


# AES Product Catalog

Innovative products for success!

**AES**  



*»Quality is never an accident ...  
it represents the wise choice  
of many alternatives.«*

William A. Foster







# Introduction: Our line of products

## Creating solutions for tough environments

The tough requirements within the aviation industry continually push the limits of technical feasibility, creating major challenges. Our technical knowledge, high quality product standards and services, and an uncompromising focus on our customer requirements have made us a reputable international service and product provider for the aviation industry.

We are specialized in sophisticated development work to engineer complete electrical systems within an aircraft. Our services range from electrical design to the development and manufacturing of electrical and electronic products and systems.

These include: LED lighting, power management, controls, and telecommunications systems inside aircraft cabins and VIP planes.

Our global customers include Airbus and Boeing, commercial airlines, cabin interior and galley manufacturers as well as completion centers. Our products are compatible with almost all types of systems. We customize our products and develop interfaces which guarantee the overall functionality of your system. This ensures that our solutions meet the highest standards of your requirements. Our products and systems can be used throughout the whole aircraft cabin, from galleys to lavatories and seats. We support you to create the ideal system for you, or just help find that one special part to complete your existing system.

We have been a proficient partner in a challenging industry since 1997. We have already started working on tomorrow's technology, because we keep our eyes forward.

## Our centers of competence:



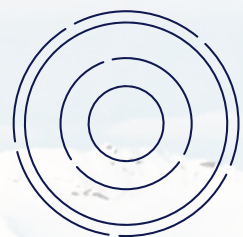
**Light**



**Control**



**Power**



**Communication**



**Special & VIP**



**Certification**

# Our concept: Products and sy

We create smart solutions, both electrical and electronic, for environments with a compact, limited installation space. These challenging environments adhere to our customers' individual requirements. Our extensive design and engineering ability is the groundwork for our integrated solutions in light, power management, control and telecommunications systems. We are a valued partner for product and system design, offering a vast portfolio of services and long-term support. These include: planning and project management, development, production, integration, and

## Monument Power & Light Systems

- + Power Manager PM8350
- + Power Supply PS1140
- + Work Light LD0510
- + Ceiling Light CL6200
- + Flex Light FL0240

## Cabin Light System

- + Power Supply PS2501
- + Light Controller LC0300/0320
- + LED Power/Control Unit LPU1009
- + Spot Light LE0125/0126
- + Ceiling Light CL6000/6200
- + Flex Light FL0240/0250

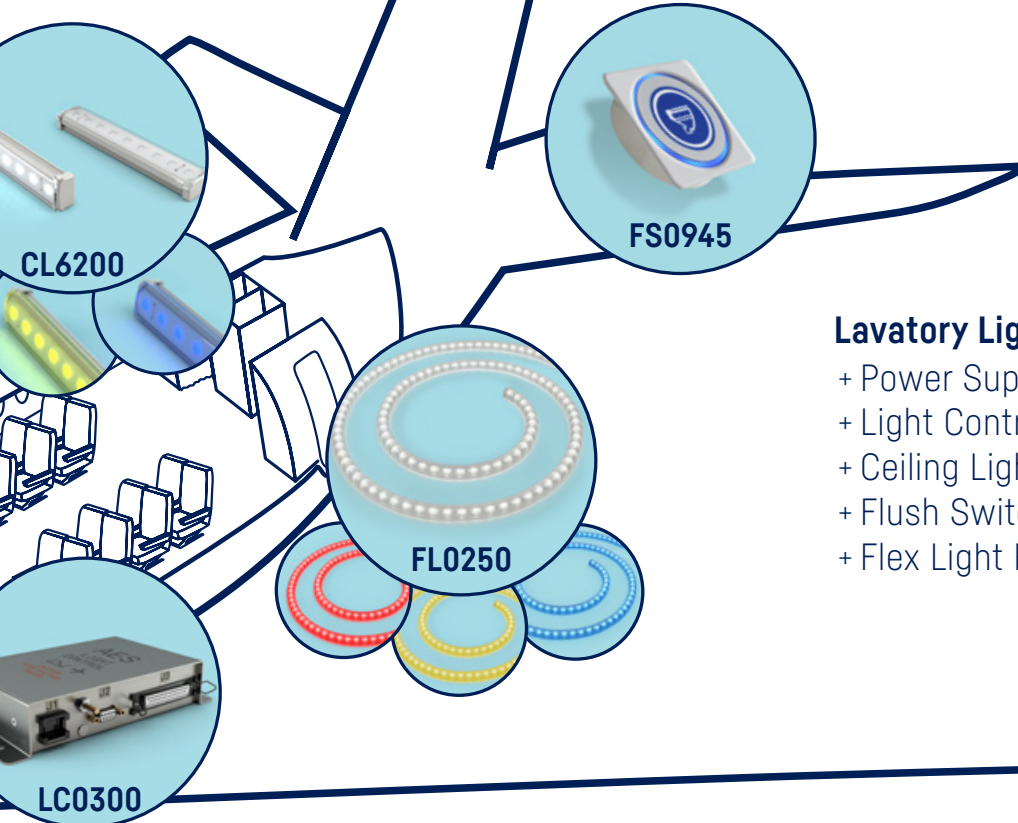


example A350, all rights reserved

# Systems that fit your needs!

other services. We design and VIP aviation custom-in house production communication systems. Moreover, stations and costly down-time customers worldwide.

custom, target-oriented solutions for, both our commercial ers, as well as, our space and maritime clients. AES's reliable completes the final assembly of our equipment, components, and raight forward product maintenance helps prevent malfunction. The quality of AES engineering products is valued by our



## Lavatory Light System

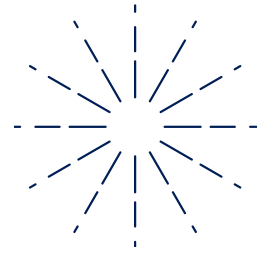
- + Power Supply PS2030
- + Light Controller LC0300/0320
- + Ceiling Light CL6050
- + Flush Switch FS0945
- + Flex Light FL0230/0240/0250

## Communication System

- + Corded Phone THX2015
- + Display Control Panel DCP1005
- + Priv. Branch Exchange Server IPX3606
- + Power Supply PS1140



# Enlighten your passengers.

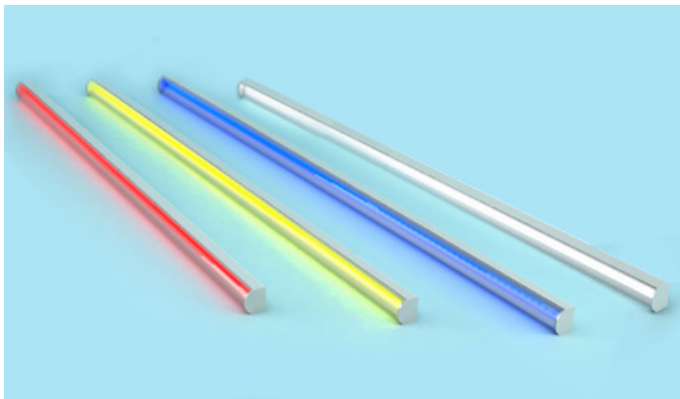


Light not only enables us to see things, it shapes our mind, our feelings, it even reflects on our health. Light plays an essential part in our everyday life and even more so in aviation!

AES has primarily developed and produced aircraft lighting for various applications, with a more detailed focus on LED aircraft lighting. Over time, this has evolved into some close working relationships with prominent LED manufacturers, which allows us access to the latest data and LED developments. As a result, we have extensive knowledge about how LEDs behave in diverse operating and environmental conditions. Today, we can create durable lights with, consistent light quality, incorporating these advantages into other product developments. Naturally, we meet the requirements of major aircraft manufac-

turers relating to our materials and their attributes, such as: corrosion resistance, resilience to aggressive media, and flammability levels. This means, AES prepares design calculations and conducts analyses, to ensure that their construction is sound [e.g.: thermal analyses, strength calculations, FEM, reliability analyses, considering EMV requirements]. We have also developed lighting compatible with the night vision system (NVIS) in accordance with the MIL-STD- 3009, as well as, state-of-the-art technologies like OLEDs (Organic Light Emitting Diode).





available accs:  
BR6005,  
BR6008

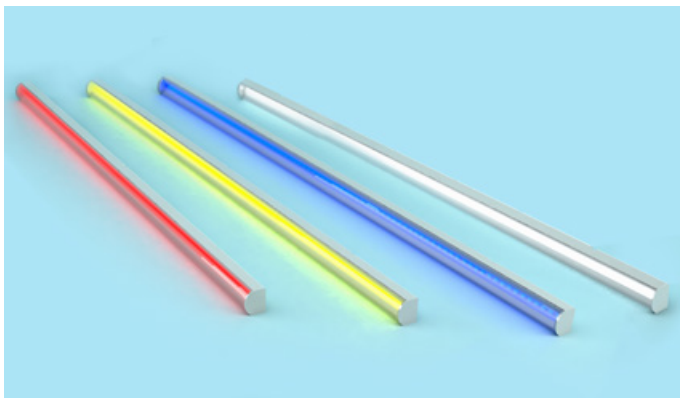


#### CL6000 LED Ceiling Light

designed for Airbus A318-A321, A330, A340 and A380  
as well as Boeing B747 and B737

|                           |  |
|---------------------------|--|
| + as well as              | cool white warm white, RGB-W                   |
| + voltage                 | 28 V DC or 115 AC                              |
| + consumption             | 29,5   22   15   8 VA/W                        |
| + dimensions              | 32,2* x 32 x 1180   873   566   292 mm (h/w/l) |
| + weight                  | 0,6   0,45   0,3   0,17 kg                     |
| + fully qualified acc. to | RTCA-DO160                                     |

