CRYO-1280

1280×1024 cooled MWIR infrared module

Product Overview

1280×1024, 10μm HgCdTe (MCT) cooled MWIR infrared module, F4.0 aperture, NETD 20mK, 25Hz frame rate, default F4 30~150mm continuous-zoom lens; provides SDI / CameraLink / MIPI interface configurations and RS422 control.



1280×1024	10 μm	20 mK @ 23℃	3.7–4.8 μm
RESOLUTION	PIXEL PITCH	NETD	SPECTRAL BAND

Product Features

High-Resolution Cooled Imaging

- 1280×1024 / 10μm HgCdTe (MCT) cooled MWIR detector with a 3.7~4.8μm spectral response, NETD 20mK@23℃ and MRTD ≤350mK (12cy/mrad, minimum FOV); the 25Hz frame rate delivers fine, detailed imaging

F4 30~150mm continuous zoom

- Default F4.0 30~150mm continuous-zoom lens (FOV 24.1°×19.4° ~ 4.9°×3.9°, estimated values); supports step/continuous zoom, step/continuous focus, follow focus and one-touch focus

Three interface configurations

- Any one of three interface configurations — SDI (DC 22~30.3V) / CameraLink (DC 18~32V) / MIPI (DC 12~24V) — with RS422 serial control; external sync input/output/adaptive supported

Typical Applications



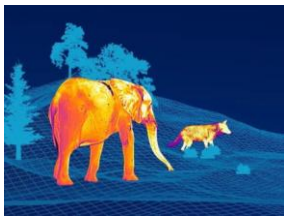
Long-range surveillance



Aerospace



Integrated Electro-Optical Systems



Environmental Protection

Technical Specifications

Product Selection

Lens Configuration	F4.0 30~150mm continuous zoom (default); optional fixed-focus athermalized / fixed-focus motorized-focus lens
Interface Configuration	SDI / CameraLink / MIPI (choose one of three)
FOV (continuous zoom, est.)	24.1°×19.4° ~ 4.9°×3.9°
IFOV (continuous zoom, est.)	0.33 ~ 0.067 mrad
Electronic Zoom	1× (default) / 2× / 4×

Detector & Imaging

Detector	HgCdTe (MCT) cooled infrared detector
Resolution	1280×1024
Pixel Pitch	10 μm
Spectral response	3.7~4.8 μm
F-Number	F4.0
Blind Pixel	≤1%
NETD	20 mK (F2/F4) @ 23℃
MRTD	≤350 mK (12 cy/mrad, minimum FOV)
Frame rate	25 Hz
Cool-down time	≤6 min at room temperature, ≤8 min at high temperature
Non-uniformity (after correction)	≥5‰

Image processing & control

Non-Uniformity Correction (NUC)	Shutter/background correction; auto/manual/disabled (default auto, interval adjustable 0~255min, correction time ≤1.5s)
Correction indication	On-screen character feedback "Correcting / Correction complete"
Image enhancement (DDE)	0~7 levels (factory default: level 4)
Brightness / Contrast	0~100, auto/manual
Polarity	White-hot (default) / Black-hot
False Color	48 false color palettes in addition to white-hot/black-hot
Crosshair reticle	Show / Hide (default) / Move
Solar Protection	Supported (threshold 0~16383, default 16000)
Image mirroring	Off (default) / Left-right / Up-down / Diagonal
Blind Pixel Replacement	Serial command search & save + real-time automatic find-and-replace
Test Pattern Output	Gradient / checkerboard test pattern
Self-Test	Power-on self-test / command self-test / timed self-test
Software Upgrade	Serial firmware upgrade

Zoom & optical axis (continuous zoom configuration)

Total zoom time	≤6 s at room/high temperature, ≤8 s at low temperature
Auto Focus Time	≤2.5 s at room/high temperature, ≤4 s at low temperature (near best focus)
One-touch focus time	≤2 s
Optical axis alignment	FOV20~FOV16 ≤2 pixels; FOV15~FOV1 ≤4 pixels
Optical axis stability	≤2 pixels
Optical axis repeatability	≤2 pixels (minimum FOV)
Parfocality	Best-focus point deviation < 10% of total travel over the full temperature range
Zoom/focus control	Step/continuous zoom, step/continuous focus, follow focus, one-touch set/query

Video & Interfaces

Video Output	SDI / CameraLink / MIPI (per interface configuration)
Communication Interface	RS422, 115200bps (8 data bits, 1 start bit, 1 stop bit, no parity)
External sync	Internal sync / external sync input / output / adaptive (50 Hz)
Power-up/power-down control	TTL level (3.3 V)

Power Supply & Consumption

SDI Configuration	DC 22~30.3 V (typical 28 V), steady-state ≤25 W, peak ≤50 W
CameraLink Configuration	DC 18~32 V (typical 28 V), steady-state ≤30 W, peak ≤50 W
MIPI Configuration	DC 12~24 V (typical 12 V), steady-state ≤16 W, peak ≤34 W
Insulation Resistance	>20 MΩ (chassis ground insulated from signal ground and power ground)
Power Protection	Reverse polarity / overvoltage protection

Physical & Environmental

Dimensions	≤234×118×116 mm (depending on configuration)
Weight	≤2.5 kg (±50 g)
Operating Temperature	-40~+60 ℃
Storage Temperature	-45~+65 ℃
Humidity	5%~95%, non-condensing
Vibration	≥2g (15~500 Hz), 15 min per axis along three axes
Shock	15g half-sine, three shocks in each of the six directions of the three axes
Fully domestically sourced	100% domestically sourced

Compiled from the CRYO-1280 Technical Specification V1.0 (2026-07); (est.) values are optical-geometry references.

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