

**HLX LAB™**  
SUSTAINABLE LABORATORIES





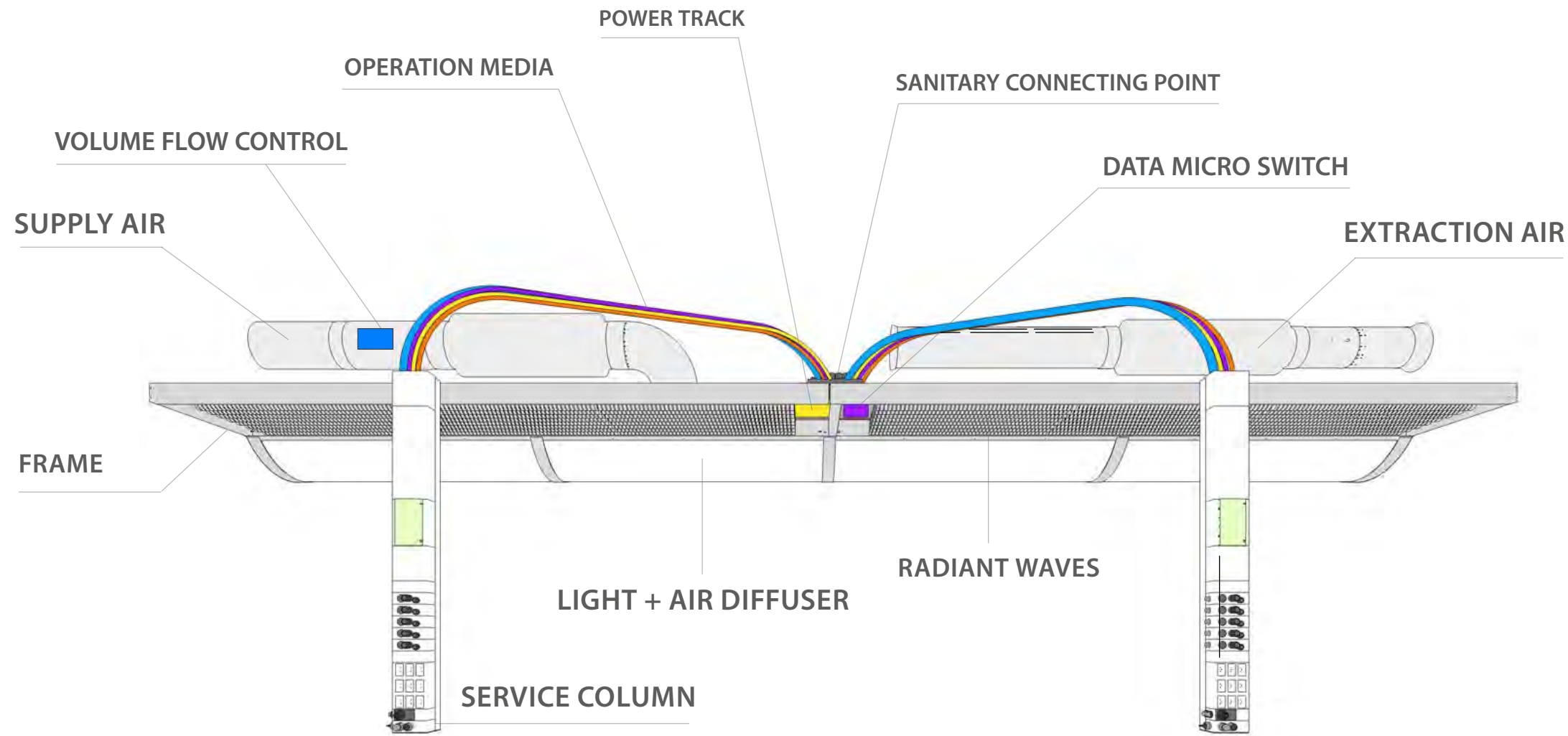
## THE ESSENCE

We started with the concept of designing and engineering the most flexible, completely integrated, infrastructure solution for both laboratory and office space environments. The resulting products, HL-X-LAB and HL-X-OFFICE, are service ceiling delivery systems for all utilities and services required in any space. We incorporated the most advanced technologies available that leverage the laws of physics with respect to the characteristics of air, water, and light. We take advantage of the fundamental qualities of thermal layering, specific heat capacity differentials, precise measurement and response times, as well as adaptive environmental conditions, which optimize energy efficiency and maximize productivity. We add to these scientifically proven concepts, encompassing the most effective ways of heating, cooling, moving, and distributing air and light, and most flexible and cost effective technology to provide power, data, and utilities at any location within an open space environment.

