



PUB\_2021\_086 - P C E PROJETOS\_RJ\_Revitalização Av.  
Alameda São Boaventura

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## Interlocutores



Specification Sales Specialist  
VITOR HUGO REIS

SIGNIFY  
Rua Werner Von Siemens, 111  
Torre A, Conjunto 21,  
Lapa, 05069010,  
São Paulo/SP – Brasil

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## Descrição

Premissas:

Trecho típico 1 (central)

Braço de 2,5m

Classificação via: V1

Classificação passeio: P3

1 Faixa de segurança = 0,15m

1 Faixa exclusiva de ônibus = 3m

2 Faixas de veículos = 2,80m (5,60m)

1 Segregador = 0,20m

1 Ciclovia unidirecional = 1,20m

1 Sarjeta = 0,30m

1 Calçada de largura variável, podendo adotar como largura média  
1,50m

Trecho típico 2 (unilateral)

Braço de 1,5m

Classificação via: V1

Classificação passeio: P3

**Specification Sales Specialist**

VITOR HUGO REIS

SIGNIFY

Rua Werner Von Siemens, 111

Torre A, Conjunto 21,

Lapa, 05069010,

São Paulo/SP – Brasil

T (11) 96912-7913

vitor.hugo.reis@signify.com

1 Faixa de segurança = 0,30m  
2 Faixas de veículos = 2,80m cada (5,60m)  
1 Segregador ciclovia = 0,20m  
1 Ciclovia = 1,20m  
1 Sarjeta = 0,30m  
1 Calçada = 1,50 – 2m

## Lista de luminárias

$\Phi_{total}$

409800 lm

$P_{total}$

2286.0 W

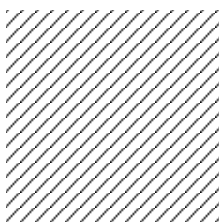
Rendimento luminoso

179.3 lm/W

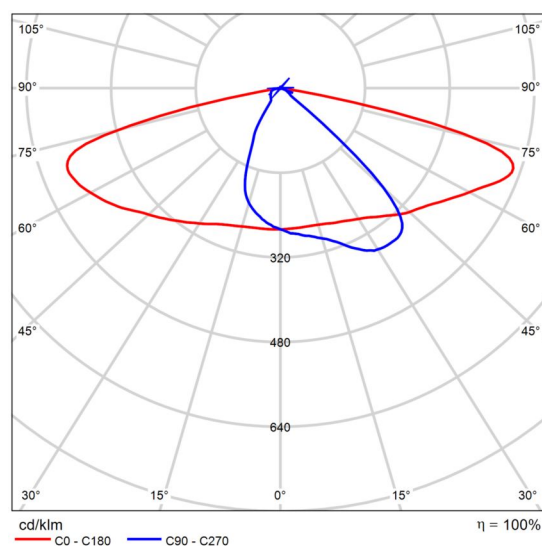
Un.	Fabricante	Nº do artigo	Nome do artigo	P	$\Phi$	Rendimento luminoso
20	SIGNIFY - BRP483 LED202 NW 113W DML P7 0-10			114.3 W	20490 lm	179.3 lm/W

## Folha de dados do produto

SIGNIFY - BRP483 LED202 NW 113W DML P7 0-10 -



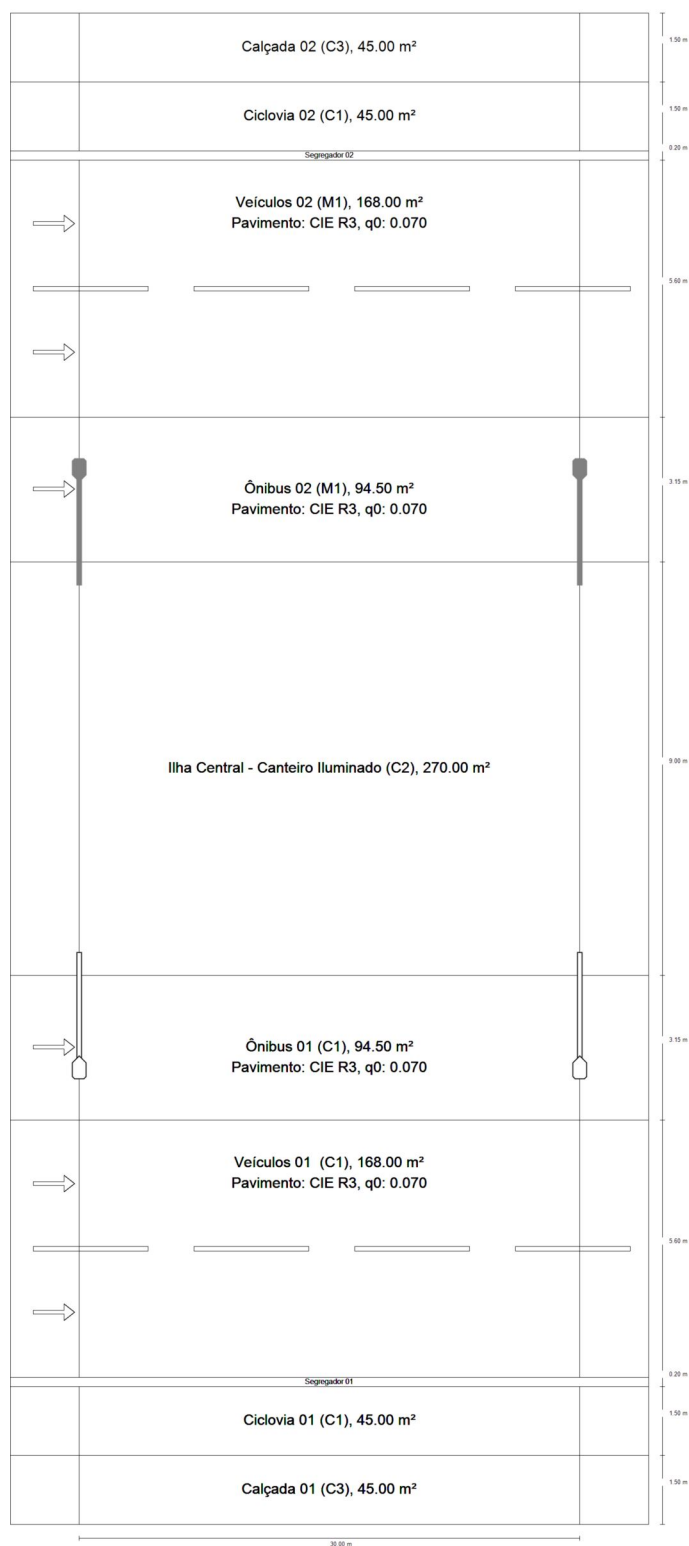
P	114.3 W
$\Phi_{\text{Lâmpada}}$	20491 lm
$\Phi_{\text{Luminária}}$	20490 lm
$\eta$	100.00 %
Rendimento luminoso	179.3 lm/W
CCT	3000 K
CRI	100



CDL polar

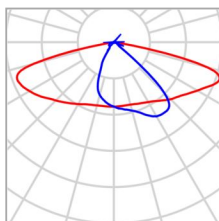
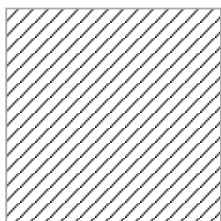
Trecho típico 1 · Alternativa 1

## Resumo (em direcção EN 13201:2015)



Trecho típico 1 · Alternativa 1

## Resumo (em direcção EN 13201:2015)



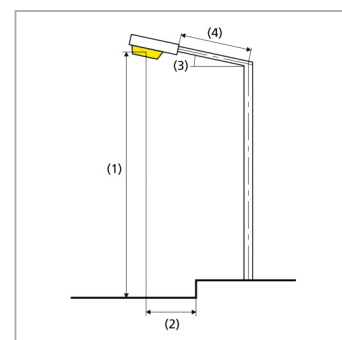
Fabricante	SIGNIFY - BRP483 LED202 NW 113W DML P7 0-10	P	114.3 W
		$\Phi_{\text{Lâmpada}}$	20491 lm
Equipagem	1x	$\Phi_{\text{Luminária}}$	20490 lm
		$\eta$	100.00 %

Trecho típico 1 · Alternativa 1

## Resumo (em direcção EN 13201:2015)

BRP483 LED202 NW 113W DML\_57546-1\_Medições Fotométricas\_17-02\_2021\_IESNA2002.IES  
(unilateral em baixo)

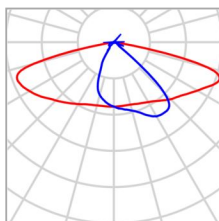
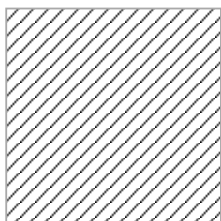
Distância entre postes	30.000 m
(1) Altura de ponto de luz	11.900 m
(2) Saliência de ponto de luz	19.750 m
(3) Inclinação de braço extensor	0.0°
(4) Comprimento braço extensor	2.500 m
Horas de funcionamento anual	4000 h: 100.0 %, 114.3 W
Consumo	3771.9 W/km
ULR / ULOR	0.00 / 0.00
Intensidades luminosas máx. Em todas as direcções que, em uma luminária correctamente instalada, formam o ângulo dado com as verticais inferiores.	$\geq 70^\circ$ : 665 cd/klm $\geq 80^\circ$ : 180 cd/klm $\geq 90^\circ$ : 2.51 cd/klm
Classe de potência luminosa Os valores de intensidade luminosa em [cd/klm] para o cálculo da classe de intensidade luminosa referem se ao fluxo luminoso das luminárias de acordo com EN 13201:2015.	G*1
Classe de índice de encandeamto	D.0





Trecho típico 1 · Alternativa 1

## Resumo (em direcção EN 13201:2015)



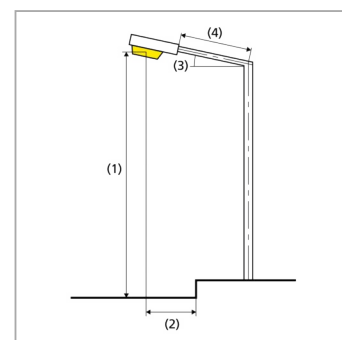
Fabricante	SIGNIFY - BRP483 LED202 NW 113W DML P7 0-10	P	114.3 W
		$\Phi_{\text{Lâmpada}}$	20491 lm
Equipagem	1x	$\Phi_{\text{Luminária}}$	20490 lm
		$\eta$	100.00 %

Trecho típico 1 · Alternativa 1

## Resumo (em direcção EN 13201:2015)

BRP483 LED202 NW 113W DML\_57546-1\_Medições Fotométricas\_17-02\_2021\_IESNA2002.IES  
(unilateral em cima)

