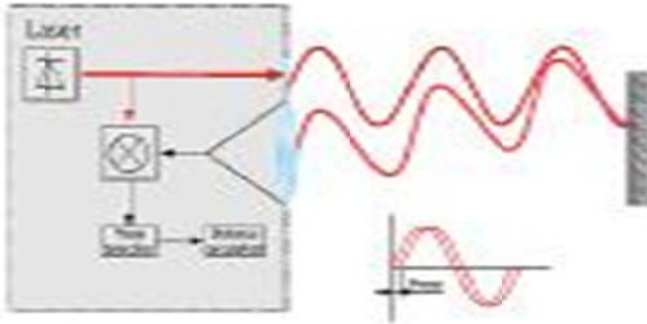


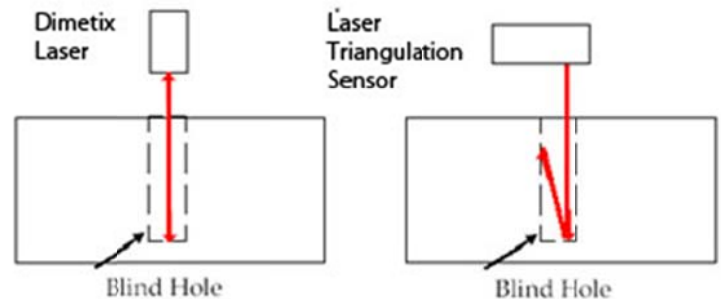
DIMETIX FLS-C series laser distance sensor technical supplement



Measurement Principle

The measurement principle of the FLS-C series operates on the basis of non-contact comparative phase measurements with amplitude modulation. It uses a laser diode as its source with a class 2 rating for plant safety. The sensor sends out a laser beam and the amount of phase shift is reflected back to determine the distance. This technique is superior to laser triangulation for measuring long distances. It provides better accuracy at a substantially lower cost and a small package size.

A laser triangulation sensor cannot make a depth measurement in a deep blind hole. As you can see below, the laser beam from the Dimetix sensor can make the measurement whereas the laser triangulation sensor cannot.












Measuring Modes

Multiple measuring modes are available in the FLS-C to accommodate different requirements for various applications. Measuring rates depend on environmental conditions such as target surface, distance, and background light (e.g. sun light). The measuring of the FLS-C with factory settings can be up to 10Hz in best environmental conditions. (e.g. good reflective target and dark environment).

Normal Mode		Fast Mode		Natural Surface Mode	
<ul style="list-style-type: none"> • Accuracy of $\pm 1\text{mm}$ • Measuring rate, up to 10Hz • Various applications 		<ul style="list-style-type: none"> • Accuracy of $\pm 2\text{mm}$ • Increased measuring rate, up to 20Hz • Positioning applications, warehouse, cranes, etc. 		<ul style="list-style-type: none"> • Natural surfaces with poor reflectivity • Accuracy of $\pm 5\text{mm}$ • Measuring rate, up to 0.3Hz • Increased measuring range up to 80 meters on natural target 	
Accuracy (+/-mm)		Accuracy (+/-mm)		Accuracy (+/-mm)	
FLS-C10	FLS-C30	FLS-C10	FLS-C30	FLS-C10	FLS-C30
1	3	2	6	5	15

Applications:

<p>Overhead Crane For fast determination of positions of moving objects, such as cranes and in high rack storage areas .</p>		<p>Hopper Car Monitor relative positions of hopper cars handling bulk materials. The Dimetix laser can measure targets of varying shape, texture, and color.</p>	
<p>Silo Contents The networking capability of the FLS-C series enables multiple sensors to be mounted in a number of silos. Control of contents is easily maintained for filling</p>		<p>Paper Mills To measure diameter and width of paper rolls one FLS-C sensor is mounted above and two FLS-C sensors are mounted at the ends to simultaneously measure roll diameter and width.</p>	
<p>Logging Even in outdoors the FLS-C series can be used to measure log length and location at a saw for cutting.</p>		<p>Saw Mills In saw mills one can easily measure width, thickness and cant. Due to the long range, the sensors can be located far enough away and yet provide adequate accuracy in this harsh environment.</p>	
<p>Mining / Quarry Measure raw material levels and depth of excavated areas. Dimetix lasers are rugged for a variety of environments and can measure natural targets with ease.</p>		<p>Structural / Civil Engineering Measure height , length, and location; Monitor structural deflection of bridges.</p>	
<p>Steel Mills Even hot slabs of steel can be measured with a FLS-C sensor. Both width and thickness can be measured. The elevated surface temperature of hot steel is not as much of an issue with the phase shift technology .</p>		<p>Enclosures / Environmental Protection For environmental conditions we can provide a variety of enclosures for outdoor conditions. Our enclosures are NEMA type and we can also measure through a glass window in the enclosure.</p>	