

HG-C Series Micro Laser Distance Sensors

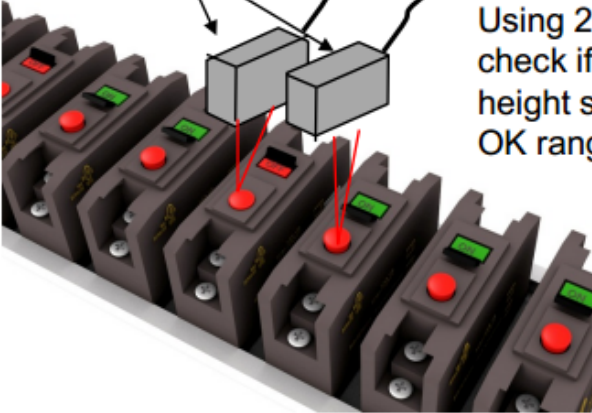
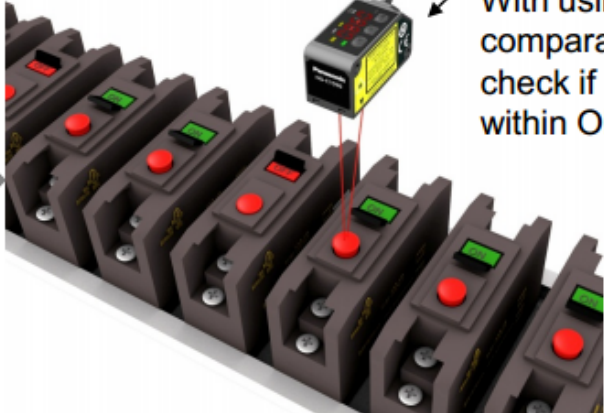
Application Examples

Relays & Connectors • Capacitors • Circuit Protection • Electromechanical • Sensors • Industrial Automation • Resistors & Inductors • Semiconductors • Wireless Connectivity

na.industrial.panasonic.com

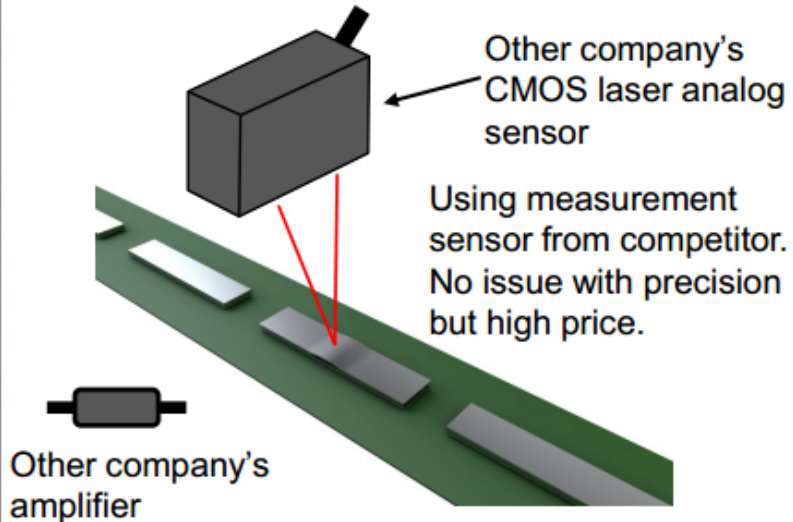
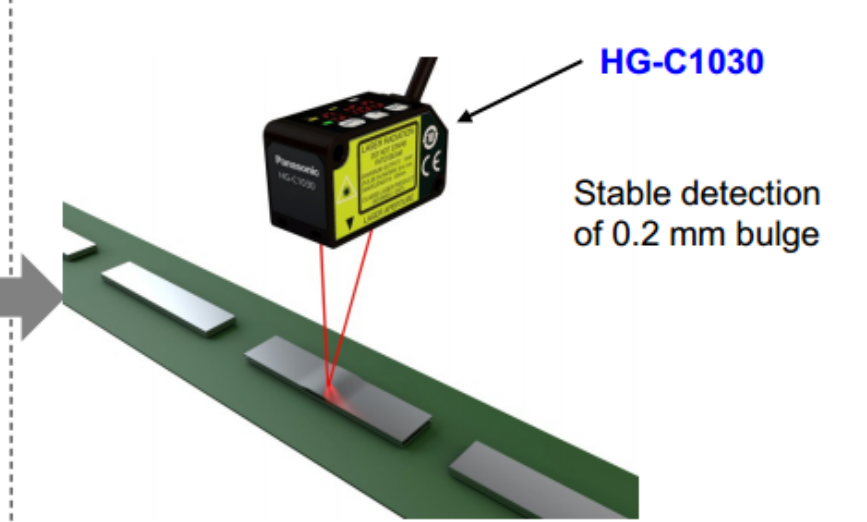
1-800-344-2112

Button Height Inspection For Electric Circuits

Application	
 <p>Other company's CMOS laser sensor</p> <p>Using 2 sensors to check if button height stays within OK range</p>	 <p>HG-C1050</p> <p>With using window comparator mode, check if height stays within OK range</p>
Application Part for electric circuit	Benefit 1 Save time for setting with using just one sensor.
Issues Takes time for setting 2 sensors separately. Require 2 points of PLC I/O for inspection.	Benefit 2 Only require 1 point of I/O for PLC, which leads to cost reduction.
Product Micro laser distance sensor HG-C1050	Benefit 3 Save money with using only one sensor instead of 2.

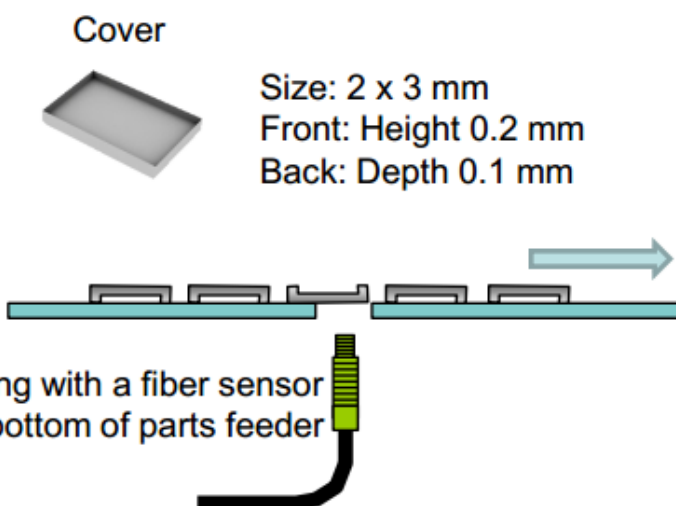
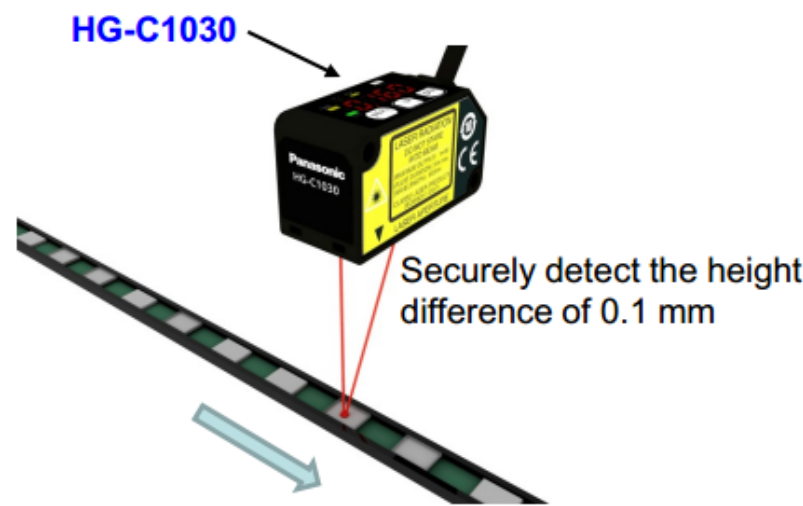


