

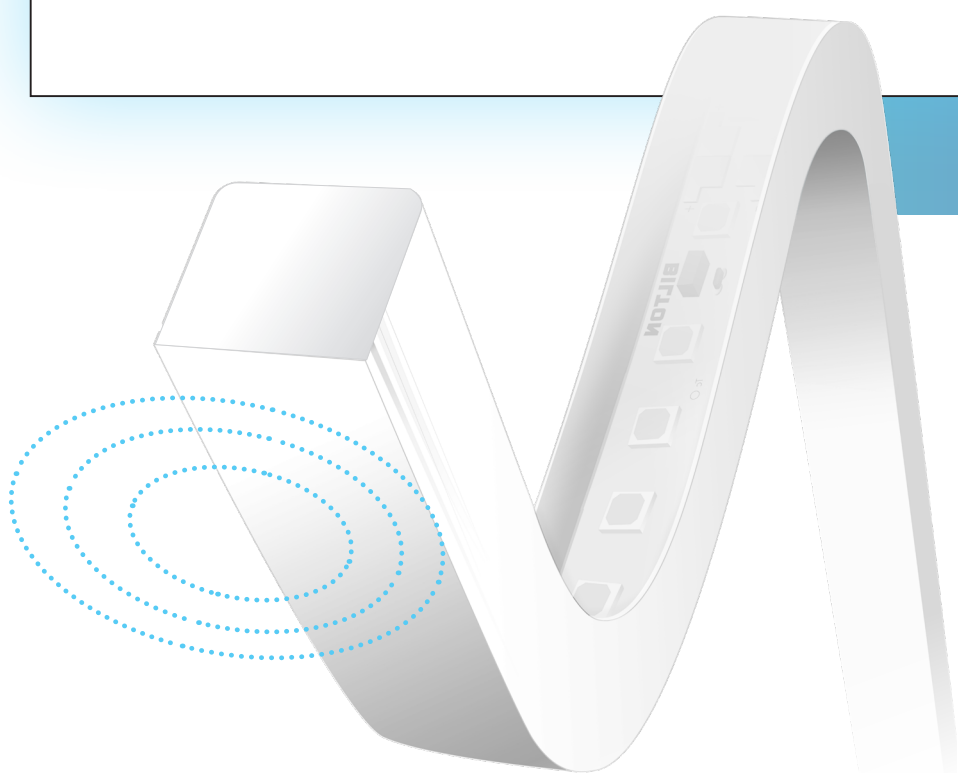
TECH NEWS

#08/18

Forward thinking

BILTON INNOVATION 2018

CONTACT- INTO THE LESS FUTURE



BILTON

www.biltongroup.com

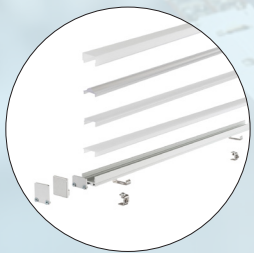
DESIGNING FUTURE

BILTON IS THE SPECIALIST WITH IMMENSE EXPERTISE IN LINEAR LIGHTING. IT IS BILTON'S DECLARED OBJECTIVE TO ESTABLISH A NEW DIMENSION OF LIGHTING WITH LEDS IN ALL AREAS OF LIFE, WHEREVER POSSIBLE.

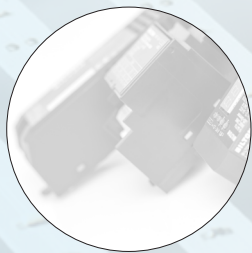
LINEAR LED MODULES



PROFILES AND COVERS



LIGHT MANAGEMENT



STRAIGHT INTO THE FUTURE

With innovative products and new concepts in manufacturing processes, BILTON has established itself as a specialist for flexible linear LED lighting and intelligent light management systems. In the past, BILTON was always able to create accents again and again with its continuous innovative strength. With this, the company has made a name for itself in LED light management and in linear LED lighting. Thanks to their unique 'reel-to-reel' manufacturing, BILTON can produce high-quality LED modules "Made in Austria" at its main site in Saalfelden.

