



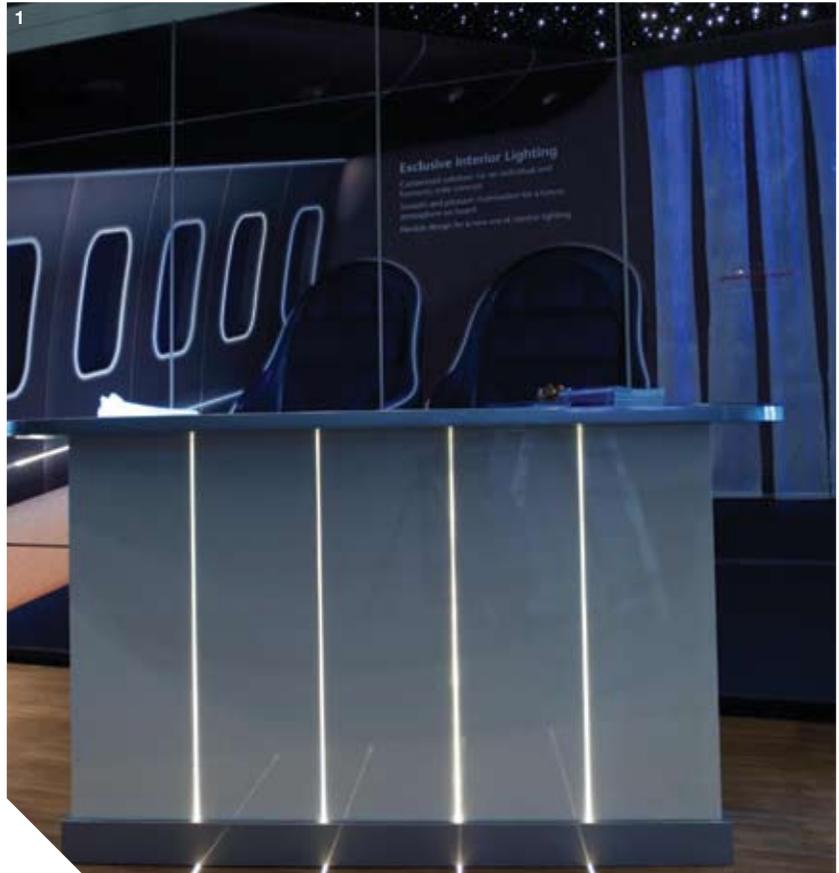
# market LED

HOW DO YOU BALANCE THE NEEDS OF PASSENGERS, AIRLINES AND REGULATORS? SCHOTT EXPLAINS WHY ITS LIGHTS SHOULD PLEASE EVERYONE

**F**uturistic design studies can transform aircraft cabins from small old-fashioned places into spacious atmospheric surroundings for the air travel of the future. New materials and highly sophisticated LED technologies support this trend. Fibre optics and light guides also play a role in the interplay between design and technology.

The illusion of personal space and modern ambience are often supported by detailed lighting concepts, generally seen in sophisticated bars, luxury hotels or other architectural highlights. Even traditionally more conservative places like banks are nowadays using specially designed materials, like woven fibres, to surround buildings in stylish light features. Rabobank in the Netherlands for example is a specially designed place where the mixture of mood-lighting and fibre optics creates the much sought-after 'wow effect'.

For new aircraft, mood-lighting is standard business and has been used for quite a while. But aircraft are not buildings, and efficiency and durability are the traditionally requested features for any equipment used in aircraft. Additionally, there is limited space available to hide the equipment, and if an area is to be homogeneously illuminated, and especially when there will be changing colour scenarios as on large light panels, more space is needed than is usually available. Also, even the newest generation of LEDs are ageing, and every LED might age differently, even if ageing compensations are



implemented. The effect is that in the past, whole sections had to be replaced since a newly installed unit was easily distinguished from the older ones. In addition to these issues, the aircraft industry has high qualification procedures, especially for flammability requirements. Regularly used materials that are perfect for design purposes can't be used in aircraft.

Technology leaders like Schott are dealing with this challenge to enable designers to realize their concepts, but these are not the only challenges in this environment. Companies like Boeing and Airbus are trying to limit the variety of equipment onboard their aircraft, to reduce qualification costs and promote their standard catalogue equipment, leaving very limited options for designers. Airlines try to do quite

the opposite and set new standards with their own branding and design features. In particular, the Asian market leaders are requesting personalised environments designed for full comfort. These environments may include different light scenarios during take off and landing, as well as for the seat environment, where passengers have individual access to entertainment, full communication and light features during the night.

To support the strategies of both airlines and manufacturers, Schott develops new products to give maximum freedom to the designers, while reducing the development costs by introducing a modular concept.

Being the world leader for reading lights, and also being well established in the architectural world, Schott

1. The challenge is to balance aesthetic ideals with efficiency and durability
2. The new light supply unit



combines knowledge of aviation industry requirements, with knowledge of lighting effects and the influence of light on people and materials.

The evolution in high power LED technology fibre optic applications has become more and more useful to new lighting concepts. Through the technical approach of having light guides and light sources, separated light can be created in nearly any corner where general wiring is not permitted, such as in panels. Additionally the heat of LEDs can be released in places where it will not cause disturbance. Maintenance costs can be reduced as fibre optics are very resistant and can be regarded as pure hardware without failure rate.

**Individualisation complements the overall light scenario** These are not the only advantages. Single light features like light lines, small in-seat reading lights and night skies can be created with a newly developed light supply unit for aviation applications. Schott's concept follows the holistic approach that individualisation is able to

## SEPARATED LIGHT CAN BE CREATED IN NEARLY ANY CORNER

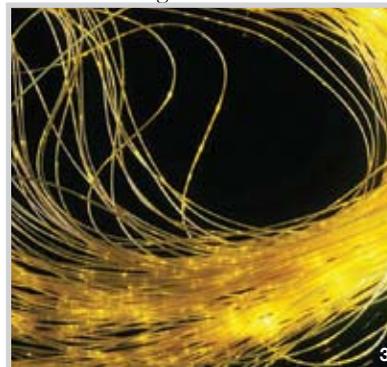
complement an overall light scenario. The major advantage of such a concept is that the designers have the freedom to design the visible part, like light outlets or forms and frames, visible to the passenger, without dealing with the technology behind.

Since a lot of the areas in a cabin are not straight, and need to be illuminated not only for design purposes but for also for real illumination, light units need to be of varying lengths.

One approach is to build module chains that interact with each other, are flexible enough to create narrow bends and small enough to fit into limited space while not creating any shadows between modules.

According to Dr Armin Plichta, manager of Schott Aviation, the

technology behind has to fulfil industry and qualification requirements, but the real aims are to create products that are fit for use and take into consideration selective customers' perceptions, and to reduce qualification costs by using multipurpose equipment. That is what Schott is aiming for. **END**



3. Fibre optics are very resistant, reducing maintenance costs

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