Additionally, our integrated, advanced technology solution is the safest, healthiest, and most comfortable working environment achievable, when compared to other infrastructure alternatives. The concept of open space design and the necessity for flexibility in reconfiguration capabilities is a significant driver for full “cost of ownership” considerations. With the constant acceleration in developing technologies and laboratory processes, a service ceiling approach to infrastructure provides the lowest cost of ownership throughout the life span of the space and, therefore, the highest ROI.

We provide the most advanced technology of today with easy integration of the technologies of tomorrow.

# BASIC AXLE



## THE COMPONENTS

- **VENTILATION**
  - Supply Air Module
  - Air Extraction Module
  - Volume Flow Control
- **COOLING/HEATING**
  - Radiant Waves
  - Chilled Beams
- **LIGHTING**
  - LED Light Diffuser
  - Adaptive Light Interface (optional)
- **MEDIA SUPPLY**
  - Service Columns; bringing operation media and all utilities to the workstations
- **POWER + DATA**
  - Variable Positionable Power Outlets
  - Data Micro Switches
- **INTERIOR CUBE (optional)**
  - Room-In-Room Module for Special Tasks





## ADVANCED VENTILATION

The patented air distribution system HL-X-VENT™, channeled through a scientifically designed luminaire and perforated light foil, allows for low air intake velocities no matter what air exchange rates are required. Air rolls are generated within the space, creating a safer and healthier environment. All air intake and exhaust is precisely controlled and measured, automatically optimizing response time and accuracy. Our air exhaust system completes the fully integrated solution, taking advantage of natural thermal layering. All these techniques provide the most energy efficient and safest ventilation system possible, reducing energy consumption by at least 30%.

**PERFORMANCE:**

- LOW SPEED SUPPLY AIR up to 32 x/per h
- AIR EXTRACTION UP to 350 W/m<sup>2</sup>

