

Llogaritjet Fotometrike_SHFMU "Hasan Prishtina"

Preliminary remarks

Notes on planning:

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

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Site 1 - Building 1

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Site 1 - Building 1 - Përdhesa

Koridori

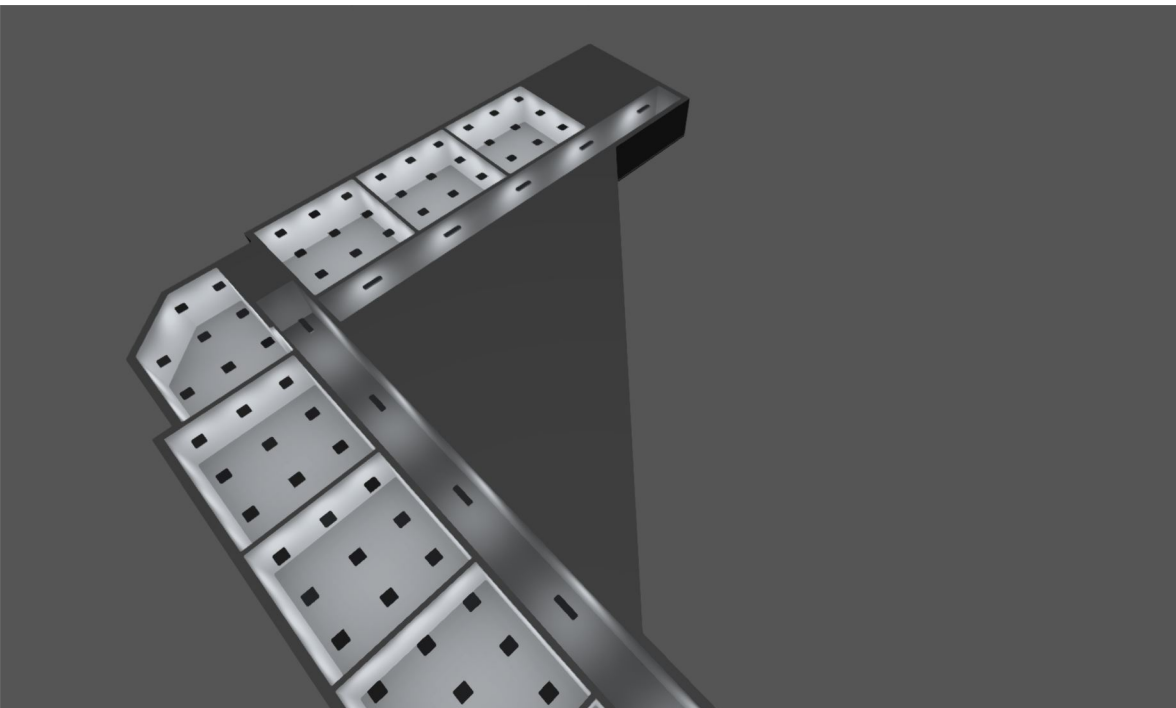
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Site 1 - Building 1 - Përdhesa

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Description

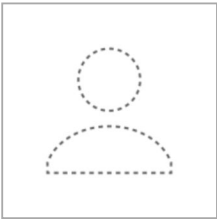
Luminaire list

Φ_{total} 270410 lm	P_{total} 2420.0 W	Luminous efficacy 111.7 lm/W
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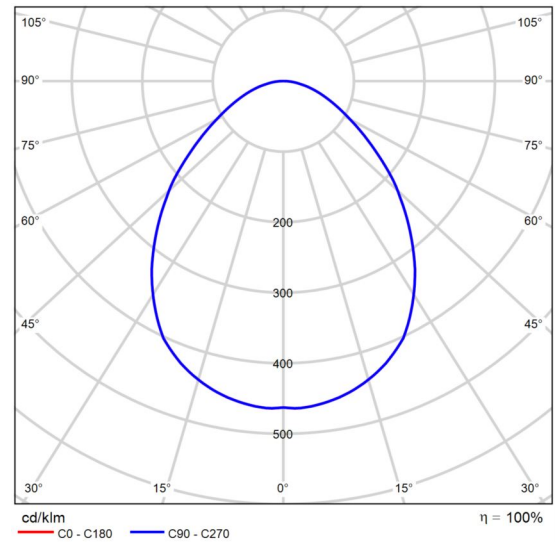
pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
10	Not yet a DIALux member	0042695	4000K Ra80 START PANEL IP65 1200x300 4400lm 840 WHITE	36.1 W	4321 lm	119.7 lm/W
71	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Product data sheet

Not yet a DIALux member - 4000K Ra80



Article No.	0042695 START PANEL IP65 1200x300 4400lm 840 WHITE
P	36.1 W
Φ_{Lamp}	4321 lm
$\Phi_{Luminaire}$	4321 lm
η	100.00 %
Luminous efficacy	119.7 lm/W
CCT	3000 K
CRI	100



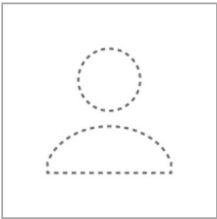
Polar LDC

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	16.0	17.2	16.3	17.5	17.7	16.0	17.2	16.3	17.5	17.7	
	3H	17.0	18.1	17.3	18.4	18.6	17.0	18.1	17.3	18.4	18.6	
	4H	17.4	18.4	17.7	18.7	19.0	17.4	18.4	17.7	18.7	19.0	
	6H	17.7	18.7	18.1	19.0	19.3	17.7	18.7	18.1	19.0	19.3	
	8H	17.8	18.8	18.2	19.1	19.4	17.8	18.8	18.2	19.1	19.4	
	12H	17.9	18.8	18.3	19.1	19.5	17.9	18.8	18.3	19.1	19.5	
4H	2H	16.4	17.5	16.8	17.7	18.0	16.4	17.5	16.8	17.7	18.0	
	3H	17.6	18.5	18.0	18.8	19.1	17.6	18.5	18.0	18.8	19.1	
	4H	18.1	18.9	18.5	19.3	19.6	18.1	18.9	18.5	19.3	19.6	
	6H	18.6	19.3	19.0	19.6	20.0	18.6	19.3	19.0	19.6	20.0	
	8H	18.7	19.4	19.2	19.8	20.2	18.7	19.4	19.2	19.8	20.2	
	12H	18.9	19.5	19.3	19.9	20.3	18.9	19.5	19.3	19.9	20.3	
8H	4H	18.3	19.0	18.7	19.3	19.8	18.3	19.0	18.7	19.3	19.8	
	6H	18.9	19.4	19.3	19.8	20.3	18.9	19.4	19.3	19.8	20.3	
	8H	19.1	19.6	19.6	20.0	20.5	19.1	19.6	19.6	20.0	20.5	
	12H	19.3	19.7	19.8	20.2	20.7	19.3	19.7	19.8	20.2	20.7	
12H	4H	18.3	18.9	18.8	19.3	19.7	18.3	18.9	18.8	19.3	19.7	
	6H	18.9	19.4	19.4	19.8	20.3	18.9	19.4	19.4	19.8	20.3	
	8H	19.2	19.6	19.7	20.1	20.6	19.2	19.6	19.7	20.1	20.6	
Variation of the observer position for the luminaire distances S												
S = 1.0H		+0.2 / -0.3					+0.2 / -0.3					
S = 1.5H		+0.4 / -0.7					+0.4 / -0.7					
S = 2.0H		+0.8 / -1.1					+0.8 / -1.1					
Standard table		BK04					BK04					
Correction Summand		1.4					1.4					
Corrected glare indices referring to 4321lm Total luminous flux												

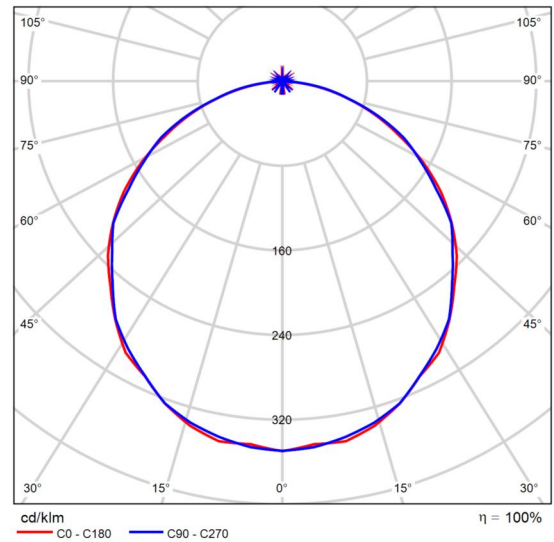
UGR diagram (SHR: 0.25)

Product data sheet

Not yet a DIALux member - START Panel Eco 600x600 3200lm 830



Article No.	0044623
P	29.0 W
Φ_{Lamp}	3200 lm
$\Phi_{Luminaire}$	3200 lm
η	100.00 %
Luminous efficacy	110.3 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	30
p Walls		50	30	50	30	30	50	30	50	30	30	30
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	16.5	17.9	16.8	18.1	18.4	16.5	17.8	16.8	18.1	18.3	
	3H	18.0	19.3	18.4	19.6	19.9	18.1	19.3	18.4	19.6	19.9	
	4H	18.6	19.8	19.0	20.1	20.4	18.7	19.9	19.0	20.2	20.5	
	6H	19.1	20.2	19.4	20.5	20.8	19.1	20.2	19.5	20.6	20.9	
	8H	19.2	20.2	19.6	20.6	20.9	19.3	20.3	19.7	20.7	21.0	
	12H	19.2	20.2	19.6	20.6	20.9	19.4	20.4	19.8	20.7	21.1	
4H	2H	17.2	18.4	17.6	18.7	19.0	17.2	18.3	17.5	18.6	18.9	
	3H	18.9	19.9	19.3	20.2	20.6	19.0	19.9	19.3	20.3	20.6	
	4H	19.6	20.5	20.0	20.9	21.3	19.7	20.6	20.1	20.9	21.3	
	6H	20.2	21.0	20.6	21.4	21.8	20.3	21.0	20.7	21.4	21.9	
	8H	20.4	21.1	20.8	21.5	21.9	20.5	21.2	20.9	21.6	22.0	
	12H	20.4	21.1	20.9	21.5	22.0	20.6	21.2	21.0	21.7	22.1	
8H	4H	19.9	20.6	20.4	21.1	21.5	20.0	20.7	20.4	21.1	21.5	
	6H	20.6	21.2	21.1	21.7	22.1	20.7	21.3	21.2	21.7	22.2	
	8H	20.9	21.4	21.4	21.8	22.3	21.0	21.5	21.5	22.0	22.5	
	12H	21.0	21.4	21.5	21.9	22.4	21.1	21.6	21.6	22.1	22.6	
12H	4H	19.9	20.6	20.4	21.0	21.5	20.0	20.6	20.4	21.1	21.5	
	6H	20.7	21.2	21.2	21.7	22.2	20.8	21.3	21.2	21.7	22.2	
	8H	21.0	21.4	21.5	21.9	22.4	21.1	21.5	21.6	22.0	22.5	
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 / -0.3					+0.2 / -0.3					
S = 2.0H		+0.4 / -0.7					+0.3 / -0.6					
Standard table		BK06					BK06					
Correction Summand		3.7					3.9					
Corrected glare indices referring to 3200lm Total luminous flux												

UGR diagram (SHR: 0.25)

Building 1

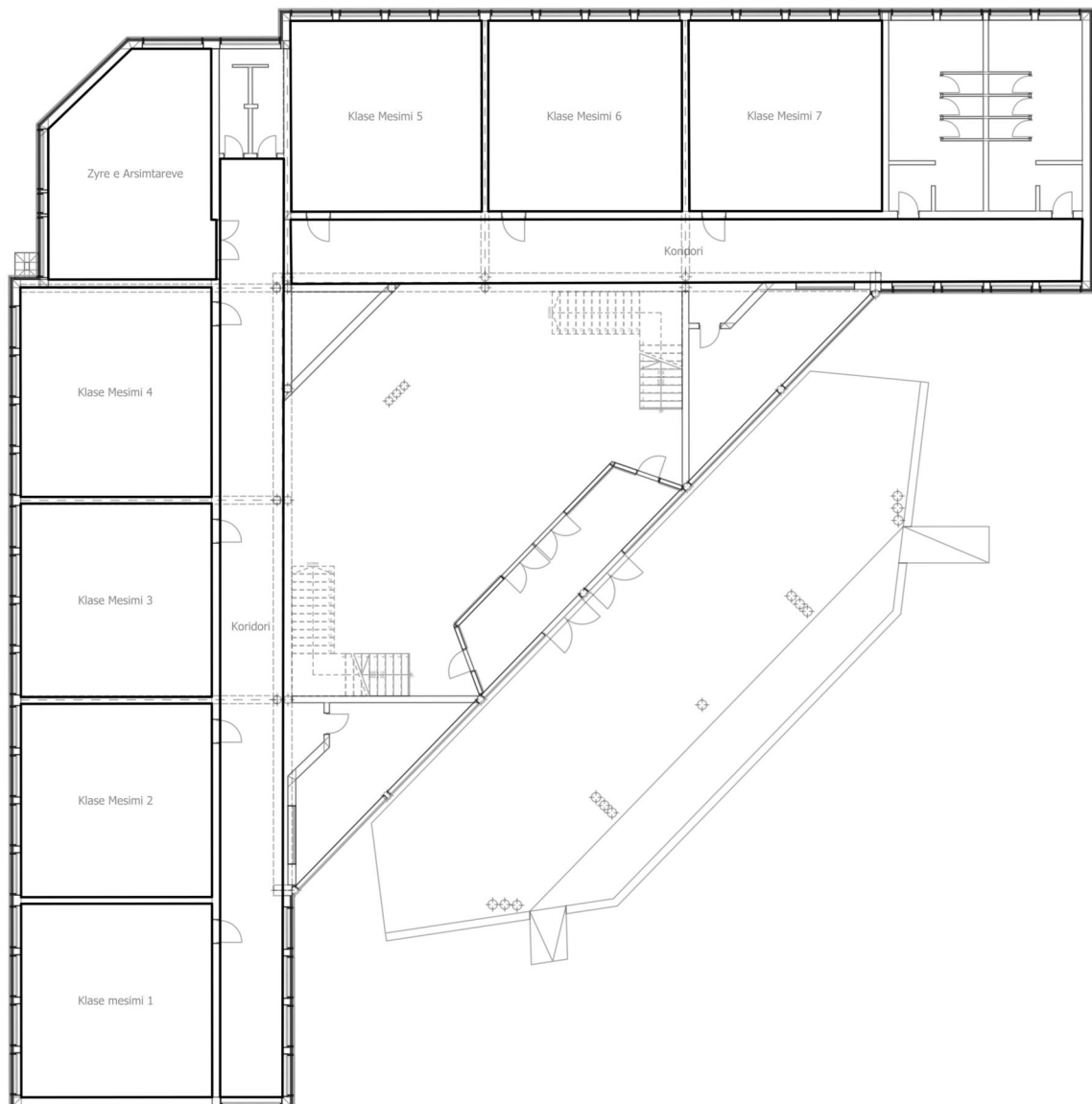
Luminaire list

Φ_{total}	P_{total}	Luminous efficacy
270410 lm	2420.0 W	111.7 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
10	Not yet a DIALux member	0042695	4000K Ra80 START PANEL IP65 1200x300 4400lm 840 WHITE	36.1 W	4321 lm	119.7 lm/W
71	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhësa (Light scene 1)

Room List



Building 1 · Përdhësa (Light scene 1)

Room List

Klase mesimi 1

P_{total} 261.0 W	A_{Room} 48.49 m ²	Lighting power density 5.38 W/m ² = 1.44 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 375 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm

Klase Mesimi 2

P_{total} 261.0 W	A_{Room} 48.47 m ²	Lighting power density 5.39 W/m ² = 1.43 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 376 lx
-------------------------------------	---	---	--

pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm

Klase Mesimi 3

P_{total} 261.0 W	A_{Room} 48.49 m ²	Lighting power density 5.38 W/m ² = 1.44 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 375 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm

Building 1 · Përdhësa (Light scene 1)

Room List

Klase Mesimi 4

P_{total} 261.0 W	A_{Room} 52.55 m ²	Lighting power density 4.97 W/m ² = 1.41 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 352 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm

Klase Mesimi 5

P_{total} 261.0 W	A_{Room} 47.81 m ²	Lighting power density 5.46 W/m ² = 1.44 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 378 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm

Klase Mesimi 6

P_{total} 261.0 W	A_{Room} 48.47 m ²	Lighting power density 5.39 W/m ² = 1.43 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 376 lx
-------------------------------------	---	---	--

pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm

Building 1 · Përdhësa (Light scene 1)

Room List

Klase Mesimi 7

P_{total} 261.0 W	A_{Room} 48.32 m ²	Lighting power density 5.40 W/m ² = 1.44 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 376 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm

Koridori

P_{total} 180.5 W	A_{Room} 77.64 m ²	Lighting power density 2.32 W/m ² = 1.75 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 133 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
5	Not yet a DIALux member	0042695 START PANEL IP65 1200x300 4400lm 840 WHITE	4000K Ra80	36.1 W	4321 lm

Building 1 · Përdhese (Light scene 1)

Room List

Koridori

P_{total} 180.5 W	A_{Room} 65.69 m ²	Lighting power density 2.75 W/m ² = 1.76 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 156 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
5	Not yet a DIALux member	0042695 START PANEL IP65 1200x300 4400lm 840 WHITE	4000K Ra80	36.1 W	4321 lm

