

October 26, 2015

Citizen Electronics Co., Ltd.

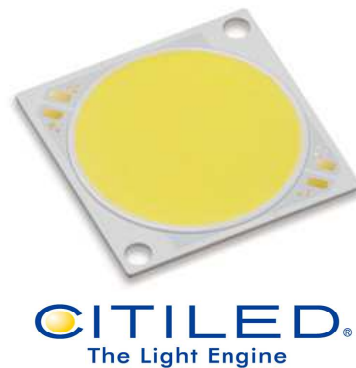
**Expansion of the product lineup of LEDs for lighting ‘COB Series’:
Development of “LEDs that have achieved the world’s
highest-class luminous flux of more than 70,000 lm”**

- For outdoor or high-bay lighting requiring high luminous flux -

Citizen Electronics Co., Ltd. (Head Office: Fujiyoshida City, Yamanashi Prefecture. President: Yoshihiro Gohta) has developed LEDs for lighting, ‘CLU550,’ as new products of ‘COB *1 Series’ that provide the world’s highest-class luminous flux of more than 70,000 lm. The products will be exhibited during the ‘Hong Kong International Lighting Fair 2015’ starting on October 27, 2015.

**LEDs for lighting, ‘COB Series’
Package providing high luminous flux**

- Developed products: 2 models
CLU550-3626C1-XXAL7G4-B24 (Ra70 min.)
CLU550-3626C1-XXM2G2-B24 (Ra80 min.)
 - Size: 38.0 mm × 38.0 mm × 1.4 mm
 - Luminous flux: 59,209 lm to 71,735 lm *
 - Mass production is scheduled to start in November 2015
- * typical values of each color variation



■ Background of development

Recently, LED lighting has become more prominent in terms of energy conservation and eco-friendly activities. LEDs delivering high luminous flux are required for outdoor or high-bay lighting such as flood lights and stadium lighting in which mercury lamps and HID lamps have been used conventionally.

This new product enables increase in the quantity of mounted dies occupying the same space by 45 % over that of the current model through mastering high-density mounting technology cultivated as a pioneer of high-wattage LEDs. Citizen Electronics has also achieved an

increase in luminous flux by about 20 % over that of the current model and the world's highest-class luminous flux of more than 70,000 lm through our original Chip on Aluminum technique *2. As only one LED package can deliver brightness equivalent to 500 W, this new product contributes to the miniaturization of luminaires.

■ Main features

1. Luminous flux have been improved by about 20 % over that of the current model and the world's highest-class luminous flux of more than 70,000 lm has been achieved

This new product enables increase in the quantity of mounted dies occupying the same space by 45% over that of the current model through mastering high-density mounting technology cultivated as a pioneer of high-wattage LEDs. Citizen Electronics has also achieved an increase in luminous flux by about 20 % over that of the current model and the world's highest-class luminous flux of more than 70,000 lm through our original Chip on Aluminum technique.

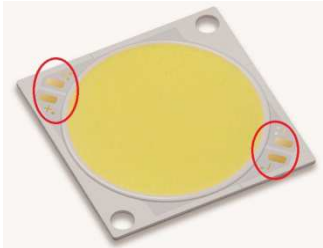
As only one LED package can deliver high luminous flux in luminaires requiring high luminous flux such as outdoor or high-bay lighting including flood lights, these products can contribute to miniaturization of luminaires or simplification of circuit design.

* Comparison of the two models below made when they light up under the same conditions (5000K, Ra 70 min., Tj=85°C)

	Luminous flux	Luminous efficacy	Product code
New product:	70,463 lm	148 lm/W	CLU550-3626C1
Current model:	57,463 lm	128 lm/W	CLU056-3618C1
	[about 20 % increase]	[about 15 % increase]	

2. Package with four terminals is capable of being driven by general power source

Driving power can be dispersed by incorporating four terminals on the package. Luminaire makers can drive high-luminous flux LEDs using a general-purpose power source without the need for a special one.



3. The same package size as COB series

The same package size as that of CLL05X/CLU05X of the existing COB series enables efficient design of luminaires.

*1 COB: stands for Chip on Board and is a structure where LED dies are directly mounted on a board.

*2 Chip on Aluminum technique: a high-heat dissipation technique where LED dies are directly mounted on an aluminum board and has been patented by Citizen Electronics.



"CITILED The Light Engine" is a brand name of LEDs for lighting manufactured by CITIZEN ELECTRONICS CO., Japan.

CITILED is a registered trademark of CITIZEN ELECTRONICS CO., Japan.

Information provided in this press release was accurate at the time of announcement.

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