

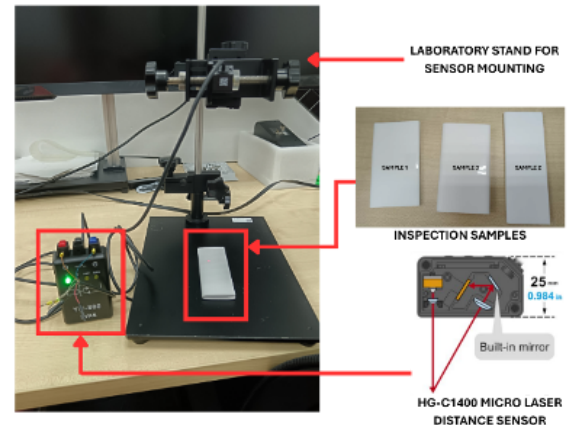
SEMICONDUCTOR

3D Height Measurement



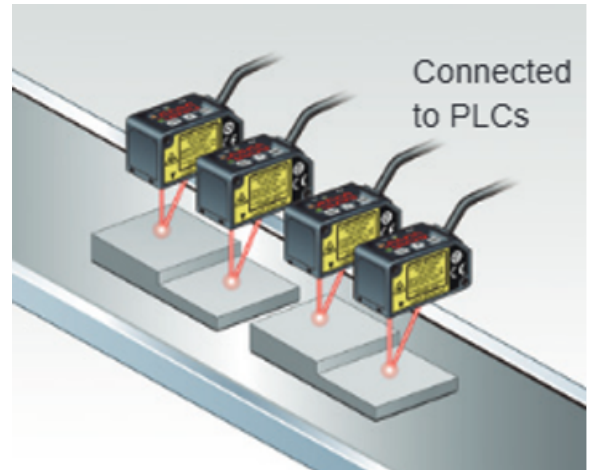
Problem Identified

The client, operating within the semiconductor industry, faced challenges in obtaining accurate and consistent height measurements of small components during inspection processes. Traditional contact-based measurement methods introduced potential for physical damage, slower cycle times, and inconsistent readings due to surface variability.



Solution Provided

To resolve these issues, the HG-C1400 Micro Laser Distance Sensor was integrated into a compact lab setup for high-precision, non-contact height measurement. The sensor was mounted on an adjustable stand and powered by a regulated DC power supply to create a controlled inspection environment.



Results

The HG-C1400 sensor accurately and consistently measured the height of all samples with minimal deviation across repeated trials. Its non-contact capability prevented object interference or damage and maintained precision despite surface variations. Measurement ranges—Sample 1: 4.6–5.4 mm, Sample 2: 6.3–7.4 mm, and Sample 3: 10.8–11.2 mm—confirm its suitability for small, high-precision applications.



Summary

This report addresses a critical challenge in semiconductor component inspection—accurate and repeatable height measurement of small objects. By deploying the HG-C1400 Micro Laser Distance Sensor, the client achieved non-contact, high-precision measurement, improving both quality control and operational efficiency. This case highlights how advanced sensing technology can significantly enhance inspection processes, reduce defects, and support future automation in high-tech industries.