

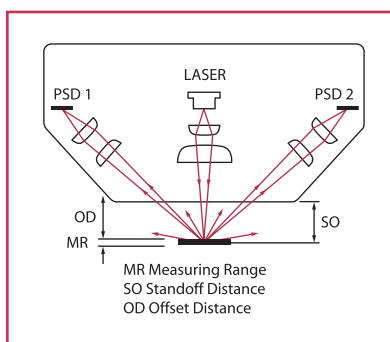
# Product Information

## LTS-Laser Twin Sensor



### Unique Dual Viewing Axes and Fast Gain Control Measures Changing Surfaces Accurately

- Resolution down to 0.00025 mm
- Measurement Range of up to 20 mm
- Response frequencies to 200 kHz, unmatched in the industry
- Spot size down to 0.03 mm or 30  $\mu$ m
- Twin PSD triangulation for varying surfaces
- Eliminates "spikes" when surface color changes
- Designed for high accuracy thickness and profiling applications

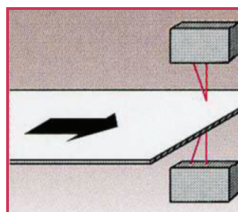


LTS sensors are single point optical triangulation sensors that use two built in PSD detectors to achieve high speed measurements for ultra high accuracy. It's unique design offers exceptional performance on surfaces of changing color or reflectivity or surfaces with steps which would create shadows for single axis sensors. PSD-based sensing provides sensor frequency response up to 200 kHz, while also providing excellent measurement accuracy to microns and resolution at the sub-micron level. The smaller laser spot size makes it ideal for measurement of small features, including surface texture. LTS sensors are available with standoff of 15 or 30 mm, and a selection of measuring ranges.

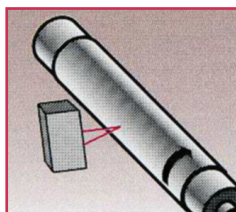
Model Number	Measurement Range (MR)	Stand Off (SO)	Offset Distance (OD)	Resolution (Worst Case)	Resolution (Typical)	Linearity Angle at SO	Triangulation at SO	Spot Size at SO	
LTS 15/1	mm	1	15	14.5	Note 1	Note 2	43 deg.	0.03	
	in.	0.04	0.59	0.57	0.00001	0.000001			0.00004
LTS 15/2.5	mm	2.5	15	13.9	0.00025	0.000025	0.0025	43 deg.	0.03
	in.	0.1	0.59	0.55	0.00001	0.000001	0.0001	0.001	0.001
LTS 15/5	mm	5	15	12.8	0.0005	0.00005	0.005	43 deg.	0.03
	in.	0.20	0.59	0.50	0.00002	0.000002	0.0002	0.002	0.001
LTS 15/10	mm	10	15	11.5	0.001	0.0001	0.01	43 deg.	0.03
	in.	0.39	0.59	0.45	0.000039	0.0000039	0.0004	0.004	0.001
LTS 30/5	mm	5	30 $\pm$ 0.75	27.5 $\pm$ 0.75	0.0005	0.00005	0.00005	25 deg.	0.07
	in.	0.2	1.18 $\pm$ 0.03	1.08 $\pm$ 0.03	0.00002	0.000002	0.0002	0.002	0.003
LTS 30/10	mm	10	30 $\pm$ 1	25 $\pm$ 1	0.001	0.0001	0.01	25 deg.	0.07
	in.	0.39	1.18 $\pm$ 0.04	0.98 $\pm$ 0.04	0.000039	0.0000039	0.0004	0.004	0.03
LTS 30/20	mm	20	30 $\pm$ 1.5	20 $\pm$ 1.5	0.002	0.0002	0.02	25 deg.	0.07
	in.	0.79	1.18 $\pm$ 0.06	0.78 $\pm$ 0.06	0.000079	0.0000079	0.008	0.008	0.003

Note 1: Resolution at full bandwidth

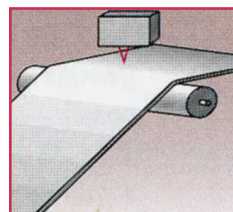
Note 2: Resolution at 128 sample averaging



Sheet Thickness



Thickness On A Roller



Thickness Over A Roller

E-mail: [sales@flwpa.com](mailto:sales@flwpa.com) | [www.flwpa.com](http://www.flwpa.com)

