**lumos** CONTROLS
A WISILICA BRAND

Lighting Controls Design Guide

# MUSEUM

Lighting has a vital role in making museums welcoming, educating, entertaining and aesthetically appealing. The lighting should make pathfinding easier, and should attract the visitors to specific displays or elements.

Lumos Controls has been assisting building communities in creating energy-efficient and lively spaces. We thought sharing our experiences, and best practices would be helpful for your following projects.

This guide will brief you on how we design lighting control strategies for museums with a focus on:

→ Altering the mood of the exhibition space
→ Drawing attention to stunning artwork and sculptures
→ Guiding visitors from entrance to exit

# Museum Buildings Possibilities With Us- Save Energy and Make Visitors Enjoy Every Moment in life!

We have a device portfolio that is simple to install and easy-to-use.

Energy efficiency and comfort are crucial in lighting, and our lighting controls help you achieve them. Our future-proof solution helps you save energy, and enhance the ambiance, through easy deployment of lighting control strategies. We also provide detailed analytical reports on energy utilization, occupancy patterns, and device usage.  The result is better ROI. Also, the solution easily integrates with the building management system, bringing added benefits.

Interest

Visibility

GALLERY LIGHTING

Environment

Presentation

# Lighting Control Strategies
## for Each Spaces

| Control Requirement | Exhibition Room/Gallery | Lecture Room | Information Room | Lobby | Storage Room |
|---|---|---|---|---|---|
| Manual ON/OFF/ Dimming | Yes | Yes | Yes | Yes | Yes |
| Time Scheduling | Yes | | | | |
| Occupancy Control | | Yes | Yes | Yes | Yes |
| Vacancy Control | | Yes | Yes | Yes | Yes |
| Daylight Harvesting | Yes | Yes | Yes | Yes | |
| Emergency Lighting | Yes | Yes | Yes | Yes | Yes |

## Did you Know?

Higher color temperatures (4,600K or more) appear blue-white and are called cool or daylight colors.
Mid-range color temperatures (3,100K–4,600K) appear cool white.
Lower color temperatures (up to 3,000K) range from red to yellowish-white in tone and are called warm colors.

