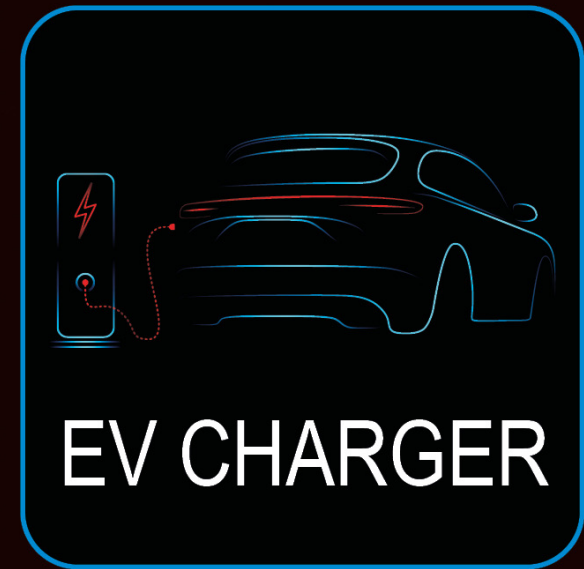
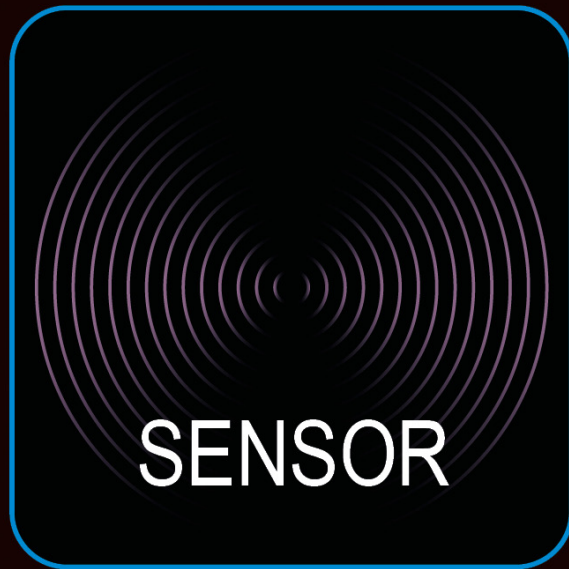


RUTRONIK TECHTALK MEETS



08.06. - 10.06.2021 | **ONLINE**

Stanley's 265nm UVC LED for high efficacy disinfection

M.Sc. Dennis Sylla
Sales Engineer





Stanley's 265nm UVC LED for high efficacy disinfection

June 9th 2021
Stanley Electric Co., Ltd.

Inauguration of the enterprise

December 29, 1920

Establishment

May 5, 1933

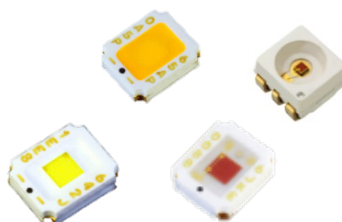
President and Representative Director

Yutaka Hiratsuka

Employees

Consolidated 17,263

Non-consolidated 3,688



Capital stock

\30,514 Million (\$274 Million)

Net sales

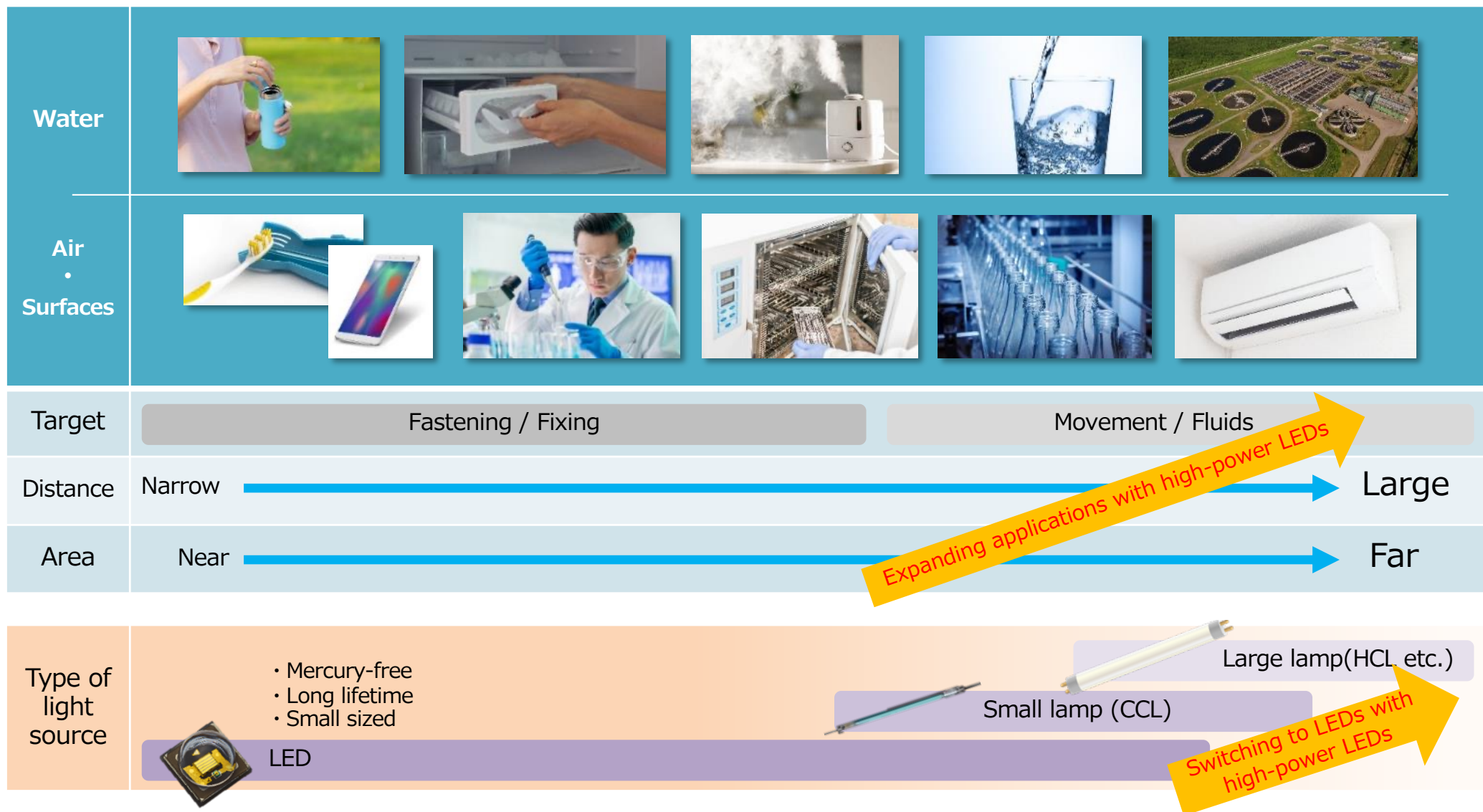
Group \434,124 Million (\$3,911 Million)

Net income attributed to owners of parent

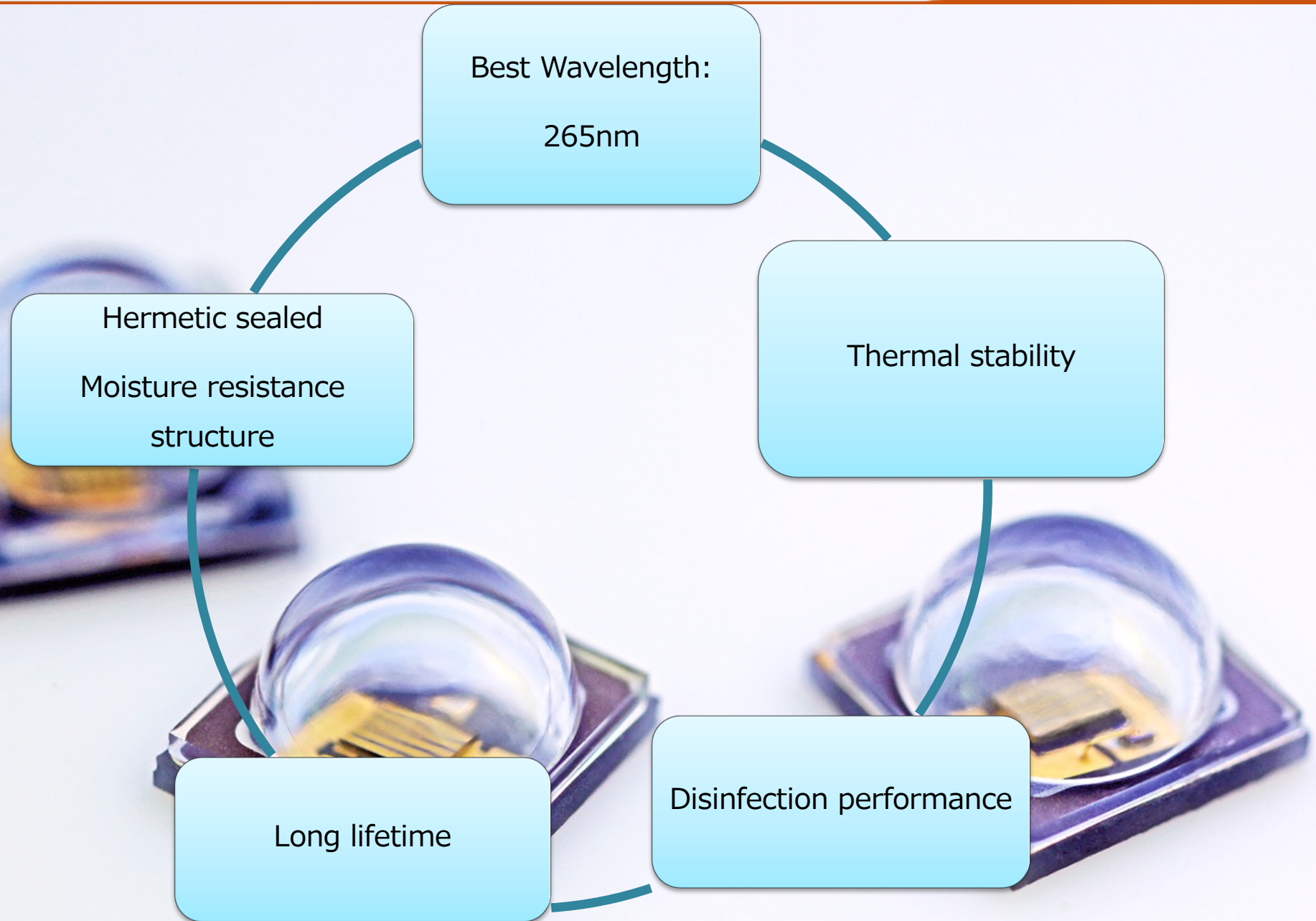
Group \40,265 Million (\$362 Million)