**CONTROL:**

- INTEGRATED AIR MANAGEMENT SYSTEM
- CENTRAL MONITORING

**SAFETY:**

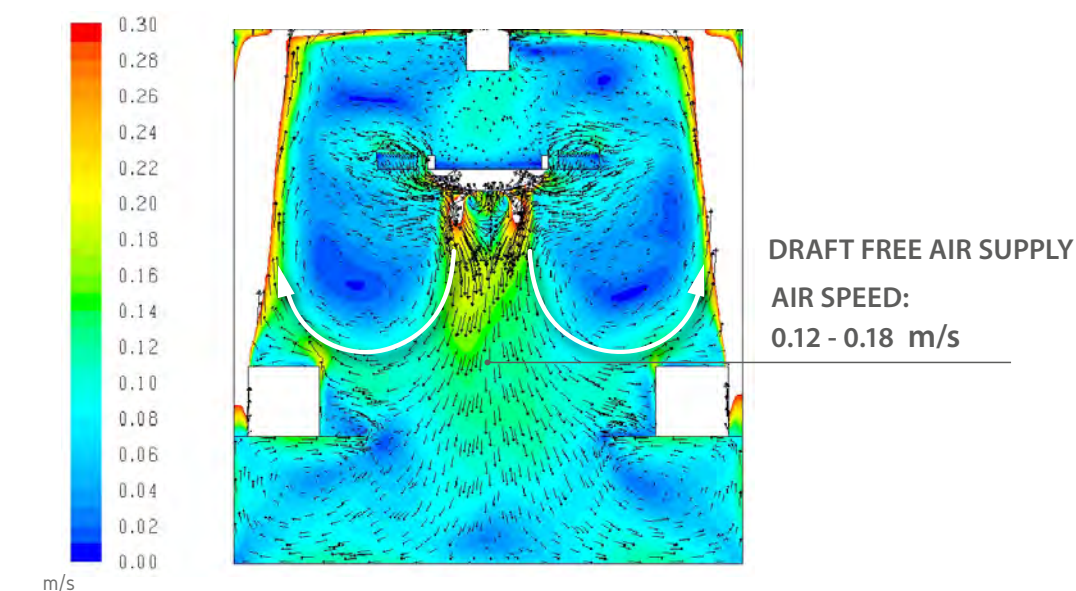
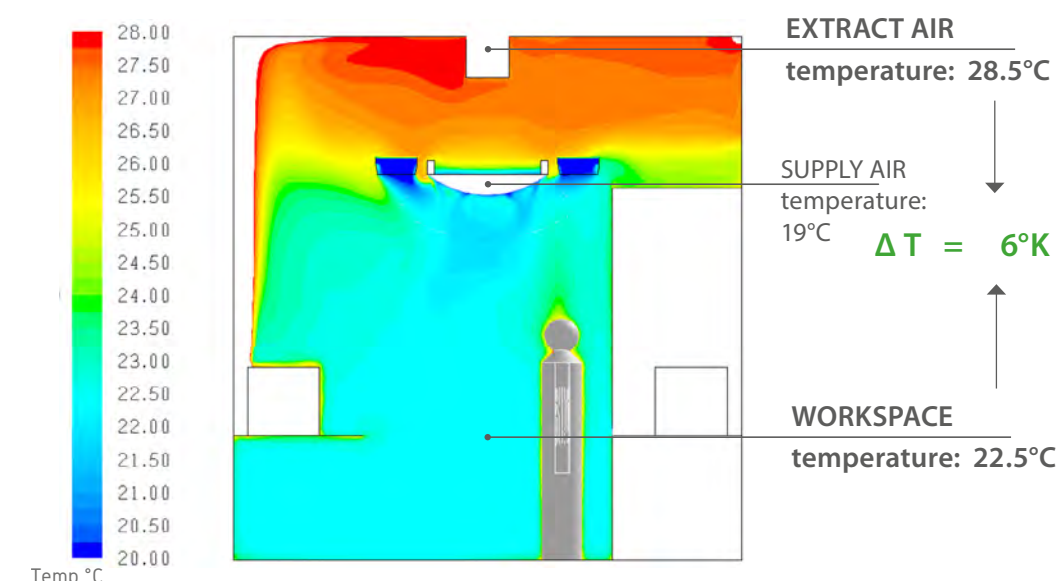
- MINIMAL EXPOSITION RISK
- LESS CROSS CONTAMINATION