# Exhibition Room/Gallery



250 Sqm
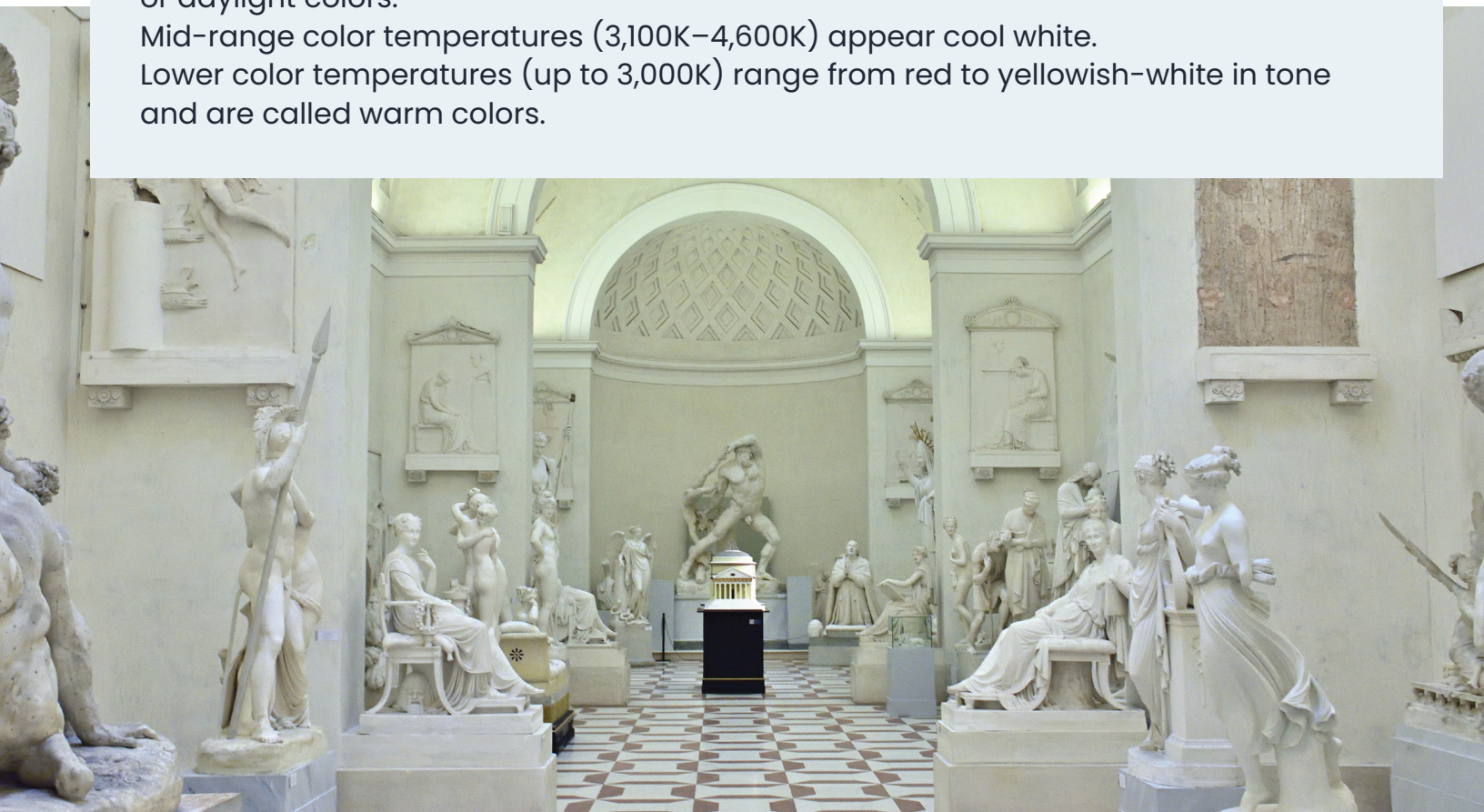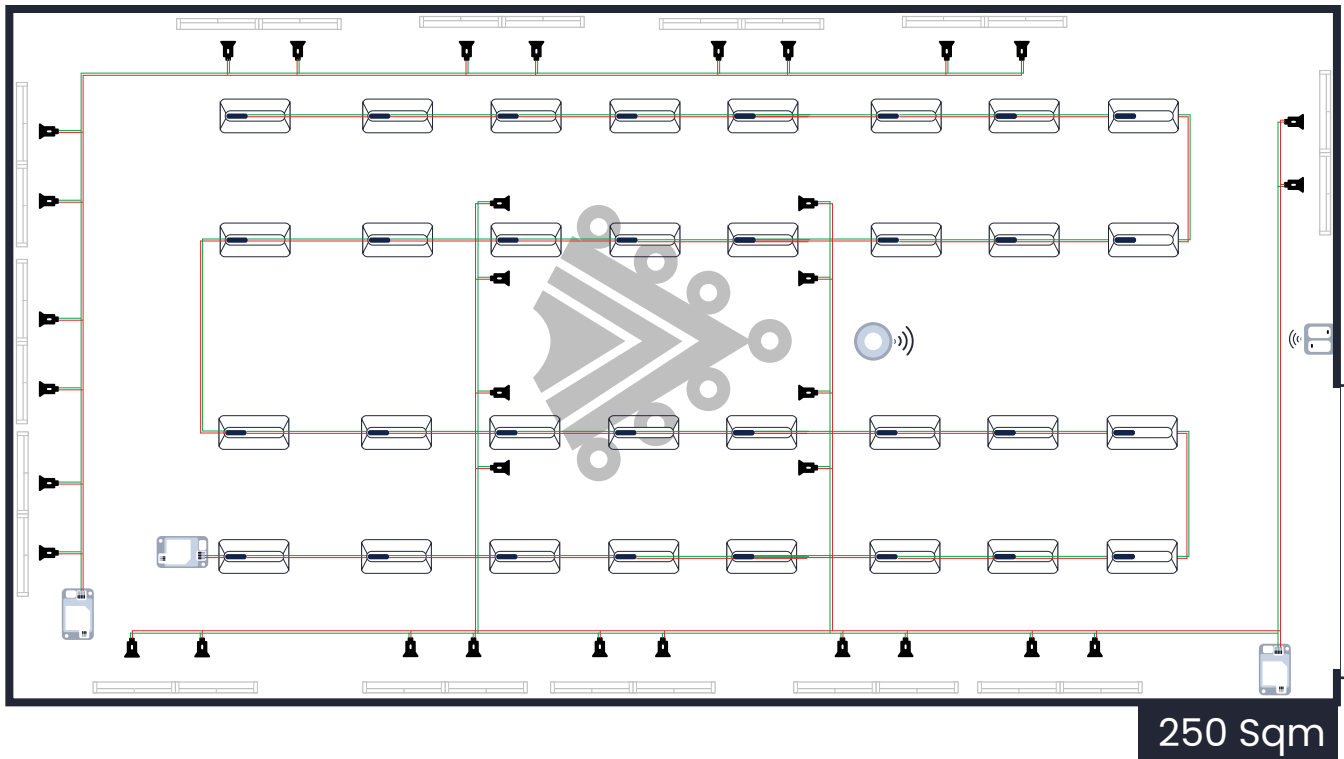
◯ Motion/Light Sensor    ▦ DALI Room Controller    ▯▯ Switch

