

April 12, 2011

Mitsubishi Chemical Corporation
Mitsubishi Kagaku Media Co., Ltd.

World's first[※] tuning/dimming type organic EL lighting VELVE™ !

Sample kits will be released in April, and the light source module will follow in July



photo by Toshio Kaneko



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Mitsubishi Chemical Corporation (HQ: Minato-ku Tokyo; president: Yoshimitsu Kobayashi; hereinafter "Mitsubishi Chemical") and its subsidiary Mitsubishi Kagaku Media Co., Ltd. (HQ: Minato-ku Tokyo; president: Shigenori Otsuka; hereinafter "Mitsubishi Kagaku Media") will begin selling a tuning/dimming type organic electroluminescent (EL) lighting panel, the VELVE™^{※※}. Sample kits will begin selling from the end of April in Europe, North America, Japan and the Asian Pacific, and the light source module will follow in July. The price for the sample kit with the basic VELVE control circuit will be 90,000 yen in Japan. Verbatim®, a subsidiary of Mitsubishi Kagaku Media, will be in charge of overseas sales, while Mitsubishi Kagaku Media will be in charge of domestic sales along with the Internet for other sales channels. The sales target will be lighting equipment, architecture, building materials, furniture, interior designer, planner, engineers.

The sample kit will use USB as the interface and control the organic EL module. Additionally, the kit has seven preprogrammed colors (red, green, blue, white, yellow, magenta, cyan), four colors of white (four color temperature), 16 levels of dimming, and an automatic tuning mode. Moreover, the light source module has an embedded driving circuit and control circuit on the panel, comes with DMX and DALI to control the RGB color for the interface, has full color adjustment, white adjustment (with which one can freely adjust the color temperature) and a dimming function (so one can freely set the level of brightness). Both of them have the world's largest[※] panel size of approximately 14cm x 14cm, a luminescence efficiency of 28lm/W and a brightness of 1000cd/m².

Some of the features of VELVE are that it has "the world's largest panel size, at approximately 14cm x 14cm"; the "tuning function: the world's first full color adjustment"; the "dimming function for brightness adjustment from 100%~0%"; a "variety of whites: express a wide range of white from cool to warm "; "soft light that is easy on the eyes," etc. The tuning/dimming function makes it possible to match the light to one's biorhythm. For example, cool white will be used during active hours to convey a sense of refreshment, and a warmer color and brightness will be used for relaxation. VELVE also has a sufficient color rendering index ($CRI \geq 80$, $R9 > 80$), and the soft light will not strain the eyes. Not only is VELVE unique in surface lighting, but it provides a comfortable living space.

In order to achieve the world's largest panel size, a coating technique is used on the foundation layer of the organic EL. Organic EL panels are usually manufactured by vapor deposition, but it was concluded that the coating technique is advantageous in the mass-production of a large, uniform surface. The panel manufacturing was made possible by the business and capital partnership with Pioneer Corporation (HQ: Kawasaki Kanagawa; president: Susumu Kotani; hereinafter "Pioneer") in 2010 with regard to organic EL lighting. In the future, the objective is not only to use the coating technique for the foundation layer but also to spread this to the emission layer. The coating process will be developed with Pioneer.

The goal is to create a coating material and achieve low cost through mass production by 2014 and aim for sales of 300 billion yen within the organic EL industry by 2015.

"VELVE," the new brand name for the organic EL lighting panel, is taken from VELVET, and is intended to convey a sense of rich, yet soft and deep lighting. The organic EL lighting makes it possible to achieve unique, creative lighting by taking advantage of the nearly imperceptible surface of the light source, ultra-thinness, shape

and transparency. Also, the luminous efficiency of the organic EL lighting is expected to increase further, as well as the fact that it is mercury-free and a very environmentally friendly lighting source. Mitsubishi Chemical/Mitsubishi Kagaku Media/Verbatim are therefore striving to provide a comfortable environment for the people, society and the earth. VELVE stands as a proposal for the future of lighting.

※. As of 1/31/2011 (according to Mitsubishi Kagaku Media)

※※. Trademark registration for VELVE has been handled by Mitsubishi Chemical and is pending.

- VELVE has been exhibited by Verbatim at the Fuori Salone exhibition held in Milan, Italy, from April 12th to 17th.