Bulge Detection of Bonded Metal Parts

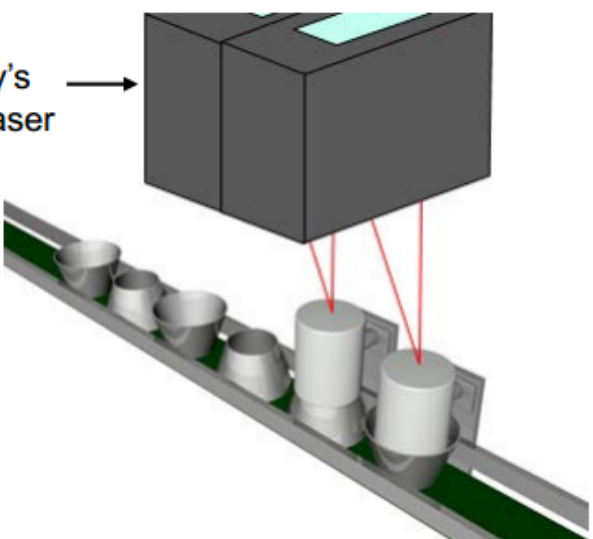
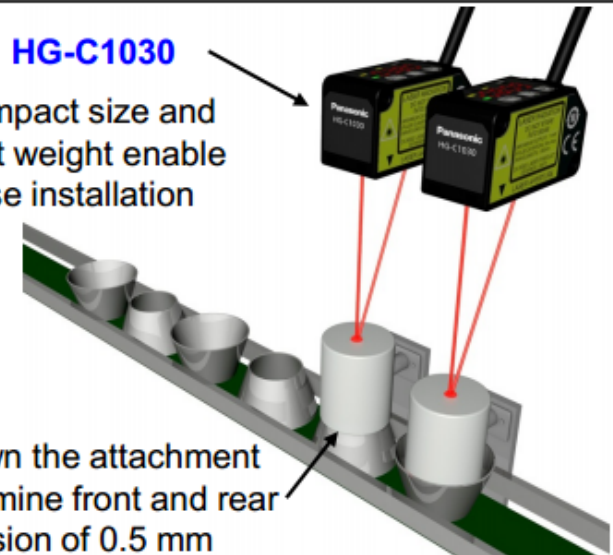
Application			
 <p>Other company's CMOS laser analog sensor</p> <p>Using measurement sensor from competitor. No issue with precision but high price.</p> <p>Other company's amplifier</p>		 <p>HG-C1030</p> <p>Stable detection of 0.2 mm bulge</p>	
Application	Bimetal part	Benefit 1	
Issues	Using expensive measurement sensor for 0.2 mm bulge detection. Nice precision but too expensive.	Benefit 2	
Product	Micro laser distance sensor HG-C1030	Benefit 3	
			Stable detection of 0.2 mm bulge detection in spite of 1/3 price compare to other company.
			No need to install separate amplifier.
			Simple operation compare to measurement sensor.



Judging Front / Back Covers of Electronic Parts

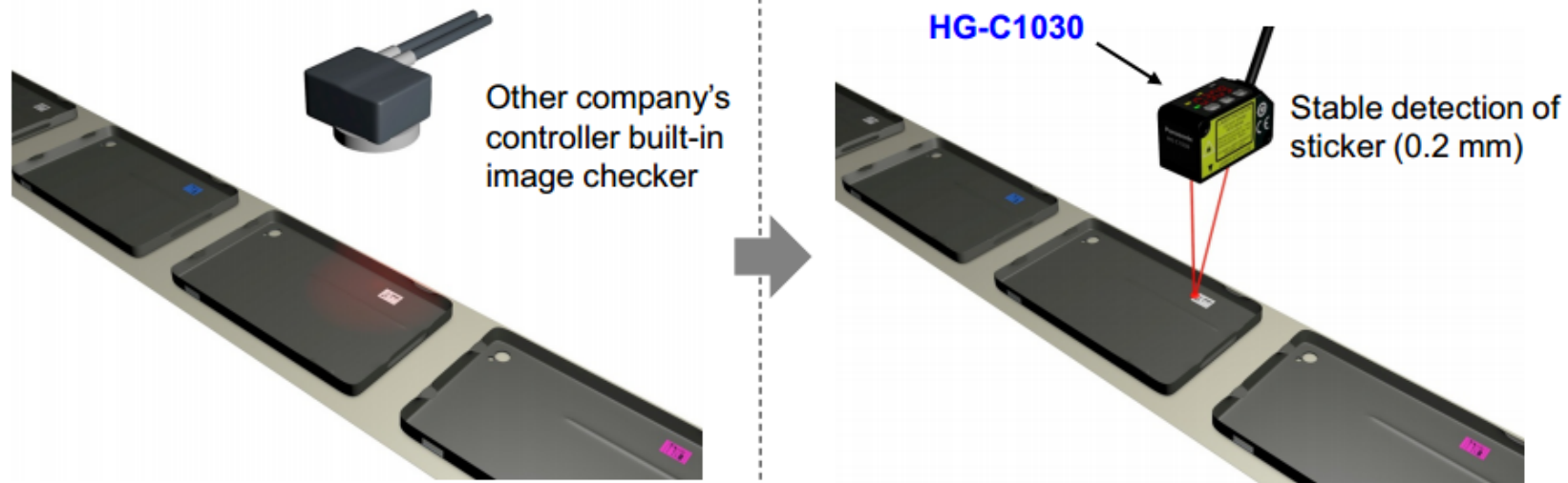
Application		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Cover</p> <p>Size: 2 x 3 mm Front: Height 0.2 mm Back: Depth 0.1 mm</p> <p>Sensing with a fiber sensor from bottom of parts feeder</p> </div> <div style="text-align: center;">  <p>HG-C1030</p> <p>Securely detect the height difference of 0.1 mm</p> </div> </div>		
Application	Electronic parts assembly	Benefit 1
Issues	<p>Detecting from bottom with a fiber sensor.</p> <p>Contamination of the fiber cause wrong detection.</p>	<p>Possible to detect the height difference of 0.1 mm stably from top.</p>
Product	Micro laser distance sensor HG-C1030	Benefit 2
		Benefit 3

