



LIGHTWARE

INNOVATIVE, RELIABLE, MADE IN EUROPE.

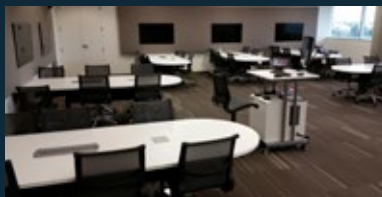


EDUCATION

**Building Advanced
Learning Environments**



AUDITORIUMS



ACTIVE LEARNING SPACES



HYBRID CLASSROOMS



DIVISIBLE ROOMS



LIGHTWARE VISUAL ENGINEERING: BUILDING ADVANCED LEARNING ENVIRONMENTS



Lightware Visual Engineering has been developing and supplying professional AV products for more than 25 years in the heart of Europe. Since 1998 Lightware has designed, developed and delivered technologies to tackle the challenges AV professionals face in the fast-paced world of digital integration.

Lightware focuses on customer needs and delivers solutions that exceed expectations with an uncompromising level of customer service and support.



30+ COUNTRIES



25+ YEARS OF EXPERIENCE



400+ EMPLOYEES

Training millennials, providing hybrid and distance learning, while being sustainable and efficient, are the challenges of today's education. All these tasks embrace AV technologies massively. The IT teams are set to secure smart future-proof professional AV solutions for their schools.

With Lightware, education customers will enjoy full support on their path to creating learning environments that will attend to each of their needs.

WE SUPPLY

Best in the industry **AV signal management solutions that ensure the ultimate USB-C connectivity** for in-person, distance, and hybrid education; all of them massively involving unified communication and collaboration.

With our **matrix switchers**, we accept, process and distribute every source applicable in education.

Our **AV-over-IP extenders are available for either 1Gbps or 10Gbps networks** delivering resolutions up to **uncompressed 4K60Hz** over fiber at distances the learning environment requires.

WE PROVIDE

Solutions to secure **seamless room automation and management. With LARA and Event Manager** firmware available in our connectivity products, instructors will start their lessons instantaneously.

With Monitoring Webtool campuses featuring multiple classrooms with hundreds of Lightware devices will ensure a 100% uptime of their technology by utilizing this open-source monitoring solution. The AV school staff will be able to monitor the technology's operation in real-time in the most efficient manner.

WE OFFER

LEAD: The Lightware Education Audiovisual Developer Program that offers exclusive features and benefits for schools, offering consultancy and project design assistance, proof-of-concept tests and demonstrations, training for technical staff, comprehensive technical support, and extended warranty services.

We will ensure that your school will have the best and most reliable bespoke solution and will **LEAD you into the future of learning spaces** with all the expertise and confidence that we have gained over 25 years of manufacturing AV products and solutions!

LIGHTWARE PUSHES THE LIMITS OF USB-C TECHNOLOGY

HAVING LAUNCHED OUR UNIVERSAL USB-C POWERED MATRIX SWITCHER TAURUS UCX IN 2020; LIGHTWARE HAS CONSISTENTLY WORKED IN PROVIDING USB-C CONNECTIVITY OVER LONGER DISTANCES TO DELIVER AV SIGNALS TO MULTIPLE ENDPOINTS. OUR EFFORTS HAVE YIELDED STUNNING RESULTS!

Today, Lightware has the great pleasure of introducing a robust suite of technologies that offer the ultimate solutions for distance, hybrid, and in-room training capabilities using USB-C. These innovations enable signal transmission ranging from a display cable length, extending up to 100 meters, and distributing to nearly unlimited end-points.

With the TAURUS UCX family of products, including TAURUS UCX-HC, TAURUS UCX-TPX, and TAURUS UCX-TPN, each venue can design the ultimate solutions to address their specific needs and elevate their training and operating efficiency to excel and standout in the educational environment. We have a Taurus UCX for that.



Local USB-C

Ideal for group study rooms & small classrooms



Extended USB-C

Ideal for hybrid learning classrooms and conference halls



USB-C over IP

Ideal for active learning spaces & divisible rooms



Presenter is within a standard display cable length

Presenter(s) are up to 100m from the display

Multiple presentation locations in the room potentially exceeding 100m

1 or 2 screens side by side

1 or 2 screens side by side

Multiple screens anywhere in the room(s)

1 input location

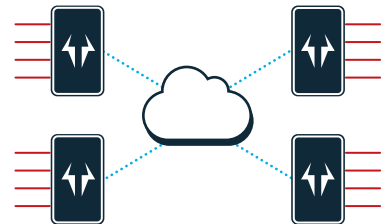
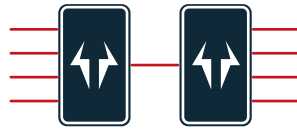
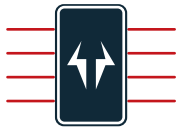
1 input location

Multiple input locations

USB devices and USB host switching are in one location

USB devices at TX/RX or USB extender;
USB host switching is between TX and RX

USB devices at any endpoint or USB extender
USB host switching at any end point



The **TAURUS UCX product family** enables building future-ready solutions tailored to a wide range of educational settings, from small group study rooms, to cutting-edge lecture recording studios, divisible rooms, and lecture theaters.

Leveraging Lightware's unmatched USB-C technology, universities are empowered to provide advanced training that rests upon hybrid collaboration and eliminates any physical distances on the path of knowledge distribution.

THE POWER OF
USB-C

Co■laboration • Control■ • Connectivity
Convenience • Charging



LIGHTWARE DEVELOPS

LIGHTWARE EDUCATION AUDIOVISUAL DEVELOPER
(LEAD) PROGRAM



**EDUCATION
AUDIOVISUAL
DEVELOPER**

1.

LEAD Extended Warranty

LEAD members with a technology refresh program agreement enjoy the full Lightware warranty throughout the entire agreement. Lightware makes it easy for peace of mind with every technology covered under warranty while upgrades continue during the refresh cycle.

2.

Demonstration Products

Lightware makes it easy to test the latest technology with demonstration equipment available for LEAD partners. Demonstrations are available with your local Lightware salesperson or integration partner.

3.

System Design Documentation - POC Assistance

We will invest into on-site consultation and bespoke design of your project with further proof-of-concept testing and review by our AV integration team. Lightware will provide you with documentation customized to your solution.

4.

Training

For you to get the most out of our technology and ensure a seamless education process, we offer comprehensive in-person and on-line training for your organization's AV-IT personnel.

GRANT program

Special for schools, colleges, and universities, we are offering a unique opportunity to apply for a technology grant to assist with the acquisition of Lightware technology for your classroom and its further evaluation for your campus technology refresh program.

With the grant program, we strive to promote advanced AV technology and make it accessible for more classrooms worldwide. The Lightware Grant Program offers proof of concept testing in your school's setting. **Contact us: grant.program@lightware.com**

5.

