

# Performance Beyond Compare

DVR Express® CLFC Video Recorder Card

## DVR Express® CLFC Video Recorder Card

### A high-speed camera recorder designed for pure performance

Its maximum sustained video recording data rate to hard disk is 850 MB/s. Need we say more? The DVR Express® CLFC is the first complete single PCI card solution to provide real-time video recording to hard disk for high-speed cameras.

The CLFC is a true recording subsystem that works in low-cost desktop computers and high-powered workstations. Software on the host computer initiates and terminates recording, but no computer resources are utilized for writing video data to storage.

### Fibre Channel storage interface provides superb performance, huge capacity, and protection from data loss

The CLFC's Fibre Channel storage interface consists of 5 independent, 2 Gbit/s fibre channel buses. The maximum configurable storage capacity is a whopping 189 000 GB, providing up to 61 hours of recording at 850 MB/s. The CLFC employs RAID 3 data storage so that no data is lost if a drive ever fails. Accessories for internal and external drive configurations are available from IO Industries.

### Multiple high-speed cameras recorded with one computer system

Multiple high-speed cameras can be recorded with a single computer system by installing multiple CLFC cards.

### Compatible with sophisticated video recording software packages

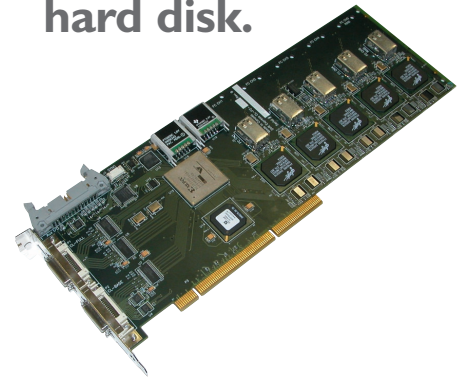
The CLFC is fully supported by IO Industries Streams™ 5.0 and IO Industries Video Savant® 4.0 digital video recording software packages.

### Applications in Science, the Military, Industry, and Entertainment

- High-Speed Digital Video Recording
- Ultra High-Resolution Image Capture
- Projectile Recording
- Materials Testing
- Crash Tests
- PIV (Particle Image Velocimetry), 2D, 3D
- Remote Sensing
- Explosives Testing
- Special Effects Recording
- Digital Cinema
- Computer Display (DVI Output) Recording
- Industrial Process Recording



Single PCI card solution for high-speed video capture direct to Fibre Channel hard disk.



### DVR Express CLFC Highlights

- Ideal for recording high-speed cameras for long durations
- Continuous, uncompressed video recording to disk at rates up to 850 MByte/s for up to 61 hours
- Supports Camera Link Base, Medium, Full, and Full-80 bit camera formats; Option for dual Camera Link Base inputs
- RAID 3 protection against data loss
- Live video display on host monitor during recording
- Video frame time stamping
- Record multiple cameras by installing multiple cards in system
- Maximum storage capacity is 189000 GB
- 64-bit/66 MHz full-length, universal PCI card

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The Experts in DVR Technology

# Built for Speed

## DVR Express® CLFC Specifications

### PC Interface

Form Factor	PCI full length card
PCI Slot	Works in all PCI slot types
PCI Bus	64-bit/66 MHz Universal PCI card
Operating System	Microsoft Windows XP Pro and Windows 2000

### Video Interface

Video Inputs	Available in two configurations: a. Camera Link - Base, Medium, Full, Full-80 bit b. Camera Link - Dual Base (two asynchronous cameras), Medium
Maximum Input Clock Frequency	85 MHz
Maximum Input Data Rate	85 MHz x 80 bits
Camera Readout Formats	Area scan, and line scan
Pixel Formats	Monochrome 8 to 16 bits Color RGB-24 bit, RGB-30 bit, RGB-48 bit, and 4 channel modes
Acquisition from Multiple Cameras	Install multiple CLFC cards to record from multiple cameras
Triggering	LVDS - 2 programmable outputs, 2 inputs TTL - 12 programmable bidirectional lines Camera Link CC lines (programmable)
Multi-Card Mode for High-Speed Cameras	Install multiple CLFC cards and use multi-board synch feature to record at data rates of N x 850 MB/s <sup>1</sup>
Video Pre-Processing Options	Time stamp (Universal Time Code) on video frames Programmable frame skipping Programmable area of Interest (AOI) capture Programmable frame size scaling
Live Video Display	Live video streamed over PCI to host memory for display on host monitor when recording is on or off
Video Playback	Video playback from CL160 to host memory for display/analysis

### Video Storage

Hard Drive Interface	Fibre Channel Arbitrated Loop (FCAL) at 2 Gbps
Number of Drive Channels	5 independent fibre channel buses
Hard Drive Compatibility	Seagate fibre channel hard drives, all 10K/15K RPM models; For other manufacturers, contact IO Industries
Maximum Sustained Recording Rate	850 MB/s - using all 5 channels
Maximum Storage Capacity	189 TB <sup>1</sup> (126 drives per channel x 5 channels x 300 GB per drive)
Data Storage Protection	RAID 0 - Data striped across 2 to 5 channels; provides best throughput; no protection against data loss RAID 3 - Data striped on 2 to 4 channels, additional channel used for parity; good throughput but reduced storage capacity; protects against channel failure or multiple drive failures on single channel
Data Compression	Lossless storage Pixel bits packed for 100% efficiency in data storage; Reduces storage requirement for 10-bit and 12-bit cameras
Storage configuration	Internal and external fibre channel drive configurations are available only from IO Industries; Contact IO Industries for details

### Application Software Support

	IO Industries Streams 5.0 digital video recording software IO Industries Video Savant 4.0 digital video recording software
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<sup>1</sup> 1 TB = 1000 GB = 1 000 000 MB = 1 000 000 000 000 bytes