Zyre e Arsimitareve

P_{total} 232.0 W	A_{Room} 45.37 m ²	Lighting power density 5.11 W/m ² = 1.49 W/m ² /100 lx (Room)	E_{perpendicular} (Working plane) 342 lx
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pcs.	Manufacturer	Article No.	Article name	P	Φ _{Luminaire}
8	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm

Building 1 · Përdhesa

Luminaire list Φ_{total}

270410 lm

 P_{total}

2420.0 W

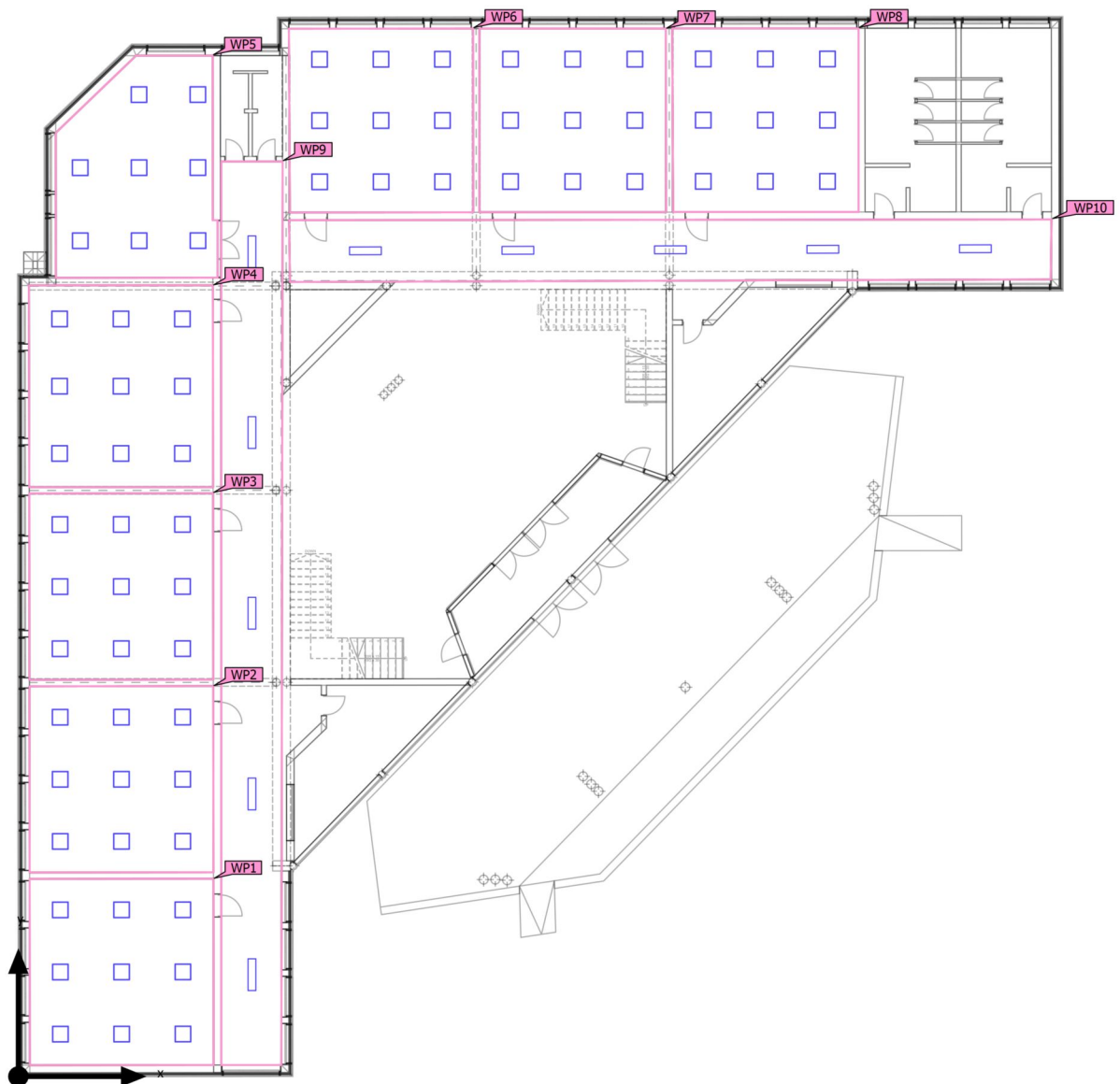
Luminous efficacy

111.7 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
10	Not yet a DIALux member	0042695	4000K Ra80 START PANEL IP65 1200x300 4400lm 840 WHITE	36.1 W	4321 lm	119.7 lm/W
71	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhësa (Light scene 1)

Calculation objects



Building 1 · Përdhësa (Light scene 1)

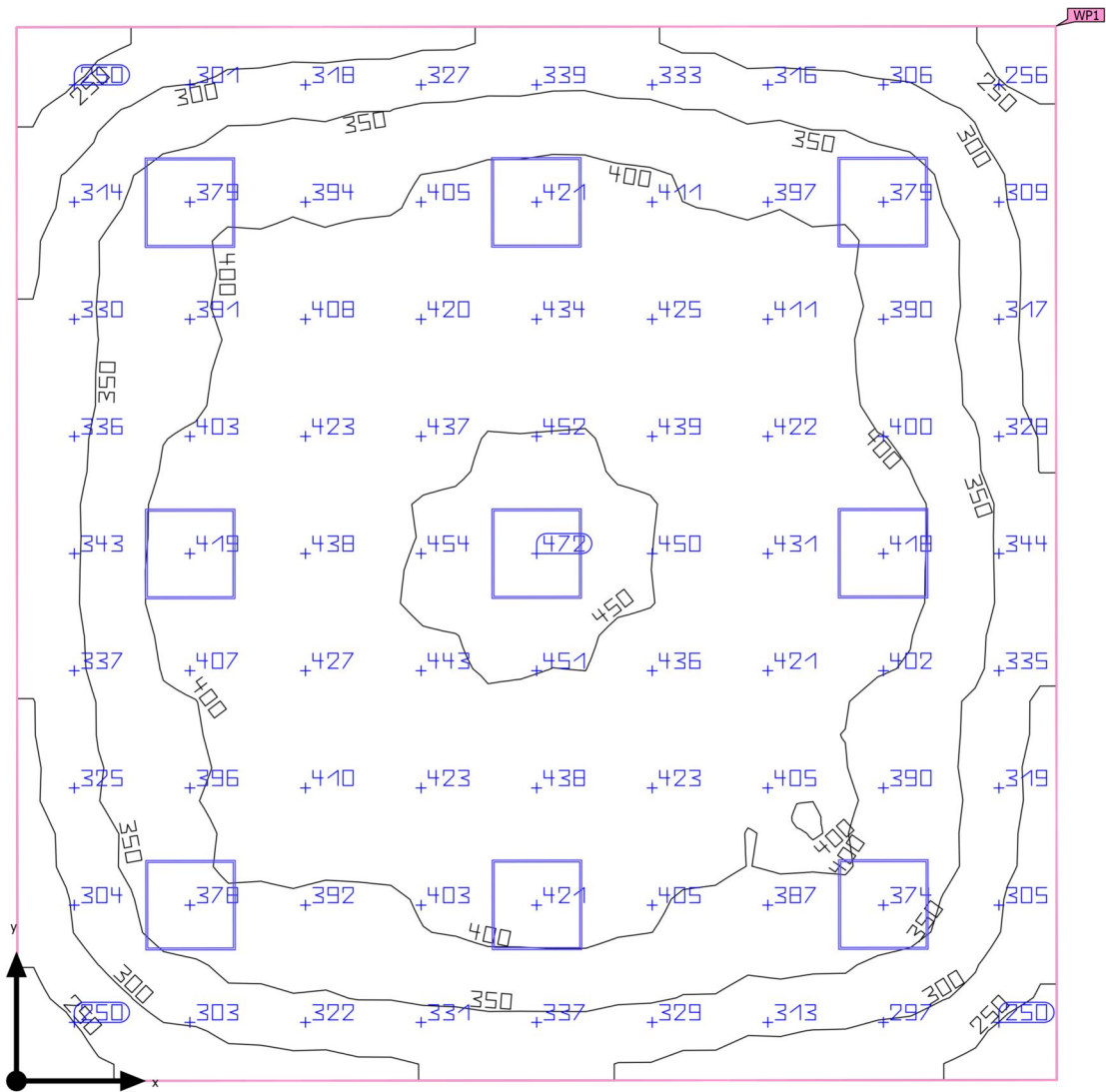
Calculation objects

Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase mesimi 1) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	375 lx (≥ 300 lx) ✓	212 lx	472 lx	0.57 (≥ 0.55) ✓	0.45	WP1
Working plane (Klase Mesimi 2) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	376 lx (≥ 300 lx) ✓	213 lx	472 lx	0.57 (≥ 0.55) ✓	0.45	WP2
Working plane (Klase Mesimi 3) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	375 lx (≥ 300 lx) ✓	214 lx	472 lx	0.57 (≥ 0.55) ✓	0.45	WP3
Working plane (Klase Mesimi 4) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	352 lx (≥ 300 lx) ✓	197 lx	444 lx	0.56 (≥ 0.55) ✓	0.44	WP4
Working plane (Zyre e Arsimitareve) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	342 lx (≥ 300 lx) ✓	190 lx	428 lx	0.56 (≥ 0.50) ✓	0.44	WP5
Working plane (Klase Mesimi 5) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	378 lx (≥ 300 lx) ✓	213 lx	476 lx	0.56 (≥ 0.50) ✓	0.45	WP6
Working plane (Klase Mesimi 6) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	376 lx (≥ 300 lx) ✓	212 lx	472 lx	0.56 (≥ 0.50) ✓	0.45	WP7
Working plane (Klase Mesimi 7) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	376 lx (≥ 300 lx) ✓	214 lx	470 lx	0.57 (≥ 0.50) ✓	0.46	WP8
Working plane (Koridori) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	133 lx (≥ 100 lx) ✓	44.9 lx	234 lx	0.34 (≥ 0.30) ✓	0.19	WP9
Working plane (Koridori) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	156 lx (≥ 100 lx) ✓	63.3 lx	240 lx	0.41 (≥ 0.40) ✓	0.26	WP10

Building 1 · Përdhësa · Klase mesimi 1 (Light scene 1)

Summary



Ground area	48.49 m²
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %
Light loss factor	0.80 (fixed)

Clearance height	3.000 m
Mounting height	3.000 m
Height _{Working plane}	0.800 m
Wall zone _{Working plane}	0.000 m

Building 1 · Përdhësa · Klase mesimi 1 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	375 lx	≥ 300 lx	✓	WP1
	g_1	0.57	≥ 0.55	✓	WP1
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	20	≤ 19	✗	
Consumption values ⁽²⁾	Consumption	347 kWh/a	max. 1700 kWh/a	✓	
Room	Lighting power density	5.38 W/m ²	–		
		1.44 W/m ² /100 lx	–		

(1) Based on a rectangular space of 7.012 m x 6.916 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

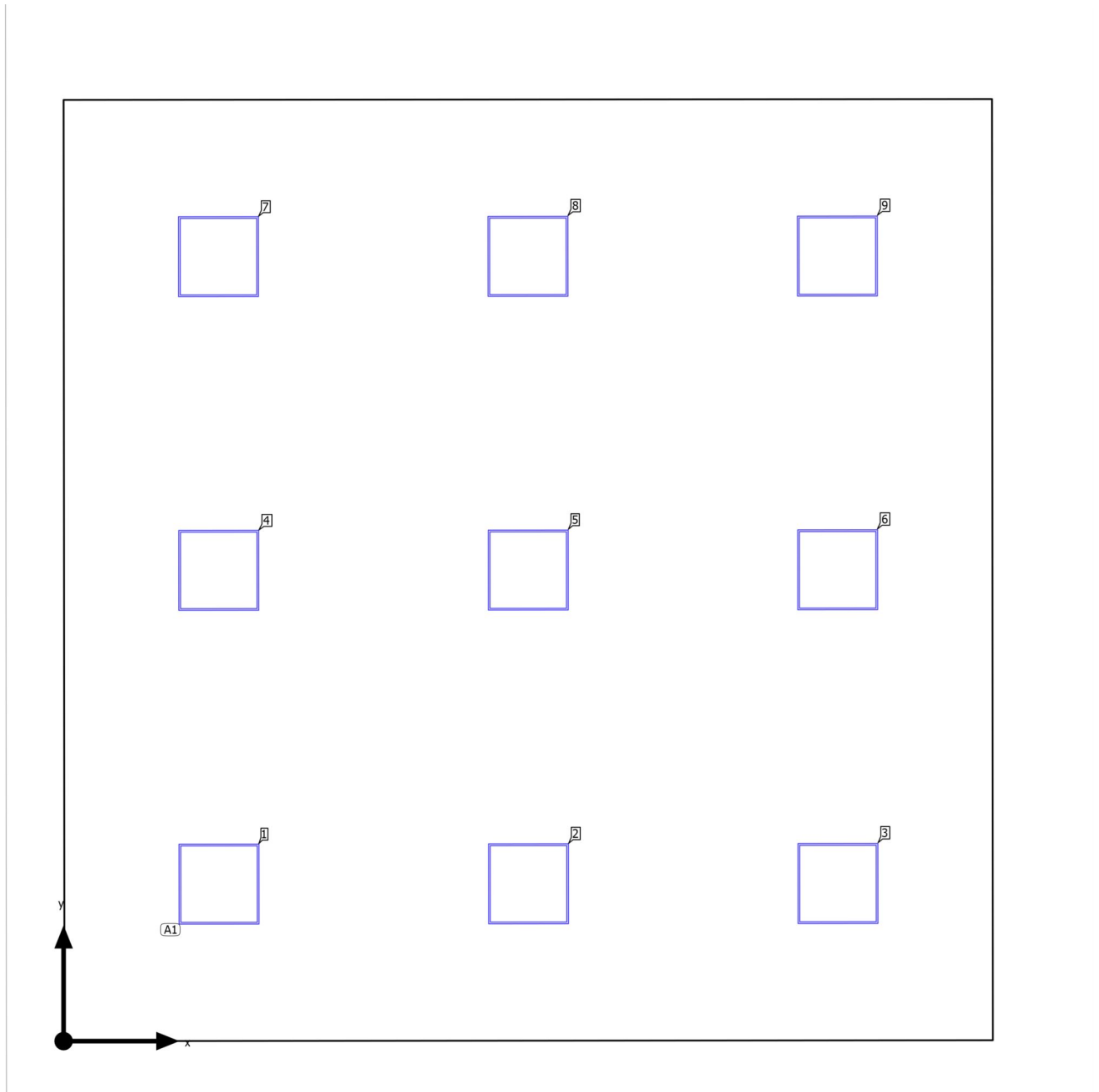
Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Luminaire list

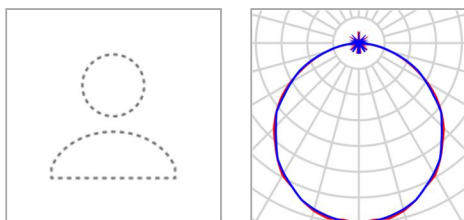
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	20	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase mesimi 1

Luminaire layout plan



Building 1 · Përdhësa · Klase mesimi 1

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	29.0 W
Article No.	0044623	$\Phi_{\text{Luminaire}}$	3200 lm
Article name	START Panel Eco 600x600 3200lm 830		
Fitting	1x LED		

9 x Not yet a DIALux member START Panel Eco 600x600 3200lm 830

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.158 m / 1.170 m / 3.000 m	1.158 m	1.170 m	3.000 m	1
X-direction	3 pcs., Center - center, 2.305 m	3.463 m	1.172 m	3.000 m	2
Y-direction	3 pcs., Center - center, 2.337 m	5.769 m	1.174 m	3.000 m	3
Arrangement	A1	1.156 m	3.507 m	3.000 m	4
		3.461 m	3.509 m	3.000 m	5
		5.766 m	3.511 m	3.000 m	6
		1.154 m	5.844 m	3.000 m	7
		3.459 m	5.846 m	3.000 m	8
		5.764 m	5.848 m	3.000 m	9