Advanced Technical Support

Receive market-leading support service with our dedicated local Lightware support team, we will assist you via email, phone, or on-site visit.

6.

Developer Engagement

Meet with our product developers, share your future needs and learn about our future product developments. We at Lightware develop products driven by our customers' requirements.

7.

Case Study Project Recognition

Make your technological advance a case worth studying and obtain multiple reviews in leading education and AV media.

Learn more: www.lightware.com/lead



University of Sharjah Deployed 170 Units of TAURUS UCX

The University of Sharjah (UoS) is the largest university in the United Arab Emirates. It is a rapidly evolving educational venue. With its outstanding achievements in research, publishing, and technology, UoS is ranked 1st in the United Arab Emirates and **entered the top 300 World Universities in 2023.**

For several years, the University has been implementing a **digitalization programme for its campus.** So far, CCTV, access control, and classroom technologies have been deployed across its premises.

The Covid challenges brought around the **necessity to provide distance learning.** Later on, the need for **hybrid technologies came into the focus** of the UoS.

The teaching personnel pinned their requirements squarely: **they needed touchless control,** preferably the one available from personal devices to avoid infection, they expected **seamless connectivity,** and they wanted a **simple solution.** On top of that, the IT team looked for the technology that would **keep the instructors' devices powered** and running for hours throughout their challenging schedules of lecturing, presenting, and running video conferencing.

When Covid waged, the UoS used docking stations for switching. In larger classrooms, beyond projectors and interactive whiteboards, there were voice-lifting devices. Docking stations deployed in about a hundred classrooms caused plenty of headaches to the IT personnel, with frequent freezing, needs for debugging and firmware upgrades, de-powering, and the like. Attending to the challenges of distant and hybrid training would involve multiple additional devices, complicated integration, and unwelcome costs. The IT team of the University set off to search for a solution with a clear vision of the goal and awareness of the task's complexity.



Before awarding the technology for their classrooms, **the IT specialist had examined and run about 30 proof-of-concept tests. They sieved through brand after brand, to choose the one that would respond to the specific needs** of the UoS's educational staff. To the University's dedicated IT committee that embraced instructors, faculty management, and IT engineers, there were presented two or three shortlisted technologies for evaluation.

Lightware's TAURUS UCX-4x2-HC30 went far beyond the expectations of the instructors and IT team, richly featuring the power of USB-C technology embedded in one single device.

It was like 10 years ahead of the competitors, very intelligent, very powerful, and not very expensive," says Mr. Khaleel Ahab Dajani, Sr. AV Officer of the University. **170 units of TAURUS UCX were installed** jointly by IT specialists of the University and their contractor **in a remarkably short time of just 4 weeks,** proving its outstanding ease of deployment.

TAURUS UCX offered the benefits of seamless USB-C and HDMI 2.0 connectivity to switch uncompressed 4K60Hz 4:4:4 signal. It enhanced hybrid classrooms with touchless intuitive control available for instructors with the QR code via authenticated WIFI access on their personal devices. **TAURUS UCX enabled the use of classroom peripherals like cameras, microphones, keyboards, and mice.** With their

laptops connected to this switcher **supporting 60W charging,** the UoS's instructors are confident that their devices stay powered whilst presenting or at UC sessions.

With TAURUS UCX supporting remote access, the IT team has dramatically increased its efficiency by monitoring and managing up to 170 units of TAURUS UCX deployed in classrooms across the campus remotely. Identifying technical issues and troubleshooting takes minutes. The engineers can do bulk firmware upgrades and have access to various operation analytics.

From their 1st acquaintance with Lightware's technology and ever since the IT team of the University has enjoyed the manufacturer's outstanding support. As Mr. Khaleel Ahab Dajani remarks:

The support is great, in case of any issues the representative of Lightware arrives on site in 5-10 minutes. They are very nice!

The University of Sharjah uses TAURUS UCX in its classrooms and in its outstanding e-courts at the Department of Law. In the e-court rooms, students have hands-on practices in an immersive environment simulating court hearings. TAURUS UCX delivering uncompressed 4K60Hz 4:4:4 with zero latency and featuring USB-C enabled use of peripherals is the central device in the e-court rooms. Here future lawyers nurture their skills through practicing to become successful in their careers and to contribute to the fame of their alma mater.

LIGHTWARE CONNECTS



USB-C CONNECTIVITY FOR GROUP STUDY
SPACES, GENERAL PURPOSE CLASSROOMS,
DISTANCE, AND HYBRID LEARNING



Seamless USB-C connectivity is a milestone in today's learning environment that involves plenty of multimedia sources and terminal equipment, such as laptops and media players, USB cameras, document cameras, speakerphones, etc. They are indispensable elements of teaching today.

With BYOD (bring your own device) and BYOM (bring your own meeting), having firmly established as a standard for training digitally native millennials, USB-C's role has only dramatically increased.

With TAURUS UCX, Lightware's flagship USB-C connection platform, instructors are spared of any technical issues that such heavily wired spaces are likely to hold for them. TAURUS UCX provides literally seamless connectivity which removes every frustration and barrier that teachers habitually have while using multimedia and peripheral equipment. **The new Taurus UCX-4x3-HCM40 version is enhanced with Multi-Screen extended desktop capabilities using a single USB-C cable.**

With this unrivaled unique AV-industry device in the heart of the group study rooms, general purpose classrooms, distance and hybrid learning sites, teachers are enabled to effectively engage and collaborate with their students, while student use technology they are familiar with, which contributes to the quality of their learning and retaining information.

In schools, AV engineers are always on alert and ready to support in case of any technical problems, still, with this universal matrix switcher, their job has become tremendously easier.



Group Study Room Built on TAURUS UCX

The Group Study Room is expected to host up to 4 people offering USB-C connectivity features. This room has 1-2 4K displays. Students can use their mobile devices in BYOM/BYOD modes and share USB-featured room peripherals (cameras, microphones, interactive displays, keyboards, and mouse).

The solution offers USB host switching, matrix/mirror features, dual monitor extended capability and multiple screen capability. The universal stand-alone switcher has 2-4 video inputs (USB-C & HDMI / USB-B); audio is available via the display and/or soundbar; dedicated models support Bidirectional DANTE functionality.



Group study rooms, distance, and hybrid learning spaces will go further leveraging the benefits that wireless presentation and collaboration tools hold when integrated with the TAURUS UCX universal switcher:

- With TAURUS UCX, any **laptop can benefit from sharing USB peripherals** (USB cameras, speakers, or speakerphones, keyboard and mouse).
- It is TAURUS UCX, that will give the presenter (teacher or student) piece of mind when sharing their content since their **BYOM laptop will stay charged over USB 3.1 with up to 100W of power**.
- TAURUS UCX via the USB-C connection will **provide access to the local network**, if required. The instructors will be able to share the content they need ad hoc.
- Hosting up to 4 BYOM devices simultaneously, TAURUS UCX will **output up to two sources on two separate displays**.
- **The newly added Multiple Screen capability enables extending one connected laptop via a single USB-C cable across two monitors.**
- In dedicated models, Bidirectional DANTE features will **support DANTE audio decoding and encoding**.
- TAURUS UCX enables **switching from wired to wireless conferencing solutions to take advantage of the USB peripherals in the room** via USB host switching and provide BYOM in a cable free option.

