

# UNMANNED AUTONOMOUS SYSTEM SENSORS

- + Long Range
- + Rapid Pulse Rates
- + Pinpoint Laser Precision
- + High Ground-Level Accuracy



# Laser Sensors

Designed with high accuracy, pinpoint precision and long-range capabilities to natural targets, LTI's laser sensors are a must for many unmanned autonomous systems. They can discriminate between unwanted interference and the actual range data you need.

Adjust the pulse rate, power level and advanced target modes to dial-in the sensor's optimum performance within your specific environmental conditions. Measure and collect reliable range data every split second and have it in an output format that is compatible with your existing system.

## TruSense® S-200 Series

- LTI's smallest and most lightweight sensor fits into most payloads
- OEM version makes system integration quick and easy
- Ranges over a mile to natural targets

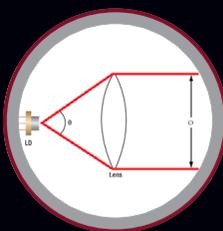


## Universal Laser Sensor

- Senses the presence of extremely fast-moving targets in real time
- Penetrates light fog and dust for outdoor applications
- Produces highly accurate and reliable distance data



**LONG RANGE**  
Detect any natural target at ranges that will always give you enough forewarning to safely maneuver around it.



**NARROW BEAM WIDTH**  
Distinguish between two objects within close proximity of each other with pinpoint accuracy.



**HIGH ACCURACY**  
Be confident in your measurements and avoid costly mistakes that can make or break a UAS.

## Air-to-Ground Distance Data

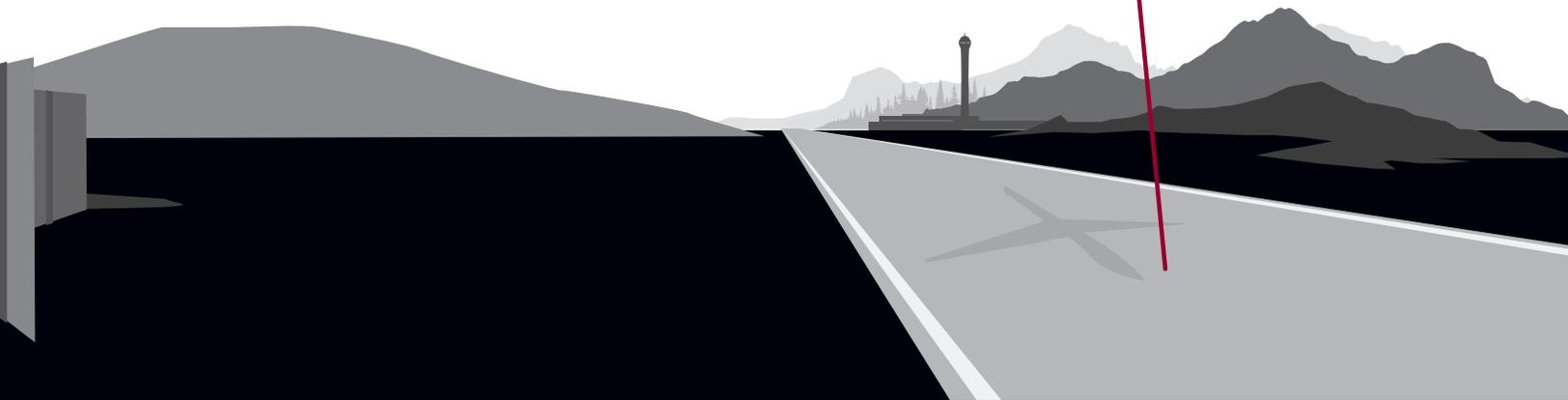
LTI's reflectorless, long-range measurement sensors are ideal for air-to-ground measurements for accurate takeoff and landing maneuvers.

For low altitude air-to-ground measurements (AGM), LTI sensors can complement onboard radar, GPS and compass sensors. Obtain highly accurate (2 cm) and rapid data rates (up to 2,000 pulses per second) so you can safely land your UAS with precision.

