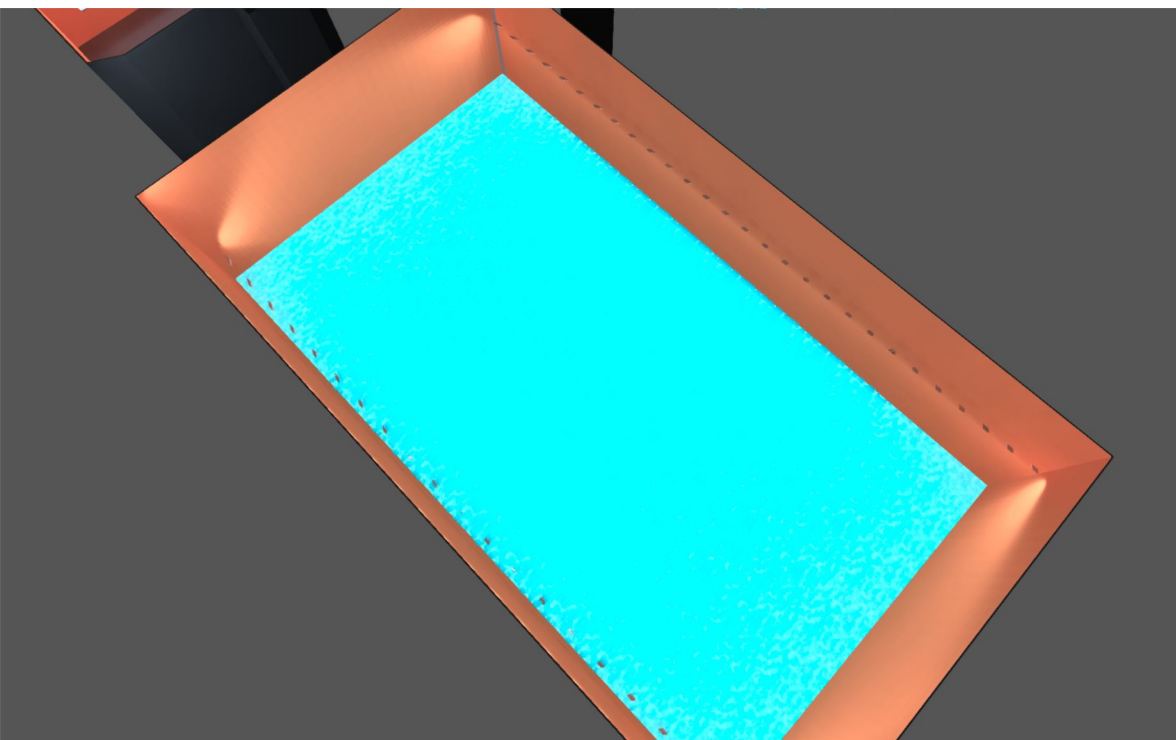




ΚΟΛΥΜΒΗΤΗΡΙΟ ΚΟΜΟΤΗΝΗΣ

Preface

Notes on planning:

The energy consumption quantities do not take into account light scenes and their dimming levels.

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Site 1

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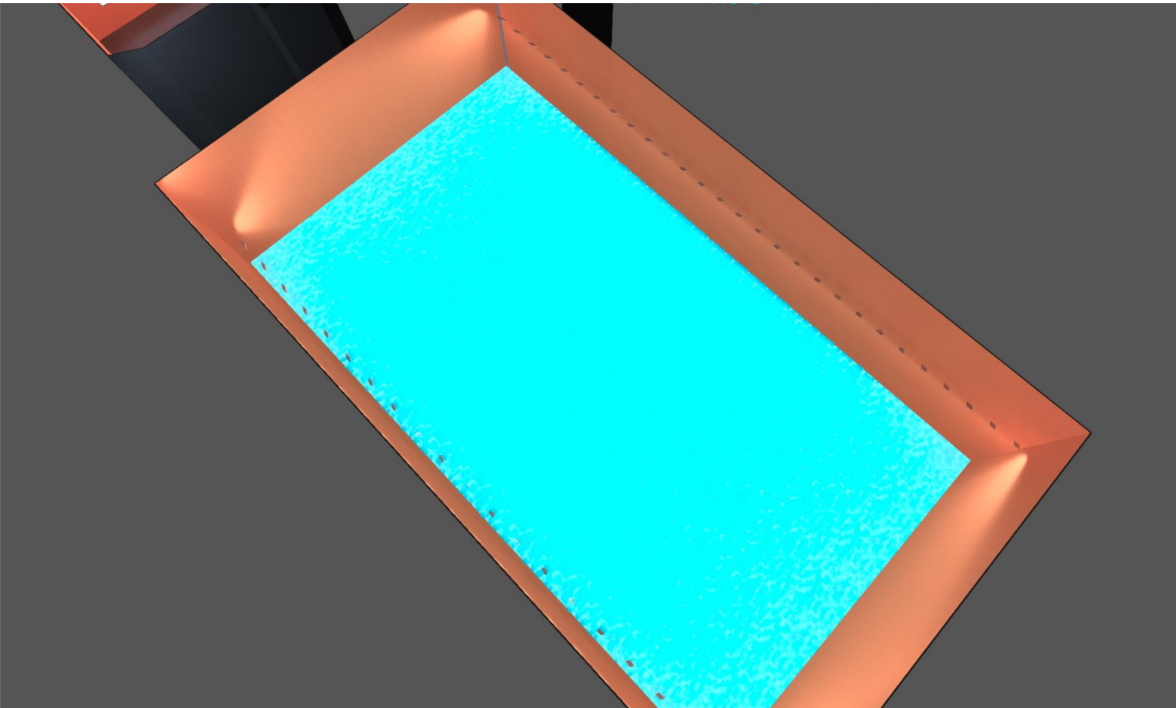
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Contacts



Description

Luminaire list

 Φ_{total}

3287738 lm

 P_{total}

24476.0 W

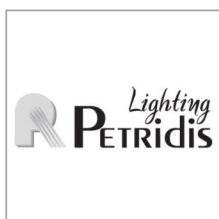
Luminous efficacy

134.3 lm/W

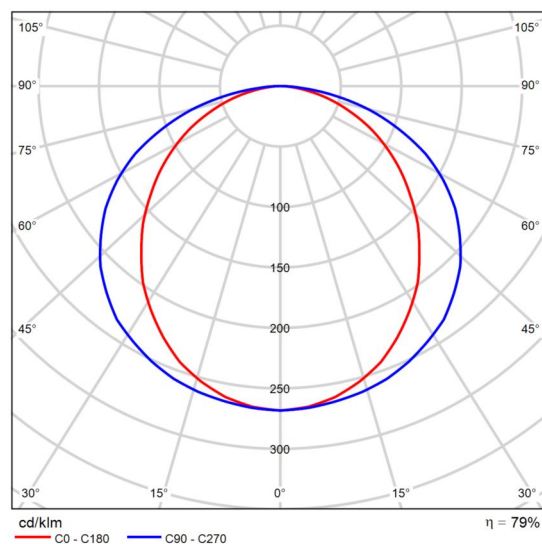
pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
87	Philips	Clearflood Large	BVP651 T25 DW10 /740	280.0 W	37637 lm	134.4 lm/W
2	Petridis	29503_	FOGLIO Q H S LED 36W NEUTRAL 600X600	36.0 W	4244 lm	117.9 lm/W
1	Petridis	29550_	FOGLIO H S LED 44W WARM L1200mm	44.0 W	4831 lm	109.8 lm/W

Product data sheet

Petridis - FOGLIO H S LED 44W WARM L1200mm



Article No.	29550_
P	44.0 W
Φ_{Lamp}	6107 lm
$\Phi_{Luminaire}$	4831 lm
η	79.11 %
Luminous efficacy	109.8 lm/W
CCT	3000 K
CRI	80



Polar LDC

Glare evaluation according to UGR												
p Ceiling		70	70	50	50	30	70	70	50	50	30	70
p Walls		50	30	50	30	30	50	30	50	30	30	50
p Floor		20	20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis					
2H	2H	18.1	19.5	18.4	19.7	20.0	20.0	21.4	20.3	21.6	21.9	
	3H	19.5	20.8	19.8	21.0	21.3	21.9	23.2	22.3	23.5	23.7	
	4H	20.1	21.2	20.4	21.5	21.8	22.7	23.9	23.1	24.2	24.5	
	6H	20.4	21.5	20.8	21.8	22.2	23.3	24.4	23.7	24.7	25.1	
	8H	20.5	21.6	20.9	21.9	22.2	23.5	24.6	23.9	24.9	25.2	
	12H	20.6	21.6	21.0	21.9	22.3	23.6	24.6	24.0	25.0	25.3	
4H	2H	19.0	20.2	19.4	20.5	20.8	20.5	21.7	20.8	22.0	22.3	
	3H	20.6	21.6	21.0	21.9	22.3	22.6	23.6	23.0	24.0	24.3	
	4H	21.2	22.2	21.6	22.5	22.9	23.6	24.5	24.0	24.8	25.2	
	6H	21.7	22.5	22.1	22.9	23.3	24.3	25.1	24.7	25.5	25.9	
	8H	21.8	22.6	22.3	23.0	23.4	24.6	25.3	25.0	25.7	26.1	
	12H	21.9	22.6	22.4	23.0	23.5	24.7	25.4	25.2	25.8	26.2	
8H	4H	21.7	22.4	22.1	22.8	23.2	23.8	24.5	24.2	24.9	25.3	
	6H	22.3	22.9	22.7	23.3	23.8	24.6	25.2	25.1	25.7	26.1	
	8H	22.5	23.0	23.0	23.5	24.0	25.0	25.5	25.4	25.9	26.4	
	12H	22.6	23.1	23.1	23.5	24.0	25.2	25.6	25.7	26.1	26.6	
12H	4H	21.7	22.4	22.2	22.8	23.3	23.7	24.4	24.2	24.8	25.3	
	6H	22.4	22.9	22.9	23.4	23.9	24.6	25.2	25.1	25.6	26.1	
	8H	22.6	23.1	23.1	23.6	24.1	25.0	25.5	25.5	25.9	26.4	
Variation of the observer position for the luminaire distances S												
S = 1.0H		+0.1 / -0.1					+0.1 / -0.1					
S = 1.5H		+0.2 / -0.4					+0.2 / -0.2					
S = 2.0H		+0.4 / -0.8					+0.4 / -0.4					
Standard table		BK05					BK07					
Correction summand		4.0					7.4					
Corrected glare indices referring to 6107lm Total luminous flux												

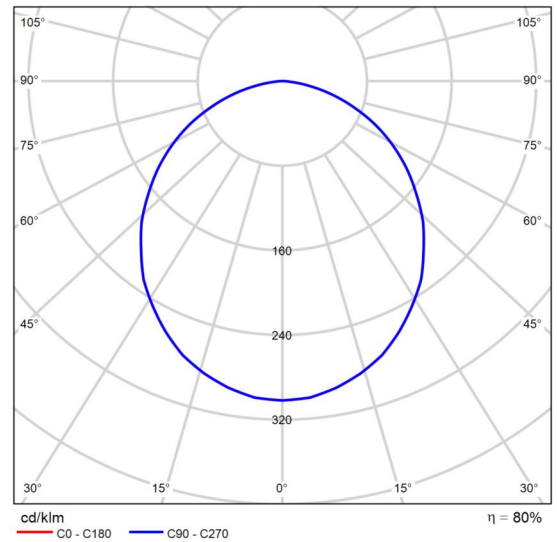
UGR diagram (SHR: 0.25)

Product data sheet

Petridis - FOGLIO Q H S LED 36W NEUTRAL 600X600



Article No.	29503_
P	36.0 W
Φ_{Lamp}	5300 lm
$\Phi_{Luminaire}$	4244 lm
η	80.08 %
Luminous efficacy	117.9 lm/W
CCT	4000 K
CRI	80