TAURUS BRIDGE DANTE UCX-4X3-HC40-BD



The TAURUS UCX-4x3-HC40-BD universal matrix switcher is an evolutionary leap in the acclaimed TAURUS UCX Series, which has consistently garnered industry accolades for its innovative approach to AV solutions. This is Lightware's strategic product designed to meet the evolving demands of modern hybrid classrooms.



TAURUS UCX-4x3-HC40-BD boasts the following features and characteristics:

Comprehensive USB-C

Integration that continues the legacy of its predecessors offering a unified solution for 4x3 4K video, audio, data, control, and charging, all through a single USB-C connection. This streamlined connectivity drastically reduces cabling clutter and simplifies hybrid classroom setup.

The Dante features include 2 channels of Dante input audio and Dante output. The 2 channels can be combined to create a single stereo channel.



HYBRID CLASSROOM Built on DANTE Audio Solution Supported by Bridged Dante Audio Capability of TAURUS-4x3-HC40-BD

The core element of the hybrid classroom setting is the TAURUS-4x3-HC40-BD matrix switcher that facilitates 4 inputs of USB-C and HDMI for the laptops, the room PC, and the keyboard/mouse.

The matrix switcher supports Bridged Dante audio sourcing the sound from the Dante ceiling microphone and de-embedding audio into the speakers.



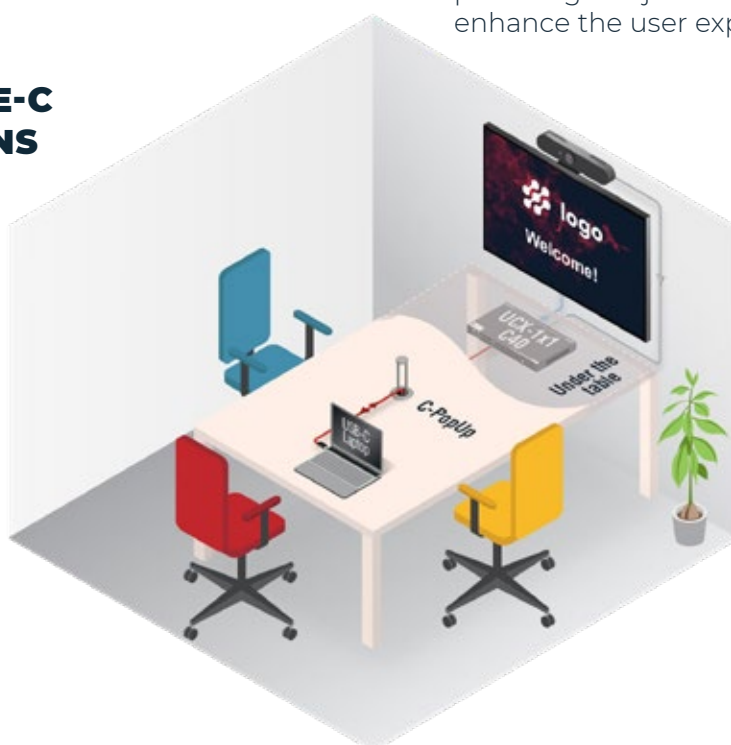
TAURUS SMART DOCK UCX-1X1-C40

The Taurus **UCX-1x1-C40**, also known as the **Taurus USB Type-C Docking Station**, stands out as a groundbreaking docking station and crafted to support technology-driven learning. **Ideal for personal workstations or shared educational spaces**, it offers flexible BYOM capabilities, enabling students and educators to connect and collaborate effortlessly. Elevate your classroom experience with this powerful docking station designed to meet the needs of a modern academic environment.

- Taurus Smart Dock functions as a high-performance docking station, **crafted specifically with IT needs** in mind rather than traditional AV.
- **UCX-1x1-C40** is designed with large deployments in mind, **offering IT departments the ability to monitor and manage docking stations remotely** for uninterrupted operations and timely support.
- The Smart dock includes a **custom welcome screen to assist people** before they are connected in the room and ensure success.
- **Supports a wide range of devices**, allowing for smooth, flexible meeting setups across multiple formats and technology preferences.
- The **Smart Dock includes** the same **OpenAPI** as the full UCX line of products and can be managed and monitored on the network.
- **Hot desking or hoteling** with the Smart Dock **can reveal where open desks are located** in conjunction with a reservation system for availability.
- **LARA automates the room environment**, providing adjustments and controls that enhance the user experience effortlessly.

TAURUS USB TYPE-C DOCKING STATIONS

- **HDMI**
- **USB-C**
- **USB 2.0**



WHY CHOOSE THE TAURUS SMART DOCK?

The Taurus UCX-1x1-C40 is a 2-in-1 solution that combines the functionality of a professional docking station with a high-powered, automated education solution. It brings together the convenience of BYOM, the efficiency of remote management, and the intelligent automation of LARA, making it a must-have for any streamlined and dynamic learning spaces.

MAKE YOUR CLASSROOM FUTURE-READY WITH TAURUS UCX TPX



EXTEND USB-C SIGNALS UP TO 100M



Extend Video Connectivity

seamless integration of USB 2.0 (High-speed 480Mbps) and HDMI 2.0 4K@60Hz 4:4:4 signals over distances of up to 100 meters



Connectivity for multiple USB hosts

connect up to 8 peripherals and switch between different host devices (camera, speakerphone, touch monitor, etc.)



BYOM Compatibility in Larger Spaces

USB-C connectivity for audio, video, control, data and charging laptop or mobile device up to 100W



Easy Cabling and Cost-Saving

remote powering the RX unit over a single CAT cable, no additional power outlet and adapter needed

HYBRID CLASSROOM SETUP

In this setup, the TAURUS UCX-2x1-TX20 and UCX-3x3-TPX-RX20 are deployed to enable hybrid teaching. The diagram features a dedicated room PC placed under the content screen and connected to UCX-3x3-TPX-RX20 unit, and a presenter's laptop placed at the lectern. The solution supports dual screen functionality from the room PC to enable remote students' and content display.



USB-C AND HDMI UNIVERSAL SWITCHER TRANSMITTER UCX-2X1-TPX-TX20 IS A PART OF THE TRANSMITTER-RECEIVER CONFIGURATION THAT PROVIDES THE SAME FUNCTIONALITY AS THE TAURUS UCX SWITCHER CARRYING THE SIGNAL ACROSS DISTANCES UP TO 100M.



