# Cardinal 1280

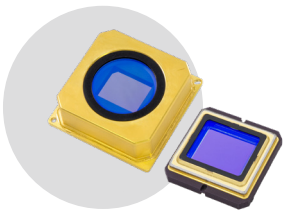
The Cardinal 1280 is a high-definition SWIR InGaAs detector featuring a 10µm pixel pitch. This detector offers high resolution and sensitivity, enabling EO/IR systems to capitalize on the SWIR spectrum for low-light imaging and extremely long-range daytime surveillance, even in challenging weather conditions like smoke, dust, fog, or rain. It incorporates SCD's advanced Asynchronous Laser Pulse Detection (ALPD) technology. A Thermo Electric Cooler (TEC) is included for optimal performance of the Focal Plane Array (FPA) in low light level scenarios. SCD is committed to standing alongside our customers, ensuring they receive the finest solutions available.

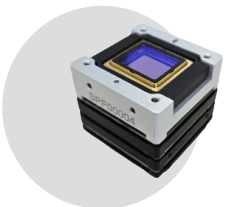
## Main Features

- Standard daylight imaging with 2 gain levels
- Low light level with CTIA stage
- ALPD with 2x2 binning
- Active imaging
- Proximity electronics available

## Applications

- High quality long range daylight SWIR imaging
- Low light level imaging
- Active imaging
- Laser "see-spot"
- Airborne EVS
- Airborne and ground payloads
- Driving Vision Enhancement (DVE)
- Non-destructive testing
- Covert surveillance with 24/7 day operation





| | High-end solution<br>metallic packaging | Wide distribution<br>ceramic packaging |
|---|---|---|
| Format & pitch | 1280x1024, 10µm | 1280x1024, 10µm |
| Spectral range | 0.6-1.7µm (VIS-SWIR) | 0.6-1.7µm (VIS-SWIR) |
| Quantum efficiency | >80% at 1550nm | >80% at 1550nm |
| Dark current | ~ 1fA @ 283K | ~ 1fA @ 283K |
| Operating modes and well capacity | High gain – 10Ke<br>Medium gain – 0.5Me<br>Low Gain - 1Me<br>ALPD - 2nd gen up to 1KHZ | High gain – 10Ke<br>Medium gain – 0.5Me<br>Low Gain - 1Me<br>ALPD - 2nd gen up to 1KHz |
| Maximum FR at full window (low gain mode) | 150 F/s @ 13 bit<br>resolution global shutter | 151 F/s @ 13 bit<br>resolution global shutter |
| Size | 43x45x43 mm (with proxy)<br>34x25x34 mm (w/o proxy)<br>34x22x34 mm (Low Window w/o proxy) | 37x34x37 mm (with proxy)<br>25x11x26 mm (w/o proxy) |
| Cooling capability | Down to -10C @<br>30C environment | Down to 0C @<br>30C environment |
| Power dissipation (FPA) | ~ 150mW @ 60 F/s | ~ 150mW @ 60 F/s |
| Power dissipation (proxy) | 2W (TEC disabled) | 2W (TEC disabled) |