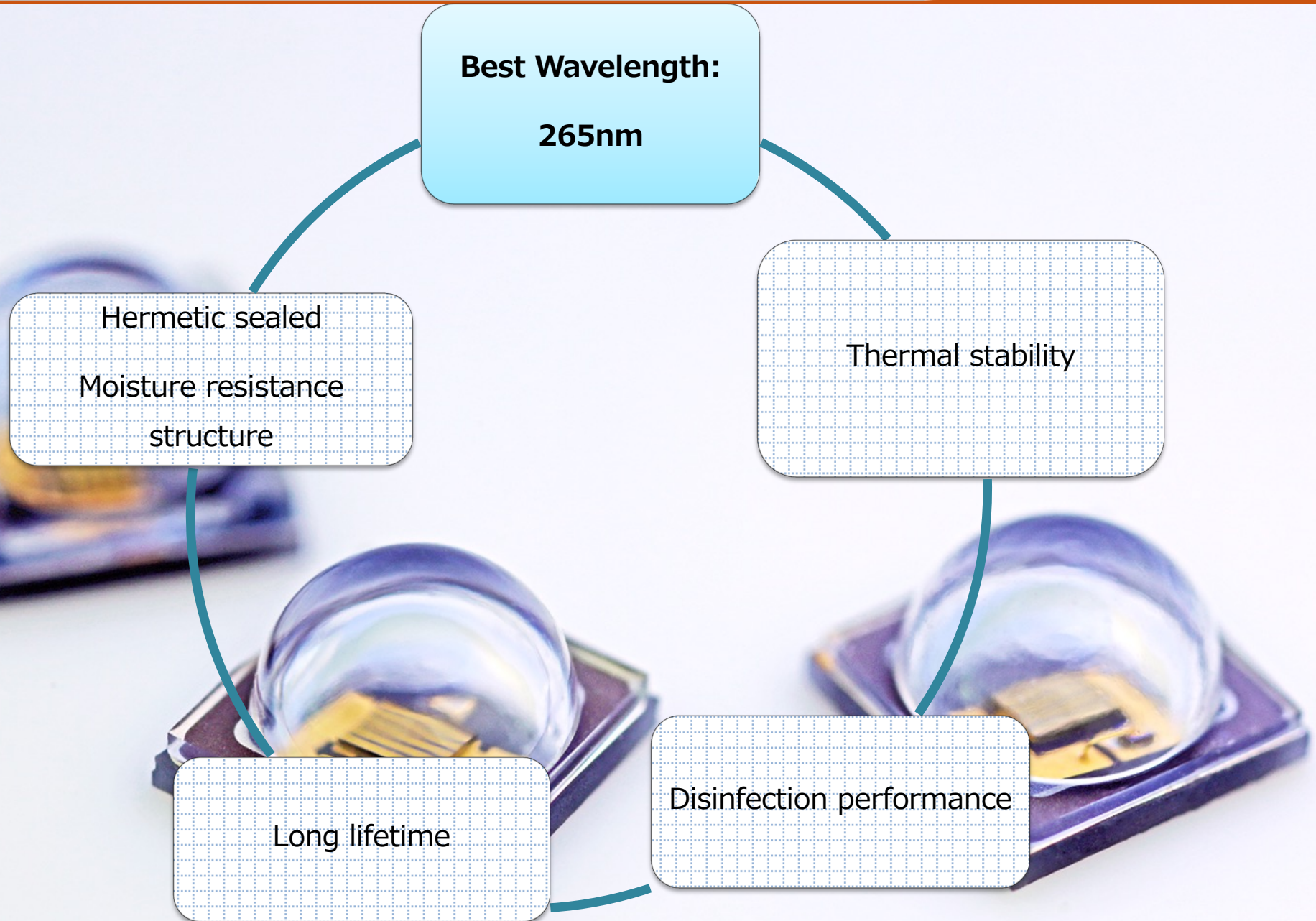
Head Office
(Tokyo)

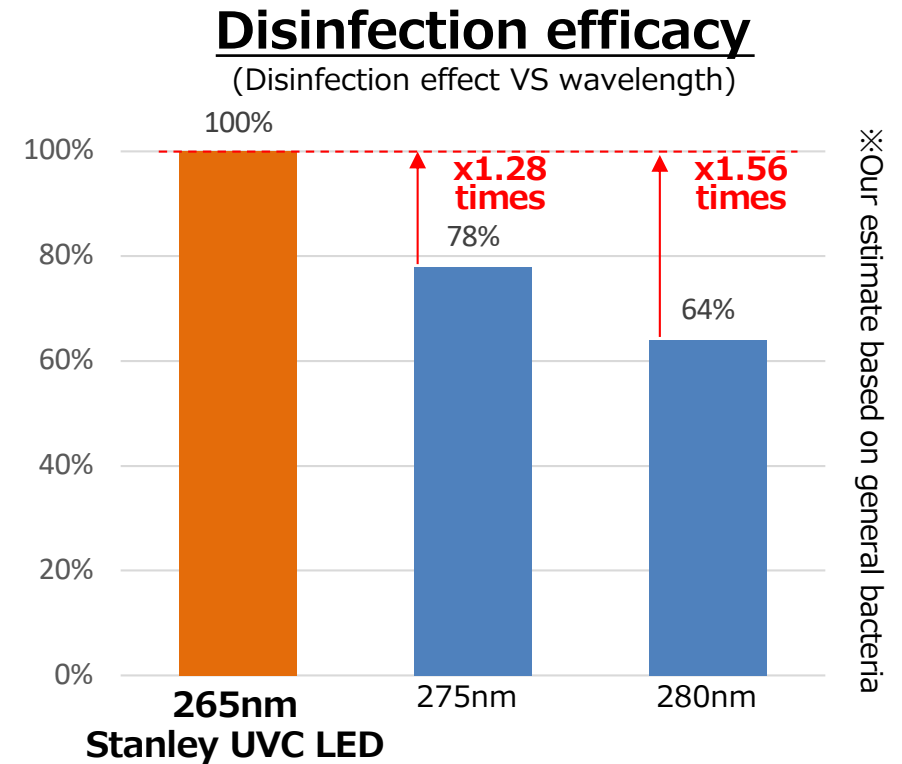
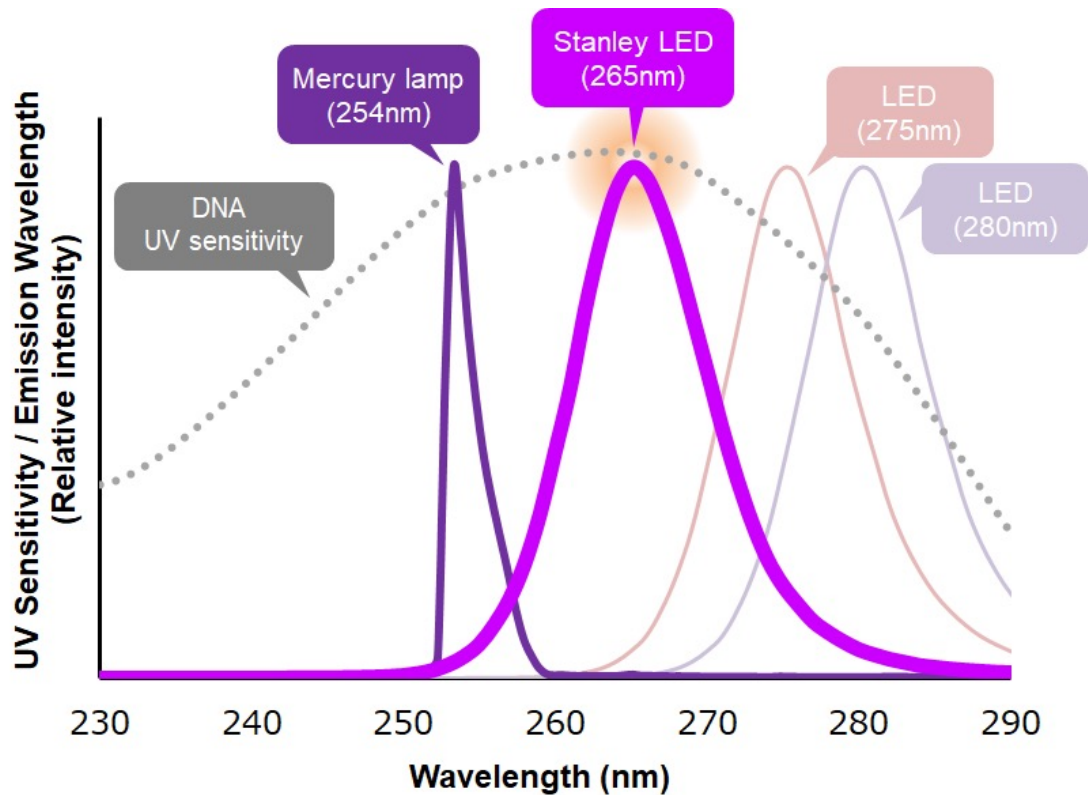