Polar LDC

Glare evaluation according to UGR												
p Ceiling		70	70	50	50	30	70	70	50	50	30	
p Walls		50	30	50	30	30	50	30	50	30	30	
p Floor		20	20	20	20	20	20	20	20	20	20	
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis					
2H	2H	17.3	18.7	17.6	18.9	19.2	17.3	18.7	17.6	18.9	19.2	
	3H	18.8	20.0	19.1	20.3	20.5	18.8	20.0	19.1	20.3	20.5	
	4H	19.3	20.5	19.7	20.8	21.1	19.3	20.5	19.7	20.8	21.1	
	6H	19.7	20.7	20.0	21.0	21.4	19.7	20.7	20.0	21.0	21.4	
	8H	19.7	20.8	20.1	21.1	21.4	19.7	20.8	20.1	21.1	21.4	
	12H	19.8	20.8	20.1	21.1	21.4	19.8	20.8	20.1	21.1	21.4	
4H	2H	18.0	19.1	18.3	19.4	19.7	18.0	19.1	18.3	19.4	19.7	
	3H	19.6	20.6	20.0	20.9	21.3	19.6	20.6	20.0	20.9	21.3	
	4H	20.3	21.2	20.7	21.5	21.9	20.3	21.2	20.7	21.5	21.9	
	6H	20.7	21.5	21.1	21.9	22.3	20.7	21.5	21.1	21.9	22.3	
	8H	20.8	21.6	21.3	21.9	22.4	20.8	21.6	21.3	21.9	22.4	
	12H	20.9	21.5	21.3	22.0	22.4	20.9	21.5	21.3	22.0	22.4	
8H	4H	20.5	21.2	21.0	21.6	22.1	20.5	21.2	21.0	21.6	22.1	
	6H	21.1	21.7	21.6	22.1	22.6	21.1	21.7	21.6	22.1	22.6	
	8H	21.3	21.8	21.7	22.2	22.7	21.3	21.8	21.7	22.2	22.7	
	12H	21.3	21.8	21.8	22.3	22.8	21.3	21.8	21.8	22.3	22.8	
12H	4H	20.5	21.2	21.0	21.6	22.0	20.5	21.2	21.0	21.6	22.0	
	6H	21.1	21.6	21.6	22.1	22.6	21.1	21.6	21.6	22.1	22.6	
	8H	21.3	21.8	21.8	22.2	22.7	21.3	21.8	21.8	22.2	22.7	
Variation of the observer position for the luminaire distances S												
S = 1.0H		+0.1 / -0.1					+0.1 / -0.1					
S = 1.5H		+0.2 / -0.4					+0.2 / -0.4					
S = 2.0H		+0.5 / -0.8					+0.5 / -0.8					
Standard table		BK05					BK05					
Correction summand		3.1					3.1					
Corrected glare indices referring to 5300lm Total luminous flux												

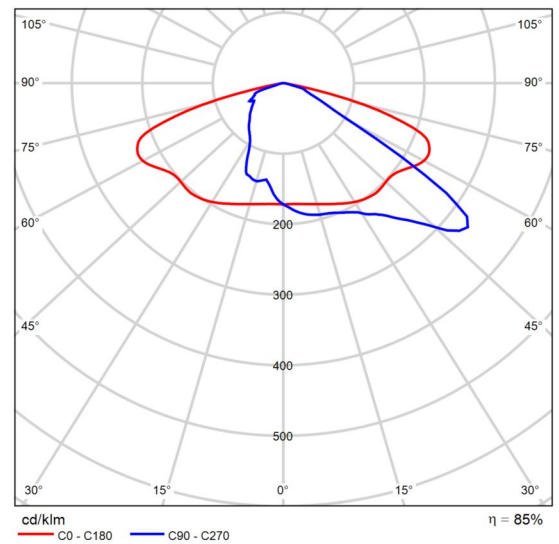
UGR diagram (SHR: 0.25)

Product data sheet

Philips - BVP651 T25 DW10 /740



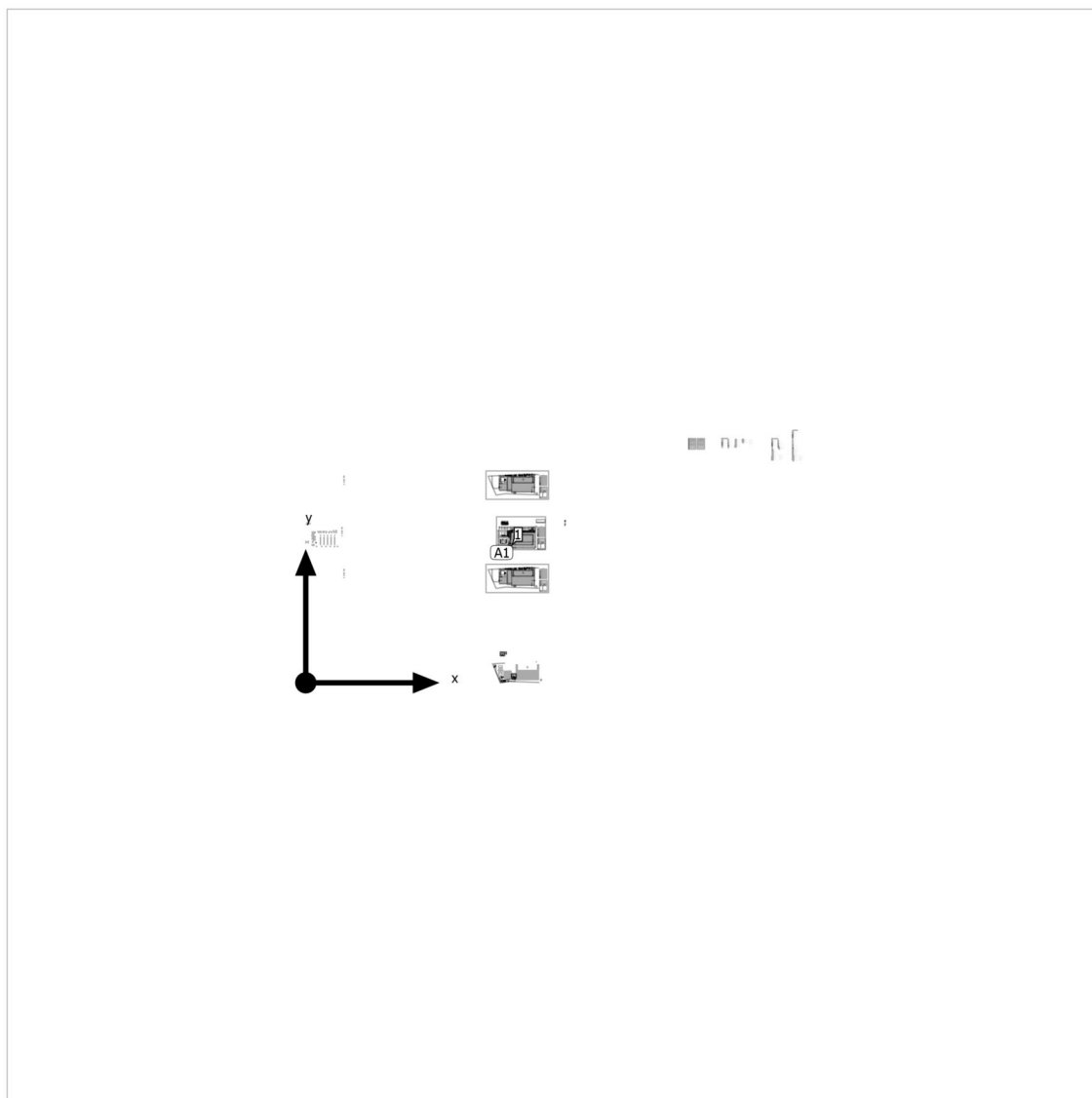
Article No.	Clearflood Large
P	280.0 W
Φ_{Lamp}	44100 lm
$\Phi_{\text{Luminaire}}$	37637 lm
η	85.35 %
Luminous efficacy	134.4 lm/W
CCT	4000 K
CRI	70



Polar LDC

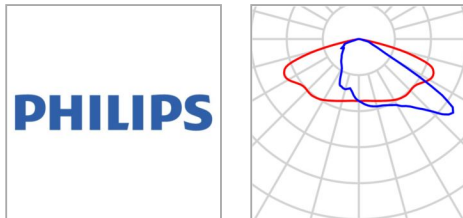
Site 1

Luminaire layout plan



Site 1

Luminaire layout plan



Manufacturer	Philips	P	280.0 W
Article No.	Clearflood Large	$\Phi_{\text{Luminaire}}$	37637 lm
Article name	BVP651 T25 DW10 /740		
Fitting	1x LED450-4S/740 L96@100kh		

27 x Philips BVP651 T25 DW10 /740

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	525.681 m / 348.713 m / 12.809 m	525.681 m	348.713 m	12.809 m	1
X-direction	27 pcs., Centre - centre, Distances not equal				
Arrangement	A1				

Site 1

Luminaire list

Φ_{total} 37637 lm	P_{total} 280.0 W	Luminous efficacy 134.4 lm/W
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pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
1	Philips	Clearflood Large	BVP651 T25 DW10 /740	280.0 W	37637 lm	134.4 lm/W

Building 1

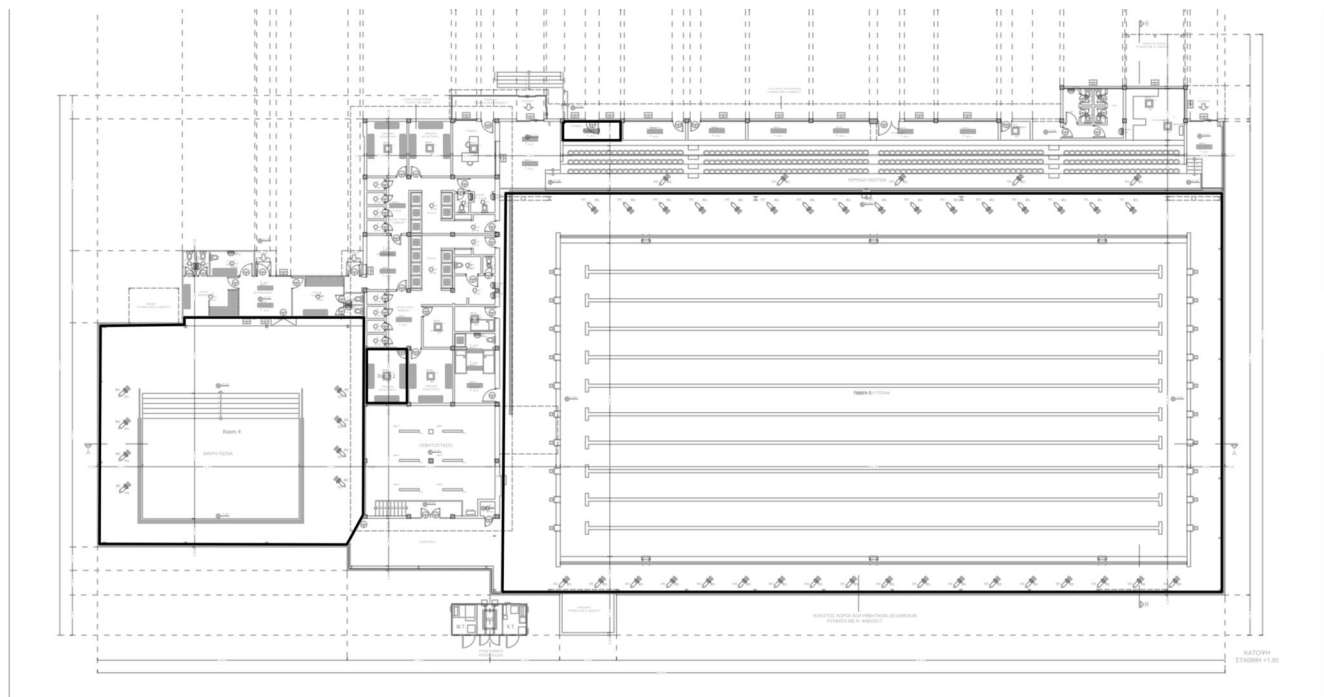
Luminaire list

Φ_{total} 3250101 lm	P_{total} 24196.0 W	Luminous efficacy 134.3 lm/W
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pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
86	Philips	Clearflood Large	BVP651 T25 DW10 /740	280.0 W	37637 lm	134.4 lm/W
2	Petridis	29503_	FOGLIO Q H S LED 36W NEUTRAL 600X600	36.0 W	4244 lm	117.9 lm/W
1	Petridis	29550_	FOGLIO H S LED 44W WARM L1200mm	44.0 W	4831 lm	109.8 lm/W

