

STARRETT SL3

LINE LASER SENSORS FOR TIRE BULGE AND RUNOUT MEASUREMENT

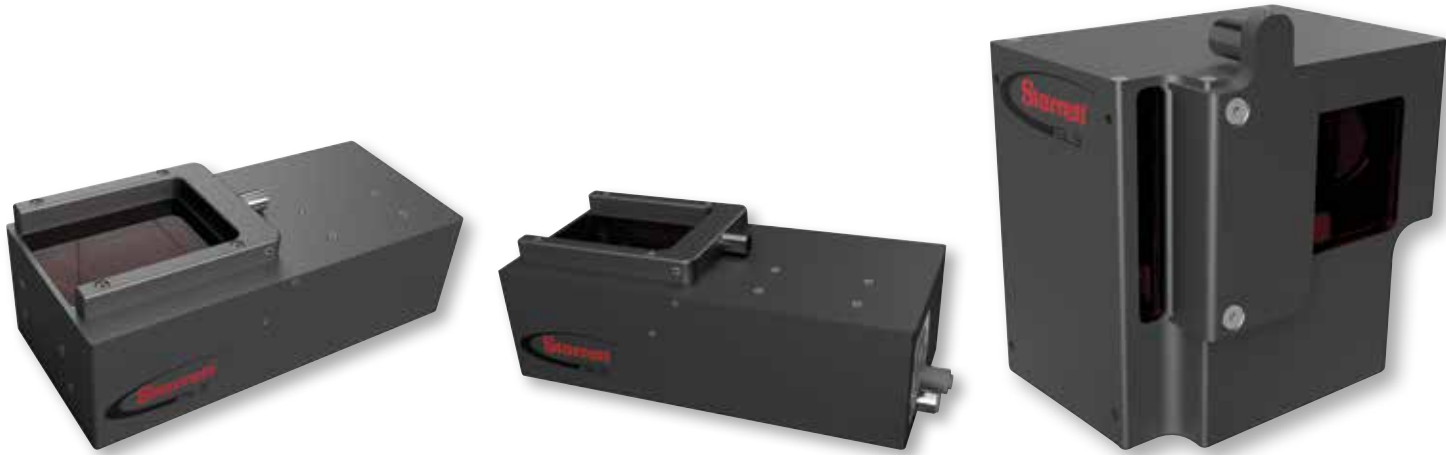


LASER MEASUREMENT SOLUTIONS

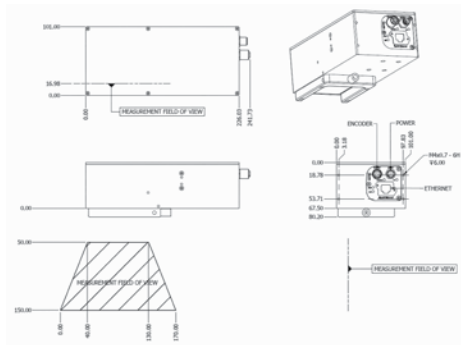
The StarrettSL3 is the third generation of high speed line laser sensors first introduced by Starrett-Bytewise in 2001. Line laser sensors acquire 500 tracks of measurement over a wide area to assure each tire is inspected over the largest possible area. The large standoff distance means the sensor will never be at risk of crashing into the tire like other types of sensors do. Line laser sensors are by far the best technology for runout and bulge measurement, and over 3,300 Starrett-Bytewise sensors are in use today, making Starrett-Bytewise the leading supplier for tire scanning technology worldwide.

SL3 has been optimized specifically for cured tire runout and bulge measurement, and combines the world's leading high-speed CMOS camera with precision optics and laser diode to produce the most accurate and reliable line laser sensor. The Starrett-Bytewise sensor laboratory has been outfitted with a sub-micron precision calibration rig to assure each sensor meets the most demanding standards across the entire measurement range. This third generation sensor achieves improved resolution and accuracy through enhanced camera firmware and improved calibration techniques.