The higher the LED output, the wider the possibilities of disinfection



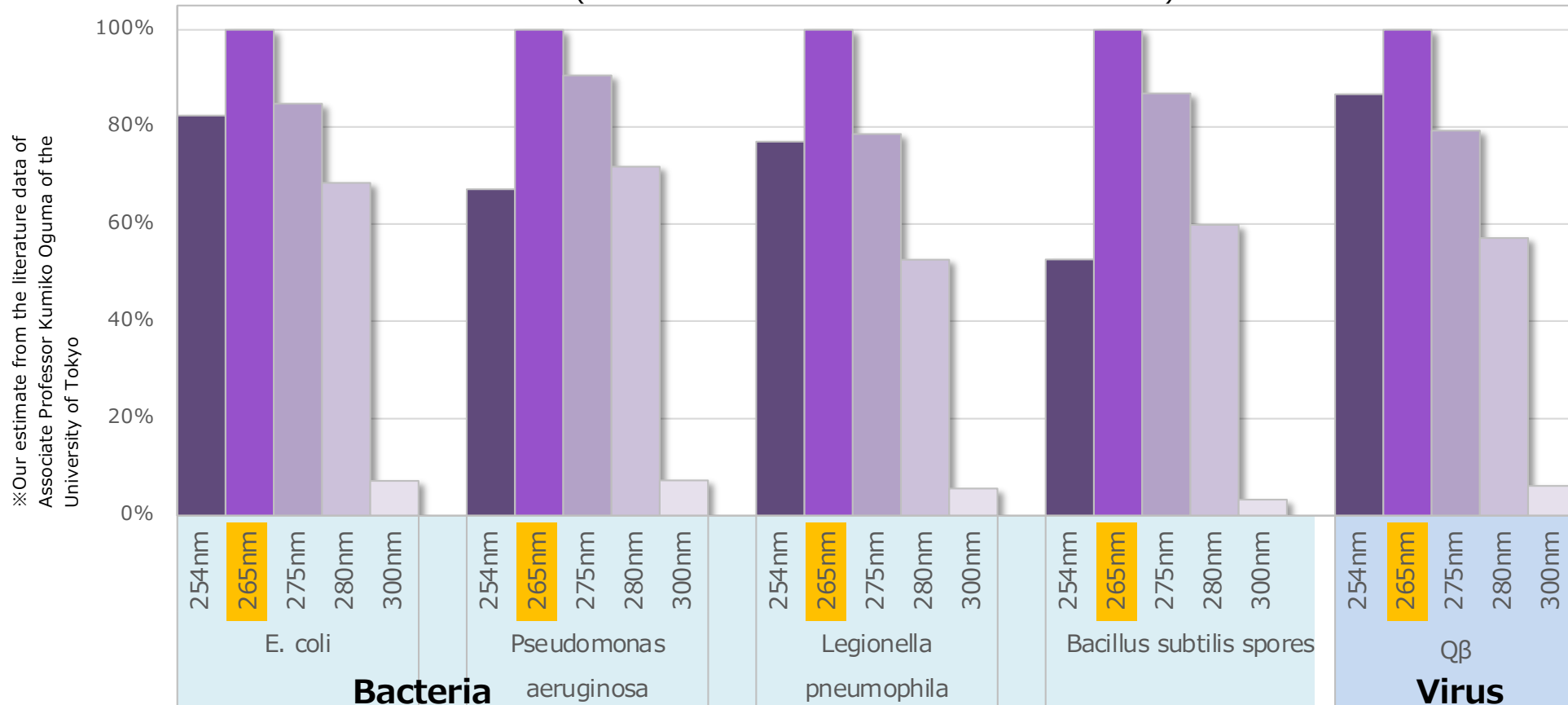




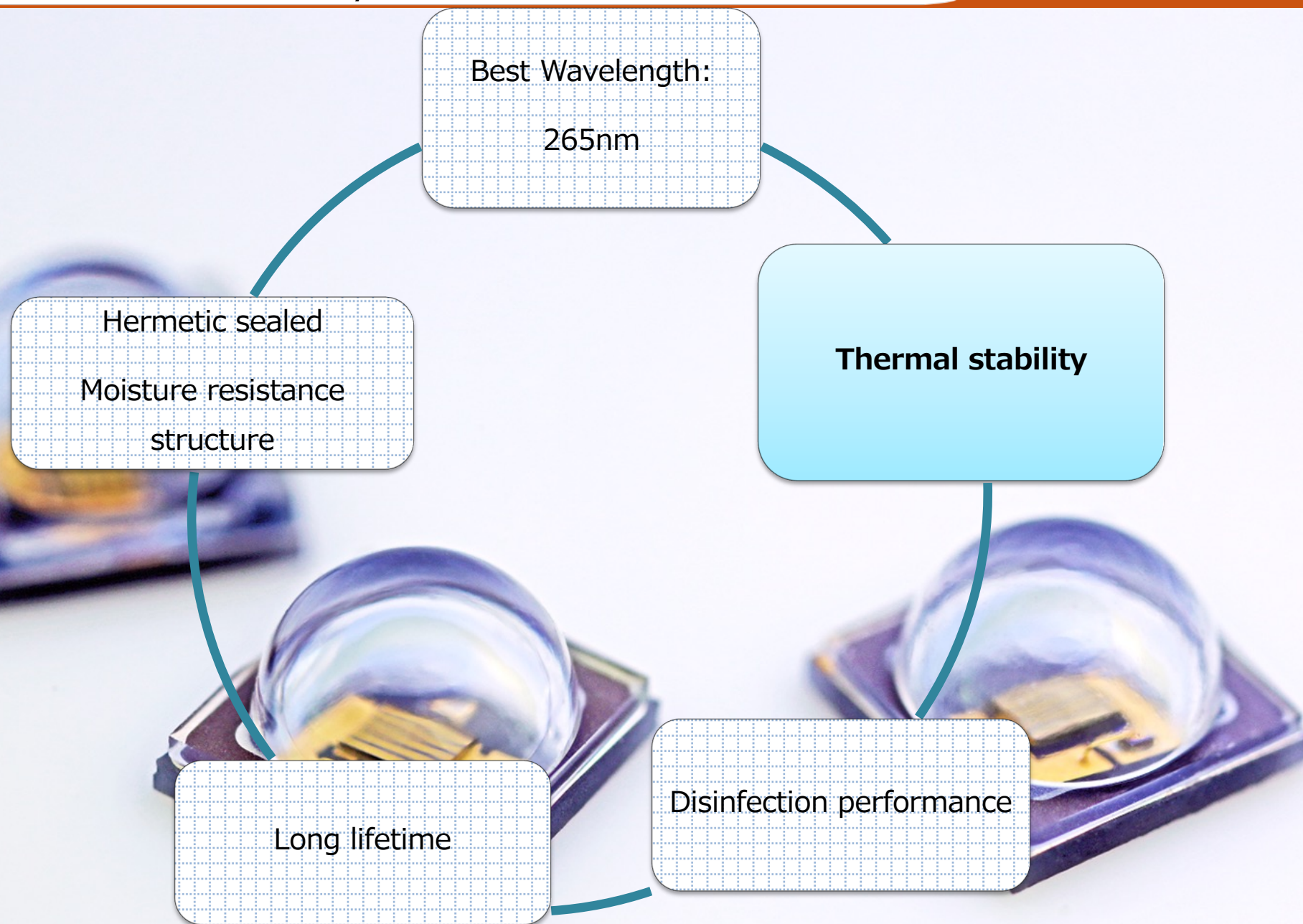
Our LED has a peak emission wavelength at 265nm, which maximizes the disinfection effect