Building 1 · Storey 1 (Light scene 1)

Room list



Building 1 · Storey 1 (Light scene 1)

Room list

Room 1

P_{total} 13440.0 W	A_{Room} 1819.91 m ²	Lighting power density 7.38 W/m ² = 1.02 W/m ² /100 lx (Room) 10.17 W/m ² = 1.41 W/m ² /100 lx (Working plane)	E_{perpendicular} (Working plane) 723 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
48	Philips	Clearflood Large	BVP651 T25 DW10 /740	280.0 W	37637 lm

Room 2

P_{total} 72.0 W	A_{Room} 13.76 m ²	Lighting power density 5.23 W/m ² = 1.78 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 293 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
2	Petridis	29503_	FOGLIO Q H S LED 36W NEUTRAL 600X600	36.0 W	4244 lm

Room 3

P_{total} 44.0 W	A_{Room} 6.88 m ²	Lighting power density 6.39 W/m ² = 2.79 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 229 lx
------------------------------------	--	---	--

pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
1	Petridis	29550_	FOGLIO H S LED 44W WARM L1200mm	44.0 W	4831 lm

Building 1 · Storey 1 (Light scene 1)

Room list

Room 4

P_{total} 3360.0 W	A_{Room} 374.18 m ²	Lighting power density 8.98 W/m ² = 1.48 W/m ² /100 lx (Room) 14.28 W/m ² = 2.36 W/m ² /100 lx (Working plane)	E_{perpendicular} (Working plane) 606 lx
--------------------------------------	--	---	--

pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
12	Philips	Clearflood Large	BVP651 T25 DW10 /740	280.0 W	37637 lm

Building 1 · Storey 1

Luminaire list Φ_{total}

3250101 lm

 P_{total}

24196.0 W

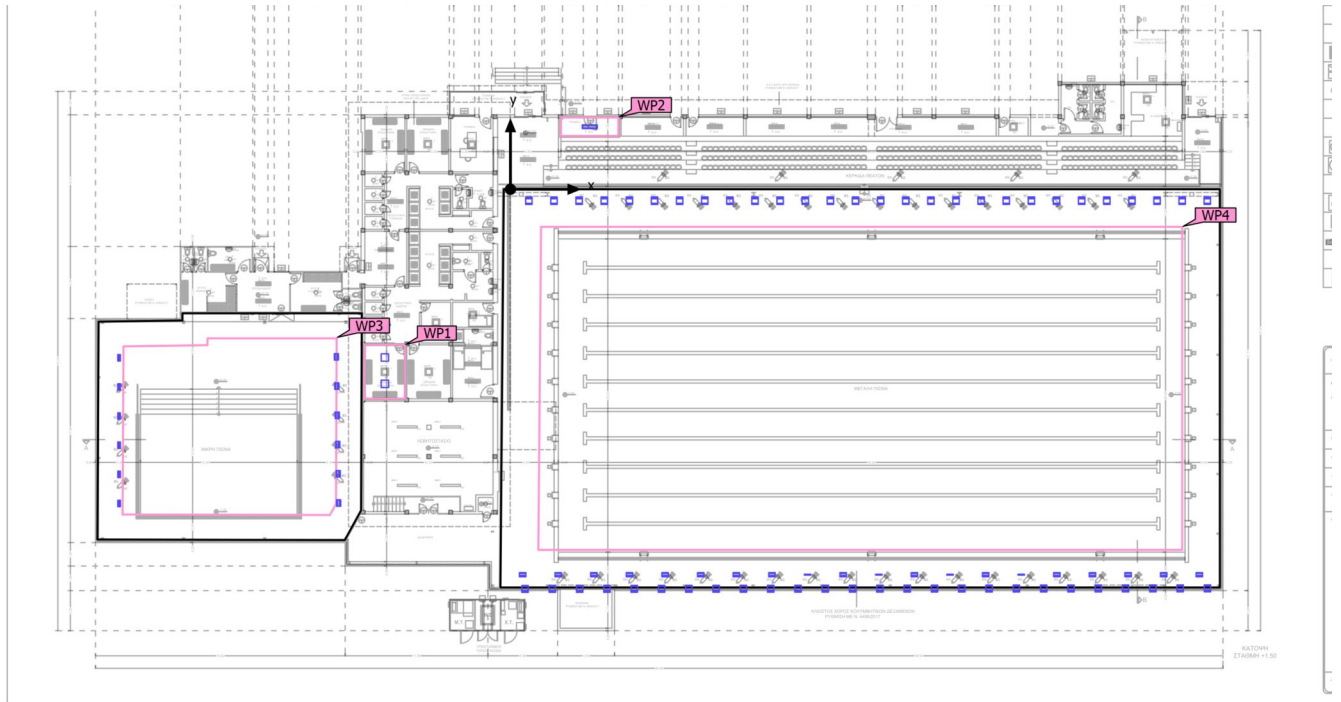
Luminous efficacy

134.3 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
86	Philips	Clearflood Large	BVP651 T25 DW10 /740	280.0 W	37637 lm	134.4 lm/W
2	Petridis	29503_	FOGLIO Q H S LED 36W NEUTRAL 600X600	36.0 W	4244 lm	117.9 lm/W
1	Petridis	29550_	FOGLIO H S LED 44W WARM L1200mm	44.0 W	4831 lm	109.8 lm/W

Building 1 · Storey 1 (Light scene 1)

Calculation objects



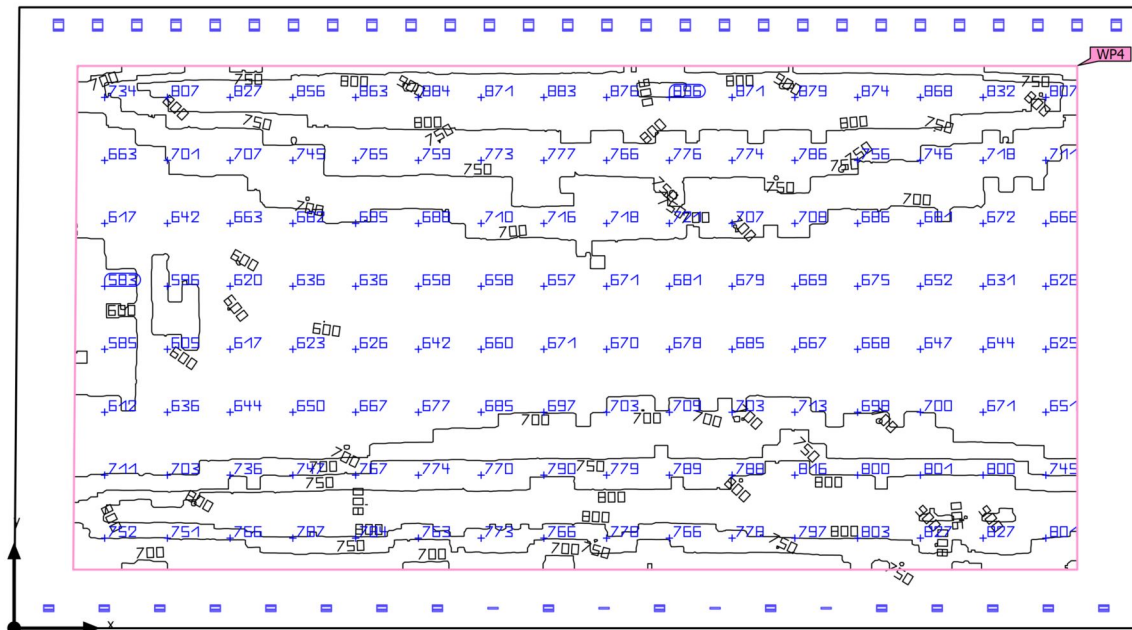
Building 1 · Storey 1 (Light scene 1)

Calculation objects

Working planes

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 2) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	293 lx (≥ 200 lx) ✓	154 lx	398 lx	0.53 (≥ 0.40) ✓	0.39	WP1
Working plane (Room 3) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	229 lx (≥ 200 lx) ✓	116 lx	351 lx	0.51 (≥ 0.40) ✓	0.33	WP2
Working plane (Room 4) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 2.000 m	606 lx (≥ 500 lx) ✓	426 lx	799 lx	0.70 (≥ 0.60) ✓	0.53	WP3
Working plane (Room 1) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 3.000 m	723 lx (≥ 500 lx) ✓	564 lx	919 lx	0.78 (≥ 0.60) ✓	0.61	WP4

Building 1 · Storey 1 · Room 1 (Light scene 1)

Summary

Ground area	1819.91 m ²	Clearance height	12.800 m
Reflection factors	Ceiling: 70.0 %, Walls: 49.0 %, Floor: 19.9 %	Mounting height	4.500 m – 7.800 m
Maintenance factor	0.80 (fixed)	Height _{Working plane}	0.000 m
		Wall zone _{Working plane}	3.000 m

Building 1 · Storey 1 · Room 1 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	723 lx	≥ 500 lx	✓	WP4
	$U_o (g_1)$	0.78	≥ 0.60	✓	WP4
	Lighting power density	10.17 W/m ²	–		
		1.41 W/m ² /100 lx	–		
Energy estimation ⁽²⁾	Consumption	33264 kWh/a	max. 63700 kWh/a	✓	
Room	Lighting power density	7.38 W/m ²	–		
		1.02 W/m ² /100 lx	–		

(1) Based on a rectangular space of 31.780 m x 57.400 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

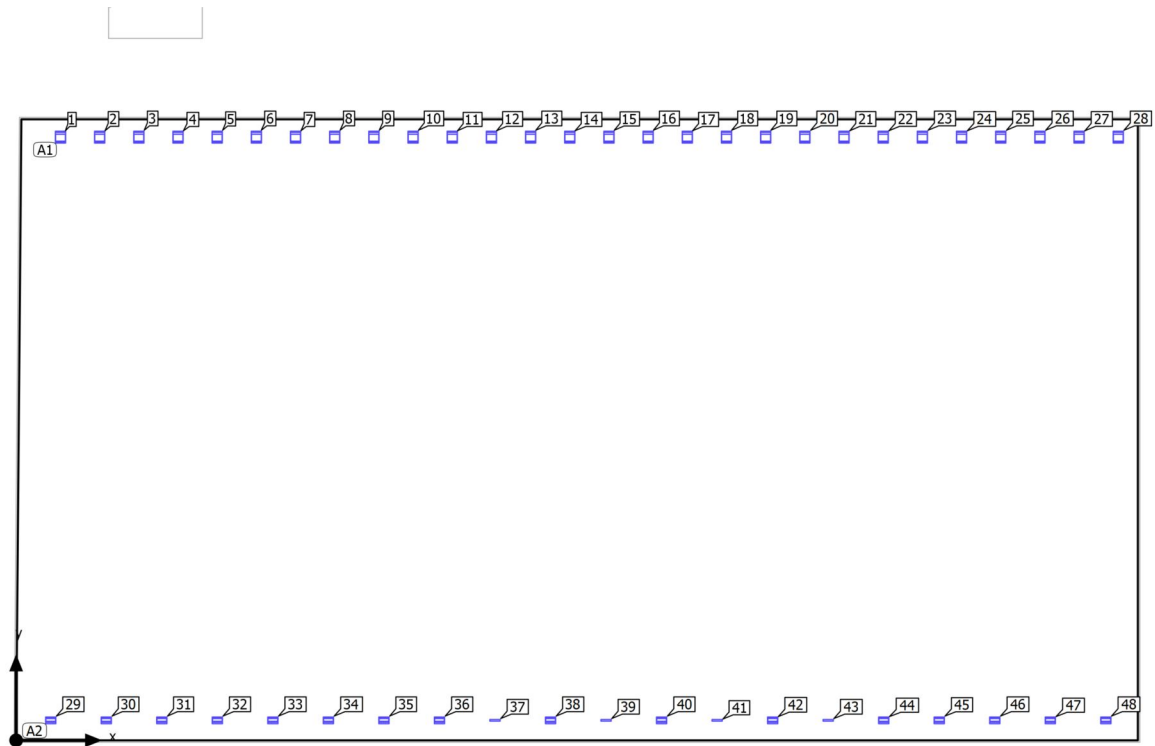
Utilisation profile: DIALux presetting (34.2 Standard (office))

