SCHOTT is an international technology group with 130 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

Lighting has become an essential factor in cabin interior designs. Not only does the quality of light decisively influence passengers comfort, it also enables airlines to enhance their onboard brand recognition.

With the HelioJet technology, SCHOTT and Lufthansa Technik have found their way for a brighter future in cabin interiors.

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’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.
**HelioJet White** relies only on two LEDs that guide the light into an optical converter. Based on fiber optic principles, the converter mixes the light and distributes it evenly over the entire distance of the light element.

**HelioJet Spectrum** is based on an optical converter at the ends of which four LEDs (RGBW) generate and feed light. The Color Control allows every single LED in the lighting system to be permanently monitored and tuned by the unique sensor technique.
HelioJet White – Unmatched Homogeneous Illumination

Constantly homogeneous light with only two LEDs due to fiber optic technology.

The HelioJet technology overcomes the phenomenon of ageing LEDs. As given the intensity and color temperature of LEDs changes with use. Some change faster than others and there is no predictable pattern. Rather than placing numerous LEDs in a line it works with only two LEDs per lighting segment, which feed light into an optical light converter from both ends of the HelioJet.

Based on fiber optic principles, the converter mixes the light and distributes it evenly over the entire distance of the light element. This enables HelioJet to provide unmatched homogeneous light – continuously over time.

HelioJet uses about 80 % less diodes than conventional LED strips. This leads to significant improvements. The mean time between failure (MTBF) is much higher, which reduces the maintenance efforts substantially. Also LEDs can be exchanged, enabling new maintenance concepts that clearly support an ecologically friendly approach. Due to the unique repair concept, HelioJet supplies eco-friendly maintenance which ensures an even better approach for costs of ownership.

Since EASA STC was granted in August 2013 HelioJet flies successfully.
Heliojet installed in A319
HelioJet Spectrum\textsuperscript{CC} – with unique Color Control

Perfectly accurate colors controlled by active sensor based technology.

Light and colors are important to passenger’s physical and psychological wellbeing. Also colors contribute to brand recognition. The first impression that passengers receive when they enter an aircraft is a huge opportunity for the airline to build its brand.

HelioJet Spectrum\textsuperscript{CC} enables almost unlimited designs for mood lighting and corporate color themes with 16 million different color shades. Also scenes like sunrise/sundown, spa and escape guidance are possible.

HelioJet Spectrum\textsuperscript{CC} works with an optical light converter. At each end four LEDs feed in light, which is harmonized in the optical light converter. Since RGB LEDs are much more heterogeneous and instable in its color performance than white LEDs, HelioJet Spectrum\textsuperscript{CC} includes an innovative, sensor based technology. It ensures that every single LED installed in the system is perfectly in tune with the specified setup and produces the desired color temperature extremely accurately.

Also exchange of parts is possible without optical deficiency, as new parts adjust themselfs into a harmonized picture.

**Color Control**

- Active sensor technique
- Designed to work in the “nice” system from Lufthansa Technik
- 16 million different color shades

Four LEDs (RGBW) at both ends of HelioJet Spectrum\textsuperscript{CC}

The unique Color Control ensures perfectly accurate colors.

Unlimited possibilities for mood lighting, corporate color and endless scenes.
Technical Details

For a brighter future in cabin interiors

HelioJet White
Perfect homogeneous illumination with only two LEDs due to fiber optics.

HelioJet Spectrum<sup>cc</sup>
Accurate colors controlled by unique active sensor technique.

### HelioJet White | 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>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>&gt; 50,000 OH</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. (typically 28 W)</td>
</tr>
<tr>
<td>Light beam angle</td>
<td>60 °</td>
</tr>
</tbody>
</table>

### HelioJet Spectrum<sup>cc</sup> | for 928 mm unit

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>450 g (lamp unit with cable and connector)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>26 x 28 x 928 mm, length customizable</td>
</tr>
</tbody>
</table>
| Power | - Power consumption 28 W / lamp unit  
- ext. Power supply for connection of two lamp units 
- with integrated I/O module for connection with Cabin Management System 
- 115 VAC, 360-900 Hz, 60 W |
| Color temperature (CT) | Tunable white, 2,800 – 9,000 K |
| Color rendering index (CRI) | > 85 (3,500 K ... 4,000 K)  
> 90 (> 4,000 K) |
| Light intensity | 1m distance > 300 lx |
| Color gamut | Sensor controlled RGBW-system fulfills major aircraft manufacturer specification for color gamut |
| Light stability | - Color shift ≤ 3 SDCM  
- Brightness shift < 1%  
- over specified temperature range and lifetime |
| Light beam angle | 60 ° |
| Communication | - Integrated in external Power Supply box with RS 485 bus for communication with Cabin Management Systems  
- Individual LEDs addressable |
Aviation
SCHOTT North America, Inc.
122 Charlton Street
Southbridge, MA 01550
USA
Phone: +1 508/765 3235
Fax: +1 508/764 7361
info.aviation@us.schott.com
www.heliojet.aero

Lufthansa Technik

Lufthansa Technik AG
Product Division Original Equipment Innovation
Weg beim Jaeger 193
22335 Hamburg
Tel: +49 (0)40 5070 64528
Fax: +49 (0)40 5070 65024
innovation@lht.dlh.de
HelioJet@aero.com