TAURUS UCX-2x1-TPX-TX20

- Single TPX (CATx) cable between TX and RX devices, up to 100m, with power supply from TX to RX, Video, USB2.0, Ethernet, and Serial command injection;
- USB-C input for 4K video, audio, data, and power;
- Multiple USB 2.0 connectivity for any USB devices (cameras, speakerphones, touch panels, USB-HID devices, etc.);
- Independent USB host switching for 2 USB hosts, up to 8 USB devices (4 at TX & 4 at RX)
- Room device control via Ethernet (TCP/IP) or Serial (2x at TX device, 1x at RX device);
- USB-C charging up to 100W on the TX



TAURUS UCX-3x3-TPX-RX20

- 1 * TPX (CATx) input
- 2 * HDMI w/USB-B inputs
- 3 * HDMI outputs
- 1 * Analog audio output
- Independent USB host switching for 2 USB hosts up to 8 USB devices (4 at TX & 4 at RX) (keyboard/mouse, collaboration bar, camera)
- Control ports for OCS, GPIO and 2x serial

LIGHTWARE MAXIMIZES SPACE USE



UCX-2x1-TPN-TX20

4-Room-Divisible Space Example

4 standard classrooms can be merged into either 2 larger classrooms, 1 giant classroom, or operate as autonomous learning spaces.

Each room features a display, and Lightware technology as listed below:

- UCX-2x1-TPN-TX20 with USB-C & HDMI inputs and multiple USB 2.0 connectivity ports allowing transmission of a single source to multiple points via 10Gbps networks;
- HDMI-TPN-RX107, allowing transmission of HDMI 2.0, embedded audio, Ethernet, RS 232 to multiple receiver devices through a 10Gbps Ethernet switch,
- A single control unit TPN-CTU-X50 that together with the 10Gbps network switch builds a virtual matrix for TPN devices on the network connected as input and output endpoints.
- Wall contact sensors connected to the primary UCX GPIO ports automatically detect when rooms are combined or divided. The TPN-CTU-X50 handles the signal routing(s) according to the rooms' configurations. Signals are switched to one or multiple screens based on the wall configuration automatically and the "Power-ON" commands are sent to the displays. Users only need to plug in their devices to either the USB-C or HDMI connection and open or close a wall. Beyond that, the functionality of LARA firmware in UCX switchers allows programming and preconfiguring that eliminate any mistakes through accidental BYOD or room PC connection to the room UCX switchers.
- For example, if all four rooms are combined, the walls are all open, the input of the UCX switcher in room A will be routed to all four rooms, and any additional signals on any input of the other three UCX switchers will not trigger any output or command. When the presentations are over, the room displays will be turned off automatically using occupancy information with LARA. With CEC and RS-232 capabilities available in Lightware devices, this solution is applicable to any projector or display. Matrix switching with signal distribution allows projects to include any number of classrooms that make up divisible learning spaces.

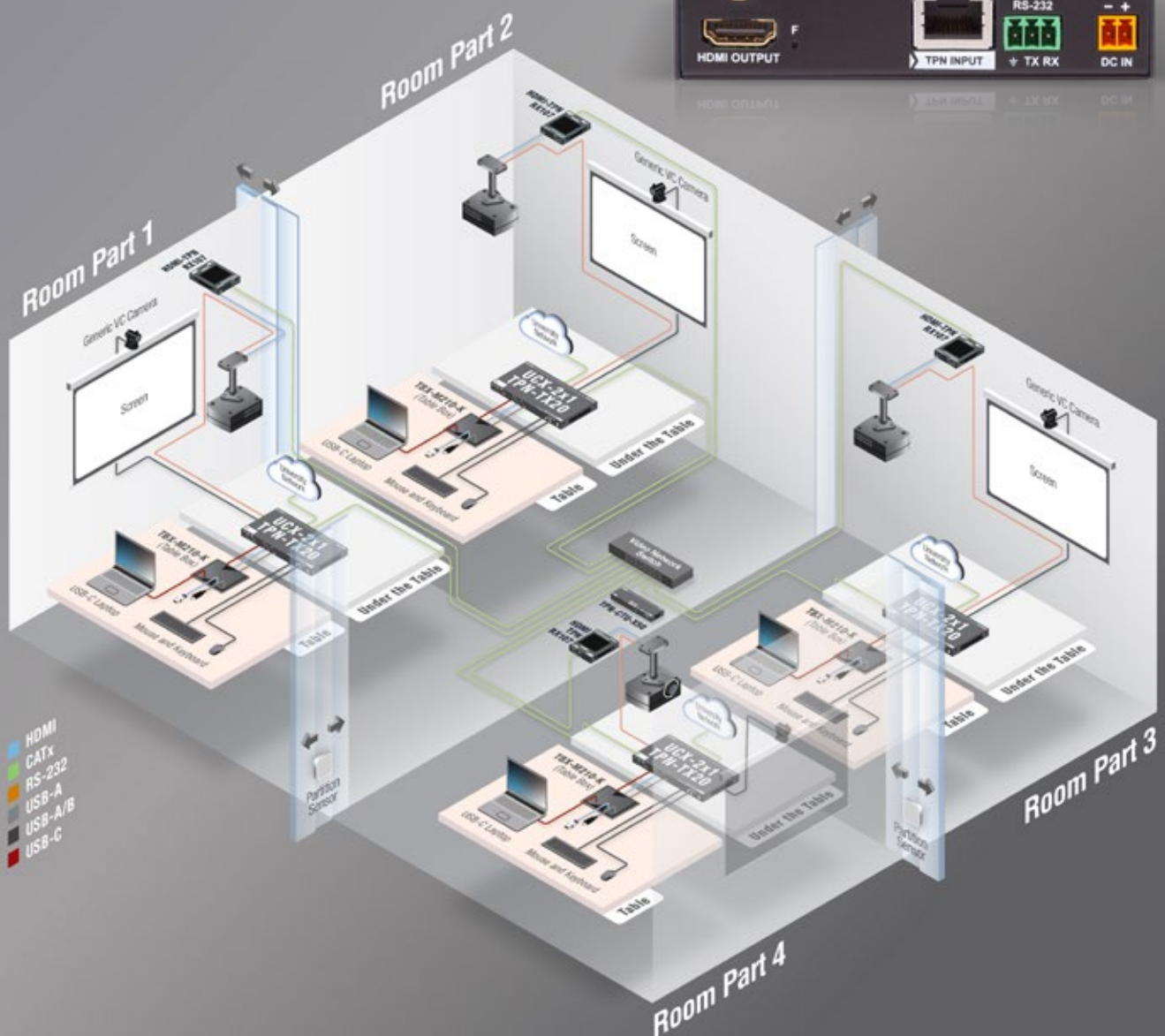
With TAURUS UCX TPN signal management solutions, divisible rooms need no costly dedicated rack space to accommodate for matrix switchers and other constructive elements that form up point-to-point solutions.