Luminaire list

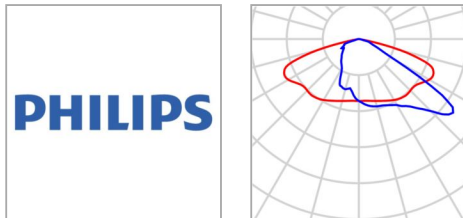
pcs.	Manufacturer	Article No.	Article name	R _{UG}	P	Φ	Luminous efficacy
48	Philips	Clearflood Large	BVP651 T25 DW10 /740	–	280.0 W	37637 lm	134.4 lm/W

Building 1 · Storey 1 · Room 1

Luminaire layout plan



Building 1 · Storey 1 · Room 1

Luminaire layout plan

Manufacturer	Philips	P	280.0 W
Article No.	Clearflood Large	Φ _{Luminaire}	37637 lm
Article name	BVP651 T25 DW10 /740		
Fitting	1x LED450-4S/740 L96@100kh		

28 x Philips BVP651 T25 DW10 /740

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	2.269 m / 30.897 m / 7.800 m	2.269 m	30.897 m	7.800 m	1
X-direction	28 pcs., Centre - centre, 2.005 m	4.274 m	30.897 m	7.800 m	2
Arrangement	A1	6.279 m	30.897 m	7.800 m	3
		8.284 m	30.897 m	7.800 m	4
		10.288 m	30.897 m	7.800 m	5
		12.293 m	30.897 m	7.800 m	6
		14.298 m	30.897 m	7.800 m	7
		16.303 m	30.897 m	7.800 m	8
		18.307 m	30.897 m	7.800 m	9
		20.312 m	30.897 m	7.800 m	10
		22.317 m	30.897 m	7.800 m	11
		24.322 m	30.897 m	7.800 m	12
		26.326 m	30.897 m	7.800 m	13

Building 1 · Storey 1 · Room 1

Luminaire layout plan

X	Y	Mounting height	Luminaire
28.331 m	30.897 m	7.800 m	14
30.336 m	30.897 m	7.800 m	15
32.341 m	30.897 m	7.800 m	16
34.345 m	30.897 m	7.800 m	17
36.350 m	30.897 m	7.800 m	18
38.355 m	30.897 m	7.800 m	19
40.360 m	30.897 m	7.800 m	20
42.364 m	30.897 m	7.800 m	21
44.369 m	30.897 m	7.800 m	22
46.374 m	30.897 m	7.800 m	23
48.379 m	30.897 m	7.800 m	24
50.383 m	30.897 m	7.800 m	25
52.388 m	30.897 m	7.800 m	26
54.393 m	30.897 m	7.800 m	27
56.398 m	30.897 m	7.800 m	28

20 x Philips BVP651 T25 DW10 /740

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.771 m / 0.984 m / 4.500 m	1.771 m	0.984 m	4.500 m	29
X-direction	20 pcs., Centre - centre, Distances not equal	4.612 m	0.984 m	4.500 m	30
		7.454 m	0.984 m	4.500 m	31
Arrangement	A2	10.296 m	0.984 m	4.500 m	32
		13.137 m	0.984 m	4.500 m	33
		15.979 m	0.984 m	4.500 m	34

Building 1 · Storey 1 · Room 1

Luminaire layout plan

X	Y	Mounting height	Luminaire
18.820 m	0.984 m	4.500 m	35
21.662 m	0.984 m	4.500 m	36
24.504 m	0.984 m	4.500 m	37
27.345 m	0.984 m	4.500 m	38
30.187 m	0.984 m	4.500 m	39
33.029 m	0.984 m	4.500 m	40
35.870 m	0.984 m	4.500 m	41
38.712 m	0.984 m	4.500 m	42
41.554 m	0.984 m	4.500 m	43
44.395 m	0.984 m	4.500 m	44
47.237 m	0.984 m	4.500 m	45
50.079 m	0.984 m	4.500 m	46
52.920 m	0.984 m	4.500 m	47
55.762 m	0.984 m	4.500 m	48

Building 1 · Storey 1 · Room 1

Luminaire list Φ_{total}

1806576 lm

 P_{total}

13440.0 W

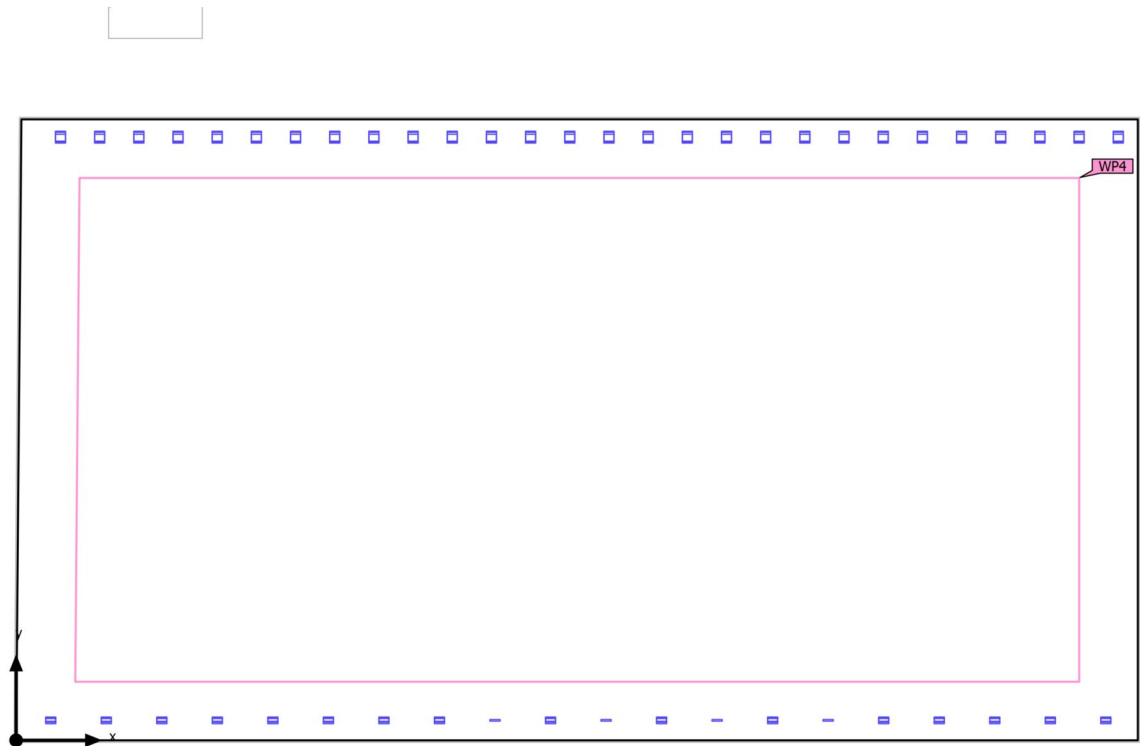
Luminous efficacy

134.4 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
48	Philips	Clearflood Large	BVP651 T25 DW10 /740	280.0 W	37637 lm	134.4 lm/W

Building 1 · Storey 1 · Room 1 (Light scene 1)

Calculation objects



Building 1 · Storey 1 · Room 1 (Light scene 1)

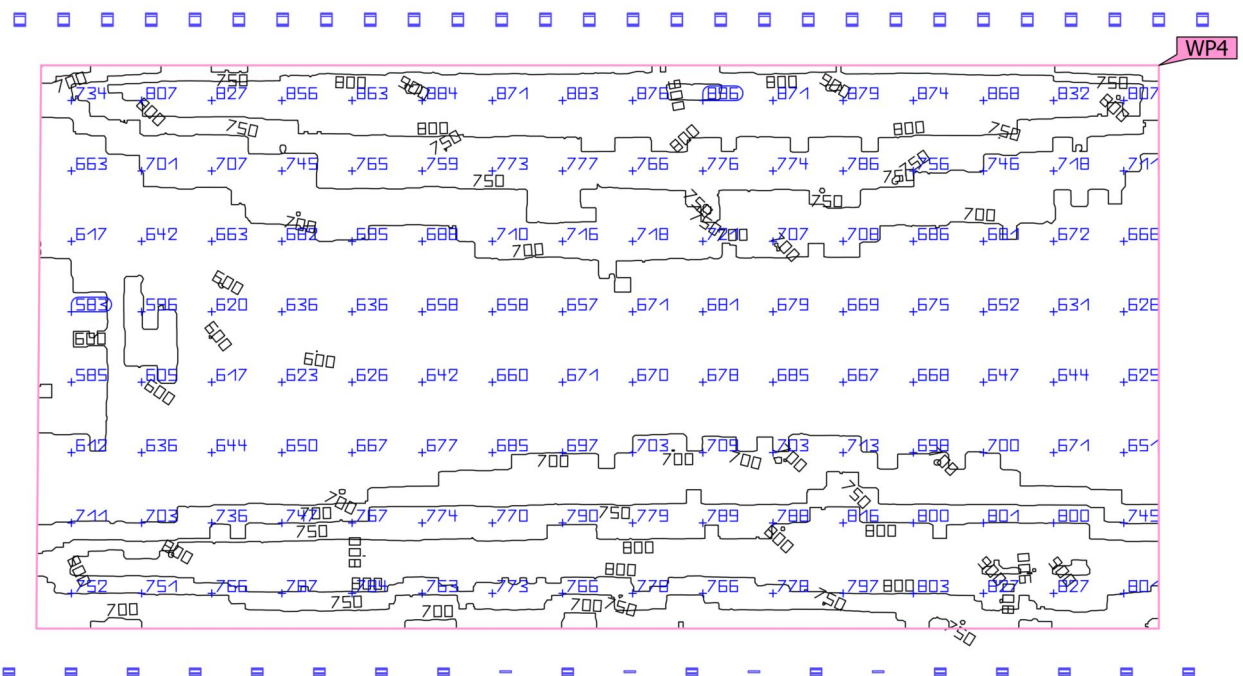
Calculation objects

Working planes

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 1) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 3.000 m	723 lx (≥ 500 lx) ✓	564 lx	919 lx	0.78 (≥ 0.60) ✓	0.61	WP4

Utilisation profile: DIALux presetting (34.2 Standard (office))

