A History of Engineering Excellence

Experience

Finger Lakes Instrumentation has been supplying high performance imaging solutions to a wide variety of markets for 20 years. We began designing and manufacturing cooled CCD cameras in 1998. We incorporated in 2000. Since that time we have shipped thousands of cameras to over 50 countries worldwide.

Our first cameras were designed for astronomy and astrophotography, but we soon found customers in other applications, including fluorescence imaging, TEM, chemiluminescence, x-ray, forensics, and spectroscopy.

We have designed CCD cameras for more than 50 different CCDs from ON Semi, e2v, Sony, Hamamatsu, and Fairchild. We currently manufacture cameras using more than 40 different CCDs. In January 2018 we introduced our first cooled scientific CMOS cameras. We also develop best-in-class accessories for imaging, including high speed filter wheels and precision focusers.

Customers

The majority of our sales are sold to life science instrumentation companies who integrate our cameras and filter wheels into their products. In the past, many customers saw FLI as an “astronomy camera” company because of the award-winning images taken by our astronomy customers. Astrophotography pushes the boundaries of image acquisition and processing and is ideal for showing the virtues of our cameras.

Electrophoresis gels and microtubing plates are not as photogenic. In addition, companies using our cameras in their products normally want to remain anonymous.

Sensors optimized for one market quickly find homes in other applications. Eliminating channel cross-talk in a multi-channel astronomy camera benefits life scientists using the same sensor. Increased frame rates developed for life scientists were quickly adopted for space-related applications needing higher time resolution.

Markets

Every FLI product is designed and manufactured in New York, USA. The majority of our products however are exported! We supply to OEMs in North America, Asia, the Middle East, and Europe. Our customers have the confidence to install our products in remote automated observatories from Finland to the equator to Antarctica, all around the globe.

FLI is ready to assist you with your camera requirements whether you need hundreds of cameras with consistent batch to batch performance or a single camera optimized for a unique application.

FLI is a registered trademark of Idex Health & Science LLC.

Eta Carina, courtesy Wolfgang Promper. ProLine PL16803 Camera.
Cooled Cameras

Why Cool the Sensor?

Cooling improves the signal-to-noise ratio and minimizes cosmetic defects in sensors.

Kepler Cameras
FLI’s new Kepler series of cooled cameras supports higher throughput, up to 35 channels, and a variety of new sensors, including scientific CMOS. The Kepler KL400 has high sensitivity (95% peak quantum efficiency) coupled with low noise (1.5 electrons) even at video frame rates. The KL4040 is a high QE front illuminated camera with a generous 52mm imaging diagonal. The game changing KL6060 will feature a 38MP, 87mm diagonal sensor (Q4 2019). The KL400 & KL6060 are available with front or back illuminated sensors.

Modularity
The majority of FLI cameras are exported; to minimize shipping costs, Kepler’s shutter, fans, and digital board have all been designed to be user-replaceable.

ProLine CCD Cameras
ProLine cameras offer the deepest cooling of our standard cameras, and provide two power and two USB connections for FLI accessories. A complete imaging system (camera, filter wheel and focuser) can be controlled with a single power and USB cable from your PC. High and low data rates are optimized using independent analog to digital converters. Both the inner and outer chambers are sealed for harsh environments.

MicroLine CCD Cameras
MicroLine cameras cover a broad range of possibilities, from small interline transfer sensors with a C-mount front flange to the massive 50-megapixel ML50100. Despite being smaller and lighter than ProLine cameras, standard MicroLines cool within a few degrees of their larger sibling, and substantially deeper than competitive models. With the optional copper heatsink, MicroLine cooling meets or exceeds ProLine cooling. Smaller sensors have a shorter back focal distance than ProLine cameras. MicroLines support dual and quad channel readout with some sensors.
Atlas Focuser

FLI developed the Atlas focuser to satisfy the demand for high precision focusing on telescopes with heavy loads. The Atlas is the finest available focuser for large sensors: 105,000 steps with 85 nm per step. The Atlas's precision drive screws guarantee superior positional accuracy and repeatability in any orientation. Custom linear bearings provide extreme torsional rigidity. The Zero Tilt Adapter™ ensures no tilt, tip, or marred surfaces.

CenterLine Filter Wheels

CenterLine color filter wheels have two overlapping filter carousels with a central aperture. Symmetrical weight distribution eliminates changes in the telescope's balance as it tracks across the sky. CenterLines are also ideal for prime focus installations where a symmetric location over the secondary mirror is beneficial. The CL-1-10 has two 5 position carousels for 50 mm square filters, ideal for the PL16803. The CL-1-14 has two 7-position carousels for 50 mm diameter filters; the CL-1-20 has two 10-position carousels for 25 mm diameter filters.

CFW Filter Wheels

FLI has developed filter wheels accepting a broad range of filter sizes and positions. Our color filter wheels' robust mechanical designs provide the basis for stunning, uncompromising images. Each FLI color filter wheel is precision engineered with a highly accurate no-slip drive chain and stepper motor. The large diameter pivot pin and bushings are precision ground and matched for smooth, quiet no-fuss operation. FLI color filter wheels do not use internal lights for homing, so your images are protected from stray light interference.

Atlas Focuser

FLI developed the Atlas focuser to satisfy the demand for high precision focusing on telescopes with heavy loads. The Atlas is the finest available focuser for large sensors: 105,000 steps with 85 nm per step. The Atlas's precision drive screws guarantee superior positional accuracy and repeatability in any orientation. Custom linear bearings provide extreme torsional rigidity. The Zero Tilt Adapter™ ensures no tilt, tip, or marred surfaces.