Accessories: BR6005/BR6008 brackets (\*brackets add 0,2 mm to product width and height)



available accs:  
BR6005,  
BR6008

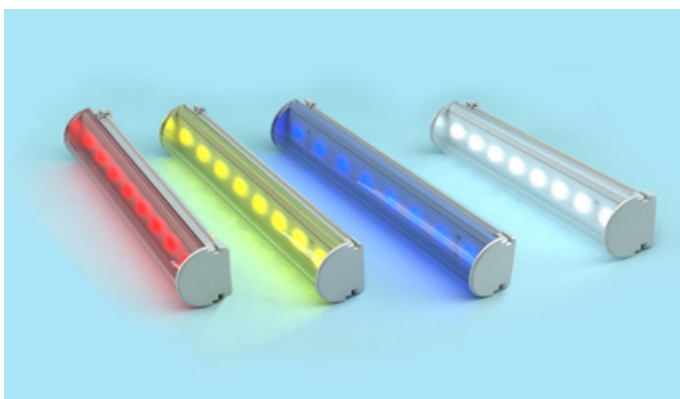


#### CL6050 LED Ceiling Light

designed for Airbus A350

|                           |  |
|---------------------------|--|
| + color                   | cool white warm white, RGB-W                   |
| + voltage                 | 28 V DC or 115 AC                              |
| + consumption             | 29,5   22   15   8 VA/W                        |
| + dimensions              | 32,2* x 32 x 1180   873   566   292 mm (h/w/l) |
| + weight                  | 0,6   0,45   0,3   0,17 kg                     |
| + fully qualified acc. to | RTCA-DO160 and ABD0100                         |

Accessories: BR6005/BR6008 brackets (\*brackets add 0,2 mm to product width and height)



available accs:  
WLC2407

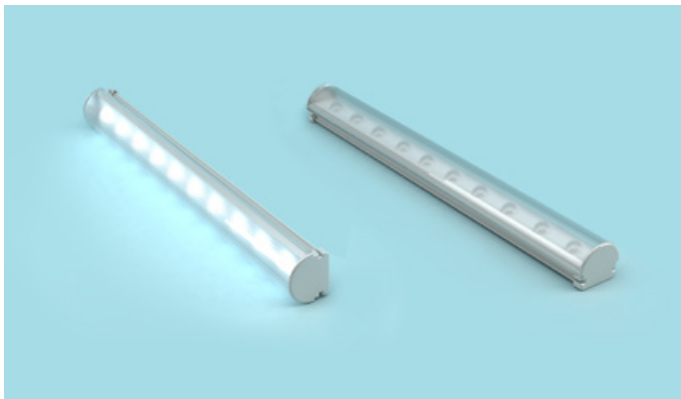


#### CL6200 RGB-W LED Ceiling Light

designed for Airbus A318-A321, A330, A340 and A380  
as well as Boeing B747 and B737

|                           |   |
|---------------------------|---|
| + color                   | cool white warm white, RGB-W  |
| + voltage                 | 28 V DC   |
| + consumption             | max. 0,45 W / inch ~ 35 % efficiency increase !                           |
| + dimensions              | 9 mm x 18 mm x 3"-78" [excl. 5"]<br>[h/w/l - without lenses and brackets] |
| + weight                  | 11 g / inch (incl. lenses, brackets or end caps)                          |
| + fully qualified acc. to | RTCA-DO160 and ABD0100  |

Accessories: WLC2407 bracket (\*brackets add 0,2 mm to product width and height)



available accs:  
WLC2407

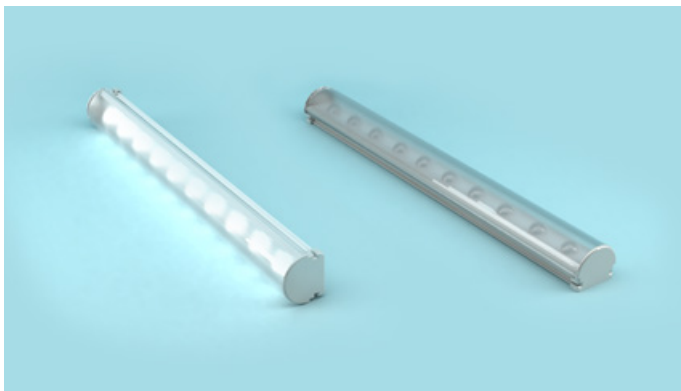


#### LWL1008 LED Ceiling Light

designed for various aircraft

|                                      |   |
|--------------------------------------|---|
| + color                              | approx. 3000, 3500 and 4000 Kelvin                |
| + voltage                            | 28 V DC   |
| + consumption                        | max. 0,7 W / inch                                 |
| + dimensions                         | 9" x 18" x 3"- 78" [excl. 5"] (h/w/l)             |
| + weight                             | 11 g / inch [incl. lenses, brackets and end caps] |
| + fully qualified acc. to RTCA-DO160 |   |

Accessories: WLC2407, \*brackets add 0,2 mm to product width and heigth



available accs:  
WLC2407

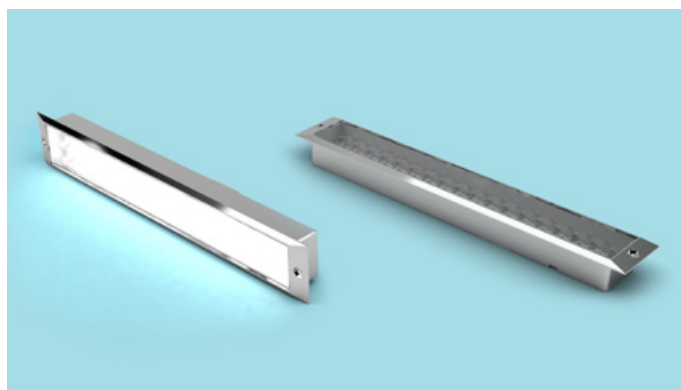


#### LWL2407 LED Ceiling Light

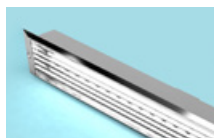
designed for various aircraft

|                                      |  |
|--------------------------------------|--|
| + color                              | approx. 3000, 3500 and 4000 Kelvin               |
| + voltage                            | 28 V DC  |
| + consumption                        | max. 0,7 W / inch                                |
| + dimensions                         | 9" x 18" x 3"- 78" [excl. 5"] (h/w/l)            |
| + weight                             | 11 g / inch [incl. lenses, brackets or end caps] |
| + fully qualified acc. to RTCA-DO160 |  |

Accessories: BR6005/BR6008 brackets, \*brackets add 0,2 mm to product width and heigt



available opts:  
prism (above)  
defuse (left)  
facett (right)



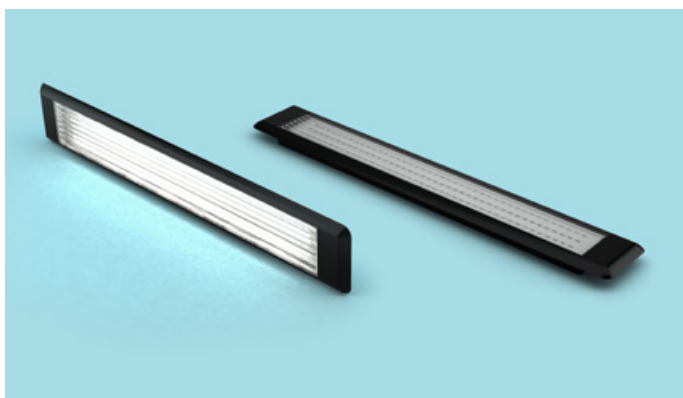
#### LD0500 LED Work Light

designed for various aircraft

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| + color                              | approx. 4700 and 8000 Kelvin        |
| + voltage                            | 28 V DC or 115 V AC / VF 360-800 Hz |
| + consumption                        | max. 6 w                            |
| + dimensions                         | 23/53 mm x 42 mm x 282 mm (h/w/l)   |
| + weight                             | max. 0,185 kg                       |
| + fully qualified acc. to RTCA-DO160 |                                     |

available lens options: prism, facette or diffuse





available opts:  
prism [above]  
e.g. diffuse (left)  
e.g. facett (right)

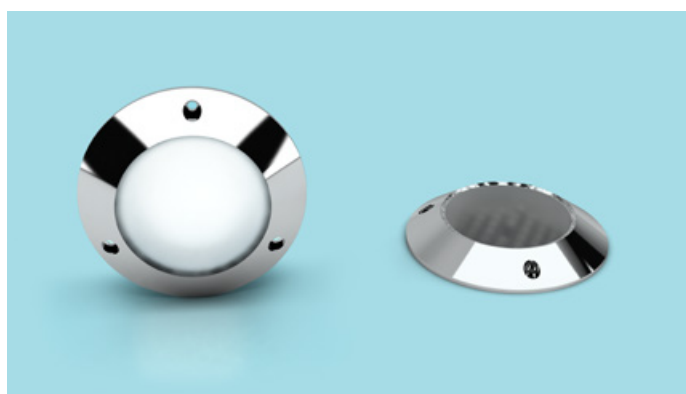


#### LD0510 LED Work Light

designed for Airbus A350

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| + color                              | approx. 2700, 4000 and 6500 Kelvin  |
| + voltage                            | 28 V DC or 115 V AC / VF 360-800 Hz |
| + consupcion                         | max. 6 w                            |
| + dimensions                         | 15/45 mm x 42 mm x 282 mm (h/w/l)   |
| + weight                             | max. 0,185 kg                       |
| + fully qualified acc. to RTCA-DO160 |                                     |

available lens options: prism, facette, diffuse, clear  
Accessories: lamp covers in various colors/finishes



available options:  
diffuse (left)  
facett (right)