**COMFORT:**

- UNIFORM WORKSPACE CLIMATE
- DRAFT-FREE AIR SUPPLY
- ADAPTABLE AIR FLOW VOLUME RATES

**EFFICIENCY:**

- ADVANCED THERMODYNAMIC DESIGN
- LOWEST POWER CONSUMPTION PER EXTRACTED WATT



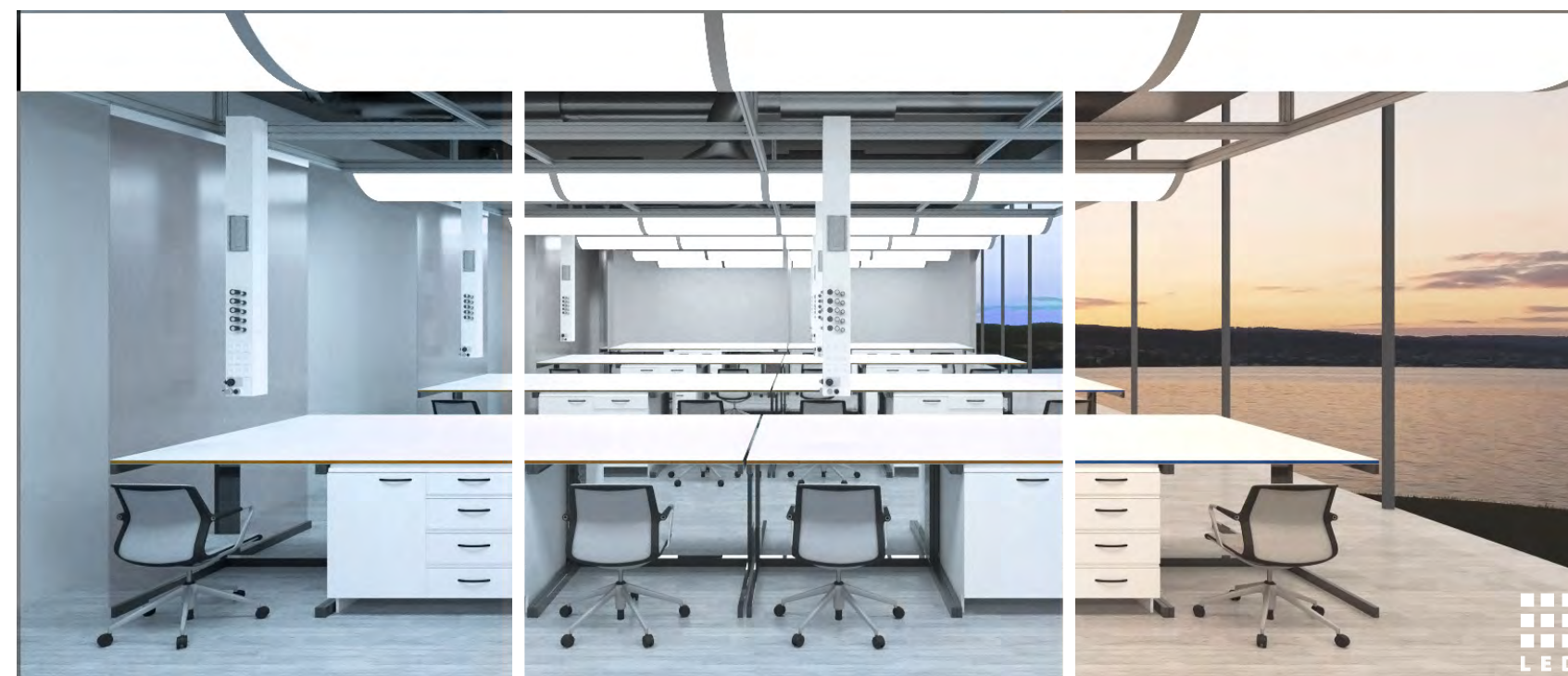


## INTELLIGENT LIGHTING

The HL-X-LIGHT™ lighting solution for shadow free workspaces in both laboratory and office applications utilizes optimal light dispersion materials and energy saving LED's, enabling maximum lighting performance with the lowest possible power consumption. The complete design creates a highly comfortable ambient light with a rich light spectrum and true color performance, providing both daylight conditions and critical light qualities.

### 3 VERSIONS

HL-X-LIGHT™ is provided in 3 different configurations: **ECO** with low wattage, **ECO DIAMOND** with powerful examination light capacity, and **ECO ADAPTIVE** - adding to the ECO DIAMOND type biodynamic, adjustable color and temperature functionality. The included interface supports either an automatic sensor technology, or manual adjustment capability of light management systems.



