

Cooled CCD Detector

ATD2100

Features

- Band range: 180~1100nm
- Area array linear back-illuminated CCD
- Cool to -70°C
- Ultra-low dark current
- Ultra-low read noise
- Detector resolution: 2048, 1024
- Exposure time up to 1.3 hours
- Size: 80 x 80 x 90mm
- Weight: <750g

Application

- scientific research
- Spectral detection
- Fluorescence detection
- bioluminescence

Description

ATD2100 is an ultra-low temperature cooling, high-performance linear array CCD camera designed for the ultraviolet and visible bands. It uses air cooling technology to achieve ultra-low temperature cooling effects of -70°C.

ATD2100 uses a high-performance area array linear back-illuminated CCD sensor, which has 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. This achieves ultra-low temperature refrigeration effects as low as -70°C.

ATD2100 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.

Model	Feature
ATD2100-R20	Infrared enhanced area array back-illuminated CCD, 28.672 × 0.896mm, 2048X64, cooled to -30°C
ATD2100-LT20	Scientific research grade area array back-illuminated CCD, 24.576 × 3.000mm, 2048X256, cooled to -30°C
ATD2100-LT10	Scientific research grade area array back-illuminated CCD, 28.672 × 0.896mm, 1024X64, cooled to -30°C
ATD2100-DC20	Scientific research grade area array back-illuminated CCD, 30.7 x 4.0mm, 2048X264, cooled to -70°C



NO	Item	Parameter							
		ATD2100-UV20	ATD2100-NR20	ATD2100-LT20-1	ATD2100-LT20-3	ATD2100-LT20-6	ATD2100-LT10-1	ATD2100-LT10-3	ATD2100-DC20
1	Spectral range	180~1100nm							
2	number of pixels	2048X64		2048×128	2048×256	2048X512	1024X64	1024X128	2048X264
3	Detector target size	28.672 × 0.896 mm	28.672 × 0.896 mm	24.576 × 1.46 mm	24.576 × 3.000 mm	24.576 × 6.000 mm	24.576 × 1.4 mm	24.576 × 2.9 mm	30.7 × 4.0 mm
4	Refrigeration method	Three-stage TEC Cooled							Four-level TEC Cooled
5	cooling temperature	-30℃							-70℃
6	maximum exposure time	15min		1.3hour					1.0hour
7	bit depth	18 bits							16 bits
8	Heat dissipation method	Air Cooling							Air or water cooling
9	Data output interface	USB2.0							USB3.0
10	Detector power supply	DC12V±5%							
11	Power consumption	<20 W							<50 W
12	peak quantum efficiency	78%@600nm	91%@700nm	90%@650nm					95%@800nm
13	non-uniformity	±3%		±3%					±3%

14	Dynami c Range	50000	125000	18000
15	Maximu m frame rate	120 fps		100 fps
16	size	80 x 80 x 90mm		
17	weight	Less than750g		
18	Operatin g temperat ure	-20 ~ 50℃		
19	storage temperat ure	-30 ~ 70℃		
Note: The parameters in the table are for reference only, other performance parameters of the instrument can be customized;				

Model	Feature	Photosensitive surface size
ATD2100-UV20	Side-enhanced area array back-illuminated CCD, 2048X64, cooled to -30°C	28.672 × 0.896 mm
ATD2100-NR20	Near-infrared enhanced area array back-illuminated CCD, 2048X64, cooled to -30°C	28.672 × 0.896 mm
ATD2100-LT20-1	Scientific research grade area array back-illuminated CCD, 2048X128, cooled to -30°C	24.576 × 1.46 mm
ATD2100-LT20-3	Scientific research grade area array back-illuminated CCD, 2048X256, cooled to -30°C	24.576 × 3.000 mm
ATD2100-LT20-6	Scientific research grade area array back-illuminated CCD, 2048X512, cooled to -30°C	24.576 × 6.000 mm
ATD2100-LT10-1	Scientific research grade area array back-illuminated CCD, 1024X64, cooled to -30°C	24.576 × 1.4 mm
ATD2100-LT10-3	Scientific research grade area array back-illuminated CCD, 1024X128, cooled to -30°C	24.576 × 2.9 mm
ATD2100-DC20	Scientific research grade area array back-illuminated CCD, 2048X264, cooled to -70°C	30.7 x 4.0 mm