Relative comparison of inactivating capability by emission wavelength

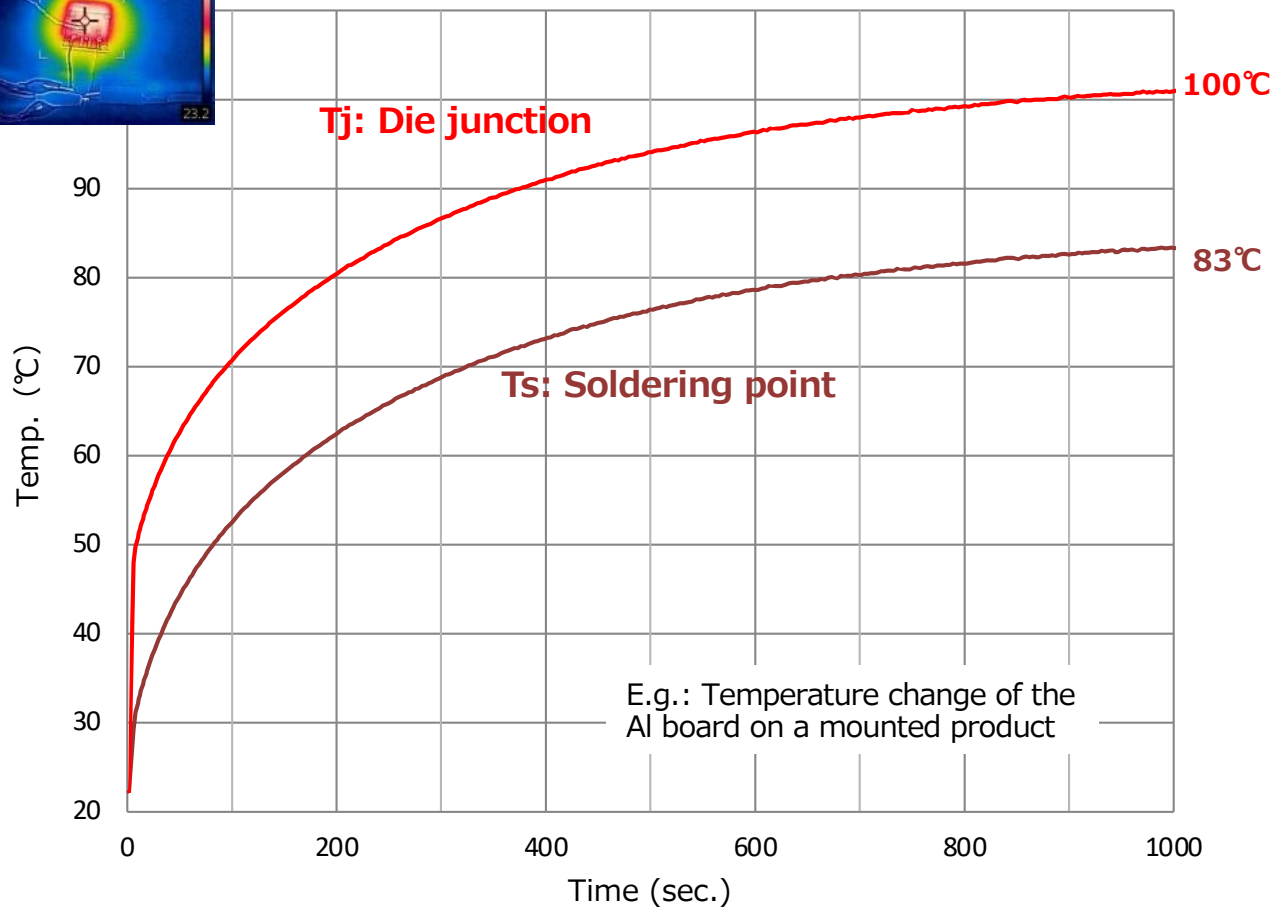
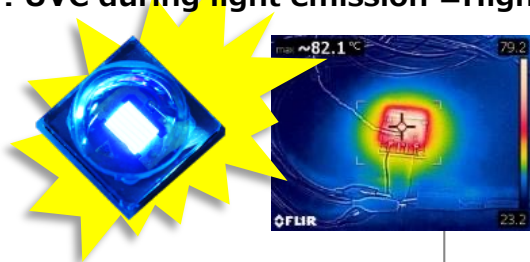
(When the bactericidal effect at 265nm is 100%)



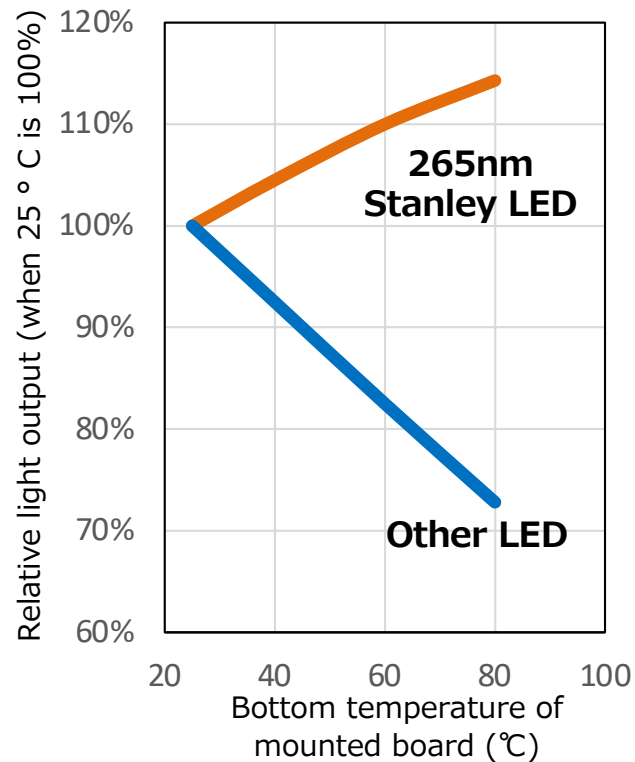
Stanley's 265nm achieved higher bactericidal effect than any other wavelength



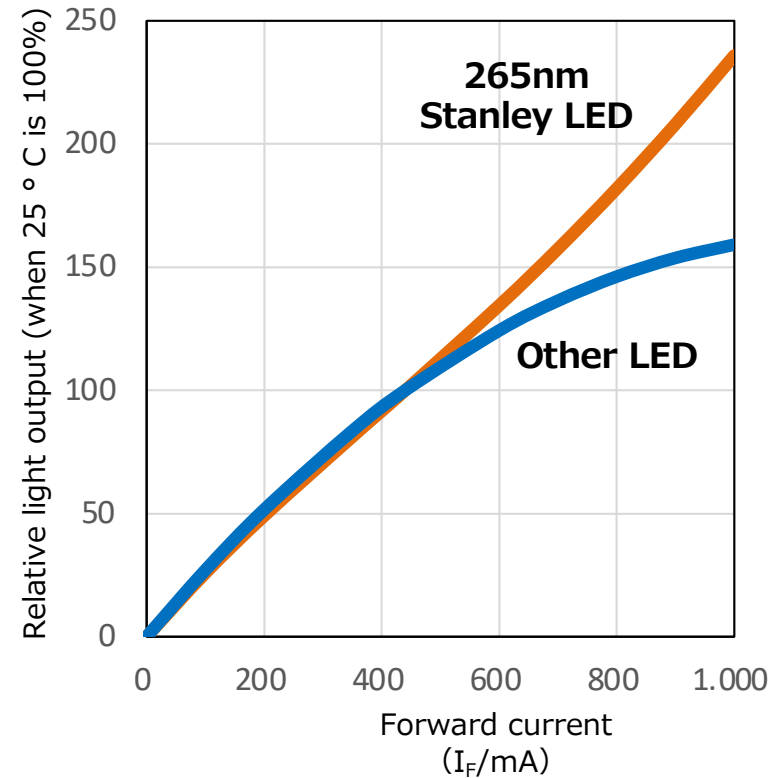
!! UVC during light emission =High temp.!!