Side Determination of an Electrical Part With a Hole

Application		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Other company's CMOS laser sensor</p>  </div> <div style="text-align: center;"> <p>HG-C1030</p> <p>Compact size and light weight enable close installation</p>  <p>Press down the attachment and determine front and rear with precision of 0.5 mm</p> </div> </div>		
Application	Electronic parts assembly	Benefit 1
Issues	Big CMOS laser head size and narrow detection point make installation difficult.	Enable flexible installation with compact and amplifier built-in feature.
Product	Micro laser distance sensor HG-C1030	Benefit 2
		Enable height detection with precision of 0.5 mm.
		Benefit 3
		Price is low compared to other company's.

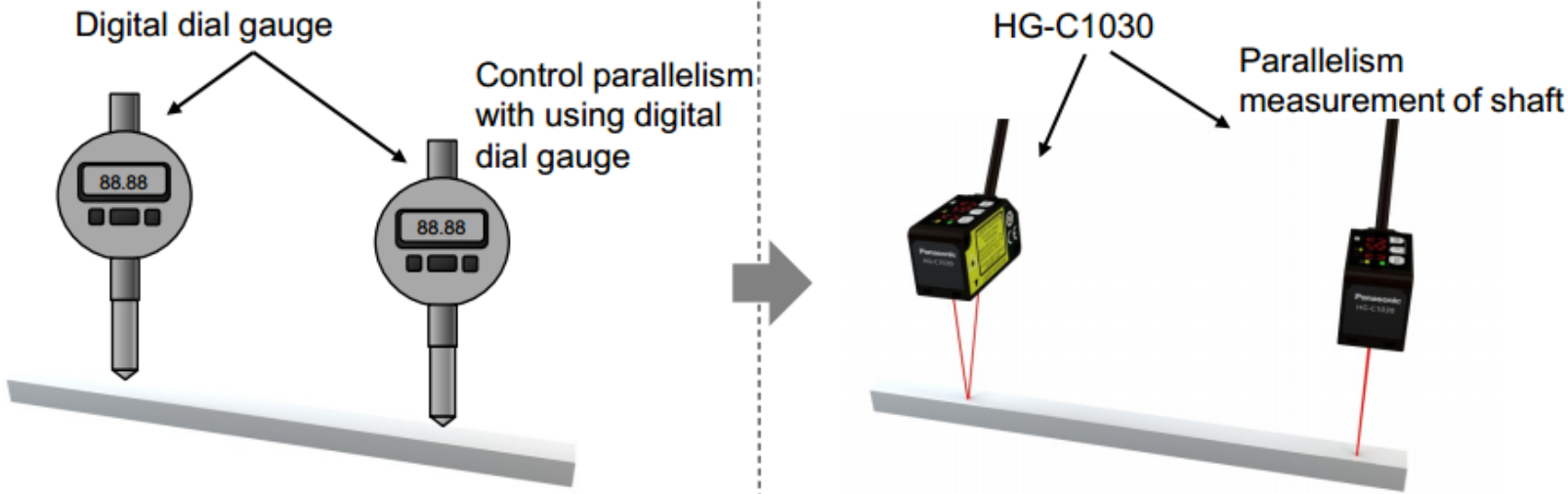


Sticker Detection On Smart Phone Covers

Application		
		
Application	Assembly inspection	Benefit 1
Issues	Application is sticker detection and simple but using image checker to avoid influence of color variation. Equipment become expensive.	Stable detection of sticker with thickness of 0.2 mm.
Product	Micro laser distance sensor HG-C1030	Benefit 2
		Detecting height difference and not affected by color variation.
		Benefit 3
		Save time for adjustments and settings compare to image checker.

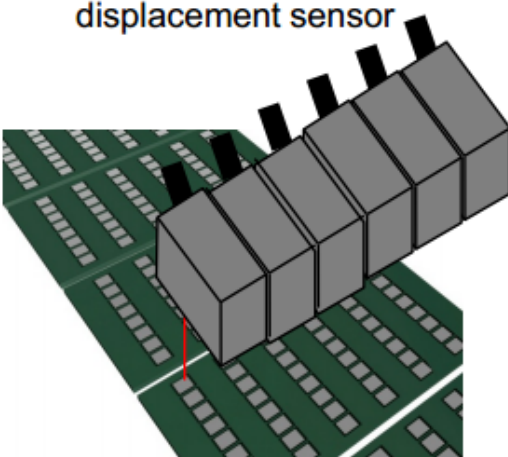
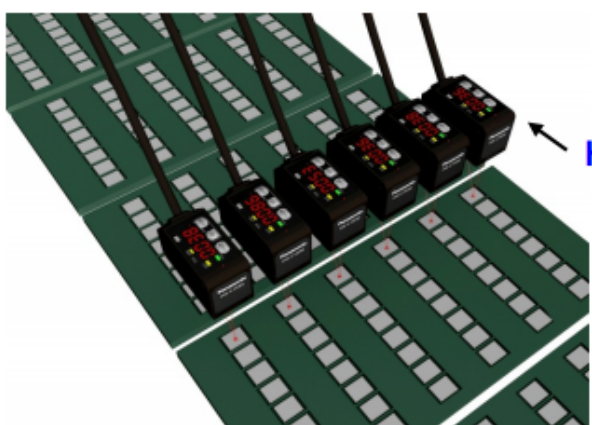