Building 1 · Përdhesa · Klase mesimi 1

Luminaire list Φ_{total}

28800 lm

 P_{total}

261.0 W

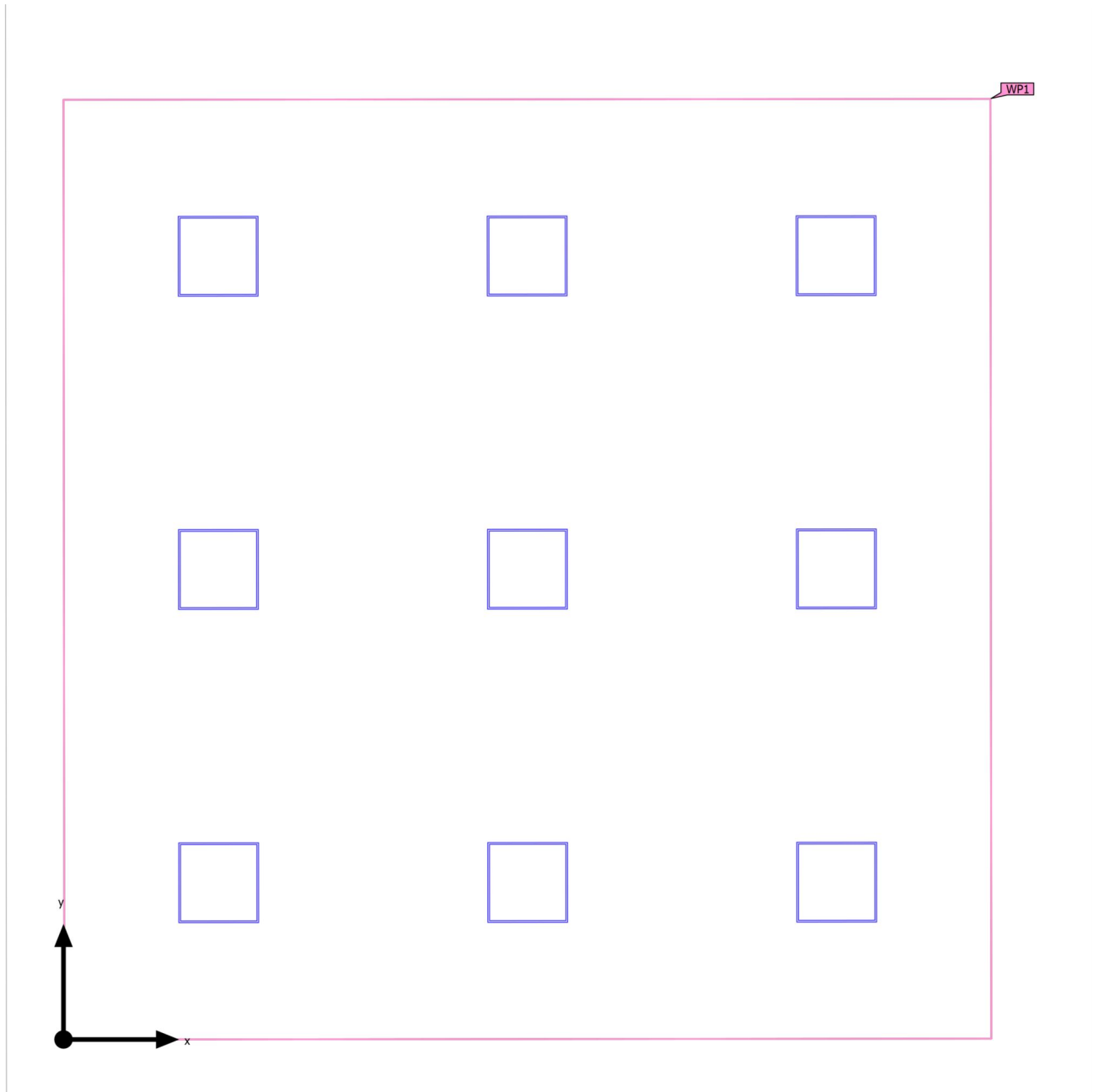
Luminous efficacy

110.3 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase mesimi 1 (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Klase mesimi 1 (Light scene 1)

Calculation objects

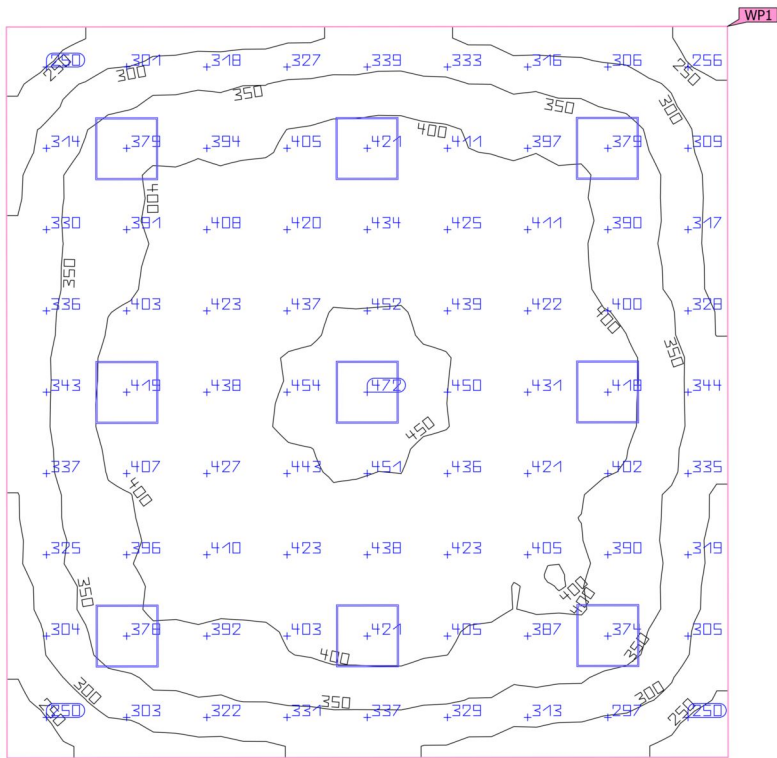
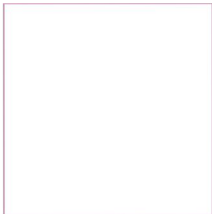
Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase mesimi 1) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	375 lx (≥ 300 lx) ✓	212 lx	472 lx	0.57 (≥ 0.55) ✓	0.45	WP1

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhësa · Klase mesimi 1 (Light scene 1)

Working plane (Klase mesimi 1)

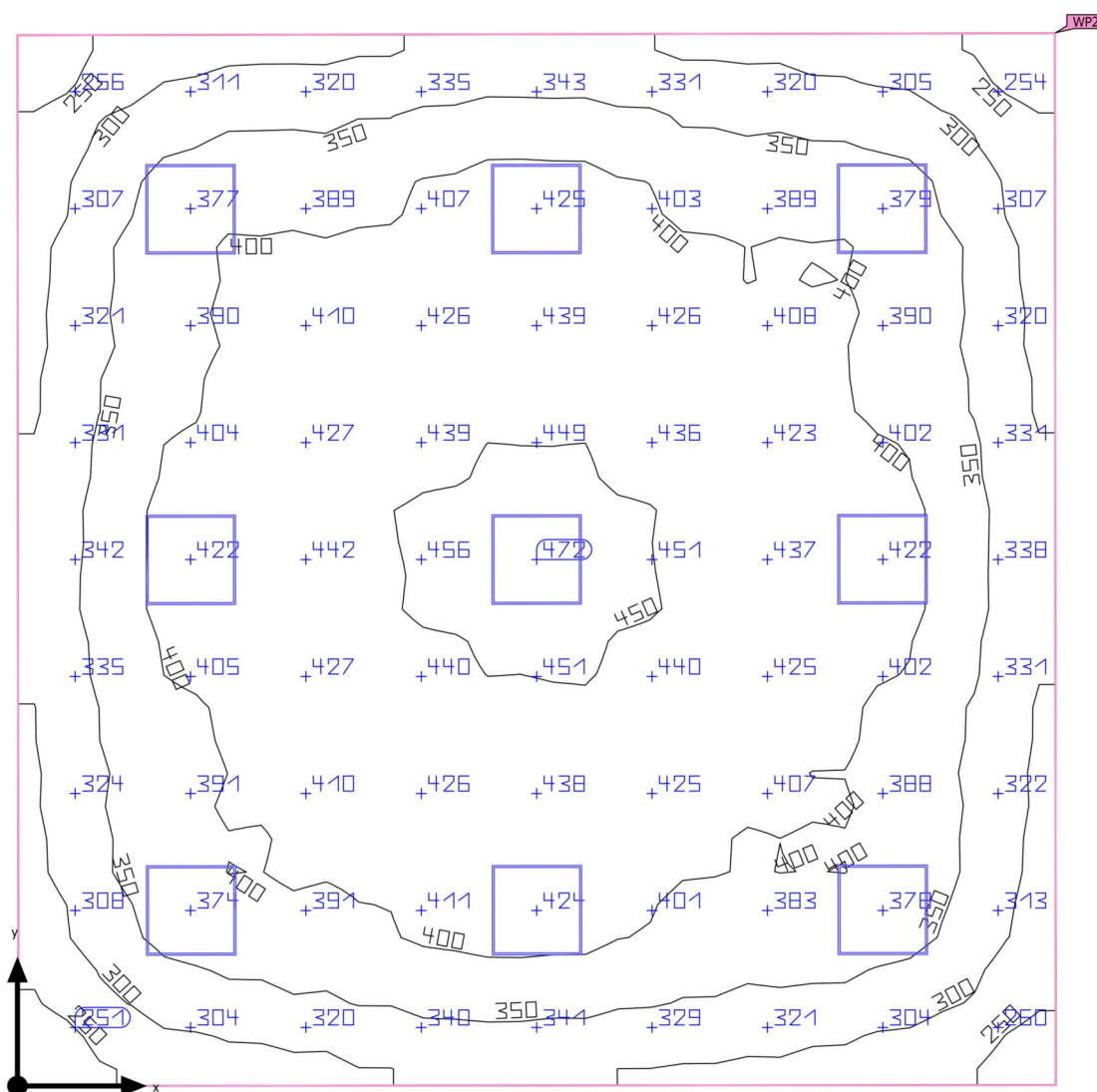


Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase mesimi 1)	375 lx	212 lx	472 lx	0.57	0.45	WP1
Perpendicular illuminance (adaptive)	(≥ 300 lx)			(≥ 0.55)		
Height: 0.800 m, Wall zone: 0.000 m	✓			✓		

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhësa · Klase Mesimi 2 (Light scene 1)

Summary



Ground area	48.47 m²	Clearance height	3.000 m
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %	Mounting height	3.000 m
		Height _{working plane}	0.800 m
Light loss factor	0.80 (fixed)	Wall zone _{Working plane}	0.000 m

Building 1 · Përdhësa · Klase Mesimi 2 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	376 lx	≥ 300 lx	✓	WP2
	g_1	0.57	≥ 0.55	✓	WP2
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	20	≤ 19	✗	
Consumption values ⁽²⁾	Consumption	347 kWh/a	max. 1700 kWh/a	✓	
Room	Lighting power density	5.39 W/m ²	–		
		1.43 W/m ² /100 lx	–		

(1) Based on a rectangular space of 6.916 m x 7.012 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

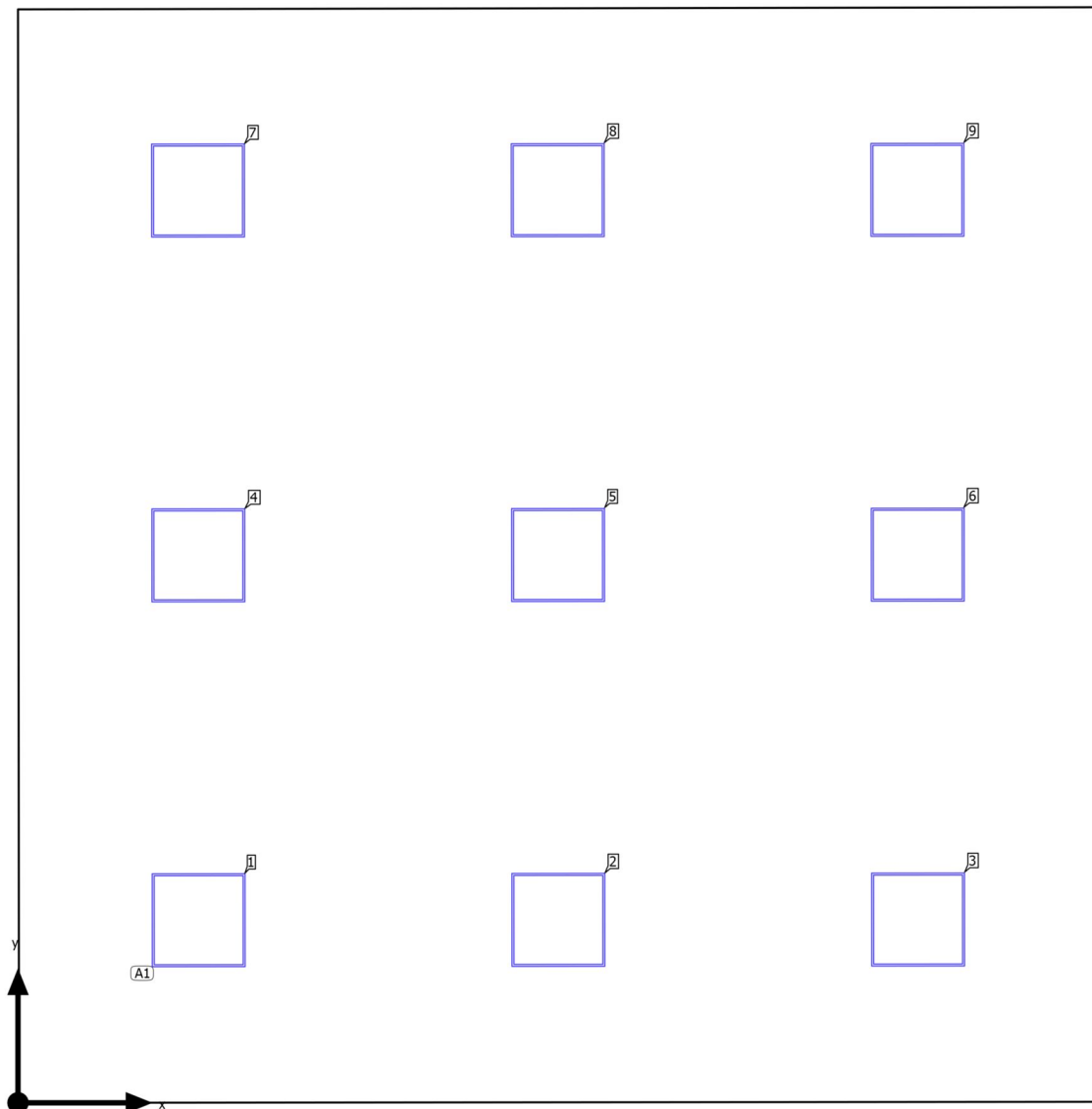
Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Luminaire list

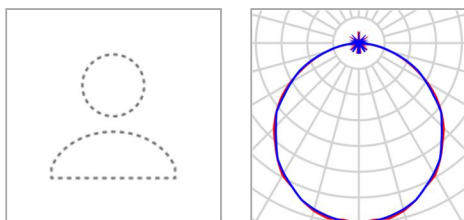
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	20	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 2

Luminaire layout plan



Building 1 · Përdhësa · Klase Mesimi 2

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	29.0 W
Article No.	0044623	$\Phi_{\text{Luminaire}}$	3200 lm
Article name	START Panel Eco 600x600 3200lm 830		
Fitting	1x LED		

9 x Not yet a DIALux member START Panel Eco 600x600 3200lm 830

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.158 m / 1.170 m / 3.000 m	1.158 m	1.170 m	3.000 m	1
X-direction	3 pcs., Center - center, 2.305 m	3.463 m	1.172 m	3.000 m	2
Y-direction	3 pcs., Center - center, 2.337 m	5.769 m	1.174 m	3.000 m	3
Arrangement	A1	1.156 m	3.507 m	3.000 m	4
		3.461 m	3.509 m	3.000 m	5
		5.766 m	3.511 m	3.000 m	6
		1.154 m	5.844 m	3.000 m	7
		3.459 m	5.846 m	3.000 m	8
		5.764 m	5.848 m	3.000 m	9

Building 1 · Përdhesa · Klase Mesimi 2

Luminaire list Φ_{total}

28800 lm

 P_{total}

261.0 W

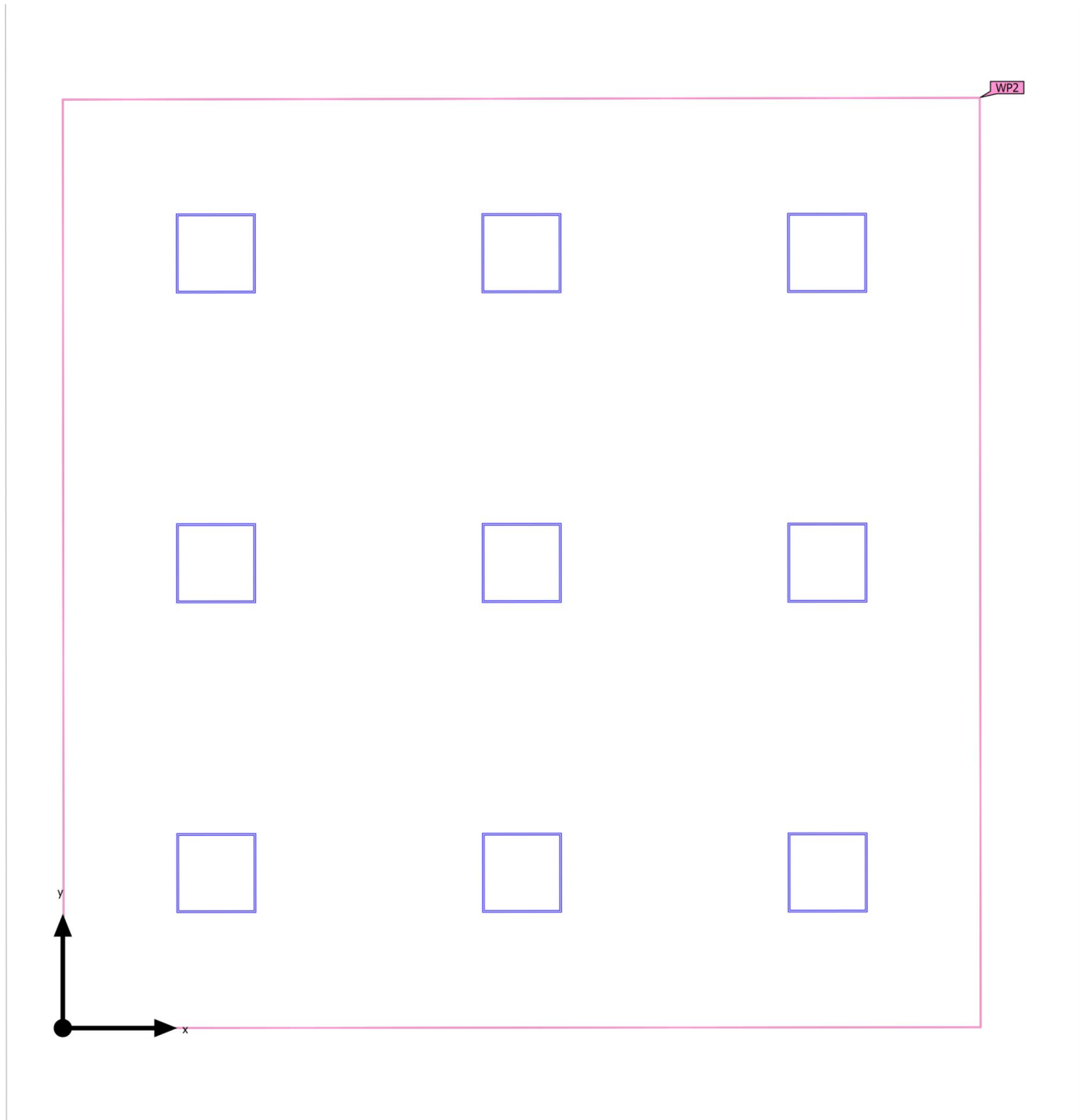
Luminous efficacy

110.3 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 2 (Light scene 1)

