

# EyeRIS IX-Series

Interactive Products



# About Cybernetyx

Cybernetyx is a fast-growing multinational technology corporation with its registered offices in Germany and development, sales and support presence in multiple countries across the globe including India, South Korea and China. Cybernetyx has developed several award-winning advanced Human-Computer Interaction products in the industry which are deployed across users from all ages and various market segments, including Education, Corporate, SME and Government.

The core belief at Cybernetyx is that an interactive product must act as an information and communication platform for its users by providing intuitive digital tools to fetch, create and share content, to engage the viewers and enrich the content creation and consumption capability in Classrooms, Training rooms, Conference rooms, NOCs, Open Spaces and beyond. Before releasing the solutions in the market, Cybernetyx's world-class development team has put in more than 8 years of extensive research work in creating a technology which highly performs on this core belief. Cybernetyx flagship products like EyeRIS (Eye-like Rapid Imaging System), IntelliSpace, UNIBOARD, EyeSIGHT, OPTIMARK et al are getting extremely popular across the globe and now are widely acknowledged as a technology-benchmark in the interactive solutions space, already impacting more than 50 million Presenters, Educators and Learners in a short span of time and with a user-base growing at an exponential rate. Additionally, multiple Global Fortune 500 companies are also using EyeRIS technology core today to integrate and provide leading interactive display solutions to their clients, thus making Cybernetyx the fastest growing company in the ICT space across the world.

Cybernetyx Research Areas: Computer Vision-based MultiTouch Interactive Whiteboard Systems, Any-surface computing, Interactive Projection Solutions, Gesture-based computing, Natural User Interface (NUI) Applications, Tabletop/Surface computing, Interactive Virtual/Augmented Reality, Interactive Floor projections, Augmented reality & Pervasive/Ubiquitous computing.



Cybernetyx Office in Berlin, Germany



Cybernetyx Office in Noida, India

## Achievements :

- Industry-leader in interactive projection technology for more than 5 years
- Consistently top-selling product (OEM Interactive space) in the US, European and Asian markets
- Sales in more than 70 countries
- Impacted more than 50 Million users
- Products awarded quality certifications like FCC, CE, SGS and U/L

## Key Milestones :

Phase - 1 2006-2008	Phase - 2 2009-2010	Phase - 3 2011-2012	Phase - 4 2013 - 2014	Phase - 5 2015 - 2016	Phase - 6 2016 onwards
R&D, Concept	Launch	Growth	Growth	Growth	High growth
<ul style="list-style-type: none"> <li>▶ Technology conceptualization</li> <li>▶ Fundamental goal of giving computers a vision-based input</li> <li>▶ Development commenced on the Cybernetyx Visual Touch Technology</li> </ul>	<ul style="list-style-type: none"> <li>▶ Launch of CYBERSCREEN, the first IWB product based on Visual Touch technology</li> <li>▶ Pioneered the first MultiTouch Interactive whiteboard solution with 255 touch points</li> <li>▶ Development started on IntelliSpace, NUI-based IWB application suite</li> </ul>	<ul style="list-style-type: none"> <li>▶ Launch of EyeRIS, world's first UST gesture-based IWB solution</li> <li>▶ Launch of IntelliSpace, industry's most advanced IWB software</li> <li>▶ Development commenced on EyeSIGHT, UNIBOARD, Finger-touch (Optical and Laser-curtain)</li> <li>▶ Launch of OptiMark, Student Evaluation system</li> </ul>	<ul style="list-style-type: none"> <li>▶ Development completed on Visual Touch 2.0, image processing technology, 165 million pixels/sec</li> <li>▶ Launch of the highly successful EyeRIS 7 Series</li> <li>▶ Launch of calibration-less IWB solution</li> <li>▶ First cycle of development completed for EyeRIS v3.0 and TOUCHv1.0.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Launch of Visual Touch 3.0, world's fastest image processing technology, 195 million pixels/sec</li> <li>▶ Launch of the EyeRIS 8 Series Interactive Products</li> <li>▶ Launch of EyeRIS TOUCH v1.0 (Finger TouchSolution)</li> <li>▶ Launch of EyeSIGHT v2.0</li> </ul>	<ul style="list-style-type: none"> <li>▶ Launch of EyeRIS-IX Interactive platform (Visual Touch v3.1), world's fastest image processing technology, 195 million pixels/sec</li> <li>▶ Launch of the TOUCH v2.0 (upgraded finger touch series)</li> <li>▶ Development completed for the first cycle of EyeRIS X (HID platform)</li> </ul>