Distância entre postes	30.000 m
(1) Altura de ponto de luz	11.900 m
(2) Saliência de ponto de luz	19.750 m
(3) Inclinação de braço extensor	0.0°
(4) Comprimento braço extensor	2.500 m
Horas de funcionamento anual	4000 h: 100.0 %, 114.3 W
Consumo	3771.9 W/km
ULR / ULOR	0.00 / 0.00
Intensidades luminosas máx. Em todas as direcções que, em uma luminária correctamente instalada, formam o ângulo dado com as verticais inferiores.	$\geq 70^\circ$ : 665 cd/klm $\geq 80^\circ$ : 180 cd/klm $\geq 90^\circ$ : 2.51 cd/klm
Classe de potência luminosa Os valores de intensidade luminosa em [cd/klm] para o cálculo da classe de intensidade luminosa referem se ao fluxo luminoso das luminárias de acordo com EN 13201:2015.	G*1
Classe de índice de encandeamento	D.0



## Resultados para os campos de avaliação

	Tamanho	Calculado	Nominal	Check
Calçada 02 (C3)	$E_m^{(2)}$	24.56 lx	$\geq 5.00$ lx	✓
	$U_o^{(2)}$	0.77	$\geq 0.20$	✓
Ciclovía 02 (C1)	$E_m^{(2)}$	27.67 lx	$\geq 20.00$ lx	✓
	$U_o^{(2)}$	0.77	$\geq 0.30$	✓
Veículos 02 (M1)	$L_m$	2.22 cd/m <sup>2</sup>	$\geq 2.00$ cd/m <sup>2</sup>	✓

Trecho típico 1 · Alternativa 1

## Resumo (em direcção EN 13201:2015)

	Tamanho	Calculado	Nominal	Check
	$U_o$	0.66	$\geq 0.40$	✓
	$U_l$	0.91	$\geq 0.70$	✓
	$R_{El}$	0.89	$\geq 0.35$	✓
	$TI^{(1)}$	8 %	-	-
Ônibus 02 (M1)	$L_m$	2.74 cd/m <sup>2</sup>	$\geq 2.00$ cd/m <sup>2</sup>	✓
	$U_o$	0.87	$\geq 0.40$	✓
	$U_l$	0.98	$\geq 0.70$	✓
	TI	7 %	$\leq 10$ %	✓
	$R_{El}^{(1)}$	0.86	-	-
Ilha Central - Canteiro Iluminado (C2)	$E_m^{(2)}$	25.41 lx	$\geq 10.00$ lx	✓
	$U_o^{(2)}$	0.87	$\geq 0.25$	✓
Ônibus 01 (C1)	$E_m$	30.82 lx	$\geq 30.00$ lx	✓
	$U_o$	0.75	$\geq 0.40$	✓
Veículos 01 (C1)	$E_m$	30.65 lx	$\geq 30.00$ lx	✓
	$U_o$	0.75	$\geq 0.40$	✓
Ciclovía 01	$E_m^{(2)}$	27.67 lx	$\geq 20.00$ lx	✓
	$U_o^{(2)}$	0.77	$\geq 0.30$	✓
Calçada 01	$E_m^{(2)}$	24.56 lx	$\geq 5.00$ lx	✓
	$U_o^{(2)}$	0.77	$\geq 0.20$	✓

(1) informativo, não faz parte da avaliação

(2) Valor nominal alterado pelo planeador, em desvio à norma

Foi calculado com uma valor de manutenção 0.85 para a instalação.

Trecho típico 1 · Alternativa 1

## Resumo (em direcção EN 13201:2015)

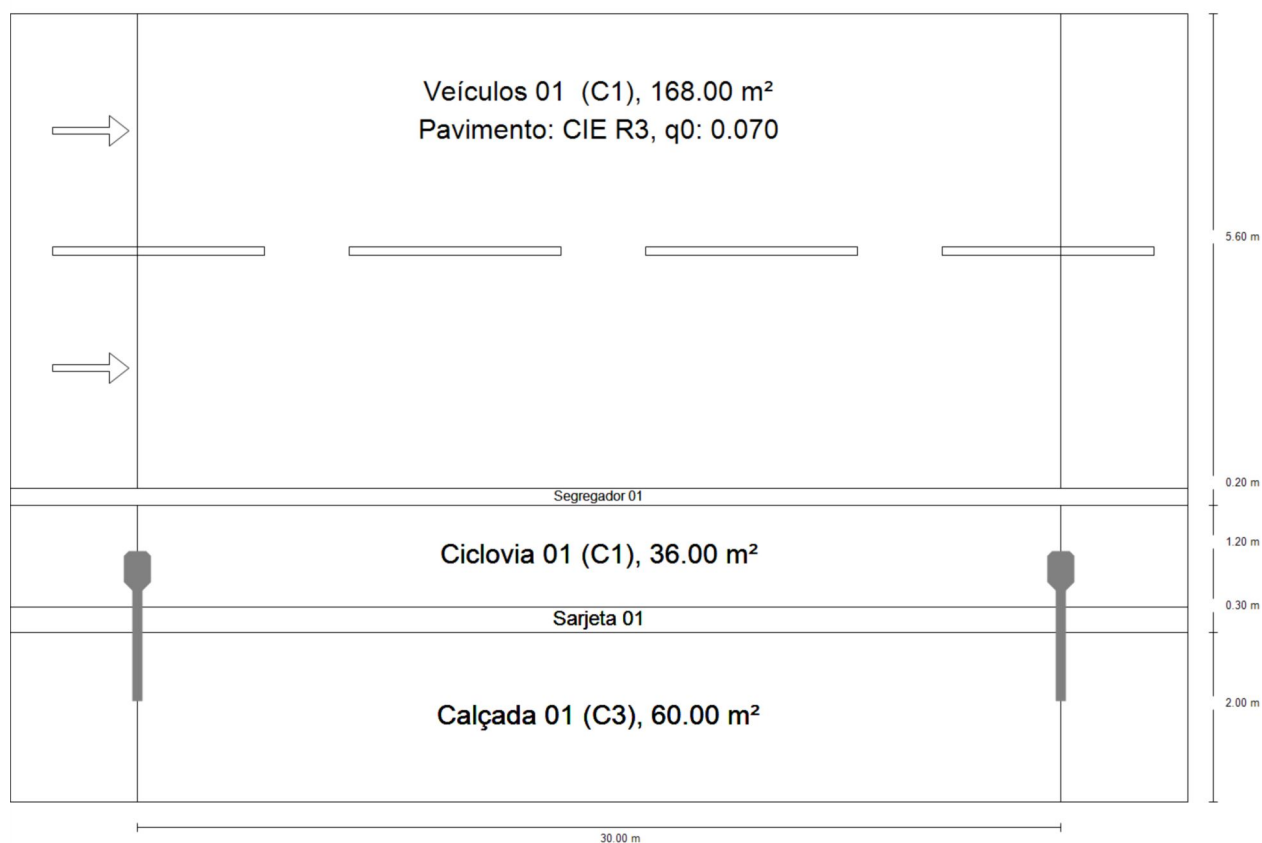
Resultados para indicadores de eficiência energética

	Tamanho	Calculado	Consumo
Trecho típico 1	D <sub>p</sub>	0.004 W/lx*m <sup>2</sup>	-
BRP483 LED202 NW 113W DML_57546-1_Medidas Fotométricas_17- 02_2021_IESNA2002.IES (unilateral em baixo)	D <sub>e</sub>	0.5 kWh/m <sup>2</sup> yr,	457.2 kWh/yr
BRP483 LED202 NW 113W DML_57546-1_Medidas Fotométricas_17- 02_2021_IESNA2002.IES (unilateral em cima)	D <sub>e</sub>	0.5 kWh/m <sup>2</sup> yr,	457.2 kWh/yr

A EN 13201:2015-5 não abrange o caso de planeamento com várias distribuições de luminárias. O cálculo desses valores de potência, portanto, ocorre apenas para a distribuição de luminárias cuja distância entre postes define o comprimento dos campos de avaliação.

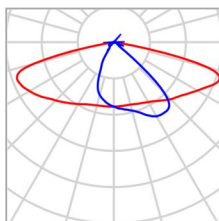
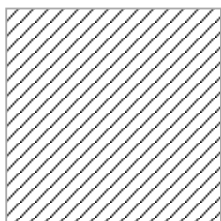
Trecho típico 2 (Unilateral) - Iluminância · Alternativa 2

## Resumo (em direcção EN 13201:2015)



Trecho típico 2 (Unilateral) - Iluminância · Alternativa 2

## Resumo (em direcção EN 13201:2015)



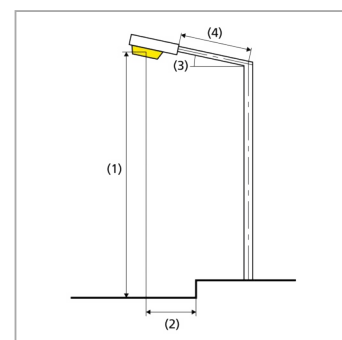
Fabricante	SIGNIFY - BRP483 LED202 NW 113W DML P7 0-10	P	114.3 W
		$\Phi_{\text{Lâmpada}}$	20491 lm
Equipagem	1x	$\Phi_{\text{Luminária}}$	20490 lm
		$\eta$	100.00 %

Trecho típico 2 (Unilateral) - Iluminância · Alternativa 2

## Resumo (em direcção EN 13201:2015)

BRP483 LED202 NW 113W DML\_57546-1\_Medições Fotométricas\_17-02\_2021\_IESNA2002.IES  
(unilateral em baixo)

Distância entre postes	30.000 m
(1) Altura de ponto de luz	11.900 m
(2) Saliência de ponto de luz	-1.000 m
(3) Inclinação de braço extensor	0.0°
(4) Comprimento braço extensor	1.500 m
Horas de funcionamento anual	4000 h: 100.0 %, 114.3 W
Consumo	3771.9 W/km
ULR / ULOR	0.00 / 0.00
Intensidades luminosas máx. Em todas as direcções que, em uma luminária correctamente instalada, formam o ângulo dado com as verticais inferiores.	$\geq 70^\circ$ : 665 cd/klm $\geq 80^\circ$ : 180 cd/klm $\geq 90^\circ$ : 2.51 cd/klm
Classe de potência luminosa Os valores de intensidade luminosa em [cd/klm] para o cálculo da classe de intensidade luminosa referem se ao fluxo luminoso das luminárias de acordo com EN 13201:2015.	G*1
Classe de índice de encandeamto	D.0



## Trecho típico 2 (Unilateral) - Iluminância · Alternativa 2

### Resumo (em direcção EN 13201:2015)

#### Resultados para os campos de avaliação

	Tamanho	Calculado	Nominal	Check
Veículos 01 (C1)	$E_m$	30.02 lx	$\geq 30.00$ lx	✓
	$U_o$	0.75	$\geq 0.40$	✓
Ciclovía 01	$E_m^{(2)}$	30.20 lx	$\geq 20.00$ lx	✓
	$U_o^{(2)}$	0.76	$\geq 0.30$	✓
Calçada 01	$E_m^{(2)}$	27.57 lx	$\geq 5.00$ lx	✓
	$U_o^{(2)}$	0.74	$\geq 0.20$	✓

(2) Valor nominal alterado pelo planeador, em desvio à norma

Foi calculado com uma valor de manutenção 0.85 para a instalação.

