IP Centric Video Wall Solutions
For Control Centers

Full HD Resolution
Novel Cooling Mechanism
High Brightness LED/UHP Series
Browser/Server Based Architecture

www.deltadisplays.com
As a global multi-billion dollar company, Delta places innovation, quality and reliability at the heart of its culture. This focus and unrelenting drive to deliver the best have helped Delta achieve its leadership position in the control room video wall Display market.

Delta prides itself in producing its entire video wall system in-house based on its own design and manufacturing capabilities. This includes the projection engine, cube mechanics and controllers. Delta even manufactures its own color wheel and other optics including the lens. This philosophy provides the company with full control over the quality and costs of the system. This is critical for long-term reliability and long-term support, the important factors to consider when choosing your control room display.

The unique combination of DLP expertise, in-house design and manufacturing excellence, and unrelenting dedication to quality and reliability, ensures that you will receive state-of-the-art performance, superior quality and exceptional levels of reliability for your Delta video wall solution.

CONTROL ROOMS ARE THE NERVE CENTER OF ANY MAJOR OPERATION. WHETHER IT’S THE DISTRIBUTION OF ELECTRICITY, REFINING OF PETROCHEMICALS, SURVEILLANCE OF CITY STREETS OR MANAGING A MAJOR DISASTER, THE CONTROL ROOM HOLDS THE REINS OF THE OPERATION AND MUST HAVE A TIGHT GRIP ON IT AT ALL TIMES.

SECOND TO SECOND, Minute By Minute.
To do this effectively, the control room needs clear, precise & accurate information, which typically comes in from a variety of different sources: from CCTV cameras and instrument sensors to regional NOCs and substations. Control rooms simply cannot afford downtime. All this information needs to be continuously monitored, comprehended and acted upon.

Because of their ability to display a vast array of information simultaneously and present it collectively to a wide audience these large high – resolution displays (often known as video walls) are the backbone of any command and control center. They are vital tools for collaborative monitoring and decision making.

**Largest OEM of Optical Engines in the World**

Delta’s extensive experience in DLP® technology is unsurpassed in the marketplace. No other company has more accumulated experience in DLP engine design and manufacturing than Delta.

**Manufacturing Leadership**

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**Delivering You the Detail**

DLP technology used in all Delta’s video wall displays brings the ultimate visual experience to your control room. Delivering sharp, crisp video images and clear, easy-to-read text and graphics, DLP technology ensures that your control room operators always have the detail to perform at their best.
Enabling Your Staff To Make Critical Decisions

The projection engines used in all Delta rear® projection video walls are powered by DLP® technology. Generating extraordinary image quality with incredible color depth and® contrast, DLP® technology brings video images to life and enables detailed data to be read with ease, extremely important factors in® a control room environment. DLP® technology is also renowned for its robustness and long-term reliability.

At the heart of a DLP® projection system is the DMD chip which contains an array of up to 2 million hinge-mounted microscopic mirrors. Each mirror can switch on and off up to several thousand times a second, enabling it to reflect up to 1,024 shades of grey and create up to 35 trillion colors.

Boasting Dynamic high Contrast ratios, (1,500,000:1) DLP technology delivers crisp, sharp whites and deep dark blacks producing 3D-like images that almost pop out of the screen.

DLP Technology:
The Hands-Down Winner

World-class Image Processing

Whilst DLP technology plays a key role in the high image quality delivered by Delta's video walls, it is Delta's powerful image processing which truly sets it apart from its rivals. Incorporating 10-bit HQV processing and SIMD (Simple Instruction Multiple Data) array with 3K processors, Delta's image processing unit delivers you the most advanced processing available on the market today. Working at a rate of 1 trillion operations per sec, the processor scales all incoming signals to the native resolution of the display and then enhances the image, removing any artifacts caused by the conversion and transmission of video.

The enhancement is performed with fourfield motion adaptive de-interlacing, multi cadence tracking, expanded 10-bit color processing and detail enhancement. The result transforms standard-definition sources to HD quality and makes HD look even more detailed. Moreover, Delta's HQV image processing provides real-time clean up of highly compressed video, reducing compression artifacts of block and mosquito noise from lower-quality sources.

One Trillion Operations Per Second.
Enabling Your Staff To Make Critical Decisions

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Solutions For Every Control Room Application

Delta offers an extensive product portfolio with over 40 “off-the-shelf” products to suit every application and installation scenario. Delta’s cubes (as they are commonly known in the industry) are available in a range of resolutions including XGA (1024 x 768), SXGA+ (1400 x 1050), HD (1920x1080) and WUXGA (1920x1200).

