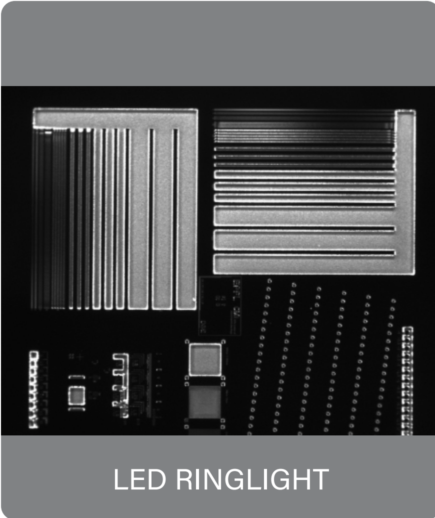
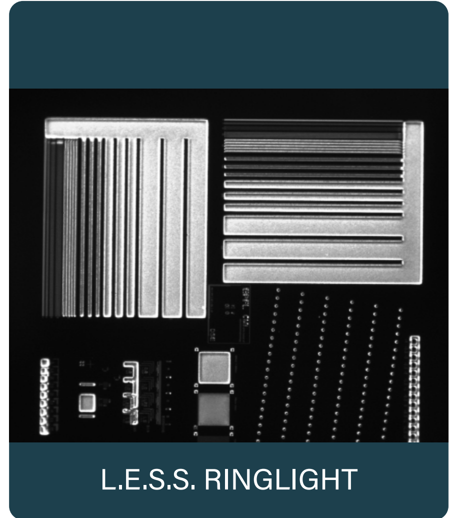
APPLICATION NOTE


LED RINGLIGHT


L.E.S.S. RINGLIGHT

INSPECTION OF A SILICIUM WAFER

ELIMINATION OF **REFLEXIONS** AND **UNIFORM ILLUMINATION** OF THE **MICRO-STRUCTURES** OF A **SILICIUM WAFER**

PROBLEMATIC

Using standard LED illuminations to inspect a silicium wafer creates unwanted reflections on the surface of the sample that reduces the image quality.

OUR SOLUTION

Using L.E.S.S. light, the user benefits from uniform illumination with neutral white light (5400°)

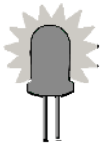
The light of the L.E.S.S. brightfield illumination hit the sample from the top with optimum intensity and no heat dissipation.

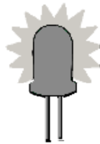
APPLICATION

Fig. 1 was taken with an entry-level LED ring at a working distance of 100 mm. Large shadow areas are present and unwanted reflections appear on the surface of the wafer. The different areas are not evenly illuminated such that some engravings are not observable.

Fig. 2 was taken with a high-level ring of 80 LEDs in the same configuration as **Fig. 1.** In this case, we can observe fewer reflections. However, some shadows remain and the engravings are only partially observable. **Fig. 3** was taken with L.E.S.S. ringlight (BF-5400) at a working distance of 100 mm.

The surface structure is entirely visible. No shadow areas are present on the m i c r o - s t r u c t u r e s such that all details are observed. T h e uniformity of the illumination results in sharp, well-defined images leading to a faster and more accurate and reliable inspection of the sample.





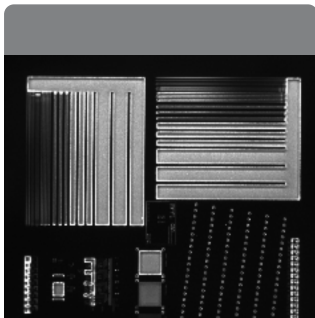


Fig. 1

Image of a wafer lit by an entry-level LED ringlight

Fig. 2

Image of a wafer lit by high-level 80 LEDs ringlight

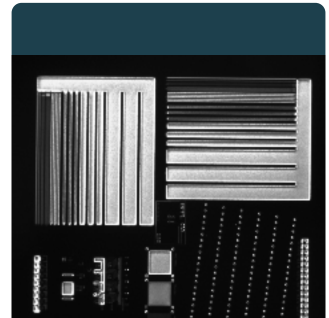


Fig. 3

Image of a wafer lit by L.E.S.S. ringlight

RISK CLASS 0
EN 62471 : 2006

EYE-SAFE
CLASS 1 LASER PRODUCT
ICE 60825-1 2014-05

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L.E.S.S. SA
Av. de Longemalle 13
CH-1020 Renens, Switzerland
Tel : +41 21 552 07 10

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