

# VARO 110 S

track  
180-6530137W



Project / Type \_\_\_\_\_

Notes \_\_\_\_\_

Count / Date \_\_\_\_\_



Track light made of die-cast aluminium; surface traffic white powder coated; 355° rotatable and 90° tiltable; integrated converter in the plastic adapter; passive cooling of the LEDs through improved heat sink geometry; with COB (Chip on Board) technology for maximum efficiency; no appearance of multiple shadows; light colour 4000 K; binning initial MacAdam  $\leq 3$  SDCM; CRI  $\geq 90$ ; min. 85% of luminous flux after 50000 operating hours; energy efficient LEDs with high CRI; including high quality aluminium reflector with spherical reflector; high gloss anodised; neutral colour reflection through absolute freedom from interference colour; for brilliant object staging; precise radiation characteristic with 66° beam; installed and exchanged without tools; optical attachments available as accessories; optical attachments can be combined; accessories are listed separately; degree of protection IP20; PC2; 220-240 V; incl. DALI-2 converter; adapter for toolless insertion or movement on a variety of 3-phase power tracks; light source replaceable by an authorized professional; control gear replaceable by an authorized professional;



**General**

Ceiling | Track \_\_\_\_\_

tilt max 90° \_\_\_\_\_

rotation 355° \_\_\_\_\_

traffic white | RAL 9016 \_\_\_\_\_

IP20 \_\_\_\_\_

3190 lm \_\_\_\_\_

**LED**

4000 K \_\_\_\_\_

CRI  $\geq 90$  \_\_\_\_\_

L85 / 50000 h \_\_\_\_\_

initial MacAdam  $\leq 3$  SDCM \_\_\_\_\_

R<sub>g</sub>: 100 | R<sub>f</sub>: 92 | R<sub>f(1-5)</sub>: 92 \_\_\_\_\_

MR 0.78 | MDER 0.71 \_\_\_\_\_

**Optical**

wide flood | beam angle 66° \_\_\_\_\_

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

**Electrical**

DALI-2 | 1 DALI Addr. \_\_\_\_\_

PC2 | 220-240 V \_\_\_\_\_

system 23.4 W \_\_\_\_\_

system 136 lm/W<sup>2</sup> \_\_\_\_\_

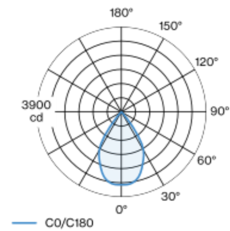
**Physical**

diameter 110 mm | height 110 mm \_\_\_\_\_

0.25 kg \_\_\_\_\_

<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

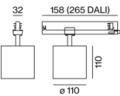
## Light distribution



wide flood 66°

h (m)	EO° (lx)	ø (m)
1	3340	1.30
2	840	2.60
3	370	3.89
4	210	5.19
5	130	6.49

## Product drawing



## Installation instructions



## Lighting calculator



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### Maintenance Factors

Operating Time [h]	10 000	20 000	30 000	40 000	50 000
LLMF	0.975	0.944	0.913	0.883	0.854
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
B13	42
B16	53
B20	66
C13	71
C16	90
C20	110



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## Optical accessories

### HONEYCOMB LOUVER

Ø (MM)

106

ARTICLE NUMBER(S)

080-6501118



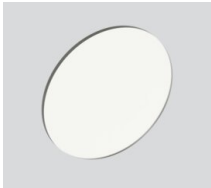
### WIDE FLOOD LENS

Ø (MM)

106

ARTICLE NUMBER(S)

080-6502110W



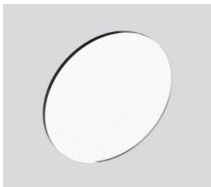
### OVAL LENS

Ø (MM)

106

ARTICLE NUMBER(S)

080-6502210



### SNOOT short

Ø (MM)

97

ARTICLE NUMBER(S)

080-6503118



### SNOOT medium

Ø (MM)

97

ARTICLE NUMBER(S)

080-6503218



### SNOOT angle

Ø (MM)

97

ARTICLE NUMBER(S)

080-6503318



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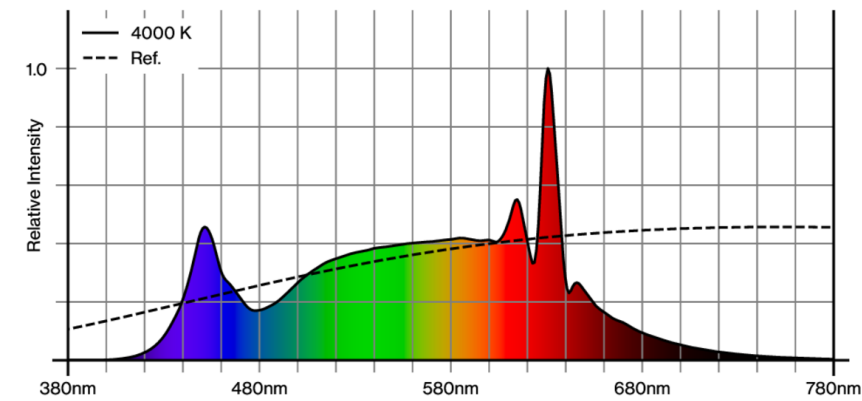


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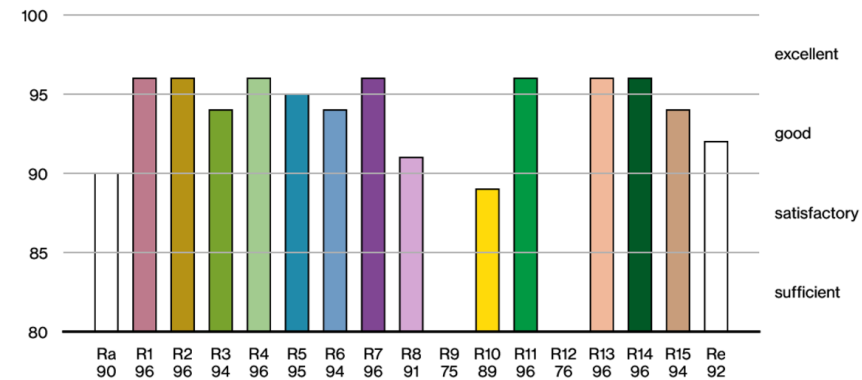
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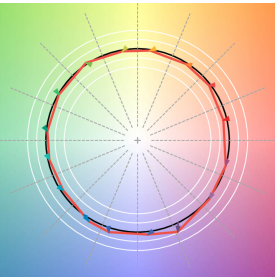
### Colour rendering



CRI/R<sub>a</sub> ≥ 94 R<sub>e</sub> ≥ 92 (4000 K)



### TM30 colour vector graphic



The black line represents the black body reference. The red line indicates the results of the test light source. The deviation from the test light source to the reference is shown and is marked by arrows. The shorter the arrows, the higher the color rendering.

