

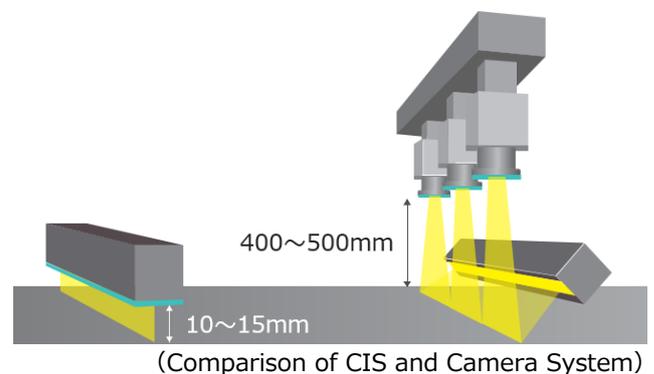
## NEWS RELEASE

### NSG releases "SLA 5DG" new SELFOC® Lens Array (SLA) for machine vision - Improvement on (twofold depth of) focus and inspection objects of wider range -

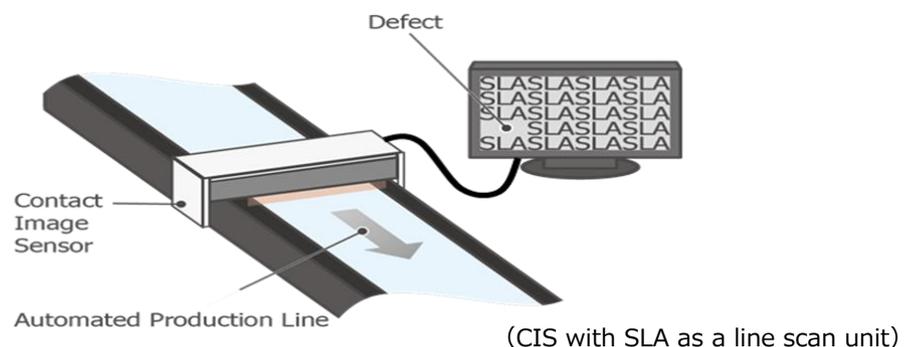
Tokyo (July 8, 2020) - NSG Group announced today that it has developed SELFOC® Lens Array (SLA\*1) "5DG" with the improved depth of focus\*2 for an automatic inspection device in a machine vision\*3 system. This new product will expand the range of applications of SLA, which has been used mainly for a scanner of multi-function printers as a contact image sensor (CIS)\*4. SLA developed by NSG is a unique "plate"-shaped lens. Compared with ordinary lenses, the more compact optical system (WD\*5: approx. 20 mm or less) realizes low-distortion image scanning, it is used in scanners of multi-function printers. SLA is also acknowledged for its performance as a lens for a line scan unit (CIS system) of automatic inspection machine. The demand of CIS is growing for a variety of applications as it can take the place of a conventional camera system. Due to the development of AI and Deep Learning technology, labor cost savings need, higher quality requirement and so on, the demand of CIS is expanding to various fields.

Advantages of SLA (CIS) against the conventional camera system:

- More compact
- Easy installation and maintenance
- All-in-one type, unnecessary to install multiple components such as camera, light source, "frame/holder", etc.
- Applicable for broader width
- Less distorted image



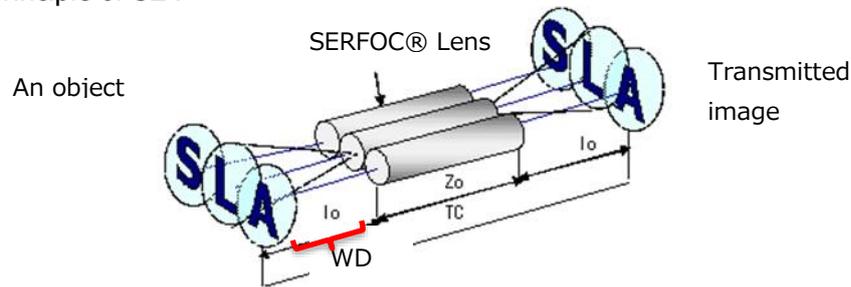
By improving the depth of focus twice as much as the conventional one, the new product "SLA 5DG" is used not only for two-dimensional inspection objects (printing, film, etc.) but also for a broader range of CIS inspection targets including thicker or vibrating objects. For example, SLA 5DG is sure to enhance automated product inspection utilizing a line scan unit (CIS) at the manufacturing site of PCBs (printed circuit boards), pharmaceuticals, foods, etc.



<Glossary>

\* 1 SELFOC® Lens Array: SLA

(a) Principle of SLA



(b) Structure of SLA

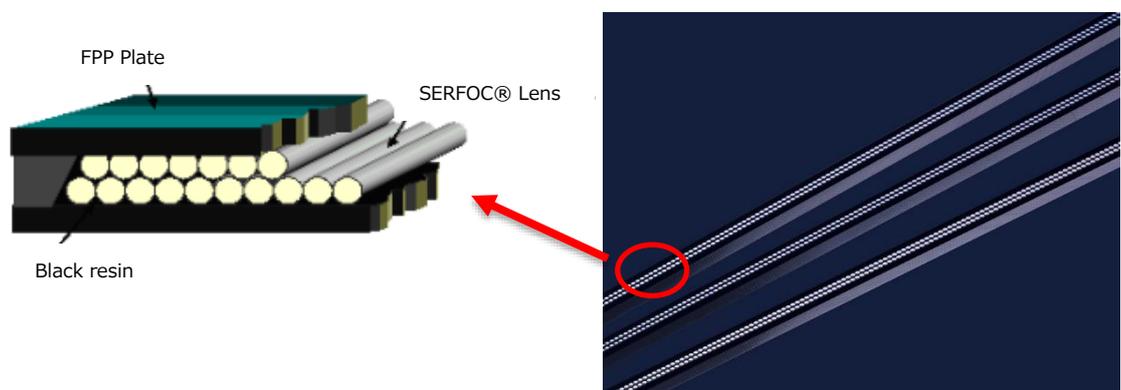


Photo: SLA

- \*2 DOF: Depth of Focus. A range in the optic axis direction within which a clear-cut image can be formed when an object is seen through the lens.
- \*3 Machine vision: A mechanism to operate a device based on image capture and processing, e.g. automatic inspection device.
- \*4 CIS: Contact Image Sensor. A line scan unit composed of SLA (Lens Array), light source and sensors.
- \*5 WD: Working Distance. A distance between a surface of the lens and an object when in focus.

NSG Group continues to expand its business aiming to achieve the goal of “changing our surroundings, improving our world”.

NSG Group is one of the world’s largest manufacturers of glass and glazing products for the architectural, automotive industry and technical glass sectors. With around 27,000 employees, NSG Group has principal operations worldwide and sales in over 100 countries.

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