# EyeRIS IX-Series

## Interactive Whiteboard Solutions

Cybernetyx has developed several advanced Human-Computer Interaction products in the industry which are deployed across users from all ages and various market segments, including Education, Corporate, SME, PSU and Government. Cybernetyx believes that an interactive product must act as information and communication platform for its users by providing intuitive digital tools to fetch, create and share content, to engage the viewers and enrich the content creation and consumption capability in Classrooms, Training rooms, Coaching Centres, Conference rooms, Boardrooms, NOCs, Open Spaces and beyond. Cybernetyx flagship product EyeRIS (Eye-like Rapid Imaging System) is now extremely popular across the globe and is widely acknowledged as a technology-benchmark in the interactive solutions space, already impacting more than 50 million Presenters, Educators and Learners in a short span of time and with a user-base growing at an exponential rate world wide. EyeRIS-IX Series IWB systems are the latest, upgraded and advanced interactive whiteboard systems (comes bundled with advanced and intuitive IntelliSpace IWB suite) from Cybernetyx, Germany.



- Fast Response Time
- True MultiTouch
- Smooth Writing
- Consumable (battery) free Stylus
- Gesture Recognition
- Recording Tools
- Snapshot from Running Video
- Integration with MS Office™
- Geometrical Tools
- Extensive Resource Library
- Cybernetyx MyCloud
- Multi-Language Support
- Auto-Calibration
- Ink Anywhere
- Object Anywhere
- Portable Solution



EyeRIS IX-Series Interactive Camera Unit	
Movement Detection Technology	3-D Optical
Tracking Active Area (max projection size recommended)	Up to 100" for 16:9 aspect ratio (Wide angle) & up to 80" for 4:3 aspect ratio
View angel (Vertical)	95 deg
View angel (Horizontal)	110 deg
View angel (Diagonal)	170 deg
T/R Range	0.6 / 0.4 / 0.2 / 0.16
Tracking Speed	60-70 FPS (can be extrapolated upto 200 FPS)
Ambient Light Resistance Technology	830nm +/- 20 & 650nm +/-20 dual band tracking technology (Visible and IR bands)
Simultaneous Touch Point Support	255 (System configuration dependent)
Calibration Technology	Automatic as well as Manual Calibration
Connectivity Interface	Mini USB
Max USB Transmission Distance	15 ft
Power Requirement	5 V
Power Consumption	< 1W
Operating & Storage Environment	Temperature : -10° C to +60° C; Humidity: 0% to 95%
Accuracy	+ / - 2 px
Response Time	Upto 195 Mn dots/sec
Resolution	Sub-pixel upto 6768 x 4320 pxsq (native 752x480)
Data Refresh Rate	Upto 195 million dots/sec, USB bandwidth around 200 MBPS
Optimised Cursor Jittering	7 point bezier algorithms histogram

# EyeRIS IX-Series

## A Technical Note



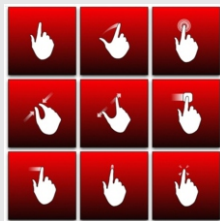
**MultiTouch:**

World's first Interactive Solution that supports 255 touch-points simultaneously.

