**LIGHTING CONTROLS**

Generally, lighting management will be carried out by presence and brightness detectors. The type, 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- Circulation, Halls, Stairwells Management:**

Automatic operation by presence and luminosity detector on 2/3 of the lighting, 1/3 on a control system not accessible to the public allowing compliance with EC6.1 regulations

Detector type **PD4-M-1C-Corridor + Slaves** in 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: **SM: IP54 with base, FC: IP20/Class II/CE**

Detection area: h=2,50 m: **40 x 5 m across, 20 x 3 m towards, Ø 8 m vertical**

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 2000 Lux**

**Permanent control of daylight and artificial light**

Applications: **Circulations**

Detector type **PD4-M-1C + Slaves** in 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: **SM: IP54 with base, FC: IP20/Class II/CE**

Detection area: h=2,50 m: **Ø 24 m across, Ø 8 m towards, Ø 6,40 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 2000 Lux**

**Permanent control of daylight and artificial light**

Applications: **Halls**

Detector type **LC Plus 280°** wall-mounted detector of the brand **BEG LUXOMAT** or technically equivalent and will have the following characteristics:

Degree / protection class: **IP54/Class II/CE**

Detection area: h=2,50 m: **16 m across, 9 m towards, 2 m vertical**

Switching power: **2000W cos φ 1/1000VA cos φ 0.5,** **LED 250W maxi**

Follow-up time: **15 s to 16 min or pulse /** Brightness: **2 to 2500 Lux**

Applications: **Stair**

**2- Small rooms Management:**

Automatic operation by presence and luminosity detector

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

Protection class: **SM: IP44, FC: IP23/Class II/CE**

Detection area h=2.50 m: **Ø 10 m across, Ø 6 m towards, Ø 4 m activity seat**

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

Follow-up time: **30 s to 30 min or pulse** / Brightness: **10 to 2000 Lux**

Applications: **Sanitary / Cloakrooms / Technical rooms / Airlocks...**

**3- Operating principles of the rooms:**

* Bathroom management

Automatic operation by presence and luminosity detector IP65

* Orientation lighting management

Automatic operation by presence and luminosity detector. The beaconing will allow the nurse carrying out his rounds or the resident to bring an orientation light in case of detection

* Entrance lighting management

Semi-automatic operation by absence and luminosity detector. A push button, integrated in the detector, will allow the entrance lighting to be switched on manually and voluntarily. Only the extinction will be automatic

Detector type **PD9-M-1C-IP65-FC** for flush ceiling mounting, brand **BEG LUXOMAT** or technically equivalent, with the following characteristics:



Protection class: **Detection head: IP65/Class III/CE, Power supply IP20/Class II/CE**

Detection area h=2.50 m: **Ø 10 m across, Ø6 m towards, Ø4 m seated**

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

Follow-up time: **15 s to 30 min or pulse** / Brightness: **10 to 2000 Lux**

Application: **Bathrooms / Showers**

Detector type **Indoor 140L** for wall flush mounting, installation height 1.10 m of the brand **BEG LUXOMAT** or technically equivalent and will have the following characteristics:



Protection class: **FM: IP20/Class II/CE,**

Detection zones h=1.10 m: **8 m across, 3 m towards**

Switching power: **2000W cos φ 1/1000VA cos φ 0.5, LED 250W max**

Follow-up time: **15 s to 30 min or pulse** / Brightness: **10 to 2000 Lux**

Functions: **Beaconing / Night light.** Integrated **push button** for manual control of the lighting

Application: **Orientation lighting / Entrance lighting**

**4- Conference Room Management:**

Semi-automatic operation by absence detector on DALI dimmable luminaires. The lighting located near the windows will be controlled independently of the lighting on the corridor side to take account of natural light. The lighting will be switched on manually and voluntarily by pressing the push button. Only the variation, considering the natural light, and the extinction will be automatic. The PB will also allow the user to manually control the lighting, allowing him to temporarily force the state of the luminaires to be switched on, off and dimmed. The system will also offer the possibility of creating lighting scenarios, for example for conferences or projections. Commissioning and modifications will be carried out via a dedicated smartphone application in BLE (Bluetooth) communication with the system. This will be carried out by the contractor or by a manufacturer's commissioning service.

The principle chosen will be the **DALI-LINK** brand **BEG LUXOMAT** or **technically equivalent,** comprising the following equipment:

* **DALI BUS power supply** type **PS-DALI-LINK-100mA** with the following characteristics:

Main’s supply 230V AC / DALI BUS supply 16V DC / 100 mA / 300m BUS max

Auto-addressing of components on the BUS

Control of up to 25 DALI luminaires and 6 control devices

(Multi sensors/ PB interfaces…)

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

* **Multi DALI sensors** with the following characteristics:

Power supply and communication via DALI BUS 16V DC

Protection class: **IP20/Class 2**

Functions: **Master / Slave / Switching** or **Control / Lighting sensor**

**Type PD11-DALI-LINK**

Detection area h=2,50 m: **Ø 9 m across, 6 m towards, 3 m activity seat**

**Type PD4N-DALI-LINK**

Detection area h=2,50 m: **Ø 24 m across, 8 m towards, 6,40 m activity seat**

* **DALI PB interface** type **PBM-DALI-LINK-4W-BLE** with the following characteristics:

Power supply and communication via DALI BUS 16V DC

Bluetooth communication for setting up

4 independently interfaceable binary inputs

Can be combined with all manufacturers’ pushbuttons

Variant without Bluetooth: **PBM-DALI-LINK-4W**



