

InGaAs CCD Sensors

ATD7100

Features

- Band range: 990~2600nm
- Linear InGaAs CCD
- Cooling down to -30°C
- Ultra-low dark current
- Ultra low noise
- Resolutions: 2048, 1024
- Irradiation time up to 1.3 hours
- Volume structure: 80 x 80 x 90mm
- Light weight: <750g

Application

- Scientific research
- Spectral detection
- Fluorescence detection
- Bioluminescence

Model	Feature
ATD7100-IGA15-5	0.9~1.5μm, 512 pixels
ATD7100-IGA17-5	0.9~1.7μm, 512 pixels
ATD7100-IGA17-10	0.9~1.7μm, 1024 pixels
ATD7100-IGA22-5	0.9~2.2μm, 512 pixels
ATD7100-IGA25-5	0.9~2.5μm, 512 pixels

Description

ATD7100 is an low-temperature cooling, high-performance linear array InGaAs CCD sensor specially designed by Optosky for the short-wave infrared band. ATD7100 has a built-in high-performance linear InGaAs CCD, a multi-stage high-performance TEC refrigerator, and is supplemented by efficient sealing technology to achieve ultra-low temperature refrigeration effects. , thereby achieving the characteristics of low dark current, low noise, and high reliability.

ATD7100 uses a high-performance linear array InGaAs CCD sensor with excellent sensitivity, signal-to-noise ratio, and dark current performance. It also uses a multi-stage high-performance TEC cooling period, supplemented by efficient sealing technology or vacuum sealing technology, thus achieving The ultra-low temperature refrigeration effect can reach as low as -30°C.

Under normal circumstances, ATD7100 uses air cooling technology to achieve an ultra-low temperature refrigeration effect of -70°C. At the same time, ATD7100 can also use water cooling technology to achieve better cooling effects.

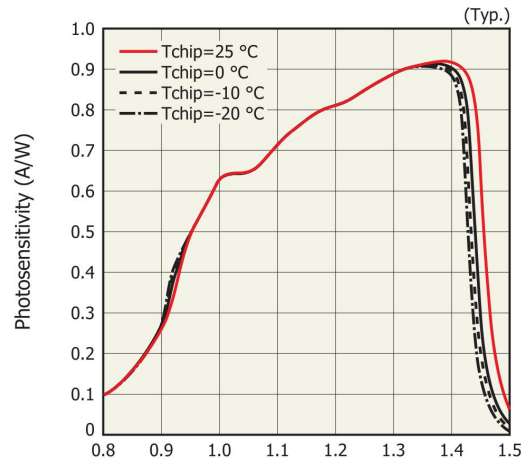
ATD7100 has built-in ultra-low noise CCD signal conditioning circuit, high-precision ADC, and high-performance noise elimination technology, and then digitizes the sensor signal and outputs it through USB2.0.