Calculation objects



Building 1 · Përdhesa · Klase Mesimi 2 (Light scene 1)

Calculation objects

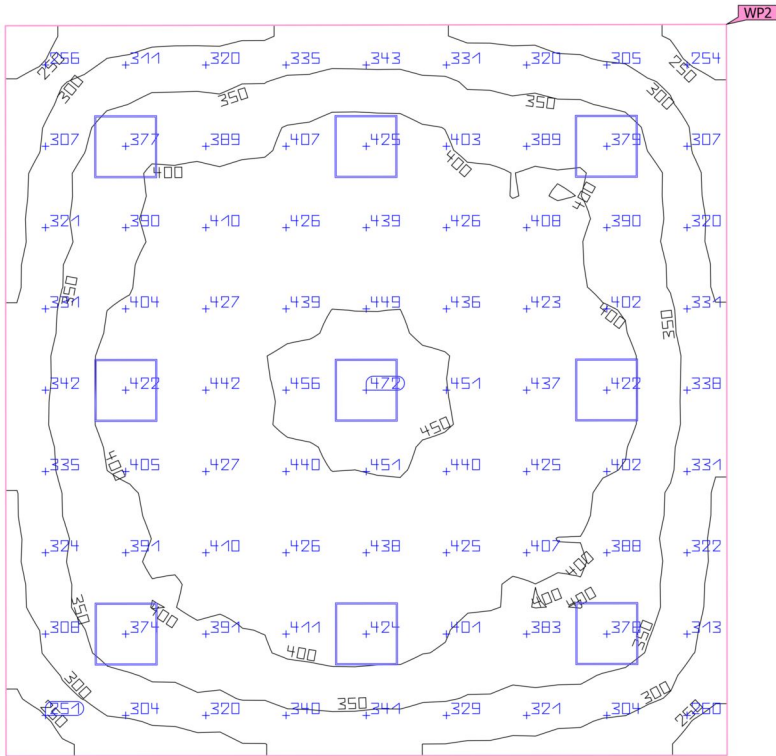
Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 2) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	376 lx (≥ 300 lx) ✓	213 lx	472 lx	0.57 (≥ 0.55) ✓	0.45	WP2

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhesa · Klase Mesimi 2 (Light scene 1)

Working plane (Klase Mesimi 2)

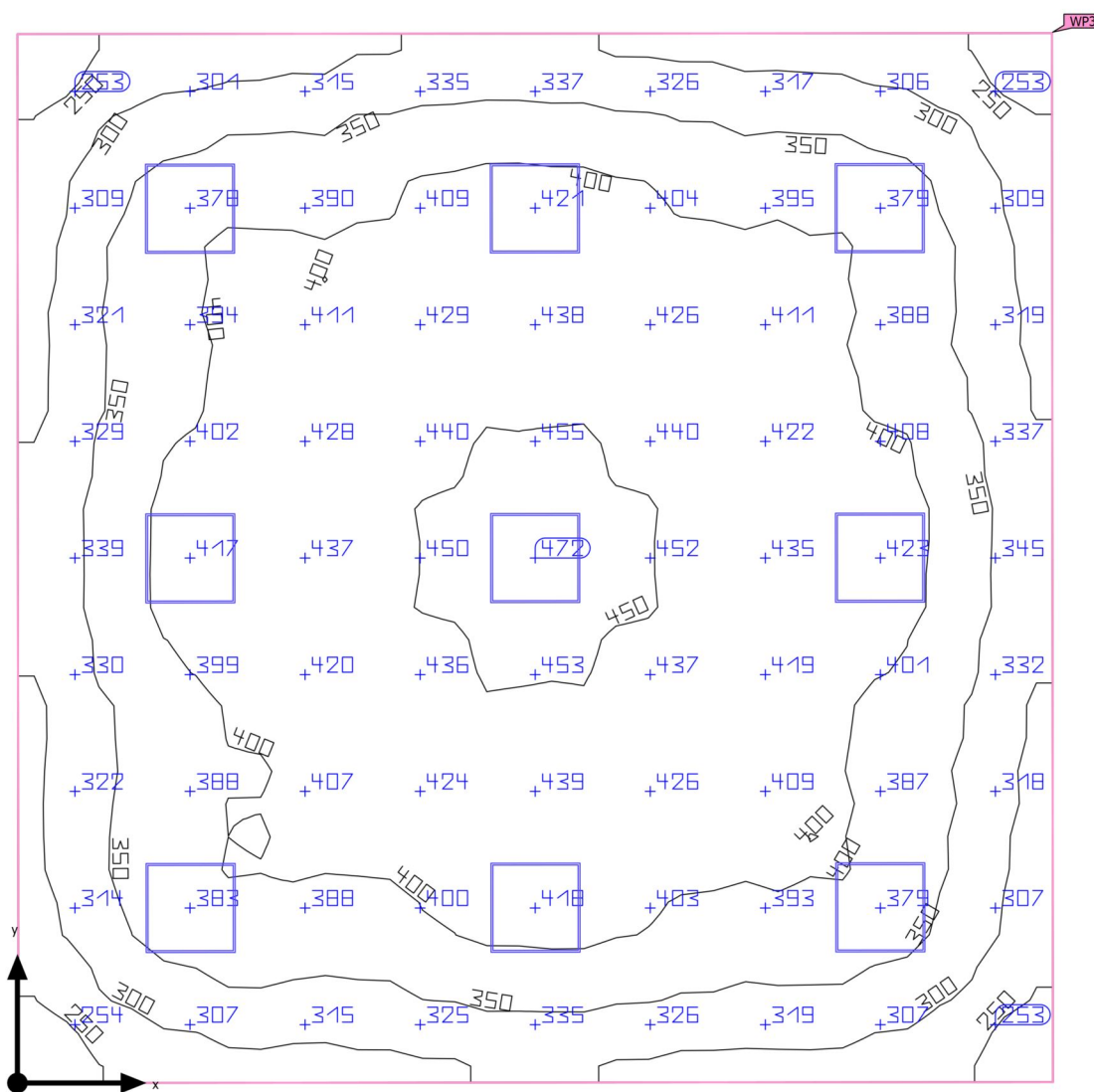


Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 2)	376 lx	213 lx	472 lx	0.57	0.45	WP2
Perpendicular illuminance (adaptive)	(≥ 300 lx)			(≥ 0.55)		
Height: 0.800 m, Wall zone: 0.000 m	✓			✓		

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhesa · Klase Mesimi 3 (Light scene 1)

Summary



Ground area	48.49 m ²	Clearance height	3.000 m
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %	Mounting height	3.000 m
Light loss factor	0.80 (fixed)	Height _{Working plane}	0.800 m
		Wall zone _{Working plane}	0.000 m

Building 1 · Përdhësa · Klase Mesimi 3 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	375 lx	$\geq 300 \text{ lx}$	✓	WP3
	g_1	0.57	≥ 0.55	✓	WP3
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	20	≤ 19	✗	
Consumption values ⁽²⁾	Consumption	347 kWh/a	max. 1700 kWh/a	✓	
Room	Lighting power density	5.38 W/m ²	–		
		1.44 W/m ² /100 lx	–		

(1) Based on a rectangular space of 6.916 m x 7.012 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

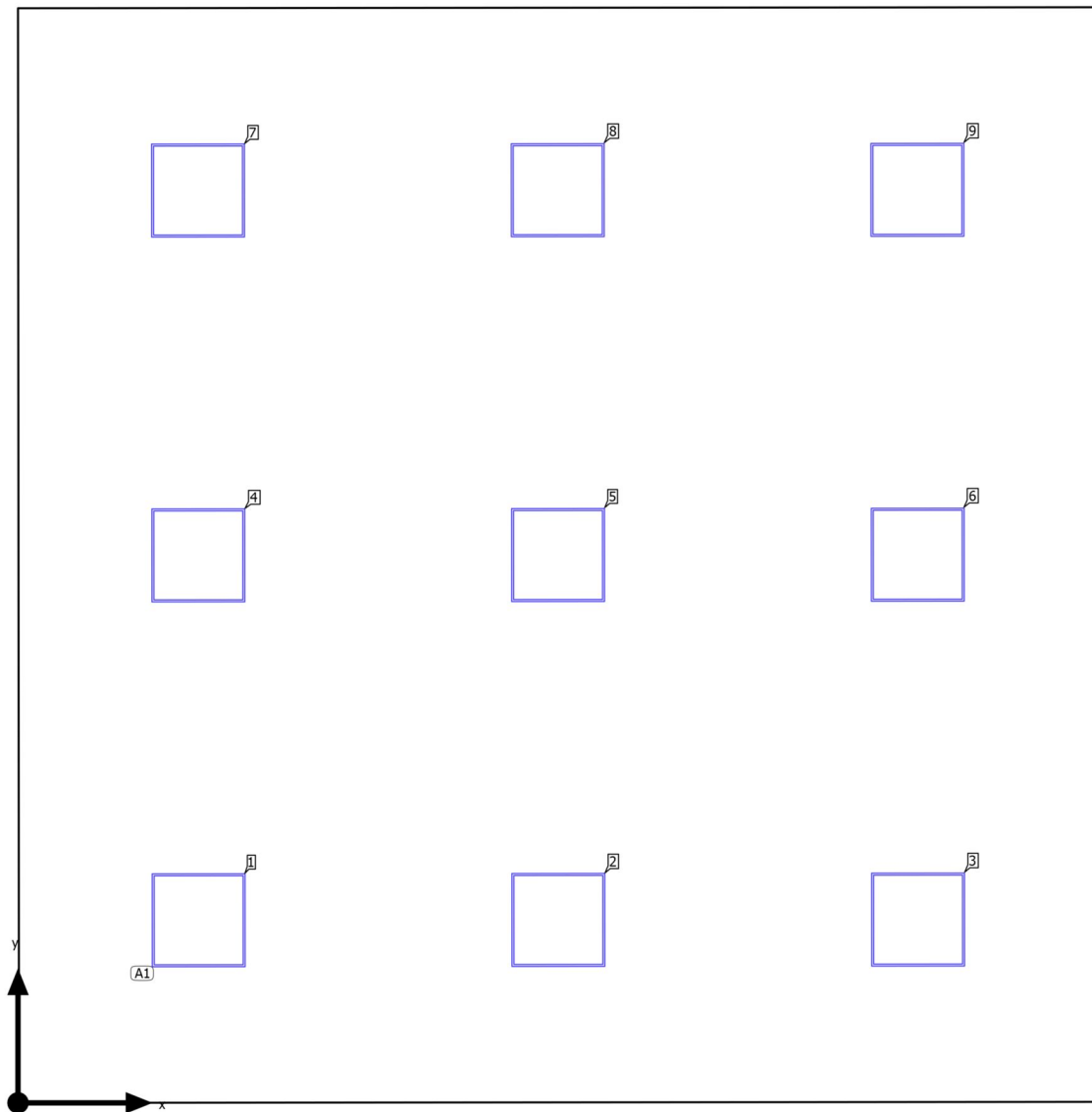
Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Luminaire list

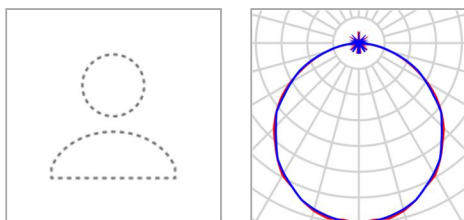
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	20	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 3

Luminaire layout plan



Building 1 · Përdhësa · Klase Mesimi 3

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	29.0 W
Article No.	0044623	$\Phi_{\text{Luminaire}}$	3200 lm
Article name	START Panel Eco 600x600 3200lm 830		
Fitting	1x LED		

9 x Not yet a DIALux member START Panel Eco 600x600 3200lm 830

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.158 m / 1.170 m / 3.000 m	1.158 m	1.170 m	3.000 m	1
X-direction	3 pcs., Center - center, 2.305 m	3.463 m	1.172 m	3.000 m	2
Y-direction	3 pcs., Center - center, 2.337 m	5.769 m	1.174 m	3.000 m	3
Arrangement	A1	1.156 m	3.507 m	3.000 m	4
		3.461 m	3.509 m	3.000 m	5
		5.766 m	3.511 m	3.000 m	6
		1.154 m	5.844 m	3.000 m	7
		3.459 m	5.846 m	3.000 m	8
		5.764 m	5.848 m	3.000 m	9

Building 1 · Përdhesa · Klase Mesimi 3

Luminaire list Φ_{total}

28800 lm

 P_{total}

261.0 W

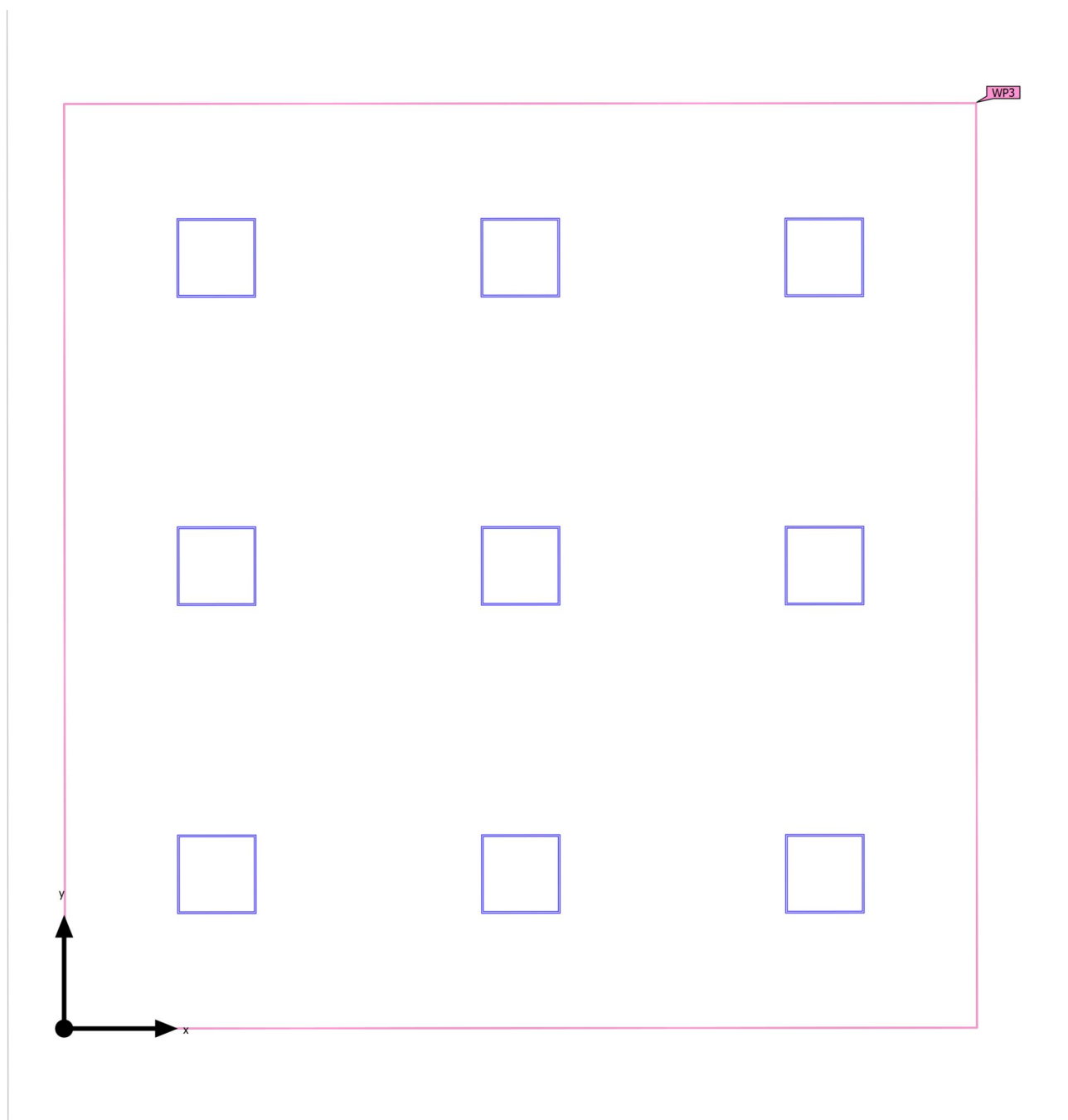
Luminous efficacy

110.3 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 3 (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Klase Mesimi 3 (Light scene 1)

