Atom 1024

ATOM™ 1024: Uncooled Infrared Camera with XGA Resolution

- Frame Rate: 30Hz XGA, 60Hz VGA
- Very Low Power Consumption
- < 50mK Detector Thermal Sensitivity
- Lightweight
- 17 micron Pixel Technology
- 8-14 micron Detector Spectral Range

Available with a variety of fixed and variable focal length infrared objective lenses

Incorporating an advanced 1024x768 microbolometer detector array, the Atom 1024 Uncooled Infrared Camera delivers extremely high resolution in an XGA format. The camera is designed for a wide variety of applications that benefit from its superb image detail and excellent thermal sensitivity. Because of the camera's small compact size and low power consumption, the Atom 1024 is easy to integrate, and ideally suited for a wide range of military and COTS thermal imaging systems.

The Atom 1024's short thermal time constant produces superior thermal image quality even while imaging fast moving objects, making the system an ideal choice for handheld, ground vehicle and airborne EOIR platforms and advanced fusion-based night vision systems.
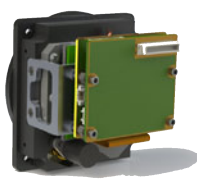
Infrared Detector	Uncooled ASi Microbolometer
Array Size	1024 x 768 pixels
Pixel Pitch	17 microns
Detector Spectral Range	8-14 microns
Frame Rate	30Hz XGA (Option for 60Hz VGA)
Thermal Time Constant	< 10 ms
Detector Sensitivity (f/1)	< 50 mK
Time to First Image	< 4 seconds
Video Processing	Non-uniformity correction, Auto/Manual gain, BPR, Digital Zoom, Digital Filtering, Built-in Self Test, Test patterns, External Synchronization

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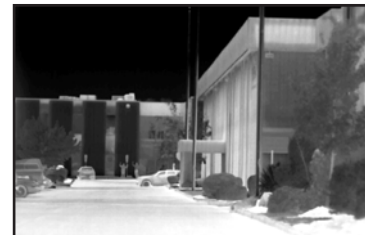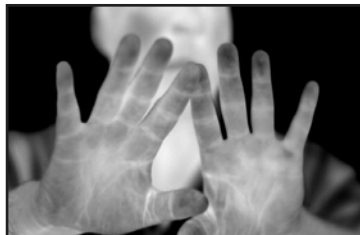
Atom 1024

FEATURES

- 1024x768 resolution with 17 micron pixels
- < 50mK detector thermal sensitivity
- 30Hz XGA and 60Hz VGA frame rate
- < 10ms thermal time constant
- < 1.7 Watts (LVTTL)
- Mil-Spec option

BENEFITS

- XGA resolution for high performance applications
- Increased range and detection performance
- Smooth motion within scene
- Less image blur – sharp images of objects in motion
- Longer battery life
- Ready to integrate into tactical systems

ATOM 1024 IMAGER SPECIFICATIONS

| Description	Camera Link	GigE	LVTTL
Operating Temperature Range	-40°C to 60°C	-20°C to 60°C	-40°C to 60°C
Non-operating Temperature Range	-45°C to 70°C	-25°C to 70°C	-45°C to 70°C
14-bit Streaming Digital Output	Camera Link	GigE	LVTTL
Serial Control Interface	Camera Link	GigE	LVTTL level UART
Graphical User Interface	Included	Included	Included
Size (lens not included)	2.4"x 2.7"x 2.7" W x H x L	2.4"x 2.7"x 3.7" W x H x L	2.4"x 2.7"x 2.25" W x H x L
Weight (lens not included)	< 0.4 kg	< 0.5 kg	< 0.25 kg (< 0.1 kg electronics only)
Input Voltage	6-12 VDC	6-12 VDC	3.3 or 3.6 VDC
Power Consumption	< 2.2 W	< 3.6 W	< 1.7 W

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ATOM 1024 ORDERING INFORMATION

