

Video clip and still image photography in dim locations for camera-equipped cellular telephones:
**Citizen Electronics releases a super-bright white LED lamp
for use as an illumination source on camera-equipped cellular telephones**

Precision electronic component maker Citizen Electronics (Headquarters: Fujiyoshida City, Yamanashi Prefecture; Capitalization: ¥1.98855 billion; President: Takashi Masuzawa) is pleased to announce its successful development of two types of super-bright white LED lamp for use as illumination sources on camera-equipped cellular telephones. Citizen will begin full-scale mass production of these LEDs, which will allow cellular telephones to record video clips and still images in poorly lit locations, by the end of September. (Mass production of some models has already begun.)

This development effort has resulted in two product series: the CL-460S, which can mount 4 LED elements on a 7.0 x 7.0 x 1.0 mm square package, and the CL-470S, which can mount 1 to 3 elements on a 3.5 x 3.5 x 1.0 mm package. The product lineup is organized to match the diversifying needs of Citizen's users, allowing model selection based on factors such as product layout or the location where the lamp will be incorporated onto the telephone.

Currently Citizen is able to ship sample units (samples are priced at ¥500/unit) and will be beginning mass production of each of the new models in late September, with an initial monthly sales target of 2 million units. Mass production of the 4-element CL-460S-WA-D model has already begun with a current monthly volume of 200,000 units, planned for expansion to 500,000 units in October.

Camera-equipped cellular telephones are currently on their way to becoming dominant in the Japanese domestic market, with factors such as increased transmission speeds leading to an increase in the number of models capable of recording and transmitting not only still images, but also video clips. By allowing these camera-equipped cellular phones to illuminate their subjects, the new series of LED lamps that Citizen has developed will extend phone image-recording capabilities to allow photography in dimly lit areas.

These products differ significantly from traditional flash light sources (xenon tubes) in that they can provide continuous illumination, allowing a video clip to be recorded from a fixed distance under dim lighting conditions. In addition, there is no need to carry separate lighting equipment, since the lamps are built into the cellular telephone itself. The lamps use super-bright white LEDs and boast specifications that are sufficient for use in lighting photographic subjects, while at the same time providing a small size, thin form factor, and lightweight construction that makes them ideal for use in the super high-density packaging characteristic of cellular telephones.

Citizen plans to exhibit these new products starting on October 1 at the "CEATEC JAPAN 2002" tradeshow that will be held at Makuhari Messe International Exhibition Hall.

The lamps offer the following characteristics:

1. A super-thin SMD package (T=1.0 mm) to ensure compatibility with surface mounting as well as with the trend in cellular telephone designs towards increasing thinness.
2. Illumination with uniform light thanks to flat directivity in lamp beam spread.
3. Compatibility with 2 modes: pulse lighting for still image illumination and continuous lighting for video clip illumination.
4. Typ24 lux during pulse lighting and Typ8 lux during continuous lighting at a distance of 50 cm, made possible by a super-bright package.
5. The ability to be soldered into place using environmentally friendly lead-free solder.

Citizen is a top manufacturer of chip-type (surface mount type) LED lamps. The company has captured a large share of the LED lamp market by building relationships with a large number of both international and domestic telephone manufacturers.

Japanese manufactures leads overseas manufacturers in the trend towards advanced and extended cellular telephone functionality. Citizen looks forward to putting its experience to work in expanding sales to overseas manufacturers as they begin introducing products with color displays and built-in cameras.