MORNING

NOON

EVENING

### BIODYNAMIC LIGHT / WHITE COLOR MODULATION

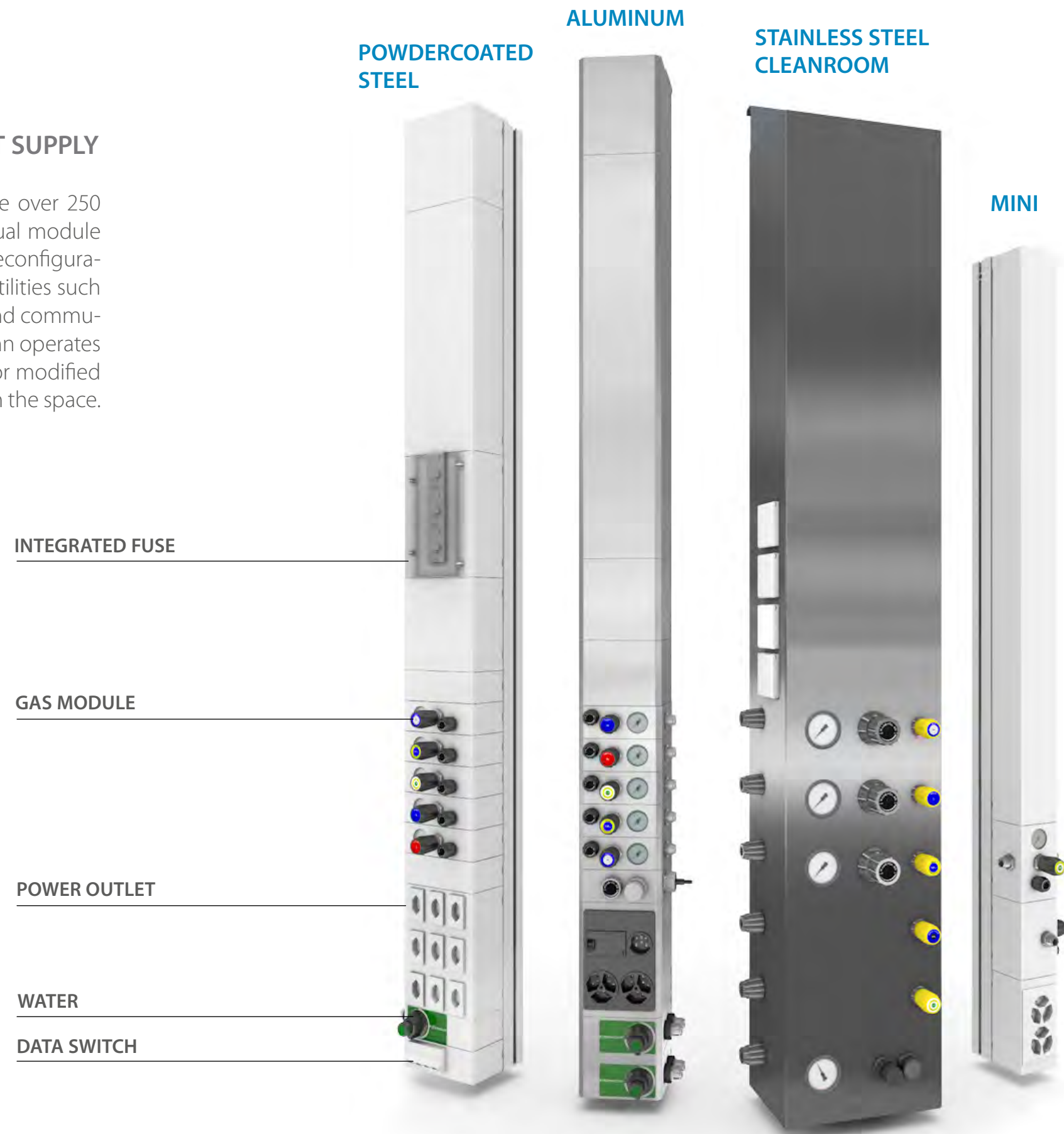
The **ECO ADAPTIVE** solution enhances the environment for all users by synchronizing the human biological rhythm with biodynamic lighting, thus offering healthy, comfortable, and productive working conditions. The research on light perception has proven the influence of light quality on human health and feeling. While natural daylight is perceived as the most comfortable, artificial light sources should render light over the day in the same manner if possible. Adding sense motion and environment brightness measuring controllers expands HL-X-LIGHT™ to a fully interactive and effective infrastructure component with highest comfort and efficiency.



# SERVICE COLUMNS

FOR EVERY APPLICATION THE RIGHT SUPPLY

Our column variations and selection provide over 250 possible media outlets, each in their individual module, allowing ease of maintenance and future reconfiguration. They supply each workstation with all utilities such as: gaseous media, liquids, cooling, IT/data and communication, as well as power outlets. Each column operates independently and can be maintained and/or modified without effecting any other operations within the space.



## VARIATIONS

HL-X-COLUMNS™ are produced in various standard specifications and materials and are available in:

- steel,
- aluminum,
- as individual columns,
- double columns,
- double columns with shelf boards.

The slim designed MINI-COLUMN is optimally applicable for use in bio labs and office areas.

