

# COMBO 450

trim

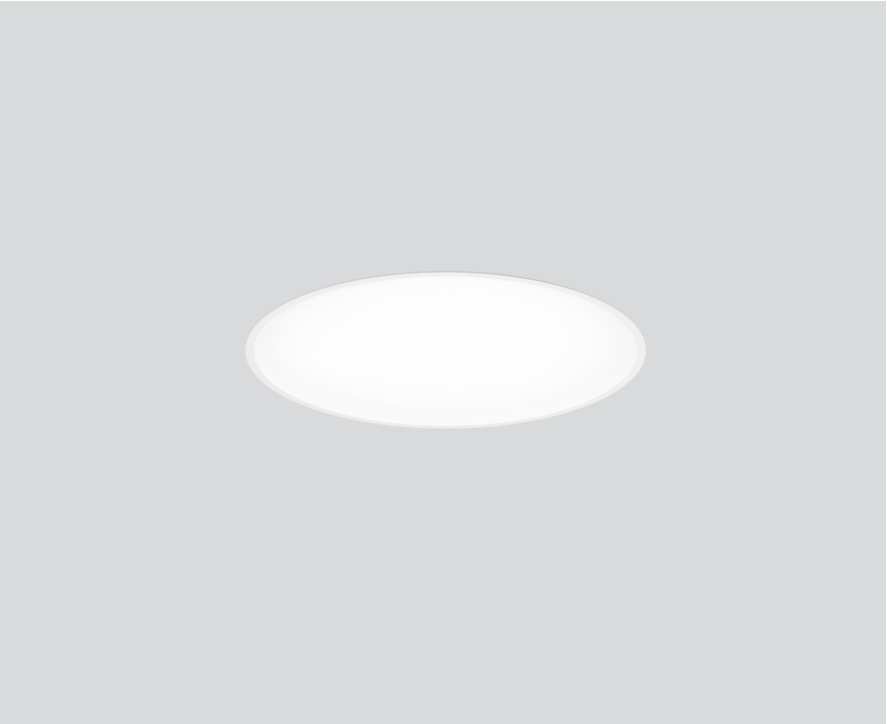
064-1041517K



Project / Type

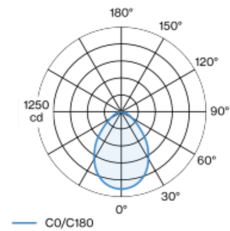
Notes

Count / Date

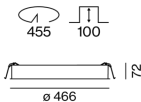


Round light fitting in aluminium; recessed light with wrap around edge; suitable for ceiling thickness of 10-25 mm; surface pure white powder coated; installation without tools using snap spring closure; external converter for ceiling insertion, through-wiring suitable; electrical connection by means of reverse polarity protected plug system; LED board highly reflective lacquered for higher efficiency; light colour 3000 K; 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  $65^\circ \leq 3000 \text{ cd/m}^2$ ; 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

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

IP40

2060 lm

## LED

3000 K

CRI  $\geq 80$

L90 / 50000 h

initial MacAdam  $\leq 3$  SDCM

MR 0.54 | MDER 0.49

## Optical

Microprismatic | microprismatic

UGR  $\leq 19$  |  $\geq 65^\circ < 3000 \text{ cd/m}^2$

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

## Electrical

non DIM

PC1 | 220-240 V

system 16.7 W

system 123 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	0.91	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	31
B13	40
B16	50
B20	62
B25	78
C10	52
C13	67
C16	85
C20	104
C25	130

## Mounting accessories

### MOUNTING RING

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