Cubes are specially designed to be tiled together to form screens of extremely high resolutions.

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Over 40 Products To Choose From

Delta video walls now come with Next GEN LED light source.

LED illumination offers you an array of performance enhancements – both in image quality and cost of ownership. By replacing the color wheel and UHP lamp with three high power solid state light emitting diodes (red, green and blue LEDs) you achieve a much wider color gamut resulting in a much richer visual experience. There is also a 25% increase in perceptual brightness as LEDs deliver much more saturated colors. With a brightness output of 750 lumens, Delta’s LED-lit video walls are the brightest on the market. LEDs also enable you to control the brightness and contrast of your image more accurately.

Wider Color Gamut With Next GEN LED Illumination

With their extremely long lifetime (Eco mode 80,000hrs), LEDs do not need regular replacement, meaning you will have no consumables up to 6 years – even with a 24/7 operation & also possible to replace on-site whenever required. As LED is a flat light source (compared to a point light source of a lamp), they offer higher reliability. Even if one or two LEDs fail there is no loss of complete image & content is still displayed using balance LEDs. All this translates into lower maintenance and thus a lower total cost of ownership.
Front Access Saves you Space

Most Delta video walls are available with a front access option. A unique motorized screen lifting up from the front optimizes the use of space making the installation in compact rooms possible.

Pixel-Perfect Alignment

Near-Seamless Displays

Unique Color Sensor Design

Innovative Lamp Design

Delta’s lamp-lit video walls feature a unique dual lamp design in which both the lamps are mounted in a fixed position. This means that no mechanical motion is required during change-over, eliminating the risk of losing an image during a lamp switch. This offers the highest level of redundancy for mission critical applications, where loss of an image for more than a split second could spell disaster. Lamps can be replaced – post failure – without shutting down the system. The additional benefit of this design is that no periodic maintenance is required to maintain the switching mechanism in working condition resulting in lower operational and maintenance costs.

Both lamps can be used in either a “cold redundant” or “hot redundant” mode. When used simultaneously (hot redundant), a much brighter image can be obtained, which is useful in environments with high ambient light. It also provides the option to use sufficiently degraded lamps simultaneously when a single lamp does not deliver an acceptable image. High power UHP (Ultra High Pressure) lamps are used in all Delta lamp-lit systems delivering an impressive brightness output level of up to 2200 ANSI lumens. The UHP lamps also boast a long lamp lifetime of up to 10,000 hours, making them ideal for 24/7 operations.

Advanced Screen Design

When selecting the right screen is critical to maintaining a good display over time. The standard screen used on all Delta cubes is the Cross Prism Screen FXS/XPS which offers unsurpassed contrast, wide viewing angles and superb centre-to-corner brightness uniformity. The advanced screen design incorporates a Fresnel lens and two crossed prism Lenticular lenses, ensuring maximum brightness and minimum glare. The screens feature a unique glass back to prevent bulging and are extremely tolerant of high ambient light, making them ideal for control room environments.

Other screen options that are available include Black Bead Screens and Ultra High Contrast screens. Custom screens can also be built to meet your specific requirements.

Advanced Screen

The projection engine resides inside a specially designed enclosure which also holds the display screen. These cubes – as they are known – are modular in nature allowing you to stack them both horizontally and vertically to form large displays of any size or form. Various sizes of cubes include 50”, 67”, 70” and 80” which can be customized into curved displays to meet your specific requirements.

Sharp focus & no text over-lapping allows users to read even the corner text with ease.

Seamless Displays

The projection engine is mounted inside the cube on a six-axis adjustment base. This base provides the ability to make precise geometric adjustments in six directions to obtain pixel-perfect alignment between individual cubes. Electronic adjustments can also be made afterwards for fine-tuning at a pixel level. This enables physical seams between screens of neighboring cubes to be adjusted to less than 0.2mm, delivering a near-seamless picture. For rear access cubes, the six-axis base is provided with a manual adjustment. In front access cubes, the adjustment is motorized.

Perfect Alignment

To ensure the colors of individual cubes are perfectly matched and a perfectly uniform image is displayed across the entire display, Delta incorporates an auto-color calibration system based on a unique color sensor design.

With sensors positioned on the light beam of the optical lens, the color calibration system encompasses the tolerances of all the optics in the system – including the lens and glass components. The system automatically adjusts the color temperature and brightness, ensuring control room operators view a perfectly uniform image across the entire screen at all times.