Calculation objects

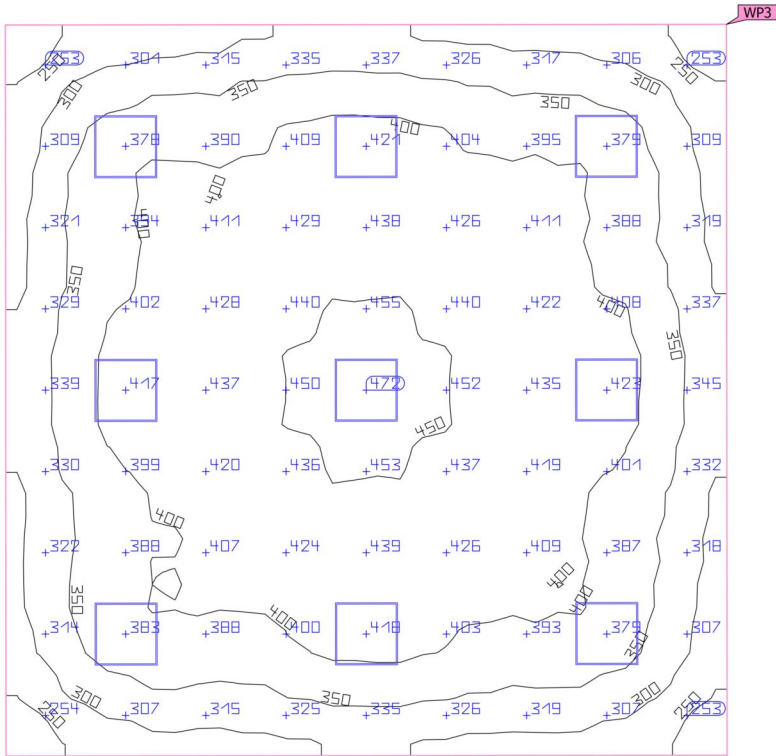
Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 3) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	375 lx (≥ 300 lx) ✓	214 lx	472 lx	0.57 (≥ 0.55) ✓	0.45	WP3

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhesa · Klase Mesimi 3 (Light scene 1)

Working plane (Klase Mesimi 3)

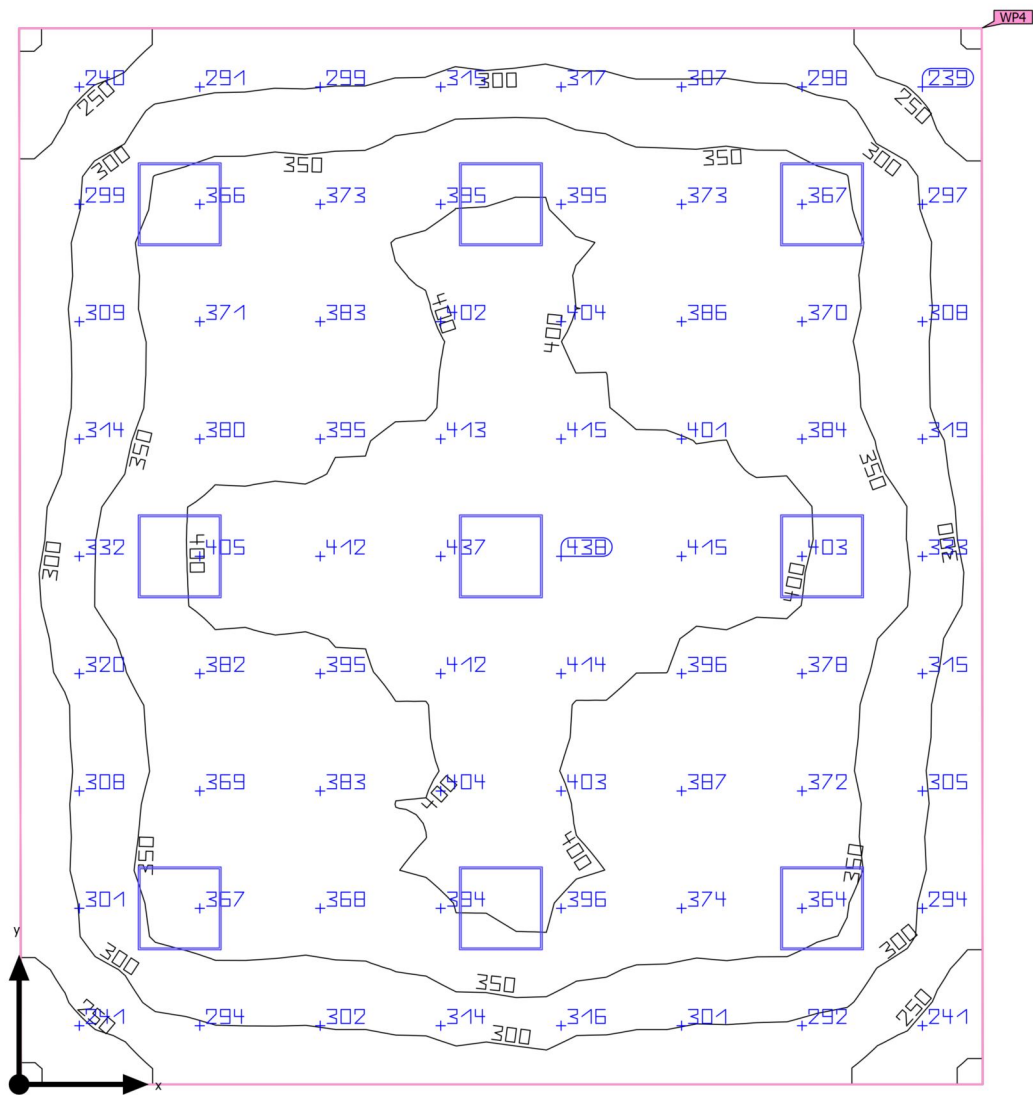


Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 3)	375 lx	214 lx	472 lx	0.57	0.45	WP3
Perpendicular illuminance (adaptive)	≥ 300 lx			≥ 0.55		
Height: 0.800 m, Wall zone: 0.000 m	✓			✓		

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhësa · Klase Mesimi 4 (Light scene 1)

Summary



Ground area	52.55 m²
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %
Light loss factor	0.80 (fixed)

Clearance height	3.000 m
Mounting height	3.000 m
Height _{Working plane}	0.800 m
Wall zone _{Working plane}	0.000 m

Building 1 · Përdhësa · Klase Mesimi 4 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	352 lx	≥ 300 lx	✓	WP4
	g_1	0.56	≥ 0.55	✓	WP4
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	20	≤ 19	✗	
Consumption values ⁽²⁾	Consumption	347 kWh/a	max. 1850 kWh/a	✓	
Room	Lighting power density	4.97 W/m ²	–		
		1.41 W/m ² /100 lx	–		

(1) Based on a rectangular space of 7.601 m x 6.922 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

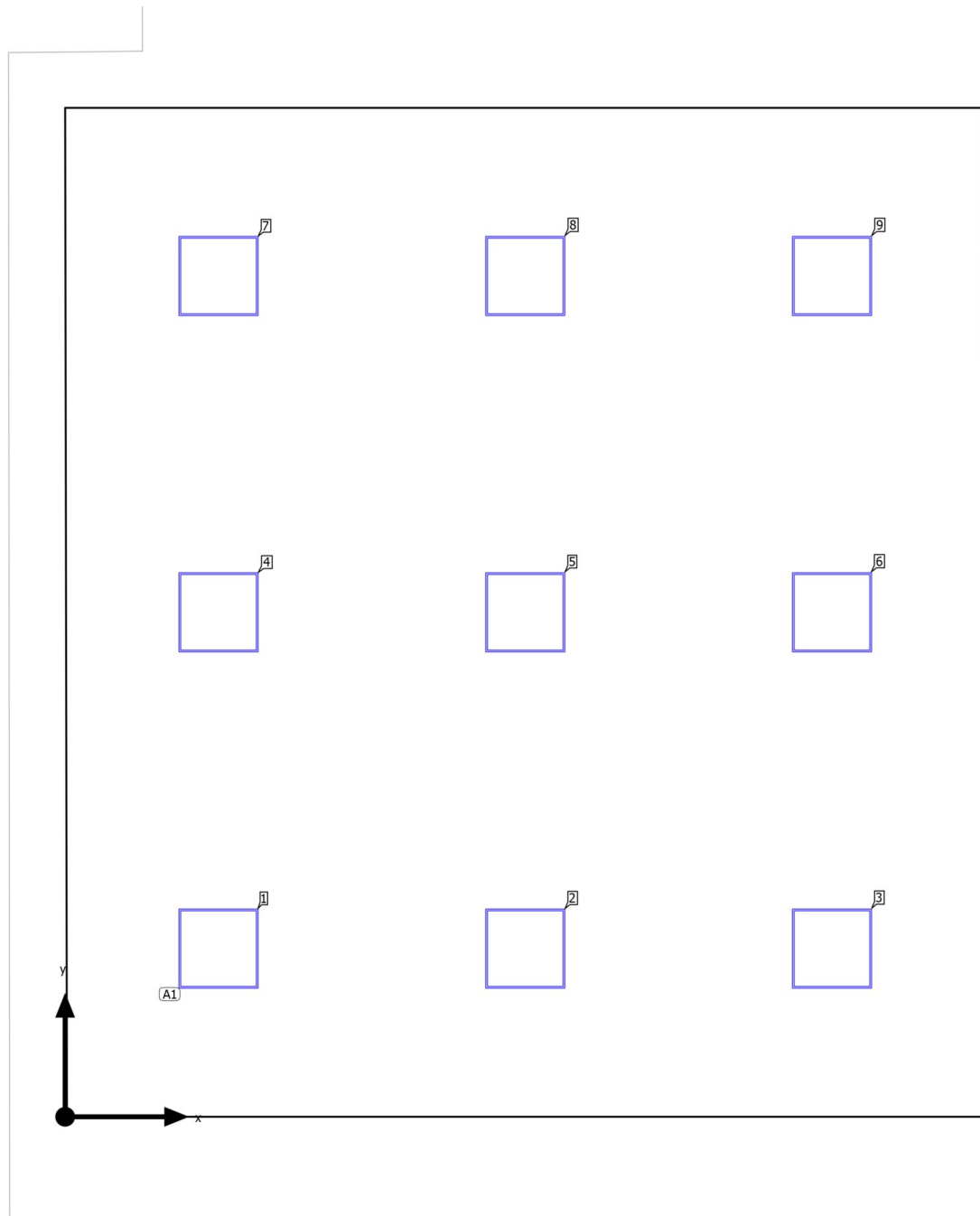
Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Luminaire list

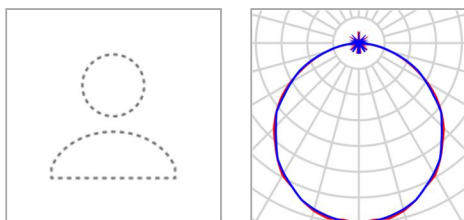
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	20	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 4

Luminaire layout plan



Building 1 · Përdhësa · Klase Mesimi 4

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	29.0 W
Article No.	0044623	$\Phi_{\text{Luminaire}}$	3200 lm
Article name	START Panel Eco 600x600 3200lm 830		
Fitting	1x LED		

9 x Not yet a DIALux member START Panel Eco 600x600 3200lm 830

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.155 m / 1.266 m / 3.000 m	1.155 m	1.266 m	3.000 m	1
X-direction	3 pcs., Center - center, 2.310 m	3.465 m	1.266 m	3.000 m	2
Y-direction	3 pcs., Center - center, 2.531 m	5.774 m	1.266 m	3.000 m	3
Arrangement	A1	1.155 m	3.797 m	3.000 m	4
		3.465 m	3.797 m	3.000 m	5
		5.774 m	3.797 m	3.000 m	6
		1.155 m	6.329 m	3.000 m	7
		3.465 m	6.329 m	3.000 m	8
		5.774 m	6.329 m	3.000 m	9

Building 1 · Përdhësa · Klase Mesimi 4

Luminaire list Φ_{total}

28800 lm

 P_{total}

261.0 W

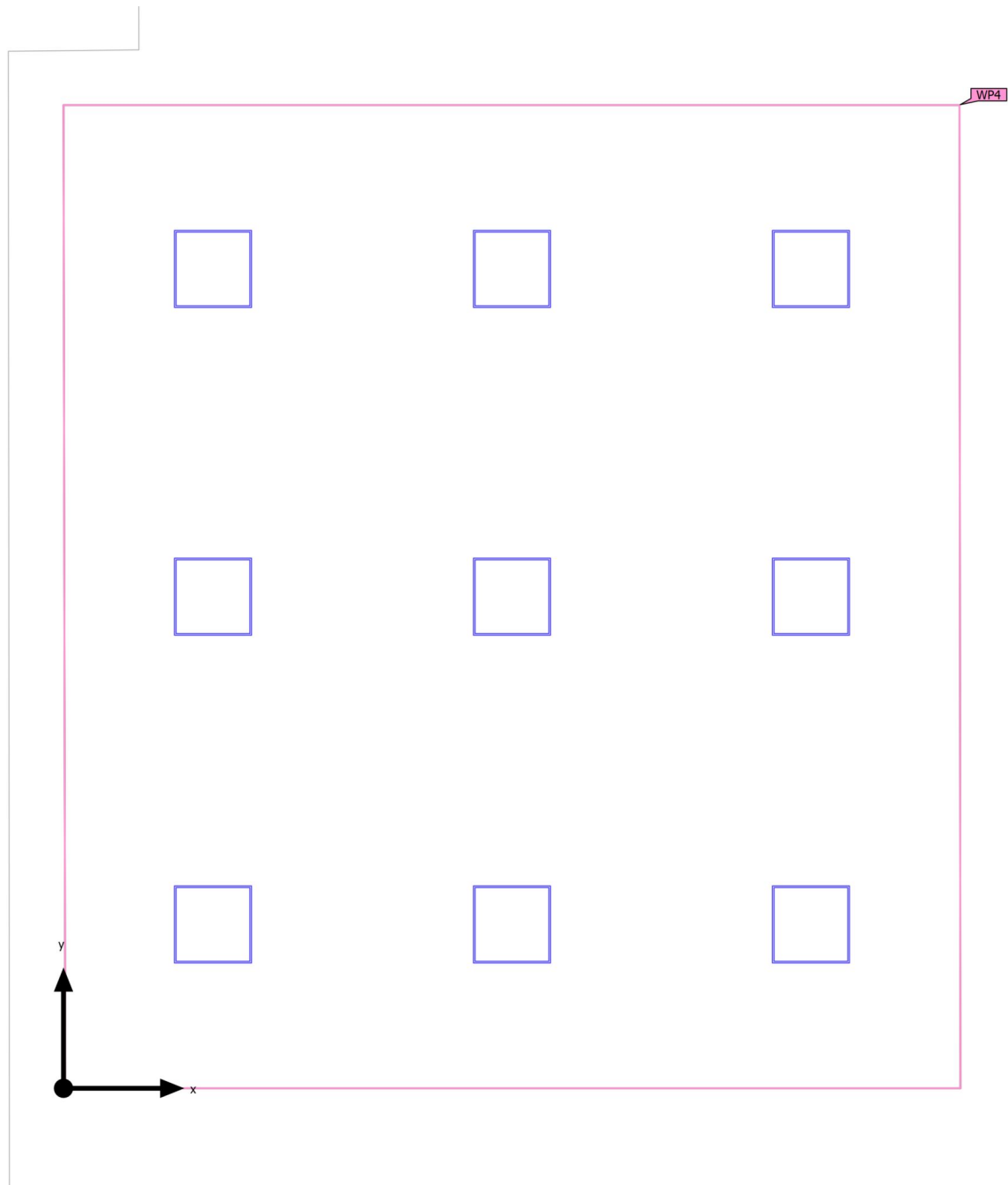
Luminous efficacy

110.3 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 4 (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Klase Mesimi 4 (Light scene 1)