Schools use divisible classrooms to optimize the use of space and assets as well as for improving students' learning experiences.

Divisible rooms leverage the benefits of Lightware's matrix switching with SDVoE extension and robust USB-C connectivity to maximize the use and flexibility of educational spaces.

With Lightware's AV technology deployed in divisible classrooms, instructors enjoy seamless connectivity with enhanced presentation experiences in fully automated learning spaces without user interaction, while students stay engaged and motivated for learning.

HDMI-TPN-RX107



USB Type-C and HDMI Transmitter Switcher UCX-2x1-TPN-TX20



This universal transmitter switcher is a part of the AV-over-IP ecosystem built around SDVoE technology. It provides the same functionality as the TAURUS UCX Series of products but delivers a single source to multiple destinations through 10Gbps Ethernet networks. This transmitter-switcher enables the following functionality and characteristics:

- Full-Featured USB-C and SDVoE
- Multiple USB 2.0 connectivity for any USB device (camera, speakerphone, touch monitor, USB-HID devices, etc.)
- Room device control via Ethernet (TCP/IP), Serial, OCS or local GPIOs
- Independent USB Host switching layer for multiple USB hosts, for devices connected to TPN receivers and for 4 devices at TX side
- Video, Audio, Data and Charging Power over a single USB-C connection
- USB-C charging up to 100W
- Transmission of USB-C, HDMI 2.0, embedded audio, Ethernet, RS-232 to multiple TPN receiver devices through a 10Gbps Ethernet switch
- HDMI2.0 4K@60 4:4:4 matrix switching over 10Gbps network
- Independent, full bandwidth USB 2.0 matrix switching layer, supporting multiple USB camera sources
- Taurus UCX, DCX, and HDMI-TPN devices can be combined in a media-over-IP matrix switching system.

Control Unit for UCX TPN and HDMI-TPN Series



TPN-CTU-X50 is a control unit (CU) for Lightware's TPN AV-over-IP product line. Jointly with an off-shelf 10Gbps Ethernet switch installed as a crosspoint in the system, TPN-CTU-X50 creates a virtual matrix for the TPN devices on the IP network operating as input and output endpoints.

TPN-CTU-X50 is designed to manage TPN systems including up to 50 TPN endpoints. Its open SDVoE API allows any third-party SDVoE-powered controller interface device to manage the virtual matrix.

This controller features Lightware Advanced Room Automation (LARA) with a LARA TPN driver. The driver offers an easy way for crosspoint switching and performing basic setup tasks like assigning EDID and adjusting HDCP capabilities of the TPN transmitters. The driver also offers a graphical user interface to perform setup tasks and crosspoint switching. More features are to be added with subsequent releases.

Its three independent Ethernet ports allow network design flexibility even in highly secure IT environments. Other control interfaces include six GPIO ports, two RS232 interfaces, plus an OCS sensor.

Rey Juan Carlos University, Madrid, Deploys Lightware's USB-C Powered Technology to Build Classrooms

Founded in 1996, **Rey Juan Carlos University (URJC)** has always applied an advanced interdisciplinary approach to teaching and research. URJC **proudly ranks among the best universities in Madrid** for its excellent academic offer and high level of scientific research.

Back in 2020, in line with its Quality policy, the **University rapidly reacted and responded to the need for a hybrid learning model** to address the pandemic challenges. The educational venue looked for a classroom AV solution to enable the same level of accessibility to video, audio, and data for distant students as those learning on campus, have.

The IT Team had several issues that needed to be addressed:

- **Sourcing and transmission of the classroom audio and video signals** with no compromise to their quality; remote students had to enjoy the sound and picture of the quality as if they were present in the classroom;
- The engineers had to decide whether to carry on with traditional blackboards or introduce a change in pedagogy by using interactive projectors or displays. Finally, **they chose interactive solutions based on projectors and USB cameras** featuring automatic tracking to focus on the traditional blackboard when the teacher is writing on it;
- The IT Team was to **provide seamless connectivity for the dedicated classroom PCs and teachers' laptops with classroom peripherals**, such as cameras, displays, keyboards and mice, control touch panels, etc.);
- **Costly USB cables, widely limited in lengths**, and often showing poor integration with room peripherals, particularly with cameras, could also become a challenge for hybrid classrooms;
- **The hybrid classrooms were to embrace multiple devices that would need constant monitoring and remote support for instructors and for troubleshooting.**



From August-2021 up to July-2023, with rolling out multiple Lightware devices, the University's IT Team converted their campus into an advanced hybrid learning space.

At the **1st stage**, as many as **102 units of Lightware MMX4x2-HDMI-USB20-L matrix switchers** were deployed offering 4xHDMI inputs, 2xHDMI outputs, and USB2.0 for switching across 4 USB peripherals and 4 hosts. The IT Team **enrolled Taurus UCX universal matrix switcher UCX-4x2-HC30 for 102 classrooms**, and in the final stage, the University **will deploy 92 more units of UCX-4x2-HC30.**

With Taurus UCX-4x2-HC30 installed in their hybrid classrooms, the University has built a future-proof learning environment where instructors are confident users of the hybrid technology. They enjoy automated seamless launching of the classroom's AV. They rely on instantaneous host switching and **seamless USB 3.1 Gen 1 connectivity to deliver 4K@60Hz 4:4:4 video, audio, and have access to Ethernet.**

Lightware's distribution amplifier DA4-HDMI20-C is used in large auditoriums of the University to enable a quality video signal on each room display.

The University's engineers deployed **Lightware's USB-C 5-meter cables**. They are satisfied with the performance of Lightware. However, they still face connectivity

and switching issues with a third-party USB-A cable produce.

With the **open API available in Lightware devices, the task of remote control and support** for instructors, as well as trouble preempting are perfectly surmountable for the engineers of URJC.

The IT Team of the Rey Juan Carlos University appreciate the scalability of the **Lightware technology which provides room for future technological development** and further extension across the campus. They see potential in Lightware's open API features that **enable integration with 3rd parties devices** and higher architecture control solutions to enhance classroom use efficiency and preempt devices' failures.

Currently, the engineers consider the deployment of the **room control provided by the Lightware Advanced Room Automation firmware (LARA) that is available in the Taurus UCX switcher.** With LARA the University will control both Lightware and 3rd party devices using a rich library of prewritten modules or having their own modules in JavaScript. They study LARA and assess its potential compared to Lightware's Event Manager control solution that the University has successfully used so far to enhance the classrooms' use and improve overall learning experience.