The application opportunities for linear LED solutions are becoming more and more di-

verse. The potential of LED lighting is no longer utilised exclusively for buildings, but is now used in other sectors too. This is why BILTON does not deliver any "off-the-peg" products, but rather tailors them individually to suit customer requirements.

OUR 'KNOW-HOW' - YOUR ADVANTAGE IN INNOVATION

The potential in the future lies in not only seeing lighting as illumination, but continuously developing and manufacturing products with new lighting characteristics. Products with special requirements for lighting solutions are

the current challenge. For example, shops and outdoor areas or targeted functional lighting for machines. Or even a special light spectrum and illumination for plants and aquatics. Light is not usually the first topic to be considered. But when looking below the surface, it is in these very areas that light really becomes an essential constituent rather than just a decorative embellishment.

As a highly specialised company, BILTON has focussed its entire expertise on linear LED lighting. It is exactly this specialisation that also enables us to continuously develop individual solutions for our customers.



BILTON

FOCUSED ON LINEAR LIGHT

CONVICTION AND UNDERSTANDING



As befits the subject of linear lighting, BILTON is following a very clear line into the future, based on three pillars:

1. Superior quality, 2. High flexibility and availability, and 3. Permanent OEM capability. With these topics, we are positioning ourselves very clearly with respect to the competition and creating real innovations.

BILTON's 'reel-to-reel' manufacturing is unique in Europe and is instrumental for the high product quality that can now be applied to all sectors. This enables us to develop innovative solutions right here in-house and to adapt these quickly to the requirements of our customers. High flexibility in product creation and in manufacturing – and of course in supply reliability. In other words, optimum logistics.

If we strive for the best quality again and again – even with the standard range – we can also offer custom solutions on the basis of this foundation and thanks to our technical understanding.

Our own conviction is the key to our success with every project and with every product development. Because, first and foremost, we want to convince ourselves. With the project, with the solution and with our products. After that, we can convince our customers. Ultimately, we can deliver what we have promised to our customers.

Dr. Roland Michal
CTO, BILTON GROUP

EDITORIAL

INNOVATION FOR A

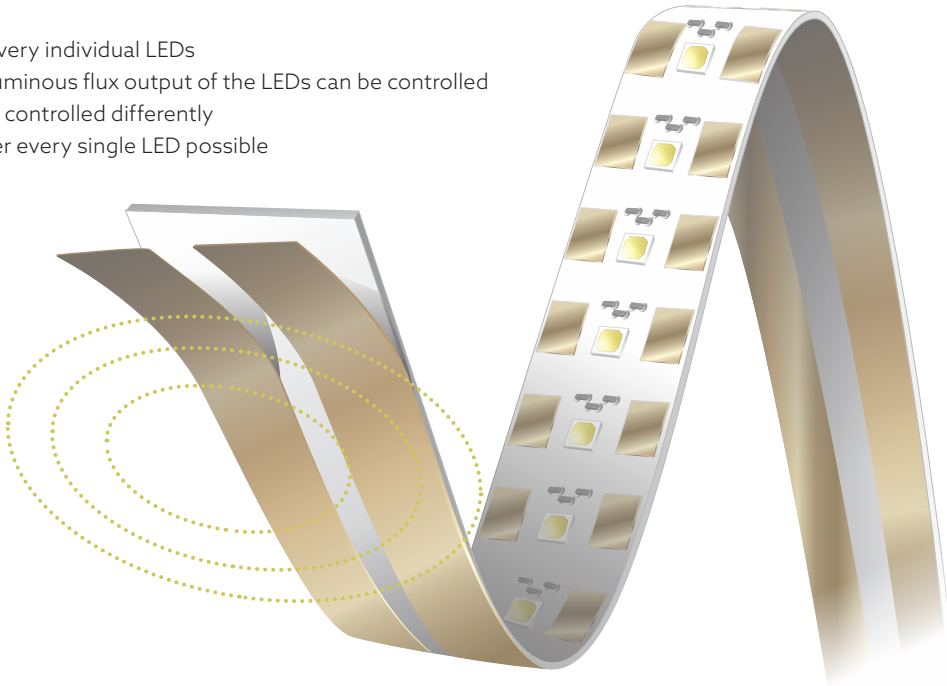
THE CONVENTIONAL CONTROL OF LINEAR LED LIGHTING STRIPS BY MEANS OF CONSTANT VOLTAGE ENTAILS SOME DISADVANTAGES IN CERTAIN APPLICATIONS. BILTON HAS TACKLED THIS PROBLEM WITH INNOVATIVE SOLUTIONS. BILTON HAS TAPPED INTO NEW APPLICATIONS IN THE MARKET WITH THE USE OF CONTACTLESS ENERGY TRANSFER:

