**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

Typical detector **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**

Typical detector **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**

**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 / Outdoor**

**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...**

Detector type **PD9-M-1C-IP65-FT** 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, Ø 6 m towards, Ø 4 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**: Showers**

**3- Gymnasium and Sports Hall Management**:

Semi-automatic operation by absence detector on DALI dimmable luminaires. The lighting will be switched on manually and voluntarily by a control panel, not accessible to the public. Only dimming, considering natural light, and switching off will be automatic. The control panel will allow different lighting thresholds to be set according to the activities and the level of use and will allow the light sources to be completely switched off.

Commissioning and modifications will be carried out via a dedicated Smartphone application in BLE (Bluetooth) communication with the system. It will be the responsibility of the contractor or the manufacturer's commissioning service.

The lighting management system will provide the following functions:

* Training threshold 200/300 lux - Constant regulation to take account of natural light
* Competition threshold - 400/500 lux - Fixed threshold without regulation
* Total extinction command

The chosen principle will be the **DALILINK** brand **BEG LUXOMAT** or **technically equivalent** comprising the following equipment:

* **DALI BUS Power Supply** type **PS-DALILINK-USB-REG-210mA** with the following characteristics:

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

Self-addressing of the components on the BUS

Control of up to 45 DALI luminaires and 10 control devices

(Multi sensors/ PB interfaces...)

Up to 8 control zones per supply / 16 groups / 16 scenes



* **DALI Multi-sensor** type **PD4-DALILINK-GH-SM** with the following features:

Power supply and communication via DALI BUS 16V DC

Protection class: **SM: IP54/Class II/CE**

Detection area h=10 m: **Ø 30 x Ø 19 m towards**

* **DALI PB interface** type **PBM-DALILINK-4W-BLE** with the following features:

Power supply and communication via DALI BUS 16V DC

Bluetooth communication for parameterization

4 binary inputs can be interfaced independently

Can be combined with all manufacturers' pushbuttons

Version without Bluetooth: **PBM-DALILINK-4W**