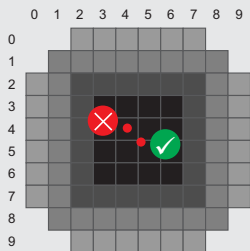
**Ultra Short Focus Optics (T/R upto 0.16):** EyeRIS IX-Series IWB systems are with distributed low-level and high-level image processing between dedicated SoC and host CPU for super-high tracking speed of 195 Mn dots/sec and it could produce a very large interactive surface at world's smallest distance (T/R upto 0.16). EyeRIS driver automatically takes care and adjusts the massive un-distortion and de-warping to produce superior and smooth interactive experience.



**High-Speed Tracking:** Multi-core, Multi-threaded, High-speed advanced image processing with base 60-70 FPS tracking rate (can be extrapolated and extended upto 200 FPS).



**NUI Gesture Support:** EyeRIS provides Native gestures & touch inputs for a full smartphone-like Natural User Interface. EyeRIS IX-Series IWB systems are based on its revolutionary 'Visual Touch' 3-D optical tracking platform, designed for the NUI, which delivers intuitive, seamless experiences that unfold through natural human input.



**Higher Resolution:** Super-high resolution. 6768 x 4320 pxsq. Processes more than 195 Million dots/second. This is highest in the industry. Using a unique sub-pixel processing technique, Cybernetyx Visual Touch tracking engine is able to enhance the resolution upto 9 times the native resolution. It results in

- Sub-Pixel precision for higher resolution
- Jitter-free writing experience

**Real Time Writing Experience:** Fast writing speed and implementation of smoothing algorithms like Catmull-rom, Bezier etc. Feather-smooth writing experience with real-time response.

**Automatic Calibration:** Using an automatic filter switcher, EyeRIS IX-Series IWB products are able to extract visible band images of the projection enabling the system to calibrate automatically within 5 seconds.



**Superior Ambient Light Disturbance Resistance:** EyeRIS IX-Series IWB systems are having improved sunlight resistance based on Band-pass filters and patent-pending DBI (Differential background illumination) circuitry. It works in both full dark and full sunlight environments. Based on the dual layer band-pass filtering optical technology, EyeRIS does a heuristic sampling and active background subtraction of all physical space outside to projection. Thus, no external light sources can cause interference to EyeRIS IX-Series IWB systems.

**Driver Utility:** Improved troubleshooting due to live feed and tracking monitor. Remote support could be possible. Simple, Intuitive user interface, Live Status Indicators (connected, calibrated and OPTIBAR), Easier Troubleshooting, Blob Trace & more blob details, settings and monitor in one view.



**Support for interactivity on Edge blended surface.** Edge-blending is a technique used to describe the process of visually combining several projected images to make a single seamless image. Generally, this is done to increase the size of a projected image to make a very wide image, or by combining a number of lower resolution devices together to increase the total resolution of a display. In both cases, a number of projectors are needed which are firstly overlapped and then visually joined together using an edge blending technique. EyeRIS IX-Series IWB systems are capable of making the edge-blended surface interactive & provides an advanced interactive experience to the users. Combination of up to 4 projected images to a very large interactive projection screen could be developed with seamless & most advanced interactive experience.



**Consumable free stylus:** Extremely light weight, Ultra-fast full charging time, Feather smooth writing experience, Economical (no batteries required), A million times recharging possibilities. Full charging time is just 180 sec. which provides a writing time of multiple hours.



# TOUCH v2.0

## Finger Touch Solutions for EyeRIS

Cybernetyx amazed the whole IWB and Interactive Projector industry back in 2012 by launching world's first surface-independent 255 point MultiTouch finger-based interactive projection solution. EyeRIS Touchv2.0 is the latest, upgraded & an advanced surface-Independent finger-touch Interactive system providing users with a superior smart phone - like gesture-touch experience supporting interactivity up to 255 touch points on a large screen size of 100 inches diagonal which can be extended upto 300 inches by edge-blending function. The use of Prism-based pulsating light curtain technology and software-based intelligent alignment tool in the modular and compact Finger-Touch system makes it possible to install the entire set up on any kind of irregular or warped surface in just under 10 minutes. This revolutionary technology also enables the system to calibrate automatically thus reducing the big pain of calibrating general IWBs. This Cybernetyx technology also powers most of the OEM finger-touch projection systems in the industry today, widely accepted to be the future of all finger-touch IWB solutions soon.

