## Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Introduction</td>
</tr>
<tr>
<td>4</td>
<td>Overview</td>
</tr>
<tr>
<td>6</td>
<td>Live, Remote Video Production</td>
</tr>
<tr>
<td>7</td>
<td>Broadcasting and Streaming</td>
</tr>
<tr>
<td>8</td>
<td>Multi-Community Contribution</td>
</tr>
<tr>
<td>10</td>
<td>Package</td>
</tr>
<tr>
<td>11</td>
<td>System Diagram</td>
</tr>
<tr>
<td>12</td>
<td>Specifications</td>
</tr>
</tbody>
</table>
Introduction

One operator can easily manage a live, multi-camera production with LEIGHTRONIX PolyOptix® digital video recording and multi-camera control system. Each PolyOptix system includes a PEGvault-SD™ digital video encoder with camera control technology to simplify the creation of professional, broadcast quality video captured from multiple vantage points.

PolyOptix was designed for government agencies of all sizes, educators, and any other organization seeking a compact, all-in-one system for remote event recording. This camera control solution is ideal for documenting public meetings, fine arts concerts, local sporting events, or any other event that requires multiple camera angles to capture all of the action.
Overview

The PolyOptix system is a complete camera control and video recording package containing carefully selected professional components built upon high-performance, low cost video technologies. The package includes the LEIGHTRONIX PEGvault-SD digital media encoder with PolyOptix camera control technology and three robotic pan/tilt/zoom digital video cameras. The package also includes a four channel live production switcher.

- **Cameras**: high-quality CCD cameras feature high speed, wide range pan/tilt remote control and 10x optical zoom
- **Switcher**: digital processing live production video switcher with built-in time base corrector and three camera source inputs plus auxiliary input for video presentation media
- **Recorder**: PEGvault-SD digital video encoder produces high quality digital media files that can be automatically transferred to a broadcast center or online video library

See page 10 for more information on the complete PolyOptix package.
Easy-to-Use with Professional Results
A PolyOptix system makes video capture a snap for anyone. Through a browser-based user interface and camera angle quick key presets, the PEGvault-SD automatically controls camera angles, camera transitions, and switching. With little to no training, anyone can manage a remote video production like a professional.

Multiple Vantage Points
Each quick key view preset is easily configured by selecting one of the three cameras and manually adjusting the view with the pan/tilt/zoom controls.

In order to avoid camera movement between views utilizing the same camera, an alternate, secondary camera angle may be entered for each view using one of the remaining two cameras.

Each view is identified by a user-defined text label. Users also have the option to upload thumbnail images to help identify each view.

Save Event Setup
When all of the desired camera views have been entered, the new preset configuration file may be saved for the corresponding event, preserving the camera settings and allowing multiple, custom configurations to be defined for any event in advance.
PolyOptix
Digital Video Recording and
Multi-Camera Control System

Live, Remote Video Production

Easy Event Capture

Celebrations

Ceremonies

Sporting Events

Distance Learning

Meetings

Concerts

Seamless Transitions
At the start of each event, the camera control operator simply clicks on the Start Recording button and utilizes the quick key preset buttons to focus attention on pre-determined subjects throughout the event. Camera views are automatically readied, allowing the operator to “take” the next shot while the PEGvault-SD controls the live switcher. With ultra smooth camera transitions and steady shots, the result is a polished final production.

Presentations
During an event, operators can also incorporate audio-visual resources such as presentation slides, video, and other media by selecting the media input on the browser-based interface. External media sources such as a slide show presentation will require an external signal conversion device to convert the computer video (VGA) to a composite or S-video signal.

Index Points
As the meeting progresses, video index points can be created in real time using the convenient Index Point button. Index points serve as video markers within the recorded video, making it easy for viewers to gain fast access to topics of interest within each video. Video index points integrate exclusively with the PEG Central® Web media hosting and streaming video-on-demand service from LEIGHTRONIX.

Live Broadcast/Webcast
While the PEGvault-SD is recording, the encoder’s looping in/out connections allow the live signal to pass through for connection to broadcast or cable television transmission systems or a live streaming device such as the LEIGHTRONIX PEGsteam-SD2™ live streaming media encoder.

Automatic File Transfer
Once the operator stops the recording process, the PEGvault-SD will automatically forward the newly created digital media file to a NEXUS® series broadcast server or a PEG Central streaming video-on-demand account. The PEGvault-SD can also transfer files to third party broadcast video servers with File Transfer Protocol (FTP) capabilities.
Diverse Video Distribution Options

- Broadcast television and local cable
- Remote, Next to Live™ broadcast (PEGcasting™)
- Live Webcasting
- Online video-on-demand streaming

This highly versatile solution makes integration with LEIGHTRONIX broadcast and streaming products and services easy. Compatibility with these products and services allows for remote Next to Live broadcasts, live Webcasts using the PEGstream-SD2, and automatic transfers of digital media files to LEIGHTRONIX NEXUS series video servers for rebroadcast and/or to a PEG Central Web media hosting and streaming video-on-demand account.
The affordability and ease of use of PolyOptix make it an ideal solution for multiple communities and organizations who share a local cable or video-on-demand streaming site. Any number of remote systems can be installed in multiple locations, with each system capturing meetings and events and forwarding digital content to a common broadcast center or online video library.
The PolyOptix solution is available for purchase from LEIGHTRONIX as a complete recording and multi-camera control system. The table below outlines the features and functionality of the PolyOptix system.