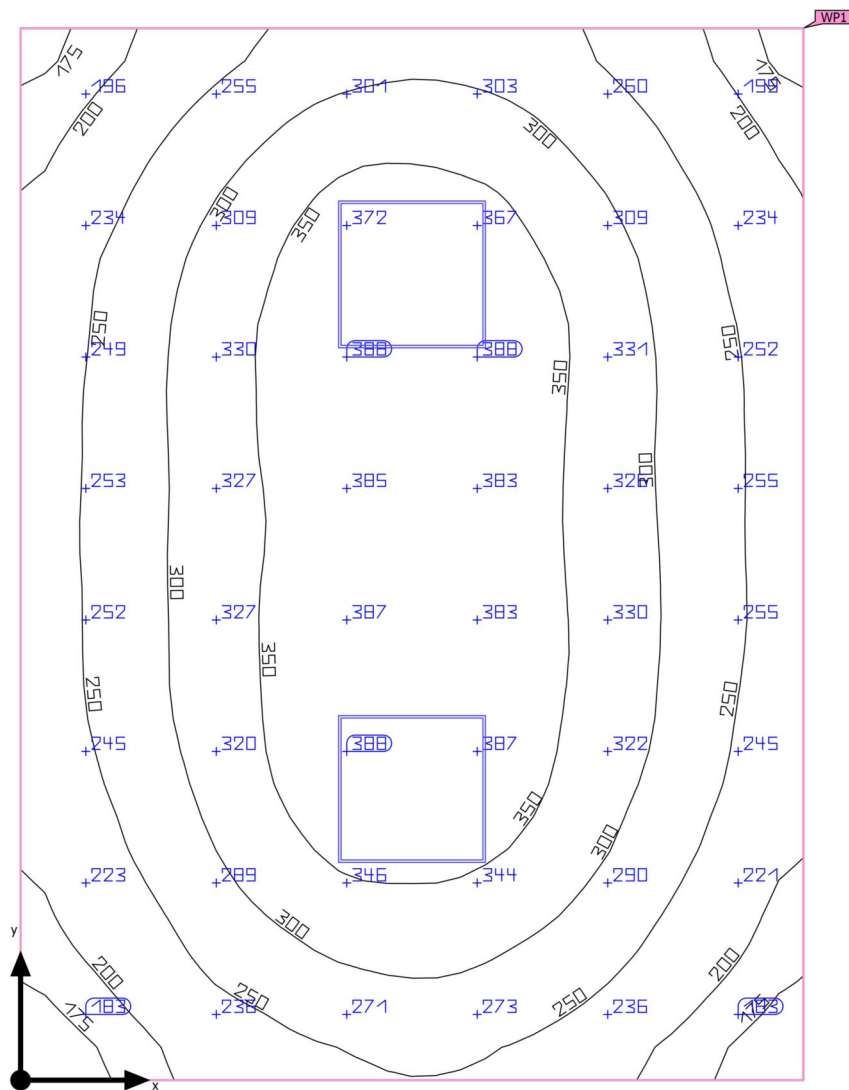
Building 1 · Storey 1 · Room 1 (Light scene 1)

Working plane (Room 1)

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 1)	723 lx	564 lx	919 lx	0.78	0.61	WP4
Perpendicular illuminance (adaptive)	(≥ 500 lx)			(≥ 0.60)		
Height: 0.000 m, Wall zone: 3.000 m	✓			✓		

Utilisation profile: DIALux presetting (34.2 Standard (office))

Building 1 · Storey 1 · Room 2 (Light scene 1)

Summary

Ground area	13.76 m ²	Clearance height	12.800 m
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %	Mounting height	3.000 m
Maintenance factor	0.80 (fixed)	Height _{Working plane}	0.800 m
		Wall zone _{Working plane}	0.000 m

Building 1 · Storey 1 · Room 2 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	293 lx	≥ 200 lx	✓	WP1
	$U_o (g_1)$	0.53	≥ 0.40	✓	WP1
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	19	≤ 25	✓	
Energy estimation ⁽²⁾	Consumption	59.4 kWh/a	max. 500 kWh/a	✓	
Room	Lighting power density	5.23 W/m ²	–		
		1.78 W/m ² /100 lx	–		

(1) Based on a rectangular space of 3.200 m x 4.300 m and SHR of 0.25.

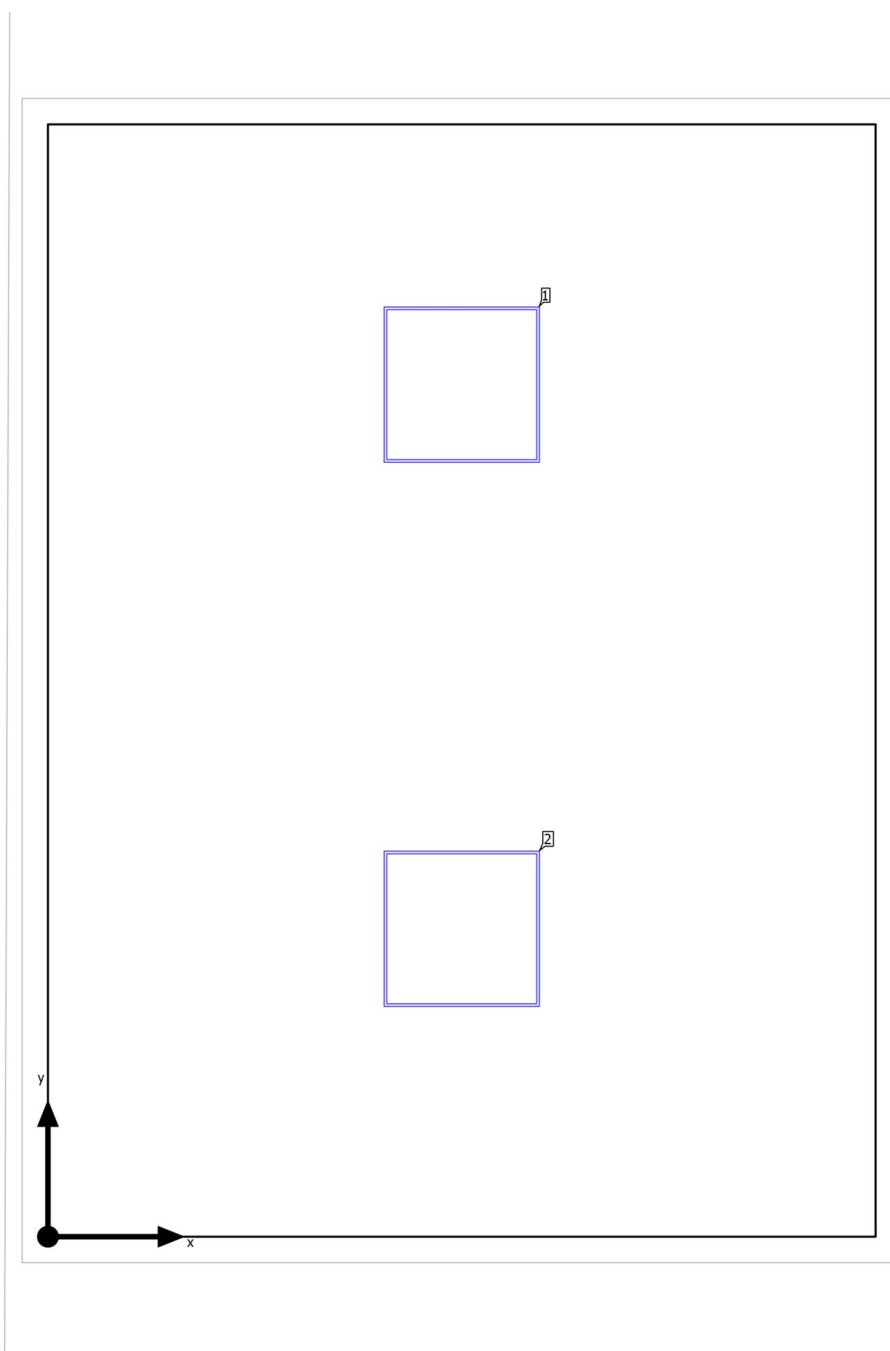
(2) Calculated using DIN:18599-4.

Utilisation profile: General areas inside buildings - Rest, sanitation and first aid rooms (10.4 Cloakrooms, washrooms, bathrooms, toilets)

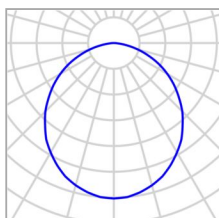
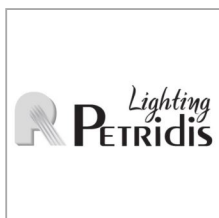
Luminaire list

pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
2	Petridis	29503_	FOGLIO Q H S LED 36W NEUTRAL 600X600	18	36.0 W	4244 lm	117.9 lm/W

Building 1 · Storey 1 · Room 2

Luminaire layout plan

Building 1 · Storey 1 · Room 2

Luminaire layout plan

Manufacturer	Petridis	P	36.0 W
Article No.	29503_	Φ _{Luminaire}	4244 lm
Article name	FOGLIO Q H S LED 36W NEUTRAL 600X600		
Fitting	1x SMD		

Individual luminaires

X	Y	Mounting height	Luminaire
1.600 m	3.294 m	3.000 m	1
1.600 m	1.190 m	3.000 m	2

Building 1 · Storey 1 · Room 2

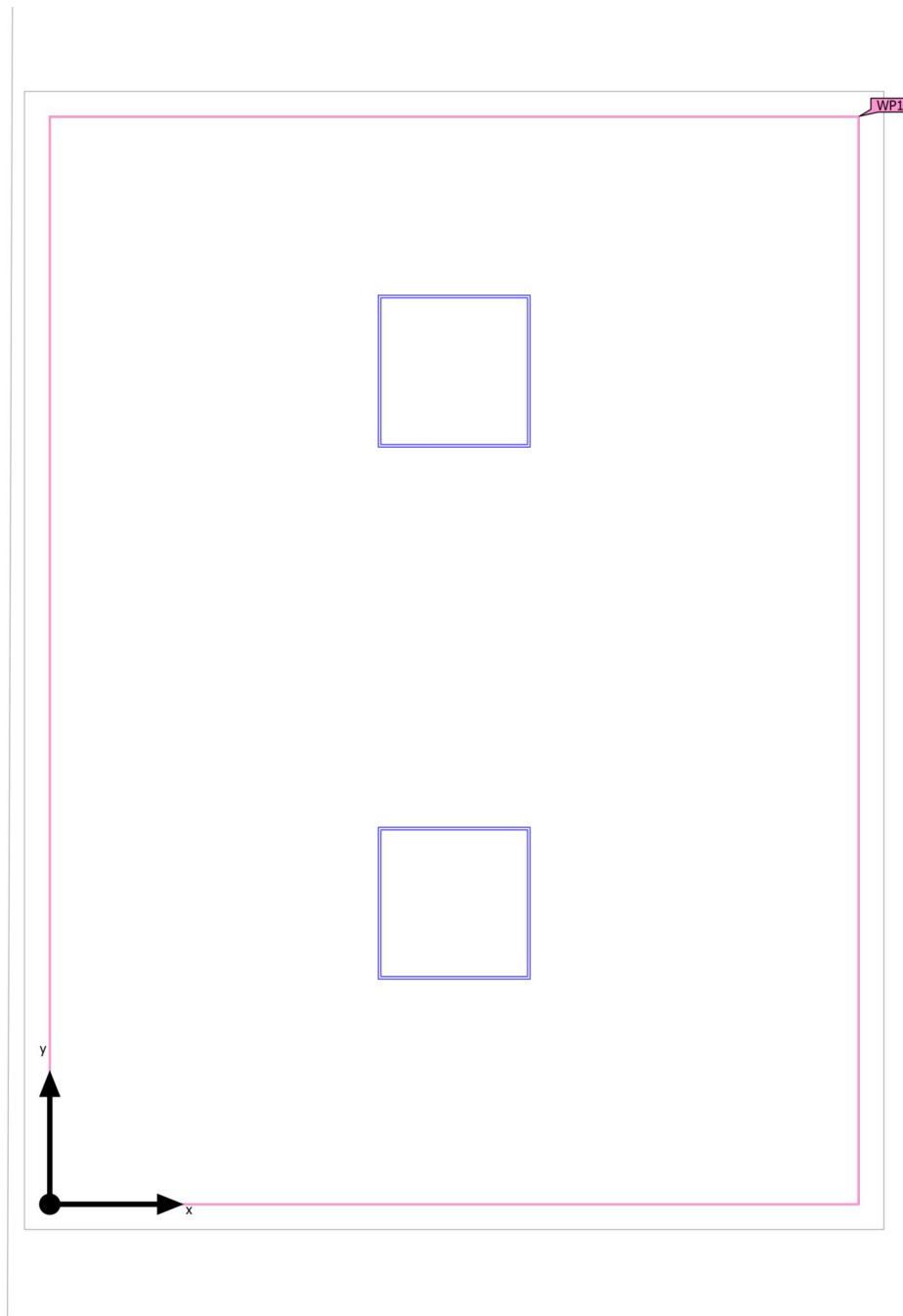
Luminaire list

Φ_{total} 8488 lm	P_{total} 72.0 W	Luminous efficacy 117.9 lm/W
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pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
2	Petridis	29503_	FOGLIO Q H S LED 36W NEUTRAL 600X600	36.0 W	4244 lm	117.9 lm/W

