



SWIR LED (1600nm) 產品效能世界第一
SWIR 1600nm, best performance in the world.

產品介紹

業界量產最高效率的 1600nm LED

晶元光電研發中心 (EPISTAR LAB) 研發團隊在 2023 年開發出高效率 SWIR LED 技術平台，以此技術所製作出的 14mil 1600nm LED，在 100mA 電流操作下，光功率達 11.2mW，電壓為 ~1.0V，EQE 達 ~14.4%，WPE 為 ~10.2%，為目前 LED 業界量產最高效率的 1600nm LED。

應用需求與產品推廣

SWIR LED (>1100nm) 產品根據不同材料吸收特性，目前主要應用於 Proximity(測距) 及 Biosensor (生物感測) 穿戴裝置，更進一步可做非侵入式的健康偵測，例如：皮膚表面水分偵測、血糖、血脂、酒精偵測等等應用，後續會瞄準機器視覺應用為未來主軸，開啟更多 SWIR LED 應用之可能。

The highest-efficiency 1600nm LEDs in the world

In 2023, the R&D team of the R&D Center (EPISTAR LAB) has developed a high-efficiency SWIR LED technology platform producing the 14mil 1600nm LED with 11.2mW output power and ~1.0V voltage, the EQE ~14.4% and the WPE~10.2% at 100mA, making it the most efficient in the world.

Application requirements and Product promotion

SWIR LED (>1100nm) products are mainly used in Proximity and Bio sensor wearable devices according to the absorption characteristics of different materials, and can be used for non-invasive health detection, such as skin surface moisture detection, blood glucose, blood lipids, alcohol detection, etc.

In the future, we will focus on machine vision applications as the future spindle and reach more possibilities for SWIR LED applications.

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EPISTAR SWIR LED Products

Size [mil]	14X14	14X14	14x14	14x14	14x14
Wp [nm]	1200	1300	1480	1550	1600
Appearance					
THK [um]	170	170	170	170	170
Vf2 [V] (typ.)	1.22V @100mA	1.16V @100mA	1.08V @100mA	1.06V @100mA	1.04V @100mA
Chip Power [mW] (typ.)	20mW @100mA	15.9mW @100mA	11.7mW @100mA	9.5mW @100mA	7.6mW @100mA

晶元光電在 SWIR LED 波段產品線完整且對應產品多元