- ✓ Fast Response Time
- ✓ Smooth Writing Experience
- ✓ Supports Gestures
- ✓ Unique 180° Light Curtain Technology
- ✓ Works on Practically any Surface
- ✓ Ease of Installation (Less than 10 min.)
- ✓ Software based Advanced Alignment Tool
- ✓ Supports Automatic Calibration
- ✓ Light Weight & Compact Design
- ✓ False Activation Prevention & Parallax Correction



<b>EyeRIS TOUCH v2.0</b>	
Technology	180° PRISM laser technology
Laser diode quantity	1
Output power	200mW in CW
Wavelength	830nm +/- 20
Red Light Laser	Yes
Red Light Laser Wavelength	650nm +/-20
Divergence angle	180° PRISM
Power Voltage	5v/1.5A
Power Consumption	1W
Operating environment	Temp -10° ~ 50° C / Humidity 0%-95%
Storage environment	Temp -30° ~ 70° C / Humidity 0%-95%
0 & 180° Power	± 60% of 90° Power
Life time	≧ 7000 hrs
Line width	2.0mm ± 0.5mm at 1.5m
Magnet	Yes
Audio Cable mono 2.5mm (Male to Male)	1 (4.5M)
Y-Cable USB Type A to Mini USB and Audio 2.5mm Female	1 (5M)
Power Adapter 5v/2A	1

# TOUCH v2.0

## Technical Note / Illustration

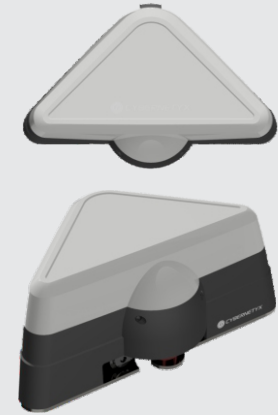
**Smaller Size:** The new touch module is the smallest touch unit for interactive projection in the industry measuring just 100mmX62mmX42mm.

**Simple, Fast Alignment:** The new touch unit has a built-in visible-range red color line laser module for visual alignment.

- ✓ **Faster and Simpler Alignment Process:** Visible-range Line laser can be turned on to make a line same as the IR laser module so that the user can easily see the laser plane during alignment.
- ✓ **Surface Flatness Measurement:** The flatness of the surface can also be tested using this red line laser and corrected.



Complied with IEC 60825-1  
Safety Standard of Laser Product

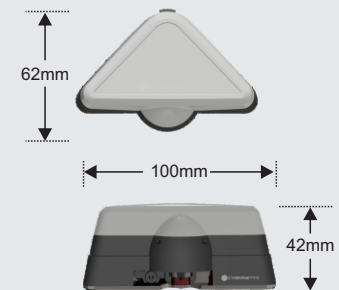
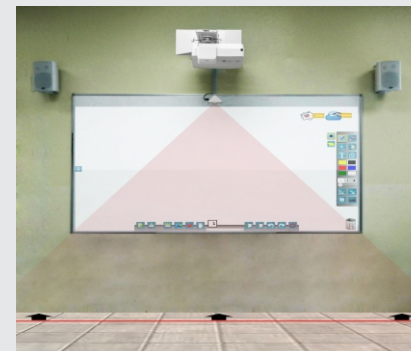


**Synchronized Operation:** The new touch unit works with the global shutter capability of the EyeRIS sensor to emit pulsed signals instead of continuous wave for creating a laser curtain. The laser turns ON and OFF repeatedly in a second via signal from the camera sensor.