Parallelism Measurement of the Shaft

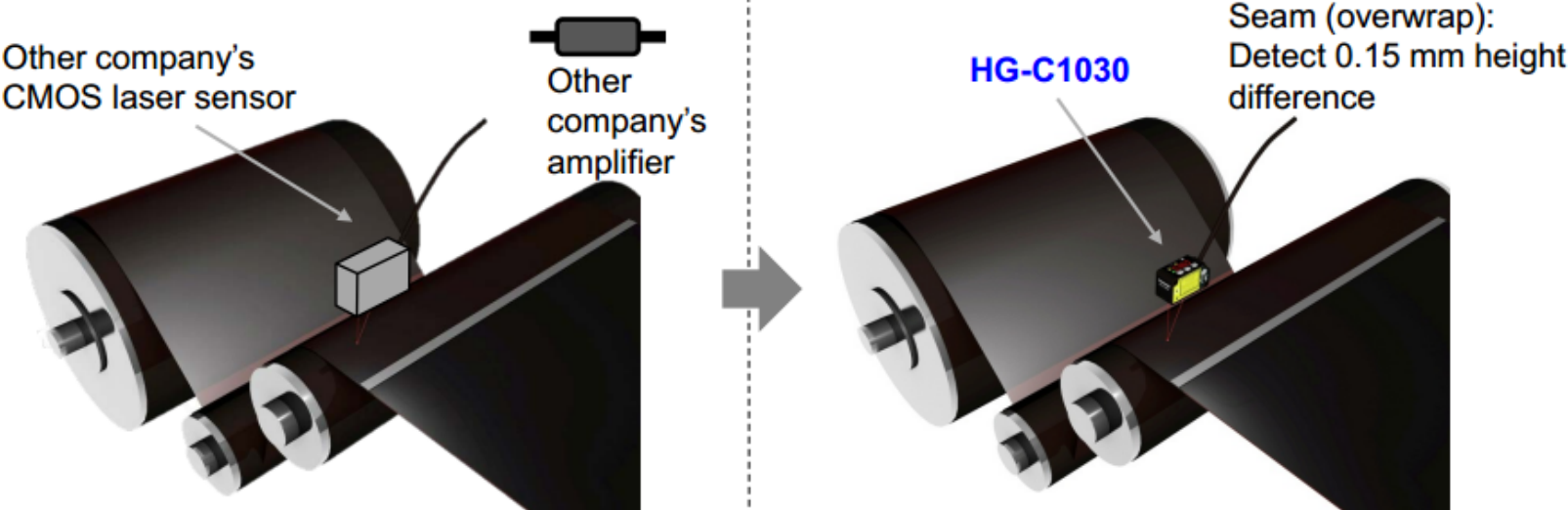
Application		
 <p>The diagram illustrates the transition from traditional contact measurement to non-contact laser measurement. On the left, two digital dial gauges are shown measuring a shaft, with a label 'Control parallelism with using digital dial gauge'. On the right, two HG-C1030 micro laser distance sensors are shown measuring the same shaft, with a label 'Parallelism measurement of shaft'. A large arrow points from the dial gauges to the laser sensors, indicating the recommended method.</p>		
Application	Resin shaft	Benefit 1
Issues	Pressing down the gauge cause subduction to resin shaft and this result in unstable measurement. Laser measurement sensor is too expensive.	Enable contactless parallel measurement with high accuracy.
Product	Micro laser distance sensor HG-C1030	Benefit 2
		Easy Zero set.
		Benefit 3
		Lower price than other company's laser measurement sensor and easier to install.



Detecting Overwrap of IC Chips

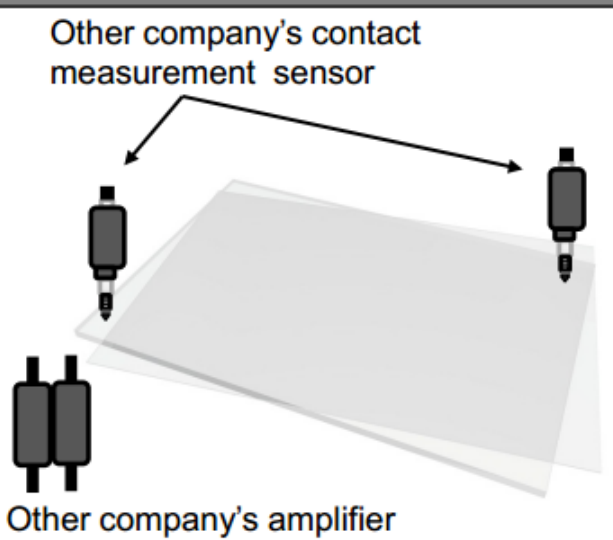
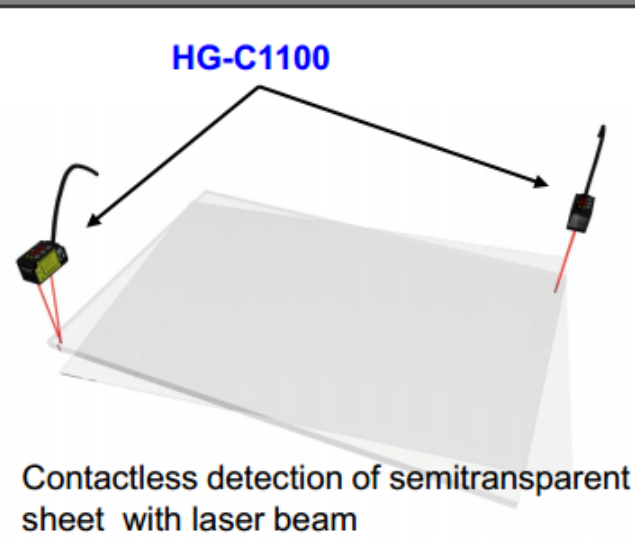
Application		
<div> <div> <p>Other company's laser displacement sensor</p>  <p>Other company's amplifier</p> </div> <div> <p>Securely detect overwrap of IC chips</p>  <p>HG-C1030</p> </div> </div>		
Application	IC chip conveyor	Benefit 1
Issues	Customer wants to detect overwrap of 60 μ m IC chip. Laser displacement sensor is expensive.	No need to place separated amplifier. Less wiring, easy installation.
Product	Micro laser distance sensor HG-C1030	Benefit 2
		Easy setup by 2-point teaching like regular sensor.
		Benefit 3
		Price is low compared to high end displacement sensor.

Detecting A Seam of Functional Sheet

Application		
		
Application	Polarizing film processing	Benefit 1
Issues	Want to detect a seam / overwrap of sheet material (thickness = 0.15 mm), but detection was unstable.	Possible to stably detect overwrap of thickness = 0.15 mm sheet.
Product	Micro laser distance sensor HG-C1030	Benefit 2
		Easy installation and setting by amplifier build-in.
		Benefit 3
		Low cost compared to laser measurement sensor.

