

Excel M Cooled Camera

High Resolution Cooled Digital Camera

The Excel M cooled CCD digital camera has been specifically engineered to meet the critical demands of high resolution, low light level scientific and industrial applications. Assembled in an ISO rated clean room, the hermetically vacuum sealed cooling system maintains stringent temperature stability to ensure a high dynamic range, low noise image. The thoughtful design enables optical interface to the industry standard C-mount and single-cable connection to a PC for ease of use. The intuitive software control ensures successful camera operation for the novice and sophisticated operator. Dage-MTI advanced camera technologies are engineered to the highest standards, yet refreshingly easy to use.



Model XLMT shown above. Lens not included. Standard XLMT shipment includes IEEE 1394 FireWire cable, IEEE 1394 PCI card, cooler power supply, focus wrench, Exponent software and access to SDK.

FEATURES AND BENEFITS

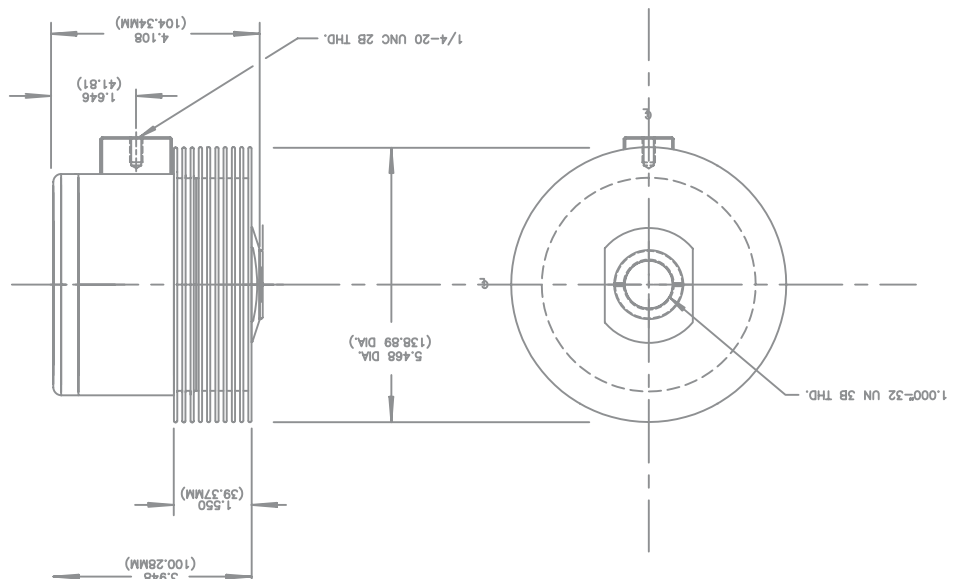
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| High Resolution Sensor | Utilizes Kodak 4 million pixel sensor (color or monochrome) Exceptionally sharp, detailed images |
| High Performance | Full 2048 x 2048 @ 7.2 fps |
| Large Pixels (7.4um x 7.4um) | High sensitivity (Visible-NIR) Large well capacity. |
| Cooling (Hermetically Vacuumed Sealed) | -30°C with two-stage Peltier cooler. Maintains stringent temperature stability for low noise images. |
| ROI (Region of Interest) | Provides full screen display of selected area of interest for detailed observation. Continuously variable to full resolution. Increases frame rate for dynamic images. |
| Binning | Color and monochrome binning. Increases sensitivity and frame rate. |
| Multiple Display Algorithms | User selectable for speed or quality enhancement. |
| User-Defined Memory Presets | Allows up to 15 different camera settings. Ensures retention and repeatability. |

(continued)

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| External Sync & Trigger | Allows synchronizing capture to external events such as strobes, shutters, or other equipment. |
| General Purpose Input | Provides access to a footswitch control for hands-free image capture. |
| Versatile Exposure Control | Automatically adjusts gain and/or shutter to achieve correctly exposed image, even under difficult lighting conditions. |
| IIDC Compliant | Adheres to standards set forth by IEEE 1394 Trade Association. Provides defined guidelines to ensure easy integration and consistency for software interface. |
| IEEE 1394 FireWire | Single-cable connection to PC. Simple installation and ease of use. Cable and PCI card included. Compatible with laptop computer. |
| Firmware Update via Software | Provides seamless firmware upgrade through software. Eliminates camera down time. |
| Exponent Software | Full featured camera control software. |
| Software Support | ImageJ, Metamorph, Twain, 3rd party specific, SDK |

The hermetically vacuum sealed cooling system keeps the Excel M at -30° C.



