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Press Release

Introduction of a new assessment of measurement technology for the surfaces of painted automobile bodies - TAMS™ – Total Appearance Measurement System

Rhopoint Instruments Ltd. announces that Volkswagen AG has introduced a new assessment measurement technique for the surfaces of painted car bodies. The Rhopoint TAMS™ (Total Appearance Measurement System) technology was developed as part of an innovation project and is now about to be introduced into series production.

The Rhopoint TAMS™ technology is the result of a six-year joint development project between Rhopoint Instruments Ltd., Audi AG and Volkswagen AG and offers the car manufacturer improved parameters for controlling the appearance quality of painted car bodies and painted vehicle parts.

As a result of the successful test phase in the production lines, Rhopoint TAMS™ is a newly specified technology of Volkswagen AG and has been included in the technical delivery conditions and quality test specifications.

Rhopoint TAMS™ measures what you see

With the current methodology for measuring and controlling the appearance of painted surfaces, the biggest challenge is to correlate the measured results with the visual assessment of the quality inspectors or, in other words, „what you measure is not always what you see“. Rhopoint Instruments Ltd. and the specialist departments of Audi AG and Volkswagen AG have jointly developed a new methodology and technology to meet this challenge. The result is the Rhopoint TAMS™, a device that uses the technology of image projection and image analysis to imitate visual perception. Stripe images projected onto a surface are captured with a dual-focus camera, while established optical analysis techniques (e.g. optical transfer functions) are used to calculate indices that describe surface properties in the same way as the human eye.

The result is a much higher agreement with visual perception, which is essential for quality control in production. The Rhopoint TAMS™ „Quality“ (Q) value allows pass/fail decisions to be applied based on this final manufacturing criterion, while the „Harmony“ (H) value ensures that adjacent body parts can be perceived as optically equivalent or the possible differences can be shown. In this way the subjective perception of each individual observer is excluded and objectified. In the case of a qualitative deviation, the presentation methodology of the results allows quick reaction and intervention.



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Control Electro Dip Paint / E-Coat (KTL)

With today's existing methods, quality control of matt e-coats in the production line was only possible through time and cost intensive analyses.

Due to the applied optical concept and methods Rhopoint TAMS™ is able to measure all kinds of surfaces from high gloss to matt. With Rhopoint TAMS™ the user can now also measure the quality of e-coats in the production line. This is all the more important as the e-coat quality has a direct influence on the perceived and measured quality of the clear coat and thus on the final painted appearance.

The overall picture

The painted appearance of the car body surface depends to a large extent on the underlying waviness and roughness of the steel, aluminum or plastic molded parts before painting.

Rhopoint TAMS™ can be used to measure and map surfaces at any intermediate stage of an automobile production.

E-coat, filler, basecoat and topcoat before and after any polishing operations can be characterized to obtain a detailed picture of the entire coating process. This unique data set offers the car manufacturer new possibilities to assess the suitability of raw materials or to optimize individual process elements - this saves costs and improves quality.

Rhopoint TAMS™ is available as a portable handheld device or as an implemented automated system. RoboTAMS has been optimized for rapid automatic evaluation of vehicle paint quality and has already been tested for concept suitability.

In addition, error detection and error characterization are further options that can be displayed with the developed measurement technology.

(Rhopoint TAMS™ is distributed worldwide by Konica Minolta Sensing)



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