ASM

PRESS RELEASE

Top-of-the-class SPI: The new ASM ProcessLens

Unbeatable combination of precision and speed

Munich (Germany), November 30, 2021 – Speed or precision – electronics manufacturers must currently pick one or the other when they want to install an SPI system on their production line. They cannot have both. The new ASM ProcessLens, on the other hand, transforms the "either or" into "both" on the highest level. A completely new HD optical system with a resolution of 20 microns in high-speed mode reduces the inspection time by up to 70 percent compared to traditional SPI systems. In the only slightly slower high-resolution mode, the system inspects with a resolution of 10 microns. Features like these make the new ASM ProcessLens by far the fastest and most precise high-end inspection system in the industry.

"With the new ASM ProcessLens, ASM combines the need for maximum precision from the semiconductor field with the speed requirements in SMT production," explains Jérôme Rousval, ASM Solutions Marketing Manager and specialist for SPI systems. "Users no longer need to accept a compromise with this system, which allows them to produce with more flexibility, efficiency and productivity than ever before. And when they use the option to expand it to the world's first self-learning ASM Process Engine system, they have reached a fundamental milestone on the road to the Integrated Smart Factory."

High-speed meets high-resolution

With the new ASM ProcessLens, speed and precision are no longer mutually exclusive but combined in a single machine. To inspect a standard board with an area of approx. 69,000 square millimeter and more than 6,020 pads, the totally new SPI system from ASM takes only 3.0 seconds in high-speed mode or 3.7 seconds in high-resolution mode with resolutions of 20 and 10 microns, respectively.

Covering 50 by 50 millimeters (2,500 sq.mm), the scanning area of the 26-megapixel camera is 277 percent larger than the previous version's

with 4 megapixels and 30 by 30 millimeters. The number of micro-mirrors on the DLP (Digital Light Projector) chip that generates the moiré patterns was increased from 8 million to 20 million for a much higher resolution by cutting each mirror's size roughly in half. Each mirror is electronically controllable so that the stripe patterns can be projected completely vibration-free without any movement of the light source.

Flexibility and investment protection

The ability two switch between high-speed and high-resolution modes via software commands makes the production line much more flexible. The new model also features a high degree of investment protection because it equips users with the ability to easily accommodate future inspection tasks with no need for recalibrations, technicians, or inspection program changes.

New generation of algorithms

The DLP chip is controlled by a completely new generation of algorithms that generate the moiré patterns much more quickly and precisely. The time required to change the mirrors' positions to generate the stripes is an impressive 16 microseconds. In addition, test programs can now be exchanged between machines and platforms. The same applies to important machine characteristics such as camera rotation. When these properties are transferred to another machine, the software adjusts them automatically in order to ensure the same quality of measurement results.

Accurate down to smallest detail

Another focus area was the development and refinement of the control mechanisms for accurate operation in the microsecond range. Vibrations from other areas of the inspection system are balanced out, and light control is optimized by compensating for delays until full luminance has been achieved. ASM has also made improvements to the system's thermal stability because only if all optical elements of the ASM ProcessLens are immune to thermal factors can even the smallest distortions in the recorded images be excluded. All elements are manufactured with a 3D printing process, and no part gets accepted if it has a less than 99-percent reliability rating. And to optimize the heat management in the machine, the heat dissipation system was redesigned from the ground up.

Measure what matters

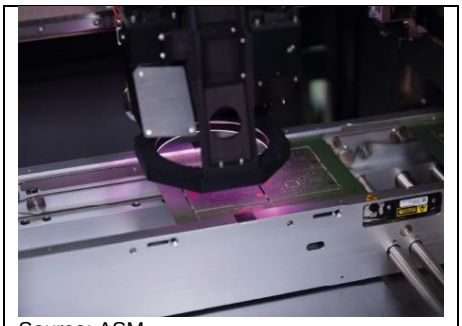
The development of the new ASM ProcessLens is based on ASM's decades of expertise as the market leader in the semiconductor segment. More than 150,000 vision systems installed worldwide and over 400 engineers who work exclusively on vision-related matters speak for themselves: "Measure what matters". By understanding what is measured and knowing how to interpret the results, the ASM ProcessLens delivers all the relevant data needed for making process improvements. The result: dramatic reductions in pseudo-errors, user assists, and line stops. With the possibility to expand the system with artificial intelligence including autonomous process control and optimization, the ASM ProcessLens becomes an indispensable prerequisite for the comprehensive automation of SMT production in the Integrated Smart Factory.

Illustrations for downloading

The following printable illustrations are available for downloading:
http://www.htcm.de/kk/asm

Source: ASM

The new ASM ProcessLens is up to 70% faster than traditional SPI systems without sacrificing quality.



Source: ASM

20 million micromirrors on the DLP chip, the 25-MP camera system with a resolution of up to 10 microns and a scanning area of 2,500 sq.mm make the new ASM ProcessLens the industry's leading SPI system.

Bildquelle: ASM

"With the new ASM ProcessLens, ASM combines the need for highest precision from the semiconductor sector with the speed requirements of SMT manufacturing," explains Jérôme Rousval, ASM Solutions Marketing Manager.

The SMT Solutions Segment of ASM Pacific Technology

The mission of the SMT Solutions segment within the ASM Pacific Technology Group (ASMPT) is to implement and support the smart SMT factory at electronics manufacturers worldwide.

ASM solutions such as SIPLACE placement systems and DEK printing systems support the networking, automation and optimization of central workflows with hardware, software and services that enable electronics manufacturers to transition to the smart SMT factory in stages and enjoy dramatic improvements in productivity, flexibility and quality.

Since maintaining close relationships with customers and partners is a central component of its strategy, the company has established the SMT Smart Network as a global forum for the active exchange of information between and with smart champions.

For more information about ASM, visit www.asm-smt.com.

ASM Pacific Technology Limited

Headquartered in Singapore, ASMPT (HKEX stock code: 0522) is a global technology and market leader in leading-edge solutions and materials for the semiconductor assembly and packaging industries. Its surface-mount technology solutions are deployed in a wide range of end-user markets including electronics, mobile communications, automotive, industrial, and LED assembly. The company's continuous investments in research and development help it to provide customers with innovative and cost-efficient solutions and systems that enable them to achieve higher productivity, greater reliability and enhanced quality.

For more information about ASMPT visit www.asmpacific.com

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