Calculation objects

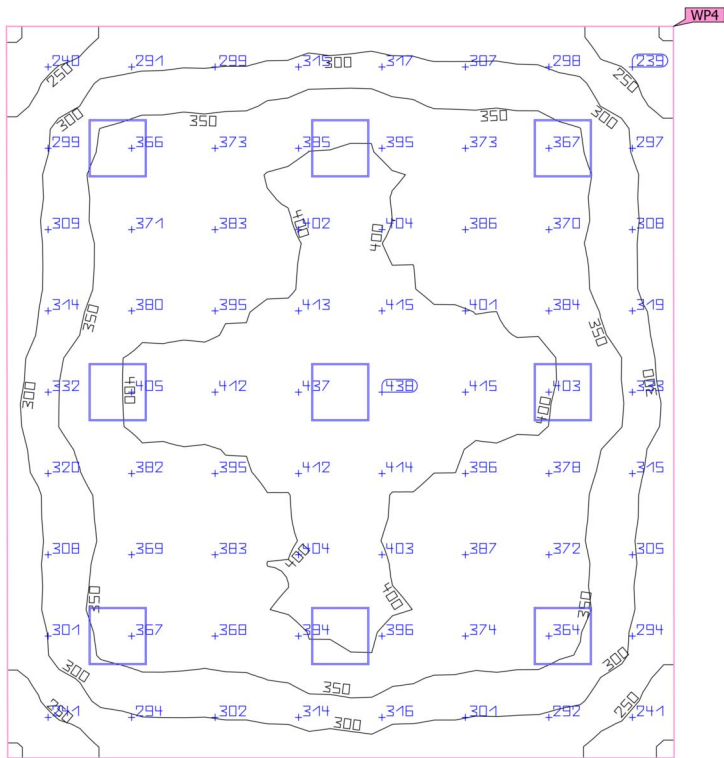
Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 4) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	352 lx (≥ 300 lx) ✓	197 lx	444 lx	0.56 (≥ 0.55) ✓	0.44	WP4

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhësa · Klase Mesimi 4 (Light scene 1)

Working plane (Klase Mesimi 4)

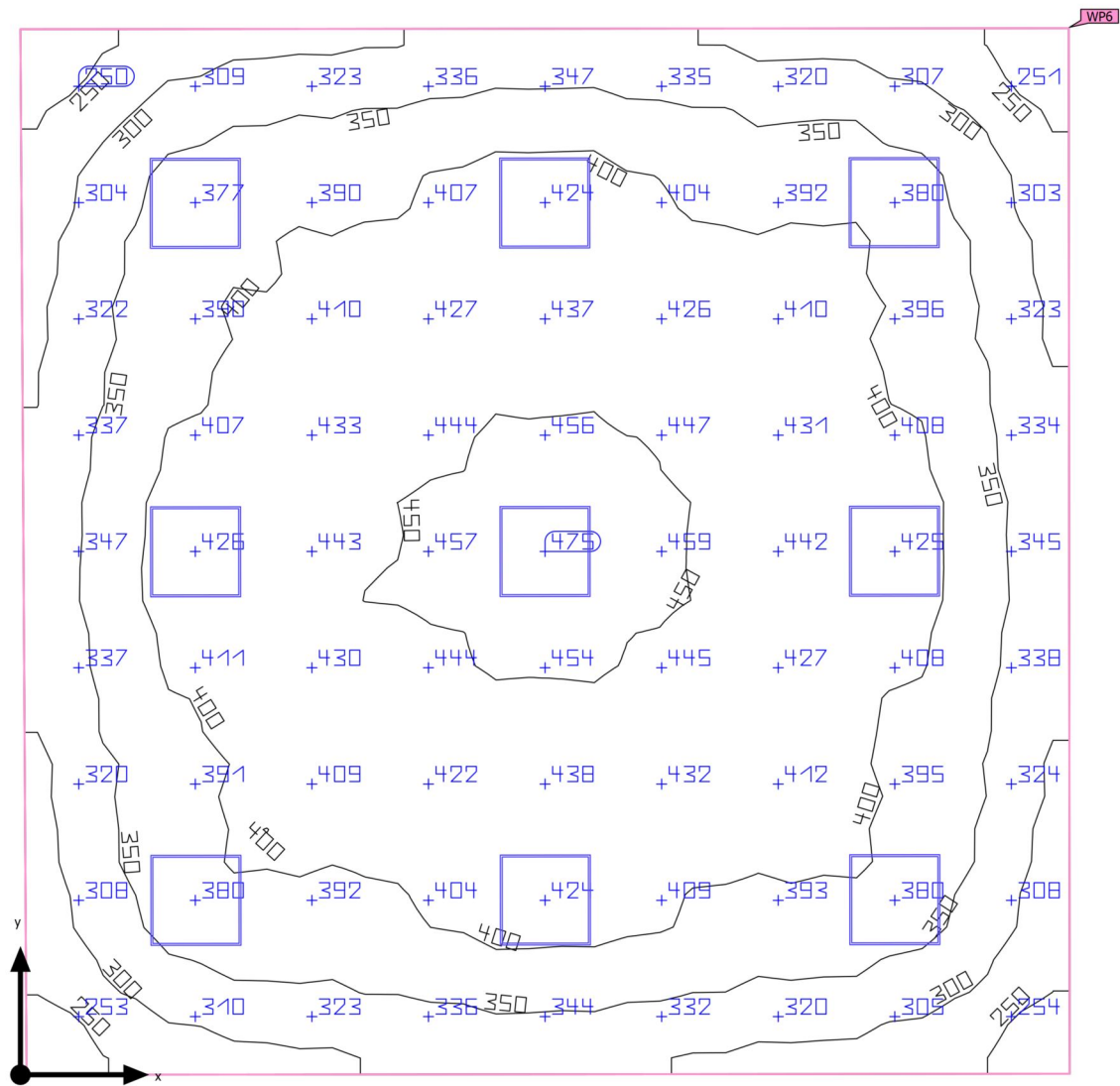


Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 4)	352 lx	197 lx	444 lx	0.56	0.44	WP4
Perpendicular illuminance (adaptive)	≥ 300 lx			≥ 0.55		
Height: 0.800 m, Wall zone: 0.000 m	✓			✓		

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhësa · Klase Mesimi 5 (Light scene 1)

Summary



Ground area	47.81 m²
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %
Light loss factor	0.80 (fixed)

Clearance height	3.000 m
Mounting height	3.000 m
Height Working plane	0.800 m
Wall zone Working plane	0.000 m

Building 1 · Përdhësa · Klase Mesimi 5 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	378 lx	≥ 300 lx	✓	WP6
	g_1	0.56	≥ 0.50	✓	WP6
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	19	≤ 19	✓	
Consumption values ⁽²⁾	Consumption	347 kWh/a	max. 1700 kWh/a	✓	
Room	Lighting power density	5.46 W/m ²	–		
		1.44 W/m ² /100 lx	–		

(1) Based on a rectangular space of 6.916 m x 6.931 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

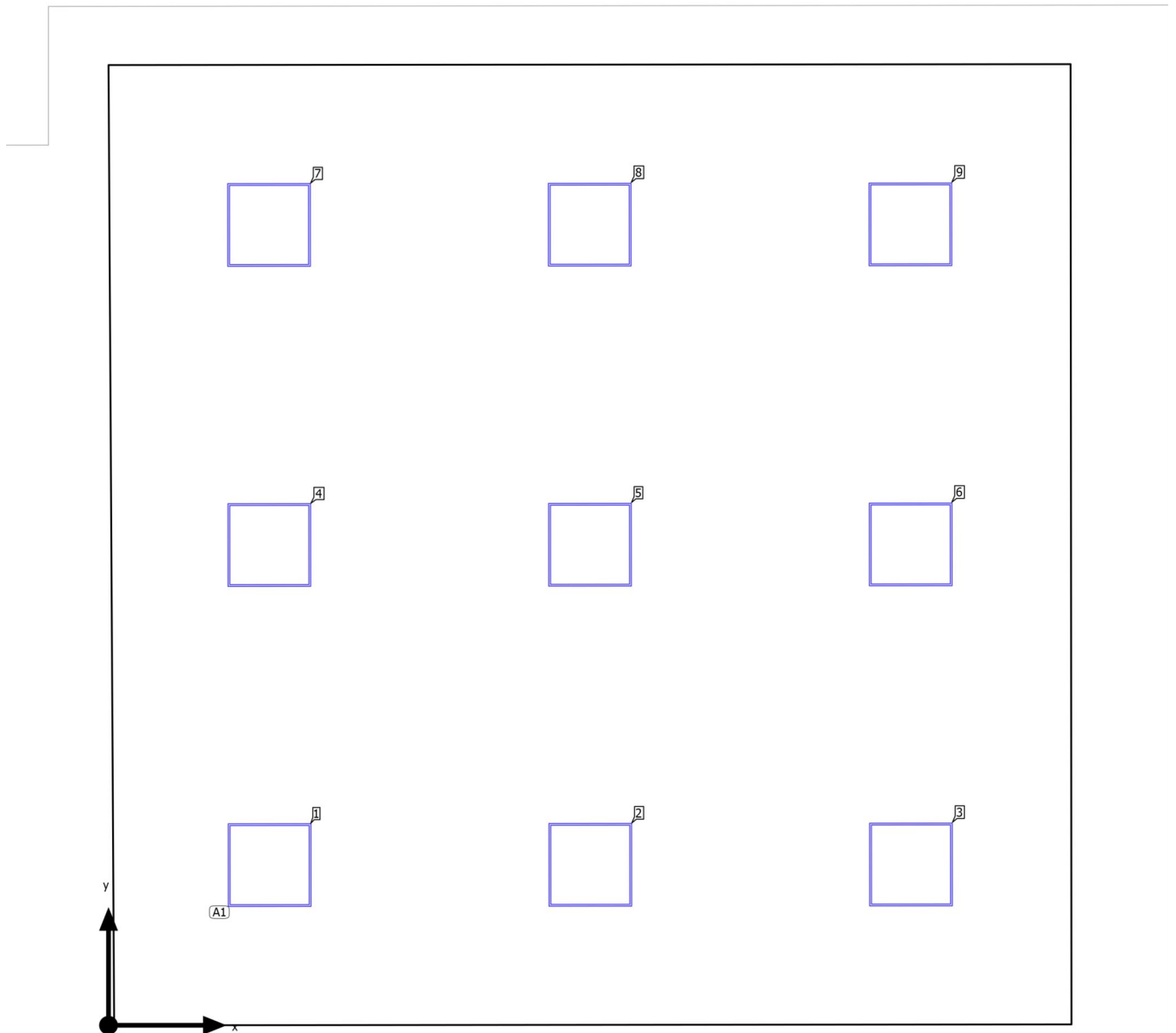
Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Luminaire list

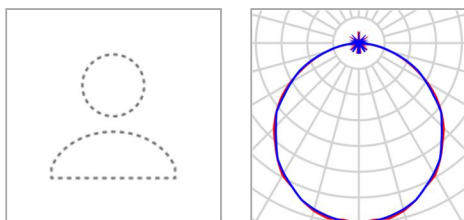
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	19	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 5

Luminaire layout plan



Building 1 · Përdhësa · Klase Mesimi 5

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	29.0 W
Article No.	0044623	$\Phi_{\text{Luminaire}}$	3200 lm
Article name	START Panel Eco 600x600 3200lm 830		
Fitting	1x LED		

9 x Not yet a DIALux member START Panel Eco 600x600 3200lm 830

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.160 m / 1.154 m / 3.000 m	1.160 m	1.154 m	3.000 m	1
X-direction	3 pcs., Center - center, 2.310 m	3.471 m	1.156 m	3.000 m	2
Y-direction	3 pcs., Center - center, 2.305 m	5.781 m	1.158 m	3.000 m	3
Arrangement	A1	1.158 m	3.459 m	3.000 m	4
		3.468 m	3.461 m	3.000 m	5
		5.779 m	3.463 m	3.000 m	6
		1.156 m	5.764 m	3.000 m	7
		3.466 m	5.766 m	3.000 m	8
		5.777 m	5.768 m	3.000 m	9

Building 1 · Përdhesa · Klase Mesimi 5

Luminaire list Φ_{total}

28800 lm

 P_{total}

261.0 W

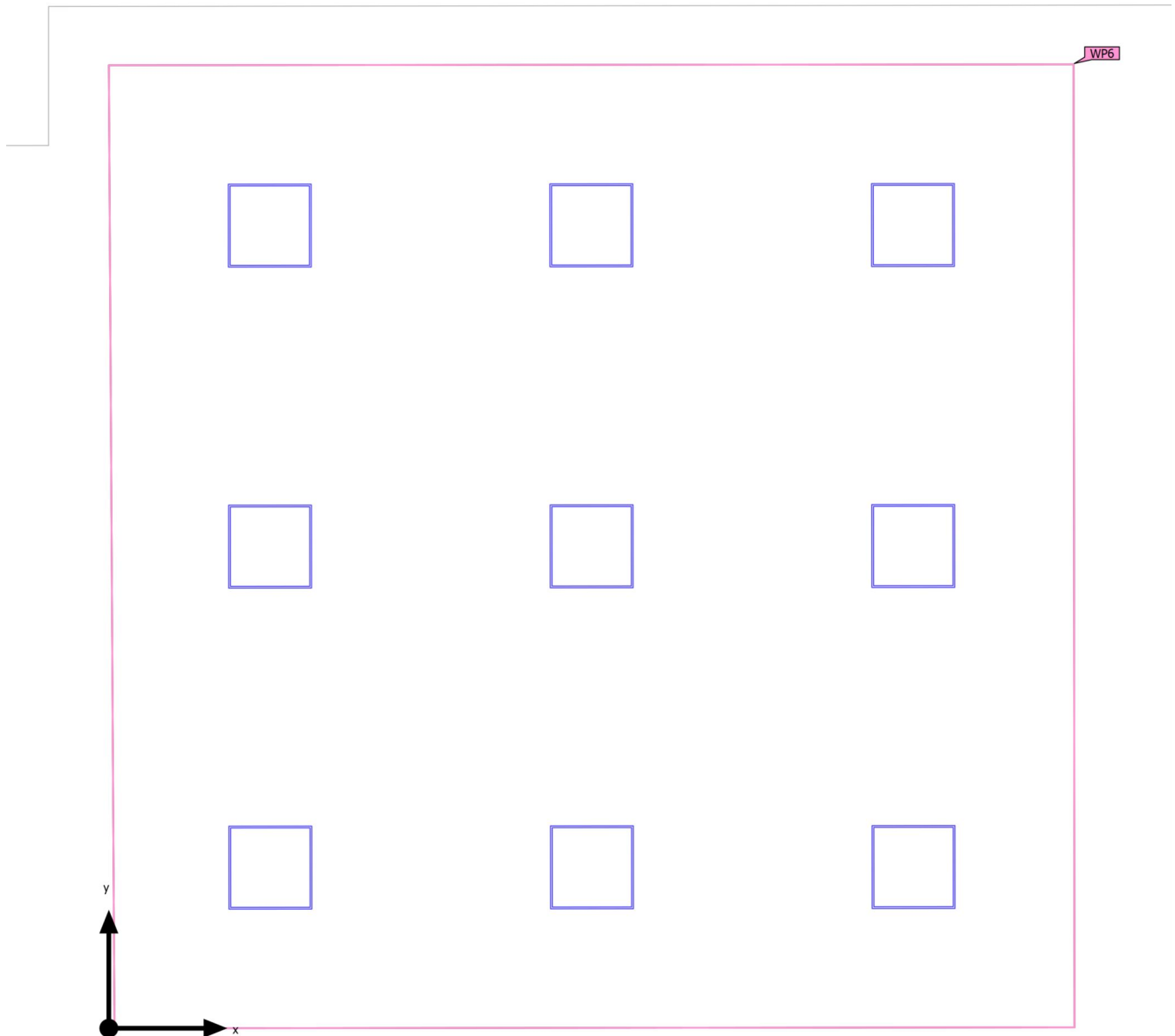
Luminous efficacy

110.3 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 5 (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Klase Mesimi 5 (Light scene 1)

Calculation objects

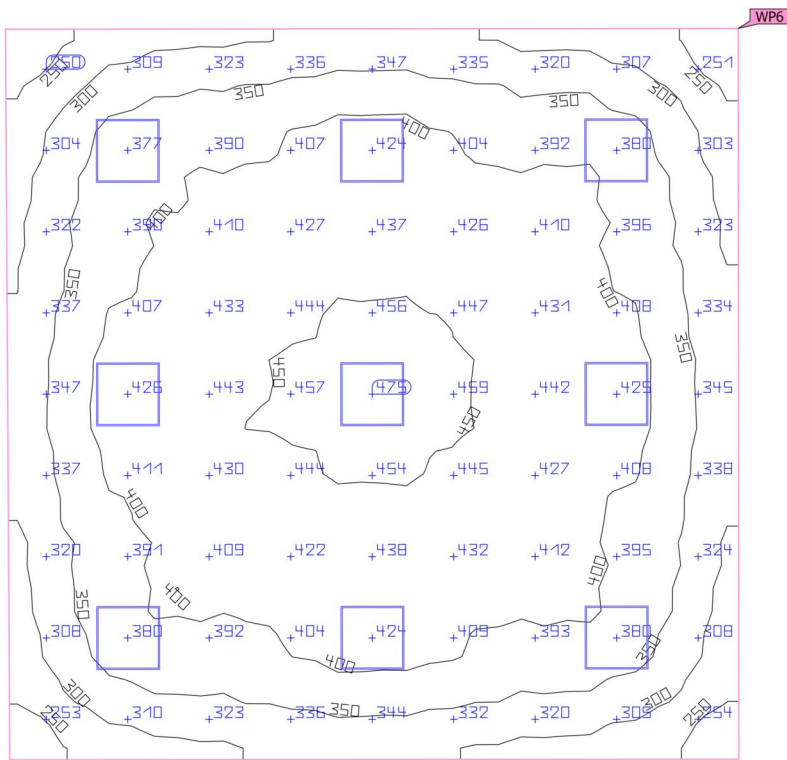
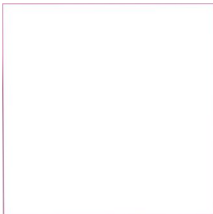
Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 5) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	378 lx (≥ 300 lx) ✓	213 lx	476 lx	0.56 (≥ 0.50) ✓	0.45	WP6