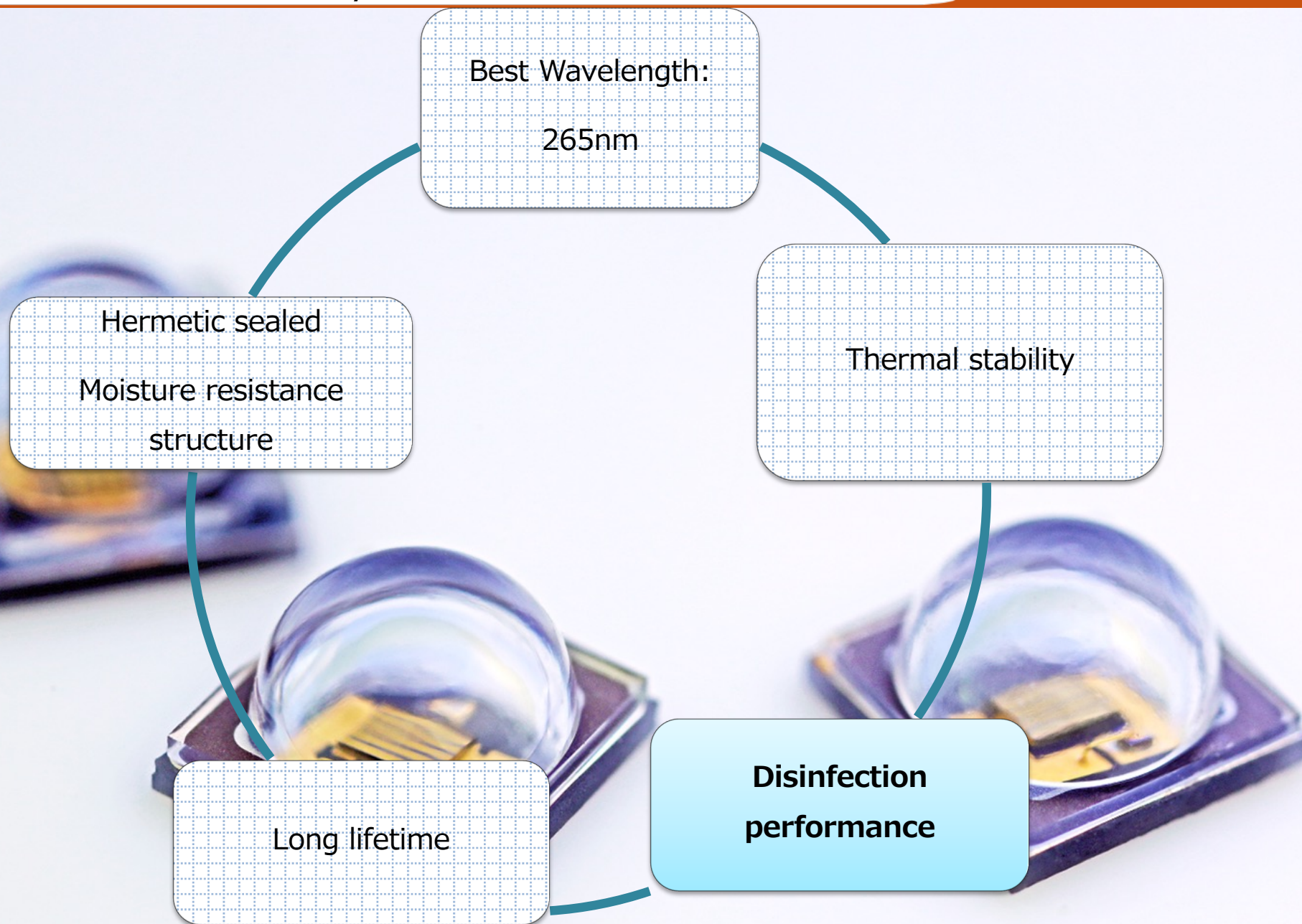
Temperature VS relative light output



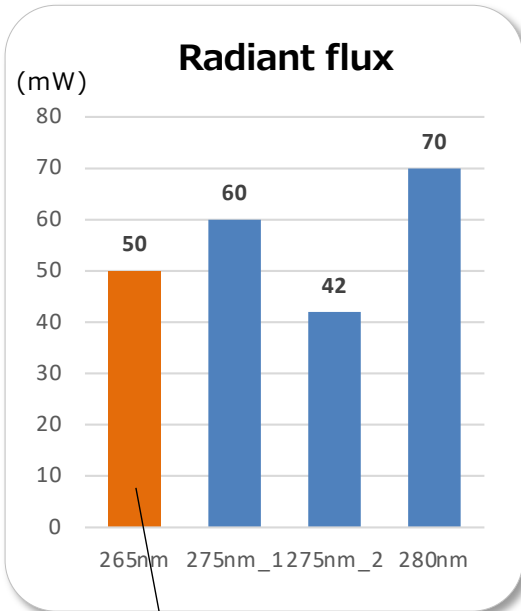
Forward current VS relative light output



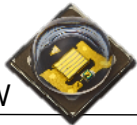
Stanley is continuing to develop industry leading die materials to produce optimal performance in 'real' usage cases(especially related to use at high temperatures)



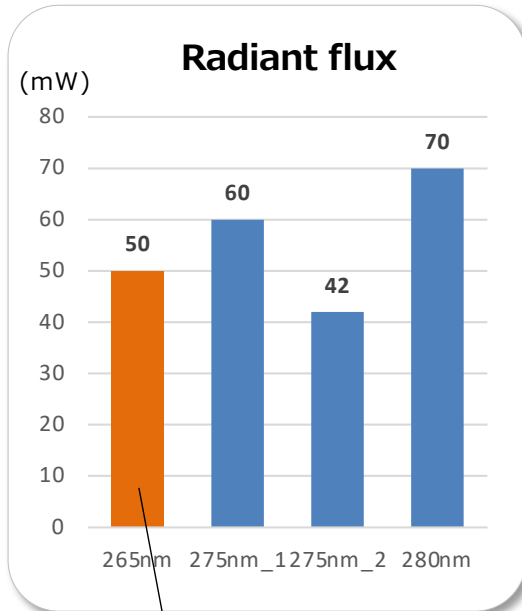
LED performance
listed on the datasheet



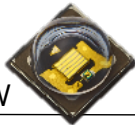
Stanley
265nm 50mW



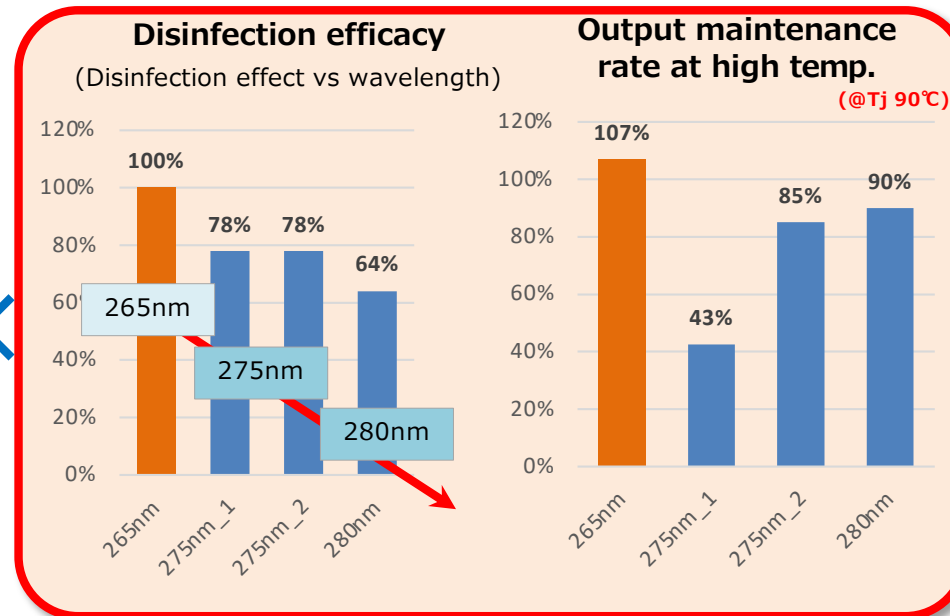
LED performance
listed on the datasheet



Stanley
265nm 50mW



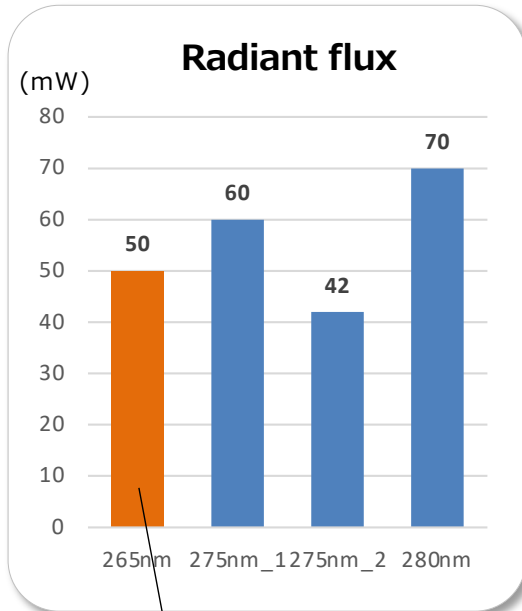
Important parameters when evaluating UVC light sources



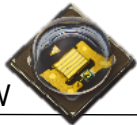
265nm: the most effective
disinfection effect on
microorganisms

LED output changes
significantly under actual
usage conditions

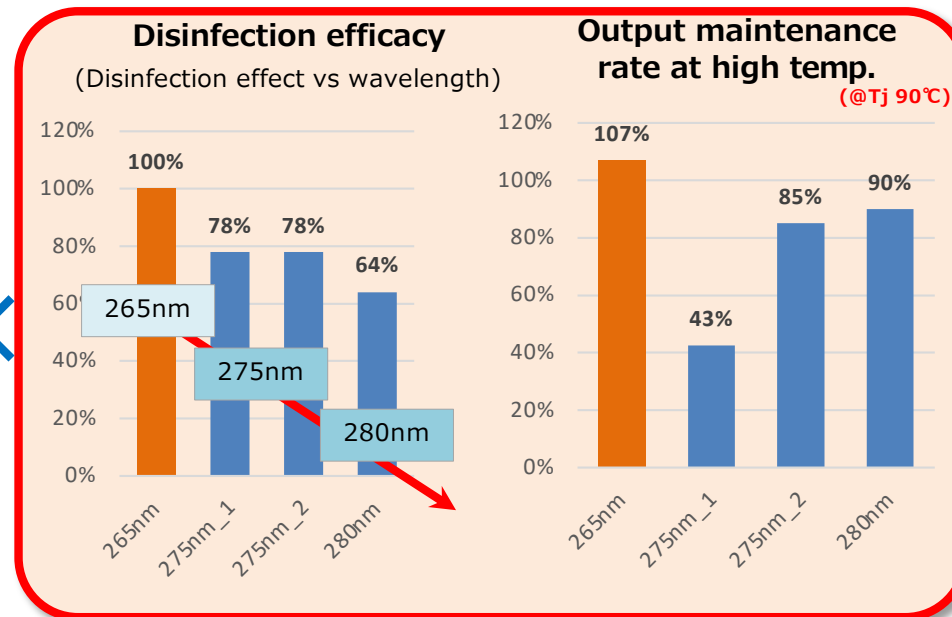
LED performance listed on the datasheet



Stanley
265nm 50mW



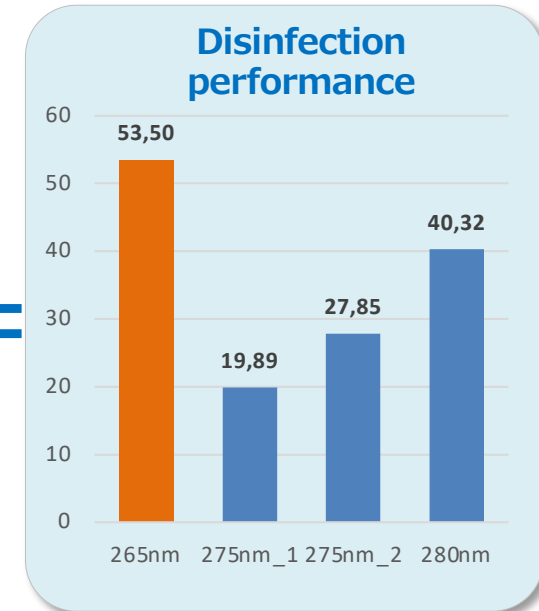
Important parameters when evaluating UVC light sources



