

What is Height Compensation ?

Most benchtop color instruments require the sample to be placed flush against the view port when taking a measurement. If the sample is not flush to the port, then the color measurements may change dramatically. The D25NC is unique in that it is a non-contact color measurements with a corrections applied based on the distance from the sensor. A laser is used to monitor the sample's height and adjust the measurement output.

During manufacturing, the instrument's white calibration tile is measured at various distances from the sensor window. From this, a correction table can be determine to compensate from the changes in distance.

The white tile is precisely positioned in a range from 3 inches to 4 inches from the sensor window during our manufacturing and QC testing. The measurements are then compared to the values at 3.5 inches and the DE* must be less than 0.2 units. The full range of the sensor is 2.5 to 4.5 inches and the DE* must be less than 1 unit as compared to the 3.5 inch value.

Because the tolerances are small, they must be done with a precision, as any angular change on the glossy tile surface will have an effect on the measured values.

In real world applications, the improvement of correction will vary depending on several factors including gloss, texture, angle, and translucency of the sample. In general, a flat level matte surface will show less change in measurement with distance than a glossy or irregular shaped sample due to the way that light reflects off the surface of the sample.