

Manufacturing | Defense | Education | Industrial | Marine | Geological | Aerial Surveying & Mapping



**DOCKING**



**PROXIMITY**



**DETECT**



**GUIDANCE**



**DISTANCE**



**HEIGHT**



## < DOCKING

Being able to acquire accurate measurements to almost any type of surface will make vessel- and shore-based maneuvers a whole lot more manageable.

Instantly know bridge gap values, water lock heights or any other measurement value you may need.

## PROXIMITY >

Blind spots cause costly collisions and can ruin an entire operation. Avoid them altogether with these lightning-fast sensors that will ensure nothing encroaches into your safety zones.



## < HEIGHT

Precise and reliable height measurements can certainly assist with a safe landing, especially through fog or airborne particulates generated from high winds.

\* Sensors used on aircraft are subject to U.S. export controls.



# VEHICLE & EQUIPMENT GUIDANCE SENSORS

## Universal Laser Sensor (ULS)

These sensors are highly accurate and fully programmable and offer a variety of I/O formats. Easily control parameters such as the laser power levels or short and long-range gates.

\*All sensors include field installation cable.

### ULS

Ideal for applications requiring extremely high accuracy.

#7005400

### ULS OEM

Ideal for system integration.

#7005395



## TruSense® S-Series

All these sensors are powerful, compact and more affordable. Use any one of the variety of targeting modes to customize what you want the laser to detect.

\*All sensors include field installation cable & interface software.

### S-100

More cost-effective.

#7005770

### S-100 OEM

Ideal for system integration.

#7005780

### S-200

Offers higher accuracy.

#7005785

### S-200 OEM

Ideal for system integration.

#7005910



## Accessories



### Mounting Plate

Attach to any LTI sensor or the LTI Mounting Bracket.

#7035137



### Sun Shade

Protect your LTI sensor from inclement weather, sun and overhead dust.

#1134749



### Mounting Bracket

Permanently mount your LTI sensor with swivel and tilt adjustments.

(Requires LTI Mounting Plate.)

#3004959

## Accessories Continued



### Power/Comm Cable

A completely pre-assembled configuration cable for your convenience.

(Not intended for field installation. Only 1 recommended regardless of sensor quantity.)

ULS #7054667  
S-100 #7054670  
S-200 #7054671



### ULS Interface Kit

A software program to configure your ULS. (Not intended for field installation. Includes download cable & software. Only 1 recommended regardless of sensor quantity.) #7034740



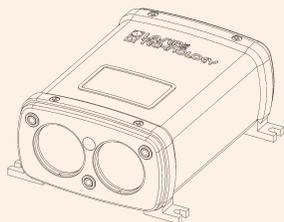
Specifications		Universal Laser Sensor (ULS)	TruSense S-100	TruSense S-200
Performance	Min range	1.5 ft (46 cm)	1.5 ft (0.46 m)	1.5 ft (46 cm)
	Max range (to reflective target / to nonreflective target)	5,249 / 1,640 ft (1,600 / 500 m)	7,546 / 5,249 ft (2,300 / 1,600 m)	9,514 / 5,249 ft (2,900 / 1,600 m) low-accuracy mode 4,921 / 2,953 ft (1,500 / 900 m) medium-accuracy mode 2,461 / 2,461 ft (750 / 750 m) high-accuracy mode
	Accuracy	0.70 in (2 cm)	3.3 ft (1 m)	0.1 ft (4 cm) in short-range mode 0.3 ft (8 cm) in medium-range mode 0.5 ft (15 cm) in long range-mode
	Data output rate	<1 Hz to 2 kHz	<1 Hz to 6 Hz	<1 Hz to 15 Hz
	Target modes	Averaging, binning, detection, last	Closest, farthest, closest-farthest, strongest, first	First, strongest, last, first-second-third, Last-second to last, first-strongest-last, First-second-third-strongest-last
	Wavelength	905 nm (near IR)	905 nm (near IR)	905 nm (near IR)
Optical and Electrical	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)	3 mrad (equal to 1 ft beam diameter @ 328 ft or 30 cm @ 100 m)
	I/O	RS232, RS485, 4-20	RS232	S-200 = TRIG, SDI12, RS232 without alignment laser S-210 = TRIG, SDI12, RS232 with alignment laser S-230 = 4-20 HART with alignment laser
	Input power	12-24 VDC (12 VDC recommended)	6 to 11 VDC (9 VDC recommended)	12-24 VDC (12 VDC recommended)
Physical	Current draw	Measuring = 150 mA	Measuring = 140 mA, Idle = 50 mA Sleep = 30 mA	Measuring = 65 mA, Standby = 40 mA
	Dimensions (L x W x H)	5.3 x 4.75 x 2.5 in (134.6 x 120.7 x 50.8 mm)	4.11 x 3.22 x 1.64 in (104.4 x 81.7 x 41.6 mm)	4.11 x 3.22 x 1.64 in (104.4 x 81.7 x 41.6 mm)
	Weight	Standard = 32.8 oz (929.9 g) OEM = 15.5 oz (439.3 g)	Standard = 4.8 oz (138.6 g), OEM = 2.7 oz (76 g)	Standard = 4.8 oz (138.6 g), OEM = 2.7 oz (76 g)
	Housing and frame material	Aluminum	Glass-filled polycarbonate	Glass-filled polycarbonate
Environmental	Eye safety	Class 1, 7mm (FDA, CFR21) Class 1m (IEC 60825 - 1 : 2001)	Class 1, 7 mm (FDA, CFR21) Class 1m (IEC 60825 - 1 : 2001)	Class 1, 7 mm (FDA, CFR21) Class 1m (IEC 60825 - 1 : 2001)
	Shock / vibration	MIL-STD-810	MIL-STD-810	MIL-STD-810
	Moisture	IP54	IP54	IP54
	Operating temperature	-20° to 140° F (-28° to 60° C)	-20° to 140° F (-28° to 60° C)	-20° to 140° F (-28° to 60° C)