Auto Color & Brightness

Front Service

Innovative Lamp

Even For A Second!
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Icon Pro Series Controller

The Delta Icon Pro Series Controller is a multi-screen graphics controller running on the Windows® Platform. The Icon Pro Series controller drives multiple cubes to form one large logical screen called a video wall or a data wall. The video wall displays graphics information from the controller workstation as well as information from various sources connected to the controller.

Key Features

• Raid 0, 1, 5 and 10 support
• KVM over LAN, serial over LAN, LAN alert
• Redundant and hot swappable components
• Remote management for hardware functions
• Xeon Quad Core with multiple processor support
• Displays resolutions up to 1920 x 1200 per channel
• Switch fabric chassis for high demanding applications
• CPU, fan, temperature and chassis intrusion detection and alarm
• SNMP trap, event log, remote power control, command line interface
• Runs on all standard Windows® operating systems and with Linux® Emulation
• Input capability (DVI-D, RGBHV, HD video, display over LAN, VNC, IP stream decoding)
• Supports decoding of multiple camera types, multiple formats, custom formats and resolutions from QCIF, D1 to HD
Display Management

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Distributive Vision Control System

Delta’s Distributive Vision Control System (DVCS) is one of the world’s most advanced control systems designed specifically for control room visual display systems. Combining the latest advances in Digital Signal Processing (DSP) technology and with recent improvements in video compression rates, the Delta DVCS enables customers to capture, distribute, control and display high-resolution graphics/HD video signals over an IP network-reliably and cost effectively.

**Key Features**

- Compact and silent
- Low power consumption
- Real-time monitoring of all windows
- Remote display wall control through network
- Supports Hi-Fi audio transmission over the network
- Supports up to 64 input signal sources in one display
- Supports 10 RGB/Video signal preview simultaneously
- Supports remote processor firmware upgrade over the network
- DVCS server can communicate with more than 10000 processors
- Supports multiple operators controlling a large scale display wall simultaneously
- Supports multicasting. One input signal can be displayed on an unlimited number of displays

You’re In Control
With Multiple Levels Of Alarm

Fully IP Addressable

Delta’s IP centric video wall are accessible over the IP through browser/server architecture based software tool for monitoring, control and diagnostic purpose. This software provides the operator with direct feedback on the status of the system with multiple levels of alarms. Whether it’s the number of hours of a LED or their temperature, the operator will be automatically notified via the predefined alarms.
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### Monitoring
- Start/Stop Monitoring cubes
- LED status monitoring
- Alarms
  - Serious
  - Warning
  - Information

### Diagnostics
- Message window
- Log file
- Error / Alarm feedback
  - Serious
  - Warning
  - Information

### Control
- Switch on/off
- Virtual Remote Control (VRC)
- Get/Set cube data
- Save/Load options
- Scheduling options
  - Daily
  - Periodically
  - Sequentially

### Properties
<table>
<thead>
<tr>
<th>Common</th>
<th>DLP</th>
<th>Video</th>
<th>RGB</th>
<th>CCA</th>
<th>PIP1</th>
<th>PIP2</th>
<th>6-AXIS</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>OE 1 172.16.0.1</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>OE 2 172.16.0.2</td>
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<td></td>
<td>OE 3 172.16.0.3</td>
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<tr>
<td></td>
<td>OE 4 172.16.0.4</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