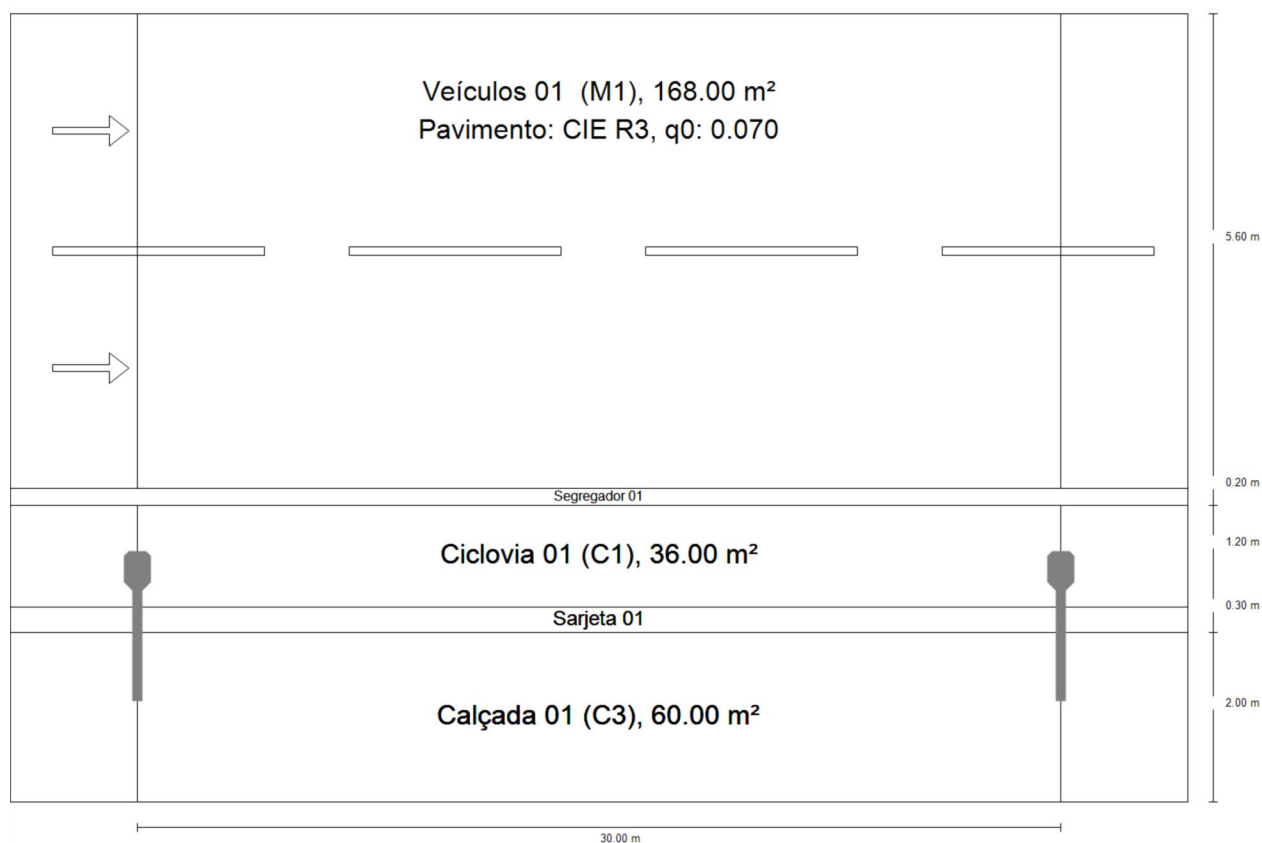
#### Resultados para indicadores de eficiência energética

	Tamanho	Calculado	Consumo
Trecho típico 2 (Unilateral) - Iluminância	$D_p$	0.015 W/lx*m <sup>2</sup>	-
BRP483 LED202 NW 113W DML_57546-1_Medições Fotométricas_17- 02_2021_IESNA2002.IES (unilateral em baixo)	$D_e$	1.7 kWh/m <sup>2</sup> yr,	457.2 kWh/yr



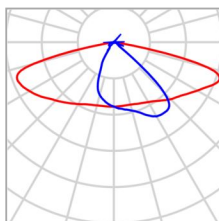
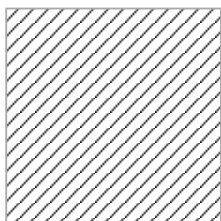
Trecho típico 2 (Unilateral) - Luminância · Alternativa 5

## Resumo (em direcção EN 13201:2015)



Trecho típico 2 (Unilateral) - Luminância · Alternativa 5

## Resumo (em direcção EN 13201:2015)



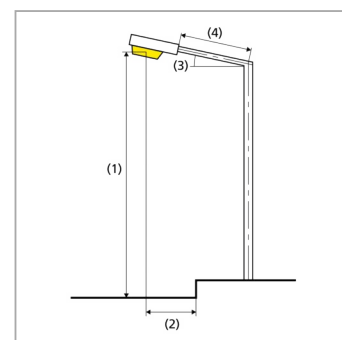
Fabricante	SIGNIFY - BRP483 LED202 NW 113W DML P7 0-10	P	114.3 W
		$\Phi_{\text{Lâmpada}}$	20491 lm
Equipagem	1x	$\Phi_{\text{Luminária}}$	20490 lm
		$\eta$	100.00 %

Trecho típico 2 (Unilateral) - Luminância · Alternativa 5

## Resumo (em direcção EN 13201:2015)

BRP483 LED202 NW 113W DML\_57546-1\_Medições Fotométricas\_17-02\_2021\_IESNA2002.IES  
(unilateral em baixo)

Distância entre postes	30.000 m
(1) Altura de ponto de luz	11.900 m
(2) Saliência de ponto de luz	-1.000 m
(3) Inclinação de braço extensor	0.0°
(4) Comprimento braço extensor	1.500 m
Horas de funcionamento anual	4000 h: 100.0 %, 114.3 W
Consumo	3771.9 W/km
ULR / ULOR	0.00 / 0.00
Intensidades luminosas máx. Em todas as direcções que, em uma luminária correctamente instalada, formam o ângulo dado com as verticais inferiores.	$\geq 70^\circ$ : 665 cd/klm $\geq 80^\circ$ : 180 cd/klm $\geq 90^\circ$ : 2.51 cd/klm
Classe de potência luminosa Os valores de intensidade luminosa em [cd/klm] para o cálculo da classe de intensidade luminosa referem se ao fluxo luminoso das luminárias de acordo com EN 13201:2015.	G*1
Classe de índice de encandeamto	D.0



Trecho típico 2 (Unilateral) - Luminância · Alternativa 5

## Resumo (em direcção EN 13201:2015)

Resultados para os campos de avaliação

	Tamanho	Calculado	Nominal	Check
Veículos 01 (M1)	L <sub>m</sub>	2.20 cd/m <sup>2</sup>	≥ 2.00 cd/m <sup>2</sup>	✓
	U <sub>o</sub>	0.66	≥ 0.40	✓
	U <sub>l</sub>	0.92	≥ 0.70	✓
	R <sub>El</sub>	0.90	≥ 0.35	✓
	Tl <sup>(1)</sup>	8 %	-	-
Ciclovía 01	E <sub>m</sub> <sup>(2)</sup>	30.20 lx	≥ 20.00 lx	✓
	U <sub>o</sub> <sup>(2)</sup>	0.76	≥ 0.30	✓
Calçada 01	E <sub>m</sub> <sup>(2)</sup>	27.57 lx	≥ 5.00 lx	✓
	U <sub>o</sub> <sup>(2)</sup>	0.74	≥ 0.20	✓

(1) informativo, não faz parte da avaliação

(2) Valor nominal alterado pelo planeador, em desvio à norma

Foi calculado com uma valor de manutenção 0.85 para a instalação.

Resultados para indicadores de eficiência energética

	Tamanho	Calculado	Consumo
Trecho típico 2 (Unilateral) - Luminância	D <sub>p</sub>	0.015 W/lx·m <sup>2</sup>	-
BRP483 LED202 NW 113W DML_57546-1_Medidas Fotométricas_17- 02_2021_IESNA2002.IES (unilateral em baixo)	D <sub>e</sub>	1.7 kWh/m <sup>2</sup> ·yr,	457.2 kWh/yr

## **PUB\_2021\_086 - P C E PROJETOS\_RJ\_Revitalização Av. Alameda São Boaventura**

NOVA PRAÇA - Projeto luminotécnico

### **NOTAS:**

- A iluminação está dedicada às áreas de passeio da praça, não contendo malhas de cálculo nas áreas verdes.
- As árvores e arbustos presentes não foram considerados em cálculo;
- Luminarias locadas nos limites das hachuras, com a finalidade de não prejudicar o fluxo e transposição da praça.

Partner for Contact:

Order No.:

Company:

Customer No.:

Date: 14.01.2022

Operator: Vitor Hugo Reis

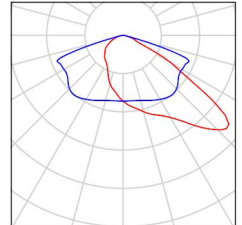
Signify

Operator Vitor Hugo Reis  
Telephone  
Fax  
e-Mail vitor.hugo.reis@signify.com

## **PUB\_2021\_086 - P C E PROJETOS\_RJ\_Revitalização Av. Alameda São Boaventura / Luminaire parts list**

21 Pieces PHILIPS BPS559 FG T25 DM31 LED15/- NO  
Article No.:  
Luminous flux (Luminaire): 1324 lm  
Luminous flux (Lamps): 1500 lm  
Luminaire Wattage: 12.2 W  
Luminaire classification according to CIE: 100  
CIE flux code: 32 75 98 100 88  
Fitting: 1 x LED15-4S/830 (Correction Factor  
1.000).

See our luminaire catalog  
for an image of the  
luminaire.



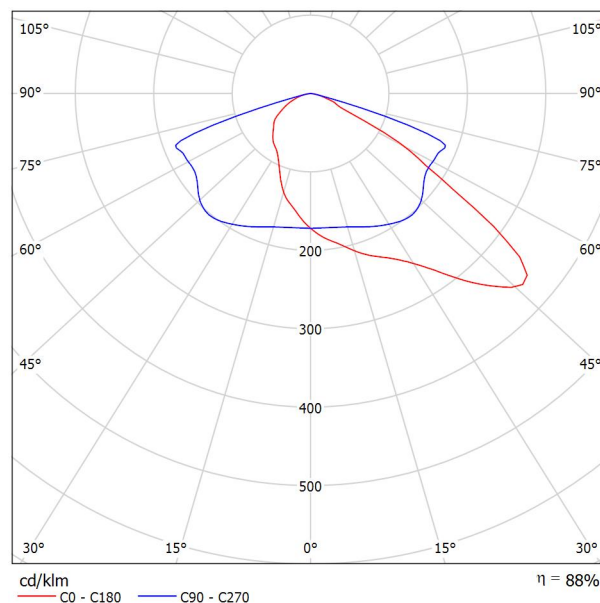
Signify

Operator Vitor Hugo Reis  
Telephone  
Fax  
e-Mail vitor.hugo.reis@signify.com

## PHILIPS BPS559 FG T25 DM31 LED15/- NO / Luminaire Data Sheet

Luminous emittance 1:

See our luminaire catalog for an image of the luminaire.