### Included Components

<table>
<thead>
<tr>
<th>Included Components</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGvault-SD w/PolyOptix Camera Control Technology</td>
<td>$9,995</td>
</tr>
<tr>
<td>Three Robotic Digital Video Cameras</td>
<td>✓</td>
</tr>
<tr>
<td>Camera Control Cables</td>
<td>✓</td>
</tr>
<tr>
<td>Live Production Video Switcher</td>
<td>✓</td>
</tr>
</tbody>
</table>

### Included Features

<table>
<thead>
<tr>
<th>Included Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web-Based User Interface</td>
</tr>
<tr>
<td>18 Preset Camera Views</td>
</tr>
<tr>
<td>Smooth Transitions Between Views</td>
</tr>
<tr>
<td>Presentation Media Input (Video)</td>
</tr>
<tr>
<td>Fade to Background Color</td>
</tr>
</tbody>
</table>

Additional equipment may be required upon installation such as power distribution, racks and mounting hardware, and any additional video/audio electronics peripherals as necessary. Consult your local video dealer, integrator, or a professional video consultant.
Typical PolyOptix System Diagram*

*Components other than the cameras, switcher, and PEGvault-SD are not included.
Specifications

PEGvault-SD Digital Video Encoder

The PEGvault-SD is a hardware-based, digital video encoder/recorder capable of producing digital media files for broadcast or optimized for online, streaming video-on-demand systems including PEG Central, the streaming video-on-demand solution from LEIGHTRONIX.

- Video Standard: NTSC, standard definition, 4x3 aspect ratio
- Video Encoding: MPEG-2, full D1 and half D1 resolution, 1.5-10Mb/s variable bit rate encoding, 3-8Mb/s constant bit rate encoding
- Video I/O: 1 BNC video input with looping BNC output, NTSC composite video 1V P-P
- Audio Encoding: MPEG-1 layer II, 44.1K and 48K sampling rates, 192Kb/s and 224Kb/s audio bit rates
- Audio I/O: 1 pair (two channel) RCA audio inputs with looping RCA audio outputs, -10dBV unbalanced line level
- Video/Audio Recording Capacity: maximum individual MPEG program length of 23 hours, 59 minutes
- Standard Digital File Storage: internal 250 gigabyte hard drive
- Video/Audio Recording Capacity: maximum individual MPEG program length of 23 hours, 59 minutes

Live Production Video Switcher

The switcher is equipped with four input channels, three camera inputs and a presentation media input. Each of the four channels is capable of accepting a composite or S-Video signal.

The switcher is also equipped with two microphone inputs (1/4” phone) and an auxiliary, two channel (unbalanced RCA) input. The audio inputs are highly versatile and may be interfaced with user selected microphones and other audio switching and monitoring devices (not included in package).

The video switcher is equipped with two composite video program outputs, one S-Video program output, and a third quad preview output showing all four inputs in a single display.

- Four Channel, Digital Processing, Live Production Video Switcher
- Quad Channel Time Base Correction: Full frame synchronization, 4:2:2, 13.5Mhz
- Video Standard: NTSC, standard definition, 4x3 aspect ratio
- Video I/O: Inputs: 4x composite, 4x S-Video, outputs: 3x composite and 1x S-Video or 2x composite, 1x component
- Audio I/O: Inputs: 2x unbalanced RCA and ¼” microphone, outputs: 2x unbalanced RCA
- Power - 12V 1.5A DC 110/220 power supply included
Cameras
The PolyOptix system package features high-quality, robotic pan/tilt/zoom digital video cameras. The cameras are fully remote control capable, and feature high-speed, quiet pan/tilt operation along with 10x optical zoom and fast, stable automatic focus.

- Video Standard: NTSC, standard definition, 4x3 aspect ratio
- Effective Pixels: 768 (H) x 494 (V)
- Lens: 10x optical zoom
- Auto Exposure: auto, manual, priority AE, exposure compensation, back light compensation
- Horizontal Resolution: 470 TV lines (wide end)
- Minimum Illumination: 3.5 lx (F1.8)
- Dimensions: (W x H x D) 4 1/2 x 4 3/4 x 5 1/4 inches
- Weight: 1 lb, 14 oz.
- Power: 13.2 W (at 12 Vdc), power supply included

Control Cabling
The package includes one primary and two secondary camera control cables. All provided cables are 50 ft in length. Low cost, alternate cables of varying lengths are available from third party vendors.

- Primary Camera Control Cable: RS-232C VISCA interface cable, D-sub 9-pin male to mini-din 8-pin male, interconnection from PEGvault-SD to camera 1, 50 ft
- Secondary Daisy-Chain Control Cable: RS-232C VISCA interface cable, mini-din 8-pin to mini-din 8-pin daisy chain interface cable from camera 1 to camera 2 and camera 2 to camera 3, 50 ft

Contact LEIGHTRONIX for more information on the PolyOptix system and components.
About LEIGHTRONIX

LEIGHTRONIX is recognized as an industry leader in specialty video equipment design and manufacturing, including digital video solutions, television automation, live and video-on-demand streaming media, and remote equipment control. A model of stability and longevity in the quickly evolving professional video market, LEIGHTRONIX continues to set standards in product value and versatility that exceed customer expectations in both product performance and support.

Exceptional product reliability, a standard 5 year warranty, and cost-free technical support have made LEIGHTRONIX one of the most trusted names in the industry.