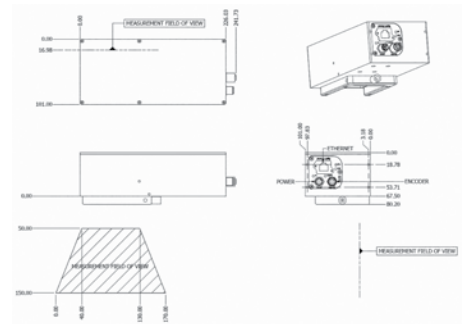
SL3 has a 3-year warranty with the opportunity to extend the warranty up to 7 years. SL3 is available in 3 sizes all optimized for integration into tire uniformity machines, balance machines, and dedicated tire geometry test machines.



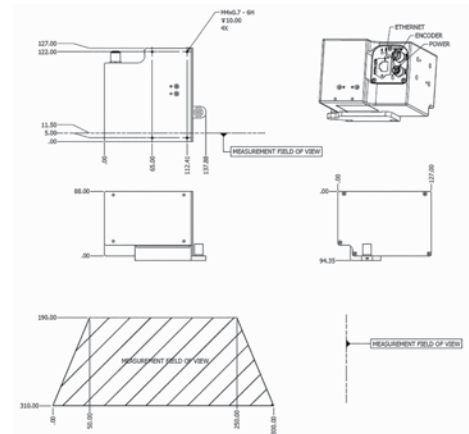
SL3-Y1



SL3-Y2



SL3-Y3



LASER MEASUREMENT SOLUTIONS

SPECIFICATIONS

STARRETT BYTEWISE SL3 SERIES MODELS		Y1	Y2	Y3
Electrical	Power Consumption (W)	4.5 typical, 7 max.		
	Power Supply (Vdc)	+7 ... +24		
	Laser Power Supply (Vdc)	+4.8 ... +6.5		
	Encoder Input (Vdc)	+2 ... +15		
	Communication Interface	RJ45, Gigabit Ethernet		
	Power Interface	RS485, M12, 8 pins, male		
	Encoder Interface	RS422 (TTL level), M12, 8 pins, female		
Mechanical	Dimensions (L x W x H) (mm)	242 x 81 x 101	242 x 81 x 101	138 x 95 x 127
	Weight (kg)	1.6	1.6	1.2
	Housing Material	Anodize Aluminum, grey		
	Window	Filtered Glass		
Measurement Field of View	Standoff to Start of FOV (mm)	50	50	190
	Height (mm)	100	100	120
	Width @ Near (mm)	90	90	200
	Width @ Far (mm)	170	170	300
Environmental	Operating Temperature (° C)	+5 ... +40 (without air cooling)		
	Operating Humidity (%)	5 ... 95 (no condensation)		
	Enclosure Rating*	IP67 with sealed Ethernet connector IP20 with standard Ethernet connector		
	Shock Load** (IEC 68-2-29)	15g/6ms		
	Vibration Load (IEC 68-2-6)	5g, 58...150Hz		
Performance	Resolution	1536 (H) x 8192 (V)		
	Scan Rate	1.3kHz		
	Bulge/Dent Accuracy (mm)	0.05	0.05	NA
	Bulge/Dent Repeatability (mm)	0.025	0.025	NA
	Runout Accuracy (mm)	0.05	0.05	0.05
	Runout Repeatability (mm)	0.025	0.025	0.025
Laser	Wavelength (nm)	660	660	685
	Laser Class	3R		

* Harting® Push/Pull connector recommended

** Glass surfaces not shock rated



Power (male)

Pin	Signal	Description
1	CNT	Count Reset (24V)
2	PWR	Power Supply (24V)
3	LAS	Laser (5V)
4	—	Not Used
5	—	Not Used
6	—	Not Used
7	GND	Ground
8	—	Not Used



Encoder (female)

Pin	Signal	Description
1	INA+	Clock A+
2	INB+	Direction B+
3	INB-	Direction B-
4	INA-	Clock A-
5	GND	Ground
6	—	Not Used
7	MON	Firmware Update (24V)
8	—	Not Used