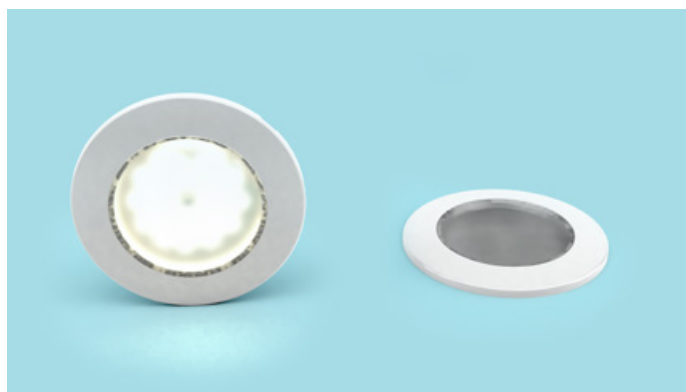


#### LD0100 LED Spot Light

designed for Airbus A318-A321, A330, A340 and A380

|                                      |   |
|--------------------------------------|---|
| + color                              | white - approx. 4,700 and 8,000 Kelvin        |
| + voltage                            | 28 V DC or 115 V AC / VF 360-800 Hz           |
| + consupcion                         | max. 2.8 w                                    |
| + dimensions                         | 26 mm (15 mm instal. depth) x 75 mm Ø (h/w/l) |
| + weight                             | 59 g (incl. lens, and cover)                  |
| + fully qualified acc. to RTCA-DO160 |   |

available lens options: facette or diffuse



available accs:  
LC0110



#### LD0110 LED Spot Light

designed for Airbus aircraft

|                                      |   |
|--------------------------------------|---|
| + color                              | approx. 2700 K, 4000 K, 6500 K            |
| + voltage                            | 28 V DC or 115 V AC / VF 360-800 Hz       |
| + consupcion                         | max. 2,8 W   3 VA                         |
| + dimensions                         | 15 mm (10 mm inst. depth) x 75 mm Ø (h/Ø) |
| + weight                             | 0,069 kg                                  |
| + fully qualified acc. to RTCA-DO160 |   |

Accessories: lamp cover (LC0111 Decor Ring) in various color or metal coatings have to be ordered separately



available accs:  
LH0127 (needed  
for assembly)  
LC0128, LC0129



#### LE0122 LED Spot Light

designed for various aircraft

|                                      |  |
|--------------------------------------|--|
| + color                              | white - 4000, 5000, 6000 and 8000 Kelvin |
| + voltage                            | 28 V DCC                                 |
| + consupcion                         | max. 4,2 W                               |
| + dimensions                         | 41 x 61 Ø   instal. depth: 46 mm (h/w/l) |
| + weight                             | 85 g (excl. housing + cover)             |
| + fully qualified acc. to RTCA-DO160 |  |

Accessories: LH0127 Ultem® housing, LC0128/129 Decor Covers



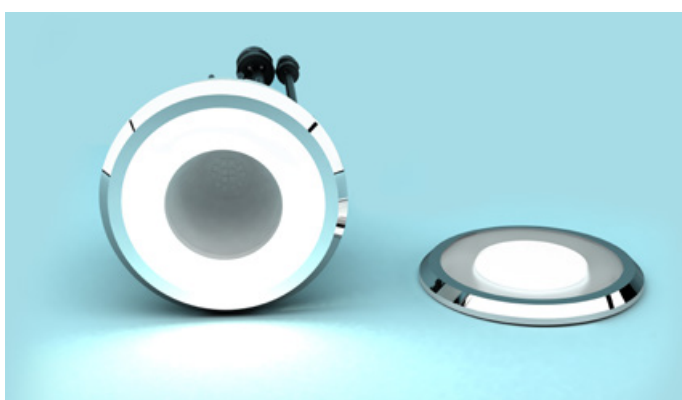
available accs:  
LH0127 (needed  
for assembly)  
LC0128, LC0129



#### LE0125 LED RGB Spot Light

designed for various aircraft

|                                      |   |
|--------------------------------------|---|
| + color                              | RGB - 16,7 million light colours (24 bit)                     |
| + voltage                            | 28 V DCC  |
| + consupcion                         | max. 5 W without interface cable<br>max. 6,5 W with VB0130-00 |
| + dimensions                         | 61 mm Ø x 41 mm   installation depth: 46 mm                   |
| + weight                             | 85 g (excl. housing + cover)                                  |
| + fully qualified acc. to RTCA-DO160 |   |



available accs:  
LH0127 (needed  
for assembly)  
LC0128, LC0129

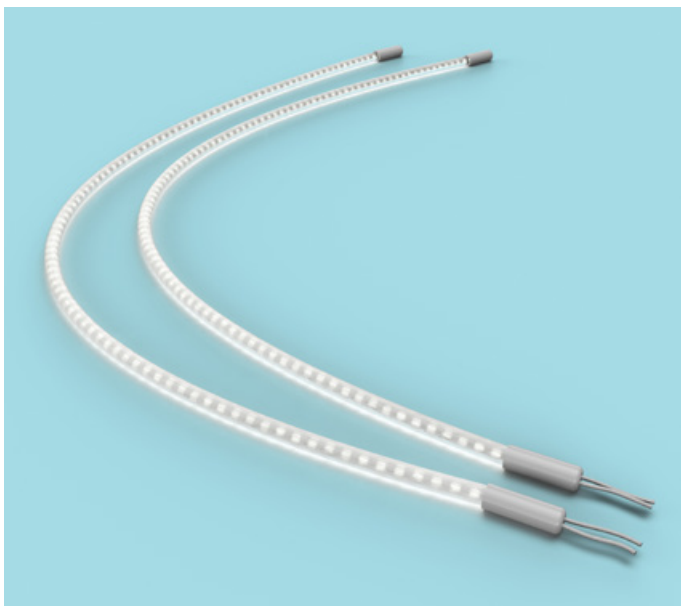


#### LE0126 LED RGB(+W) Spot / Emergency Light

designed for various aircraft

|              |   |
|--------------|---|
| + color      | <b>spot light:</b> Single/Dual White LED cluster<br>opt. RGB, RGB+W (up to 16,7 million colors-24 bit)<br><b>emergency light:</b> Single white<br>opt. Single Color LEDs- R/G/B |
| + voltage    | <b>spot light:</b> 28 V DC<br><b>emergency light:</b> 6/28 V DC   |
| + consupcion | <b>spot light:</b> 5,5 W<br><b>emergency light:</b> 1,6 W/1,5 W   |
| + dimensions | 56 mm Ø x 35 mm instal. depth (h/w/l)   |
| + weight     | 0,120 kg (0,175 kg incl. housing + cover)   |

Accessories: LH0127 Ultem® housing, LC0128/129 Decor Covers



#### LFL9004 Low Floor Light

designed for Airbus A318-A321, A330, A340 and A380

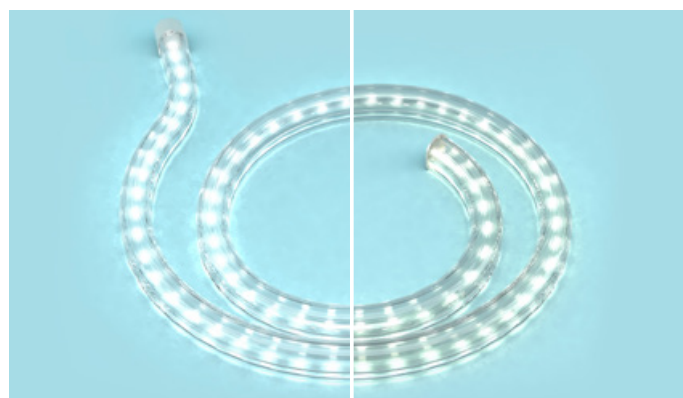
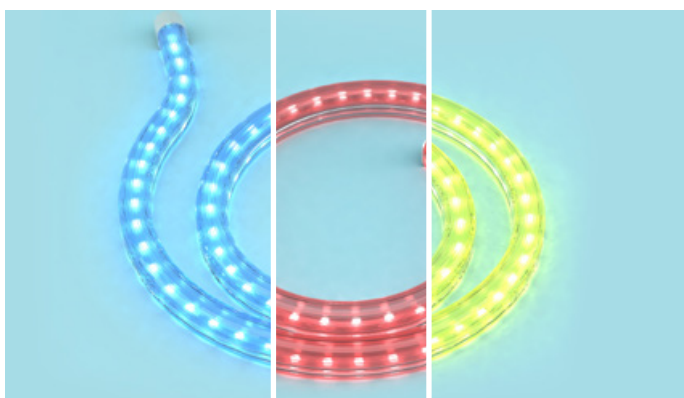
Specially designed to highlight areas such as bars, pictures, stairs etc.

|                                      |   |
|--------------------------------------|---|
| + color                              | white - approx. 4,700 and 8,000 Kelvin        |
| + voltage                            | 28 V DC                                       |
| + consupction                        | max. 2.8 w                                    |
| + dimensions                         | 26 mm [15 mm instal. depth] x 75 mm Ø [h/w/l] |
| + weight                             | 59 g [incl. lens, and cover]                  |
| + fully qualified acc. to RTCA-DO160 |   |



# Stay flexible.

360° bendable RGB/RGB+W/Dual White  
LED hoses, dimmer and logic controllable



## FL0230 Flexible RGB Decor Light

designed for Airbus A350

|               |  |
|---------------|--|
| + color       | RGB - 16,7 million light colours (24 bit)        |
| + voltage     | 28 V DC  |
| + consumption | max. 10 W / m                                    |
| + dimensions  | 18* x 15* x m in. 300 mm   m ax. 4980 mm (h/w/l) |
| + weight      | base element 75 g + extension element á 25 g     |

Available accessories: BR0241  
[\*brackets add 0,2 mm to  
product width and heigth]

