**LIGHTING CONTROLS**

Generally, lighting management will be carried out by presence and brightness detectors. The nature of the detectors, the number, the brightness, and time delay adjustment values ​​will be adapted to the premises and to the controlled lighting sources. Circuits will be properly subdivided so that only dark areas are lit during the day. All detectors must be adjustable by remote control.

**Principles of operation and material requirements**

**1- Small Rooms Management:**

Automatic operation by presence and light sensor

Typical detector **PD3N-1C** for ceiling mounting (recessed or surface-mounted depending on the nature of the ceiling) of the **BEG LUXOMAT** brand or technically equivalent and will have the following characteristics:

Degree / protection class: **IP44, FC: IP54/Class II/CE**

Detection area: h=2,50 m: **Ø 10 m across, 6 m towards, 4 m activity seat**

Switching power: **2300W cos φ 1/1150VA cos φ 0.5,** **LED 300W maxi**

Follow-up time: **30 s to 30 min or pulse /** Brightness: **10 to 2500 Lux**

Applications: **Toilets / Lockers rooms / Equipment rooms / Airlocks…**

**2- Management of Offices, Conference Rooms, Corridors, and Stairways:**

An intelligent lighting management system will be installed in the premises concerned, ensuring that the light sources are completely switched off when not in use. The system will ensure the modularity of the installations, making it possible to easily modify the partitions, without having to intervene in the luminaires or the wiring, and will have to be scalable, making it possible to anticipate a possible extension to new installations. The principle will be based on an **addressable DALI BUS**. Commissioning and modifications will be carried out via dedicated programming software, connected locally, or via a WEB interface on the LAN or WLAN network and will be at the manufacturer’s expense.

At the customer’s request, the system will allow, via a supervision, a complete control of the installations, a visualization of the lighting status and the reception of information for maintenance. The system will be autonomous or can be linked to the BMS by interfacing the DALI protocol to the BACnet protocol.

Through the components connected to the BUS, this solution will provide the following characteristics:

2.1**- Office Management**

* Occupancy management by absence detection / Lighting variation, constant lighting threshold
* User" overrides by local PB
* Control of air renewal by information from presence sensors to the HVAC package

2.2**- Conference Room Management**

* Occupancy management by absence detection / Lighting variation, constant lighting threshold
* Lighting segmented into a minimum of 3 groups: Window side management, corridor side management and Table or Screen
* User" overrides by control panel not accessible to the public
* Creation of a projection scenario: Switching off the board or screen lighting, lowering the room's lighting to 10%.
* Control of air renewal by informing the HVAC package of the presence sensors

2.3**- Management of Circulation, Halls and Stairwells**

* Occupancy management by presence detection and lighting
* The lighting management system will offer the possibility to create an intelligent operation of the corridors, thus allowing energy savings. Only the occupied zone will be switched on at the statutory value, and in anticipation, the upstream zone will be switched on at reduced power
* In stairwells, this solution will ensure level by level operation



The system selected will be the **DALI-SYS** of the brand **BEG LUXOMAT** or **technically equivalent,** comprising the following characteristics:

* **DALI BUS power supply** type **PS-DALISYS-USB-REG**

230V AC / 16V DC DALI BUS / 210mA / 300 m BUS max

Up to 64 participants on the BUS (DALI luminaires / Multi-sensors / PB interface…)

8 control zones per power supply / 16 groups / 16 scenes

* **DALI router** type **ROUTER-DALISYS-REG** or **ROUTER-DALISYS-BACnet-REG** if attached to the BMS

5V DC power supply (power supply included)

LAN connection via ETHERNET

Up to 4 DALI power supplies connected via USB to one router / max. 100 routers per installation

* **4G WIFI LTE Router** type **LTE-ROUTER-RUT950-DALISYS**

Power supply from 230V AC mains sockets

Connection to the LAN network via Ethernet of DALI-SYS components and Ethernet switch

WIFI connection for the commissioning of the project by the builder

LTE connection with up 2 SIM cards for remote maintenance by the manufacturer

* **Supervision** type **VISTATION-DALISYS-REG**

5V DC power supply (power supply included)

LAN connection via ETHERNET

Visualization on plan, customized building

Remote control of lighting / Setting of user rights

* **DALI multi-sensors** type **PDx-DALISYS**

Power supply and communication via DALI BUS 16V DC



**PD11-DALISYS FC:** Ø 9 m across, Ø 6 m towards, Ø 3 m seated

Applications: **Offices**

**PD4N-DALISYS SM/FC/FM:** Ø 24 m across, Ø 8 m towards, 6,40 m seated

Applications: **Meeting rooms / Halls**

**PD4N-DALISYS-C SM/FC/FM:** 40 x 5 m across, 20 x 3 m towards, Ø 8 m vertical

Applications: **Circulation**

**LC-plus-DALISYS:** 16 m across, 9 m towards, 2 m vertical

Applications: **Stairs**



* **DALI PB interface** type **BM-DALISYS-4W**

Power supply and communication via DALI BUS 16V DC

4 independently interfaceable binary inputs

Can be combined with all manufacturers’ pushbuttons

* **Relay Module Interface** type **RM-DALISYS-1C-REG**

Power supply and communication via DALI BUS 16V DC

Switching power: 3000W Cos ϕ = 1/1500VA Cos ϕ = 0.5 /300 W LED sources