# Technical Specifications LTS-Laser Twin Sensor



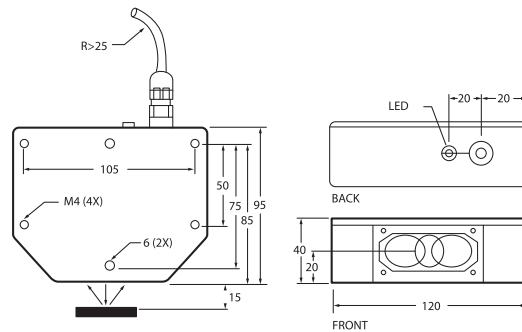
LASER SOURCE			ENVIRONMENTAL		
Laser Type	GaAlAs		Enclosure	NA	
Laser Class	3B (IEC)	IIIb (FDA)	Temperature	°C	0-50
Laser Source Power	mW	7		°F	32-122
Wavelength	nm	785	Temp. Stability	% of MR / °C	0.01
Lifetime expectancy	hr	100,000	Relative Humidity	%	<95 non-condensing.

ELECTRICAL			PHYSICAL		
Power supply voltage	VDC	-15 and +15	Dimensions	mm	120 x 95 x 40 *
Current draw	mA	<200		in.	4.72 x 3.74 x 1.57
Analog voltage output	VDC	0-10 or -10 to +10	Weight	kg	0.7
Analog current output	mA	0/4-20 (Optional)		lbs	1.5
Frequency response	Hz	100,000 (Optional 200,000)	Cable length	m	2.5
Detector type	Dual PSD			ft	8.5

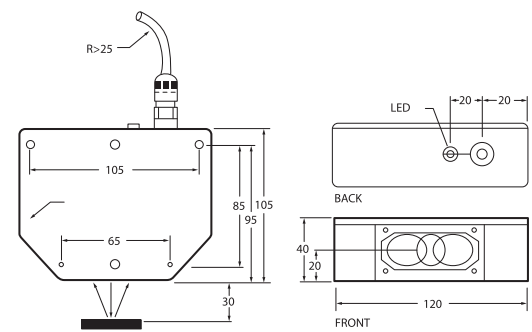
\* LTS 30/xx Dimensions 120 x 105 x 40 mm

## CONNECTION WIRING AND DIMENSIONS

1	Green	Ground	4	Red	Laser on (2.15 VDC)	7	Pink	Invalid Out (TTL)
2	Brown	Power (+15 VDC)	5	Yellow	Analog out	-	Blue	Not Connected
3	White	Power (-15 VDC)	6	Gray	Intensity Out (0 to 6 VDC)			



**LTS 15/XX Dimensions**  
(All dimensions in millimeters, 25.4 millimeters = 1 inch)



**LTS 30/XX Dimensions**  
(All dimensions in millimeters, 25.4 millimeters = 1 inch)



These products are covered under one or more of the following patents: United States, 4,305,661; 4,373,804; 4,375,921; 4,875,776; 5,056,922; 5,114,230; 5,164,579; 5,362,970; 5,510,625; 5,670,787; 5,684,292; 5,691,545; 5,734,172; 5,854,491 Canada, 1,307,051; 1,116,750.

### 1- YEAR LIMITED WARRANTY

The company will replace or, at the company's option, repair any system or parts of a system which are found defective in material or workmanship within one year from the date of shipment. Our obligation with respect to such system or parts shall be limited to repair and replacement, F.O.B: our facilities, and in no event shall the company be liable for incidental, consequential or special damages, or for transportation, installation, adjustment or other expenses which may arise in connection with such system or parts. This warranty is expressly made in lieu of any and all other warranties, expressed or implied, including warranties of merchantability and fitness. No waiver, alteration, or modification of the foregoing warranty shall be valid unless made in writing and signed by an executive of the company.

Contact FLW of PA for LMI Technologies (USA), Inc. technical information and application support

FLW of PA, Inc. | 527 West Lancaster Ave. | Frazer, PA 19355 | Ph: (610) 251-9700 | Fax: (610) 640-4270

E-mail: [sales@flwpa.com](mailto:sales@flwpa.com)  
[www.flwpa.com](http://www.flwpa.com)