

ISG LightWise FireWire™ Intelligent Cameras

IEEE-1394 IIDC DCAM Spec. Ver. 1.3.1 Fully Compliant
On-Board Image Buffer, FPGA & Processor for Easy Customization
Low Cost, Designed for OEM Applications & Field Upgradeable

Area & Line Scan Cameras
Global and Synchronous/Rolling Shutter Options
Very high frame rates in reduced Regions of Interest (Windows)

Support for 3rd Party Software (NI LabVIEW™, Norpix StreamPix, a&b Software ActiveDCAM & ImageWarp, Aphelion, Matrox Mil™, etc.)

These cameras come packaged with 1394 drivers, ISG GUI Control software and a user's manual. Support for **Windows 2000 & XP & LINUX.**

All cameras are compatible with National Instruments IMAQ IEEE-1394 driver, Vision Builder for Automated Inspection, & the Compact Vision System (CVS).

Applications include:

Security & Surveillance	Internet Monitoring	High Speed High Resolution Scanning
Sorting	Automated Inspection Systems	Bar Code reading
Machine Vision Systems	Encoding and Positioning	Web Inspection
Spectroscopy	Edge Detection	Metrology

Camera Features:

- All camera controls are done through software,
- Fully programmable dynamic range/gamma control LUT for any desired response curve.
- All cameras offer opto-isolated programmable I/O for triggering and strobe control capabilities.
- User-programmable controls include integration time, gain adjustments, offset, bit depth and data rate.
- Global shutter cameras feature multiple slope integration for extended dynamic range.
- The area cameras feature Digital Pan & Zoom hardware or Motion-JPEG as an option.
- All cameras weigh 210 g and have Dimensions (HxWxL) 38mm x 51mm x 72mm,
- Vibration (9-2K Hz):7G Shock:70G **C or CS-Mount** Cameras are powered via the 6-pin IEEE-1394 cable



LightWise Camera Specifications

Area Array Cameras	Imaging Device:	Sensing Area:	Pixel Size:	Pixels (H x V):	Pixel Depth:	Frame Rate:	Shutter:	Dynamic Range:	Operating Temp.:
LW-WVGA-G-1394	Wide-VGA 752 x 480 CMOS Mt9V022	4.55mm x 2.97mm (1/3"format)	6.0 micron square	752 x 480	10 / 30 bit (mono / color)	60 fps 752 x 480 72 fps 640 x 480	Global Snapshot	> 60 db normal - 80 to 100db w/High DR	-10° C to 65° C
LW-1.3-S-1394	1.3 Megapixel CMOS MT9M001	6.7mm x 5.3mm (1/2"format)	5.2 micron square	1280 x 1024	10 / 30 bit (mono / color)	30fps (1280x1024), 90+fps VGA	Synchronous Rolling	> 62 db	-0° C to 60° C
LW-1.3-G-1394	1.3 Megapixel CMOS IBIS-5a	8.6mm x 6.9mm (2/3"format)	6.7 micron square	1280 x 1024	8 / 10 Mono-only	27fps (1280x1024), 90+fps VGA	Global Snapshot	> 64 db and 100 db in High/DR	-0° C to 60° C
LW-3-S-1394	3.1 Megapixel CMOS MT9T001	6.6mm x 4.9mm (1/2"format)	3.2 micron square	2048 x 1536	10 / 30 bit (mono / color)	12fps (2048x1536), 90+fps VGA	Synchronous Rolling	> 61 db	-0° C to 60° C
LW-1.3-S-1394-Ethernet	1.3 Megapixel CMOS MT9M001	6.7mm x 5.3mm (1/2"format)	5.2 micron square	1280 x 1024	10 / 30 bit (mono / color)	30fps (1280x1024), 90+fps VGA	Synchronous Rolling	> 62 db	-0° C to 60° C
LW-5-S-1394	5.1 Megapixel CMOS MT9P001	5.7mm x 4.28mm (1/2.5"= 1/2" format)	2.2 micron square	2592 x 1944	10 / 30 bit (mono / color)	12fps (2592x1944), 70fps VGA	Synchronous Rolling	> 66 db	-10° C to 65° C
LW-6.6-S-1394	6.6 Megapixel CMOS IBIS4- 6600	10.5mm x 7.74mm (1"format)	3.5 micron square	3002 x 2210	10 / 30 bit (mono / color)	5fps (3002x2210), 90+fps VGA	Synchronous Rolling	> 61 db	-0° C to 50° C
LW-8-S-1394	8 Megapixel CMOS MT9E001	5.7mm x 4.28mm (1/2.5"= 1/2" format)	1.75 micron square	3264 x 2448	10 / 30 bit (mono / color)	12fps (2592x1944), 70fps VGA	Synchronous Rolling	> 66 db	-0° C to 60° C
Line Scan Cameras									
LW-ELIS-1024a-1394	Linear CMOS PanavisionSVI	8.0 mm x 125 microns (1/2"format)	7.8 micron x 125 micron Rectangular	1024 x 1	14-bit	10K lines per second Pixel Clock 10MHz	Global Snapshot	> 86 db	-0° C to 55° C
LW-SLIS-2048a-1394	Linear CMOS PanavisionSVI	14.3 mm x 7.0 microns (1"format)	7.0 micron x 7.0 micron square	2048 x 1	12-bit	27K lines per second Pixel Clock 60MHz	Global Snapshot	> 72 db	-10° C to 55° C
LW-PE-2048-1394	Linear Perkin Elmer CCD	28.7 mm x 14 microns (~35mm format)	14 micron x 14 micron square	2048 x 1	12-bit	18K lines per second Pixel Clock 40MHz	Global Snapshot	> 72 db 60mm x 66mm x117mm	-10° C to 55° C Weight 300 g

Remote-Eye Custom Camera Platform

High Performance CCD or CMOS Image Sensor
Sensor Type: either Area or Line Scan

Remote Head
via ribbon cable - up to 14 inches
via HDMI cable - up to 21 feet

Resolution: any resolution required
Monochrome & Color Versions Available.

On-Board FPGA & Linux CPU for User-Configurability
On-Board Multiple Frame Image Buffer

Global Electronic or Synchronous Shutter Modes

Data Rate: Any frame or line rate required

Data Resolution: any resolution A to D required

Fully programmable Dynamic Range / Gamma
Control LUT for any response curve desired.

Dynamic Range > Depending upon sensor used

On-Board Multiple Frame Image Buffer Up to 128 MB

ISG Integrated Image Processing:
Color Interpolation & Color Balance
Auto / Manual Exposure
Auto Calibration and Correction
Real-Time JPEG & Motion-JPEG Compression
High Quality Digital Pan & Zoom Feature

Industry Standard **10/100 Ethernet** Interface

NTSC/PAL Interface for local display monitoring

Single 12V Supply
Compact Form Factor
User Programmable Exposure Timing & Frame Rate
I/O for Triggers and Synchronization Flexibility

<http://www.isgcameras.com>