

LeddarTech®



LEDDAR T16

**SOLID-STATE LiDAR
TRAFFIC SENSOR WITH IP67
WEATHERPROOF ENCLOSURE**

LEDDAR T16

THE POWERFUL AND RELIABLE LiDAR SENSOR FOR ELECTRONIC TOLLING, TRAFFIC MONITORING, AND TRAFFIC LAW ENFORCEMENT APPLICATIONS

OVERVIEW

The Leddar™ T16 Traffic Sensor is a 2D solid-state LiDAR that is specifically designed for traffic management systems—from city to highway applications. Packaged in a weatherproof housing, the Leddar T16 offers cost-efficient and highly accurate detection for various Intelligent Transportation System (ITS) applications, such as electronic tolling, traffic monitoring and traffic law enforcement. At the heart of the sensor resides the patented Leddar digital signal processing technology, which provides superior detection, location and measurement capabilities for all types of traffic, including vehicles, pedestrians and cyclists. The Leddar T16 measures both the distance and angular positioning for each detected target. Its collected data enables functionalities, such as vehicle profiling, speed measurement, and traffic data collection.

ADVANCED VEHICLE DETECTION AND MEASUREMENT

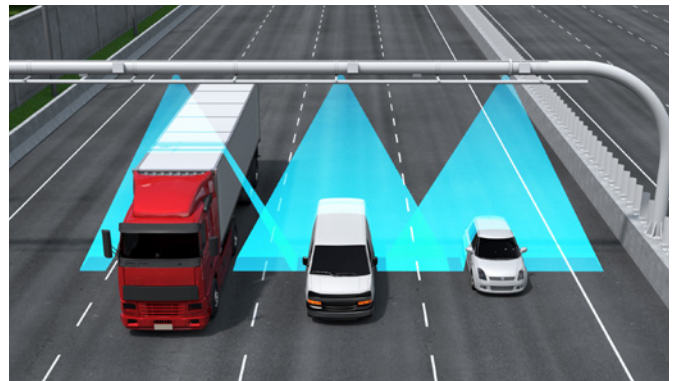
The Leddar T16's flash illumination emitted by its LED sources covers the sensor's complete field of view. Capturing the return echoes of these diffused light pulses through 16 independent active detection elements at a high acquisition rate, the Leddar T16 Traffic Sensor continuously provides rapid and accurate detection and ranging in the entire beam without any moving mechanical parts. The returned signals are digitized and processed through innovative algorithms, allowing the reliable detection and measurement of a wide range of objects under the most challenging environmental conditions, such as rain, snow and fog.

PEACE OF MIND AND EASE OF USE

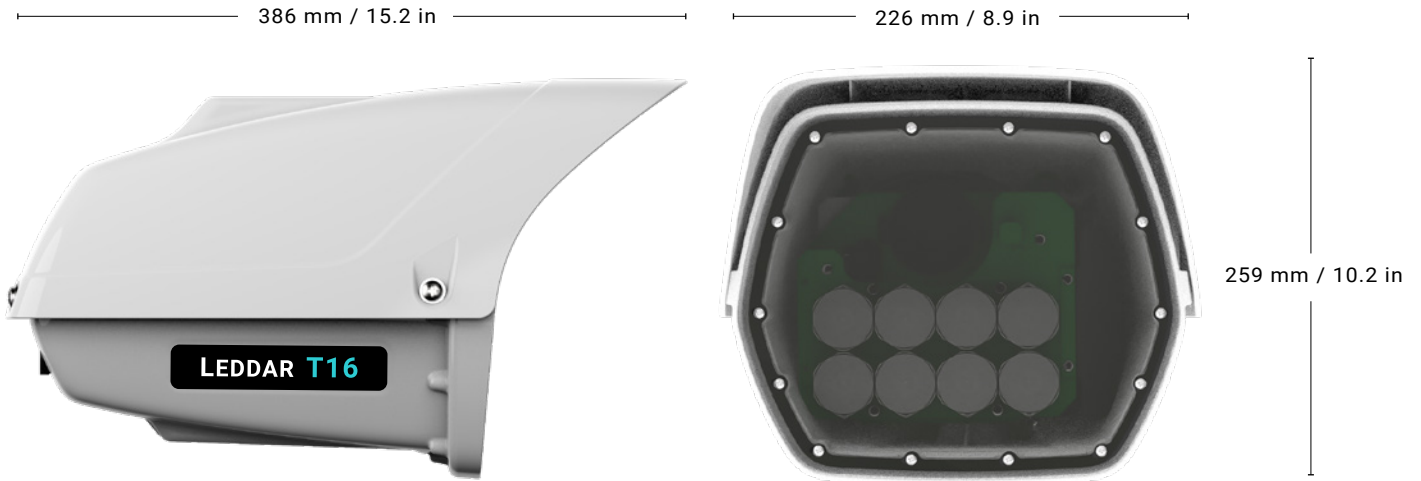
Thanks to its robust solid-state design, the Leddar T16 Traffic Sensor provides a high reliability and reduces maintenance costs compared to mechanical scanning LiDARs. Housed in a resistant and weatherproof enclosure (IP67 ingress protection), the Leddar T16 traffic sensor is built for year-round operation over a very wide temperature ranges. It uses industry-standard Power over Ethernet (PoE) connection, with the same cabling providing both power and data communication to the sensor, thereby reducing installation costs.

