide both power and data communication to the sensor, thereby reducing installation costs.

Leddar d-tec Features

- Robust solid-state flash LiDAR design
- Multilane stop-bar detection with 16 segments per d-tec unit
- Integrated video sensor with Pan & Tilt actuator
- Single Cat 5e Ethernet cable - Power over Ethernet (PoE)

Typical Leddar d-tec Setup



Configurations and Specifications

| Configuration | Long Range (P/N 75A0018) | Narrow Angle (P/N 75A0002) | Medium Angle (P/N 75A0014) | Wide Angle (P/N 75A0003) |
|---|-----------------------------|-------------------------------|-------------------------------|-----------------------------|
| Field of view (H/V) | 9° / 1.6° | 19° / 3.0° | 26° / 4.2° | 36° / 5.9° |
| Dimensions (mm, H x W x D) | 226 x 259 x 386 | | | |
| Weight (kg) | 3 | | | |
| Recommended maximum stop-bar distance (m) | 75 | 55 | 40 | 30 |

System Performance

- Data refresh rate (Hz): 196
- Operating temperature range (°C): 40 to 60
- Power consumption (W): 15 (without heater)
25.5 (with heater)
- Interface options: Ethernet Cat 5e RJ45 plug

Sensor Characteristics

- Number of segments: 16
- Wavelength (nm): 940
- Power supply: IEEE 802.3at, 48 to 56 VDC, min. 30 W
- Mounting: Compatible with standard traffic hardware
- Recommended mounting height (m): 5.2 to 6.4
- Ingress protection rating: IP67
- Eye safety: IEC 62471:2006 (exempt lamp classification)
- Regulatory compliance: FCC Part 15, Subpart B, Class A
ICES-003, Class A
CE

Package Contents

- Sensor unit
- RJ45 connector kit:
 - Shielded Cat 5e RJ45 plug
 - Bayonet-locking coupling/protective connector

Controller Interface Cards¹

- P/N 75A0005: 2-channel
- P/N 75A0006: 4-channel half-width
- P/N 75A0004: 4-channel full-width
- Interface card power supply:
 - Input: 88-264 VAC, 47-63 Hz
 - Output: 42-56 VDC
 - 0.8 A, 1 sensor (P/N 75A0007)
 - 3.3 A, 4 sensors (P/N 75A0010)

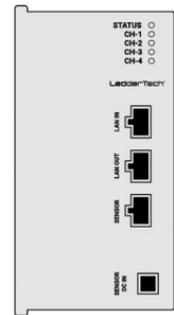
¹ Available as options.



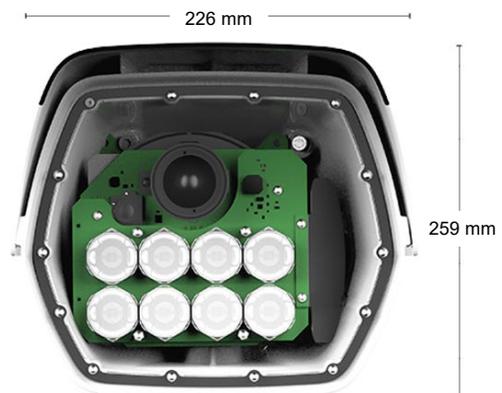
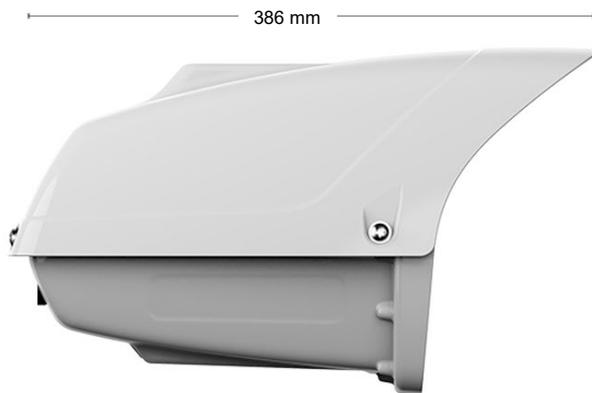
2-channel



4-channel
half-width



4-channel
full-width



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