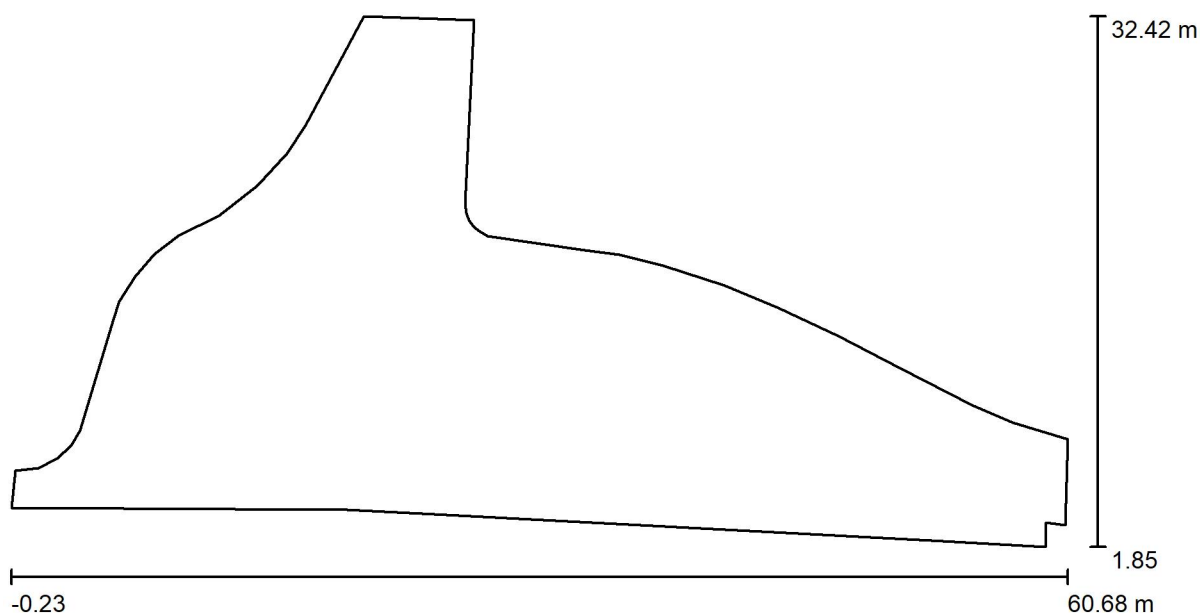


Luminaire classification according to CIE: 100  
CIE flux code: 32 75 98 100 88

Due to missing symmetry properties, no UGR table can be displayed for this luminaire.

Signify

Operator Vitor Hugo Reis  
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Fax  
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**Copenhagen LED Gen 2 / Planning data**

Maintenance factor: 0.85, ULR (Upward Light Ratio): 0.0%

Scale 1:436

**Luminaire Parts List**

No.	Pieces	Designation (Correction Factor)	$\Phi$ (Luminaire) [lm]	$\Phi$ (Lamps) [lm]	P [W]
1	21	PHILIPS BPS559 FG T25 DM31 LED15/- NO (1.000)	1324	1500	12.2
Total:			27801	31500	256.2



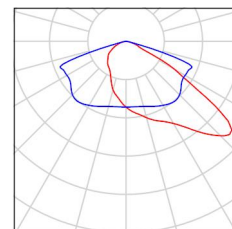
Signify

Operator Vitor Hugo Reis  
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Fax  
e-Mail vitor.hugo.reis@signify.com

## Copenhagen LED Gen 2 / Luminaire parts list

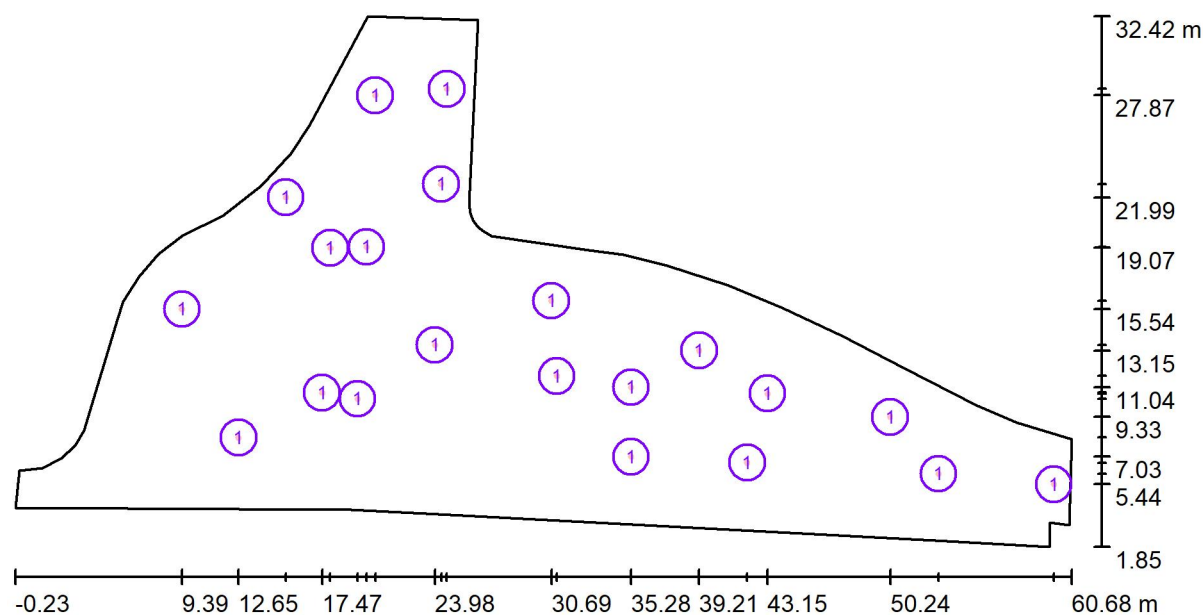
21 Pieces PHILIPS BPS559 FG T25 DM31 LED15/- NO  
Article No.:  
Luminous flux (Luminaire): 1324 lm  
Luminous flux (Lamps): 1500 lm  
Luminaire Wattage: 12.2 W  
Luminaire classification according to CIE: 100  
CIE flux code: 32 75 98 100 88  
Fitting: 1 x LED15-4S/830 (Correction Factor  
1.000).

See our luminaire catalog  
for an image of the  
luminaire.



Signify

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Telephone  
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e-Mail vitor.hugo.reis@signify.com

**Copenhagen LED Gen 2 / Luminaires (layout plan)**

Scale 1 : 436

**Luminaire Parts List**

No.	Pieces	Designation
1	21	PHILIPS BPS559 FG T25 DM31 LED15/- NO

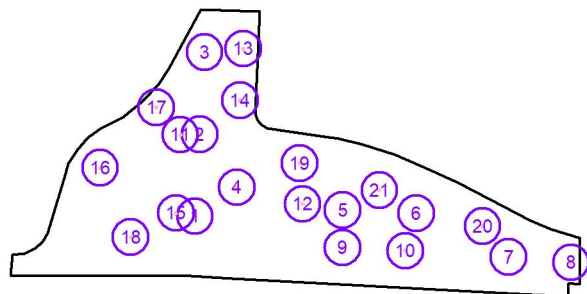
Signify

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## Copenhagen LED Gen 2 / Luminaires (coordinates list)

### PHILIPS BPS559 FG T25 DM31 LED15/- NO

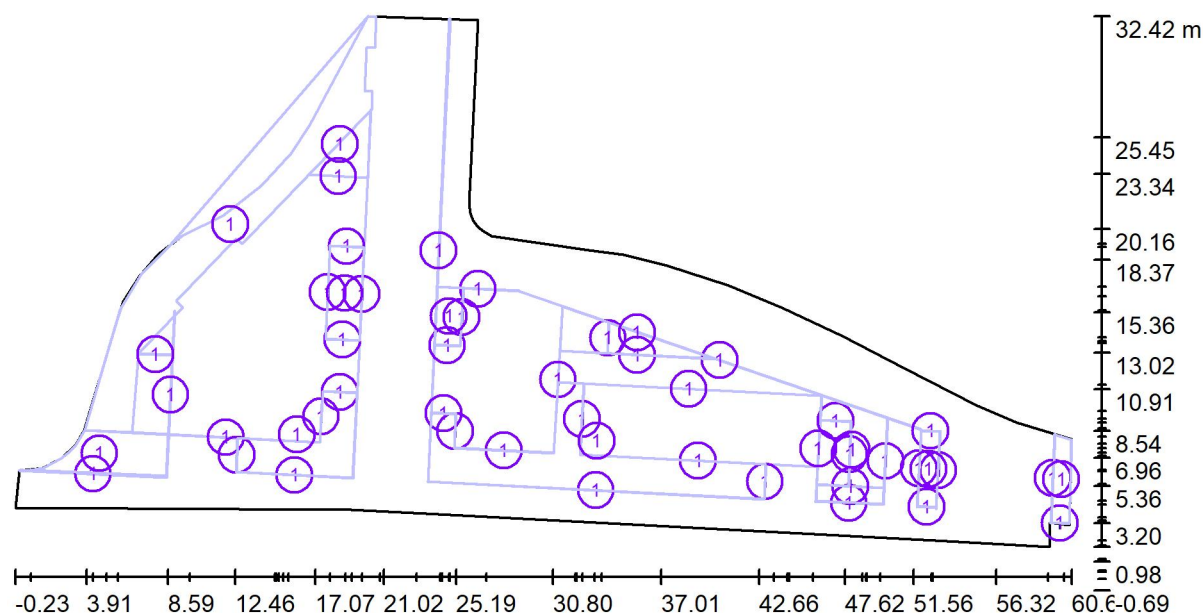
1324 lm, 12.2 W, 1 x 1 x LED15-4S/830 (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	19.514	10.375	5.500	0.0	0.0	-93.3
2	20.025	19.122	5.500	0.0	0.0	-93.3
3	20.536	27.869	5.500	0.0	0.0	-93.3
4	23.977	13.474	5.500	0.0	0.0	-92.8
5	35.291	11.040	5.500	0.0	0.0	0.0
6	43.153	10.678	5.500	0.0	0.0	0.0
7	53.027	6.053	5.500	0.0	0.0	-94.0
8	59.674	5.443	5.500	0.0	0.0	88.6
9	35.283	7.033	5.500	0.0	0.0	-2.6
10	41.983	6.691	5.500	0.0	0.0	-3.0
11	17.945	19.070	5.500	0.0	0.0	86.3
12	31.009	11.694	5.500	0.0	0.0	84.6
13	24.666	28.239	5.500	0.0	0.0	-93.8
14	24.333	22.737	5.500	0.0	0.0	-93.8
15	17.474	10.723	5.500	0.0	0.0	86.3
16	9.386	15.543	5.500	0.0	0.0	-125.7
17	15.382	21.986	5.500	0.0	0.0	-132.5
18	12.654	8.136	5.500	0.0	0.0	-3.5
19	30.691	16.027	5.500	0.0	0.0	-12.5
20	50.239	9.332	5.500	0.0	0.0	-20.3
21	39.211	13.154	5.500	0.0	0.0	-18.4

