Sharp Introduces New 'Illuminating Solar Panel' and Solar-Powered Street Light

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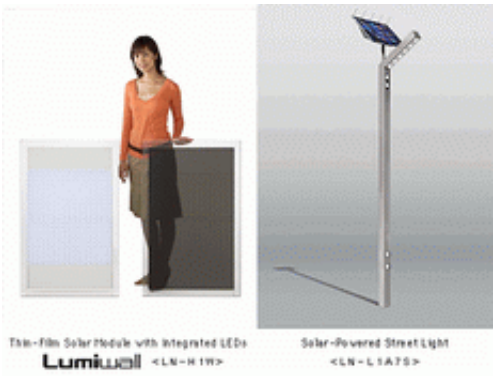

New Lighting Systems Combine Solar Cells and LEDs

Sharp Corporation announces the introduction into the Japanese market of two new solar cell products - an Illuminating Solar Panel integrating long-life, energy-efficient, high-intensity LEDs (light emitting diodes) with thin-film, "see-through" solar cells into a single solar module, and a new Solar Street Light that combines solar cells with high-intensity LED lights, and eliminates the need for underground or overhead wiring work.

In the midst of escalating global environmental problems, users are increasingly looking to photovoltaic (solar) power generation as an “energy-creating product” that produces clean energy. Over the past two to three years, photovoltaic (solar cell) production worldwide has

registered an average annual growth rate of approximately 40%. In 2003, the figure stood at 744 MW*1 worldwide, and of this, Sharp's share reached 26.6%, making it the world's top producer of solar cells for the fourth year in a row.

As the world leader in solar energy, Sharp regards tackling the development of new photovoltaic power systems that enhance the overall aesthetics of buildings and improve the view along streets to be essential to encouraging wider adoption and expanded use of solar cells, and to making a contribution to society. Sharp is now introducing two new types of solar lighting systems as their first product offerings in a new business area—lighting that combines solar cells and LEDs.

Main Features

LN-H1W Thin-film solar module with integrated LEDs
1. Consolidates power generation, daylight transmission and illumination functions in a single module.
2. Uses Crystalline Thin-Film Tandem Cells with a conversion efficiency 1.5 times higher than previous cells*2.
3. Uses long-life, high-intensity light emitting diodes that contain no mercury.

LN-L1A7S Solar-Powered Street Light
1. Slim, attractive stainless steel body with secondary battery and control circuitry built into the interior of the pole.
2. Eliminates the need for wiring installation work.
3. Cost-effective; priced at only 500,000 yen.

*1 Source: PV News
*2 Compared to Sharp's conventional product (amorphous silicon cells).

Development Background

Architects and planners are seeking non-conventional, environmentally friendly lighting solutions that offer peace of mind and safety in everyday living situations. Such lighting would provide structure illumination in cities, help create visually attractive urban spaces, enhance the nighttime presentation of scenic assets, and light streets and station areas at night, helping to deter crime when people are out and about after dark.

By combining two environmentally conscious goals—creating energy using solar cells and saving energy using mercury-free LEDs—Sharp has developed a new generation of lighting products.

Outstanding Features

LN-H1W Thin-Film Solar Module with Integrated LEDs
1. Integrates power generation, daylight transmission and illumination in a single module
During the daytime, solar cells generate electricity. At the same time, natural light from the sun is allowed to pass through the thin-film “see-through” solar cells. During the nighttime hours, LEDs embedded in the same panel are used to provide illumination. This innovative product represents a new generation of environmentally friendly photovoltaic panels that can take full advantage of the energy of the sun.

2. Crystalline Thin-Film Tandem Cells achieve a conversion efficiency 1.5 times higher than previous cells
Sharp has developed a new Crystalline Thin-Film Tandem Cell that merges amorphous silicon and crystalline thin-film silicon cells using original technology. This new cell achieves a conversion efficiency of 7.3%, approximately 1.5 times higher than conventional amorphous silicon cells.

Compared with typical silicon-based solar cells used for residential

power generation, these cells offer excellent temperature characteristics, and because the material can be made as thin as 2 microns, it also helps conserve resources.

3. Mercury-free, long-life, high-intensity light emitting diodes
The service life of the LEDs embedded in the panel is approximately 40,000 hours, significantly longer than incandescent electric bulbs (1,000 hours) and fluorescent lamps (5,000 to 12,000 hours). In addition, they are an environmentally friendly light source that contains no hazardous mercury.

LN-L1A7S Solar-Powered Street Light
1. Slim, attractive stainless steel body houses secondary battery and control circuitry within the pole
Featuring a brushed-metal finish for an elegant “high-end” feel, the corrosion-resistant stainless steel body will retain its beauty for many years to come. The stylish design conceals a secondary battery and control circuitry mounted inside the pole.

2. Eliminates the need for wiring work
Construction work to install overhead or buried power cables is completely eliminated. These lights can be installed in a single day and turned on immediately after installation. As an added benefit, because the lighting fixture generates its own electrical power, it will continue to operate even during power interruptions or power failures resulting from natural disasters.

3. Cost-effective; priced at only 500,000 yen
Sharp achieved an affordable price through Sharp unique technical developments. Plus, using solar power to generate electricity and low power consumption LEDs help keep running costs down.

The original press release can be found here.