

Atom[®] 1024**Uncooled Infrared Camera Core
with XGA Resolution**

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

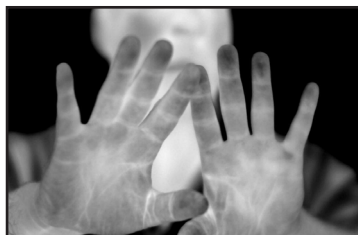


Available with a variety of fixed and variable focal length infrared objective lenses

Incorporating an advanced 1024x768 thermal image sensor array, the Atom 1024 delivers extremely high resolution in an XGA format. The camera core is designed for a wide variety of applications that benefit from its superb image detail and excellent thermal sensitivity. Because of its 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.




| | |
|----------------------------|--|
| Sensor Type | ULIS Gen2 microbolometer |
| Array Size | 1024 x 768 pixels |
| Pixel Pitch | 17 microns |
| Detector Spectral Range | 8-14 microns |
| Frame Rate | 30Hz XGA |
| Detector Sensitivity (f/1) | < 50 mK |
| Time to First Image | < 4 seconds |
| Video Processing | Non-uniformity correction, Auto/Manual gain, BPR, Digital Filtering, Built-in Self Test, Test patterns, External Synchronization |



Atom[®] 1024

| FEATURES | BENEFITS |
|---|---|
| • 1024x768 resolution with 17 micron pixels | • XGA resolution for high performance applications |
| • < 50mK detector thermal sensitivity | • Increased range and detection performance |
| • 30Hz XGA frame rate | • Smooth motion within scene |
| • ≈10ms thermal time constant | • Less image blur – sharp images of objects in motion |
| • < 1.7 Watts (LVTTTL) | • Longer battery life |
| • Mil-Spec option | • Ready to integrate into tactical systems |

ATOM 1024 IMAGER SPECIFICATIONS

| |  |  |  |
|---------------------------------|--|---|--|
| Description | Camera Link | GigE | LVTTTL |
| 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 | LVTTTL |
| Serial Control Interface | Camera Link | GigE | LVTTTL 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 |

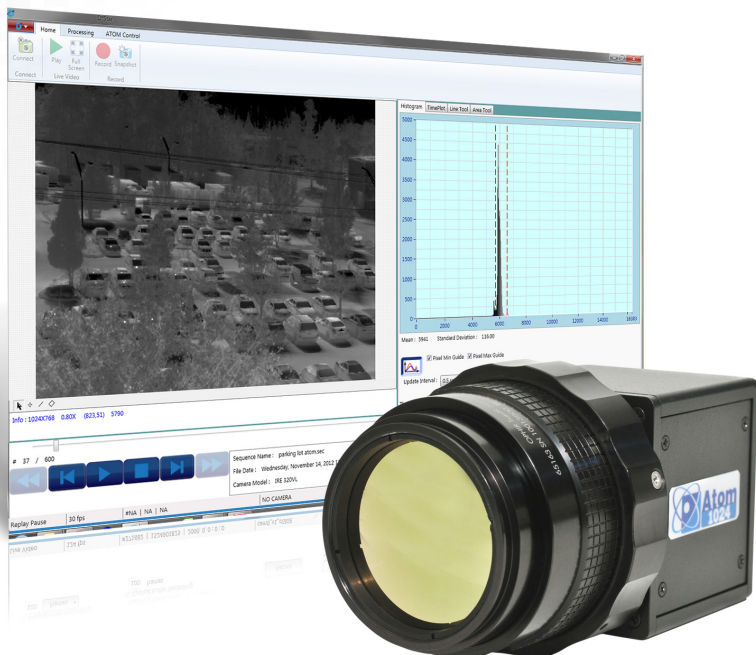
ATOM 1024 ORDERING INFORMATION

| 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 |
|  | 75mm f/1.0 HFOV=13.2° Manual focus | LVTTL [1] Camera Link GigE | 915444 915443 915442 |
|  | 15-100mm f/1.4 HFOV=9.9-68° Continuous zoom motorized focus | GigE [1] | 915319 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

D*STAR Uncooled

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 real-time image capture software package 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 1024'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)
- Time plot

DESKTOP SOFTWARE

| Description | Part No. |
|---|----------|
| D*STAR Uncooled Digital Storage and Retrieval Image Processing Software Suite for ATOM 1024/640. To be used in infrared imaging R&D applications. | 915447 |
| Software Development Toolkit (SDK) for C++ | 915448 |
| Software Development Toolkit (SDK) for LabView | 915449 |

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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