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**Copenhagen LED Gen 2 / Objects (layout plan)**

Scale 1 : 436

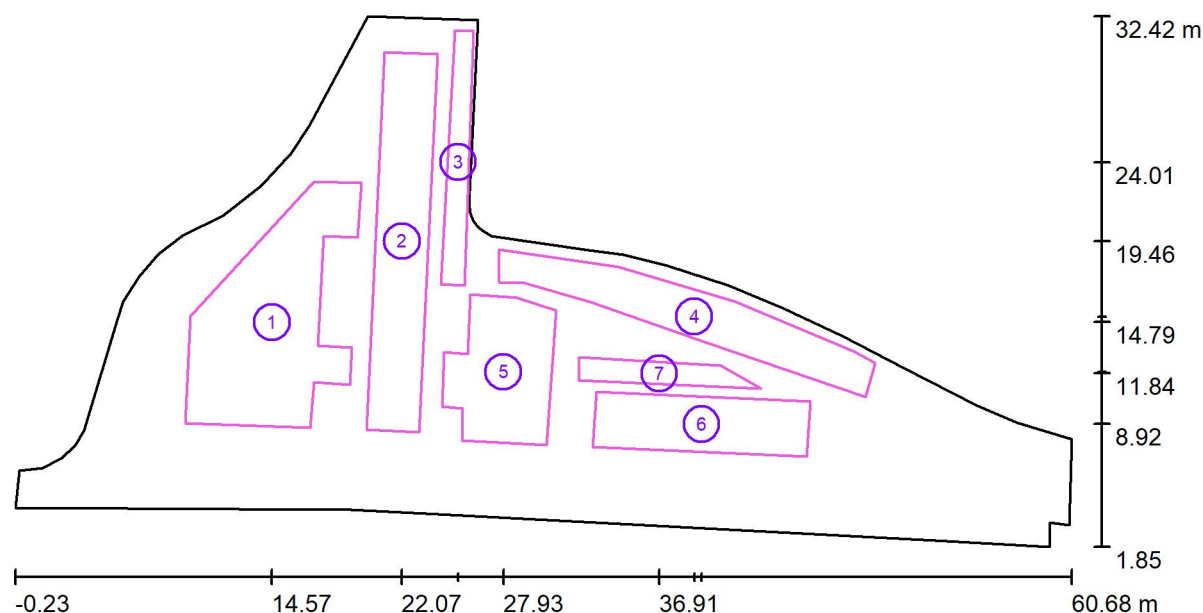
**Object parts list**

No.	Pieces	Designation
1	52	Extrusion Volume

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## Copenhagen LED Gen 2 / Calculation surfaces (results overview)



Scale 1 : 436

### Calculation Surface List

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
1	Calculation Surface 1	perpendicular	64 x 64	25	17	30	0.701	0.582
2	Calculation Surface 2	perpendicular	64 x 128	23	11	33	0.472	0.333
3	Calculation Surface 3	perpendicular	8 x 64	30	15	38	0.493	0.392
4	Calculation Surface 4	perpendicular	128 x 64	26	18	38	0.703	0.481
5	Calculation Surface 5	perpendicular	32 x 32	28	17	37	0.585	0.453
6	Calculation Surface 6	perpendicular	64 x 16	19	11	25	0.602	0.466
7	Calculation Surface 7	perpendicular	64 x 8	31	27	36	0.885	0.763

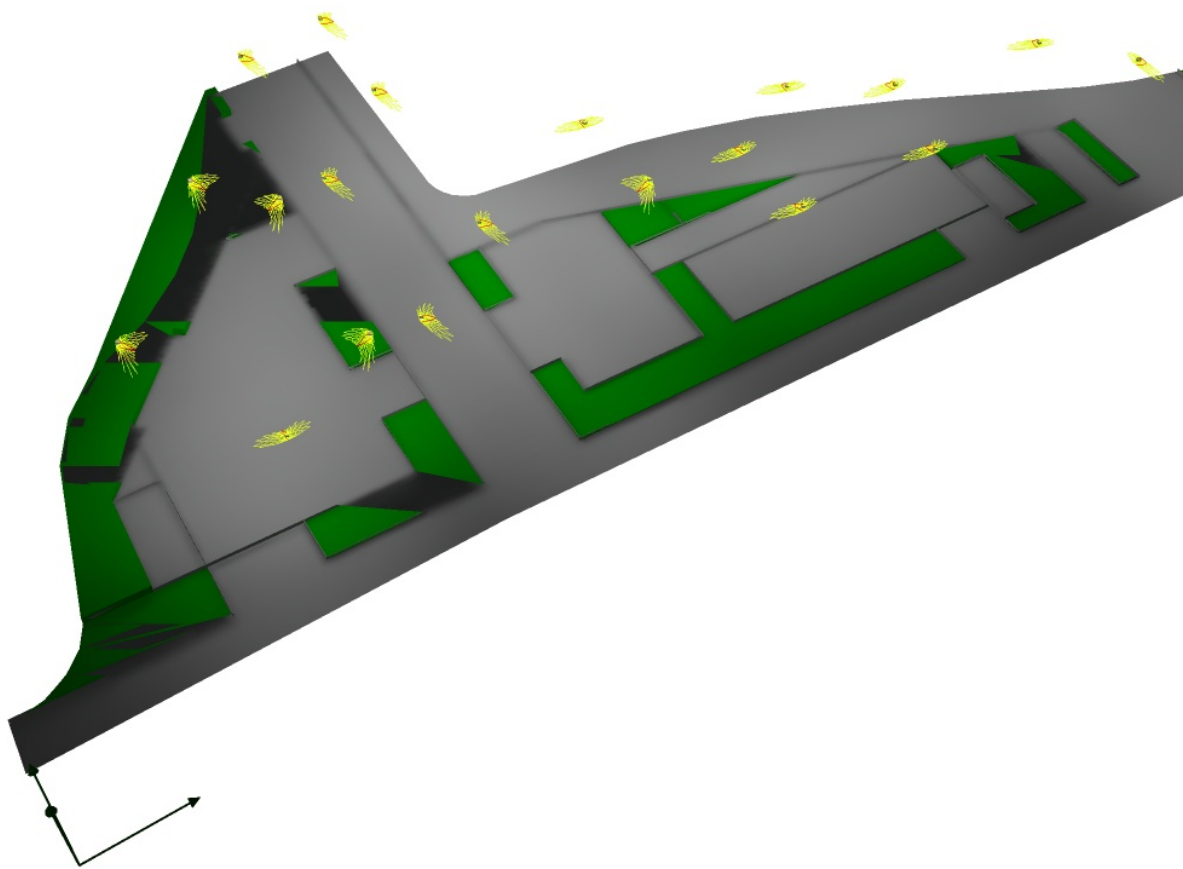
### Summary of Results

Type	Quantity	Average [lx]	Min [lx]	Max [lx]	u0	$E_{min} / E_{max}$
perpendicular	7	25	11	38	0.44	0.29

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## Copenhagen LED Gen 2 / 3D Rendering



Signify

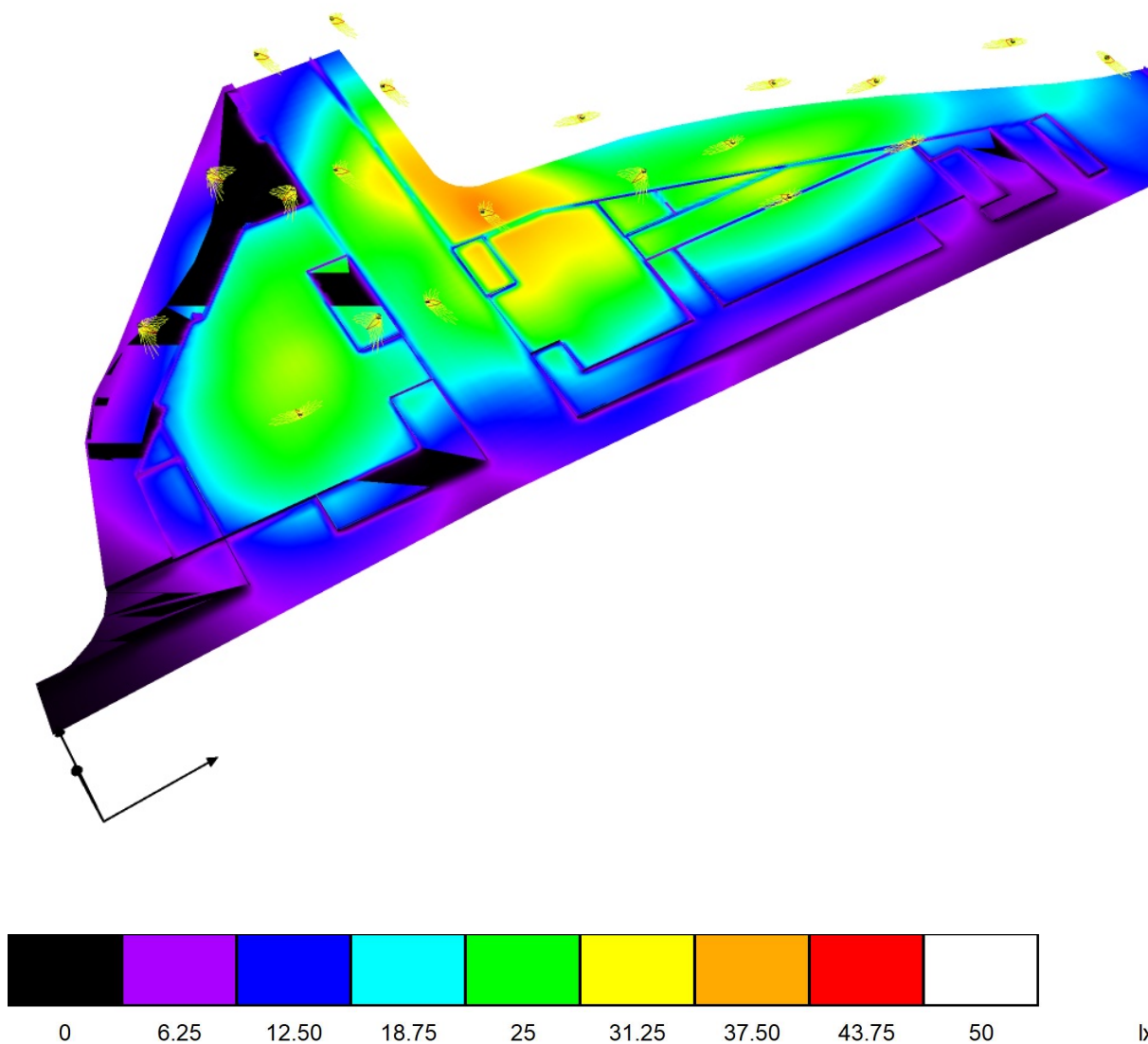
Operator Vitor Hugo Reis

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e-Mail vitor.hugo.reis@signify.com