265nm: the most effective disinfection effect on microorganisms

LED output changes significantly under actual usage conditions

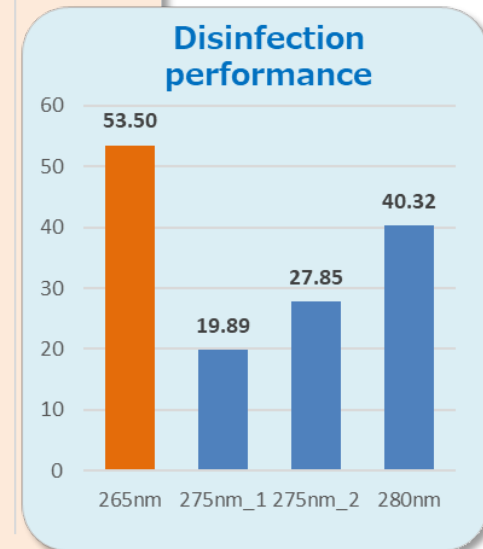
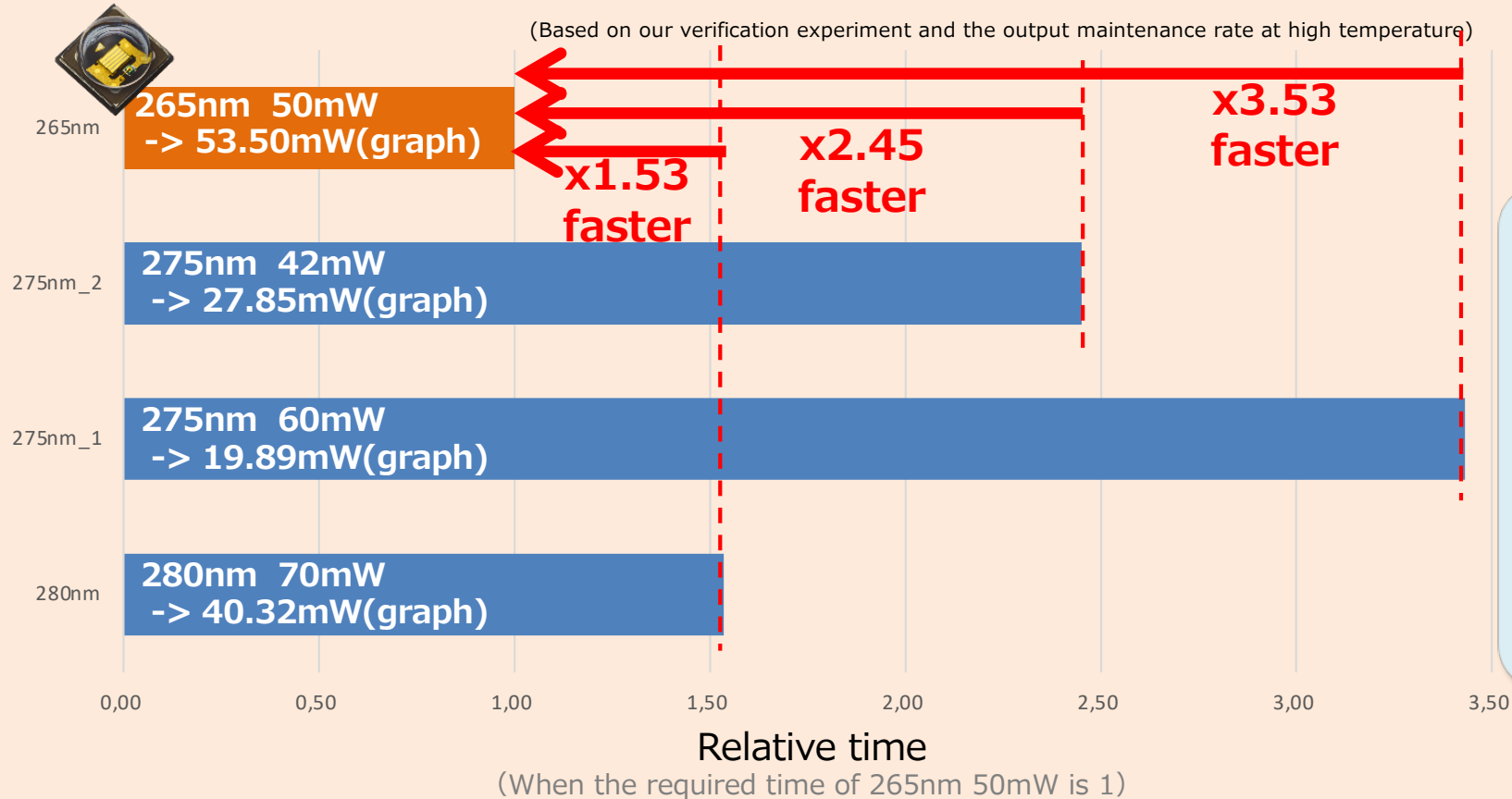
True disinfection performance not listed on the datasheet



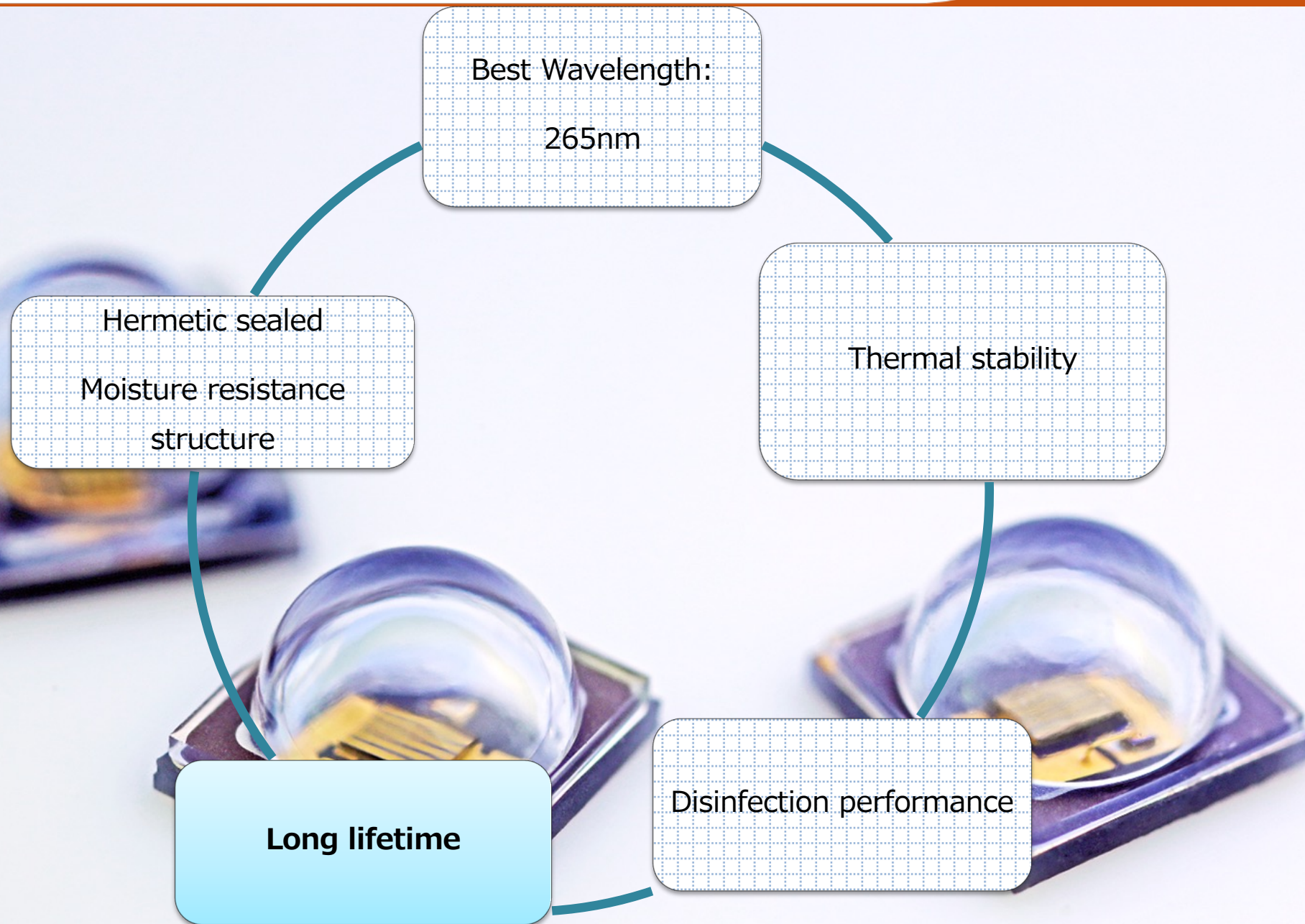
Stanley 265nm has the best disinfection performance

Outside of datasheet spec values, there are many other key factors in understanding TRUE disinfection capabilities, such as wavelength difference and real usage environment impact(including increased temperatures due to LED's radiated heat)

