The Perfect Light Color

O-INSPECT checks LEDs in the new BMW Museum

Architecture is always a reflection of the times in which it is created. Munich is just one example: in 1972 the young Federal Republic of Germany wanted to present itself as a cosmopolitan and attractive state for the XX Olympics. This was also echoed in the architecture: the Olympia Stadium with its tent-like roof, the spacious Olympia Park or the high rise BMW building with its famous "Four Cylinders" and the neighboring BMW Museum – it was all pioneering, contemporary architecture. 35 years and many millions of visitors later the redesigned museum has reopened in the spring of 2008 after four years of renovation work – with LED illumination of the glass facade tested by Carl Zeiss.

A major component within the newly built pavilion beside the museum is a glass facade with LED illumination extending over 3000 square meters. This lighting configuration was created by Zumtobel with the support of the LED specialist Ledon: harmonious light ensures uniform illumination of the glass surface. The color temperature of the light emitting diodes must be adapted so precisely that it can exactly reproduce the light color of the media facade. The most difficult part of this light configuration is the need to create optimal uniformity of the glass facade despite the different distances of the individual LED platelets. The challenge confronting Carl Zeiss: none of the 2.5 x 2.5 millimeter large points of light should fail. The solution: the optical and tactile inspection of the digital light source with *O-INSPECT*. The measuring machine tests the LEDs in high volume serial production – and all at astounding speed and with amazing accuracy.

Resplendent in a new light: the renovated BMW Museum.

Analysis Over the Shoulder

MAVUS® facilitates work on plant and machinery in distant countries

Engineer with the MAVUS® system.

For a long time, it seemed like an almost insurmountable problem: plant and machinery are built in the home country and shipped to a far-off region of the world, where they are then put into service and maintained – preferably by experts from the original country because very few other people have their know-how. Long and expensive business trips were the result. However, this can now all be changed: *MAVUS* (the abbreviation of the German for Mobile Audio-Visual Support Service), a cooperation venture of Carl Zeiss and the HEITEC systems house, facilitates collaboration between the expert at the home service headquarters and a service engineer on site. How does this work?

An advanced camera and headset, which are attached to an ergonomic support on the engineer's head along with a monocular *Head-Mounted Display (HMD)*, are used to transmit high resolution freeze frames or live images to the expert in real time online. He or she analyzes the situation in an "over the shoulder" approach and provides the on-site engineer – visually on the *HMD* and via voice communication – with information about what should be done.

The benefit: excellent availability of experts, fast reaction times, efficient startups, minimal downtimes – and low travel costs.