### Scheduler
- Daily
- Run daily mode will execute the schedule every day at a fixed time.

**Schedule Name:**

**Schedule List**

#### Daily
- **Schedule Name:** daily at 00:00

#### Periodically
- **Schedule Name:** every 3 Second(s) 00:00:02

#### Sequentially
- **Schedule Name:** every 7 Second(s) ___

#### Add Schedule
<table>
<thead>
<tr>
<th>Resolution</th>
<th>XGA</th>
<th>SXGA+</th>
<th>XGA</th>
<th>SXGA+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Dual Lamp XGA Cube</td>
<td>Dual Lamp SXGA+ Cube</td>
<td>Dual Lamp XGA Cube</td>
<td>Dual Lamp SXGA+ Cube</td>
</tr>
<tr>
<td>Image Size (mm)</td>
<td>1016 x 762 / 1361 x 1021 / 1600 x 1200</td>
<td>1016 x 762 / 1361 x 1021 / 1600 x 1200</td>
<td>1016 x 762 / 1361 x 1021 / 1600 x 1200</td>
<td>1016 x 762 / 1361 x 1021 / 1600 x 1200</td>
</tr>
<tr>
<td>Display Technology</td>
<td>DLP, single chip</td>
<td>DLP, single chip</td>
<td>DLP, single chip</td>
<td>DLP, single chip</td>
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<tr>
<td>Native Resolution</td>
<td>1024 x 768 pixels</td>
<td>1400 x 1050 pixels</td>
<td>1024 x 768 pixels</td>
<td>1400 x 1050 pixels</td>
</tr>
<tr>
<td>Aspect Ratio</td>
<td>4:3</td>
<td>4:3</td>
<td>4:3</td>
<td>4:3</td>
</tr>
<tr>
<td>Screen to Screen Gap</td>
<td>Rear access: Adjustable up to 0.2 mm Front access: Adjustable up to 1.0 mm</td>
<td>Rear access: Adjustable up to 0.2 mm Front access: Adjustable up to 1.0 mm</td>
<td>Rear access: Adjustable up to 0.2 mm Front access: Adjustable up to 1.0 mm</td>
<td>Rear access: Adjustable up to 0.2 mm Front access: Adjustable up to 1.0 mm</td>
</tr>
<tr>
<td>DMD</td>
<td>0.7&quot; DMD 12 deg.</td>
<td>0.95&quot; DMD 12 deg.</td>
<td>0.7&quot; DMD 12 deg.</td>
<td>0.95&quot; DMD 12 deg.</td>
</tr>
<tr>
<td>Light Source</td>
<td>Dual UHP lamps</td>
<td>Dual UHP lamps</td>
<td>Dual UHP lamps</td>
<td>Dual UHP lamps</td>
</tr>
<tr>
<td>Brightness</td>
<td>650-1300 ANSI based on lamp mode &amp; single/dual lamp usage</td>
<td>650-1300 ANSI based on lamp mode &amp; single/dual lamp usage</td>
<td>650-1300 ANSI based on lamp mode &amp; single/dual lamp usage</td>
<td>650-1300 ANSI based on lamp mode &amp; single/dual lamp usage</td>
</tr>
<tr>
<td>Luminance (Nits or cd/m²)</td>
<td>Varies with the screen type and lamp mode</td>
<td>Varies with the screen type and lamp mode</td>
<td>Varies with the screen type and lamp mode</td>
<td>Varies with the screen type and lamp mode</td>
</tr>
<tr>
<td>Brightness Uniformity</td>
<td>Up to 96%</td>
<td>Up to 96%</td>
<td>Up to 96%</td>
<td>Up to 96%</td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>Typ. 1500:1</td>
<td>Typ. 1800:1</td>
<td>Typ. 1500:1</td>
<td>Typ. 1800:1</td>
</tr>
<tr>
<td>Screen Options</td>
<td>FXS / BB / XPS</td>
<td>FXS / BB / XPS</td>
<td>FXS / BB / XPS</td>
<td>FXS / BB / XPS</td>
</tr>
<tr>
<td>Full Viewing Angle</td>
<td>180 degree</td>
<td>180 degree</td>
<td>180 degree</td>
<td>180 degree</td>
</tr>
</tbody>
</table>