A gallery in a museum is a place for experiencing the culture, artworks and history. Since sighting should be capable of drawing visitors' attention, bringing in more natural light can make the place pleasant and welcoming.

## We suggest

→ Time schedules for energy savings
→ DALI individual addressing for task lighting
→ Closed loop daylight harvesting ensures that exhibits do not get spoilt

**Pro tip:**

Automates luminaire functioning at pre-set time-slots of the day, week, or month to automatically dim or turn ON/OFF lights. Use controllers and vacancy sensors to detect vacancy and turn OFF devices. If you want to set a required light level, use light sensors and controllers for closed-loop daylight harvesting. Also, daylight harvesting ensure that light levels do not go above specified limits and ensure that exhibits do not get damaged.

# Lecture Room
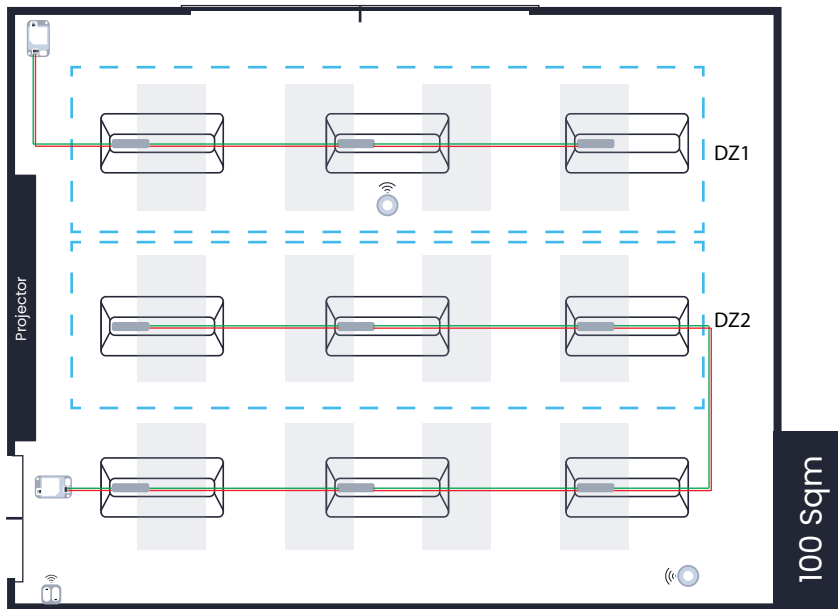


Motion/ Light Sensor    DALI Room Controller    Switch

As different activities happen at lecture halls, the light requirement keeps varying. The space require sufficient and glare-free lighting that provides optimal lighting condition for teaching and presentation.

