

Leddar™ M16

16-Segment Solid-State
LiDAR Sensor Modules



Autonomous
delivery vehicles



Commercial
vehicles



Autonomous
shuttles



Industrial
vehicles



Overview

The Leddar™ M16 Sensor Module is a solid-state flash illumination LiDAR that combines 16 independent active elements into a single sensor, resulting in rapid, continuous and accurate detection and ranging—including lateral discrimination—in the entire wide beam, without any moving parts. The Leddar M16 can be easily integrated into almost any application to add sensing intelligence capability, enabling developers and integrators to make the most of this cutting-edge technology while leveraging its unmatched flexibility.

Choosing Your Configuration

The M16 modules are available in two main configuration types: the LED family and the Laser family.

The M16-LED is the proven Leddar workhorse that our clients have come to value for its versatility and reliability. This module's infrared LED light source provides wide-beam illumination at ranges up to 100 m and is offered in six different field-of-view configurations.

The M16-LSR uses laser sources to achieve longer ranges, providing narrower and better-defined vertical FoV—all in a smaller-form factor.

Both M16 families are perfectly suited to outdoor operation, provided they are used within an enclosure: solid-state design with no motorized mechanism, wide operating temperature ranges, all-weather performance and immunity to lighting variations—both day and night.

Integration and Interfaces

All M16 modules 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 and Linux.

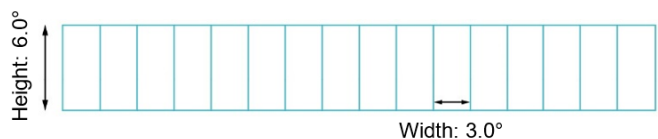
Available interfaces for the M16 include USB, RS-485, CAN bus and UART. A 3.81 mm x 8-pin male header is provided for interfacing through a cable harness or terminal block. Also, a USB mini-B connector is provided for use with the Leddar Enabler SDK, and a 2 x 20, 0.050-inch header is provided for custom expansion. Specific information about interface requirements can be obtained by contacting one of our team specialists.

Specific Integration Guidelines are also available, providing the technical information required to successfully integrate the M16 module into the user's product.

Leddar M16 Features

- 16 independent segments with simultaneous acquisition
- Multitarget and lateral discrimination capabilities
- Various beam options for optimized field of view (FoV)
- Detection range up to 165 m

FoV Segmentation (Example of a 48° x 6° M16-LED)



Configurations and Specifications

	Horizontal FoV (°)	Vertical FoV (°)	Dimensions ¹ (mm)	Weight (g)	Range @ 6.25 Hz refresh rate (m)		
M16-LSR					Retroreflector ²	White 90% ³	Gray 18% ⁴
M16R-75J0012	19	0.3	71 x 64 x 76	255	165	41	25
M16R-75J0003	19	3.0	71 x 64 x 76	255	110	31	18
M16R-75J0002	36	0.2	74 x 64 x 66	175	146	37	20
M16R-75J0007	48	0.3	62 x 64 x 66	162	105	27	16
M16R-75J0008	48	3.0	62 x 64 x 66	162	81	21	15
M16R-75J0001	48	5.1	62 x 64 x 66	162	75	16	10
M16R-75J0011	48	5.5	62 x 64 x 66	162	91	23	13
M16R-75J0009	99	0.3	62 x 64 x 66	182	35	15	10
M16R-75J0010	99	3.0	62 x 64 x 66	182	30	10	6
M16-LED							
M16D-75B0006	10	1.6	87 x 104 x 66	295	100	35	25
M16D-75B0007	19	3	71 x 104 x 66	255	93	32	21
M16D-75B0009	25	4	60 x 104 x 66	205	85	25	16
M16D-75B0010	36	5	52 x 104 x 66	200	62	17	12
M16D-75B0005	48	6	47 x 104 x 66	175	55	16	10
M16D-75B0008	99	8	63 x 104 x 84	210	25	6	3

¹ Depth x height x length.

² Retroreflector reference target corresponds to a 5 cm x 7 cm strip of reflective tape.

³ White reference target corresponds to a 20 cm x 25 cm Kodak gray card with 90% reflectivity.

⁴ Gray reference target corresponds to a 20 cm x 25 cm Kodak gray card with 18% reflectivity.

Specifications	M16-LSR	M16-LED
Wavelength (nm)	905	940
Power supply (VDC)	12 to 30	12 or 24 (jumper selectable)
Number of segments	16	
Interfaces	USB, RS-485, CAN, UART	

System Performance	M16-LSR	M16-LED
Eye safety	IEC 60825-1:2014 Class 1	IEC 62471:2006 (exempt lamp classification)
Regulatory compliance	CE, FCC Class B, RoHS	
Accuracy ⁵ (cm)	±5	
Data refresh rate (Hz)	Up to 100	
Distance precision (mm)	±6	
Distance resolution (mm)	±10	
Power consumption (W)	4	

⁵ For oversampling of 4 and more.

Environmental Performance	M16-LSR	M16-LED
Operating temperature range (°C)	-40 to +85	
Operation, transport, and storage relative humidity (%)	5 to 95	

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