

# TUBO 60

surface

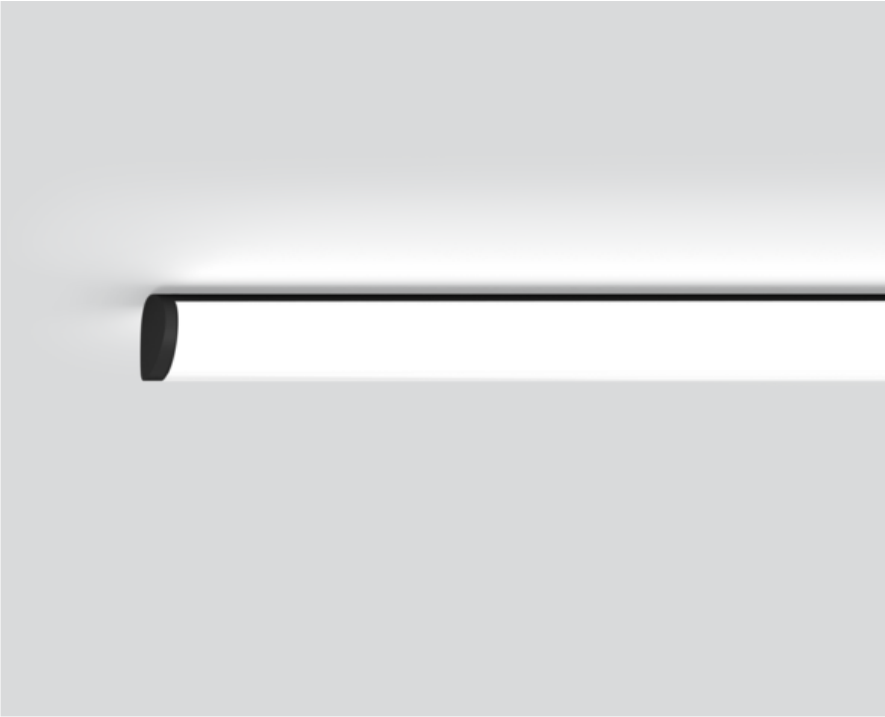
058-31146380



Project / Type

Notes

Count / Date



Carrier profile made of extruded aluminium profile; light-tight end caps in aluminium; converter integrated into luminaire housing; surface jet black powder coated; suitable for wall or ceiling mounting; easy installation using ceiling clips; light control via high quality lens system for maximum, homogeneous illumination; light colour 4000 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; cylindrical cover made of satin PMMA for uniform illumination; with gentle ceiling illumination; degree of protection IP20; PC1; incl. DALI-2 converter; light source replaceable by an authorized professional; control gear replaceable by an authorized professional;



### General

Ceiling / Wall | Surface

jet black | RAL 9005

IP20

3620 lm

3060 lm/m

### LED

4000 K

CRI  $\geq 80$

L90 / 50000 h

initial MacAdam  $\leq 3$  SDCM

MR 0.72 | MDER 0.65

### Optical

High Performance Opal | opal (lambertsch)

PstLM  $\leq 1.0$  <sup>1</sup> | SVM  $\leq 0.4$  <sup>1</sup>

### Electrical

DALI-2 | 1 DALI Addr.

PC1 | 220-240 V

system 27.9 W

system 130 lm/W <sup>2</sup>

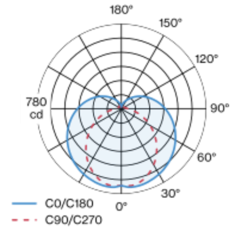
24 W/m

### Physical

length 1210 mm | width 60 mm | height 60 mm

1.4 kg

### Light distribution



### Product drawing



<sup>1</sup> Value of containing product at full load (undimmed)  
<sup>2</sup> 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	0.96	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	18
B13	24
B16	30
B20	37
C10	31
C13	40
C16	51
C20	62