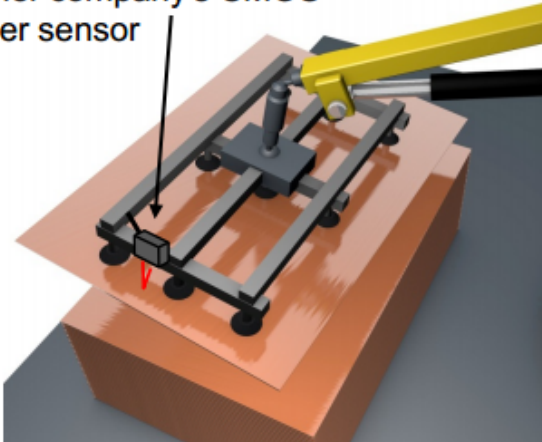
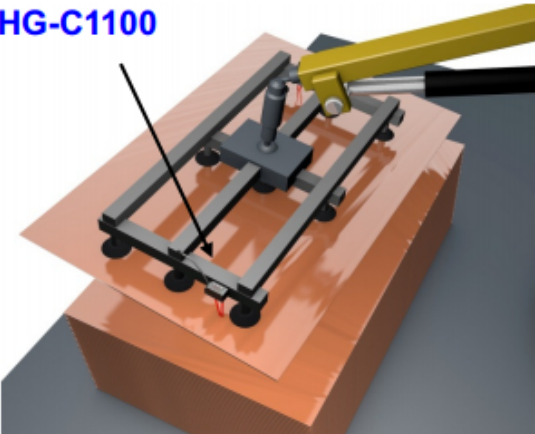


Detection of Protection Sheet For Glass Substrate

Application		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Other company's contact measurement sensor</p>  <p>Other company's amplifier</p> </div> <div style="text-align: center;"> <p>HG-C1100</p>  <p>Contactless detection of semitransparent sheet with laser beam</p> </div> </div>		
Application	Protection sheet for glass substrate	Benefit 1
Issues	Customer considered that this application can not be solved by beam sensor and installed contact measurement sensor.	Stable detection of semitransparent sheet by laser beam.
Product	Micro laser distance sensor HG-C1100	Benefit 2
		No need to concern about scar of the sheet by contact less solution.
		Benefit 3
		Low cost, compact and amplifier build-in solution.

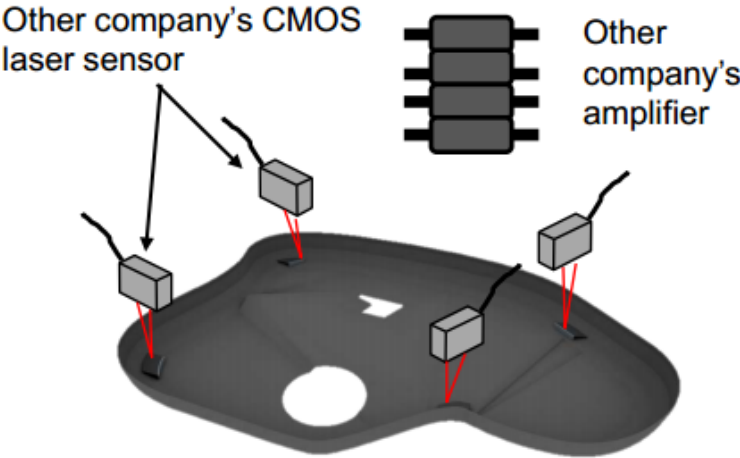
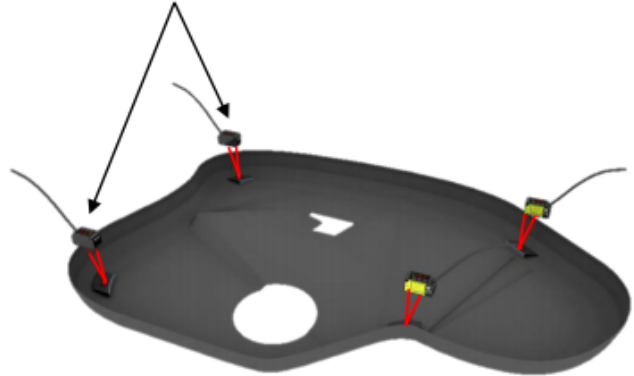


Distance Measurement Between Robots and Metal

Application	
 <p>Other company's CMOS laser sensor</p>	 <p>HG-C1100</p> <p>Ultra compact size and light weight realize installation to moving part.</p>
Application Handling robot of metal sheet	Benefit 1 Easy installation with compact size and amplifier built-in specification.
Issues Size of other company's CMOS laser sensor is big for installation and takes time for adjustment.	Benefit 2 Light weight of 85 g realizes installation to moving part, such as robot hand.
Product Micro laser distance sensor HG-C1100	Benefit 3 Easy adjustment of distance between metal sheet and suction pad with display of actual distance value in mm.

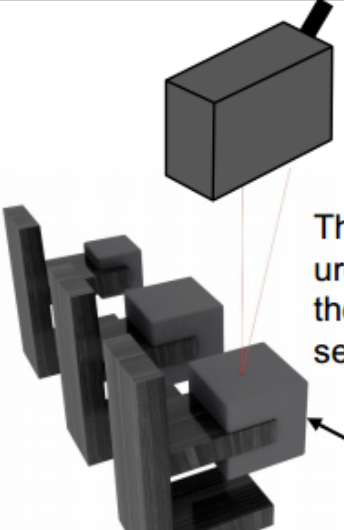
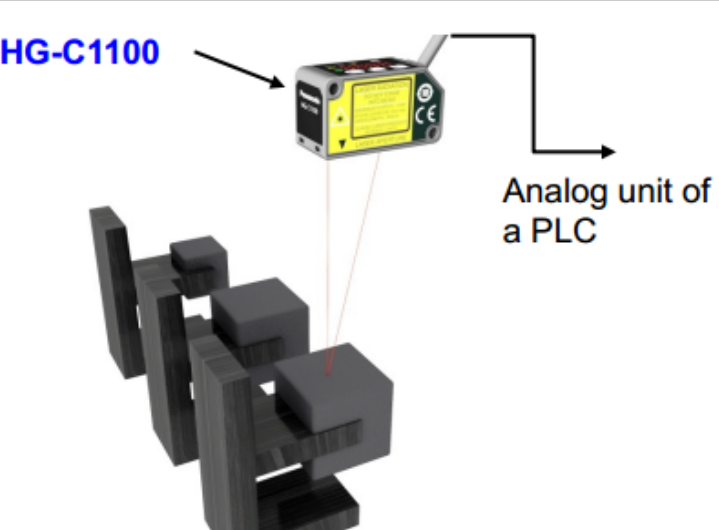


Thickness Measurement of Urethane Parts

Application		
<div> <div> <p>Other company's CMOS laser sensor</p>  <p>Other company's amplifier</p> <p>Tape (2 to 5 mm thickness) detection on automotive part</p> </div> <div> <p>HG-C1100</p>  <p>Stable detection of urethane tape (thickness 2 to 5 mm)</p> </div> </div>		
Application	Automotive part	Benefit 1
Issues	Enable detection but require space for big laser head and the amplifier. Price as set is expensive.	Benefit 2
Product	Micro laser distance sensor HG-C1100	Benefit 3