The Stainless Steel version is used in cleanroom environments up to safety class S4.

## ELECTRICAL POWER SUPPLY

A unique modular power track system that provides seamless flexibility, ease of integration, reconfiguration simplicity, and minimization of operating interruption. Plug'n'play Power outlets or Power Towers allow all electrical, data, and communication services to be brought to any placement throughout an open space environment. This combined solution, incorporates built-in circuit breaker protection for each connection to the power track.

- Quick connect at every power track point
- Elimination of installing power cables
- Complete flexibility to reconfigure
- Independent circuit breaker for each connection



## MICRO SWITCH NETWORK

Security mechanisms are implemented into decentralized micro switches, which were previously only found in large central switches, that manage and protect networks. They also allow terminal devices connected with a network via a Wireless Access Point or IP phone, to be securely authenticated. The micro switch solution is effective and cost efficient with either copper or fiber optic cabling. An infrastructure with decentralized micro switches offers significant advantages in network availability, security, and financial savings.

- Reduces cabling over 90%
- Much faster installation and easier maintenance/ upgrade
- Drastic reduction of burnable material in the ceiling, due to reduced cabling
- IP phones or single MAC address devices can be securely authenticated
- Redundancy and cascade solutions available
- Significantly more cost effective solution with maximum security

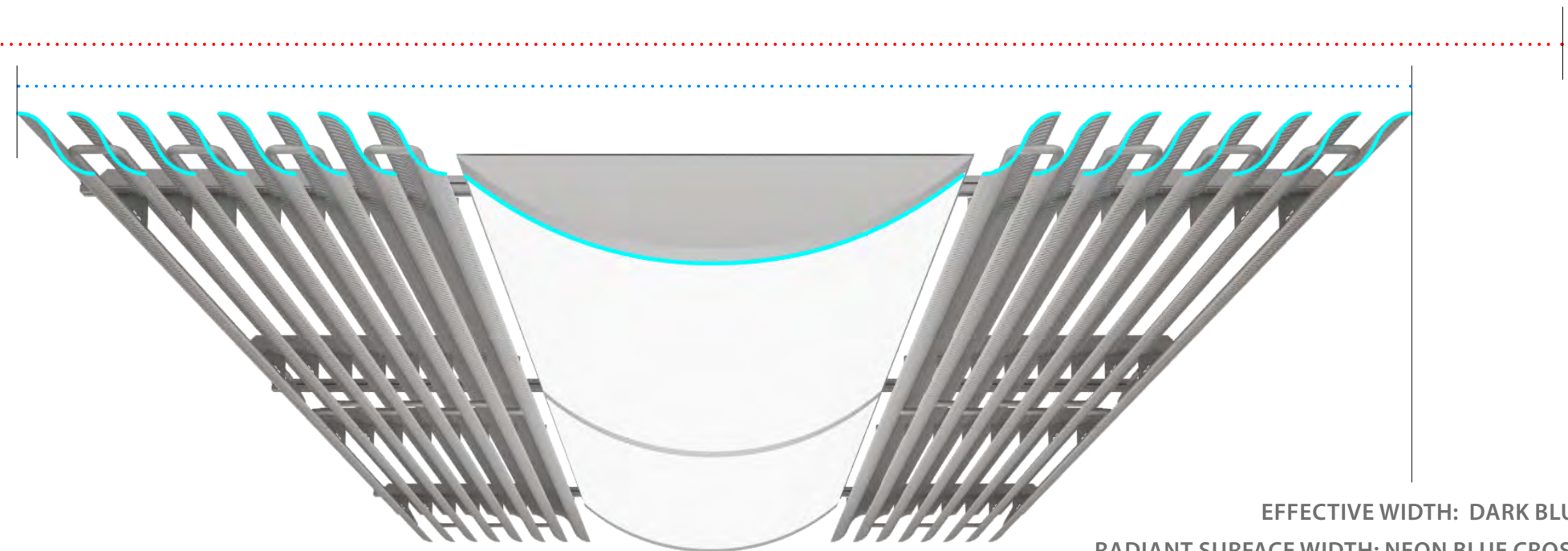
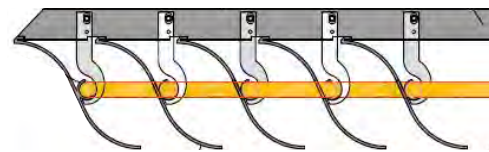


## SUPPLEMENTAL COOLING + HEATING

Our cooling and heating enhancements utilize the energy conservation physical characteristics of waterdriven designs, rather than air. Results are lower air velocities required for high heat load areas and energy savings of up to 30%.