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhesa · Klase Mesimi 5 (Light scene 1)

Working plane (Klase Mesimi 5)

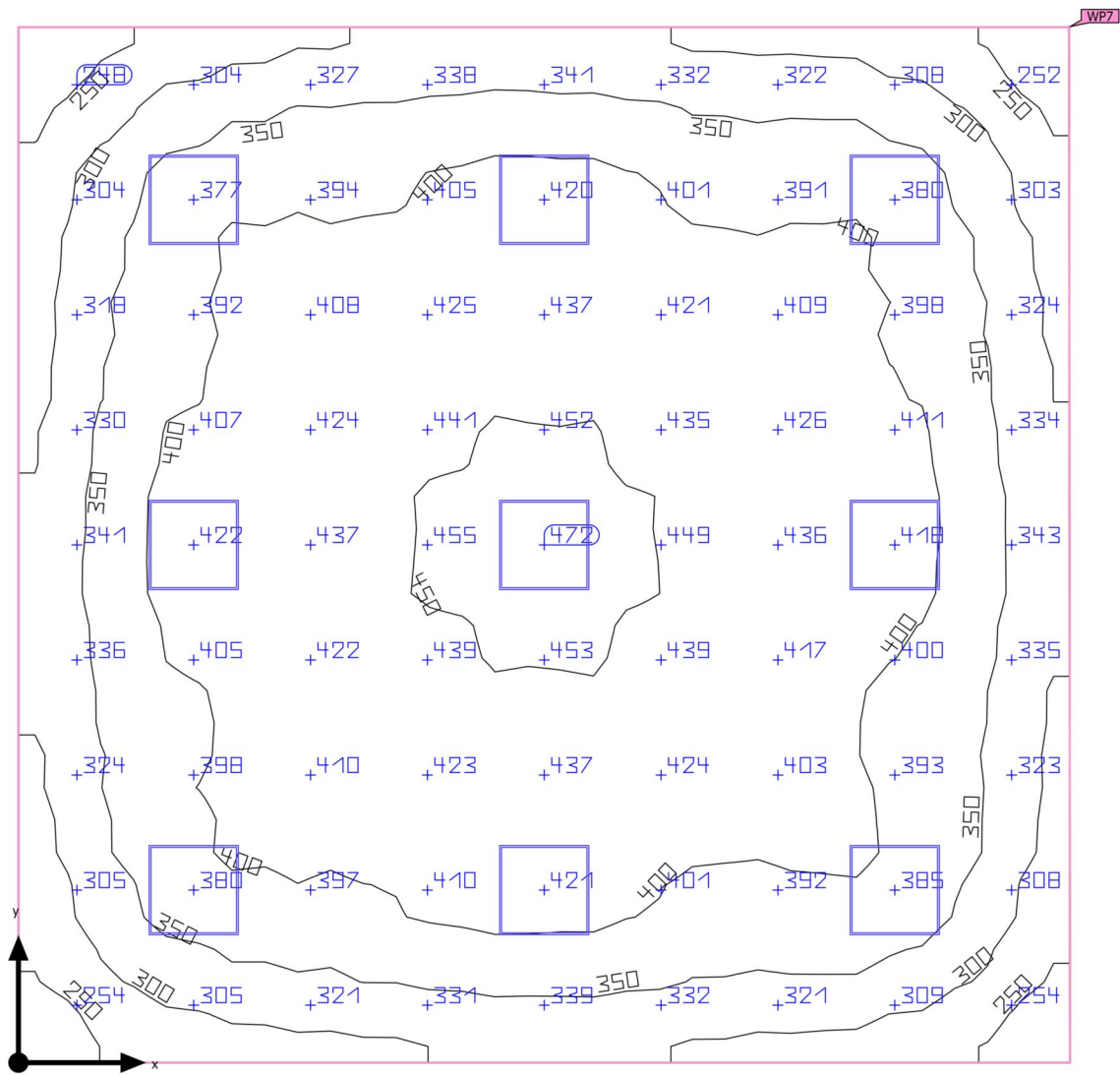


Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 5)	378 lx	213 lx	476 lx	0.56	0.45	WP6
Perpendicular illuminance (adaptive)	(≥ 300 lx)			(≥ 0.50)		
Height: 0.800 m, Wall zone: 0.000 m	✓			✓		

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhësa · Klase Mesimi 6 (Light scene 1)

Summary



Ground area	48.47 m ²	Clearance height	3.000 m
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %	Mounting height	3.000 m
Light loss factor	0.80 (fixed)	Height Working plane	0.800 m
		Wall zone Working plane	0.000 m

Building 1 · Përdhësa · Klase Mesimi 6 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	376 lx	≥ 300 lx	✓	WP7
	g_1	0.56	≥ 0.50	✓	WP7
Glare valuation ⁽¹⁾	$R_{UG, \max}$	20	≤ 19	✗	
Consumption values ⁽²⁾	Consumption	347 kWh/a	max. 1700 kWh/a	✓	
Room	Lighting power density	5.39 W/m ²	–		
		1.43 W/m ² /100 lx	–		

(1) Based on a rectangular space of 7.018 m x 6.909 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

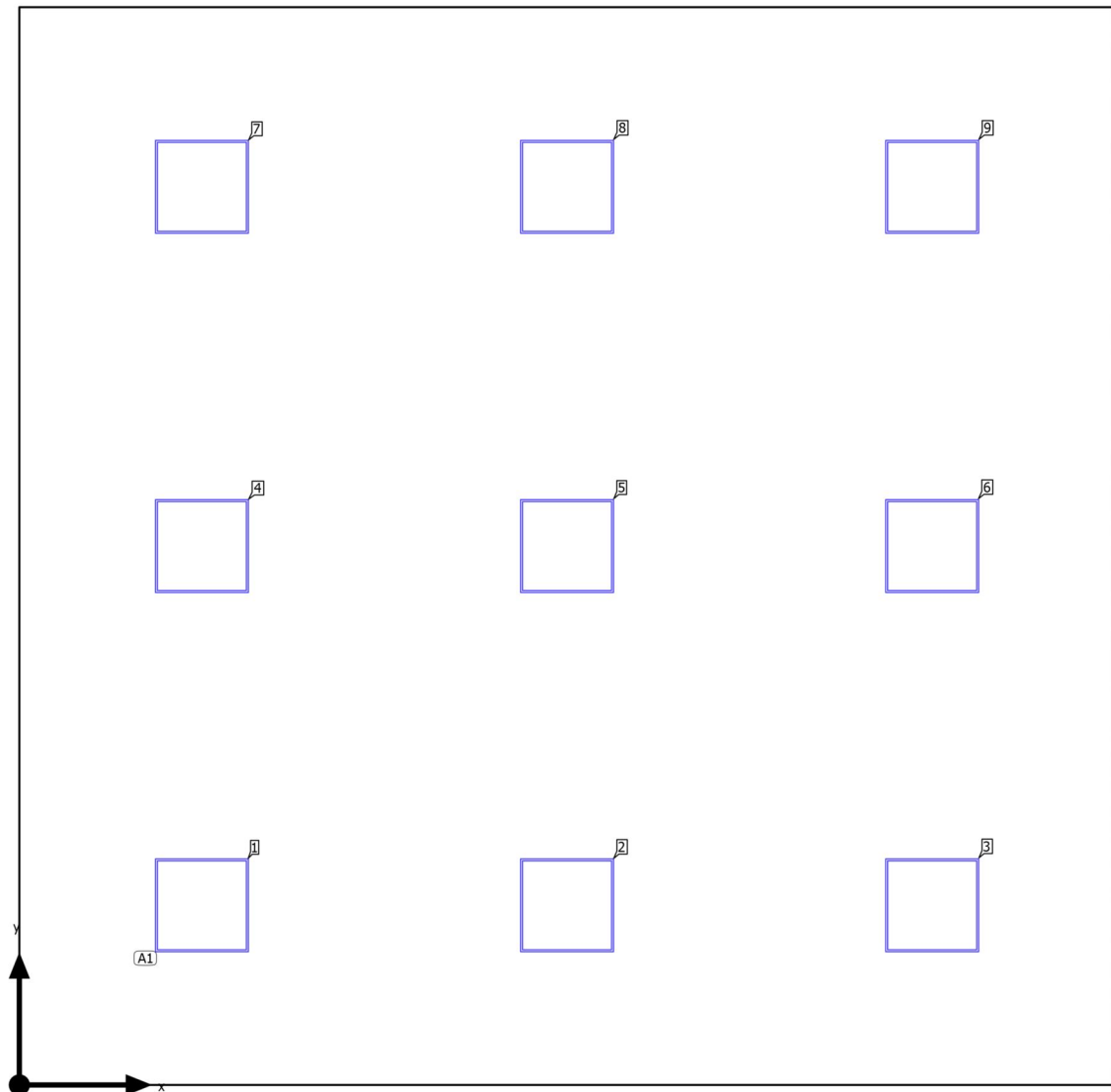
Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Luminaire list

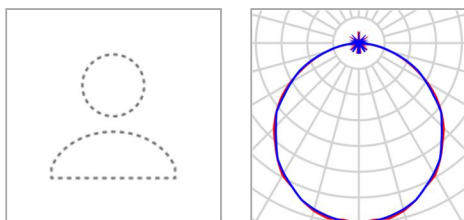
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	20	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 6

Luminaire layout plan



Building 1 · Përdhësa · Klase Mesimi 6

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	29.0 W
Article No.	0044623	$\Phi_{\text{Luminaire}}$	3200 lm
Article name	START Panel Eco 600x600 3200lm 830		
Fitting	1x LED		

9 x Not yet a DIALux member START Panel Eco 600x600 3200lm 830

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.170 m / 1.152 m / 3.000 m	1.170 m	1.152 m	3.000 m	1
X-direction	3 pcs., Center - center, 2.339 m	3.509 m	1.152 m	3.000 m	2
		5.848 m	1.152 m	3.000 m	3
Y-direction	3 pcs., Center - center, 2.303 m	1.170 m	3.455 m	3.000 m	4
		3.509 m	3.455 m	3.000 m	5
		5.848 m	3.455 m	3.000 m	6
		1.170 m	5.758 m	3.000 m	7
		3.509 m	5.758 m	3.000 m	8
		5.848 m	5.758 m	3.000 m	9

Building 1 · Përdhesa · Klase Mesimi 6

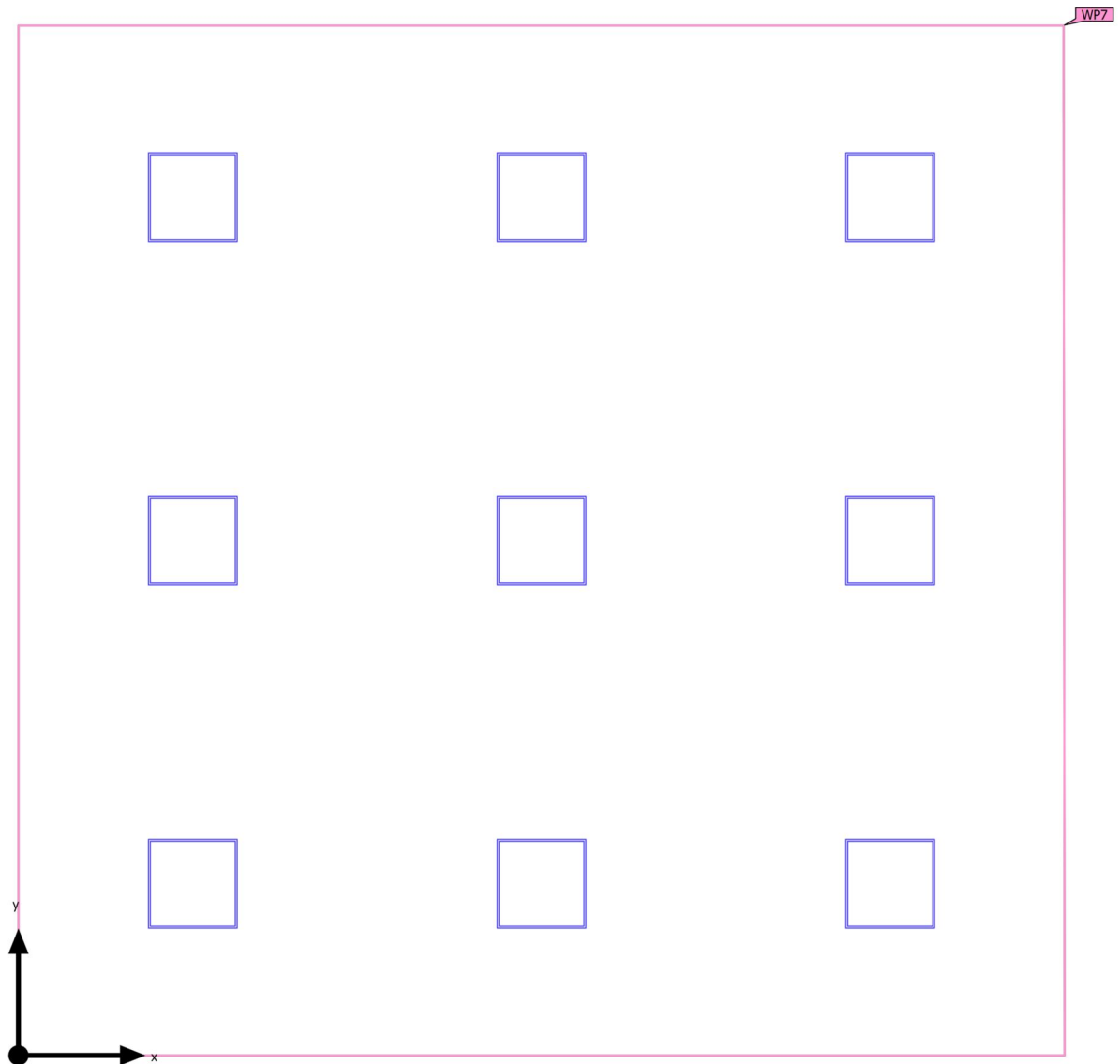
Luminaire list

Φ_{total} 28800 lm	P_{total} 261.0 W	Luminous efficacy 110.3 lm/W
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pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 6 (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Klase Mesimi 6 (Light scene 1)

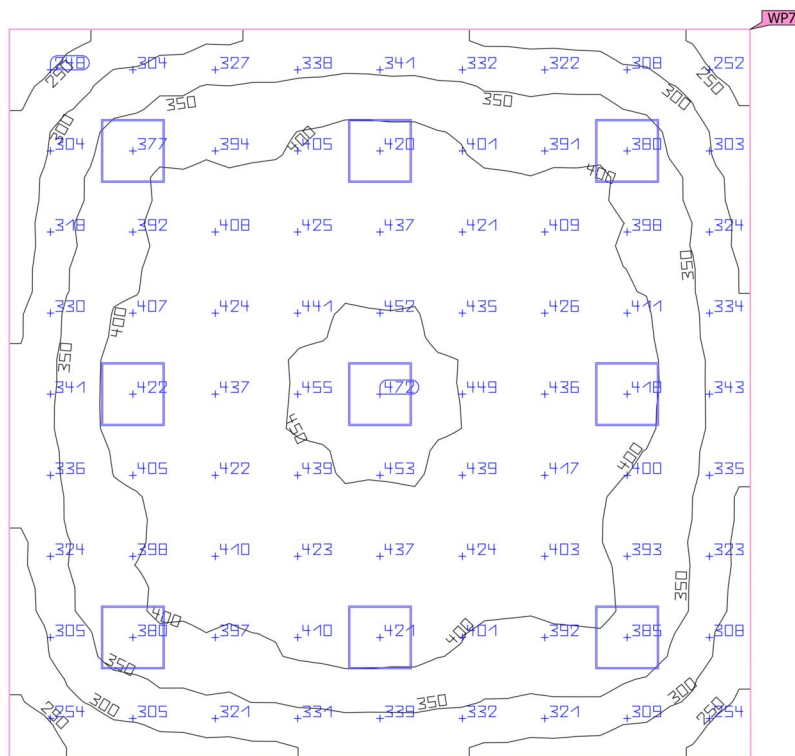
Calculation objects

Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 6) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	376 lx (≥ 300 lx) ✓	212 lx	472 lx	0.56 (≥ 0.50) ✓	0.45	WP7

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhësa · Klase Mesimi 6 (Light scene 1)