## Copenhagen LED Gen 2 / False Colour Rendering



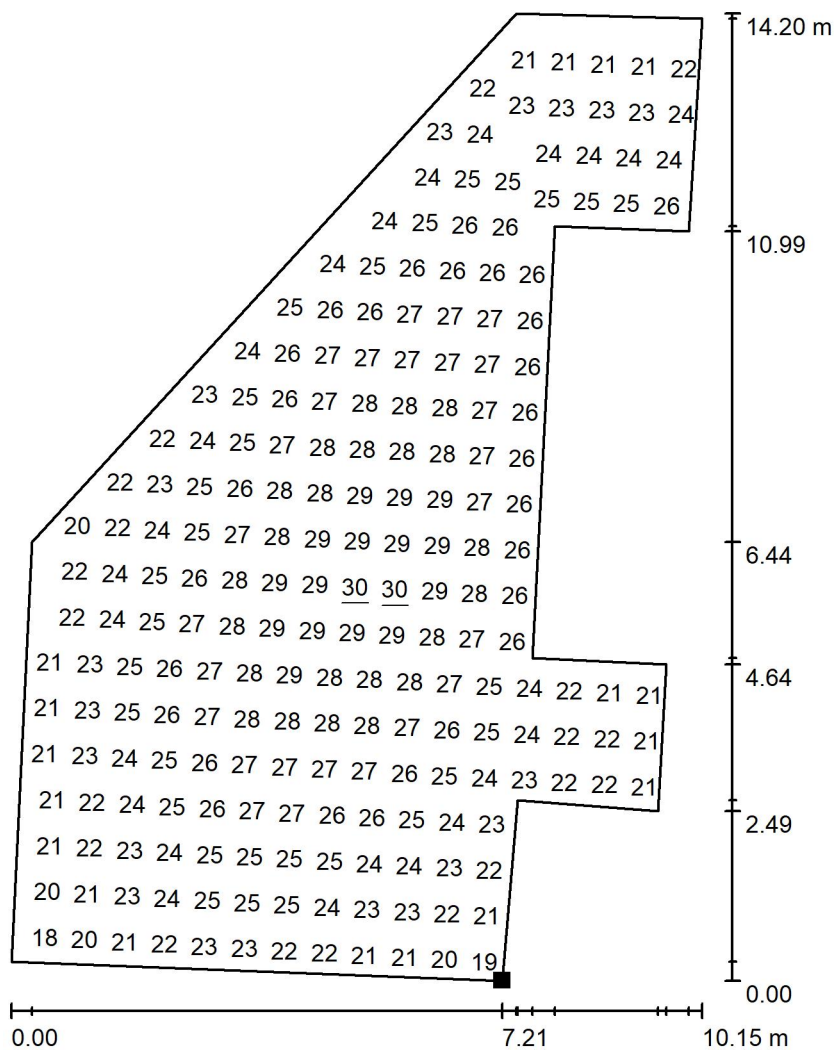




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## Copenhagen LED Gen 2 / Calculation Surface 1 / Value Chart (E, Perpendicular)



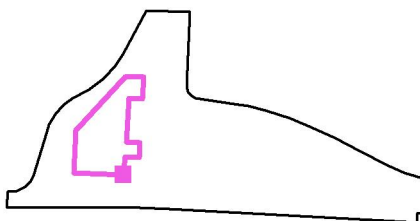
Values in Lux, Scale 1 : 111

Not all calculated values could be displayed.

Position of surface in external scene:

Marked point:

(16.790 m, 8.691 m, 0.100 m)



Grid: 64 x 64 Points

$E_{av}$  [lx]  
25

$E_{min}$  [lx]  
17

$E_{max}$  [lx]  
30

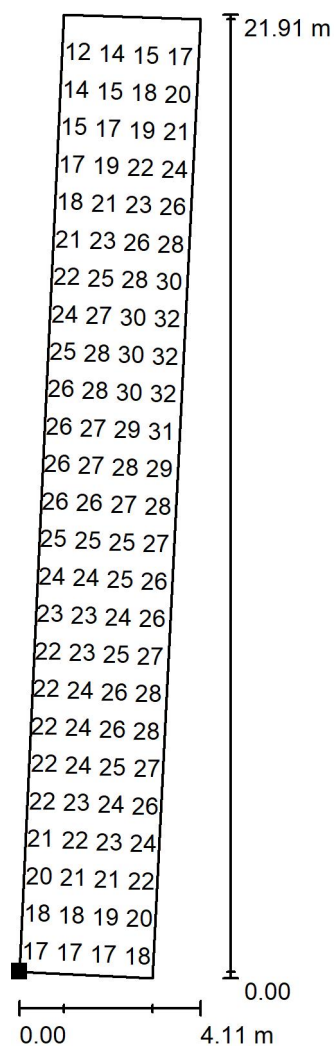
$u_0$   
0.701

$E_{min} / E_{max}$   
0.582

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## Copenhagen LED Gen 2 / Calculation Surface 2 / Value Chart (E, Perpendicular)



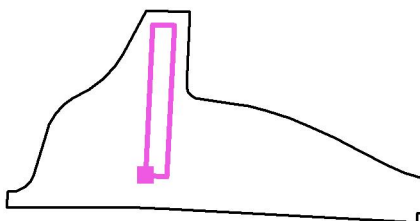
Values in Lux, Scale 1 : 172

Not all calculated values could be displayed.

Position of surface in external scene:

Marked point:

(20.032 m, 8.598 m, 0.100 m)



Grid: 64 x 128 Points

$E_{av}$  [lx]  
23

$E_{min}$  [lx]  
11

$E_{max}$  [lx]  
33

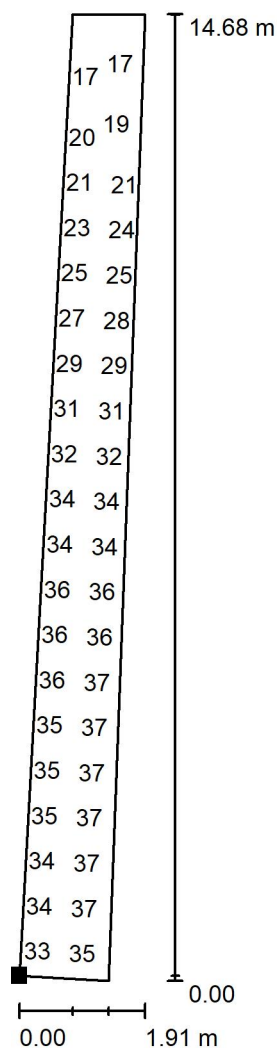
$u_0$   
0.472

$E_{min} / E_{max}$   
0.333

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## Copenhagen LED Gen 2 / Calculation Surface 3 / Value Chart (E, Perpendicular)



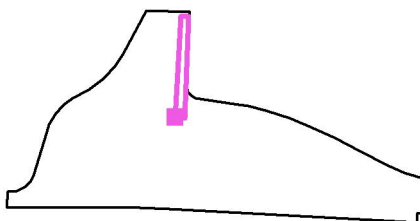
Values in Lux, Scale 1 : 115

Not all calculated values could be displayed.

Position of surface in external scene:

Marked point:

(24.304 m, 16.992 m, 0.100 m)



Grid: 8 x 64 Points

$E_{av}$  [lx]  
30

$E_{min}$  [lx]  
15

$E_{max}$  [lx]  
38

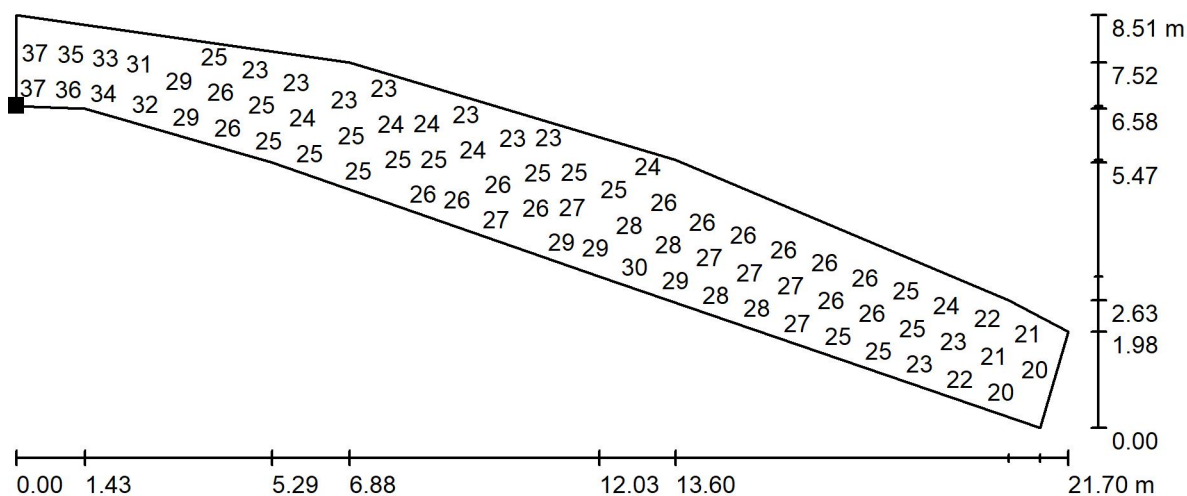
$u_0$   
0.493

$E_{min} / E_{max}$   
0.392

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### Copenhagen LED Gen 2 / Calculation Surface 4 / Value Chart (E, Perpendicular)



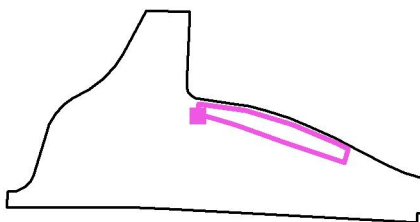
Values in Lux, Scale 1 : 156

Not all calculated values could be displayed.