ACTIVE LEARNING ROOM

The pedagogy of teaching continues to evolve. Active Learning Classrooms have become common in universities of all sizes. These rooms include cutting-edge technology and are student-focused. Typically, the room design includes an instructor lectern in the center of the room with student collaboration tables around the instructor.

In this active learning room, each collaboration space has a USB-C and HDMI connection provided by the DCX-3x1-TPN-TX10 switcher. The USB-C input at each location will also provide up to 100W charging in addition. The audiovisual switching and routing is achieved using HDMI-TPN extender devices.

The instructor's lectern in the center of the room is also connected to a DCX-3x1-TPN-TX10 enabling the instructor's laptop to be shown on any of the screens in the room using the TPN switching. Any student laptop can be displayed on any screen in the room. The matrix video functionality is enabled by Lightware's TPN technology powered by SDVoE. DCX-3x1-TPN-TX10 device can be controlled by the instructor using the control interface.

The flexibility of AV-over-IP allows the technology to be connected to the collaboration spaces, and the tables can be moved around to create ad-hoc collaboration groups; this topology being available via network switch connection supported by AV-over-IP technology.



NEW PRODUCT



USB Type-C and HDMI Transmitter Switcher DCX-3x1-TPN-TX10

This universal transmitter switcher is a part of the AV-over-IP ecosystem built around SDVoE technology. It provides video and audio with compatibility with the TPN Series of products, delivering a single source to multiple destinations through 10Gbps Ethernet networks. This transmitter-switcher enables the following functionality and characteristics:

- USB-C for video, audio and charging and SDVoE output
- Room device control via Ethernet (TCP/IP), Serial, OCS or local GPIOs
- Video, Audio, and Charging Power over a single USB-C connection
- USB-C charging up to 100W
- Transmission of USB-C, HDMI 2.0, embedded audio, RS-232 to multiple TPN receiver devices through a 10Gbps Ethernet switch
- HDMI2.0 4K@60 4:4:4 matrix switching over 10Gbps network
- Taurus UCX, DCX, and HDMI-TPN devices can be combined in a media-over-IP matrix switching system.



The SDVoE-compatible extenders of Lightware's new TPN family are the perfect answer for the high-quality 4K60 transmission needs, supporting a valuable set of the functionality, among which are

- Extend HDMI 2.0 signals from a single source to multiple destinations through 10G Ethernet networks.
- Capable of handling various connectivity standards, including a 1G user Ethernet channel over the 10G link, as well as command injection into IR and RS-232.
- The additional Gigabit Ethernet port allows users to connect an additional device to the network directly through the TPN extender. Useful for controlling external devices like projectors and displays.
- HDCP 2.3 and basic EDID management functionality are also among the features offered by these devices.
- When using direct connection in point-to-point mode, both the transmitter and receiver are compatible with Lightware's TPX family of products.
- The newest TPN receiver variants also have the capabilities of scaling, moreover allowing transparent and composite USB2.0 transmission in the opposite direction.



1G AV OVER IP – TRANSPORTING 4K@60 HZ 4:4:4 VIDEO AND USB 2.0



GEMINI GVN

NEW PRODUCT



THE GEMINI GVN SERIES DEVICES WERE DESIGNED FOR 1GBPS ETHERNET NETWORKS AND CAN ALSO OPERATE IN POINT-TO-POINT CONFIGURATION WITH DIVERSE APPLICATION POSSIBILITIES.

We recommend GVN for applications where scalability, flexibility and rapid deployment are in focus. They are simple to install and to operate, and have numerous built-in services that most other manufacturers only provide for an extra cost.



Unlimited Endpoints

GVN can be expanded from a single point-to-point extension to virtually unlimited endpoints



Advanced EDID Management

GVN transmitters and receivers support all major EDID resolutions and are capable to scale video up to 4K60 4:4:4



Built-in USB 2.0 ports

GVN has built-in USB 2.0 ports to support cameras, microphones, interactive touch surfaces, keyboards/mice, and more



HDCP Compliant

GVN is HDCP compliant



Fast Switching

GVN has seamless switching

LIGHTWARE EXTENDS

AV-OVER-IP TECHNOLOGY CARRIES MULTIMEDIA ACROSS ACTIVE LEARNING SPACES, COMPUTER AND SCIENCE LABS, LARGE SCHOOL VENUES, CAMPUS DIGITAL SIGNAGE, AND OTHER LEARNING ENVIRONMENTS.

AV-over-IP, being widely acknowledged as the best industrial method of multimedia signal delivery, is the optimum option for education. Driven by our customers' needs, we offer transceivers for both, 1Gbps and 10Gbps Ethernet networks.

Our **GVN, TPN and UBEX product families** provide audio-video signal transportation in applications where scalability, flexibility, and rapid deployment are required. For environments operating in **1Gbps networks, GVN extenders** are the most efficient and potent choice, they are capable of **scaling video up to 4K60 4:4:4** with seamless switching and distributing USB2.0 peripherals.

GVN offer extension from point-to-point architecture up to literally unlimited end-points

GVN's EDID and scaling functionality secures seamless handshaking for multiple displays on the network

GVN's built-in USB 2.0 ports support cameras, microphones, touch surfaces, keyboards/mice

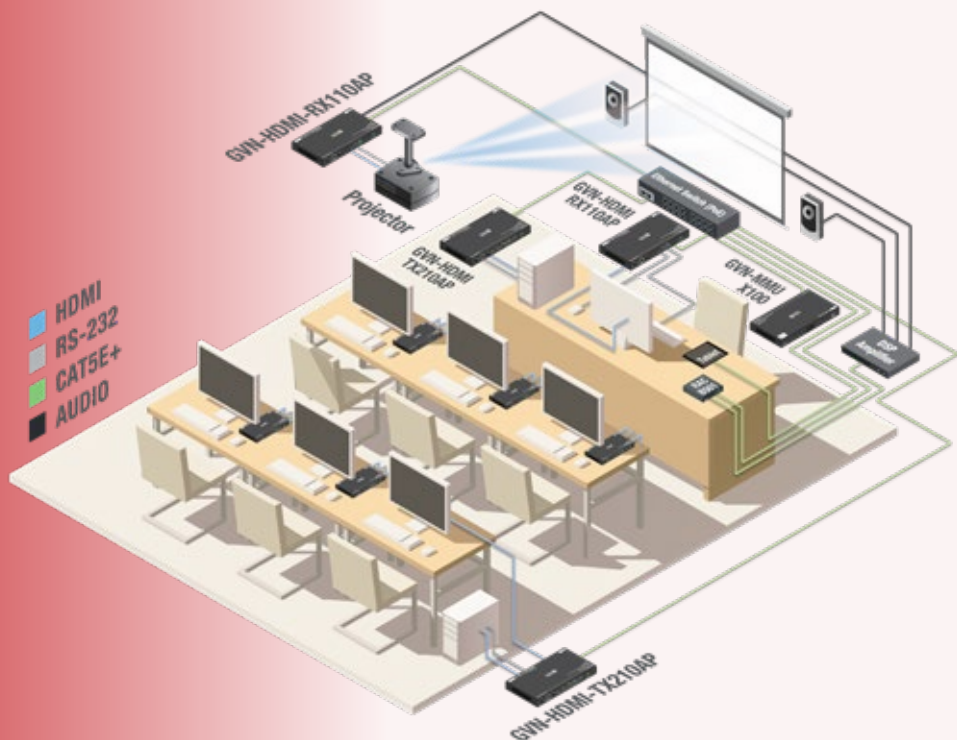
Computer Lab Example

The computer lab with full AV over IP KVM sharing capabilities. In this setting, any computer can be shown on any screen in the room, anyone can be given K+M control of any computer.