**LAMP-ILLUMINATED VIDEO CUBES**

<table>
<thead>
<tr>
<th>Resolution</th>
<th>XGA</th>
<th>SXGA+</th>
<th>XGA</th>
<th>SXGA+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colors</td>
<td>16.7 million</td>
<td>16.7 million</td>
<td>16.7 million</td>
<td>16.7 million</td>
</tr>
<tr>
<td>Color Temperature Range</td>
<td>3200K to 9300K, Custom</td>
<td>3200K to 9300K, Custom</td>
<td>3200K to 9300K, Custom</td>
<td>3200K to 9300K, Custom</td>
</tr>
<tr>
<td>Lamp Life</td>
<td>Eco mode : 8,000 hours Typ. mode : 6,000 hours</td>
<td>Eco mode : 10,000 hours Typ. mode : 6,000 hours</td>
<td>Eco mode : 8,000 hours Typ. mode : 6,000 hours</td>
<td>Eco mode : 10,000 hours Typ. mode : 6,000 hours</td>
</tr>
<tr>
<td>Inputs</td>
<td>1x Analog D-sub 15pin 1x Digital DVI-I 1x Digital DVI-D 1x CVBS BNC 1x Component Video BNC 1x SBNC (RGBHV or YPbPr)</td>
<td>1x Analog D-sub 15pin 1x Digital DVI-I 1x Digital DVI-D 1x CVBS BNC 1x Component Video BNC 1x SBNC (RGBHV or YPbPr)</td>
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</tr>
<tr>
<td>Outputs</td>
<td>1x Digital DVI-D 1x CVBS BNC</td>
<td>1x Digital DVI-D 1x CVBS BNC</td>
<td>1x Digital DVI-D 1x CVBS BNC</td>
<td>1x Digital DVI-D 1x CVBS BNC</td>
</tr>
<tr>
<td>Control Options</td>
<td>RS-232/RS-422, IP/IR</td>
<td>RS-232/RS-422, IP/IR</td>
<td>Separate Diagnostic LEDs for Power, Fan, Light source</td>
<td>Separate Diagnostic LEDs for Power, Fan, Light source</td>
</tr>
<tr>
<td>LED Indicator</td>
<td>Separate Diagnostic LEDs for Power, Fan, Light source</td>
<td>Separate Diagnostic LEDs for Power, Fan, Light source</td>
<td>Separate Diagnostic LEDs for Power, Fan, Light source</td>
<td>Separate Diagnostic LEDs for Power, Fan, Light source</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>AC 90-240V @ 50/60 Hz</td>
<td>AC 90-240V @ 50/60 Hz</td>
<td>AC 90-240V @ 50/60 Hz</td>
<td>AC 90-240V @ 50/60 Hz</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>5°C - 40°C (41°F - 104°F)</td>
<td>5°C - 40°C (41°F - 104°F)</td>
<td>5°C - 40°C (41°F - 104°F)</td>
<td>5°C - 40°C (41°F - 104°F)</td>
</tr>
<tr>
<td>Non Operating Temperature</td>
<td>-20°C - 60°C (-4°F - 140°F)</td>
<td>-20°C - 60°C (-4°F - 140°F)</td>
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</tr>
<tr>
<td>Operating / Storage Humidity</td>
<td>10% - 90%, non-condensing</td>
<td>10% - 90%, non-condensing</td>
<td>10% - 90%, non-condensing</td>
<td>10% - 90%, non-condensing</td>
</tr>
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# PRODUCT SPECIFICATIONS

## LED-ILLUMINATED VIDEO CUBES

<table>
<thead>
<tr>
<th>Resolution</th>
<th>XGA / SXGA+</th>
<th>Full HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>LED Light Source XGA / SXGA+ Cube</td>
<td>LED Light Source Full HD Cube</td>
</tr>
<tr>
<td>Individual Cube Sizes</td>
<td>50&quot;, 67&quot;, 80&quot; Diagonal</td>
<td>50&quot;, 70&quot; Diagonal</td>
</tr>
<tr>
<td>Image Size (mm)</td>
<td>1016 x 762 / 1361 x 1021 / 1600 x 1200</td>
<td>1107 x 623 / 1550 x 872</td>
</tr>
<tr>
<td>Display Technology</td>
<td>DLP, single chip</td>
<td>DLP, single chip</td>
</tr>
<tr>
<td>Native Resolution</td>
<td>1024 x 768 / 1400 x 1050 pixels</td>
<td>1920 x 1080 pixels</td>
</tr>
<tr>
<td>Aspect Ratio</td>
<td>4:3</td>
<td>16:9</td>
</tr>
<tr>
<td>Screen to Screen Gap</td>
<td>Rear access: Adjustable up to 0.2 mm Front access: Adjustable up to 1.0 mm</td>
<td>Rear access: Adjustable up to 0.2 mm Front access: Adjustable up to 1.0 mm</td>
</tr>
<tr>
<td>DMD</td>
<td>0.7&quot; / 0.95&quot; DMD 12 deg.</td>
<td>0.95&quot; DMD 12 deg.</td>
</tr>
<tr>
<td>Light Source</td>
<td>LED - 1R1G1B - 12 sq mm each</td>
<td>LED - 1R1G1B - 12 sq mm each</td>
</tr>
<tr>
<td>Brightness</td>
<td>Typ. 700 / 750 Lumens</td>
<td>Typ. 750 Lumens</td>
</tr>
<tr>
<td>Luminance (Nits or cd/m²)</td>
<td>Varies with the screen type and lamp mode</td>
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<tr>
<td>Brightness Uniformity</td>
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<tr>
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<tr>
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