## We suggest

→ Occupancy/vacancy sensing for safety and energy savings
→ Daylight sensing to improve concentration, productivity and enhanced energy savings
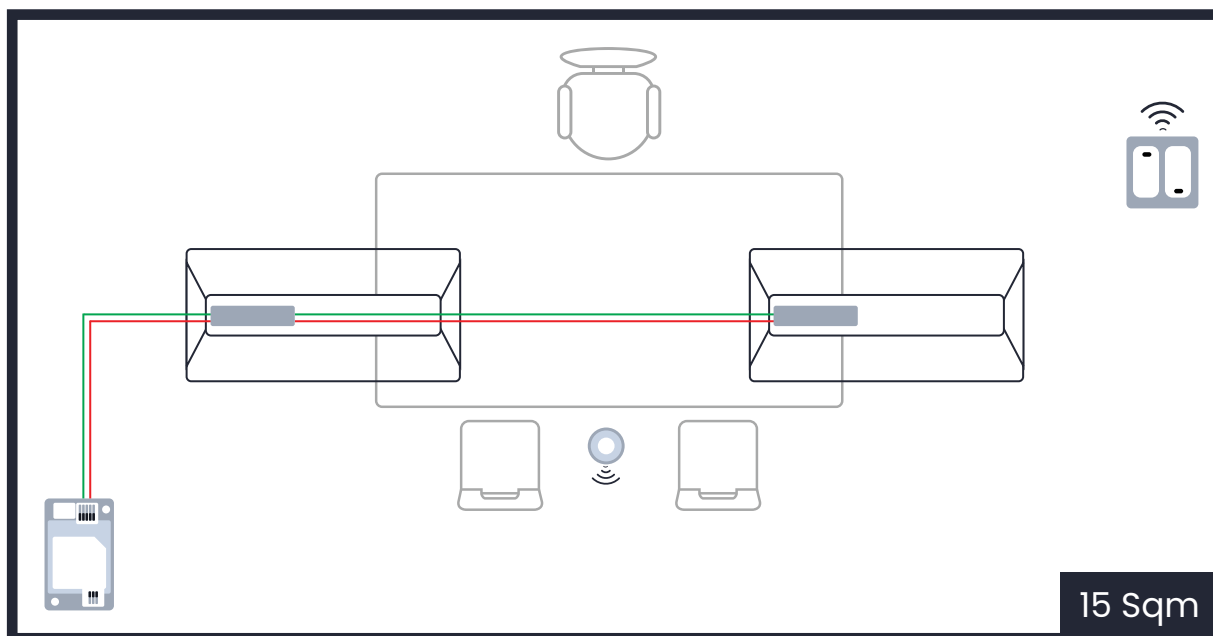
**Pro tip:**

Occupancy sensors and controllers work together to detect human presence to turn lights ON automatically. Controllers and vacancy sensors detect vacancy and turn OFF devices. If the room gets enough daylight, incorporate  light sensors and controllers for open-loop daylight harvesting. On the contrary, if you want to set a required light level, use  light sensors and controllers for closed-loop daylight harvesting.