Instructors can share any computer with the main room display, or multiple computers with multiple displays if there is more than one display in the classroom.

Each student location has both an encoder and a decoder in this example. The encoder sends the output to the network. The decoder will receive the local computer or any other computer in the room.

The instructor would have the ability to turn off all student displays, or send all student displays the same image.



AV-OVER-IP SYSTEM FOR GIGABIT ETHERNET NETWORKS



Lightware's VINX (Video Network Extender) Series offers a cutting-edge solution for educational venues looking to deploy extensive, flexible digital signage networks within their campuses. VINX allows the creation of large-scale digital signage networks ranging from simple point-to-point setups to complex, multi-node configurations.



VINX as the centerpiece of the campus digital signage solution, enables

- Smart Bandwidth Management to maintain smooth video playback without overloading the campus network
- Scaling video up to 4K UHD @30Hz to distribute high-quality video content across various campus locations efficiently
- USB 2.0 MSC extension
- HDCP compliance to ensure security and content-protection
- Audio de-embedding
- Built-in website for device configuration to remotely manage settings and updates
- Remote powering via CATx (PoE)

Its USB 1.1 keyboard & mouse (HID) extension capability makes the VINX Series particularly useful in control room settings within educational facilities. This feature enables operators to manage security and surveillance systems remotely, enhancing campus safety and operational efficiency.

VINX's open API enables easy integration with 3rd party systems allowing for greater flexibility and the ability to adapt to various software ecosystems used within educational institutions.

PARTNERSHIPS

AT LIGHTWARE, WE BELIEVE THAT SUCCESSFUL INTEGRATION IS KEY TO UNLOCKING THE FULL POTENTIAL OF MODERN AV TECHNOLOGY. WE HAVE FORGED STRONG ALLIANCES WITH LEADING TECHNOLOGY PARTNERS, CREATING A DYNAMIC AND FLEXIBLE ECOSYSTEM. BY COLLABORATING WITH COMPANIES SPECIALIZED IN VIDEO CONFERENCING, AUDIO, NETWORK MANAGEMENT AND CONTROL SYSTEMS, LIGHTWARE PROVIDES COMPREHENSIVE SOLUTIONS, TRUSTED BY GLOBAL BRANDS.

SENNHEISER

Sennheiser and Lightware have joint efforts to offer a proven and tested solution that provides an improved experience for remote users. **TAURUS UCX with LARA firmware process information from Sennheiser microphones and PTZ cameras to track and focus on speakers in the room** and so enhance visual information for distant participants.

Lenovo

Lenovo offers an extensive range of unified communication solutions for meeting rooms of all sizes, including the **ThinkSmart Full Room Kit MTR bundle**. This package includes the core computing device, a control interface, an AI-driven camera, a smart soundbar with microphones, and premium remote manageability software **to power Microsoft Teams Rooms on Windows (MTRoW) systems**.

poly

Poly's expertise in high-quality video and audio conferencing equipment is a natural fit for **Microsoft Teams Rooms**. When combined with Lightware's signal management devices, **Poly's room bars deliver flawless video conferencing experiences with integrated audio and video capabilities**. Whether in a boardroom or an open collaboration space, Lightware's **Taurus UCX and Taurus TPX** product lines seamlessly **integrate with HP/Poly's range of all-in-one videoconferencing units**.



In joint aspiration for creating enhanced meeting room experience, **Barco and Lightware offer** a seamless and feature-rich **solution for hybrid collaboration** in small to large meeting spaces and boardrooms. **Barco ClickShare CXSeries technology and Lightware's TAURUS UCX switcher turn the meeting space into a unified communication powerhouse** by harnessing all the benefits offered by the USB-C technology. Together, we enable maximum flexibility and functionality of wireless and wired hybrid meetings.



Cisco and Lightware collaborate through the **integration of Lightware technology with Cisco Room Devices, offering an expanded number of inputs** for greater versatility. Through this partnership, **users can control** room elements like.

Lights and shades directly from the Cisco Room Navigator, **extend** connectivity with USB and Ethernet and **share** audio-visual sources seamlessly across varied room types. The integration supports the Room Kit series, Board Pro and more and enables **Cisco Room Kits to function as independent USB cameras and speakerphones in BYOD meetings.**



The cooperation between Lightware and Netgear brings significant benefits to users. Through pre-tested solutions, **developers have validated TPN, GVN, and UBEX with Netgear switchers.** This ensures seamless integration, **delivering smooth AV-over-IP performance** with easy configuration and high reliability. The collaboration supports **high-quality AV and UC transmission,** accommodating **4K60 signals** and high-speed networking at **1G, 10G, and 20G for crystal-clear visuals** and smooth operation. The setup process is simplified through **plug-and-play deployment,** leveraging pre-configured Netgear AV Line switches to minimize installation hassle. **Scalability** is another advantage, as the solutions effortlessly adapt to setups ranging **from small meeting rooms to expansive, multi-display environments.** Additionally, **centralized control** simplifies the management of both AV and network systems. This partnership guarantees a streamlined, reliable, and future-ready AV-over-IP experience.

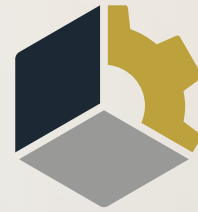


Lightware collaborates with industry-leading companies to deliver top-tier solutions. From hardware to software, whether fully integrated or perfectly compatible, each of our partnerships offers innovations that advance the ProAV market. Learn more about Lightware's Integration Solutions:

<https://lightware.com/integrations>

LIGHTWARE CONTROLS

LARA PROVIDES A SEAMLESS LEARNING AND TEACHING EXPERIENCE



LARA
LIGHTWARE ADVANCED
ROOM AUTOMATION

With LARA (Lightware Advanced Room Automation) available in TAURUS UCX /MMX2 teachers can expand their control and management of room assets and benefit from room automation.

LARA WILL CONTRIBUTE TO



Classroom work efficiency by enabling control over the assets from a single touchscreen; LARA eliminates multiple device controls. Enables professors to focus on imparting knowledge to students while LARA sets up the technical space for them.



