

Color and Gloss Control of Automotive Interior Parts

The S-Family with Close Tolerances for Toughest QC Specs

How many hours do you spend in your car? Most likely you will say "many". Thus, the interior design is getting more and more important in your purchasing decision.

A big challenge for every car manufacturer is to achieve a "feeling" of high value and at the same time minimize cost. Therefore, a variety of materials are used and need to be harmonized. The design group specifies the color, gloss and grain. Once a new color or material or process are approved, a new "style" is born – ready for implementation. At this point the supplier quality group takes ownership and starts working with various part suppliers. As a starting point master standard plaques of the new colors are manufactured with usually a flat and several grained areas. These are sent to the suppliers as their target to achieve with actual production parts.

As the master plaques and final parts are often made of different materials the suppliers work closely with the car maker. At the end the final approval is given on a production part. This production part now becomes the standard for the supplier. In order to guarantee a uniform look among the various materials very tight tolerances are specified.

Typical tolerances

Color: ΔL^* , Δa^* , Δb^* = +/- 0,5
60° Gloss: < 5 GU +/- 0.3 to 0.5

It is impossible to visually assess, if color and gloss are within these very tight tolerances. Only testing instruments with excellent precision will be able to objectively control the production.



spectro-guide S see page 78.



micro-gloss S see page 20.

New Color and Gloss Instruments with tighter technical specs

BYK-Gardner succeeded in offering a new line of color and gloss meters with improved technical performance for 60° gloss in the low gloss range (0-10 GU). The excellent repeatability of +/-0.1 can be guaranteed due to our patented calibration procedure for the new micro-gloss and spectro-guide families.

How can a Gloss or Color Tolerance of +/-0.5 be meaningful?

Instead of working with absolute color or gloss numbers the supplier production QC needs to be based on the signed-off part and only the differences are checked. This procedure eliminates the reproducibility error as color and gloss are measured relatively on the same type of material and same surface. Therefore, a difference of 0.3 gloss units from part to part can be considered as a significant difference.

In addition to the improved technical performance the micro-gloss and spectro-guide families offer you unique benefits to always guarantee precise results:

- Long-term stable calibration – needed only every three months. Guaranteed even when the temperature or humidity changes.
- Temperature stable color and gloss data between 10 °C – 40 °C
- 10 years warranty on the light source