

# LT5 Series

## Infra Red Wall Thickness Measurement Option

**PLASTECH**  
CONTROL SYSTEMS



### Function

This option is used for checking the wall thickness of containers made using “natural” plastic, e.g. dairy bottles. It is not suitable for materials that have added colouring. In particular it can check for blown in bottle necks.

### Principle of Operation

An infrared beam is set up across the conveyor, aligned with the region on interest on the bottle (the neck, for example). As the bottle travels along the conveyor, it starts to interrupt the beam. When the received light level falls below a certain threshold (1/3 of the level with no bottle) the scan is triggered. The system now continuously monitors the received light level and records the lowest level found. This corresponds to the thickest region of plastic. As the bottle moves out of the beam the received light level rises. When it rises past a certain threshold (2/3 of the level with no bottle) the test for that bottle is terminated.

- The lowest value recorded is used as the result of the test.
- The lower this value, the thicker the plastic.
- This result is compared to a set limit.
- The bottle is rejected if the value is lower than the limit, i.e. if the plastic is too thick.

To set up, align the sensors with the part of the bottle to be tested. The alignment of the transmitter relative to the receiver is not particularly critical,

the beam width is about 20 degrees. However the alignment of the resulting sensing line with the bottle is critical if one is trying to look at the top of the bottle neck, for example.

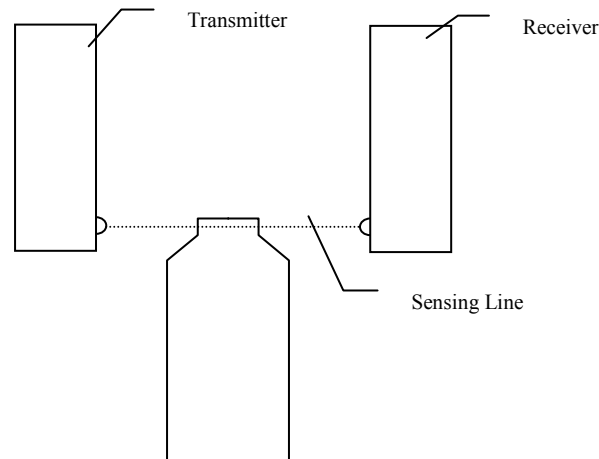
Pass bottles through, and note the test results (displayed as “Lowest Light Level” on the neck flash detection diagnostics screen, or “NECK” on the main displays screen. The setting “MIN LIGHT LEVEL” should be set to a value just below the levels obtained for good production samples. If the setting is set too high, all bottles will be rejected. The higher the setting, the thinner the bottle necks must be to pass.

### Handle Flash Detection Option

This is an extra facility, which can be used in conjunction with the infrared wall thickness measurement option above. At the point where the wall thickness measurement is triggered, the output from a handle flash sensor is sampled. If the sensor is active, the bottle is rejected due to handle flash. The alignment along the conveyor is critical.

The handle sensor should be positioned so that it is looking at the handle area as the bottle fully interrupts the thickness measurement beam.

This position is best found by experiment



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