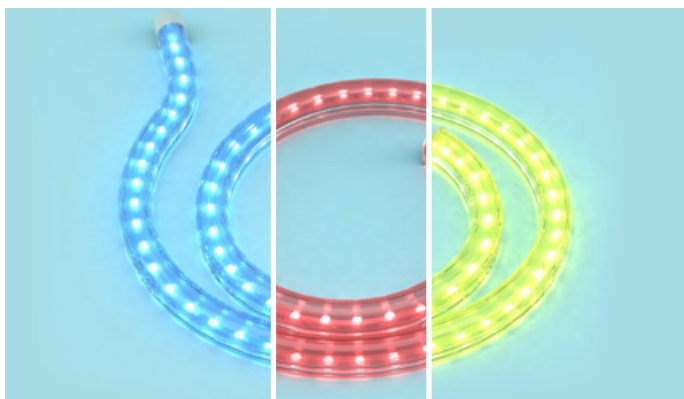


## FL0235 Flexible Dual White Decor Light

designed for Airbus A350

|               |  |
|---------------|--|
| + color       | Dual White - adjustable from 6500 K to 2700 K    |
| + voltage     | 28 V DC  |
| + consumption | max. 10 W / m                                    |
| + dimensions  | 18* x 15* x m in. 300 mm   m ax. 4980 mm (h/w/l) |
| + weight      | base element 75 g + extension element á 25 g     |



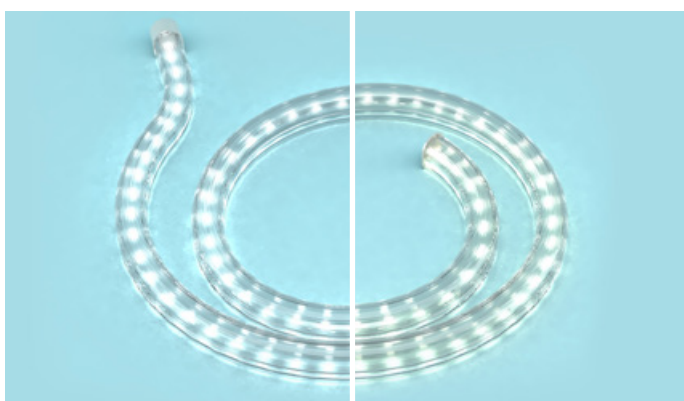


available accs:  
BR0241



| FL0240 Flexible RGB Decor Light                             |  |
|---|--|
| designed for Airbus A318, A319, A320, A321, A330, A340, 380 |  |
| + color   | RGB - 16,7 million light colours (24 bit)          |
| + voltage   | 28 V DC  |
| + consumption   | max. 10 W / m                                      |
| + dimensions  | 18* x 15* x m in. 300 mm   m ax. 4980 mm (h/w/l)   |
| + weight  | base element 75 g + 1st extension element á 25 g + |

Accessories: : BR0241 brackets, (\*brackets add 0,2 mm to product width and heigh)

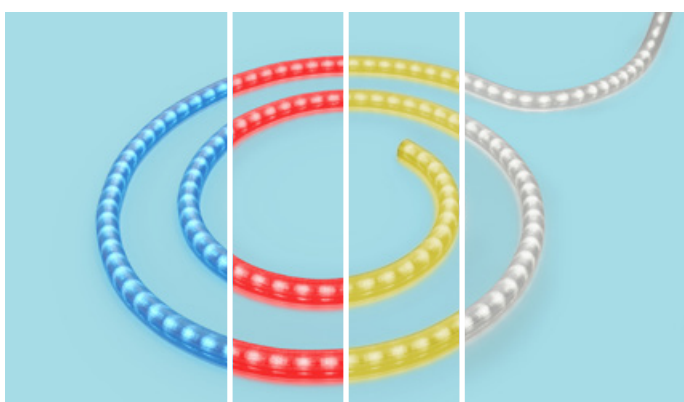


available accs:  
BR0241



| FL0245 Flexible Dual White Decor Light                      |  |
|---|--|
| designed for Airbus A318, A319, A320, A321, A330, A340, 380 |  |
| + color   | white - adjustable from 6500 K to 2700 K         |
| + voltage   | 28 V DC  |
| + consumption   | max. 10 W / m                                    |
| + dimensions  | 18* x 15* x m in. 300 mm   m ax. 4980 mm (h/w/l) |
| + weight  | base element 75 g + 1st extension element á 25 g |

Accessories: : BR0241 brackets, (\*brackets add 0,2 mm to product width and heigh)



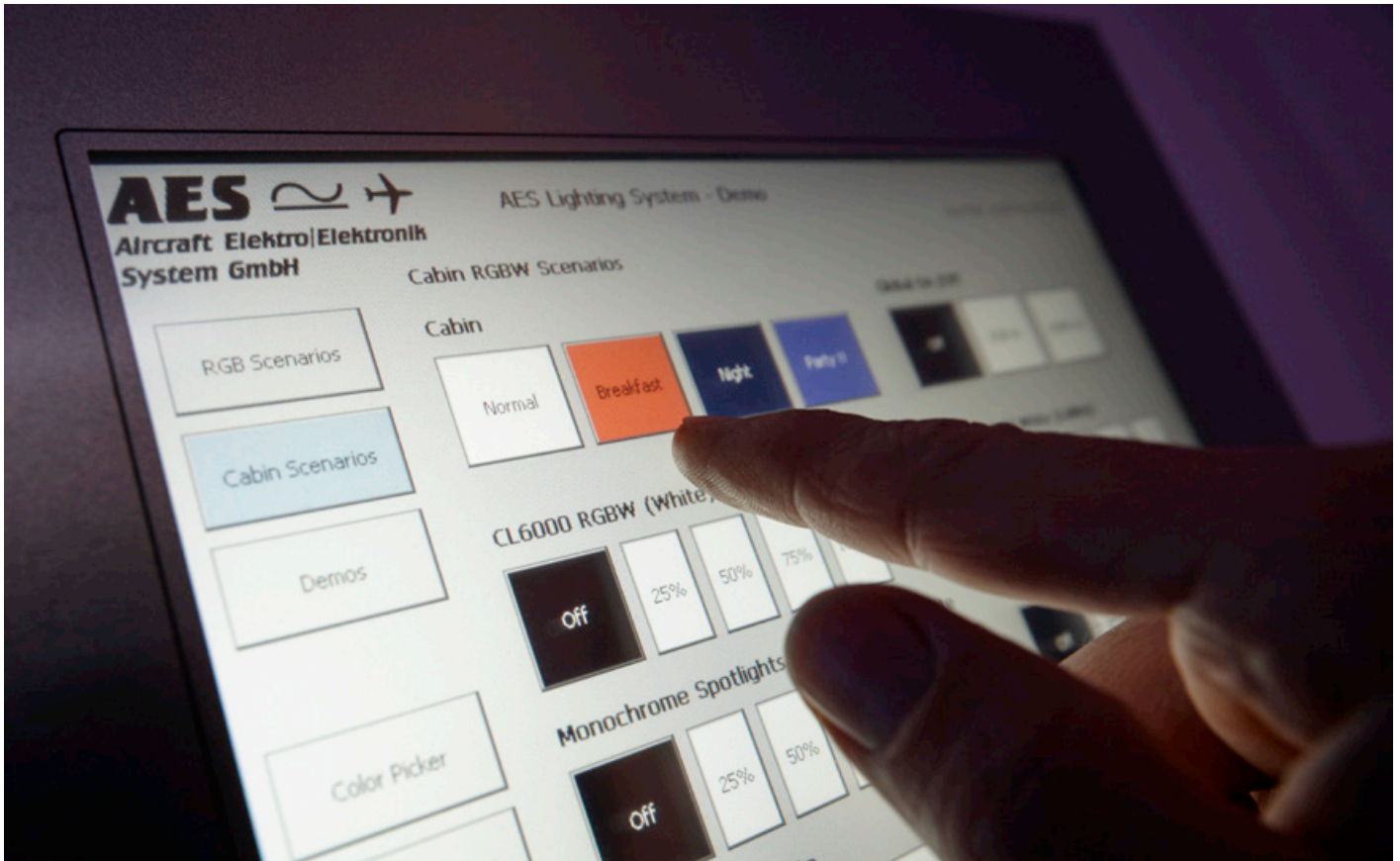
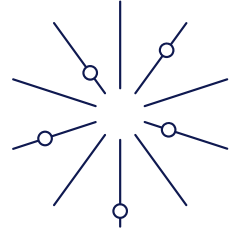
available accs:  
BR0251



| FL0250 Flexible RGB+W Decor Light         |   |
|---|---|
| designed for Airbus 318, A319, A320, A321 |   |
| + color                                   | RGB+W: up to 16,7 m illion light colours (24 bit) |
| + voltage                                 | 28 V DC   |
| + consumption                             | max. 10 W / m                                     |
| + dimensions                              | 16,4* x 12* x m in. 244 mm   m ax. 5060 mm        |
| + weight                                  | base element 107 g + 1st extension element á 10 g |

Accessories: BR0251 brackets, (\*brackets add 0,5 mm to product width and heigh)

# Take control ...



Brightness, color, temperature, humidity, volume ... we give you all the control you need!