# Information Room



15 Sqm

◯ Motion/Light Sensor     ▭ DALI Room Controller     ▯ Switch

The information room lighting should be natural and lively. It should make visitors feel at ease and help navigate them better. The lighting should create an environment that encourages learning, discovery, and curiosity.
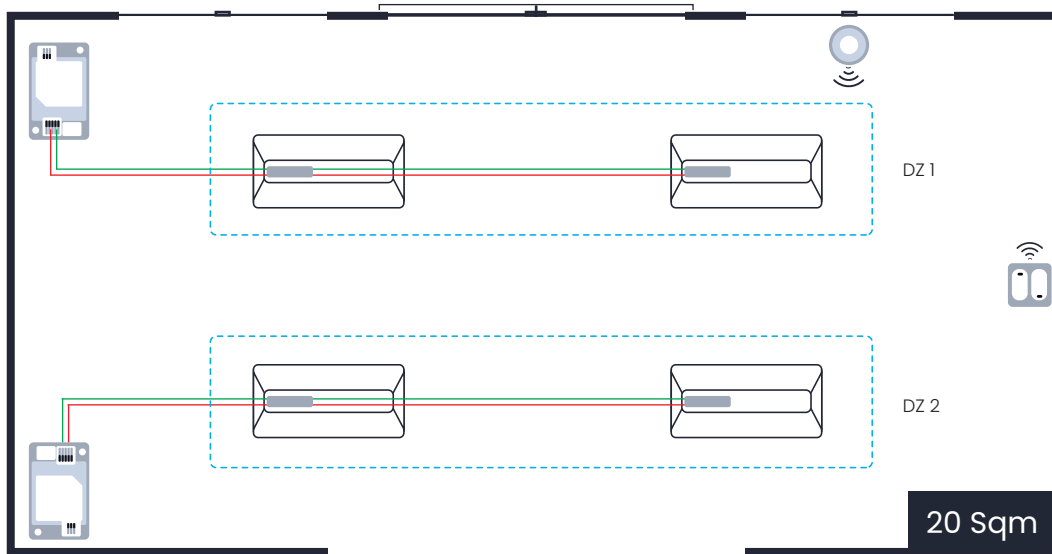
## We suggest

→ DALI individual addressing for task lighting
→ Occupancy/vacancy sensing for safety and energy savings
→ Daylight sensing to improve concentration, productivity and enhanced energy savings

### Pro tip:

Occupancy sensors and controllers work together to detect human presence to turn lights ON automatically. Controllers and vacancy sensors detect vacancy and turn OFF devices. If the room gets enough daylight, incorporate light sensors and controllers for open-loop daylight harvesting. On the contrary, if you want to set a required light level, use light sensors and controllers for closed-loop daylight harvesting.

# Lobbies



DZ 1

DZ 2

20 Sqm

⊙ Motion/Light Sensor    ▭ DALI Room Controller    ▯ Switch    **DZ** Daylight zone

The reception foyer shapes the client's initial perception of the museum. The lighting should enhance the aesthetics of the space creating a best first impression.

## We suggest

→ Occupancy sensing for safety and energy savings
→ Daylight sensing to improve concentration, productivity and enhanced energy savings

**Pro tips:**

Use occupancy sensors and controllers to turn lights ON automatically detecting human presence. If the room gets enough daylight, incorporate light sensors and controllers for open-loop daylight harvesting. On the contrary, if you want to set a required light level, use light sensors and controllers for closed-loop daylight harvesting

# Storage Rooms



60 Sqm

○ PIR Motion/ Light Sensor      ▭ DALI Room Controller      ▯ Switch
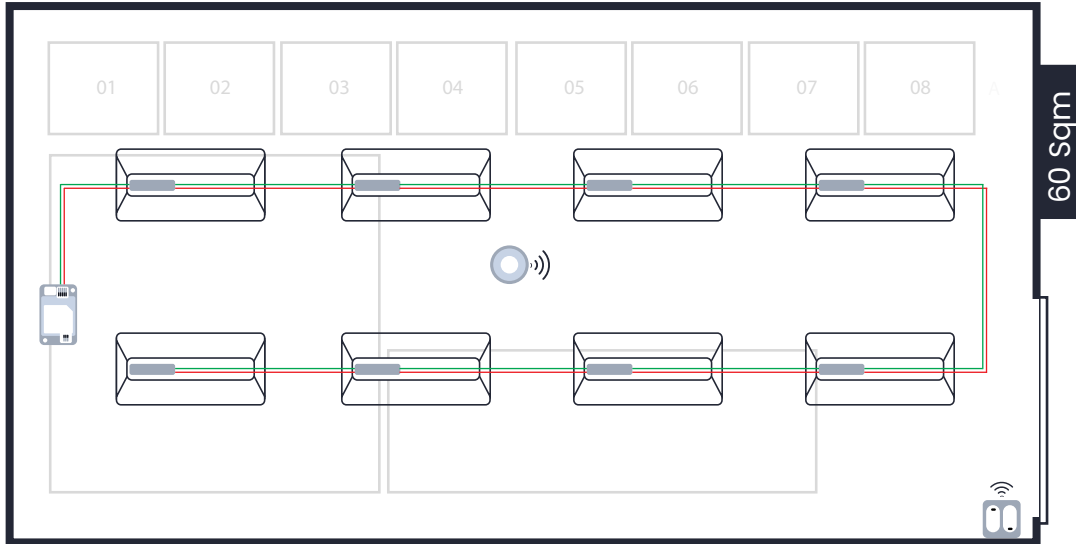
Museum storage units preserve special collections, including objects, archival items, and specimens. This space is designed to provide maximum protection to the museum's collections. Though the area is not frequently used, it requires brighter light when occupied to make visitors comfortable.