Building 1 · Storey 1 · Room 2 (Light scene 1)

Calculation objects



Building 1 · Storey 1 · Room 2 (Light scene 1)

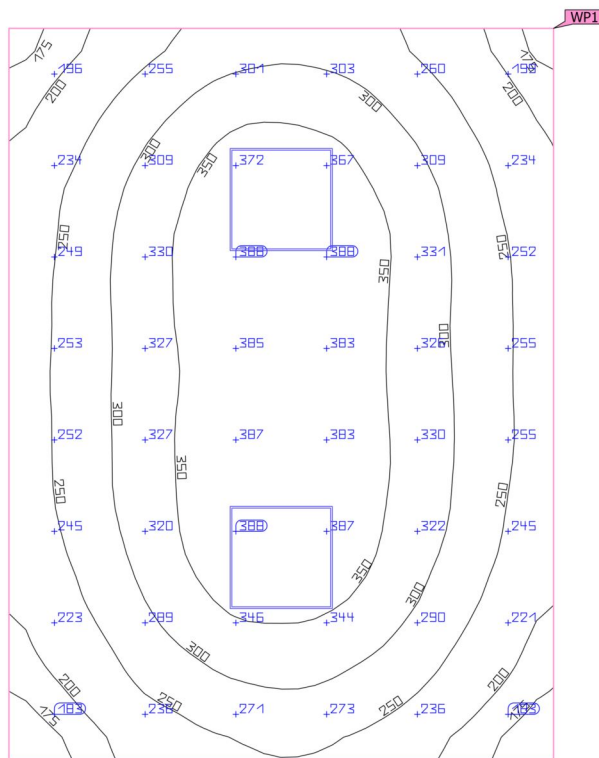
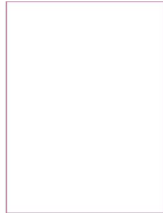
Calculation objects

Working planes

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 2) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	293 lx (≥ 200 lx) ✓	154 lx	398 lx	0.53 (≥ 0.40) ✓	0.39	WP1

Utilisation profile: General areas inside buildings - Rest, sanitation and first aid rooms (10.4 Cloakrooms, washrooms, bathrooms, toilets)

Building 1 · Storey 1 · Room 2 (Light scene 1)

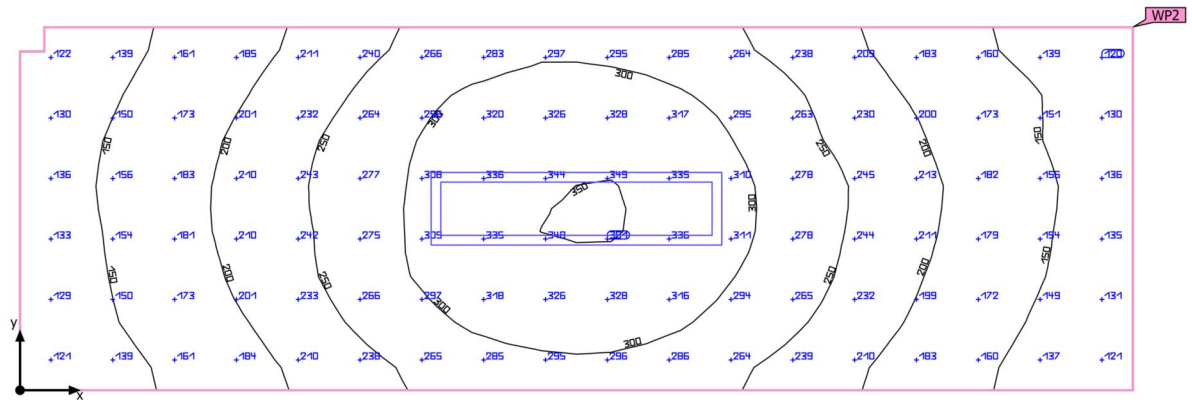
Working plane (Room 2)

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 2) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	293 lx (≥ 200 lx) ✓	154 lx	398 lx	0.53 (≥ 0.40) ✓	0.39	WP1

Utilisation profile: General areas inside buildings - Rest, sanitation and first aid rooms (10.4 Cloakrooms, washrooms, bathrooms, toilets)

Building 1 · Storey 1 · Room 3 (Light scene 1)

Summary



Ground area	6.88 m ²	Clearance height	12.800 m
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %	Mounting height	3.000 m
Maintenance factor	0.80 (fixed)	Height _{Working plane}	0.800 m
		Wall zone _{Working plane}	0.000 m

Building 1 · Storey 1 · Room 3 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	229 lx	≥ 200 lx	✓	WP2
	$U_o (g_1)$	0.51	≥ 0.40	✓	WP2
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	23	≤ 25	✓	
Energy estimation ⁽²⁾	Consumption	7.26 kWh/a	max. 250 kWh/a	✓	
Room	Lighting power density	6.39 W/m ²	–		
		2.79 W/m ² /100 lx	–		

(1) Based on a rectangular space of 4.595 m x 1.500 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

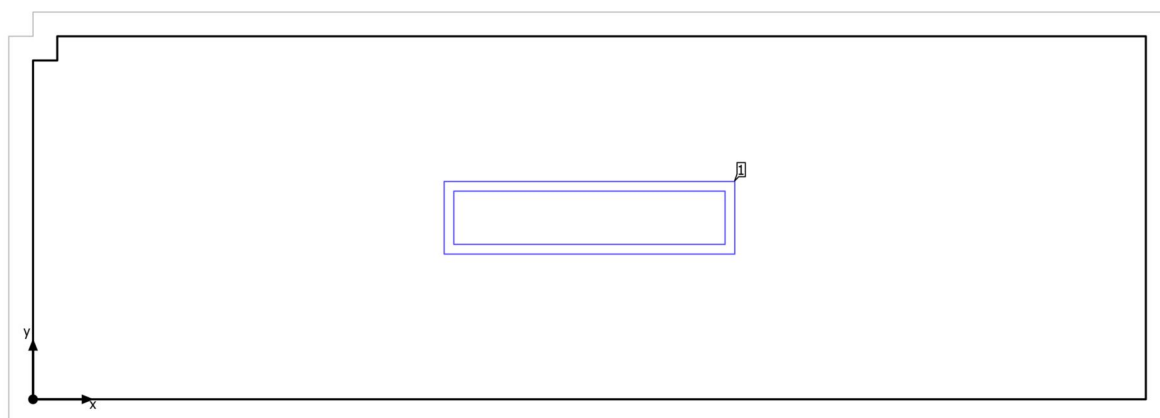
Utilisation profile: Offices (34.7 Archives)

Luminaire list

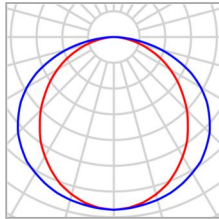
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
1	Petridis	29550_	FOGLIO H S LED 44W WARM L1200mm	23	44.0 W	4831 lm	109.8 lm/W

Building 1 · Storey 1 · Room 3

Luminaire layout plan



Building 1 · Storey 1 · Room 3

Luminaire layout plan

Manufacturer	Petridis	P	44.0 W
Article No.	29550_	$\Phi_{\text{Luminaire}}$	4831 lm
Article name	FOGLIO H S LED 44W WARM L1200mm		
Fitting	1x SMD		

Individual luminaires

X	Y	Mounting height	Luminaire
2.298 m	0.750 m	3.000 m	1

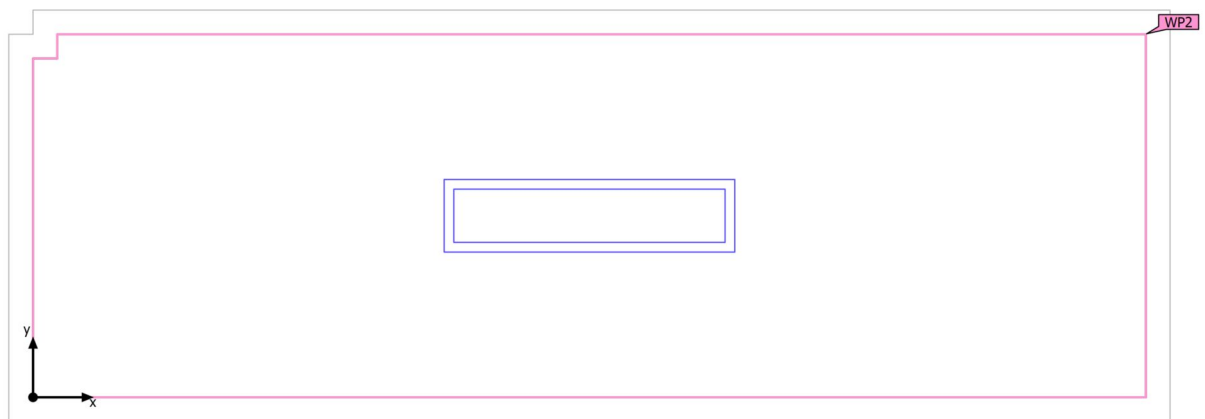
Building 1 · Storey 1 · Room 3

Luminaire list

Φ_{total} 4831 lm		P_{total} 44.0 W		Luminous efficacy 109.8 lm/W		
pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
1	Petridis	29550_	FOGLIO H S LED 44W WARM L1200mm	44.0 W	4831 lm	109.8 lm/W

Building 1 · Storey 1 · Room 3 (Light scene 1)

Calculation objects



Building 1 · Storey 1 · Room 3 (Light scene 1)

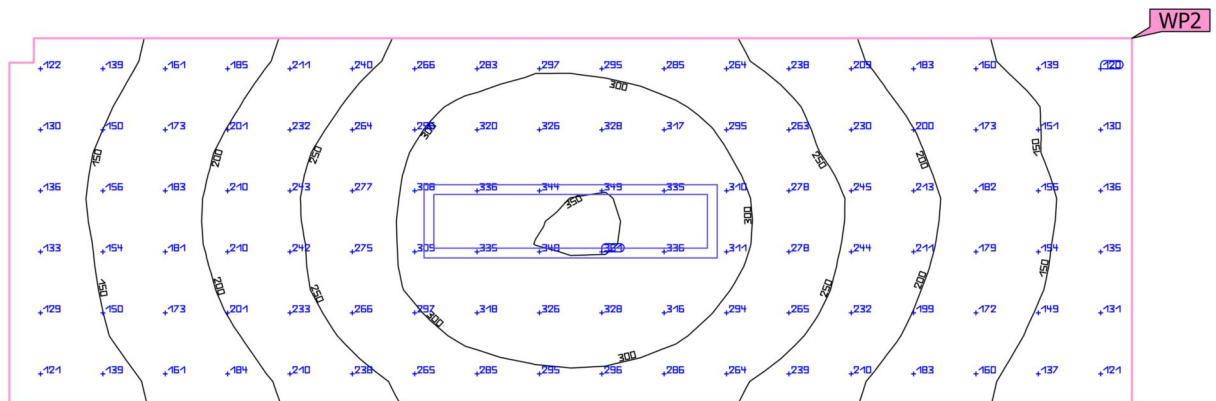
Calculation objects

Working planes

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 3) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	229 lx (≥ 200 lx) ✓	116 lx	351 lx	0.51 (≥ 0.40) ✓	0.33	WP2