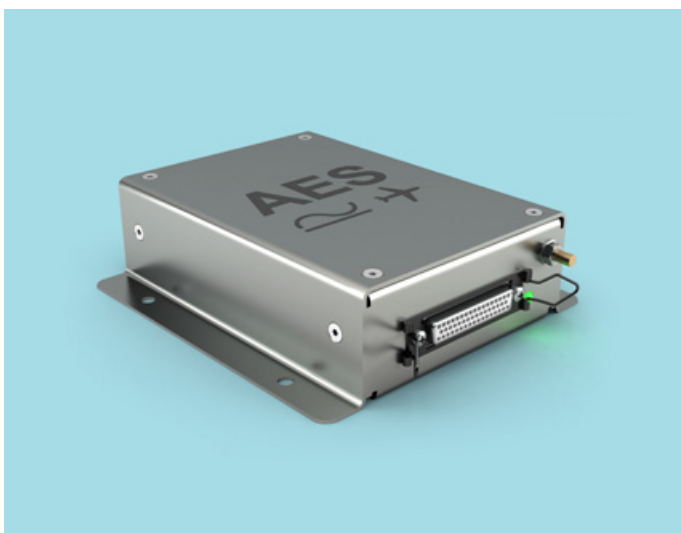
Over the past 10 years AES has developed several products, a number controlled by a microcontroller or others using programmable logic (e.g. FPGA). We apply these products to a broad range of applications. The move to digitally controlled products started with the RGB spotlights for color lighting applications. The spotlight features a 32-bit micro controller, which controls and monitors the light output while software compensates for color deviations caused by operating temperature and aging. AES developed and documented the embedded software in accordance with the RTCA DO-178B standard (Software Considerations in Airborne Systems and Equipment Certification). A major showpiece within the AES Light System is a configurable RGB-W Light Controller, developed and approved for single-aisle, long-range and A380 aircraft. We tailor the light controller functions to meet customer requirements, using application specific software and parameter configurations. This flexibility makes the light controller a versatile

control device for AES LED light products. One of our earlier customer project involved the hardware and software design and development of a complex component for an in-flight entertainment (IFE) system. This included the integration of a commercial Gigabit Ethernet switch module. The next generation of this component will feature optical 10 Gigabit Ethernet ports to support high-bandwidth IFE backbone connections. In another project, AES designed and developed a custom water control system for VIP aircrafts. The system consisted of a main controller unit and touch screen computer to serve as an interface to communicate over a serial data bus. Rather than software, programmable logic drives the core functions of the main controller. This allowed it to meet all the requirements, e.g. controlling many valves simultaneously. Other existing and future projects address the areas of power management and digitally controlled power supplies.

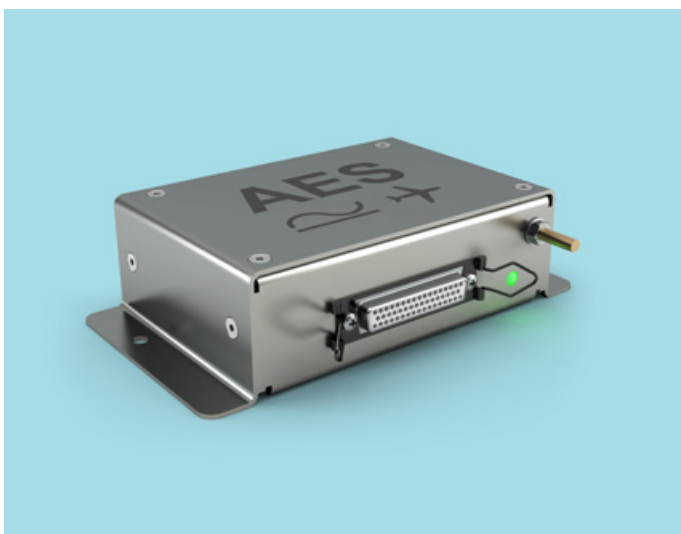




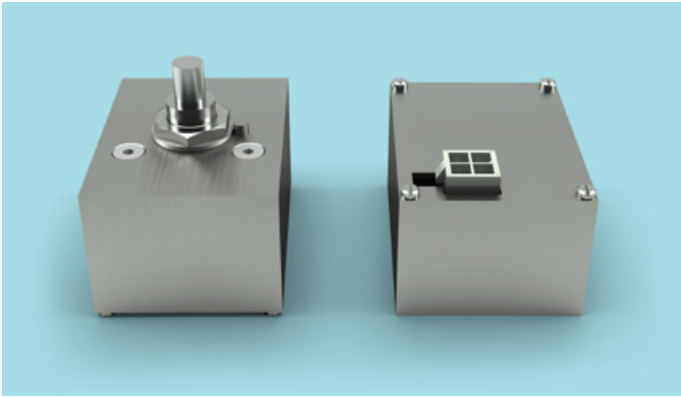
| BIU0045      Bus Interface Unit      |                           |
|--------------------------------------|---------------------------|
| designed for various aircraft        |                           |
| + voltage                            | 28 V DCC                  |
| + consumption                        | max. 112 w                |
| + dimensions                         | 44 x 172 x 215 mm (h/w/l) |
| + weight                             | less than 1,2 kg          |
| + fully qualified acc. to RTCA-DO160 |                           |



| DD0290      PWM Dimmer               |   |
|--------------------------------------|---|
| designed for A318-21, A330, and A340 |   |
| + dimensions                         | 39,5 x 125 x 133 mm (+ 17,5 mm ground bolt)                               |
| + In voltage                         | 28 V AC for PNR DD0290-000<br>115 V AC for PNR DD0290-100 / VF 360-800 hz |
| + In current                         | max. 2,2 A @ 28 V AC<br>0,45 A @ 115 V AC                                 |
| + OUT voltage                        | 28 V PWM (pulse wide modulated)   |
| + OUT current                        | max. 1,1 A  |
| + weight                             | less than 0,7 kg  |



| DD0295      PWM Dimmer              |  |
|-------------------------------------|--|
| designed for A318-21, A330 and A340 |  |
| + dimensions                        | 39,5 x 115 x 80 mm (+ 15 mm ground bolt) |
| + In voltage                        | 28 V DC                                  |
| + In current                        | In m ax. 1,2 A                           |
| + OUT voltage                       | 28 V PWM (pulse wide modulated)          |
| + OUT current                       | max. 1,1 A                               |
| + weight                            | less than 0,2 kg                         |



available options: DP0299-000 - 1 x 10 kΩ, log\*  
 DP0299-001 - 1 x 10 kΩ, lin\*  
 DP0299-002 - 2 x 10 kΩ, lin\*\*

| DP0299  | Control Potentiometer     |
|---|---------------------------|
| designed and approved for all Airbus aircraft |                           |
| + dimensions                                  | 26,2 x 49 x 63 mm [h/w/l] |
| + weight                                      | 0,075 kg*   0,080 kg**    |
| + voltage                                     | max. 38 V DC              |
| + current                                     | max. 3,8 mA               |
| + consumption                                 | max. 0,15 W               |
| + weight                                      | 0,075 kg*   0,080 kg**    |



MU0235 Memory Unit for Light Controllers incl.



| LC0300-00   | 4 Chanel Light Control System   |
|---|---|
| designed & approved for Airbus single aisle, long range and A380 aircraft |   |
| + dimensions  | 40 x 151 mm x 209 mm [h/w/l]  |
| + voltage   | <b>In</b> 115 V AC VF 360 - 800 Hz<br><b>Out</b> 4x 28 V PWM [pulse wide modulated] |
| + current   | <b>In</b> approx. 0,3 A   |
| + power   | output 30 W   |
| + connector   | ABS1019 [Sub-D-9 PIN]   ABS1145 [Sub-D-50 PIN]                                      |
| + weight  | 0,62 kg   |
| Accessories: MU0235 Memory Unit for Light Controllers                     |   |



MU0235 Memory Unit for Light Controllers incl.



| LC0300-01   | 4 Chanel Light Control System                                       |
|---|---|
| designed & approved for Airbus single aisle, long range and A380 aircraft |   |
| + dimensions  | 40 x 151 mm x 209 mm [h/w/l]  |
| + voltage   | <b>In</b> 28 V DC<br><b>Out</b> 4 x 28 V PWM [pulse wide modulated] |
| + current   | <b>In</b> approx. 5 A   |
| + power   | output 140 W  |
| + connector   | ABS1145 [Sub-D-9 PIN]   ABS1145 [Sub-D-50 PIN]                      |
| + weight  | 0,47 kg   |
| Accessories: MU0235 Memory Unit for Light Controllers                     |   |



MU0235 Memory Unit for Light Controllers incl.



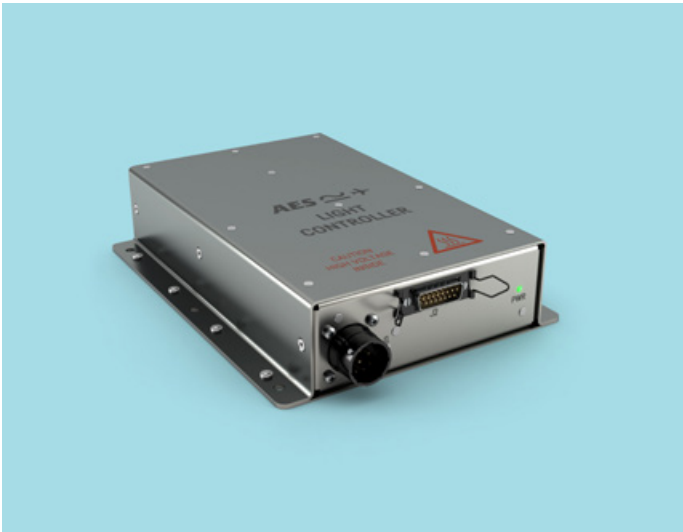
| LC0300-02 4 Chanel Light Control System                                   |  |
|---|--|
| designed & approved for Airbus single aisle, long range and A380 aircraft |  |
| + dimensions  | 60 x 121 mm x 209 mm (h/w/l)   |
| + voltage   | <b>In</b> 115 V AC VF 360 - 800 Hz<br><b>Out</b> 4 x 28 V PWM (pulse wide modulated) |
| + current   | In approx. 1,45 A  |
| + power   | output 140 w   |
| + connector   | ABS1019 (Sub-D-9 PIN)   ABS1145 (Sub-D-50 PIN)                                       |
| + weight  | 1,42 kg  |
| Accessories: MU0235 Memory Unit for Light Controllers                     |  |



