

# COMBO 450

trim

064-1041D37K



Project / Type

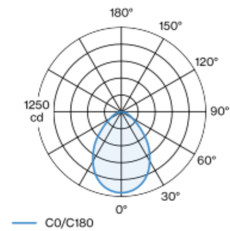
Notes

Count / Date

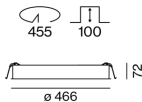


Round light fitting in aluminium; recessed light with wrap around edge; suitable for ceiling thickness of 10-25 mm; surface white powder coated; installation without tools using snap spring closure; external converter for ceiling insertion, through-wiring suitable; electrical connection by means of reverse polarity protected plug system; LED board highly reflective lacquered for higher efficiency; light colour tunable white; binning initial MacAdam  $\leq 3$  SDCM; CRI  $\geq 80$ ; min. 90% of luminous flux after 50000 operating hours; energy efficient LEDs with high CRI; flush ceiling light level; micro prismatic PMMA cover; absolutely homogeneous illumination by using a diffuser film on polycarbonate base; improved ratio of scattering effect to light transmission; same luminance for all size versions; UGR  $\leq 19$ ; VDU compatible workplace luminaire according to DIN EN 12464-1; luminance above  $65^\circ \leq 3000$  cd/m<sup>2</sup>; degree of protection IP40; PC1; 220-240 V; internal wiring in light halogen free; incl. converter, non dimmable; light source replaceable by an authorized professional; control gear replaceable by an authorized professional;

## Light distribution



## Product drawing



### General

Ceiling | Recessed

white | RAL 9010 <sup>1</sup>

IP40

2170 lm

### LED

tunable white | 2700 K - 6500 K

CRI  $\geq 80$

L90 / 50000 h

initial MacAdam  $\leq 3$  SDCM

MR 0.48 | MDER 0.44

### Optical

Microprismatic | microprismatic

UGR  $\leq 19$  |  $\geq 65^\circ < 3000$  cd/m<sup>2</sup>

PstLM  $\leq 1.0$  <sup>2</sup> | SVM  $\leq 0.4$  <sup>2</sup>

### Electrical

DALI-2 DT8 | 1 DALI Addr.

PC1 | 220-240 V

system 18.0 W

system 121 lm/W <sup>3</sup>

### Physical

trim

diameter 466 mm | height 72 mm

3.1 kg

### Cutout

diameter 455 mm

min. ceiling thickness 10 mm | max. ceiling thickness 25 mm

recessed depth 100 mm

<sup>1</sup> RAL code <sup>2</sup> Value of containing product at full load (undimmed)  
<sup>3</sup> incl. consideration of optical losses, internal control unit losses & operating device efficiency

## Installation instructions



## Lighting calculator



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## Maintenance Factors

| Operating Time [h] | 10 000                       | 20 000 | 30 000            | 40 000                          | 50 000 |
|--------------------|------------------------------|--------|-------------------|---------------------------------|--------|
| LLMF               | 0.98                         | 0.96   | 0.94              | 0.92                            | 0.9    |
| LSF                | 1                            | 1      | 1                 | 1                               | 1      |
| MF                 | LMF × RSMF × LLMF × LSF      |        | RSMF <sup>a</sup> | Room Surface Maintenance Factor |        |
| MF                 | Maintenance Factor           |        | LLMF              | Lamp Lumens Maintenance Factor  |        |
| LMF <sup>a</sup>   | Luminaire Maintenance Factor |        | LSF               | Lamp Survival Factor            |        |

<sup>a</sup> According to "CIE 97, Maintenance of indoor electric lighting systems", 2005, ISBN 3-900-734-34-8. The values must be determined by the planner.

## Circuit Breaker Types

| Automatic Circuit Breaker Type | Number of Fixtures |
|--------------------------------|--------------------|
| B10                            | 65                 |
| B16                            | 104                |
| C10                            | 65                 |
| C16                            | 104                |

## Mounting accessories

### MOUNTING RING

|                                  |                   |
|----------------------------------|-------------------|
| TYPE                             | ARTICLE NUMBER(S) |
| for acoustic ceiling   COMBO 450 | 064-1906400       |