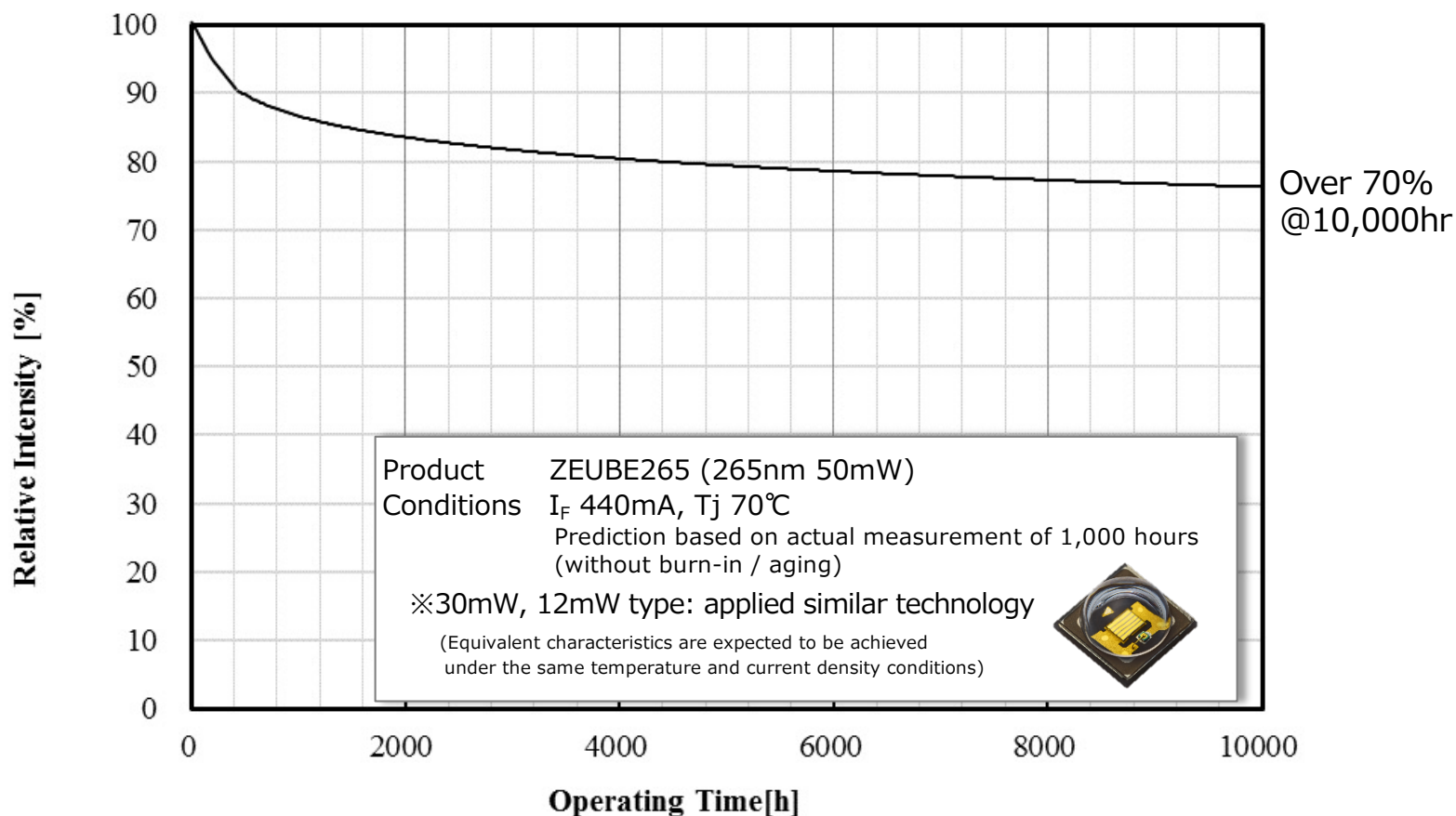
Relative comparison of time required for disinfection of new coronavirus



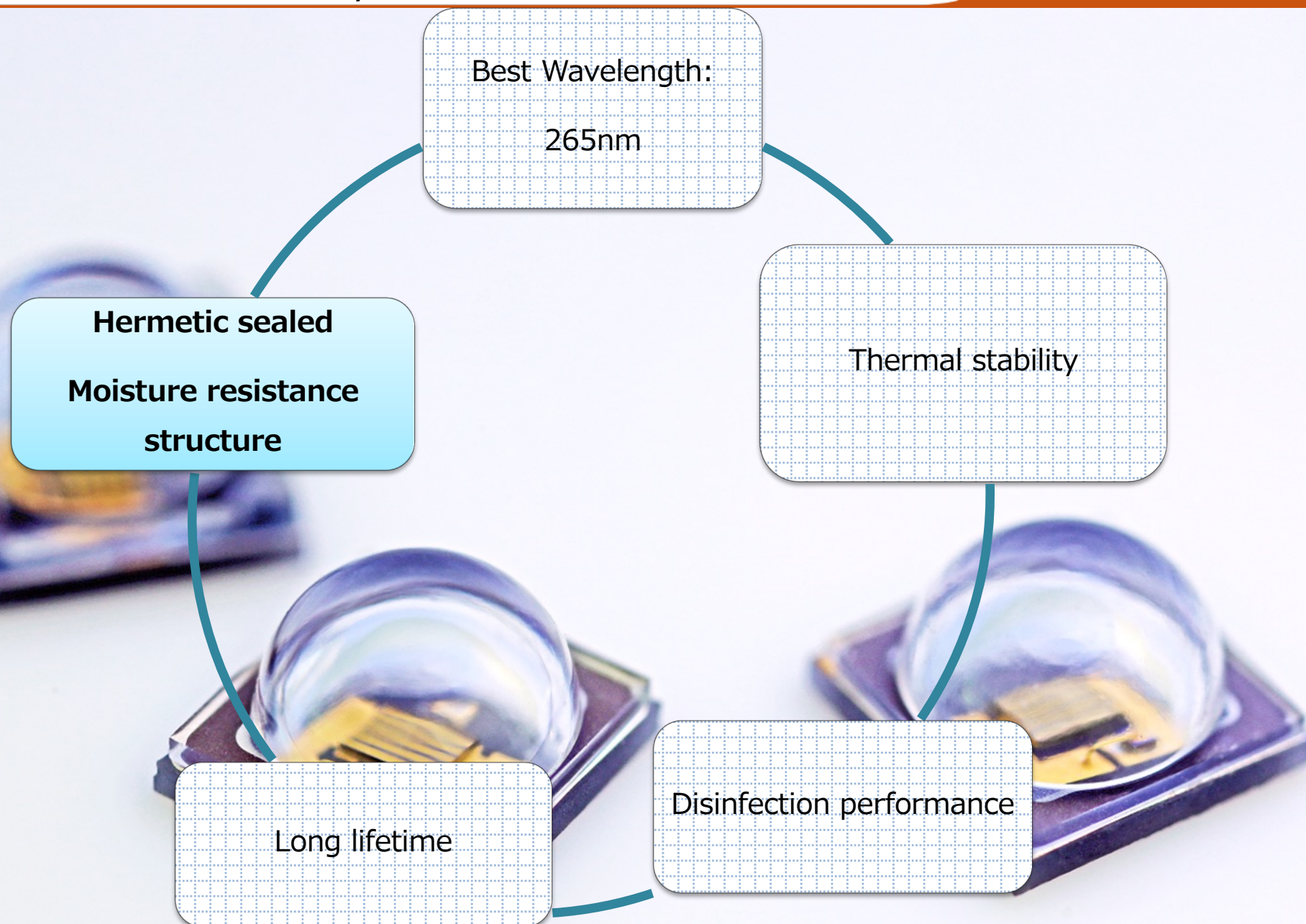
Stanley UVC LED achieves short-time disinfection of coronavirus



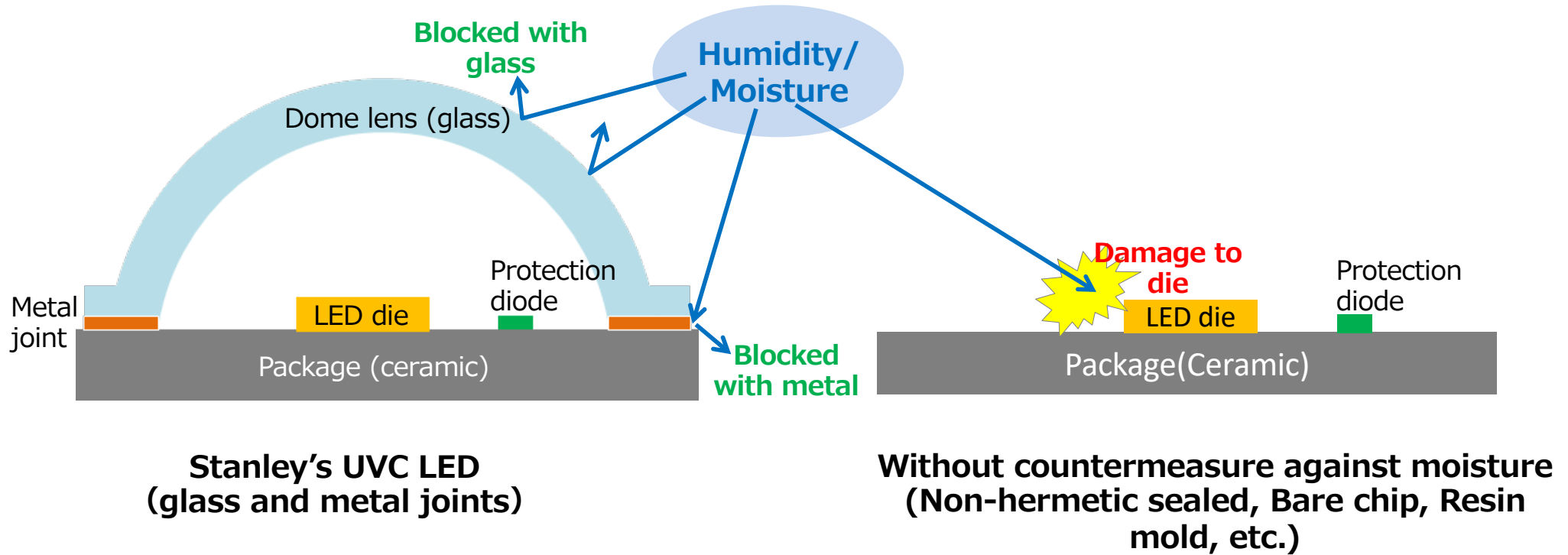
Lifetime estimation



It achieves L70 10,000hr even in a high T_j state close to the actual usage conditions