## We suggest

→ DALI individual addressing for task lighting
→ Occupancy/vacancy sensing for safety and energy savings

**Pro tips:**

You can use controllers to create glare-free and comfortable lighting. Occupancy sensors and controllers work together to detect human presence to turn lights ON automatically. Controllers and vacancy sensors detect vacancy and turn OFF devices.

Use our mobile app to enjoy maximum convenience and flexibility. You can wall mount our kinetic/ remote switches for ease of use. Our controllers meet emergency lighting requirements to ensure your building safety. Implement plug load controls for maximizing energy savings.

# Grow Seamless

Optimize building operations with our advanced reports and analytics.

→ Understand occupancy patterns
→ Energy utilization
→ Device usage

Emergency monitoring dashboards ensure occupant safety 24*7

# Device Placement Guidelines

Device placement considerations are crucial for optimizing the performance and functionality of devices in various scenarios. Here are some key points to consider:

1. **Signal Strength and Distance:** Keep in mind that signal strength tends to weaken as the distance between devices increases. Therefore, it is essential to consider the proximity of devices to ensure reliable communication. Maintain an appropriate distance between devices to ensure optimal signal strength.

2. **Metal Structures:** When devices are placed near metal structures, it is important to ensure that the Bluetooth Low Energy (BLE) antennas have a clear line of sight with nearby devices. This can be achieved by creating small holes in the metal enclosure to allow the BLE antennas to maintain connectivity.

3. **Sensor Mounting Guidelines:** Install sensors in a way that protects them from damage, vandalism, and accidents. Avoid placing sensors near heating sources that can cause rapid temperature changes within the detection or measurement zone. This includes air vents, fan heaters, incandescent lamps, and halogen lamps.

4. **Interference-Free Detection Range:** Ensure that the detection range of sensors is free from interferences that can affect their performance. Identify and mitigate potential sources of interference to maintain accurate and reliable measurements.

5. **Light Sensor Placement:** When using light sensors, make sure they only measure indirect light (light reflected from other surfaces) to avoid measurement distortions caused by direct sunlight. This ensures accurate and consistent measurement results.

6. **Scaling Up for Large Installations:** For large installations, establish a proper building hierarchy before commissioning the devices. Use Lumos Controls app, which allows devices to be divided among Buildings, Floors, and Zones. Choose the appropriate Zone for each device during commissioning. Note that devices commissioned in a Zone can only communicate with other devices in the same Zone. It is recommended to use a single phone for commissioning and configuring devices within a specific Zone to avoid multiple sync attempts to the cloud.

7. **Proximity for Configuration:** When creating, deleting, or editing Groups, Scenes, Schedules, etc., ensure that you are within the Bluetooth Low Energy (BLE) range of the related control devices. This proximity is necessary for seamless configuration and synchronization.

By considering these device placement considerations, you can optimize the performance, reliability, and functionality of your devices in various environments and scenarios.

We have a wide range of products that help you create energy-efficient and compelling museums in just a few clicks.

**Know it here**