

Leddar[™] d-tec

LiDAR-based Stop-bar Detection System for all Traffic Types and in any 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, 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 high data acquisition rates, 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

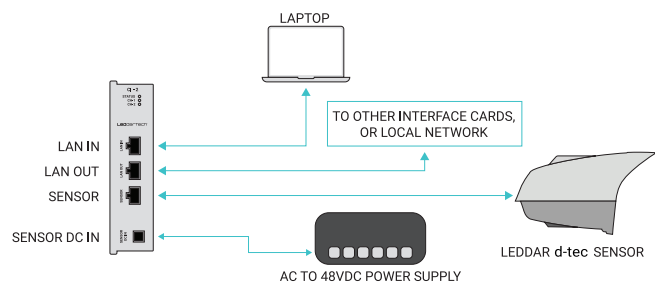
It only takes a few hours to install a complete intersection (2-4 hours for a typical setup) and as little as 15 minutes to configure. The onboard camera allows the Leddar d-tec to easily be configured remotely, providing rapid alignment with desired detection areas and simplifying maintenance operations.

Thanks to its robust solid-state design with no moving parts, the Leddar d-tec system provides high reliability and reduced maintenance costs compared with under-pavement induction loops. Housed in a resistant casing delivering IP67 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 the installation costs.

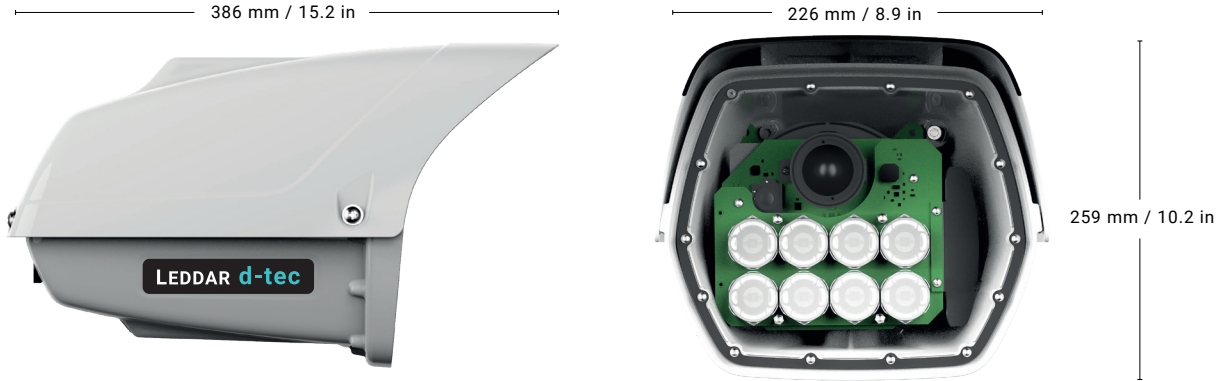
Leddar d-tec Features

- Robust solid-state flash LiDAR design
- Multilane stop bar detection with 16 segments per d-tec
- Integrated video sensor with Pan and Tilt actuator
- Fully IP addressable
- Single Cat 5e Ethernet cable - Power over Ethernet (PoE)
- IP67 weatherproof enclosure

Typical Leddar d-tec Setup



Configurations and Specifications



Configurations	Long range (PN 75A0018)	Narrow angle (PN 75A0002)	Medium angle (PN 75A0014)	Wide angle (PN 75A0003)
Field of view (H/V)	9°/1.6°	19°/3.0°	26°/4.2°	36°/5.9°
Dimensions (W x H x D)	226 mm x 259 mm x 386 mm / 8.9 in x 10.2 in x 15.2 in			
Weight	3 kg / 6.6 lbs			
Recommended maximum stop-bar distance	75 m	55 m	40 m	30 m

SYSTEM PERFORMANCE

- **Operating temperature range** - 40° C to + 60° C / -40° F to +140° F
- **Power consumption without heater** 15W
- **Power consumption with heater** 25.5W
- **Interface options** Ethernet Cat 5e RJ45 Plug

SENSOR CHARACTERISTICS

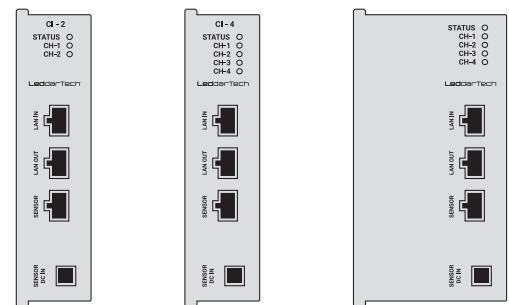
- **Number of segments** 16
- **Wavelength** 940 nm
- **Power supply** IEEE 802.3at, 48 to 56 VDC, 30W minimum
- **Mounting** Compatible with standard traffic hardware
- **Recommended mounting height** 5.2 m to 6.4 m (17 ft to 21 ft)
- **Ingress protection** IP67
- **Eye safety** IEC 62471 2006 criteria: Exempt lamp classification
- **FCC** Yes (Part 15, Subpart B, Class A)
- **ICES-003** Class A
- **CE** Yes

INCLUDED ACCESSORIES

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

CONTROLLER INTERFACE CARDS¹

- **PN 75A0004** 4-Channel Full-Width
- **PN 75A0006** 4-Channel Half-Width
- **PN 75A0005** 2-Channel
- **Interface card power supply**
 - Input: 88-264 VAC, 47-63 Hz
 - Output: 42-56 VDC
 - 0.8A, 1 sensor (PN 75A0007)
 - 3.3A, 4 sensors (PN 75A0010)



2-Channel

4-Channel
Half-Width

4-Channel Full-
Width

¹ : Available as an option

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Leddar™ technology is covered by one or more of the following U.S. patents: 7855376B2, 7554652, 8319949B2, 8310655, 8242476, 8908159, 8767215B2 or international equivalents. Other patents pending. Find the most recent version of our datasheet on our website. LeddarTech, the LeddarTech logo, Leddar, LeddarCore, LeddarOne, LeddarEngine, are trademarks or registered trademarks of LeddarTech Inc. The content of this spec sheet is subject to change without notice. 54A0006-12EN / Ver. 20191218
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