Last information update: June 2018


## Fixed round mini-recessed luminaire - Minimal - LED - spot

## Product code

P311

## Technical description

Fixed round mini-recessed luminaire installed flush with ceiling (frameless). The LED is set back to minimize direct glare. The recessed body is made of machined aluminium and the inside of the ring of thermoplastic available in a range of painted and metallised finishes. PMMA - spot $\left(16^{\circ}\right)$ high resolution optic lens. LED 4000K. Power unit available with a separate code no.

## Installation

For flush with ceiling installation, an adapter is fitted according to the thickness of the false ceiling ( 12.5 to 25 mm ). The following filling and finishing operations are simplified by a special protection template, and the luminaire is recessed in the adapter and secured mechanically (the inside of the false ceiling musy be inspected first).

## Dimension (mm) <br> Ø20×61

Colour
White (01) | Black (04) | Chrome (10) | Brass (14) | (E6) | (E8)

## Weight (Kg)

0.04

## Mounting

wall recessed|ceiling recessed

## Wiring

Direct current ballasts are available with a separate code no.: ON-OFF / 1-10V dimmable / DALI dimmable / Trailing Edge dimmable

Complies with EN60598-1 and pertinent regulations
IP20
IP43 On the visible part of the product once installed


## Product configuration: P311.01

## Product characteristics

Total lighting output [Lm]: 134
Total luminous flux at or above an angle of $90^{\circ}$ [Lm]: 0
Total power [W]: 2
Emergency luminous flux [Lm]: /
Luminous efficacy [Lm/W]: 67.2
Voltage [V]: -
Life Time: 50,000h-L80-B10 (Ta $25^{\circ} \mathrm{C}$ )
Number of optical assemblies: 1

## Optical assembly Characteristics Type 1

Light Output Ratio (L.O.R.) [\%]: 64
Lamp code: LED
Number of lamps for optical assembly: 1
Lamp code: LED
Socket: /
ZVEI Code: LED
Nominal power [W]: 2
Nominal luminous [Lm]: 210
Lamp maximum intensity [cd]: /
Ballast losses [W]: 0
CRI: 80
Beam angle [ ${ }^{\circ}$ ]: $14^{\circ}$

Wavelength [ Nm ]: /
MacAdam Step: 3

Polar

| Imax $=1475$ cd | Lux |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | h | d | Em | Emax |
| $\rightarrow$ | 1 | 0.2 | 1128 | 1475 |
|  | 2 | 0.5 | 282 | 369 |
| $\chi$ - | 3 | 0.7 | 125 | 164 |
| $\triangle$ | 4 | 1 | 70 | 92 |
| $\alpha=14^{\circ}$ |  |  |  |  |

Utilisation factors

| $R$ | 77 | 75 | 73 | 71 | 55 | 53 | 33 | 00 | DRR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| K0.8 | 57 | 53 | 51 | 49 | 53 | 51 | 50 | 48 | 75 |
| 1.0 | 59 | 56 | 54 | 52 | 56 | 54 | 53 | 51 | 80 |
| 1.5 | 62 | 60 | 58 | 57 | 59 | 58 | 57 | 55 | 86 |
| 2.0 | 65 | 63 | 62 | 60 | 62 | 61 | 60 | 58 | 91 |
| 2.5 | 66 | 65 | 64 | 63 | 64 | 63 | 62 | 60 | 94 |
| 3.0 | 67 | 66 | 65 | 64 | 65 | 64 | 63 | 62 | 96 |
| 4.0 | 68 | 67 | 66 | 66 | 66 | 65 | 64 | 63 | 98 |
| 5.0 | 68 | 68 | 67 | 67 | 66 | 66 | 65 | 63 | 99 |

Luminance curve limit