MU0325 Memory Unit for Light Controllers incl.



| LC0320 8 Chanel Light Control System                  |  |
|---|--|
| designed for A318, A319, A320, A321, A330, A340       |  |
| + dimensions  | 40 x 115 mm x 209 mm (h/w/l)   |
| + voltage   | <b>In</b> 28 V DC<br><b>Out</b> 8 x 28 V PWM (pulse width modulated) |
| + current   | <b>In</b> max. 5,1 A   <b>Out</b> max. 5 A                           |
| + connector   | ABS1145 (Sub-D-9 PIN)   ABS1145 (Sub-D-50 PIN)                       |
| + weight  | 470g (+20 g Memory Unit)   |
| Accessories: MU0325 Memory Unit for Light Controllers |  |



| LPU1009 LED Power and Control Unit |   |
|------------------------------------|---|
| designed for all aircraft          |   |
| + dimensions                       | 50,6 x 170 x 220 mm (236 incl. connector) (h/w/l)         |
| + voltage                          | <b>In</b> 115 V AC / VF 360 - 800 Hz   <b>Out</b> 28 V DC |
| + current                          | <b>In</b> 4,3 A   <b>Out</b> 28 V DC                      |
| + power                            | max. 400 W  |
| + connector                        | MS24308-4-3 (Sub-D-25P PIN)                               |
| + weight                           | less than 1,5 kg  |





#### CCP0004 Cabin Control Panel

designed for various aircraft

- + dimensions 236 x 288 x 73 mm [h/w/l]
- + voltage 28 V DC supply voltage
- + weight 2,8 kg
- + features
  - call display and call management
  - general lighting
  - switches and control
  - white and RGB lighting control
  - integration of customised features possible



#### DCP1005 Display Control Panel

designed for various aircraft

- + dimensions 296 x 370 x 80 mm [100 mm incl. disconnects]
- + voltage 115 V AC / 400 Hz
- + weight 0,069 kg
- + connectors
  - 1 x Power input (115 V)
  - 1 x Sub-D: adress configuration
  - 1 x ARINC 429 [DEMA9P]: interface to satcom SDU
  - 1 x RS 232 [DEMA9S]: serial interface
  - 1 x 10 BaseT, Ethernet (RJ45) | Interface to IPX/PAPX

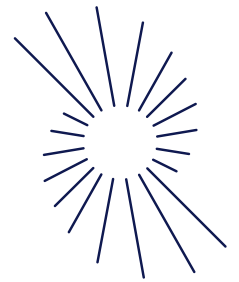


Visit us on **[www.aes-aero.com](http://www.aes-aero.com)**  
We create solutions!





# Power your systems.



Power, current, charge, voltage, resistance, potential... To make an aircraft fly you have to provide the one while keeping an eye on the other. We give you the means to do so!

The design and development of power supplies is just one of the main competencies at AES. We benefit from over 20 years of experience in this field.

The first series of classic power supply products we produced are transformer rectifiers. Transformer rectifiers are approved for the AIRBUS single-aisle [A318, A319, A320, A321] and long-range [A330, A340] aircraft as well as for the Boeing B777.

Three versions of the transformer rectifiers supply 140 W, 280 W and 420 W at 28 V DC. The second generation of power supplies products are switch mode power supplies. They are approved for the AIRBUS A318, A319, A320, A321, A330, A340 and A380 aircrafts. They function with variable, in addition to, constant frequencies. These are far lighter and more efficient than the transformer rectifiers.

Furthermore, they automatically shut down in the event of overheating and restart only after being reset.

We use the modern technology of resonance transformers for the newest generation in switch mode power supplies, "Cool and Green power". This highly efficient product ensures minor dissipation losses, which preserve low temperatures. As a result, the **"Cool & Green Power"** source does not require an internal fan. The first version of the **"Cool & Green Power"** generation supplies 70 W at 28 V DC at > 90% efficiency. It is approved for use in the AIRBUS A318, A319, A320, A321, A330, A340, A350 and A380 aircrafts. Our current research and development projects are focused on digitally controlled power supplies.





#### PS1140 Switch Mode Power Supply

designed for Airbus A318-A321, A330, A340 and A380

|              |   |
|--------------|---|
| + dimensions | 54,5 x 130 x 179 mm [h/w/l]   |
| + voltage    | <b>In</b> 96 - 130 V AC / VF 360 - 800 Hz<br><b>Out</b> 28 V PWM [pulse wide modulated] |
| + current    | <b>In</b> approx. 1,45 A  |
| + power      | output 140 w  |
| + connector  | MS24264R14B7PN   EN3646A01412AN   |
| + weight     | 1,4 kg  |



#### PS2030 Switch Mode Power Supply

designed for Airbus A318-A321, A330, A340, A50 and A380

|              |   |
|--------------|---|
| + dimensions | 43 x 46 x 253 mm [h/w/l]                                  |
| + voltage    | <b>In</b> 115 V AC / VF 360 - 800 Hz   <b>Out</b> 28 V DC |
| + current    | <b>In</b> nom. 0,3 A   <b>Out</b> 1,1 A                   |
| + power      | output 30 W   |
| + connector  | EN3646A01412AN  |
| + weight     | less than 0,5 kg  |



#### PS2070 Switch Mode Power Supply

designed for Airbus A318-A321, A330, A340 and A380

|              |   |
|--------------|---|
| + dimensions | 42 x 130 x 150 mm [h/w/l]                                 |
| + voltage    | <b>In</b> 115 V AC / VF 360 - 800 Hz   <b>Out</b> 28 V DC |
| + current    | <b>In</b> nom. 0,7 A   <b>Out</b> 2,5 A                   |
| + power      | output 70   |
| + connector  | MS24264R14B7PN   EN3646A01412AN                           |
| + weight     | less than 0,6 kg  |



#### PS2500 Switch Mode Power Supply

designed for Airbus A318-A321, A330, A340 and A380

|              |  |
|--------------|--|
| + dimensions | 50 x 170 x 235 mm (h/w/l)                                      |
| + voltage    | <b>In</b> 96 - 130 V AC / VF 360 - 800 Hz   <b>Out</b> 28 V DC |
| + current    | <b>In</b> nom. 4,05 A   <b>Out</b> max. 15 A                   |
| + power      | output 420 W   |
| + weight     | less than 0,6 kg   |



#### PS2501 Switch Mode Power Supply

designed for Airbus A318-A321, A330, A340 and A380

|              |  |
|--------------|--|
| + dimensions | 50 x 170 x 235 mm (h/w/l)                                      |
| + voltage    | <b>In</b> 96 - 130 V AC / VF 360 - 800 Hz   <b>Out</b> 28 V DC |
| + current    | <b>In</b> nom. 4,05 A   <b>Out</b> max. 15 A                   |
| + power      | output 420 W   |
| + weight     | less than 0,6 kg   |

all output pins seperatly secured and fused



#### PS6120 3-Phase Switch Mode Power Supply

designed for Airbus A318-A321, A330, A340 and A380

|              |   |
|--------------|---|
| + dimensions | 50 x 170 x 235 mm (h/w/l)   |
| + voltage    | <b>In</b> 115 V AC / VF 360 - 800 Hz 3 phase   <b>Out</b> 28 V DC |
| + current    | <b>In</b> 4,2 A per phase   <b>Out</b> 42 A                       |
| + power      | output 1200 W   |
| + weight     | less than 4 kg  |



#### TR0140 Transformer Rectifier

designed for Airbus A318-A321, A330, A340 and Boeing B777

|              |  |
|--------------|--|
| + dimensions | 55 x 130 x 180 mm (h/w/l)  |
| + voltage    | <b>In</b> 115 V AC / 400 Hz single phase<br><b>Out</b> 28 V DC nom. [26 V DC at 5 A] |
| + current    | <b>In</b> max 1,8 A   <b>Out</b> max. 5 A  |
| + weight     | ca. 1640 g   |



#### TR0280 Transformer Rectifier

designed for Airbus A318-A321, A330, A340 and Boeing B777

|              |   |
|--------------|---|
| + dimensions | 68 x 189 x 247 mm (h/w/l)   |
| + voltage    | <b>In</b> 115 V AC / 400 Hz single phase<br><b>Out</b> 28 V DC nom. [26 V DC at 10 A] |
| + current    | <b>In</b> max 3,65 A   <b>Out</b> max. 10 A   |
| + weight     | less than 2,9 kg  |



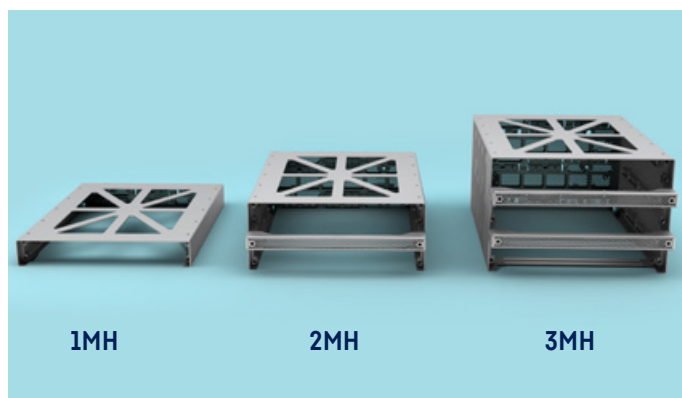
#### TR0420 Transformer Rectifier

designed for Airbus A318-A321, A330, A340 and Boeing B777

|              |   |
|--------------|---|
| + dimensions | 75 x 209 x 247 mm (h/w/l)   |
| + voltage    | <b>In</b> 115 V AC / 400 Hz single phase<br><b>Out</b> 28 V DC nom. [26 V DC at 15 A] |
| + current    | <b>In</b> max 5,35 A   <b>Out</b> max. 15 A   |
| + weight     | less than 3,4 kg  |

