Lm11059
High Resolution 11 Megapixel USB 2.0 Traffic, Flat Panel Inspection and High Resolution Documentation Camera

High Resolution CCD Sensor with Global Shutter
Lumenera’s progressive scan Lm11059 digital camera is built for rugged 24/7 use. A proven high resolution 35 mm large format CCD sensor with a fully global electronic shutter captures excellent quality, high-speed images with zero blur. Completely integrated Canon EF lens controller offers increased longevity and durability (no external cabling is required). The industrial-grade Lm11059 is ideally suited for traffic monitoring, automated License Plate Recognition (LPR), flat panel and solar panel inspection, as well as high resolution documentation and ophthalmic imaging. The scientific grade option (-SCI) is built under a strictly controlled environment to ensure no visible defects are found in the optical path. This is a key requirement for applications using collimated light sources.

High Quality Images for Difficult Lighting Environments
The high quality CCD sensor provides both monochrome and vivid color images for the most demanding environments. Full streaming uncompressed video and still image captures are easily controlled through a set of stable and reliable USB device drivers. Region of interest and binning modes allow the camera to run at faster frame rates while only providing the image data you need. Image capture synchronization is achievable using either a hardware or software trigger and is complemented by 32 MB of on board memory for frame buffering to ensure image delivery.

Plug n’ Play with No Framegrabber
The compact, lightweight design of the Lm11059, measuring 76.2 x 76.2 x 82.6 mm, ensures easy integration into tight spaces and enclosures. The fully locking USB 2.0 cabling, power connector and digital interface ensure a simple plug-and-play installation. No framegrabber is required. Simplified I/O cabling is provided through a locking Hirose connector supporting 2 output, 2 input and 2 software configurable I/O ports.

Maximize Camera Performance Within Your Own Application
The Lumenera Camera SDK provides a full suite of features and functions that allow you to maximize the camera’s performance within your own vision application. The SDK is compatible with all of our USB and GigE-based cameras. Microsoft DirectX/DirectShow, Windows API and .NET API interfaces are provided, allowing you the choice of application development environments from C/C++ to VB.NET or C#.NET. Full inline IntelliSense autocompletion and documentation is provided with the .NET API interface and is accompanied by a full API manual describing all camera functions and properties.

Superior Technical Assistance Center
All Lumenera cameras are supported by an experienced team of technical support and imaging experts. We understand your imaging needs and are here to help you get the most out of your camera.

Features
- Canon EF lens mount with fully integrated controller for focus/auto iris offers increased longevity and durability
- Compact form factor measuring 76.2 x 76.2 x 82.6 mm for easy integration, without losing the image quality typical in larger sized cameras
- Fanless body, smaller footprint and lower power requirement than the original Lw series
- High quality Kodak KAI-11002 CCD sensor provides excellent sensitivity and color reproduction
- Standard industrial or optional scientific grade quality available
- Color or monochrome, interline transfer, progressive scan 11 MP CCD sensor
- Locking industrial USB, power and Hirose GPI/O connector for control of peripherals and synchronization of lighting
- 2 output, 2 input and 2 software configurable I/O ports
- 32 MB RAM frame buffer
- Simplified cabling - video, and full camera control over a single USB cable
- 8 mounting points and 2 tripod (1/4"-20) mounts
- Binning improves sensitivity and Region of Interest (ROI) provides higher frame rates
- FCC Class B, CE Certified
- Select 8 or 14-bit pixel data
- DirectX/DirectShow compatible
- Software compatible with Windows 8, 7, XP, Vista, 32 and 64-bit operating systems
- Complete SDK available
- Four (4) year warranty
Color Quantum Efficiency Curve

Monochrome Quantum Efficiency Curve

Sensor Specifications
- Image Sensor: Kodak KAI-11002
- Optical Format: 35 mm
- Active Area: 37.25 x 25.70 mm
- Resolution: 4008 x 2672 pixels
- Region of Interest Control: Any multiple of 8 x 8 pixels, 8 x 8 pixels minimum

Camera Specifications
- Frame Rate: 4.3 fps at full resolution, 13.7 fps at 640 x 480 (with ROI)
- Bit Depth: 8 or 14-bit
- Binning Modes: 2 x 2, 4 x 4 and 8 x 8
- Exposure Control: Manual and automatic control
- Exposure Range: 86 µs to 198.8 ms (video), 53 µs to 134.2 s (snapshot)
- Gain Control: Manual and automatic control
- Gain Range: 1 to 61.7 x
- White Balance: Manual and automatic control
- Trigger Modes: Hardware and software triggerable

Camera Characteristics
- Sensitivity: Excellent
- Dynamic Range: 66 dB
- Full Well Capacity: 60,000 e-
- Quantum Efficiency: 50% (mono-peak), 42% (color-peak)
- Read Noise: 30 e-
- Dark Current Noise: <50 mV/s at 20 ºC

Mechanical Specifications
- Data Interface: USB 2.0, locking connector
- General Purpose I/O: Locking Hirose
- Lens Mount: Canon EF mount
- Dimensions: 76.2 x 76.2 x 82.6 mm, 3.0 x 3.0 x 3.25 inch
- Mass: ~850 g
- Operating Temperature: 0 to 50 ºC
- Storage Temperature: -30 to 70 ºC
- Operating Humidity: 5 to 95 %, non-condensing
- Shock / Vibration: 50 g shock, 5 g (2 to 200 Hz) vibration

Camera Software
- Operating Systems: Windows XP, Vista, 8, 7, 32 and 64-bit
- Software Interfaces: Windows API, .NET, DirectX/DirectShow

Power and Emissions
- Power Consumption: ~6 W (average)
- Power Requirement: 12 V DC
- Emissions Compliances: FCC Class B, CE Certified
- Hazardous Materials: RoHS, WEEE Compliant
- Warranty: Four (4) year

System Requirements
- Recommended PC Specs:
  - Pentium 4, 1.3 GHz or higher
  - 512 MB RAM
  - 60 MB hard drive free space or more
  - USB 2.0 Port
  - Windows XP, Vista or 7

Ordering Options
- Lm11059M: 10.7 MP Monochrome Camera (Enclosed)
- Lm11059C: 10.7 MP Color Camera (Enclosed)
- LuCAMSW-DVD: DVD with user application software, camera device drivers and documentation (no charge accessory)
- LuSDK: Software Developer's Kit (Web Download)

Camera Includes
- Lai21224L: Locking 12 V DC power supply
- Lu803: 3m USB 2.0 A to B cable

Customization Options
- SCI: Scientific grade
- WOIR: Plain glass within lens mount
- WIR: With IR cut filter within lens mount
- WOG: Without any glass within lens mount
- WO CG: Without sensor cover glass
- WOML: Without sensor pixel micro lenses
- C1: Higher quality CCD sensor
- C0: Highest quality CCD sensor