- ✓ **Boosted Power:** The new touch unit can now transmit multiple times more illumination signal providing an unparalleled touch experience.
- ✓ **Enhanced SNR:** The Sync operation enhances the Signal/Noise Ratio (SNR) of the touch unit operation and the product now can work even in direct sunlight condition.
- ✓ **Improved Lifetime:** Life of laser module is enhanced upto 20x as the laser is running at around 5% duty cycle.

**Enhanced Tracking Speed:** The new implementation of the touch unit circuit allows for a better communication with the camera sensor to take the latency lower to around 6-8ms from the current 16ms.

- ✓ The user experience is enhanced due to the decreased latency.
- ✓ USB bandwidth requirement can be controlled.



EyeRIS TOUCH Dimension

# IntelliSpace

## Interactive Whiteboard Suite

Multi-touch software suite (supports 255 touches simultaneously) - Supports Gesture Recognition like zoom, pan, tilt, flicks and so on - Native handwriting recognition, Shape-recognition up to six-sided figures - "Cloud Access" in IWB Application, content can be accessed for free on any topic in the world - Multiple formats of presentations, documents, images & videos can be imported, annotated & explained - Super Compressed recording (1 hour class room lecture Recording with approx. 80 MB file size only) - Full support for MS Office files like handwriting recognition in Word, Excel and PowerPoint - Extensive Resource Library with relevant content - Geometric Tools like protractor, compass, ruler etc. - Local Language Support like Mandarin, Chinese, Japanese, German, Spanish, French etc. - Native Support for classroom camera solution (any USB camera or webcam or Laptop could be used as document camera with the same software)

Note: All the above features are available in Windows platform. For other OS platforms all the mentioned features may not be available.

World's most Advanced IWB Suite with 'Cloud Content' access



- Fast Response Time
- True MultiTouch
- Smooth Writing
- Gesture Recognition
- Recording Tools
- Snapshot from Running Video
- Integration with MS Office™
- Geometrical Tools
- Extensive Resource Library
- Cybernetyx MyCloud
- Multi-Language Support
- Ink Anywhere
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# Application Scenario: Corporate

