APPLICATION NOTE *AN009*
Small Parts Color Verification

AUTOMOTIVE

INDUSTRY: Automotive
APPLICATION: Color verification for small automotive components

The Challenge

A major tier 1 automotive supplier needed to guarantee the correct color of small components used in automotive interiors to cover fasteners. It was imperative that these parts match the color schemes for the interior to error-proof the manufacturing process.

Current processes generally involve inefficient, labor intensive and subjective manual inspection. Subtle differences in colors commonly used for interior components make visual inspection unreliable.

The Solution

EMX industries, Inc has developed the ColorMax color sensor with multi-channel discrete outputs uniquely suited for integration into automated systems. The challenge presented by the small size of the fastener covers was overcome by the use of a 4mm spot size. The ColorMax integrates the signal over the area illuminated by its light source while rejecting the influences of ambient light.
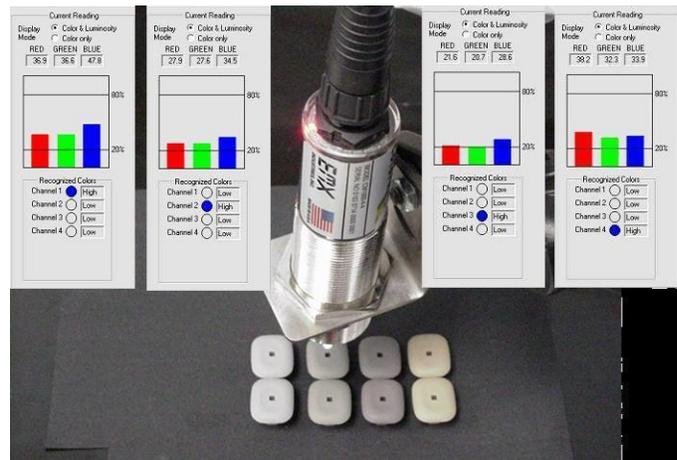

The photo shows the ColorMax sensor. The sensor features a Windows™ Application program used to set up operating parameters, make adjustments and view measurements.   Each color sample is assigned a color recognition channel with individual tolerance settings and a discrete output.

ColorMax color sensor

Color fastener caps

The illustration shows two of each fastener cover used on interior assemblies. They are very similar, therefore, often difficult to differentiate visually in the factory setting.   The sensor is positioned viewing green sample #2. The sensor light spot can be seen on the upper portion of the green sample. The readings shown in the photo are screen shots of the Windows™ Application Program frame that indicates the real-time readings and the color recognition channel status for each of the samples.

This innovative solution to error-proofing of the color inspection process results in properly matched interior components at a fraction of the time and cost associated with manual, visual techniques.

Equipment Required

CM1000-4-4   ColorMax, 4discrete outputs, 4mm spot size