Utilisation profile: Offices (34.7 Archives)

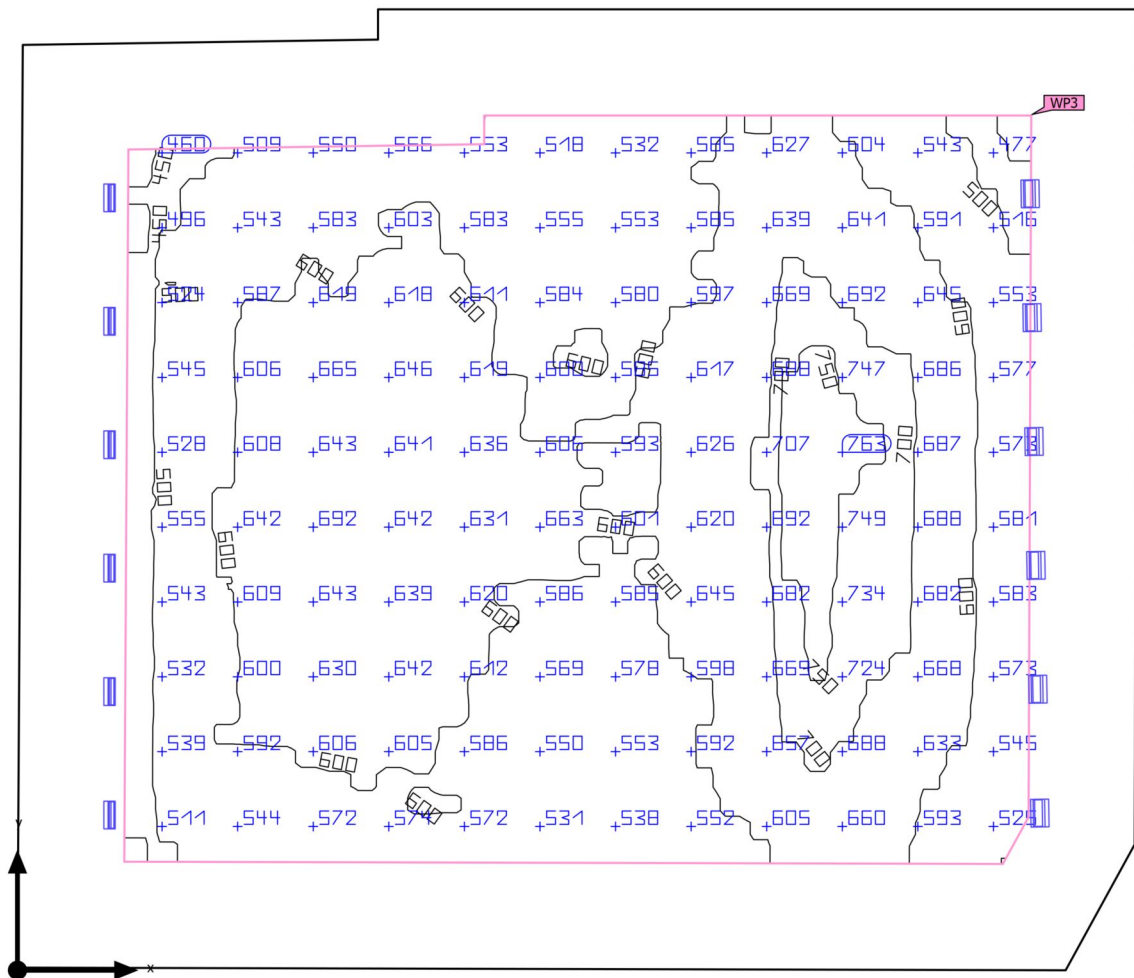
Building 1 · Storey 1 · Room 3 (Light scene 1)

Working plane (Room 3)

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 3) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	229 lx (≥ 200 lx) ✓	116 lx	351 lx	0.51 (≥ 0.40) ✓	0.33	WP2

Utilisation profile: Offices (34.7 Archives)

Building 1 · Storey 1 · Room 4 (Light scene 1)

Summary

Ground area	374.18 m ²	Clearance height	12.800 m
Reflection factors	Ceiling: 70.0 %, Walls: 49.0 %, Floor: 20.0 %	Mounting height	4.000 m
Maintenance factor	0.80 (fixed)	Height _{Working plane}	0.000 m
		Wall zone _{Working plane}	2.000 m

Building 1 · Storey 1 · Room 4 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	606 lx	≥ 500 lx	✓	WP3
	$U_o (g_1)$	0.70	≥ 0.60	✓	WP3
	Lighting power density	14.28 W/m ²	–		
		2.36 W/m ² /100 lx	–		
Energy estimation ⁽²⁾	Consumption	8316 kWh/a	max. 13100 kWh/a	✓	
Room	Lighting power density	8.98 W/m ²	–		
		1.48 W/m ² /100 lx	–		

(1) Based on a rectangular space of 21.054 m x 18.103 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

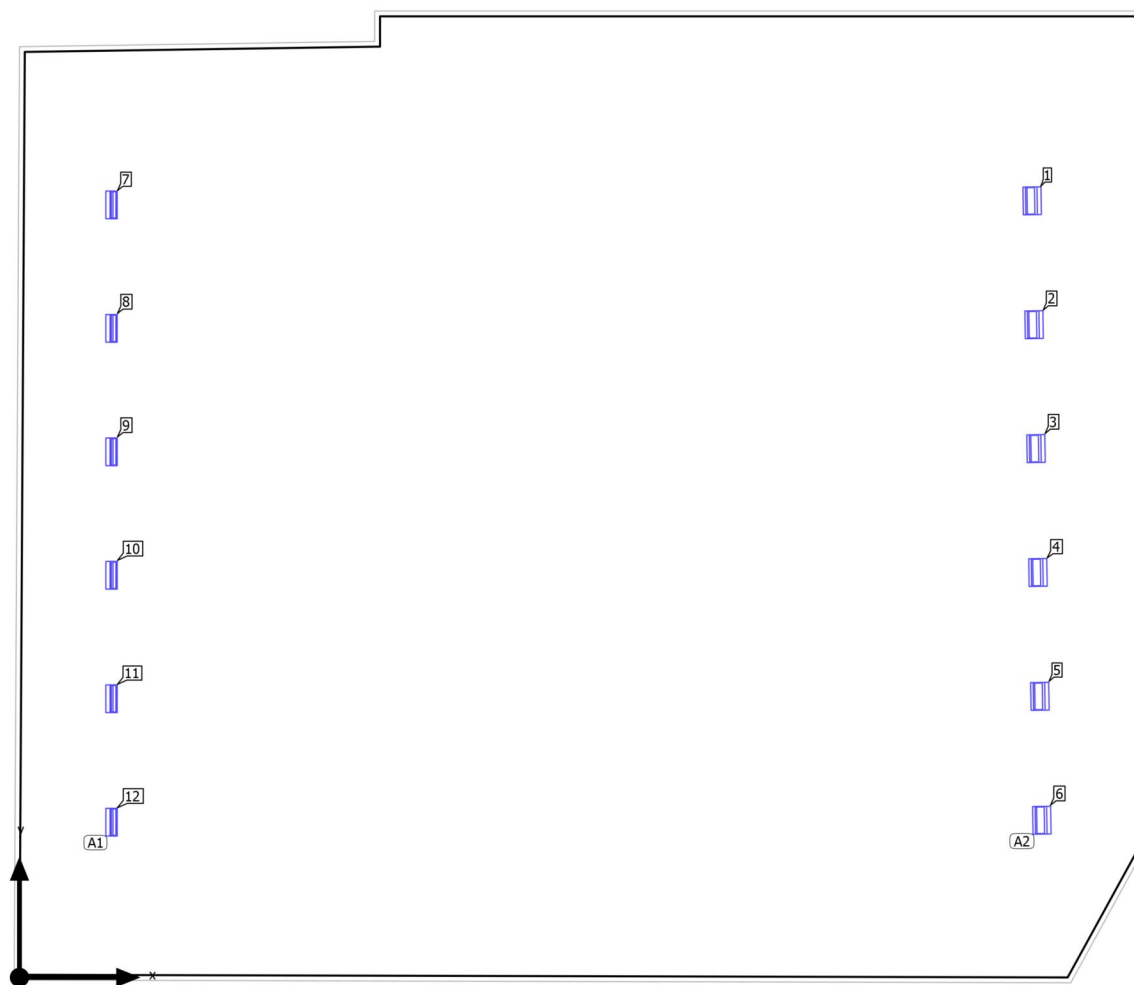
Utilisation profile: DIALux presetting (34.2 Standard (office))

Luminaire list

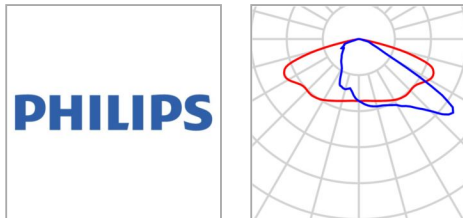
pcs.	Manufacturer	Article No.	Article name	R _{UG}	P	Φ	Luminous efficacy
12	Philips	Clearflood Large	BVP651 T25 DW10 /740	–	280.0 W	37637 lm	134.4 lm/W

Building 1 · Storey 1 · Room 4

Luminaire layout plan



Building 1 · Storey 1 · Room 4

Luminaire layout plan

Manufacturer	Philips	P	280.0 W
Article No.	Clearflood Large	Φ _{Luminaire}	37637 lm
Article name	BVP651 T25 DW10 /740		
Fitting	1x LED450-4S/740 L96@100kh		

6 x Philips BVP651 T25 DW10 /740

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.694 m / 14.549 m / 4.000 m	1.694 m	14.549 m	4.000 m	7
X-direction	6 pcs., Centre - centre, 2.325 m	1.694 m	12.224 m	4.000 m	8
Arrangement	A1	1.694 m	9.899 m	4.000 m	9
		1.694 m	7.574 m	4.000 m	10
		1.694 m	5.249 m	4.000 m	11
		1.694 m	2.924 m	4.000 m	12

6 x Philips BVP651 T25 DW10 /740

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	19.109 m / 14.626 m / 4.000 m	19.109 m	14.626 m	4.000 m	1
X-direction	6 pcs., Centre - centre, 2.333 m	19.146 m	12.293 m	4.000 m	2
Arrangement	A2	19.182 m	9.960 m	4.000 m	3

Building 1 · Storey 1 · Room 4

Luminaire layout plan

X	Y	Mounting height	Luminaire
19.219 m	7.627 m	4.000 m	4
19.255 m	5.294 m	4.000 m	5
19.291 m	2.961 m	4.000 m	6

Building 1 · Storey 1 · Room 4

Luminaire list Φ_{total}

451644 lm

 P_{total}

3360.0 W

Luminous efficacy

134.4 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
12	Philips	Clearflood Large	BVP651 T25 DW10 /740	280.0 W	37637 lm	134.4 lm/W

Building 1 · Storey 1 · Room 4 (Light scene 1)

Calculation objects



Building 1 · Storey 1 · Room 4 (Light scene 1)