EyeRIS 9090UST, EyeRIS Touch v2.0 and other associated edu-peripherals

## Board Room / Meeting Room / Conference Room



EyeRIS  
IX-Series  
for interactive  
projection application



EyeRIS  
IX-Series  
for interactive  
whiteboard application

EyeRIS  
IX-Series  
for interactive  
panel application



# Application Scenario: Education

EyeRIS 9090UST, EyeRIS Touch v2.0 and other associated edu-peripherals

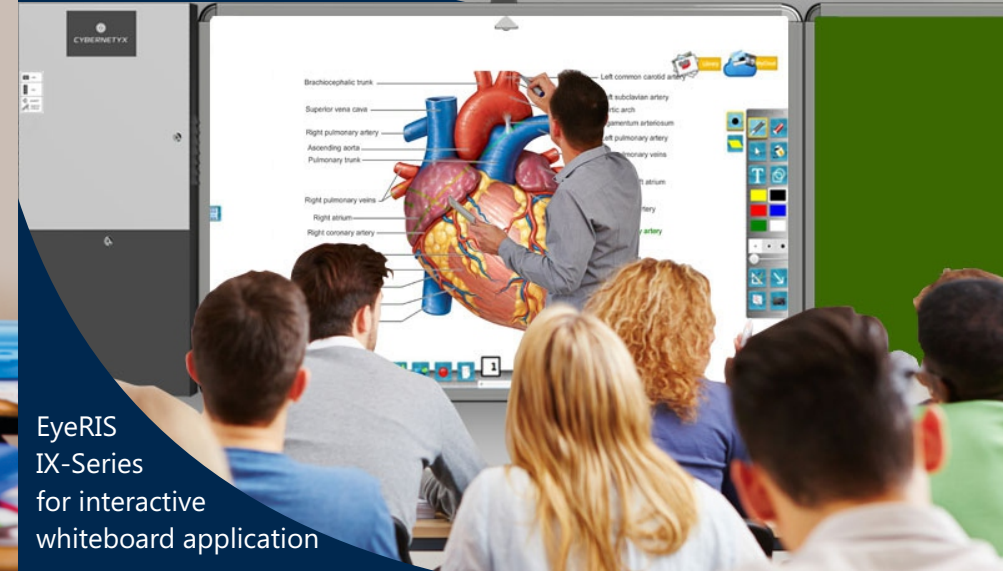
## Classroom / Training Centre



EyeRIS IX-Series for interactive panel application



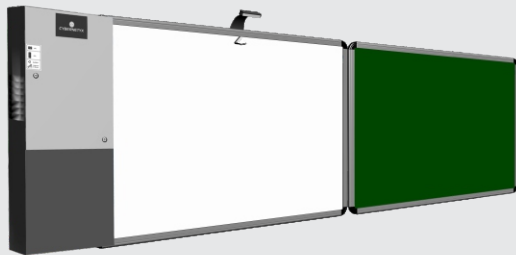
EyeRIS IX-Series for interactive projection application



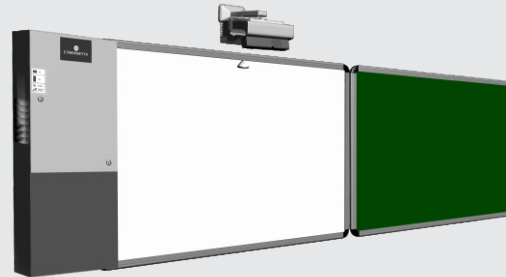
EyeRIS IX-Series for interactive whiteboard application

# Interactive Classroom Setups

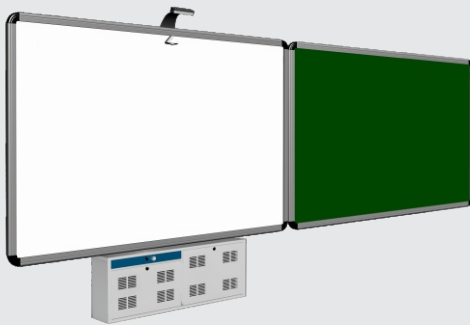
Using EyeRIS 9090UST, EyeRIS Touch v2.0 and other associated edu-peripherals



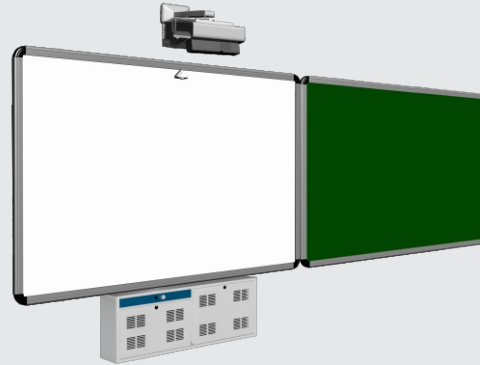
EyeRIS IX-Series Finger Touch IWB system with UNIBOARD SLIM1.1 (Vertical wall mounted metal cabinet) and green board



EyeRIS IX-Series Finger Touch IWB system with UNIBOARD SLIM1.1 (Vertical wall mounted metal cabinet) and green board



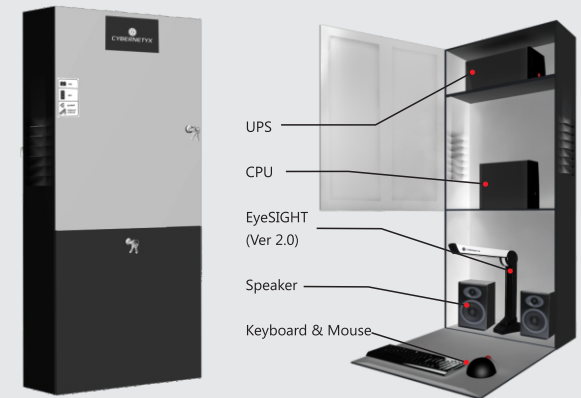
EyeRIS IX-Series Finger Touch IWB system with UNIBOARD SLIM (Horizontal wall mounted metal cabinet) and green board