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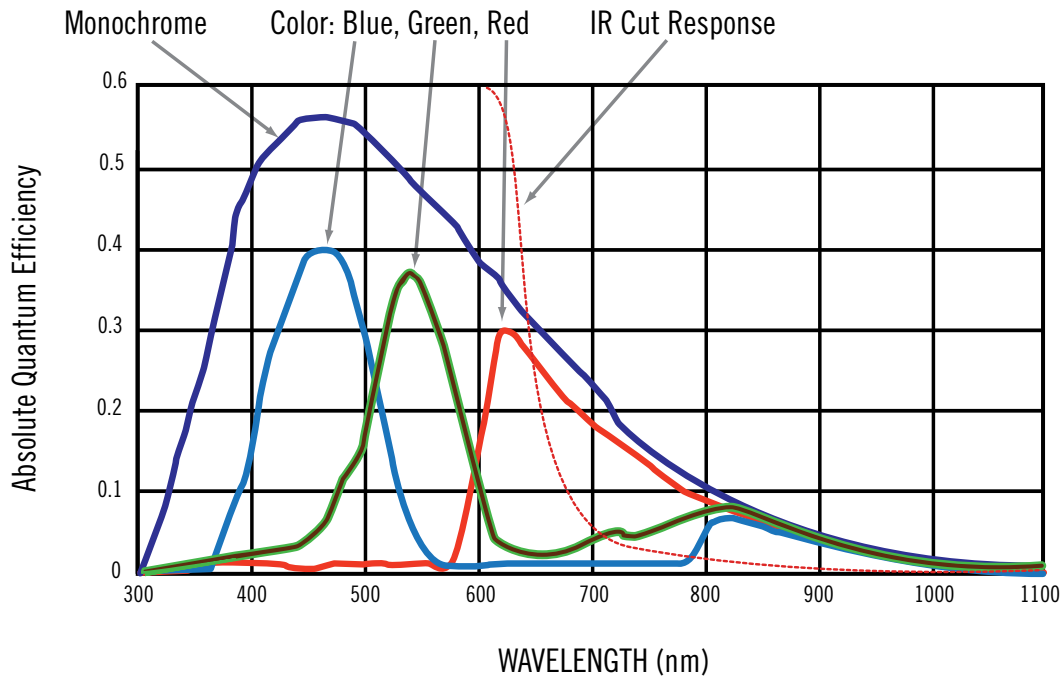
SPECIFICATIONS

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|----------------------|---|
| CCD Pixels | 4 million; 2048 x 2048 |
| Sensor | Kodak, KAI-4022 progressive-scan interline CCD (color or monochrome) |
| Pixel Size | 7.4um x 7.4um |
| Cooling | Two-stage Peltier cooling, hermetically vacuum sealed in ISO 14644-1(6) clean room |
| Cooling Temperature | -30° C |
| Digital Output | 12 bits |
| Frame Rate | 7.2 fps full resolution |
| Digital Interface | IEEE 1394 FireWire, 6 pin; IIDC standard Version 1.31 |
| Camera Firmware | Update via software |
| ROI Scan | User selectable and continuously variable to full resolution |
| Binning | Mono: 2x2, 4x4; Color: 3x3, 5x5 |
| White Balance | Auto, Manual, Auto Tracking |
| Gain | Mono: 0 to +25db; Color: 0 to +21.5db |
| Viewing Modes | 1:1, Fit to Window, Full Screen |
| Memory Presets | 15 User Defined Presets plus factory default |
| Video Interpolation | Bilinear, Bicubic, Nearest Neighbor, High Quality Bilinear & Bicubic |
| Exposure/Integration | Factory preset to 10 minutes (extended optional) Auto Exposure, Auto Gain, Auto Shutter |
| Trigger Types | Internal, External, Software |
| External Trigger | Mode 0: Asynchronous Reset (IIDC v1.31) Mode 1: Bulb Shutter Mode (IIDC V1.31) |
| External GPIO | One Input, One Output. Software accessible. Control Power: +3.3VDC limited to 100mA |
| Additional Features | Timestamp, Histogram, Camera Name |
| Lens Mount | C-mount with adjustable back focus. F-mount adapter optional. |
| Thread Mount | ¼" – 20 mount |
| Camera Power | 12V provided by IEEE 1394 port, <4.5W |
| Cooler Power | 12V@1.5A cooled |
| Operating System | Windows®XP, SP2, Linux®, Mac OS |
| Standards | FCC, part 15 class B, CE, RoHS |
| Software | Exponent capture software, Twain, 3rd party specific, SDK |

**specifications subject to change.*

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SPECTRAL RESPONSE



Note: Monochrome cameras have an "Anti-Reflective" coated clear window fitted in the C-mount focus ring to protect the sensor. This is not an IR cut filter. Color cameras have an "IR Cut" color balancing filter fitted in the C-mount focus ring.

Excel Camera Quantum Efficiency

- **Monochrome Cameras:**

55% @ 460 nm

- **Color Cameras**

Blue: 41% @ 460 nm

Green: 37% @ 540 nm

Red: 31% @ 620 nm



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Call for additional product information or for free product demos.

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