

# SONO 450 direct / indirect

surface

071-91486170



Project / Type

Notes

Count / Date



General

Ceiling / Wall , Surface

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

IP40

IK07

indirect 1200 lm

direct 3480 lm

total 4680 lm

LED

4000 K

CRI ≥ 80

L90 / 50000 h

initial MacAdam ≤ 3 SDCM

MR 0.72

MDER 0.66

Optical

Opal

opal (lambertsch)

PstLM ≤ 1.0 <sup>2</sup>

SVM ≤ 0.4 <sup>2</sup>

Electrical

non DIM

220-240 V

system 34 W

system 138 lm/W<sup>3</sup>

PC1

Physical

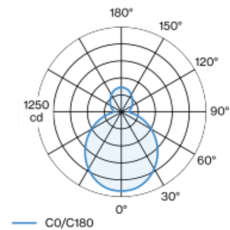
diameter 445 mm

height 80 mm

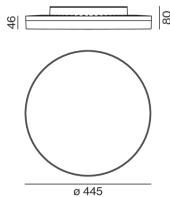
3.8 kg

Round luminaire housing in die-cast aluminium; surface white powder coated; suitable for wall or ceiling mounting; time saving installation through snap-in mounting system; LED board highly reflective lacquered for higher efficiency; same luminance for all size versions; light colour 4000 K; binning initial MacAdam ≤ 3 SDCM; CRI ≥ 80; min. 90% of luminous flux after 50000 operating hours; energy efficient LEDs with high CRI; completely homogeneously illuminated, satin PMMA cover; direct / indirect radiation characteristic for additional accentuation of the ceiling; luminaire with 2 cable openings and plug-in terminal for through wiring; degree of protection IP40; PC1; 220-240 V; shock resistance IK07; internal wiring in light halogen free; incl. converter, non dimmable; light source not replaceable; control gear replaceable by an authorized professional;

Light distribution



Product drawing



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

Installation instructions



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## Maintenance Factors

Operating Time [h]	10 000	20 000	30 000	40 000	50 000
LLMF	0.98	0.95	0.93	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 Faktor	

<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	25
B13	32
B16	39
B20	49
C10	41
C13	53
C16	65
C20	81

## Mounting accessories

### DISMOUNTING TOOL

TYPE	ARTICLE NUMBER(S)
vacuum cup	086-30000

