SCHOTT® HelioJet
LED Cabin Lighting Redefined

In cooperation with
Lufthansa Technik
SCHOTT is an international technology group with more than 125 years of experience in the areas of specialty glasses and materials and advanced technologies. With our high-quality products and intelligent solutions, we contribute to our customers’ success and make SCHOTT part of everyone’s life.

Our Business Unit SCHOTT Lighting and Imaging has been active in the area of cabin illumination since the 1990s. Especially the technological expertise in the field of optical fibers combined with LED-based light sources gives SCHOTT a competitive edge. Since 2011, SCHOTT has cooperated with Lufthansa Technik AG in cabin lighting solutions. SCHOTT® HelioJet is an innovative technology that has resulted from this cooperation.
SCHOTT® HelioJet – LED Cabin Lighting Redefined

SCHOTT® HelioJet opens a new chapter of cabin lighting design by combining the efficiency of LED technology with the homogeneous light output of fluorescent tubes.

SCHOTT® HelioJet utilizes light diodes, optical light converters and fiber optic know-how. Other than conventional LED stripes, which work with multiple LEDs in a row, HelioJet only relies on two LEDs that guide their light into an optical light converter. This technology offers three main design advantages over conventional LED stripes:

- **Very homogeneous light distribution**: HelioJet works without the typical "LED spots" and thus enables very attractive light output.
- **Constant light stability**: HelioJet eliminates color shifts from aging LEDs. The optical light converter mixes inhomogeneous effects so that they are almost undetectable.
- **Controlled light output**: HelioJet enables adjustment of the light and aperture angle precisely. The light is no longer emitted in every direction. This offers new possibilities for precise light design solutions.

The collaboration covers the entire process chain of cabin lighting, ranging from the design of lighting to manufacturing, installation, and certification, as well as service.

SCHOTT Lighting and Imaging has been active in the area of cabin illumination since the 1990s. SCHOTT’s competitive edge is technological expertise in the fields of fiber optics and LED illumination.

Lufthansa Technik concentrates on the area of lighting control, certification, and validation and provides installation, maintenance, repair, and overhaul services.

Lufthansa Technik
in cooperation with

SCHOTT
All advantages at a glance:

**Design**
- Very homogeneous light distribution
- Constant high light stability
- Controlled light output

**Costs**
- 5 × higher mean time between failure (MTBF)
- Fewer replacements, less maintenance
- Possibility to exchange single LEDs

**Maintenance**
- Low maintenance due to smaller number of LEDs
- Enhances installation efficiency
- Quick and easy to replace without special tools

**Ecologically friendly**
- No critical substances like in fluorescent tubes
- Less waste (due to high MTBF)
- Repair of single modules is possible

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SCHOTT® HelioJet does not only redefine the design options for LED cabin lighting, it also contributes substantially to financial, maintenance, and ecological aspects.

Generally, LED lighting solutions seemed to be efficient because of their long lifetime and low failure levels. Nonetheless, up until today, LED strips, which consist of a large number of light diodes, have not been able to satisfactorily replace fluorescent tubes in aircraft cabins due to inconsistent light output.

SCHOTT® HelioJet uses about 80% fewer diodes than conventional LED strips. This leads to significant improvements. The mean time between failure (MTBF) is five-times higher, which reduces the maintenance efforts substantially. Also single LEDs can be exchanged, enabling new maintenance concepts that clearly support an ecologically friendly approach.

Suitable for almost all aircraft types

SCHOTT® HelioJet is designed for use in new aircraft as well as for retrofit projects. The modular production concept provides a high compatibility with different aircraft and operating systems.

The new lighting system has been tested with European, Far Eastern, and US-based airlines. In addition, it is totally compatible with all mechanical measures, and fixation and electronic interfaces.

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**Technical Specifications (for 928 mm unit)**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illuminance @ 1m distance</td>
<td>&gt; 350 lx (fluorescent tube: 130 lx)</td>
</tr>
<tr>
<td>Illuminance of cabin floor</td>
<td>&gt; 50 lx (Airbus single aisle)</td>
</tr>
<tr>
<td>Color temperature (CT)</td>
<td>Various (typically 4,000 K / 5,600 K)</td>
</tr>
<tr>
<td>Color rendering index (CRI)</td>
<td>85</td>
</tr>
<tr>
<td>Relative MTBF</td>
<td>5 times the MTBF of standard LED strips</td>
</tr>
<tr>
<td>Operating current of LEDs</td>
<td>700 mA (max.)</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>115 VDC, variable frequency</td>
</tr>
<tr>
<td>Power consumption</td>
<td>30 W (max.)</td>
</tr>
<tr>
<td>Light beam angle</td>
<td>60 °C</td>
</tr>
</tbody>
</table>

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Less is More!

The significantly reduced number of LEDs in SCHOTT® HelioJet technology leads to a five-times higher mean time between failure (MTBF) and thus considerably lower maintenance efforts. The new lighting system is designed for new aircraft as well as for retrofit projects.