# More than just managing...

The highly efficient Galley Power Management System is a power source, digitally controlled fuse box, light controller as well as managing tool – all in one!



| PM8350  | Galley Power Management System (2MH) |
|---|--------------------------------------|
| designed for Airbus 350 - other models possible |                                      |
| + color   | alu elox finish   alu dark finish    |
| + voltage IN                                    | 96 - 130 V AC, 3-phase, 360 - 800 Hz |
| + current IN                                    | 2 A/C feeder (6 x 43,5 A each phase) |
| + voltage OUT                                   | 115 AC, 3-phase, 360 - 800 hz        |
| + total current                                 | 6 x 43 A                             |
| + consumption                                   | max. 10 W / m                        |
| + dimensions                                    | 125 x 312 x 565 mm (h/w/l)           |
| + weight  | less than 13 kg                      |

| FR8500                   | Modular Frames für Power Manager                         |
|--------------------------|--|
| designed for Airbus A350 |  |
| + color                  | alu elox finish   alu dark finish                        |
| + dimensions             | 1MH: <b>50</b> x 312 x 502,6 (inlc. connectors) (h/w/l)  |
|                          | 2MH: <b>125</b> x 312 x 502,6 (inlc. connectors) (h/w/l) |
|                          | 3MH: <b>205</b> x 312 x 502,6 (inlc. connectors) (h/w/l) |
| + weight                 | 1MH: ca. 1,6 kg  |
|                          | 2MH: ca. 2,6 kg  |
|                          | 3MH: ca. 3,95 kg   |





buttons and layout customizable:



#### SP8100 Switch Panel for PM8350

designed for Galley Power Management System

- + voltage provided by PM8350
- + consumption provided by PM8350
- + dimensions 48 x 34 x 310 mm (h/w/l)
- + weight max. 0,42 kg incl. switches

buttons and layout customizable, vertical versions possible



#### PM8010 Power Manager Slide-in-Module (stacks up to 3)

designed for Galley Power Management System

- + voltage **In** 90-130 V AC / VF 360 - 800 Hz 3 phase  
**Out** 115 V AC / VF 360 - 800 Hz 3 phase +  
**Out** 28 V DC switched - 7 channles
- + current **In** 2 A/C feeder (6 x 43,5 A each phase)  
**Out** 6 x 43,5 A
- + consumption 50 A /48 A
- + dimensions 46,5 x 306 x 483 mm (h/w/l)
- + weight max. 5,1 kg

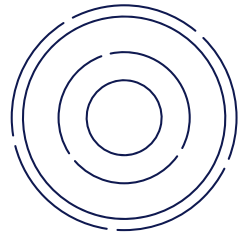


#### CM8200 Configuration Data Storage Module

designed for Galley Power Management System Module

- + installation in upper or lower position in frame FR8500
- + consumption provided by PM8350
- + dimensions 28 x 28 x 44 mm (h/w/l)
- + weight max. 14 g

# Communicate with anyone and anything.



Communication is vital, between people, machines, pilot and aircraft, crew and passenger. Without communication there is no higher brain function, no control, no aviation, no service. So communicate as much as possible - with our products!

The AES communication system is a flexible “all in one” solution. This system consistently adapts to rapidly changing technological conditions, while meeting VIP, government, and corporation customers’ needs since the early 1990s. Our system is utilized in various aircraft models including the Airbus single-aisle [A318 -A321] aircrafts, the long-range and wide-bodied Airbus A330 and A340, as well as, the Boeing Business Jet [BBJ] 737-200 to -800, and the Boeing 777, 747-200, -400 and -8 planes.

Today, the AES communication system can include the component IPX (IP-Private Branch Exchange Server), as an interface for our communication system satellite, making it possible to control and monitor, using our DCP (Display Control Panel). This

includes devices for passengers, such as, THA2015/THB2015 cord telephones and cordless phones [CHA/CHB/CHC], and our “APP Connect” Android app. Other devices important to point out are: the Ethernet Switching Unit ESU, telephone power supply TPS and individually designed maintenance panel and relay boxes.

This system allows for ISDN quality phone calls [VoIP] in conjunction with Inmarsat [satellite operator] services, via Swift-64 or Swift Broadband SBB. The Swift Broadband service also provides Internet connections to the ground via background or stream services. This allows passengers access to the Internet, their e-mail, and video conferences.



#### THX2015 Corded VoIP Telephone

designed for AES communication systems

|              |  |
|--------------|--|
| + color      | anthracite   |
| + voltage    | 28 V DC 5 Watt<br>Power over Ethernet (PoE) (IEEE 802.3 Class 2)                 |
| + dimensions | 66 x 68 x 181 mm [h/w/l]   |
| + modes      | AES - Systemtelephone for IPX<br>SIP- compatibility mode for 3rd party equipment |
| + weight     | 900 g [handset, flex cord & cradle]  |

Asseccories: Flex Cord is included



#### IPX3606 Exchange Server Communication Gateway

designed for narrow- and widebody VIP aircraft

|                          |  |
|--------------------------|--|
| + housing                | ARINC600 4MCU  |
| + voltage                | 115 V AC / 400 Hz  |
| + dimensions             | 195 x 126 x 360 mm [h/w/l]   |
| + consumption            | max. 300 VA  |
| + programmable discretes | 8 x DSSI SO [2 x TE / 6 x NT]<br>2 x CEPT E1<br>16 x analogue [8 x FXS / 8 x LAN]<br>12 x Ethernet [4 x WAN / 8 x LAN] |

Asseccories: DCP1005 Touch panel for cabin crew interaction

available accs:  
DCP1005

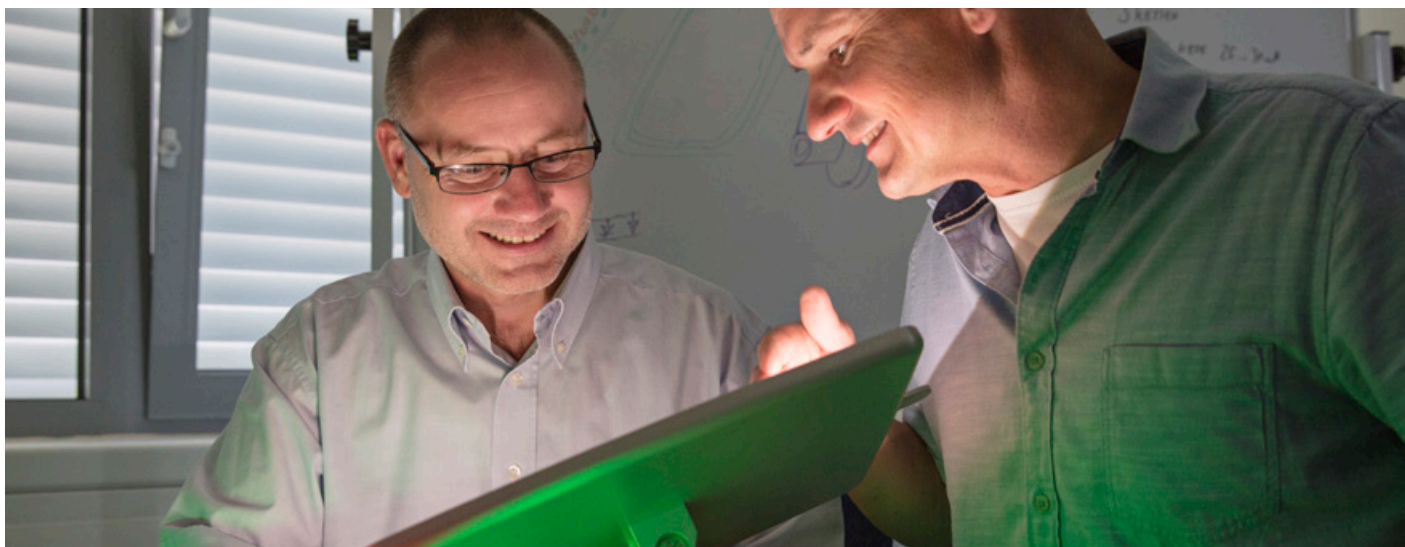


#### ESU2412 Ethernet Switch Unit

designed for all aircraft

|               |   |
|---------------|---|
| + voltage     | 115 V AC / 400 Hz   |
| + current     | 600 mA  |
| + consumption | < 60 W  |
| + dimensions  | 83,5 x 220 x 317 mm [h/w/l]   |
| + modes       | AES - system telephone for IPX<br>SIP- compatibility mode for 3rd party equipment |
| + weight      | 2,1 kg  |

# Going the extra mile ...



**Extraordinary solutions for exceptional aircrafts** - The unique requirements of our VIP clients with private as well as business jets have proved to be a unique challenge for our engineers. We love to think and produce out of the box for our customers. The emphasis of our work in this area is primarily to develop individually equipped airplane cabins, and find the precise parts as well as equipment for each aircraft. Innovative solutions and custom-made products in the aviation industry that meet such high-quality standards demand flexibility, speed, and excellent customer relations. We listen closely, clarifying your needs, thinking ahead for you systematically.