They are small enough to fit perfectly with other components and will meet your size, weight and low-power (SWaP) requirements.

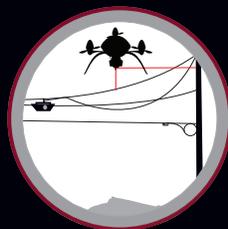


SWaP Compatible  
TruSense OEM



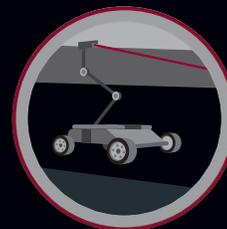
### HEIGHT

Verify air-to-ground measurement to ensure accurate vertical range readings.



### DETECTION

Instantly know what may be in the way before it becomes problematic.



### PROXIMITY

Avoid damage and costly incidents by constantly monitoring positions of nearby obstacles.



## Specifications

|                                 |                          | TruSense S-200 Series  | Universal Laser Sensor   |
|---------------------------------|--------------------------|--|--|
| <b>Performance</b>              | Min. Range               | 1.5 ft (46 cm)   | 1.5 ft (46 cm)   |
|                                 | Max. Range               | 9,514 / 5,249 ft (2,900 / 1,600 m) low-accuracy mode<br>4,921 / 2,953 ft (1,500 / 900 m) medium-accuracy mode<br>2,461 / 2,461 ft (750 / 750 m) high-accuracy mode | 5,249 / 1,640 ft (1,600 / 500 m)                               |
|                                 | Accuracy                 | 0.1 ft (4 cm) in short-range mode<br>0.3 ft (8 cm) in medium-range mode<br>0.5 ft (15 cm) in long-range mode   | 0.70 in (2 cm)   |
|                                 | Data Output Rate         | <1 Hz to 14 Hz; 200 Hz mode (only with RS232)  | <1 Hz to 2 kHz: depending upon RS232 or RS485                  |
|                                 | Target Modes             | First, Last, Strongest   | Averaging, Binning, Detection, Last                            |
| <b>Optical &amp; Electrical</b> | Wavelength               | 905 nm (near IR)   | 905 nm (near IR)   |
|                                 | Divergence               | 3 mrad (equal to 1 ft beam diameter @ 328 ft or 30 cm @ 100 m)   | 3 mrad (equal to 1 ft beam diameter @ 328 ft or 30 cm @ 100 m) |
|                                 | I/O                      | S-200 = TRIG, SDI12, RS232 without alignment laser<br>S-210 = TRIG, SDI12, RS232 with alignment laser<br>S-230 = 4-20, 4-20 HART, RS232 with alignment laser       | RS232, RS485, 4-20   |
|                                 | Input Power              | 12 VDC   | 12-24 VDC nominal, 10-30 VDC absolute (12 VDC recommended)     |
|                                 | Current Draw             | Measuring = 150 mA, Standby = 40 mA  | Measuring = 150 mA   |
| <b>Physical</b>                 | Dimensions (L x W x H)   | 4.11 x 3.22 x 1.64 in (104.4 x 81.7 x 41.6 mm)   | 5.3 x 4.75 x 2.5 in (134.6 x 120.7 x 50.8 mm)                  |
|                                 | Weight                   | Standard = 4.8 oz (138.6 g)<br>OEM = 2.7 oz (76 g)   | Standard = 32.8 oz (929.9 g)<br>OEM = 15.5 oz (439.3 g)        |
|                                 | Housing & Frame Material | Glass-filled polycarbonate   | Aluminum   |
| <b>Environmental</b>            | Eye Safety               | Class 1, 7 mm (FDA, CFR21)<br>Class 1m (IEC 60825 - 1 : 2001)  | Class 1, 7 mm (FDA, CFR21)<br>Class 1m (IEC 60825 - 1 : 2001)  |
|                                 | Shock / Vibration        | MIL-STD-810  | MIL-STD-810  |
|                                 | Moisture                 | IP54   | IP54   |
|                                 | Operating Temperature    | -20° to 140° F (-28° to 60° C)   | -20° to 140° F (-28° to 60° C)                                 |

All specifications subject to change without notice.