Photo	Lens [2]	Digital Interface	Part Number
	9.6mm f/1 HFOV=86° Fixed focus athermal	LVTTL [1] Camera Link GigE	925001 925010 925011
	13mm f/1.1 HFOV=73° Manual focus	LVTTL [1] Camera Link GigE	915241 915239 915240
	16.4mm f/1 HFOV=56° Fixed focus athermal	LVTTL [1] Camera Link GigE	925002 925008 925009
	25mm f/1.2 HFOV=40° Fixed focus athermal	LVTTL [1] Camera Link GigE	915311 915310 915312
	50mm f/1.0 HFOV=20° Manual focus	LVTTL [1] Camera Link GigE	915216 915214 915242
	50mm f/1.2 HFOV=20° Fixed focus athermal	LVTTL [1] Camera Link GigE	915351 915349 915350
	15-100mm f/1.4 HFOV=9.9-68° Continuous zoom motorized focus	GigE [1]	915323 [3]
	25-150mm f/1.4 HFOV=6.6-40° Continuous zoom motorized focus	GigE [1]	915322 915318 [3]
	25-225mm f/1.5 HFOV=4.4-40° Continuous zoom motorized focus	GigE [1]	915321 915313 [3]

NOTE: [1] Open frame chassis [2] Hard carbon coated unless otherwise indicated.
[3] Includes high durability coating on lens

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D*STAR Digital Storage and Retrieval Image Processing Software Suite for R&D Applications
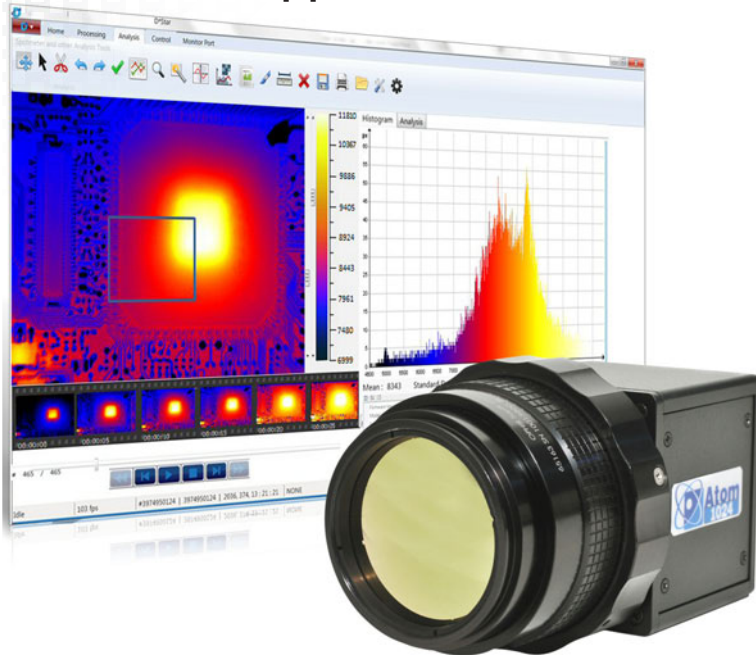
- • **Real-time digital recording**
- • **Powerful analysis tools**
- • **Intuitive user interface**

D*STAR™ is a feature rich real-time image capture and thermal analysis software for the ATOM 1024. D*STAR features a highly intuitive user interface and a library of powerful tools that enable the sophisticated analysis of thermal behavior for a wide range of objects and materials.

- • **Real-Time Digital Recording:** The Atom's digital output is displayed in real-time on your PC for live analysis or recording. Easily convert sequences to an AVI file suitable for Windows Media Player and frames to JPGs with the touch of a button.

- • **Powerful Analysis Tools:** D*STAR features a large selection of real-time analysis tools including spot meter, line profile, region of interest analysis box.

- • **Intuitive User Interface:** D*STAR features simple-to-understand controls that ensure you're up and running fast. Image recording and playback mimic standard DVD controls and camera control dialog boxes are easy to understand. Intuitive user controls allow simple image reduction, analysis, and archiving.

FEATURES

IMAGE MANAGEMENT
- • Real-time recording and playback
- • Single image capture and playback
- • 14-bit image sequence conversion to AVI files
- • Export of data to standard files

IMAGE PROCESSING
- • Multiple color palette selections
- • Image averaging (improves sensitivity)
- • Span and level control
- • Automatic Gain Correction

IMAGE ANALYSIS
- • Spot meter
- • Line Profile
- • Region of Interest — User-defined rectangle
- • Histogram Analysis (ROI)
- • Temperature versus Time plot

ATOM 1024 DESKTOP SOFTWARE

Description	Part Number
D*Star Lite Digital Storage and Retrieval and Image Processing Software Suite for Atom. To be used in infrared imaging research and development applications.	915356
Atom Software Development Toolkit (SDK) for C++	915348

Technical characteristics described in this data sheet are for information only and are not contractual. Because of ongoing product enhancements, specifications are subject to change without notice. Export of these products from the United States is controlled by the US Government. Prior authorization is required for re-export or transfer.

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