## FS0945-00 Lavatory Flush Switch - Manual

designed for Airbus A320 and A350

|              |  |
|--------------|--|
| + color/wave | blue=470 nm   amber=590 nm   white=approx. |
| + voltage    | 28V DC                                     |
| + current    | 6 W idle / 8w active                       |
| + weight     | ca. 320 g (incl. foil and cover)           |
| + dimensions | front: 86 x 86 x 33,5 mm / back: Ø 84 mm   |

Accessories: FF0946 Flush Switch Foil - foil design is customizable to air line corporate design



## FS0945-10 Lavatory Flush Switch - IR Sensor

designed for Airbus A320 and A350

|              |  |
|--------------|--|
| + color/wave | blue=470 nm   amber=590 nm   white=approx. |
| + voltage    | 28V DC                                     |
| + current    | 6 W idle / 8w active                       |
| + weight     | ca. 320 g (incl. foil and cover)           |
| + dimensions | front: 86 x 86 x 33,5 mm / back: Ø 84 mm   |

Accessories: FF0946 Flush Switch Foil - foil design is customizable to air line corporate design

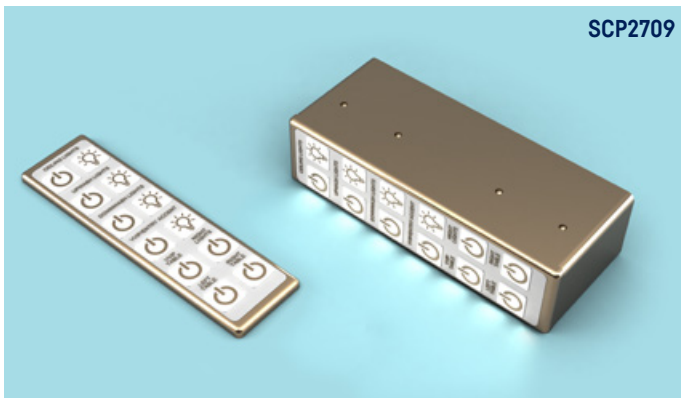




#### ML0970 Lavatory Mirror w. Integrated Light

designed for Airbus A350

|              |                         |
|--------------|-------------------------|
| + color      | approx. 4000 K          |
| + voltage    | 28 V DC                 |
| + current    | 0.25 A max.             |
| + weight     | 300 g                   |
| + dimensions | 171 mm Ø   depth: 30 mm |
| + extra info | magnification factor 3  |



SCP2709

#### SCP2409/SCP2709 Switch Control Panel

customizable for all VIP jets and commercial aircraft  
2 variants: SCP2409 - small | SCP2709 - large

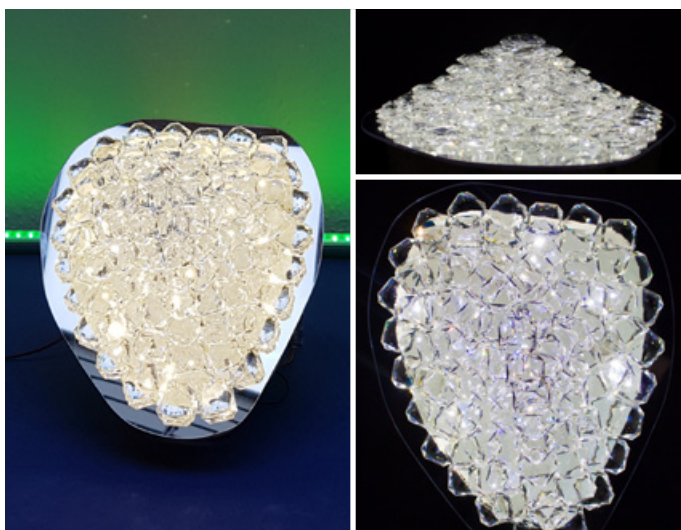
|                |  |
|----------------|--|
| + color/finish | various: gold, chrome, nickel brushed....  |
| + voltage      | 28 V DC  |
| + weight       | variable, depending on customer requirements   |
| + dimensions   | variable: customizable, up to 32 buttons possible,<br>min. 34 x 31,6 x 18 mm (h/w/l) |

for installation e.g. in passenger seat arm rests

multiple layout  
and finish  
options  
available



SCP2709



#### GL0980 Swarovski Crystal Lamp „Grape“

designed as a custom design study

|               |   |
|---------------|---|
| + color       | crystal clear, chrome mirror polish       |
| + voltage     | 28 V DC                                   |
| + consumption | approx. 12 W (prototyp)                   |
| + weight      | 1,2 kg                                    |
| + dimensions  | front: 250 x 210 x 100 mm / back: Ø 84 mm |

**Info:** PWM dimmable The Gem-Light is build up from real Swarovski crystal stones which are attached with a special optical adhesive to each other. The crystal element is surrounded by an aircraft proven polycarbonate mirror to intensify the glittering effect. The support is made of aluminium and houses the light elements and associated electronics.



# Certification



AES GmbH is an EASA [European Aviation Safety Agency] approved production organization [EASA Part 21G] and EASA approved maintenance company [EASA Part 145]. Our quality management system is certified according to EN 9100:2018. The EASA Part 145 certification authorizes us to repair the products. We manufacture ourselves– allowing us to offer genuinely seamless after sales support.

## **Continual improvement, down to the smallest detail while meeting tough requirements.**

Our philosophy on quality is: we consistently choose quality and sustainability [»Quality beats price«]. This distinguishes our solutions as well as our individual aspiration for the technical implementation. [»Make it simple and do it right!«].

The heavy demands within the aviation industry continually push the limits of technical feasibility, creating major challenges for our engineers. Our technical knowledge, high quality product standards and services, and an uncompromising focus on our customer requirements, have made us a reputable international service

and product provider for the aviation industry.


AES's reliable in-house production completes the final assembly of our equipment, components, and systems. Moreover, straightforward product maintenance helps prevent malfunctions and costly downtime. The quality of AES engineering products is valued by our customers world-wide.

The quality management department supervises and verifies the implementation and the compliance with the processes that are described in the Quality Management Manual. An important part of quality management is quality assurance.

## **The certifying staff:**

- + ensures the process of electronic development [design assurance] is met by controlling the logic of circuitry, protective circuits, the conformity with the specifications and functionality
- + carries out the final inspection and testing of products [Certificate of Conformance, Acceptance Test Report, EASA Form 1 etc.]
- + performs First Article Inspections according to DIN EN 9102
- + conducts external [supplier surveillance] and internal audits

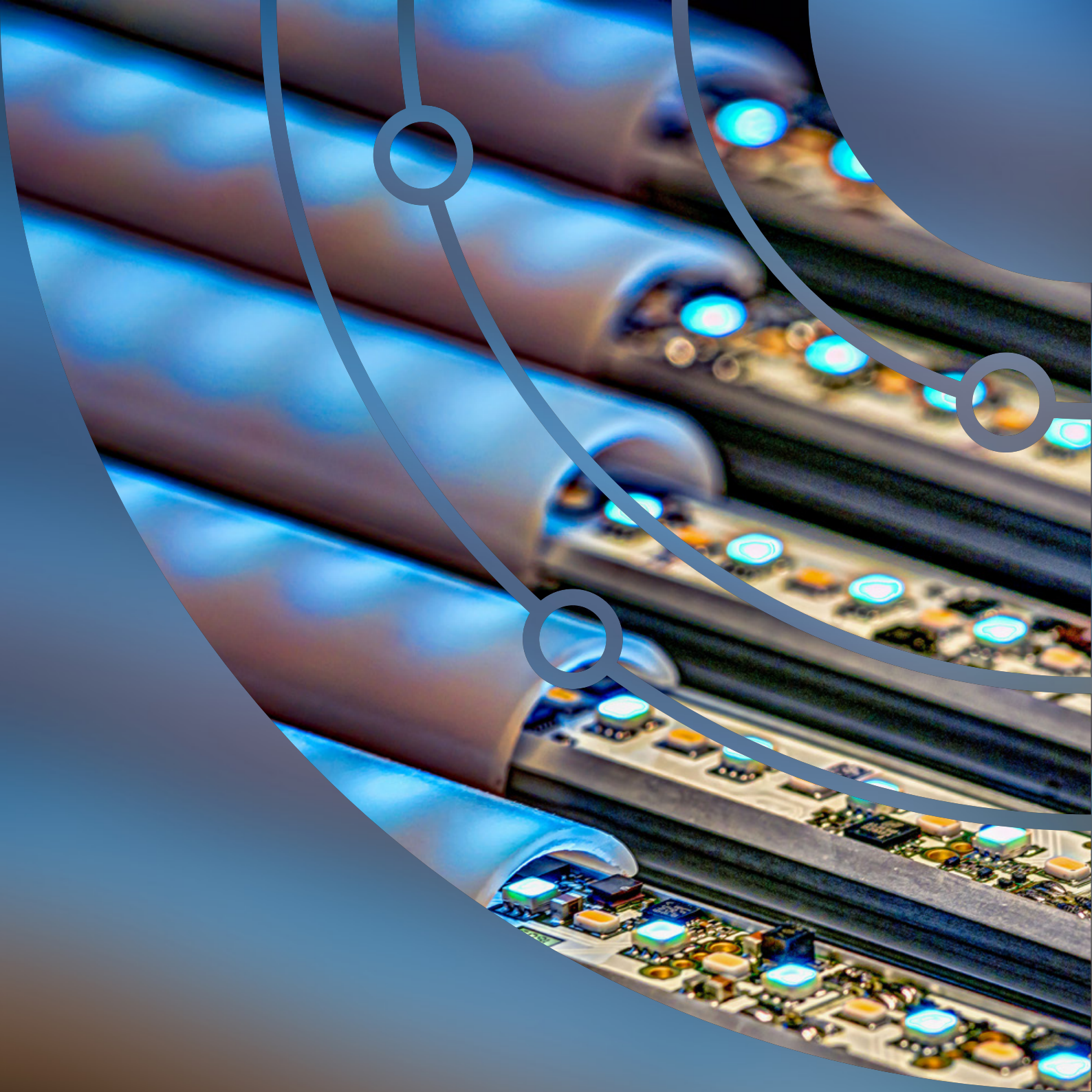




*»Quality is not an act,  
it is a habit.«*

Aristotle





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