CONTACTLESS FUTURE

- WORLD'S FIRST CONTACTLESS COUPLING
- PATENTED SYSTEM
- INDUCTIVE AND CAPACITIVE
- LED STRIP AND LED CHIP

CONTACTLESS COUPLING FOR LEDS

- 01 Capacitive energy transfer for every individual LEDs
- 02 By frequency modulation, the luminous flux output of the LEDs can be controlled
- 03 Different groups of LEDs can be controlled differently
- 04 Separability of the LED strip after every single LED possible

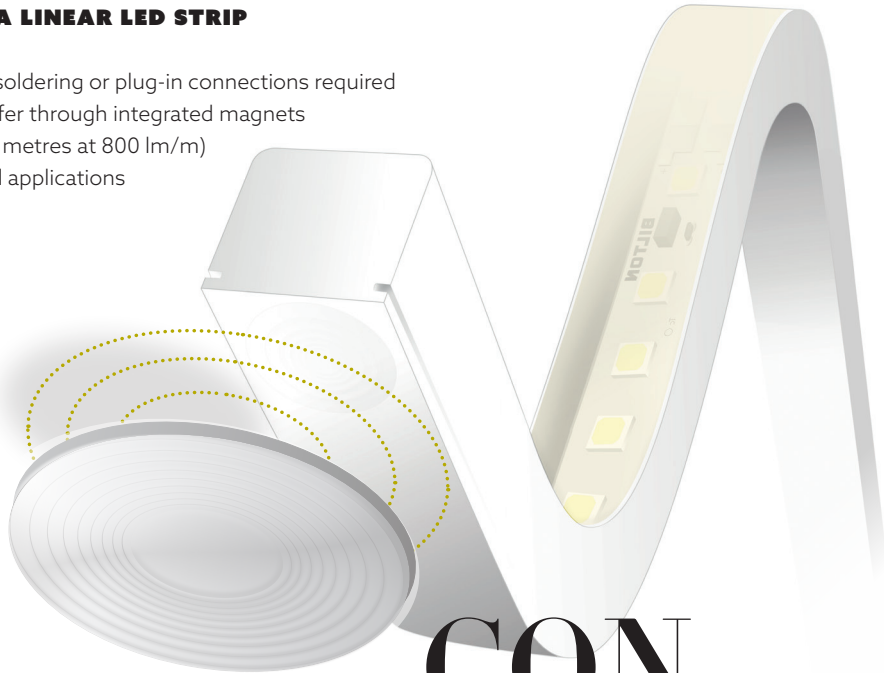


CON
LED
NECT
CHIP
ION

- APPLICATIONS**
- / Tunable White" for Human-Centric Lighting (2 light channels)
 - / Spectrum design for plant lighting (3 or more light channels)
 - / Dimming operation in the 0.1% range
- ADVANTAGES**
- / No perceivable LED flickering thanks to the integrated constant current design
 - / Simpler circuit configuration enables long strip lengths, also for multiple groups of LEDs
 - / Unrivalled flexibility in LED strip design
 - / New types of opportunities for light management based on high-frequency supplies