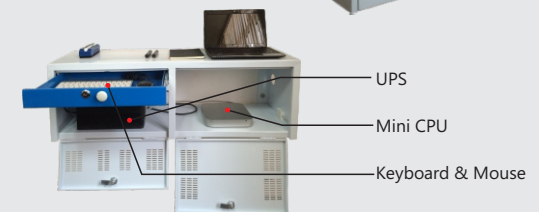
EyeRIS IX-Series Finger Touch IWB system with UNIBOARD SLIM (Horizontal wall mounted metal cabinet) and green board



EyeRIS IX-Series IWB system for Large Format Display Panel



UNIBOARD SLIM (Vertical wall mounted Metal Cabinet)



UNIBOARD SLIM 1.1 (Horizontal wall mounted Metal Cabinet)

# EyeSIGHT v2.0

## Document Camera Solution for Classroom

**UXGA** High Resolution Object Preview: Capture any image, text or object in a life-like clarity

**Capturing & Recording:** Super-compressed video recording in IntelliSpace makes it possible to use EyeSIGHT to capture live events

**Portable Device:** Light-weight and Portable classroom camera solution

**Enlarge Textbook Diagram:** Capture any diagram from the textbook with EyeSIGHT and show/edit the detailed view in IntelliSpace



**Augmented Reality:** Fully integrated with IntelliSpace, does not require any additional software to be installed



**Support classroom Evaluation System:** World's first and only visualizer solution which supports classroom evaluation at no additional cost

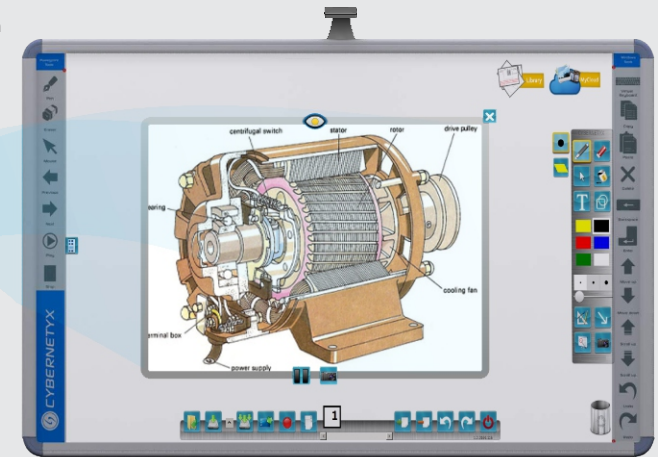


**Augmented Reality:** Augmented reality applications' support with Cybernetyx OptiMark technology brings textbook diagrams to life

World's most Advanced IWB Suite with 'Cloud Content' access



EyeSIGHT comes bundled with IntelliSpace Suite



✓ EyeSIGHT Specification	
✓ Capture	Size A4
✓ Resolution	1600 x 1200
✓ Sensor	CMOS 2.0 mega pixel
✓ Picture Format	JPG / TIF / PDF / BMP / TGA / PCX / PNG / RAS
✓ Doc Format	PDF / WORD / TXT
✓ Video Format	AVI / WMV
✓ Sensor Element	CMOS
✓ Interface Type	USB2.0
✓ Light Source	Natural as well as LED supplement light
✓ Accessories	Document camera, CD-ROM, USB-cable, Users Manual
✓ USB Cable length	2.0 meters
✓ Power supply	USB 2.0
✓ Max. Shooting Area	A4



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