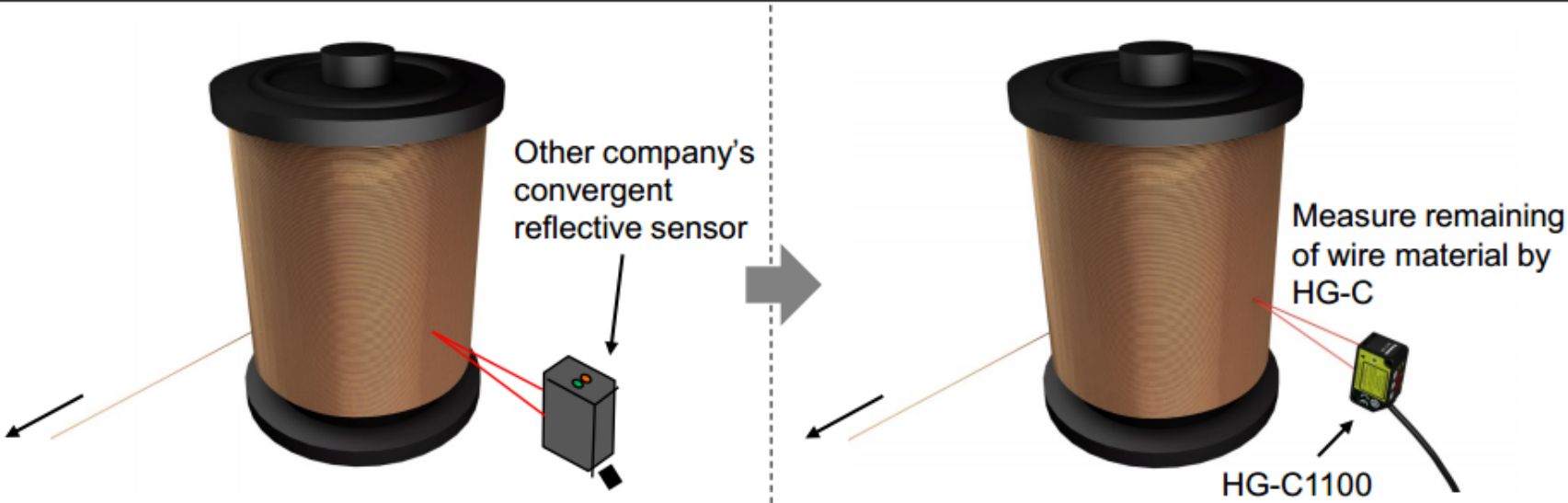


Thickness Measurement of Urethane Parts

Application	
 <p>Other company's CMOS laser sensor</p> <p>There are several types of urethane parts. Currently the type is judged by seeing the analog output.</p> <p>Urethane parts The surface is uneven.</p>	 <p>HG-C1100</p> <p>Analog unit of a PLC</p>
Application Automotive parts manufacturing	Benefit 1 Peak hold function can avoid jitters by uneven surface.
Issues The output is unstable due to uneven urethane surface. The sensor head is large.	Benefit 2 Amplifier build-in, ultra compact size.
Product Micro laser distance sensor HG-C1100	Benefit 3 High linearity like a displacement sensor.

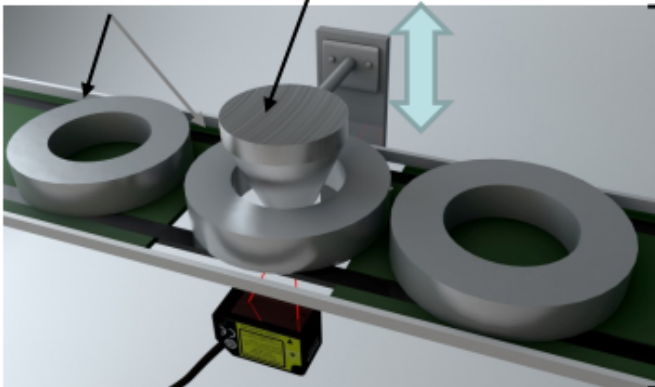
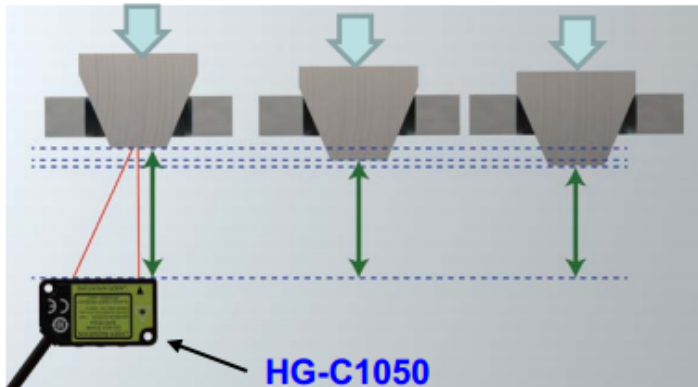


Measurement of Remaining Wire Material

Application		
		
Application	Wire for coil	Benefit 1
Issues	Ideal is detecting just before running out of material but not enough accuracy with convergent reflective type sensor.	Stable detection of remaining, even thin wire.
Product	Micro laser distance sensor HG-C1100	Benefit 2
		Easy adjustment with actual value display.
		Benefit 3
		Compact, amplifier build-in and low cost

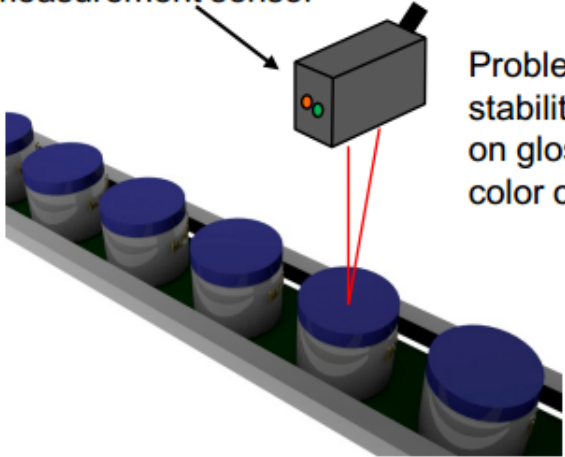
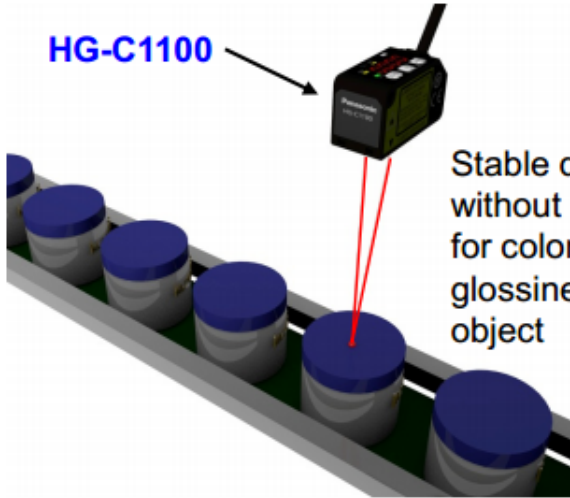


Indirect Bore Determination

Application		
<div> <div> <p>Object with different bore</p>  <p>Press down the attachment and measure from bottom</p> </div> <div> <p>Difference of bore result in distance difference of the attachment and enable to determine by HG-C</p>  <p>HG-C1050</p> </div> </div>		
Application	Metal part	Benefit 1
Issues	Customer considered that unable to determine object bore which external diameters are the same. Only can be done by image checker.	Difference of distance to attachment can be used for determination of bores.
Product	Micro laser distance sensor HG-C1050	Benefit 2
		Easier setting and determination compare to image checker.
		Benefit 3
		Lower cost compare to image checker.