CONTACTLESS ENERGY SUPPLY FOR A LINEAR LED STRIP

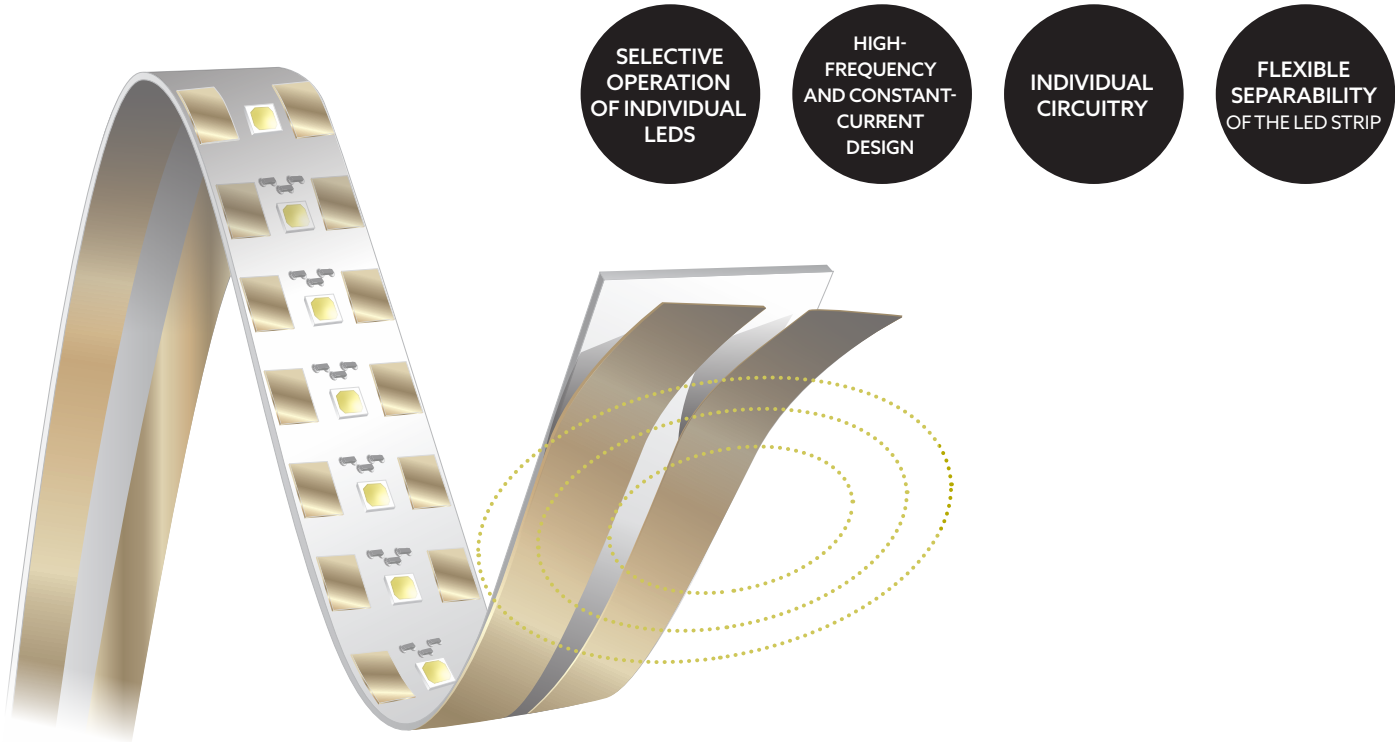
- 01 Inductive energy supply – no critical soldering or plug-in connections required
- 02 Exact positioning of the energy transfer through integrated magnets
- 03 High-power transfer of up to 80 W (5 metres at 800 lm/m)
- 04 Perfect for outside areas and unusual applications



- APPLICATIONS**
- / Reliable IP68 protection thanks to full encapsulation
 - / Simple replacement of the protected LED strip
 - / RGB applications
 - / Use in foodstuffs area and in medical technology
- ADVANTAGES**
- / Reliable positioning of transmitter and LED light strip via magnets
 - / Coupling also possible through glass walls (e.g.: aquariums)
 - / The removable light source can be positioned at different locations
 - / The light source can be cleaned externally
 - / (even by using high temperatures: medical technology)

