

**SCREEN Semiconductor Solutions Co., Ltd.**

## **SCREEN Releases High-throughput Direct Imaging System for FOPLP Mass Production**

***- Delivers Industry-leading High-speed Processing of 70 Panels per Hour at 5  $\mu$ m Resolution -***

Kyoto, Japan – June 5, 2017 – SCREEN Semiconductor Solutions Co., Ltd. has finalized development of its highly anticipated DW-6000 direct imaging system. The DW-6000 enables industry-leading<sup>1</sup> throughput of 70 panels per hour<sup>2</sup> at a resolution of 5  $\mu$ m and is specifically designed to improve advanced semiconductor packaging processes as they transition to mass production. The system will be available for viewing at JPCA Show 2017, Japan's largest exhibition for the PCB industry, to be held in Ariake, Tokyo from June 7 to 9. SCREEN will use the event to begin sales of this ground-breaking new unit.



### **DW-6000**

Please download the photo from  
[www.screen.co.jp/eng/press/download/SPE170605.zip](http://www.screen.co.jp/eng/press/download/SPE170605.zip)

As miniaturization of semiconductor wafer processes has slowed in recent years, package technologies have begun to attract significant attention. The cutting-edge field of advanced package devices has seen particularly rapid development of a wide range of new innovations, with the move toward layering and fan-out panel level packages (FOPLP)<sup>3</sup> of semiconductor chips drawing especially strong focus. Seeking to improve exposure accuracy in these processes, SCREEN has developed its DW series of high-precision direct imaging systems. This already impressive lineup has now been joined by the new high-throughput DW-6000 model.

Thanks to its combined high-power 355 nm YAG laser and four imaging heads, the DW-6000 achieves an outstanding output of 70 panels per hour at a minimum line width of just 5  $\mu$ m. This represents industry-leading productivity for a direct imaging system that supports mass production of advanced semiconductor packages. The DW-6000 also inherits many of the features that give other DW series systems their exceptional efficiency.

These advantages include ultra-precise exposure at a resolution of 2  $\mu\text{m}$ , made possible by the integration of SCREEN's proprietary iGLV<sup>4</sup> optical engine and laser control technology. They also include an automatic image correction function for exposure data, specifically developed by SCREEN to resolve the previously challenging issue of positional deviation during chip rearrangement in fan-out processing.

The new DW-6000 for panel level packages is an impressive addition to SCREEN's lineup of direct imaging systems. It provides a comprehensive solution to the mass production requirements of advanced package devices even as they continue to become increasingly miniaturized. The system is also expected to make a significant contribution to the ongoing expansion of the overall semiconductor industry.

1. This refers to the processing count for a direct imaging system designed for mass production. (Current as of June 2017, based on SCREEN research.)
2. The processing speed is attained for substrate sizes of 500 x 500 mm.
3. This type of semiconductor package technology is similar to that involved in the manufacture of fan-out wafer level packages (FOWLP), except that it uses panels rather than wafers as the base medium. As the technology does not require an IC package substrate, fan-out panel level packages (FOPLP) have been attracting attention for their increased thinness, low cost and higher number of pins.
4. Integrated grating light valves are display components that are able to effectively control both the direction and intensity of light. They utilize sensors known as micro-electro-mechanical systems (MEMS) as well as semiconductor technologies employed in the communications and biology fields and also light coherence theories. iGLVs are usually arranged in parallel rows of light-reflective ribbons above the substrates of semiconductor devices. This allows them to provide greatly improved flexibility during exposure processing.

Note: SCREEN will introduce the DW-6000 at JPCA Show 2017 (47th International Electronic Circuits Exhibition), held as "The Total Solution Exhibition 2017 for Electronic Equipment" at Tokyo Big Sight in Ariake, Tokyo from June 7 (Wed.) to 9 (Fri.), 2017.

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