### RADIANT WAVES - EFFICIENT COOLING AND HEATING

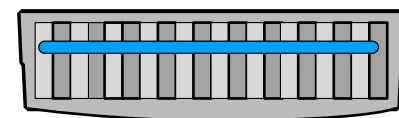
- Expandable capacity
- Slotted waves maximize convection additionally to the radiation
- Passive cooling & heating comfort
- Direct effect to objects
- Ideal for open space room layouts
- Less energy required than air systems



EFFECTIVE WIDTH: DARK BLUE DOTTED LINE  
 RADIANT SURFACE WIDTH: NEON BLUE CROSS SECTION LINE  
 TOTAL RADIANT SURFACE WIDTH UNWRAPPED: RED DOTTED LINE

### CHILLED BEAMS - EFFICIENT COOLING

- For specific locations
- Capabilities for high heat loads
- Passive cooling comfort
- Less energy required than air system





## CUBES + PARTITIONS

### ROOM-IN-ROOM SYSTEMS AND WALLS

We provide a modular, scalable work environment that meets a variety of customized and specialized specifications. With available partition walls and room-in-room solutions, any work space can be adapted to varying workflow requirements within the same open space environment. Some examples could be: highly toxic activity, temperature sensitivity, pressure changes, noise isolation, and analytical space. Our room-in-room solution, for optimal working conditions, fits seamlessly into any architecture and perfectly into our system grid. It can be installed quickly and is easy to reconfigure at a future date.

### FLEXIBILITY BENEFITS

- Easy reconfiguration of room layouts with partition walls.
- Seamless integration of analytic or office zones.
- Zero downtime during media or furniture modifications.
- Wide selection of panels, walls, separations, and cube configurations.

### APPLICATION RANGE HL-X-CUBE™

HL-X-CUBE™ secures the integrity of any area that has specialized and flexible requirements for:

1. Temperature variance
2. Pressure modulation
3. Sound protection/reduction
4. Safety/health enhancement



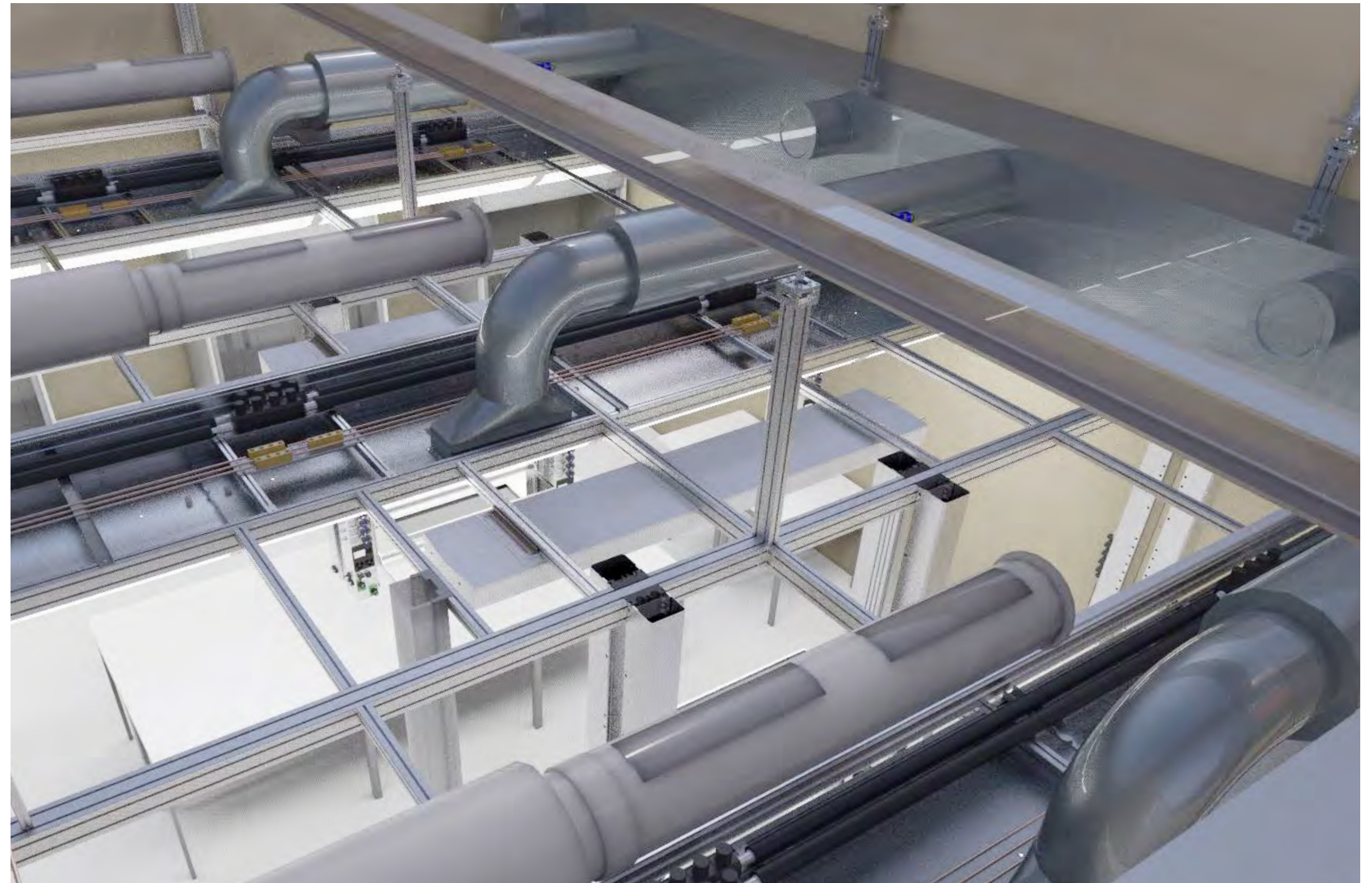


## SOPHISTICATED 3D DESIGN SYSTEM SOFTWARE DESIGN CAPABILITY

To design our highly integrated service ceiling products, incorporating a wide range of complex components and technology, we use state of the art 3D engineering software that enables detailed 3D plans and the ability to integrate into 3D CAD and AutoCAD systems. All aspects of our internal systems facilitates replication, integrated modification, and universal adaptation to architectural design. It is precisely this level of detail and sophistication of our design systems that allows for the efficiency and flexibility of our products. Our software systems are a major differentiating factor with our competitors, in that they are truly integrated with every detail of every component part, insuring a complete design package that is responsive to changing ideas and specification requirements. If necessary, our software sophistication allows for on-site modifications with the ability to adjust final documentation automatically. HL-X-LAB™ is designed like **one** machine.

### MAIN BENEFITS

- Lean 3D-Construction
- Holistic Design Approach
- Fast Configuration with Preassembly Units
- Easy Reconfiguration and Refurbishment
- Easy Upgrades





## OPTIMAL SUSTAINABILITY

Our service ceiling concept not only allows for the efficient integration into all of a building's infrastructure, our particular products, HL-X-LAB and HL-X-OFFICE, incorporate the most energy efficient design concepts and component parts that both the laws of physics and technology advancements allow. The design itself minimizes future reconfiguration costs and facilitates the easy integration of future technology that may improve our solution even further.

There simply is not a safer or healthier alternative for open space designs, based upon the way that we move and manage both air and light. Our workplaces with state-of-the-art Service Columns are the most comfortable and productive environments in which one can work.

All component parts are constructed with long-lasting, reusable, and recyclable materials. Our mission is to continually develop and produce the most advanced infrastructure solution, optimizing the benefits in all ecologic and economic areas.

### In short words, our customers benefit from:

- **Maximum Reduction in Energy Consumption**
- **Flexible Reconfiguration and Recyclable Materials**
- **Safest, Healthiest and Most Productive Working Environment**







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