CON
LED
NECT
STRIP
ION

TOPOLOGY WITH HIGH FREQUENCIES



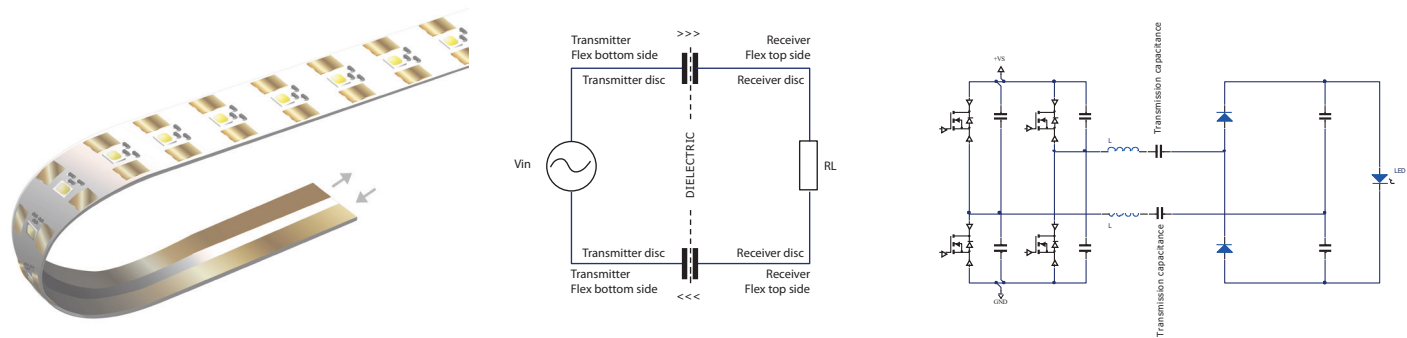
LINEAR LED STRIPS PROVIDE A MULTITUDE OF ADVANTAGES AND CAN BE USED IN A VARIETY OF APPLICATIONS IN GENERAL LIGHTING AND AS LIGHTING ELEMENTS IN INDUSTRIAL AREAS. BILTON HAS DEVELOPED THE PRODUCT ANEW AND THANKS TO THE HIGH-FREQUENCY SUPPLY, PREVIOUS LIMITATIONS CAN BE REMOVED AND LED LIGHT STRIPS BROUGHT INTO A NEW DIMENSION.

LINEAR LED STRIP BASED ON A HIGH-FREQUENCY DESIGN

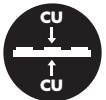
The high-frequency power supply has the advantage that the ohmic losses no longer have a perceivable influence on the operation of the LED strip segment. It is not so much the cross section of the copper available for the power feed that is important now, but rather the surface available. As a result of the contactless coupling of the LEDs, the layout required can be simply retained and the use of the available surface maximised.

A completely new dimension for the operation of a linear LED strip is yielded by the ability to selectively coordinate individual LEDs via their individual resonant circuit: The current through an individual LED can be directly determined by changing the frequency of the energy supply for the LED strip. Subsequently, this enables groups of LEDs to be defined and their luminous flux output controlled from outside. All of this without

having to design and incorporate a separate channel running all the way through the circuit board layout - as is the norm at present. If two groups of LEDs are formed in this way, a linear LED strip can be created with Tunable White technology for applications in Human-Centric Lighting. However, it is also possible to form 3 or more groups on such an LED strip. This results in solutions for a great variety of applications where a detailed spectrum design based on the interaction of multiple LEDs is required. A typical example is applications in the area of plant lighting. And all this in a constant current mode with the facility to *dim all the way down to the tenths of a percent range*.



ADVANTAGES



The coupling of the individual LEDs is realised through a simple layout by means of a double-sided, copper-coated, flexible circuit board.



High-frequency electrical fields in the interior of the circuit board prevent the influence of external interference.



The existing circuitry comprising LEDs and individually arranged capacitors can be tailored so that the selective operation of each individual LED is possible.

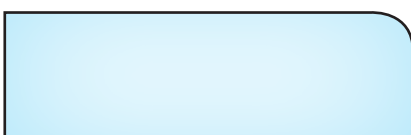
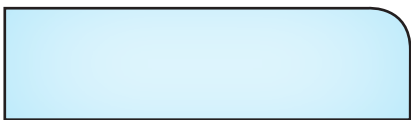


Each individual LED with its individual circuitry forms an independent lighting element so that the LED strip can be separated at any arbitrary point.



In particular, each LED will also be supplied with DC, allowing the benefits of the constant current design to be utilised to full effect.

BILTON



BILTON INTERNATIONAL GMBH

Lofererstraße 23
5760 Saalfelden, Austria
Tel.: +43 6582 71164
Fax: +43 6582 71164-999
www.biltongroup.com