

## Product innovation

### Bright spot on the LED lighting market

*New LED lighting modules from Sharp sparkle with high efficiency and a long life cycle*

**Hamburg, 30 November 2007** – Sharp is ensuring a significant leap in LED-based lighting technology with four new LED lighting modules. With a lighting efficiency of up to 80 lumens per watt depending on the module, the Sharp LEDs are at the forefront of today's LED lighting with regard to energy efficiency. Furthermore, the Sharp LED modules are characterised by their extremely long life cycle: in addition to their superb energy efficiency, 40,000 hours operating time at an operating temperature of 80°C also ensure that the overall system costs stay low, thanks to the long maintenance intervals of the respective lighting application.

Divided into ten parallel switched series of three, the modules are structured in a matrix of 30 LED chips that provide a lighting performance of between 170 and 280 lumens, depending on the module. An aluminium ceramic plate of 18 x 18 x 1.5 millimetres is used as substrate material. Already equipped with mounting drill holes the modules can be securely fixed to a suitable cooling element without great effort.

The colour temperature of the four white light LED lighting modules from Sharp lies within the range of 2,800 to 6,500 Kelvins with the shades 'normal white light', 'warm white light', comparable to a light bulb and two shades in the area 'High Colour Rendering white'. Through two slightly different phosphorous mixtures, the two 'High Colour Rendering' LEDs reach a CRI value of 90 and thus ensure high colour fastness and attention to detail. This is of decisive importance everywhere where artificial light should not distort the depiction of the illuminated objects. 'High Colour Rendering' LED modules are therefore in demand in areas such as photography, shop window decoration and goods presentation, as well as in medical technology e.g. for surgery lamps.

The powerful LED light modules from Sharp are generally suitable for a host of applications: in interior rooms e.g. for study, reading and desk lamps, decorative lighting, direct and indirect lighting for work surfaces in kitchens etc., as spotlights for stages and building sites or as components for large sized LED displays. The LED modules are also a long-lasting solution for reading lamps on public transport such as trains, aeroplanes and buses.

## Availability

The four new LED modules are available immediately from the Sharp sales offices and distribution partners.

## Line-up LED lighting modules

Model description	GM5BWC15L02		GM5BDC15L02		GM5BNC15L02		GM5BNC15L12	
LED colour	Normal white		Warm white		High Colour Rendering		High Colour Rendering	
Colour spectrum X/Y in CE 1931 coordinates	0.35	0.35	0.45	0.41	0.35	0.35	0.31	0.32
Colour temperature [K]	5,000		2,800		5,000		6,500	
Light performance [lm]* * at I <sub>f</sub> 360 mA	280		190		170		170	
Light efficiency [lm/W]	80		60		50		50	
Supply voltage [V]	10.5		10.5		10.5		10.5	
Life cycle **at 80°C	40,000 h**		40,000 h**		40,000 h**		40,000 h**	

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## **About Sharp Microelectronics Europe**

Sharp Microelectronics Europe, Hamburg, Germany, is a divisional company of Sharp Electronics (Europe) GmbH, which is a subsidiary of Sharp Corporation, Osaka, Japan. Sharp is a worldwide developer of core digital technologies that are playing an integral role in shaping the next generation of electronic products for consumer and business needs. Sharp Microelectronics Europe offers groundbreaking solutions in the areas of memory products, LCD, Opto Components, CCD, RF/IR, IC and LSI components, along with packaging and integration skills that help design engineers throughout Europe to bring their ambitious ideas to market. Sharp Microelectronics Europe is dedicated to improving people's lives through the use of advanced technology and a commitment to innovation, quality, value and design.

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