Position of surface in external scene:

Marked point:

(27.678 m, 17.102 m, 0.100 m)



Grid: 128 x 64 Points

$E_{av}$  [lx]  
26

$E_{min}$  [lx]  
18

$E_{max}$  [lx]  
38

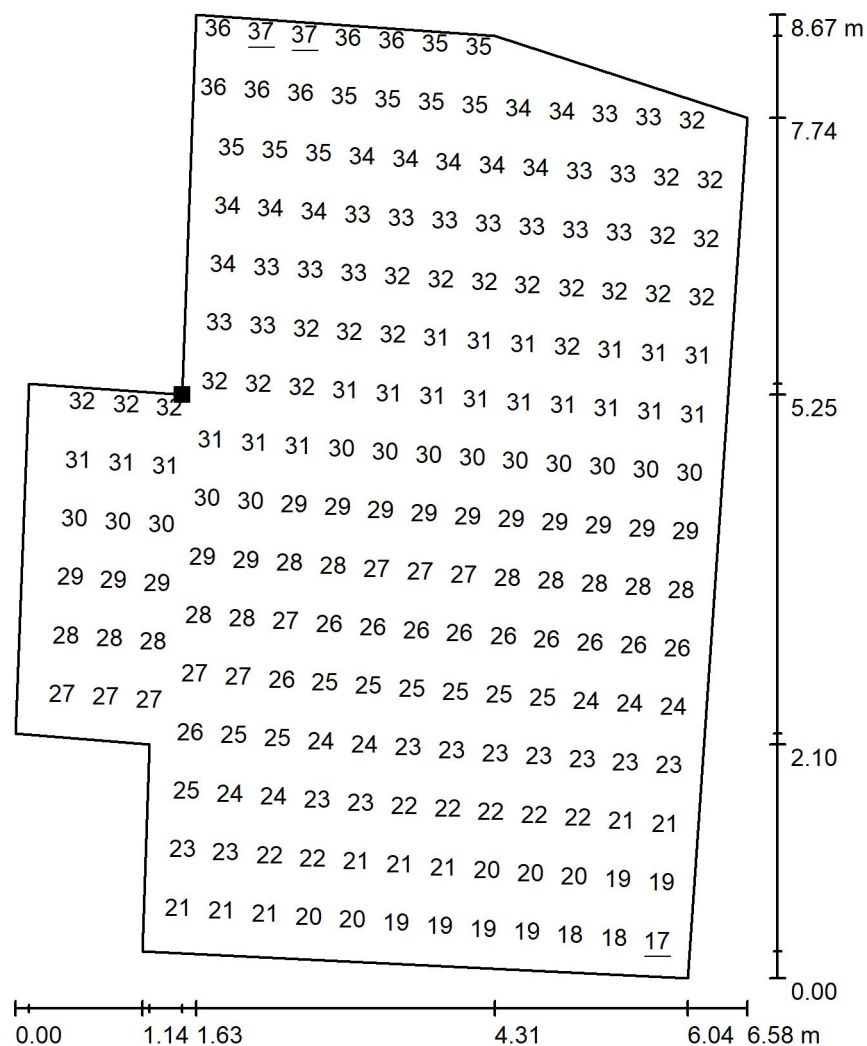
$u_0$   
0.703

$E_{min} / E_{max}$   
0.481

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## Copenhagen LED Gen 2 / Calculation Surface 5 / Value Chart (E, Perpendicular)



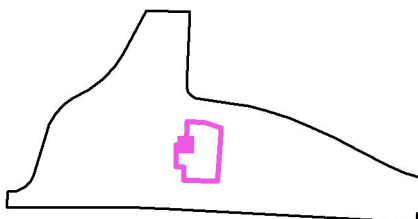
Values in Lux, Scale 1 : 68

Not all calculated values could be displayed.

Position of surface in external scene:

Marked point:

(25.884 m, 12.972 m, 0.180 m)



Grid: 32 x 32 Points

$E_{av}$  [lx]  
28

$E_{min}$  [lx]  
17

$E_{max}$  [lx]  
37

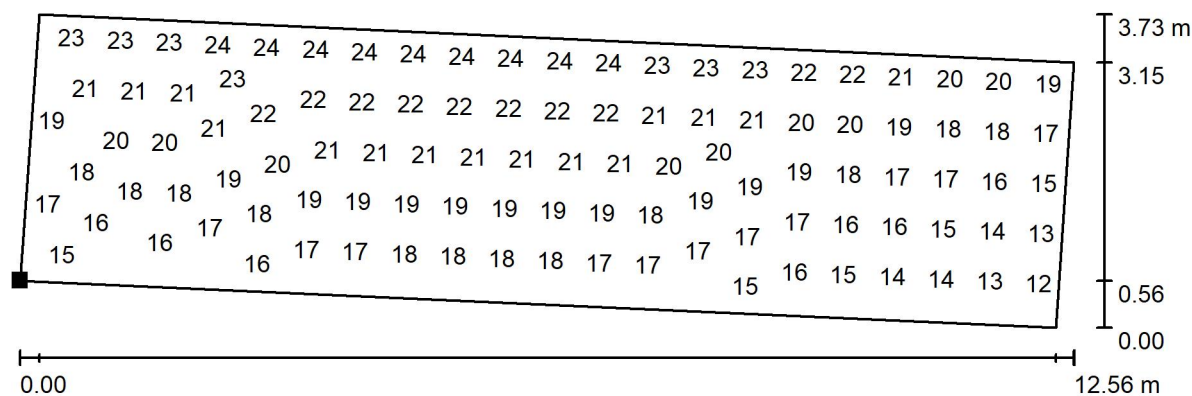
$u_0$   
0.585

$E_{min} / E_{max}$   
0.453

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 e-Mail vitor.hugo.reis@signify.com

### Copenhagen LED Gen 2 / Calculation Surface 6 / Value Chart (E, Perpendicular)



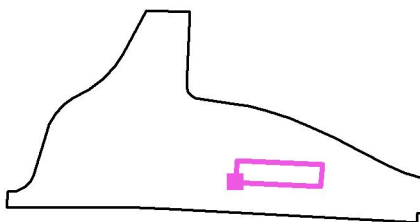
Values in Lux, Scale 1 : 90

Not all calculated values could be displayed.

Position of surface in external scene:

Marked point:

(33.069 m, 7.618 m, 0.160 m)



Grid: 64 x 16 Points

$E_{av}$  [lx]  
19

$E_{min}$  [lx]  
11

$E_{max}$  [lx]  
25

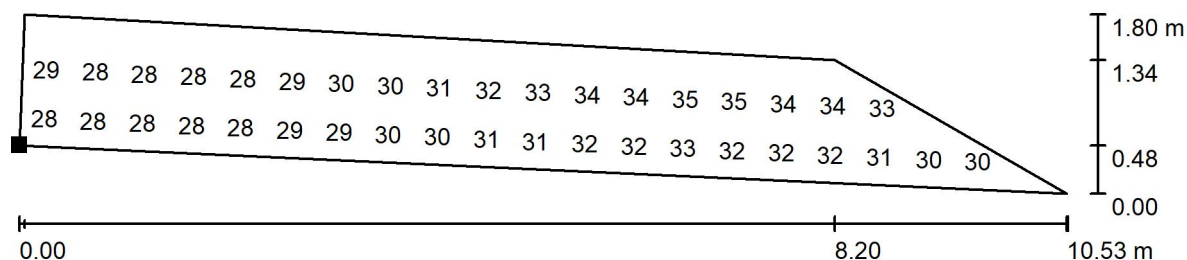
$u_0$   
0.602

$E_{min} / E_{max}$   
0.466

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### Copenhagen LED Gen 2 / Calculation Surface 7 / Value Chart (E, Perpendicular)



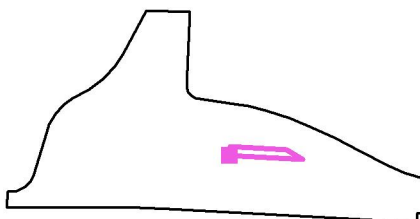
Values in Lux, Scale 1 : 76

Not all calculated values could be displayed.

Position of surface in external scene:

Marked point:

(32.248 m, 11.446 m, 0.750 m)



Grid: 64 x 8 Points

$E_{av}$  [lx]  
31

$E_{min}$  [lx]  
27

$E_{max}$  [lx]  
36

$u_0$   
0.885

$E_{min} / E_{max}$   
0.763

## **PUB\_2021\_086 - P C E PROJETOS\_RJ\_Revitalização Av. Alameda São Boaventura**

Canteiro Iluminado - Projeto luminotécnico

### **NOTAS:**

- Não foi considerado a iluminação viário da avenida, porém na prática ela estará colaborando para a iluminação dessa área.

Partner for Contact:

Order No.:

Company:

Customer No.:

Date: 28.01.2022

Operator: Vitor Hugo Reis



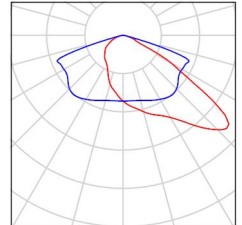
Signify

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## **PUB\_2021\_086 - P C E PROJETOS\_RJ\_Revitalização Av. Alameda São Boaventura / Luminaire parts list**

15 Pieces PHILIPS BPS559 FG T25 DM31 LED15/- NO  
Article No.:  
Luminous flux (Luminaire): 1324 lm  
Luminous flux (Lamps): 1500 lm  
Luminaire Wattage: 12.2 W  
Luminaire classification according to CIE: 100  
CIE flux code: 32 75 98 100 88  
Fitting: 1 x LED15-4S/830 (Correction Factor  
1.000).

See our luminaire catalog  
for an image of the  
luminaire.



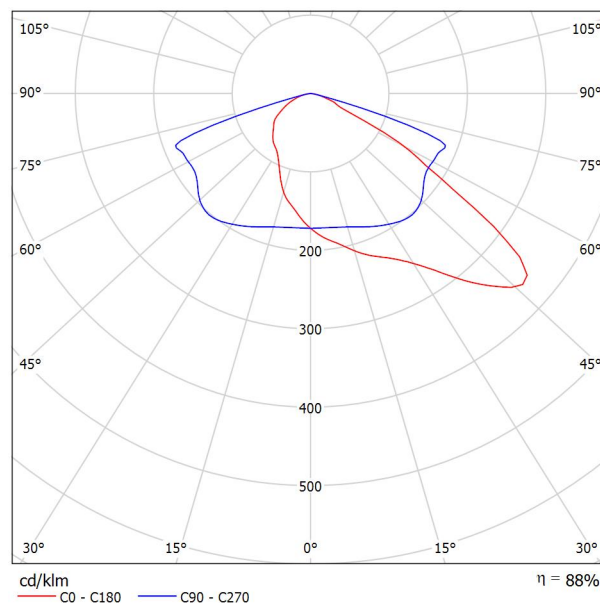
Signify

Operator Vitor Hugo Reis  
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## PHILIPS BPS559 FG T25 DM31 LED15/- NO / Luminaire Data Sheet

Luminous emittance 1:

See our luminaire catalog for an image of the luminaire.

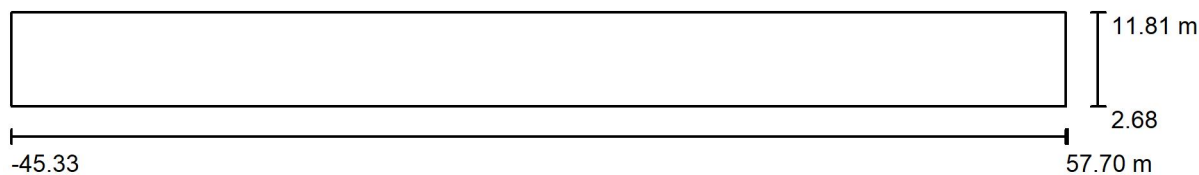


Luminaire classification according to CIE: 100  
CIE flux code: 32 75 98 100 88

Due to missing symmetry properties, no UGR table can be displayed for this luminaire.