Effective group work and exam support by making in-person, distance, and hybrid work sessions and exams a seamless experience for students. LARA ensures that devices in the learning space are ready to use by the start of the session and manages the after-session behavior.



Environment protection by setting LARA to manage automated room shut-down. Schools will optimize costs and reduce their environmental footprint by reducing control units in each classroom.



LIGHTWARE CONTROLS



ROOM AUTOMATION PANELS WITH EVENT MANAGER CONTROL AND ADMINISTRATION LEARNING SPACES OF GENERAL PURPOSE CLASSROOMS, COMPUTER AND SCIENCE LABS

With room automation panels (RAP), Lightware maximizes the use of group study rooms and general purpose classrooms, facilitates their operation on-site and allows centralized monitoring and administration. The solution can operate independently with or without the central BMS (Building Management System) system.

Lightware RAP is a combination of a processor and a keypad, in one form factor.



Room Automation Panel: **RAP-B511**

The RAP embraces the following features:

- Built-in room control **Event Manager** application
- **11 backlit programmable buttons** and a **light management rotary dial**
- Real-time clock with **network time protocol** for scheduling events (like room-launching prior to the class and the like)
- **GPIO** for the occupancy sensor, motorized screens, or shades control
- **2 Ethernet connections** for receiving/sending **PoE remote power**
- **1xRS-232** for peripheral device control

The RAP-B511 panel allows for control and communication with third-party classroom devices featuring an open API. It is also a user interface. Apart from the keys, the processor can accept commands delivered by smartphones or tablets using TCP/IP.

The RAP family features a web server that **allows operations from mobile devices through a browser.** Passwords and user validation are local administration functions that enable launching scenarios and provide access to the local Wi-Fi network.

The RAP-B511 controller allows for remote access. In the case of any technical issues in the classroom, **remote assistance can be provided without sending a person across campus to the room.** All features of the RAP-B511 are accessible over the network. A remote technician can confirm the signal presence/absence, and even “push” buttons to select devices.

Armed with functionality, the instructor is free from distractions when lecturing, while the school administration maintains efficiency by having an optimum AV-IT crew, and AV-IT engineers are satisfied being able to deliver technical support within minutes, rather than hours or days.

WE ARE GREEN FOR THE SAKE OF THE GLOBE'S SUSTAINABLE FUTURE

Lightware is committed to managing all operations and services in an environmentally responsible manner and employing methods and policies to contribute **to environmental sustainability**.

We aim at **preventing and minimizing pollution from manufacturing, packaging, and daily operation** and constantly review our activities and **set goals to reduce** our impact on the environment. We pay attention to monitoring, evaluating, and refining our energy consumption and waste management.

Employees are encouraged to minimize paper waste: where possible, all administrative **documents are emailed rather than printed & posted**, incoming faxes are diverted to email while unavoidable paper waste is recycled. When it is absolutely necessary to print, **we use recycled paper in the printers** and copiers and print in eco mode to save ink and energy. Empty print cartridges and toners are collected, treated and when possible, recycled by a contracted service.

In developing our products, we take sustainability very seriously. **We design, develop, and assemble Lightware prototypes in Budapest and so reduce our carbon footprint on transportations.**

We consciously do not overdesign our products and so **reduce colorful but chemical painting**. Neither do we practice garish and heavy design of our packaging.

We strive to make our packaging smart using every inch of the inner space of each cardboard, packing up crates, and containers effectively. We always use **recycled paper for the packaging** and have minimum plastic inside.

We have **consciously reduced accessories to accompany master products** to reduce the amount of wiring that is likely to be excessive and so wasted away.

Our offices incorporate energy-efficient lighting systems and our air-conditioning infrastructure is regularly maintained by professional technicians. When a lighting tube or bulb goes out, we always change it to an LED-based solution.

We participate regularly in Corporate Social Responsibility (CSR) events and actions. Besides ad hoc events, the Lightware team cleans a designated area of trash in the city on the annual 'Clean-Up Day', under the Let's Clean Up Europe initiative. www.ewwr.eu/take-part/#LCUE



We are proud to announce that Lightware has successfully obtained the EcoVadis sustainability bronze certification in 2024!

EcoVadis is a sustainability assessment platform for companies, which helps in measuring and improving their sustainability performance.

They evaluate various aspects, such as the following:

- **Environment**
- **Labor & Human Rights**
- **Ethics**
- **Sustainable procurement**

This achievement underscores Lightware's commitment to sustainable business practices and our contribution to building a sustainable future.



WE STAND BEHIND OUR PRODUCTS WITH OUR EXPERTISE AND COMPREHENSIVE SUPPORT

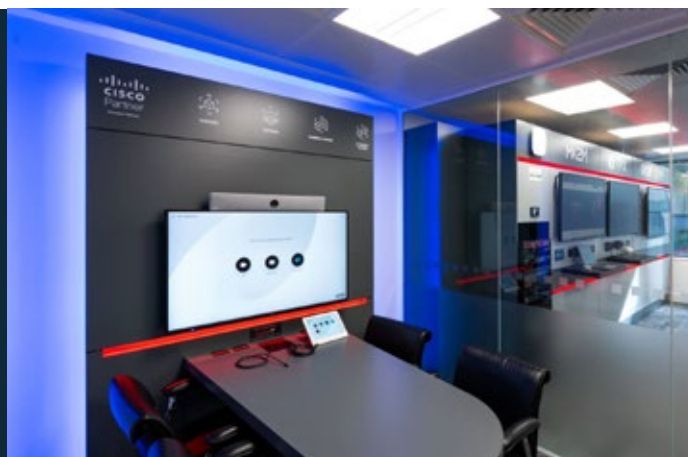
Lightware Visual Engineering is continuously **strengthening its presence around the globe** and providing comprehensive technical support and training for our partners and end users:

- We are now present in **more than 30 countries**.
- **Our AV Integration Team is available to assist in developing the optimum project for your unique requirements.** You can reach our AV Integration team at av-projects@lightware.com

Our Experience and Training Centers are located in prominent locations like **Paris, London, Madrid, Singapore, Warsaw, Düsseldorf, Sydney** and also in Switzerland.

They are available for our partners to receive demonstrations of Lightware's award-winning products and solutions. **We are continuously working on opening new experience centers** to welcome visitors and encompass a comprehensive understanding of our solutions.

<https://lightware.com/experience-centers>



Discover Lightware Academy, our new training platform, master the art of the AV market and stay ahead of the competition. **Choose the course that matches your level** and start your learning journey today.



Learn More:
academy.lightware.com

We treasure our partnerships and strong relationships and we aspire for long-term successful cooperation with you.
This is how we stay innovative and successful.



Contact us!



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www.lightware.com/education