\* All specifications are subject to change without notice. Rev. 1 January 2012

**ac-cu-ra-cy** (*noun*): the degree of conformity of a measurement to a standard or a true value.

**con-verge** (*verb*): two or more light rays proceeding inward toward a point.

**co-op-er-a-tive tar-get** (*noun*): a highly reflective surface or object, such as a glass corner cube or reflective tape.



**dif-fuse re-flec-tion** (*verb*): a light striking a target and being scattered over a wide angle.

**di-verge** (*verb*): two or more light rays proceeding outward from a point.

**eye safe** (*noun*): lasers emitting energy with no hazards to the human eye.

**fre-quen-cy** (*noun*): the number of repeating events per unit of time. A 1 kHz laser firing rate means a laser is firing 1,000 times per second.

**harsh am-bi-ent con-di-tions** (*noun*): the challenging atmosphere between the sensor and a target.

**in-fra-red light** (*noun*): invisible light with wavelengths roughly between 700 nm and 1550 nm.

**la-ser** (*noun*): acronym for light amplification by stimulated emission of radiation. A device that produces a monochromatic coherent beam of light by energizing atomic energy levels.

**lens** (*noun*): an optical element that converges or diverges light.

**max-i-mum range** (*noun*): the farthest reaching distance the sensor can acquire a measurement.

**min-i-mum range** (*noun*): accuracy may be compromised if a measurement is made from less than this distance.

**non-con-tact** (*noun*): a measurement made without a sensor touching the target. A preferred measurement method in many applications.

**non-co-op-er-a-tive tar-get** (*noun*): a target not designed to reflect light and that has less than 90% reflectivity.

**o-pac-i-ty** (*noun*): the degree to which light is not allowed to travel through.

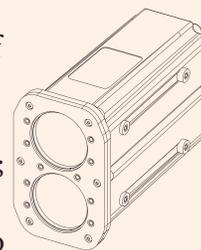
**par-al-lax** (*noun*): displacement or difference in a focus along two different optical axes; e.g., closing the left eye and viewing an object with the right eye—the object will appear to shift when the right eye is closed and viewed with the left eye.

**pre-ci-sion** (*noun*): the repeatability of a series of test results; whether the method gives the same answer under the same set of circumstances or sampling criteria.

**re-flec-tance** (*noun*): the fraction of incident light returned by a surface. Higher target reflectance will increase range. General surface reflectance (R) ratios are: reflective=90+%, white=90%, gray=20%, black=5%.

**re-frac-tion** (*noun*): the change in direction of light as it passes from one medium to another of a different density; e.g., from air to water.

**res-o-lu-tion** (*noun*): the minimum distance between two adjacent features or objects or the minimum size of a feature or object that can be detected. For a measurement, it is the smallest unit of resolve; for example, 0.001 meter has 1 millimeter of resolution. Not to be confused with accuracy.



**sam-ple rate** (*noun*): the frequency with which the sensor updates its range output. This can be set as low as one sample every few seconds and as high as 2,000 per second.

**tar-get** (*noun*): term used to refer to an object or point that is being measured or detected.

**wave-length** (*noun*): the distance between two points on adjacent waves that have the same phase, such as the distance between two consecutive peaks or troughs; e.g., 905 nanometers means this distance is 0.000000905 meters between two adjacent points on the light wave.