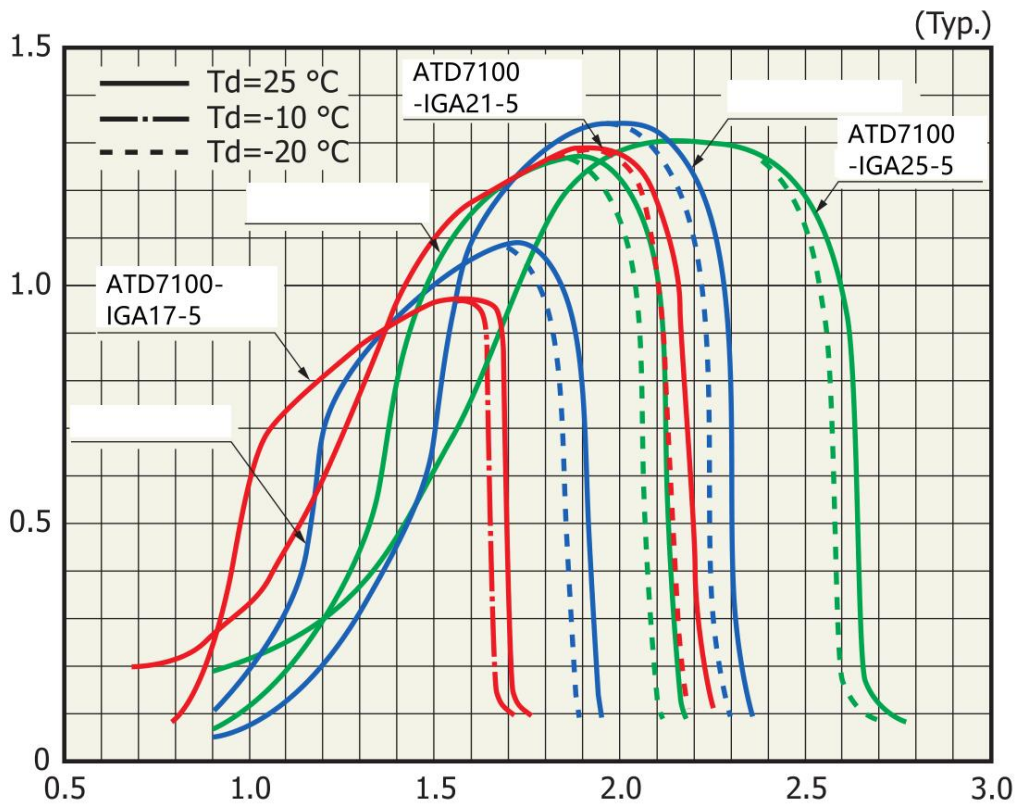
1. Parameter

Item	Parameter				
	ATD7100-IG A15-5	ATD7100-IG A17-5	ATD7100-IG A17-10	ATD7100-IG A22-5	ATD7100-IG A25-5
Spectral range	0.9~1.5 μm	0.9~1.7 μm		0.9~2.2 μm	0.9~2.5 μm
Number of pixels	512X1		1024X1	512X1	512X1
Detector target size	12.8 × 0.5 mm	12.8 × 0.5 mm	12.8 × 0.08 mm	12.8 × 0.5 mm	12.8 × 0.5 mm
Refrigeration method	Three-class TEC refrigeration	Three-class TEC refrigeration	Three-class TEC refrigeration	Three-class TEC refrigeration	Three-class TEC refrigeration
Cooling temperature	-30°C	-30°C	-30°C	-30°C	-30°C
Maximum exposure time	15 min		10 min	500ms	100ms
bit depth	18 bits	18 bits	18 bits	18 bits	18 bits
Heat dissipation method	Air cooling	Air cooling	Air cooling	Air cooling	Air cooling
Data output interface	USB2.0	USB2.0	USB2.0	USB2.0	USB2.0
Detector power supply	DC12V±5%				
Power consumption	<30 W				
Non-uniformity	±3%		±3%	±5%	±5%
Dynamic Range	14000		16667	16667	16667
Maximum frame rate	100 fps	100 fps	100 fps	100 fps	100 fps
Size	80 x 80 x 90mm				
Weight	Less than 750g				
Operating temperature	-20 ~ 50°C				
Storage temperature	-30 ~ 70°C				
Note: The parameters in the table are for reference only, other performance parameters of the instrument can be customized;					

2. quantum efficiency



Wavelength response rate curve of ATD7100-IGA15-5



Quantum response rate curves of ATD7100-IGA17-5, ATD7100-IGA22-5, ATD7100-IGA25-5

3. Order guide

Model	Feature	Photosensitive surface size
ATD7100-IGA15-5	0.9~1.5 μ m, 512 pixels, cooled to -30°C	12.8 × 0.5 mm
ATD7100-IGA17-5	0.9~1.7 μ m, 512 pixels, cooled to -30°C	12.8 × 0.5 mm
ATD7100-IGA17-10	0.9~1.7 μ m, 1024 pixels, cooled to -30°C	12.8 × 0.08 mm
ATD7100-IGA22-5	0.9~2.2 μ m, 512 pixels, cooled to -30°C	12.8 × 0.5 mm
ATD7100-IGA25-5	0.9~2.5 μ m, 512 pixels, cooled to -30°C	12.8 × 0.5 mm