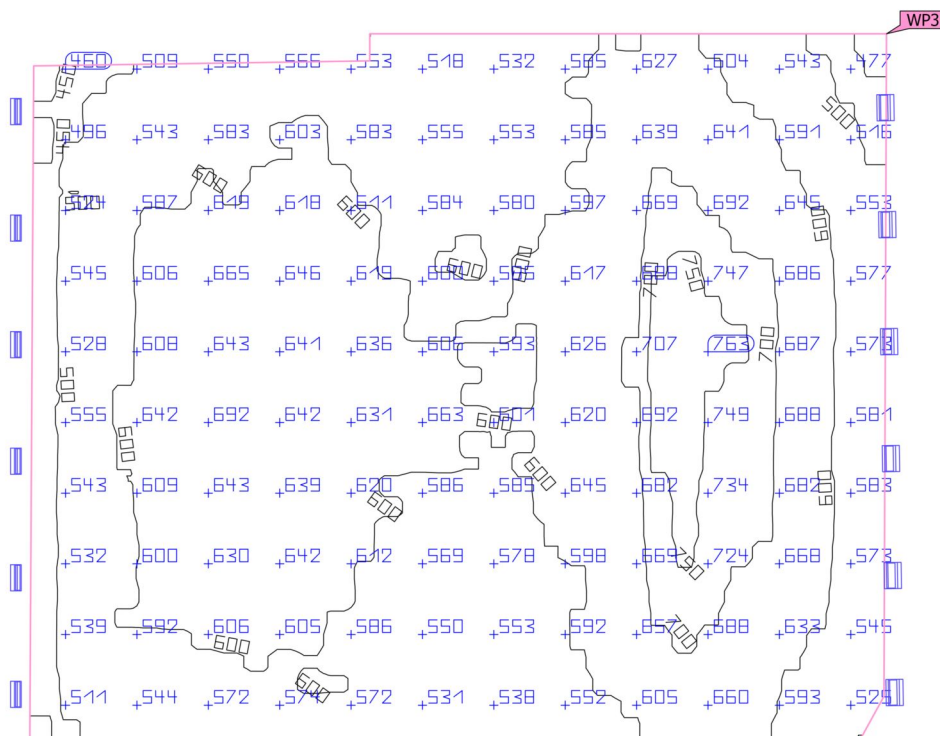
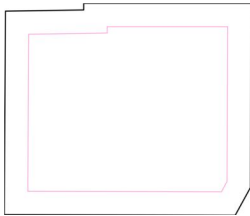
Calculation objects

Working planes

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 4) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 2.000 m	606 lx (≥ 500 lx) ✓	426 lx	799 lx	0.70 (≥ 0.60) ✓	0.53	WP3

Utilisation profile: DIALux presetting (34.2 Standard (office))

Building 1 · Storey 1 · Room 4 (Light scene 1)

Working plane (Room 4)

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	$U_o (g_1)$ (Target)	g_2	Index
Working plane (Room 4)	606 lx	426 lx	799 lx	0.70	0.53	WP3
Perpendicular illuminance (adaptive)	(≥ 500 lx)			(≥ 0.60)		
Height: 0.000 m, Wall zone: 2.000 m	✓			✓		

Utilisation profile: DIALux presetting (34.2 Standard (office))

Glossary

A

A	Formula symbol for a surface in the geometry
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B

Background area	The background area borders the direct ambient area according to DIN EN 12464-1 and reaches up to the borders of the room. In larger rooms, the background area is at least 3 m wide. It is located horizontally at floor level.
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C

CCT	(Engl. correlated colour temperature) Body temperature of a thermal radiator which serves to describe its light colour. Unit: Kelvin [K]. The lesser the numerical value the redder; the greater the numerical value the bluer the light colour. The colour temperature of gas-discharge lamps and semi-conductors are termed "correlated colour temperature" in contrast to the colour temperature of thermal radiators. Allocation of the light colours to the colour temperature ranges acc. to EN 12464-1: Light colour - colour temperature [K] warm white (ww) < 3,300 K neutral white (nw) ≥ 3,300 – 5,300 K daylight white (dw) > 5,300 K
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Clearance height	The designation for the distance between upper edge of the floor and bottom edge of the ceiling (in the completely furnished status of room).
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Control group	A group of luminaires that are dimmed and controlled together. For each lighting scene, a control group provides its own dimming value. All luminaires within a control group share this dimming value. The control groups with their luminaires are automatically determined by DIALux on the basis of the created light scenes and their luminaire groups.
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CRI	(Engl. colour rendering index) Designation for the colour rendering index of a luminaire or a lamp acc. to DIN 6169: 1976 or CIE 13.3: 1995. The general colour rendering index Ra (or CRI) is a dimensionless figure that describes the quality of a white light source in regards to its similarity with the remission spectra of defined 8 test colours (see DIN 6169 or CIE 1974) to a reference light source.
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Glossary

D

Daylight autonomy	Describes what percentage of the daily working time the required illuminance is met by daylight. The nominal illuminance is used from the room profile, unlike described in EN 17037. The calculation is not done in the centre of the room but at the placed sensor measuring point. A room is considered sufficiently supplied with daylight if it achieves at least 50% daylight autonomy.
Daylight factor	Ratio of the illuminance achieved solely by daylight incidence at a point in the inside to the horizontal illuminance in the outer area under an unobstructed sky. Formula symbol: D (Engl. daylight factor) Unit: %
Daylight quotient effective area	A calculation surface within which the daylight quotient is calculated.

E

Energy evaluation	Based on an hourly calculation procedure for daylight in indoor spaces, considering the project geometry and any existing daylight control systems. Orientation and location of the project are also considered. The calculation uses the specified system power of the luminaires to determine the energy demand. A linear relationship between power and luminous flux in the dimmed state is assumed for daylight-controlled luminaires. Times of use and nominal illuminance are determined from the usage profiles of the spaces. Switched-on luminaires that are explicitly excluded from control also consider the specified times-of-use. The daylight control systems use a simplified control logic that closes them at an outdoor horizontal illuminance of 27,500lx. The calendar year 2022 is used as a reference only. It is not a simulation of this year. The reference year is only used to assign the days of the week to the calculated results. The changeover to summer time is not considered. The reference sky type used is the average sky described in CIE 110 without direct sunlight. The method was developed together with the Fraunhofer Institute for Building Physics and is available for review by the Joint Working Group 1 ISO TC 274 as an extension of the previous annual regression-based method.
Eta (η)	(light output ratio) The light output ratio describes what percentage of the luminous flux of a free radiating lamp (or LED module) is emitted by the luminaire when installed. Unit: %

Glossary

G

g_1	Often also U_o (Engl. overall uniformity) Designates the overall uniformity of the illuminance on a surface. It is the quotient from E_{min} to $\bar{E}$ and is required, for instance, in standards for illumination of workstations.
g_2	Actually it designates the "non-uniformity" of the illuminance on a surface. It is the quotient of E_{min} to E_{max} and is generally only relevant for certifying the emergency lighting acc. to EN 1838.

I

Illuminance	Describes the ratio of the luminous flux that strikes a certain surface to the size of this surface ($lm/m^2 = lx$). The illuminance is not tied to an object surface. It can be determined anywhere in space (inside or outside). The illuminance is not a product feature because it is a recipient value. Luxometers are used for measuring. Unit: Lux Abbreviation: lx Formula symbol: E
Illuminance, adaptive	For the determining of the middle adaptive illuminance on a surface, this is rastered "adaptively". In the area of large illuminance differences within the surface, the raster is subdivided finer; within lesser differences, a rougher classification is made.
Illuminance, horizontal	Illuminance that is calculated or measured on a horizontal (level) surface (this can be for example a table top or the floor). The horizontal illuminance is usually identified by the formula letter E_h .
Illuminance, perpendicular	Illuminance that is calculated or measured plumb-vertical to a surface. This needs to be taken into account for tilted surfaces. If the surface is horizontal or vertical, then there is no difference between the perpendicular and the horizontal or vertical illuminance.
Illuminance, vertical	Illuminance that is calculated or measured on a vertical surface (this can be for example the front of some shelves). The vertical illuminance is usually identified by the formula letter E_v .

L

LENI	(Engl. lighting energy numeric indicator) Lighting energy numeric indicator acc. to EN 15193 Unit: $kWh/(m^2 \cdot a)$
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Glossary

LLMF	(Engl. lamp lumen maintenance factor)/acc. to CIE 97: 2005 Lamp flux maintenance factor that takes the luminous flux reduction into account of a luminaire or an LED module in the course of the operating time. The lamp flux maintenance factor is specified as a decimal digit and can have a maximum value of 1 (no luminous flux reduction existing).
LMF	(Engl. luminaire maintenance factor)/acc. to CIE 97: 2005 Luminaire maintenance factor that takes the soiling into account of the luminaire in the course of the operating time. The luminaire maintenance factor is specified as a decimal digit and can have a maximum value of 1 (no soiling existing).
LSF	(Engl. lamp survival factor)/acc. to CIE 97: 2005 Lamp survival factor that takes the total failure into account of a luminaire in the course of the operating time. The lamp survival factor is specified as a decimal digit and can have a maximum value of 1 (no failures existing within the time concerned or prompt replacement after the failure).
Luminance	Dimension for the "brightness impression" that the human eye has of a surface. The surface itself can emit light thereby or light striking it can be reflected (emitter value). It is the only photometric value that the human eye can perceive. Unit: Candela per square metre Abbreviation: cd/m² Formula symbol: L
Luminous efficacy	Ratio of the emitted luminous flux Φ [lm] to the absorbed electrical power P [W] Unit: lm/W. This ratio can be formed for the lamp or LED module (lamp or module light output), the lamp or module with control gear (system light output) and the complete luminaire (luminaire light output).
Luminous flux	Dimension for the total light output that is emitted from one light source in all directions. It is thus an "emitter value" that specifies the entire emitting output. The luminous flux of a light source can only be determined in a laboratory. A difference is made between the lamp or LED module luminous flux and the luminaire luminous flux. Unit: Lumen Abbreviation: lm Formula symbol: Φ
Luminous intensity	Describes the intensity of the light in a certain direction (emitter value). The luminous intensity is a matter of the luminous flux Φ that is emitted in a certain spherical angle Ω. The radiation characteristics of a light source are presented graphically in a light distribution curve (LDC). The luminous intensity is an SI base unit. Unit: Candela Abbreviation: cd Formula symbol: I

Glossary

M

Maintenance factor	See MF
MF	(Engl. maintenance factor)/acc. to CIE 97: 2005 Maintenance factor as decimal number between 0 and 1 that describes the ratio of the new value of a photometric planning parameter (e.g. of the illuminance) to a maintenance value after a certain time. The maintenance factor takes into account the soiling of luminaires and rooms as well as the luminous flux reduction and the failure of light sources. The maintenance factor is taken into account either overall or determined in detail acc. to CIE 97: 2005 by the formula $RMF \times LMF \times LLMF \times LSF$.

P

P	(Engl. power) Electric power consumption Unit: watt Abbreviation: W
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R

$R_{(UG)} \max$	Measure of the psychological glare in indoor spaces. In addition to the luminance of luminaires, the level of the $R_{(UG)}$ value also depends on the observer position, the viewing direction and the ambient luminance. The calculation is made according to the table method, see CIE 117. Among other things, EN 12464-1:2021 specifies maximum permissible $R_{(UG)}$- values $R_{(UGL)}$ for various indoor workplaces.
Reflection factor	The reflection factor of a surface describes how much of the striking light is reflected back. The reflection factor is defined by the colour of the surface.
RMF	(Engl. room maintenance factor)/acc. to CIE 97: 2005 Room maintenance factor that takes the soiling into account of the space encompassing surfaces in the course of the operating time. The room maintenance factor is specified as a decimal digit and can have a maximum value of 1 (no soiling existing).

S

Surrounding area	The ambient area directly borders the area of the visual task and should be planned with a width of at least 0.5 m according to DIN EN 12464-1. It is at the same height as the area of the visual task.
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Glossary

U

UGR (max)

(unified glare rating)

Measure for the psychological glare effect in interiors.

In addition to luminaire luminance, the UGR value also depends on the position of the observer, the viewing direction and the ambient luminance. Among other things, EN 12464-1 specifies maximum permissible UGR values for various indoor workplaces.

UGR observer

Calculation point in the room, for the DIALux the UGR value is determined. The location and height of the calculation point should correspond to the typical observer position (position and eye level of the user).

V

Visual task area

The area that is needed for carrying out the visual task in accordance with DIN EN 12464 -1. The height corresponds with the height at which the visual task is executed.

W

Wall zone

Circumferential area between working plane and walls which is not taken into account for the calculation.

Working plane

Virtual measuring or calculation surface at the height of the visual task that generally follows the room geometry. The working plane may also feature a wall zone.