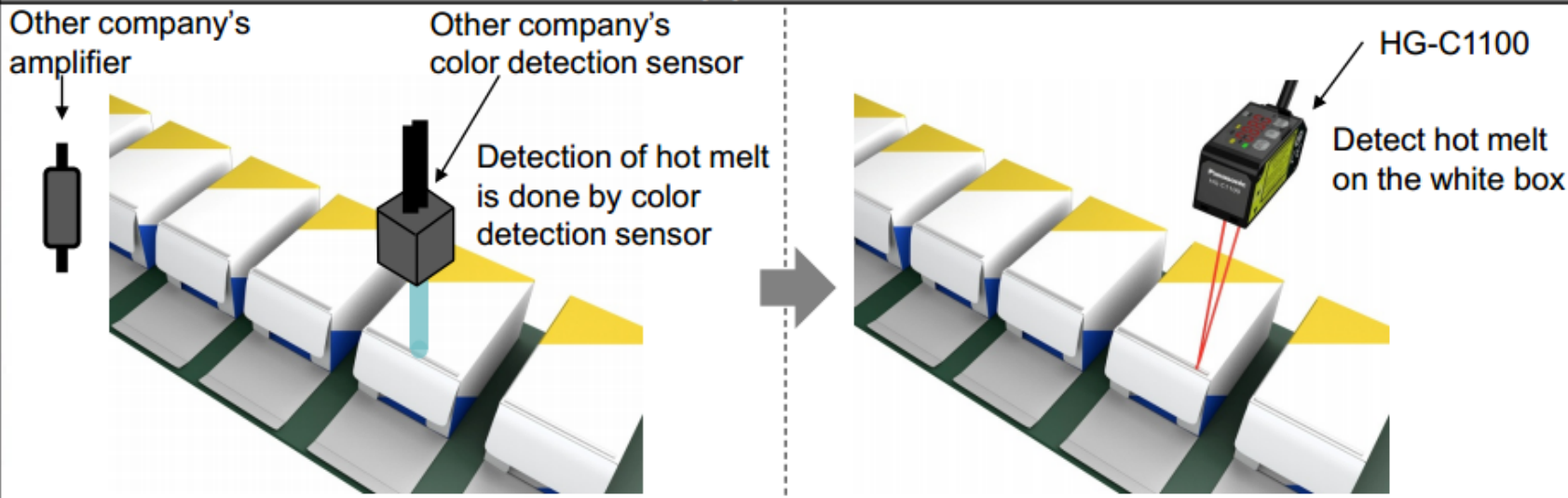


Detection of Caps For Cosmetic Containers

Application		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Other company's measurement sensor</p>  <p>Problem with stability depend on glossiness and color of the object</p> </div> <div style="text-align: center;"> <p>HG-C1100</p>  <p>Stable detection without influence for color and glossiness of the object</p> </div> </div>		
Application	Cosmetic container	Benefit 1
Issues	Existing measurement sensor had trouble with stability depend on glossiness and color of the objects.	Enable stable detection without influence of glossiness and color of the object.
Product	Micro laser distance sensor HG-C1100	Benefit 2
		Bright laser spot enable easy installation and adjustment.
		Benefit 3
		Simple setting by just pressing teaching button.



Detection of Hot Melt

Application		
		
Application	Food packaging	Benefit 1
Issues	Shiny background (package) will make detecting unstable.	No influence of shiny background due to height detection of hot melt itself.
Product	Micro laser distance sensor HG-C1100	Benefit 2
		No need for amplifier installation. (Amplifier build-in)
		Benefit 3
		Easy adjustment with display at the top of the product.

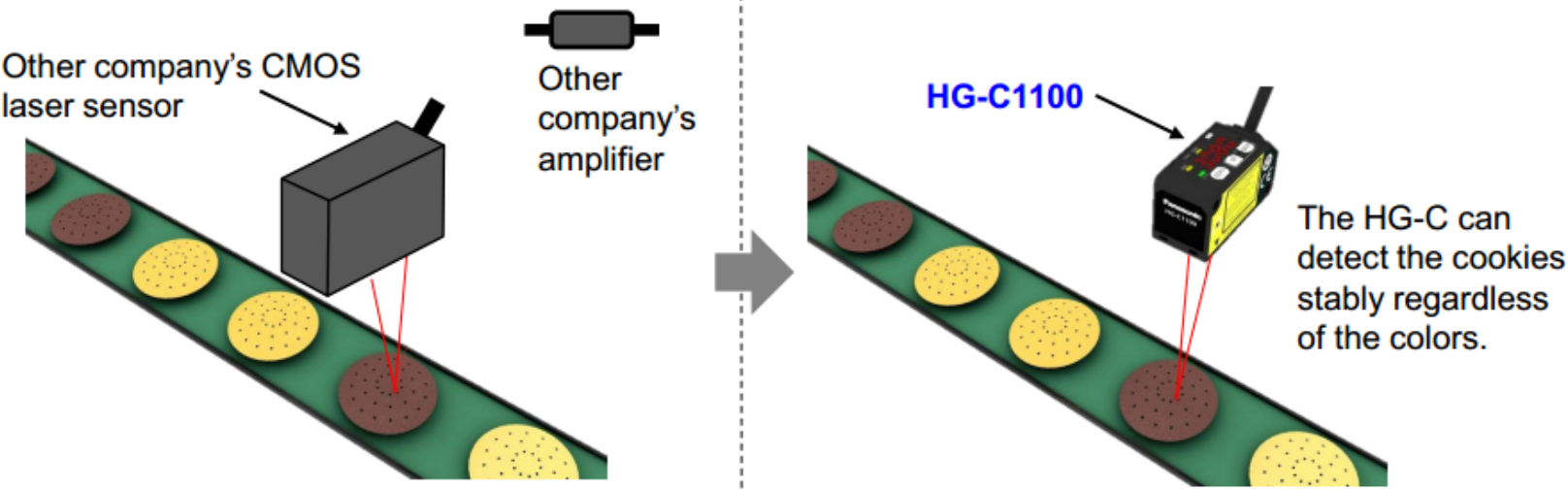


Judging Front or Back of Bottle Caps

Application		
Application	Food packaging machine	Benefit 1
Issues	Want to detect it at 100 mm distance, it is, however, unstable with the CX-444.	Possible to detect height difference of 2 mm stably at 100 mm distance.
Product	Micro laser distance sensor HG-C1100	Benefit 2
		Not affected by color or gloss of the objects.
		Benefit 3
		Low cost compared to laser measurement sensor.