With its above-ground installation, the Leddar T16 Sensor is designed to be rapidly integrated with current traffic infrastructure. The optional onboard image sensor (provided with the "Traffic" configuration) allows the Leddar T16 to easily be configured remotely, providing rapid alignment with desired detection areas and simplifying maintenance operations.

All T16 sensors come with a software development kit, the Leddar Enabler SDK, which provides a user-friendly application programming interface (API) with C libraries, and code examples for Windows.



LEDDAR T16



CONFIGURATIONS	Tolling	Traffic
Beam FOV options (from 9° to 48°)	Yes	Yes
IP67 housing	Yes	Yes
Anti-reflective window surface treatment	Yes	No
Leddar configuration software	Yes	Yes
Color image sensor (MPEG-4 video feedback)	No	Yes
Pan & Tilt actuator	No	Yes
Enclosure sunshade	No	Yes

CHARACTERISTICS

- **Beam FOV options (H/V)**
9°/1.6°, 19°/3.0°, 26°/4.2°, 36°/5.9°, 48°/7.5°
- **Number of segments** 16
- **Wavelength** 940 nm
- **Weight** 3 kg (6.6 lbs)
- **Power supply** IEEE 802.3at PoE (Power over Ethernet), 48 VDC
- **Mounting** Compatible with standard traffic hardware
- **Ingress protection** IP67
- **Ocular safety** IEC 62471 2006 criteria: Exempt lamp classification
- **FCC** Yes (Part 15, Subpart B, Class A)
- **ICES-003** Class A
- **CE** Yes

SYSTEM PERFORMANCE

- **Detection range**¹ up to 75 m
- **Accuracy** ±5 cm
- **Data refresh rate** 200 Hz
- **Operating temperature range** -40° C to + 60° C (-40° F + 140° F)
- **Power consumption without heater** 15W
- **Power consumption with heater** 30W

1 : Varies with configuration and target

INTERFACE OPTIONS

- **Ethernet Cat 5e RJ45 Plug Kit :**
Shielded Cat 5e RJ45 plug
Bayonet-locking coupling/protective connector
- **Leddar T16 uses LeddarTech's proprietary communication protocol (TCP/IP socket-based protocol called lpv4).**

ORDERING INFORMATION

LEDDAR - T16 - XX - XX

Configuration

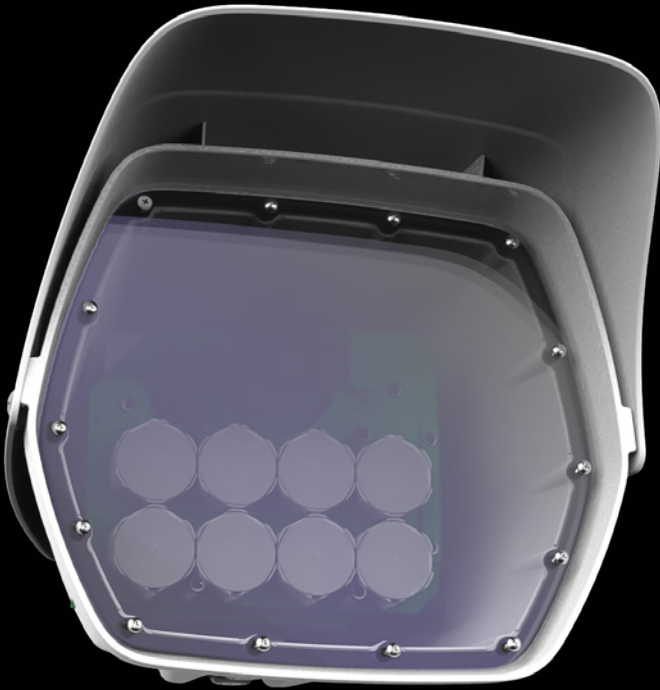
TR: Traffic
TO: Tolling

Beam

09°, 19°, 26°, 36°, 48°

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SOLID-STATE LiDAR TRAFFIC SENSOR WITH IP67 WEATHERPROOF ENCLOSURE



OVERVIEW

✓ Main Features

- Robust solid-state flash LiDAR design
- Measurement rate of 200Hz for high-speed vehicle detection
- Fully IP addressable
- Single Cat 5e Ethernet cable - Power over Ethernet (PoE)
- IP67 weatherproof enclosure
- Integrated video sensor with Pan and Tilt actuator (traffic configuration)

✓ Benefits for Traffic Applications

- Detection of all types of vehicles, including bicycles and pedestrians
- Reliable detection in any environmental conditions
- Fast installation on current infrastructure
- Quick and easy configuration
- Remote access configuration and monitoring
- Scalable solution covering multiple ITS applications

✓ Benefits for e-Tolling Applications

- High measurement rate enabling free-flow vehicle profiling and classification
- Diffuse beam delivering higher detection rates over specular surfaces
- Multiple optical configurations offered to address specific project requirements
- Lower maintenance cost compared to mechanical LiDARs
- Ability to capture small vehicle details at high speed, such as hitches
- Ability to distinguish between tailgating vehicles

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