

Leddar™ T16

Solid-State LiDAR Traffic Sensor
With IP67 Weather-Resistant Enclosure



ITS



Overview

The Leddar T16 Traffic Sensor is a 2D solid-state LiDAR specifically designed for traffic management systems—from city to highway applications. Packaged in a weather-resistant 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. The 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 high reliability and reduces maintenance costs compared to mechanical scanning LiDARs. Housed in a sturdy, weather-resistant IP67-rated enclosure, the Leddar T16 Traffic Sensor is built for year-round operation over 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 is designed to be rapidly integrated with current traffic infrastructure. The optional onboard image sensor (offered 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 Features

- Robust solid-state flash LiDAR design
- Measurement rate of 196 Hz for high-speed vehicle detection
- Fully IP addressable
- Single Cat 5e Ethernet cable – Power over Ethernet (PoE+)
- IP67 weather-resistant enclosure
- Integrated video sensor with Pan & Tilt actuator ("Traffic" configuration)

Specifications

- Beam FoV options (H/V) (°): 10/1.6, 19/3.0, 25/4, 36/5, 48/6
- Number of segments: 16
- Wavelength (nm): 940
- Weight (kg): 3
- Power supply (VDC): 48
- Power supply type: IEEE 802.3at PoE (Power over Ethernet)
- Mounting: Compatible with standard traffic hardware
- 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

System Performance

- Detection range¹ (m): Up to 50
- Accuracy (cm): ±5
- Data refresh rate (Hz): 196
- Operating temperature range (°C): -40 to +60
- Power consumption (W): 15 (without heater)
25.5 (with heater)

¹ Varies according to configuration and target.

Interface Options

- Ethernet Cat 5e RJ45 plug kit: shielded Cat 5e RJ45 plug with Bayonet-locking coupling/protective connector.
- Leddar T16 uses LeddarTech's IPv4 proprietary communication protocol (TCP/IP socket-based protocol).

Ordering Information

LEDDAR - T16 - XX - XX

Configuration

TR: Traffic
TO: Tolling

Beam

10°, 19°, 25°, 36°, 48° (48° beam available only with "Tolling" configuration)

Configuration	Tolling	Traffic
Beam FoV options	10° to 48°	10° to 36°
IP67 enclosure	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



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