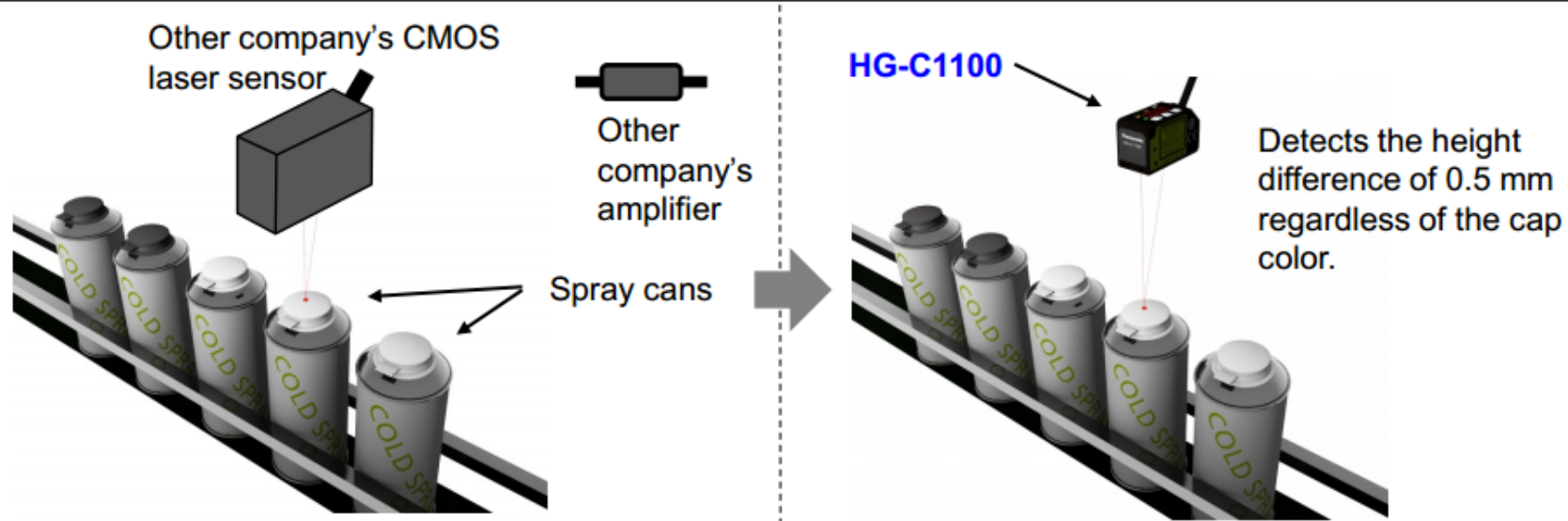


Detecting Cookies

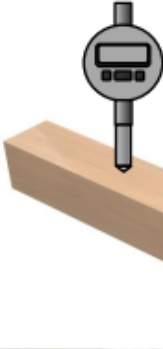
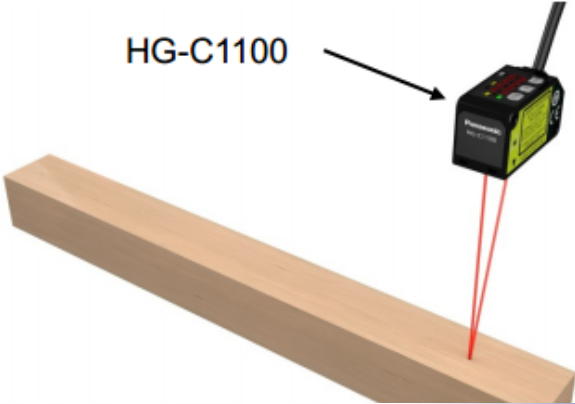
Application		
		
Application	Manufacturing of cookies	Benefit 1
Issues	Surface condition varies by tastes, toppings, and baking. In addition, there are different colors of the conveyor such as white, green and etc.	Price advantage compared to other company's sensor.
Product	Micro laser distance sensor HG-C1100	Benefit 2
		Since the HG-C is a self-contained sensor and has a digital display, condition can be checked while detecting.
		Benefit 3
		One-piece system makes maintenance easy.



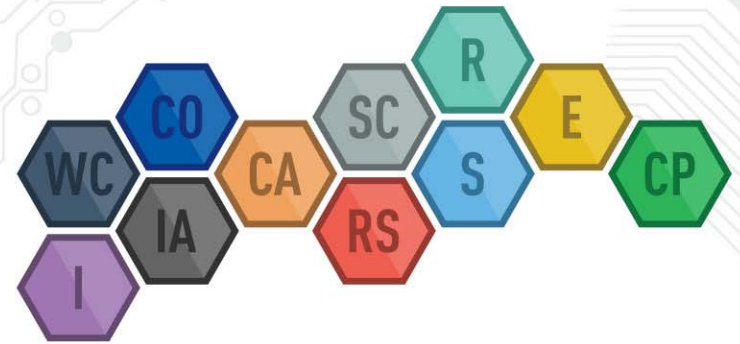
Detecting Spray Can Caps

Application		
		
Application	Spray can manufacturing	Benefit 1 No need to place separated amplifier. Less wiring, easy installation.
Issues	Customer wants to detect even slightly crooked cap (0.5 mm) Current sensor is large and requires separate amplifier.	Benefit 2 The HG-C is not affected by the color of the cap.
Product	Micro laser distance sensor HG-C1100	Benefit 3 Price is low compared to high end displacement sensor.

Measurement of Wood For House Construction

Application	
 <p>Measuring wood dimension by using digital dial gauge</p>	 <p>HG-C1100</p>
Measurement of wood for house construction	
Application Wood for house construction	Benefit 1 High accuracy measurement without contact.
Issues Contact type method cause damage to wood. Laser measurement sensor is too expensive.	Benefit 2 Easy adjustment with actual value display.
Product Micro laser distance sensor HG-C1100	Benefit 3 Lower price than laser measurement sensor from competitor and easier to install.





HG-C Series Micro Laser Distance Sensors

Application Examples
Thank You!