Comparison of package structures



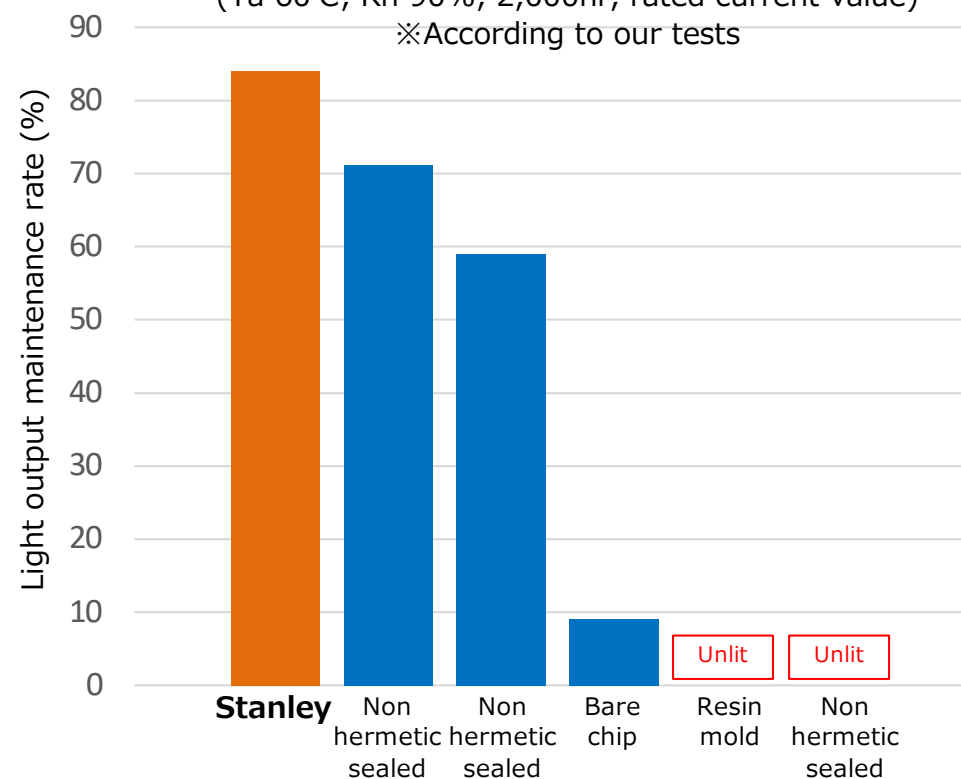
Prevents "sudden death" and "sudden output drop" due to humidity



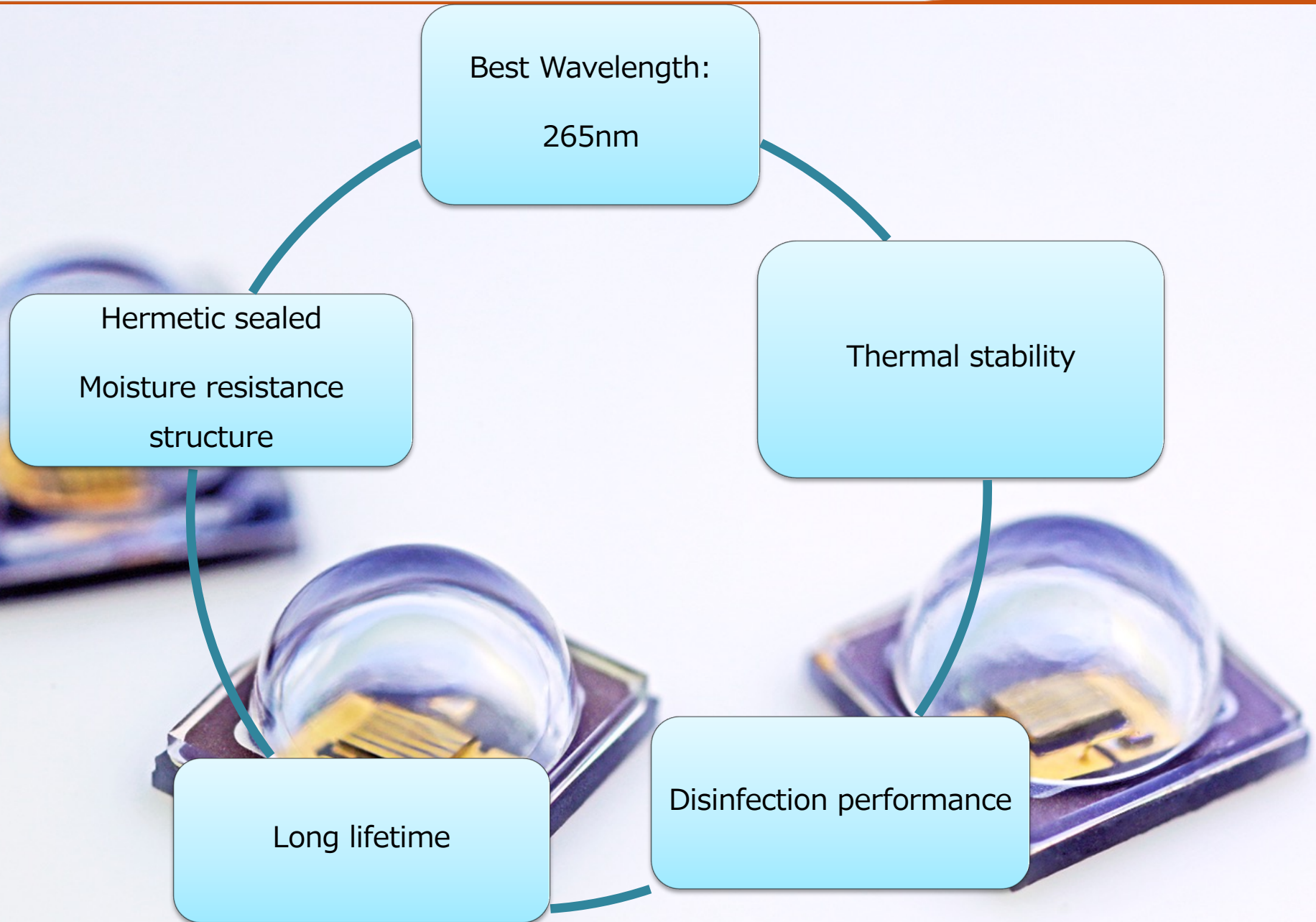
Moisture resistant energization Light output maintenance rate

(Ta 60°C, Rh 90%, 2,000hr, rated current value)

※According to our tests



It achieves excellent lifetime and quality even in humid environments



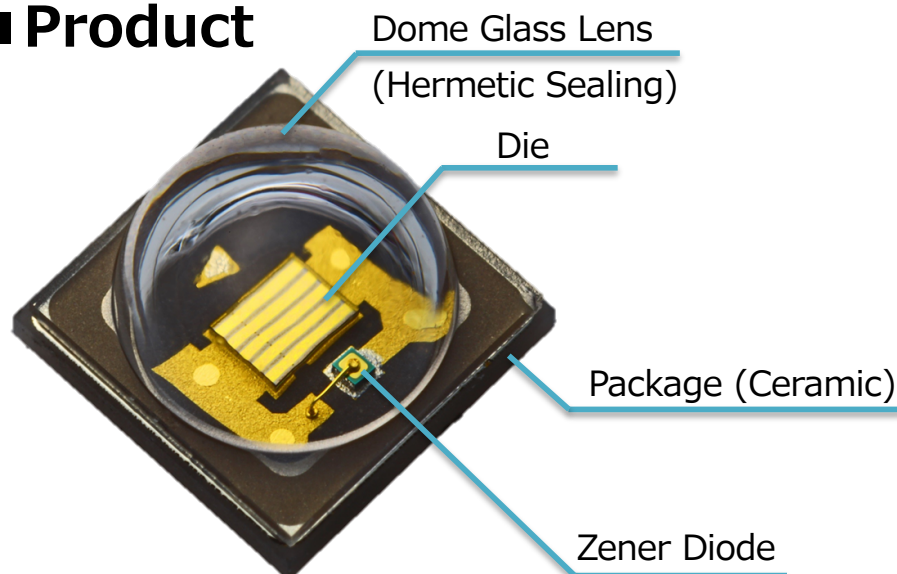
UVC LED (ZEUBE265 series)

We achieved an excellent disinfecting light source thanks to our performance-focused die development

■ Concept

- Emission wavelength: **265nm** (the highest disinfection capability)
- **High light output** suitable for disinfection of wide range and large flow rate, and **high linearity** when current changes
- A **small package** that enables the installation of disinfection light sources in narrow spaces

■ Product



■ Applications

- Water disinfection : Water purifiers
: Water servers
- Surface disinfection : Medical instrument disinfection devices
: Food filling devices
: Disinfection lighting
- Air disinfection : Air conditioners
: Air cleaners

Applications		Stanley's UVC LEDs	Lifetime (Tj 70℃)	Hermetic sealing (resistance to moisture)	
 Water purification/ treatment	 Drinking water/ food	<div>New</div>  ZEUDE265	200mW (440mA 26V)	L70 10kHr	✓
 Air conditioning	 Disinfection cabinets	 ZEUBE265	50mW (440mA 6.9V) In mass production	L70 10kHr	✓
 Humidifiers	 Ice machines	<div>New</div>  ZGUFE265	30mW (260mA 7.6V)	L70 10kHr	×
 Medicine/Research	 Beverage bottles	<div>New</div>  ZJUFE265	12mW (110mA 7.3V)	L70 10kHr	×
 Mobile devices	 Daily necessities	<div>New</div>  ZKUFE265	6mW (50mA 7.4V)	L50 5kHr	×

Thank you for your attention