



Black Panel Technology

Concealed Lighting as a new design element on the instrument panel

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'Automotive Lighting' deals with the design and functionality of lightning inside and around vehicles.

A design, which draws the attention, is the so-called disappear-effect, also known as Black Panel Technology in automotive industry. With switched off source of light a homogeneous, closed component surface is given. It appears, depending on used material, e.g. black or lucent metallic (picture 1). Only in switched on status the information becomes visible. This is feasible because of an adjustment of laser-generated microdrillings with free definable arrangements (picture 2).

Also for household appliances the technology already finds her use, because the usability is elementary here. Those operating functions which cannot be used at the moment are neither visible right now. They are only lighted up if one can also activate them by which virtually creates an intelligent operating guidance.

For the defined escape-geometry of the microdrillings, a treatment with ultrashortpuls laser offers the advantage of a precision drilling without any manual post-processing because of the melt-free ablation procedure.

Pulsar offers the drilling of metallic shadow masks with individual pattern and high resolution.

Laser drilling and -structuralizing for the production of shadow masks for Black Panel Technology – Reachable Qualities:

- **Material:** stainless steel, aluminum, coated synthetics
- **Drilling diameter:** $10\mu\text{m}$ - - **Resolution:** typ. 250 dpi

Picture 1: Demonstartor Black Panel Technology
LED Display behind laser drilled metalfoil

Picture 2: Precisely drilled apertures with homogeneous
or arbitrary position distribution

CONTACT

M.Sc. Philip Oster

Tel.: +49 (0) 2407 55 55 5-24

E-Mail: applications@pulsar-photonics.de

www.pulsar-photonics.de