Signify

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**Canteiro Iluminado - Copenhagen LED gen2 min / Planning data**

Maintenance factor: 0.85, ULR (Upward Light Ratio): 0.0%

Scale 1:737

**Luminaire Parts List**

No.	Pieces	Designation (Correction Factor)	$\Phi$ (Luminaire) [lm]	$\Phi$ (Lamps) [lm]	P [W]
1	15	PHILIPS BPS559 FG T25 DM31 LED15/- NO (1.000)	1324	1500	12.2
Total:			19858	Total: 22500	183.0

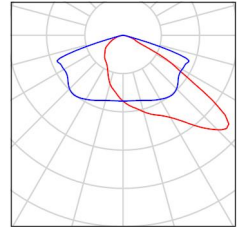
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**Canteiro Iluminado - Copenhagen LED gen2 min / Luminaire parts list**

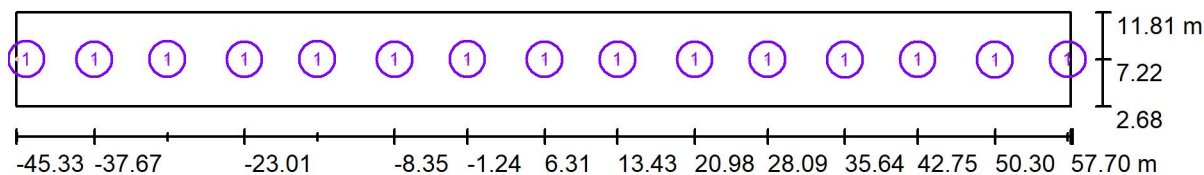
15 Pieces PHILIPS BPS559 FG T25 DM31 LED15/- NO  
Article No.:  
Luminous flux (Luminaire): 1324 lm  
Luminous flux (Lamps): 1500 lm  
Luminaire Wattage: 12.2 W  
Luminaire classification according to CIE: 100  
CIE flux code: 32 75 98 100 88  
Fitting: 1 x LED15-4S/830 (Correction Factor  
1.000).

See our luminaire catalog  
for an image of the  
luminaire.



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**Canteiro Iluminado - Copenhagen LED gen2 min / Luminaires (layout plan)**

Scale 1 : 737

**Luminaire Parts List**

No.	Pieces	Designation
1	15	PHILIPS BPS559 FG T25 DM31 LED15/- NO

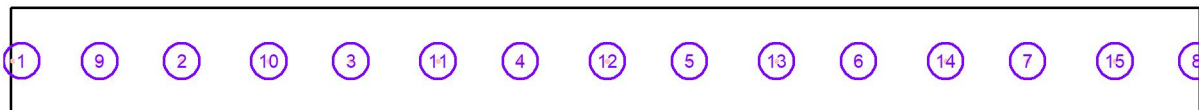
Signify

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## Canteiro Iluminado - Copenhagen LED gen2 min / Luminaires (coordinates list)

### PHILIPS BPS559 FG T25 DM31 LED15/- NO

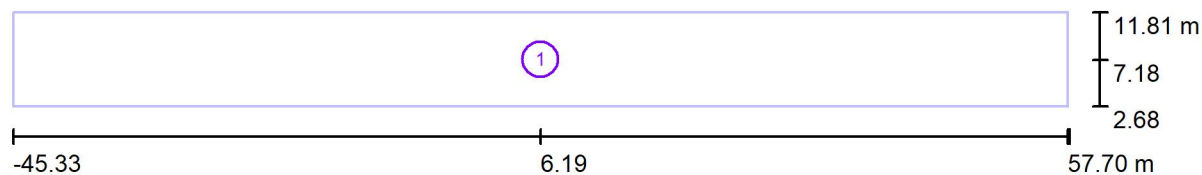
1324 lm, 12.2 W, 1 x 1 x LED15-4S/830 (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	-45.224	7.255	5.500	0.0	0.0	0.0
2	-30.561	7.253	5.500	0.0	0.0	0.0
3	-15.898	7.251	5.500	0.0	0.0	0.0
4	-1.235	7.249	5.500	0.0	0.0	0.0
5	13.428	7.247	5.500	0.0	0.0	0.0
6	28.091	7.245	5.500	0.0	0.0	0.0
7	42.754	7.243	5.500	0.0	0.0	0.0
8	57.417	7.241	5.500	0.0	0.0	0.0
9	-37.675	7.232	5.500	0.0	0.0	180.0
10	-23.012	7.230	5.500	0.0	0.0	180.0
11	-8.349	7.228	5.500	0.0	0.0	180.0
12	6.314	7.226	5.500	0.0	0.0	180.0
13	20.977	7.224	5.500	0.0	0.0	180.0
14	35.640	7.222	5.500	0.0	0.0	180.0
15	50.303	7.220	5.500	0.0	0.0	180.0

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**Canteiro Iluminado - Copenhagen LED gen2 min / Objects (layout plan)**

Scale 1 : 737

**Object parts list**

No.	Pieces	Designation
1	1	Extrusion Volume

Signify

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e-Mail vitor.hugo.reis@signify.com

## Canteiro Iluminado - Copenhagen LED gen2 min / Calculation surfaces (results overview)



Scale 1 : 737

### Calculation Surface List

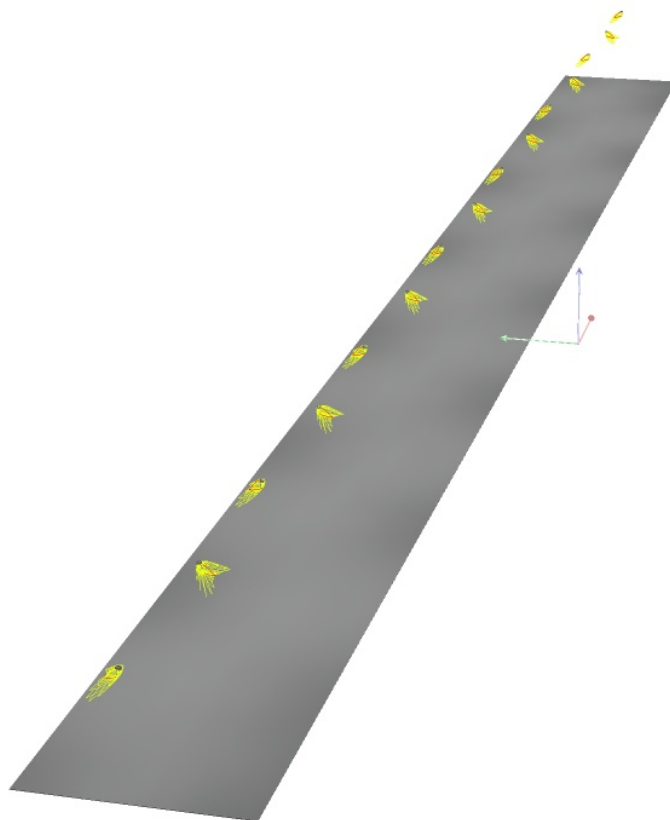
No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
1	Calculation Surface 2	perpendicular	128 x 32	10	6.52	12	0.636	0.558



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## Canteiro Iluminado - Copenhagen LED gen2 min / 3D Rendering



Signify

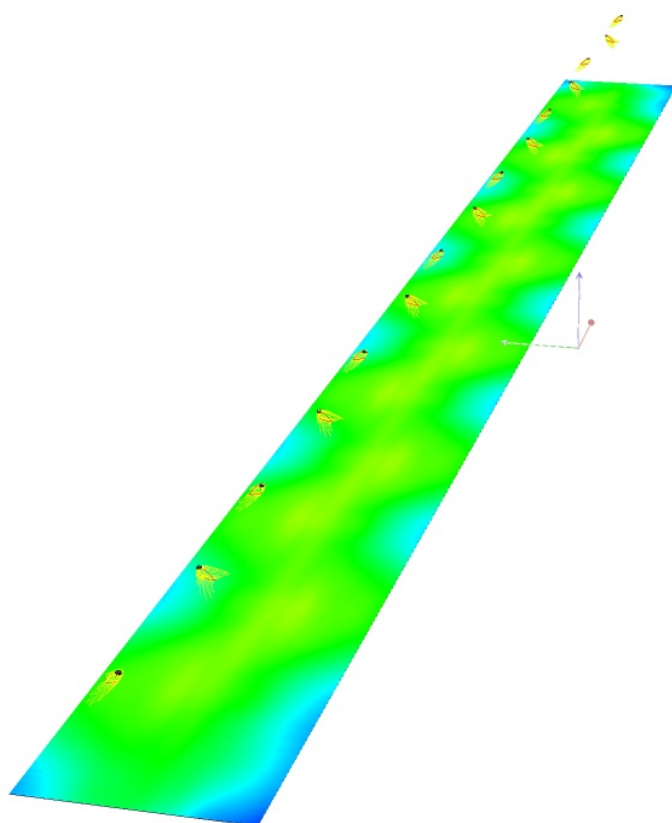
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## Canteiro Iluminado - Copenhagen LED gen2 min / False Colour Rendering



0

2.50

5

7.50

10

12.50

15

17.50

20

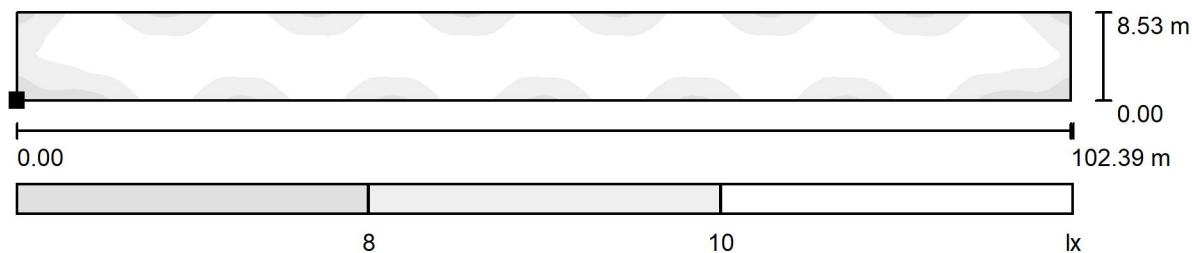
lx



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### Canteiro Iluminado - Copenhagen LED gen2 min / Calculation Surface 2 / Greyscale (E, Perpendicular)



Scale 1 : 732

Position of surface in external scene:

Marked point:

(-44.914 m, 2.978 m, 0.100 m)

Grid: 128 x 32 Points

 $E_{av}$  [lx]

10

 $E_{min}$  [lx]

6.52

 $E_{max}$  [lx]

12

u0

0.636

 $E_{min} / E_{max}$ 

0.558