【Exhibition site】 Design Library srl, Via Savona 11, 20144 Milan

【VELVE video】 www.verbatimlighting.eu/newsroom

- VELVE Sample kit is now available: <http://www.mcmedia.co.jp/>

VELVE Sample Kit

Has a frame, power source, and control software attached to the light source module



- the world's largest* panel size of approximately 14cm x 14cm
- a luminescence efficiency of 28 lm/W
- a brightness of 1000 cd/m²
- CRI ≥ 80、R9 > 80
- Seven preprogrammed colors (red, green, blue, white, yellow, magenta, cyan)
- Four white tones (including warm white at 2700/3000K, pure white at 5000K, cool white at 6500K)
- 16 levels of tuning
- Selectable automatic mode that changes the color automatically
- The preprogrammed tuning/dimming system can be used for basic functions by plugging into a power source.
- Select the desired color and control the brightness by installing the included control software to the PC and using the USB to interface with.

VELVE

Organic EL Light Source Module

The panel includes a drive circuit and control circuit



- the world's largest* panel size of approximately 14cm x 14cm
- a luminescence efficiency of 28 lm/W
- a brightness of 1000 cd/m²
- CRI ≥ 80、R9 > 80
- Full color tune function (free setting)
- Dimming function (free setting)
- Includes DMX and DALI as the interface

※As of 1/31/2011 (according to Mitsubishi Kagaku Media)

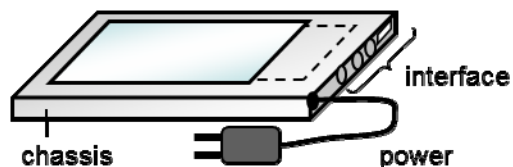
Organic EL panel



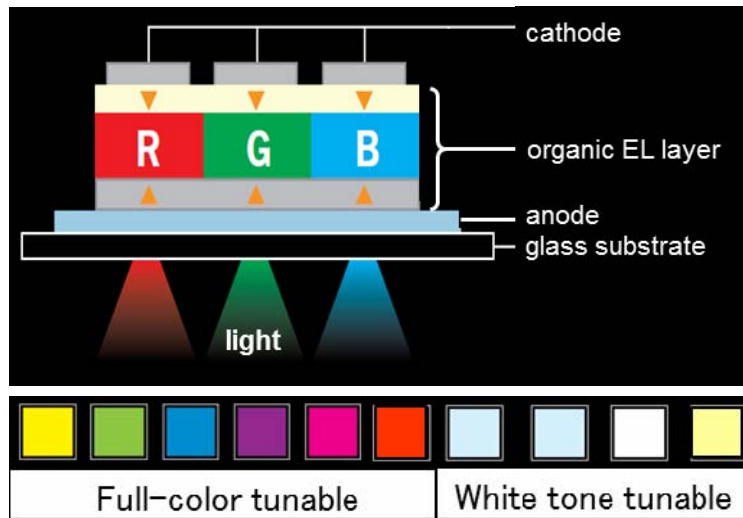
Light source module



Sample kit



RGB stripe structure and emission color of VELVE



Verbatim

Verbatim is a global brand of Mitsubishi Kagaku Media sold in over 120 countries worldwide, with the largest market share[※] of the recordable optical disc sold worldwide by brand for six consecutive years. Verbatim was born in 1969 in the State of California in the United States. Mitsubishi Chemical Corporation (known as Mitsubishi Kasei Corporation at that time), the parent company of Mitsubishi Kagaku Media, purchased Verbatim in 1990. Verbatim has been selling LED light bulbs branded Verbatim gradually in the worldwide, starting with a sale in Europe in September 2010.

※2005-2010; the largest market share of the recordable CD/DVD/BD sold worldwide by brand for six consecutive years (according to the SCCG/JRIA data)

Organic Electro Luminescence

Electro Luminescence (EL) stands for electro-luminescence. This is the phenomenon of electroluminescence and is kind of a physical phenomenon that converts electrical energy into light energy. Organic EL implements conversion of electrical and lighting energy using organic materials.

DMX, DALI

The official name for DMX is DMX512, which is an abbreviation for Digital Multiplex with 512 pieces of information.

DALI is an abbreviation for Digital Addressable Lighting Interface.

Both DMX and DALI is a command transmission method standard used to control the dimness of lighting equipment, and is intended to standardize the method of dimming control.

CRI

The color rendering index (CRI) is an index of the ability of a light source to reproduce the eight colors of various objects faithfully in comparison with a standard light source designated by the International Commission on Illumination (CIE).

R9

R9 is an index of the ability of a light source to reproduce the R9 color of various objects faithfully in comparison with a standard light source designated by the International Commission on Illumination (CIE).

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