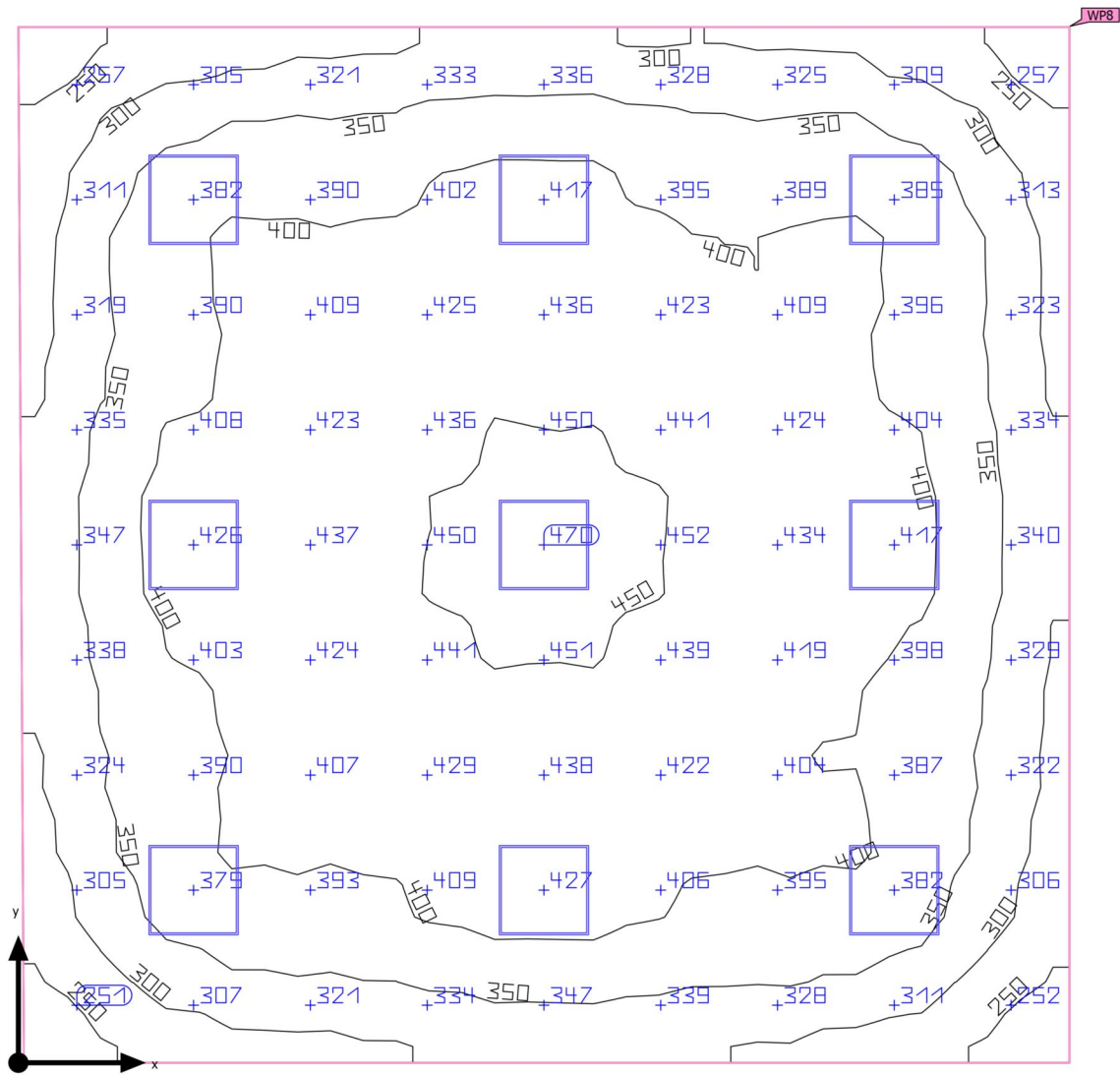
Working plane (Klase Mesimi 6)

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 6)	376 lx	212 lx	472 lx	0.56	0.45	WP7
Perpendicular illuminance (adaptive)	(≥ 300 lx)			(≥ 0.50)		
Height: 0.800 m, Wall zone: 0.000 m	✓			✓		

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhesa · Klase Mesimi 7 (Light scene 1)

Summary



Ground area	48.32 m²
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %
Light loss factor	0.80 (fixed)

Clearance height	3.000 m
Mounting height	3.000 m
Height Working plane	0.800 m
Wall zone Working plane	0.000 m

Building 1 · Përdhësa · Klase Mesimi 7 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	376 lx	≥ 300 lx	✓	WP8
	g_1	0.57	≥ 0.50	✓	WP8
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	20	≤ 19	✗	
Consumption values ⁽²⁾	Consumption	347 kWh/a	max. 1700 kWh/a	✓	
Room	Lighting power density	5.40 W/m ²	–		
		1.44 W/m ² /100 lx	–		

(1) Based on a rectangular space of 7.012 m x 6.909 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

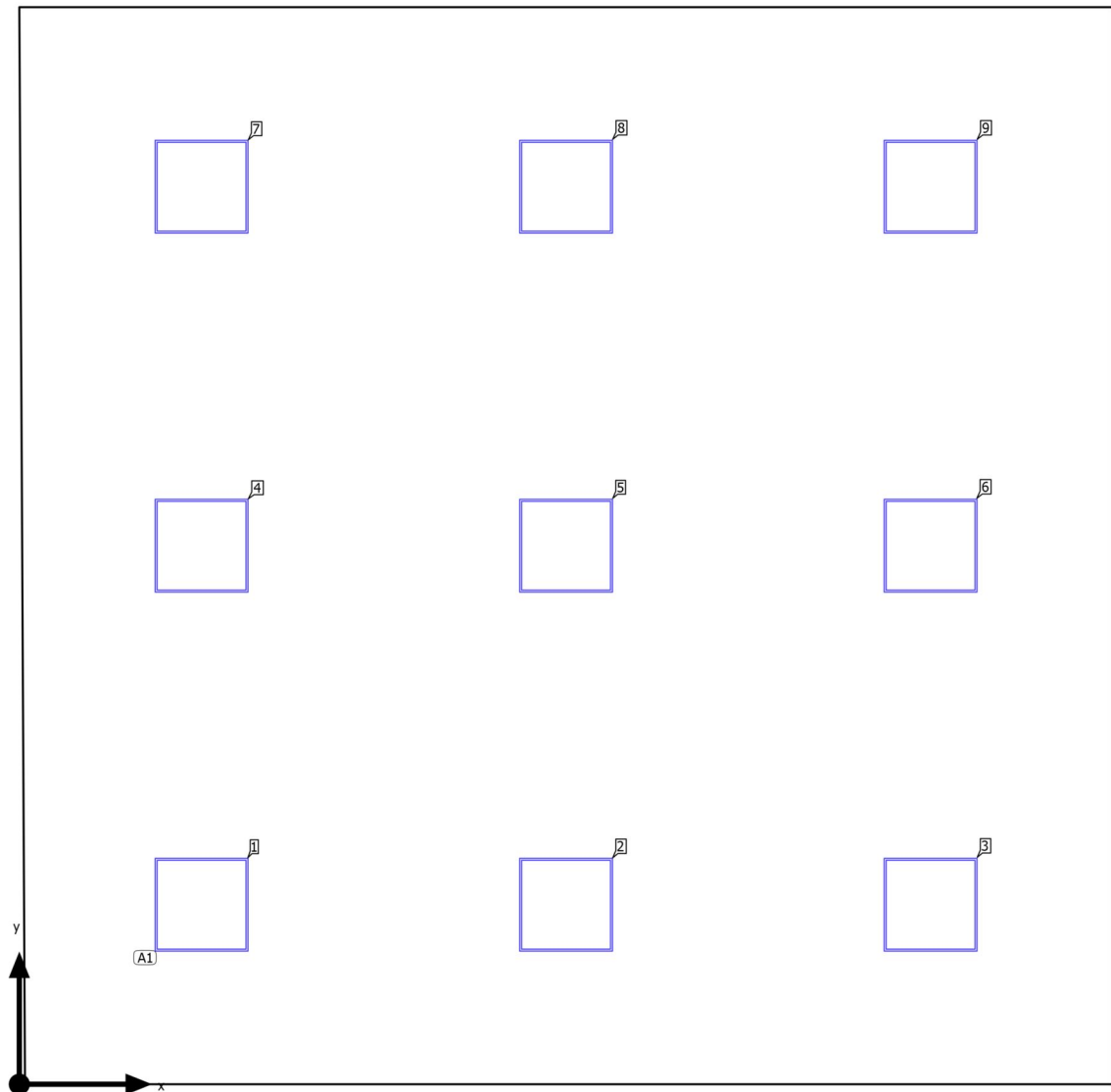
Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Luminaire list

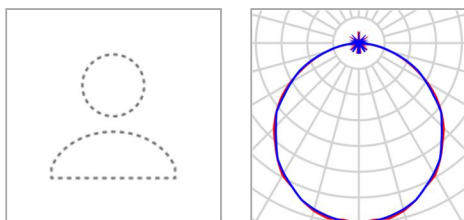
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	20	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 7

Luminaire layout plan



Building 1 · Përdhësa · Klase Mesimi 7

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	29.0 W
Article No.	0044623	$\Phi_{\text{Luminaire}}$	3200 lm
Article name	START Panel Eco 600x600 3200lm 830		
Fitting	1x LED		

9 x Not yet a DIALux member START Panel Eco 600x600 3200lm 830

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.169 m / 1.152 m / 3.000 m	1.169 m	1.152 m	3.000 m	1
X-direction	3 pcs., Center - center, 2.337 m	3.506 m	1.152 m	3.000 m	2
		5.843 m	1.152 m	3.000 m	3
Y-direction	3 pcs., Center - center, 2.303 m	1.169 m	3.455 m	3.000 m	4
		3.506 m	3.455 m	3.000 m	5
		5.843 m	3.455 m	3.000 m	6
		1.169 m	5.758 m	3.000 m	7
		3.506 m	5.758 m	3.000 m	8
		5.843 m	5.758 m	3.000 m	9

Building 1 · Përdhesa · Klase Mesimi 7

Luminaire list Φ_{total}

28800 lm

 P_{total}

261.0 W

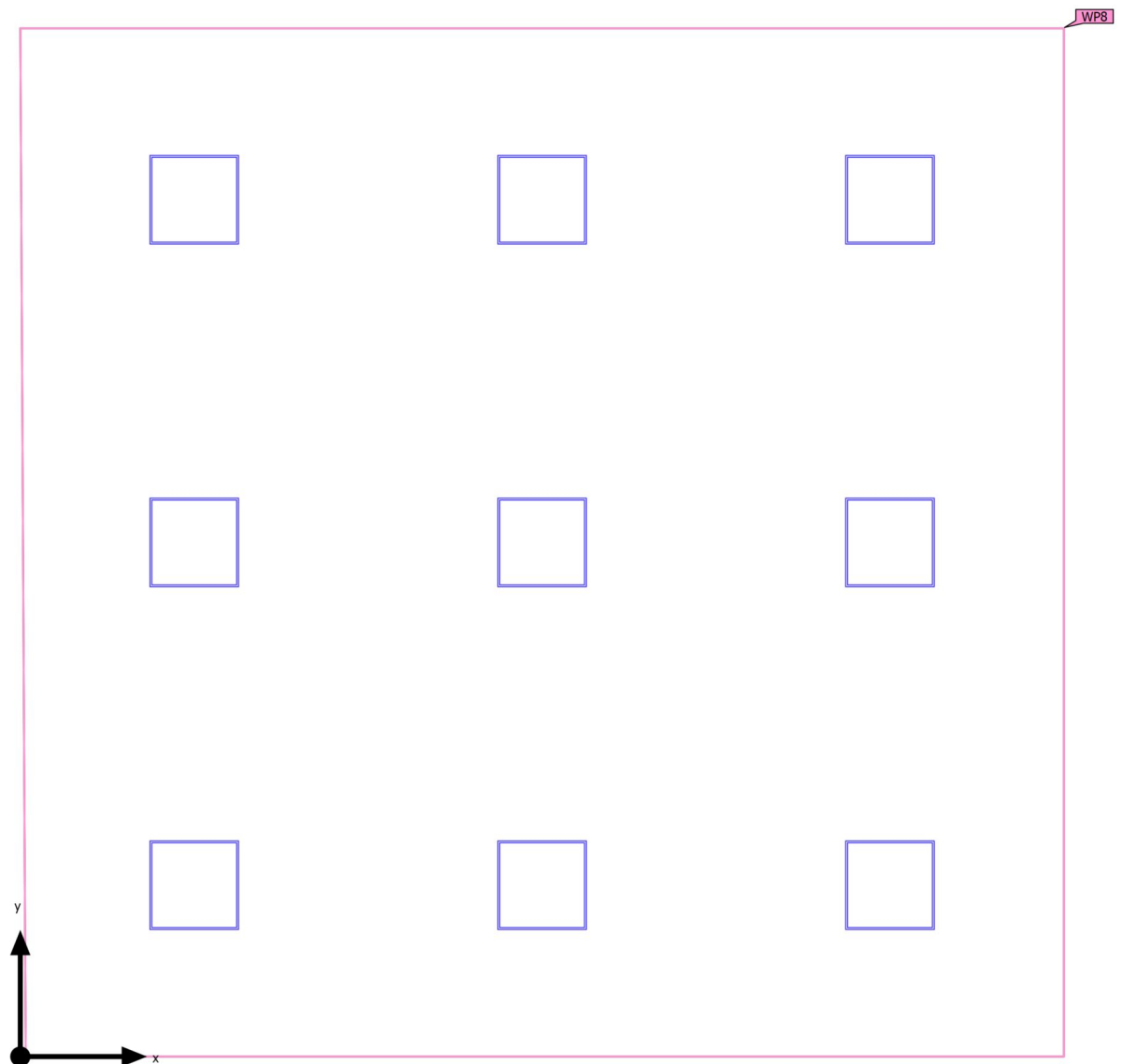
Luminous efficacy

110.3 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
9	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Klase Mesimi 7 (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Klase Mesimi 7 (Light scene 1)

Calculation objects

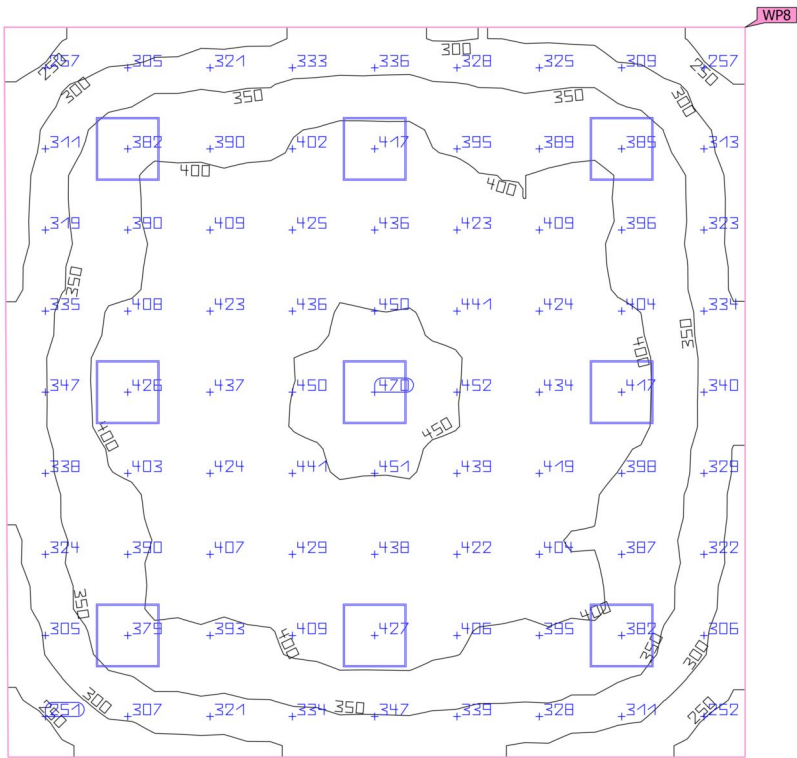
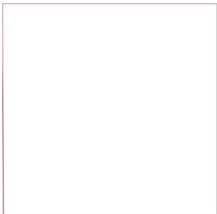
Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 7) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	376 lx (≥ 300 lx) ✓	214 lx	470 lx	0.57 (≥ 0.50) ✓	0.46	WP8

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhesa · Klase Mesimi 7 (Light scene 1)

Working plane (Klase Mesimi 7)

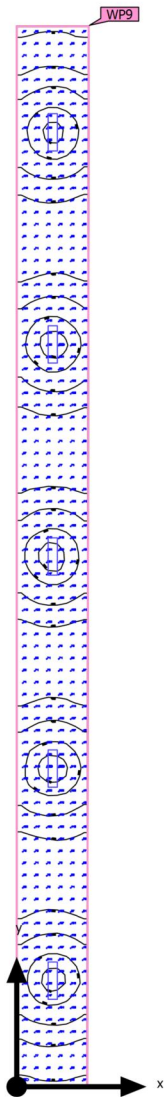


Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Klase Mesimi 7)	376 lx	214 lx	470 lx	0.57	0.46	WP8
Perpendicular illuminance (adaptive)	(≥ 300 lx)			(≥ 0.50)		
Height: 0.800 m, Wall zone: 0.000 m	✓			✓		

Utilization profile: Educational premises - Educational buildings (5.36.1 Classrooms, tutorial rooms)

Building 1 · Përdhesa · Koridori (Light scene 1)

Summary



Ground area	77.64 m ²
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %
Light loss factor	0.80 (fixed)

Clearance height	3.000 m
Mounting height	3.000 m
Height _{Working plane}	0.000 m
Wall zone _{Working plane}	0.000 m

Building 1 · Përdhësa · Koridori (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	133 lx	$\geq 100 \text{ lx}$	✓	WP9
	g_1	0.34	≥ 0.30	✓	WP9
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	18	≤ 22	✓	
Consumption values ⁽²⁾	Consumption	199 kWh/a	max. 2750 kWh/a	✓	
Room	Lighting power density	2.32 W/m ²	–		
		1.75 W/m ² /100 lx	–		

(1) Based on a rectangular space of 2.307 m x 34.004 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

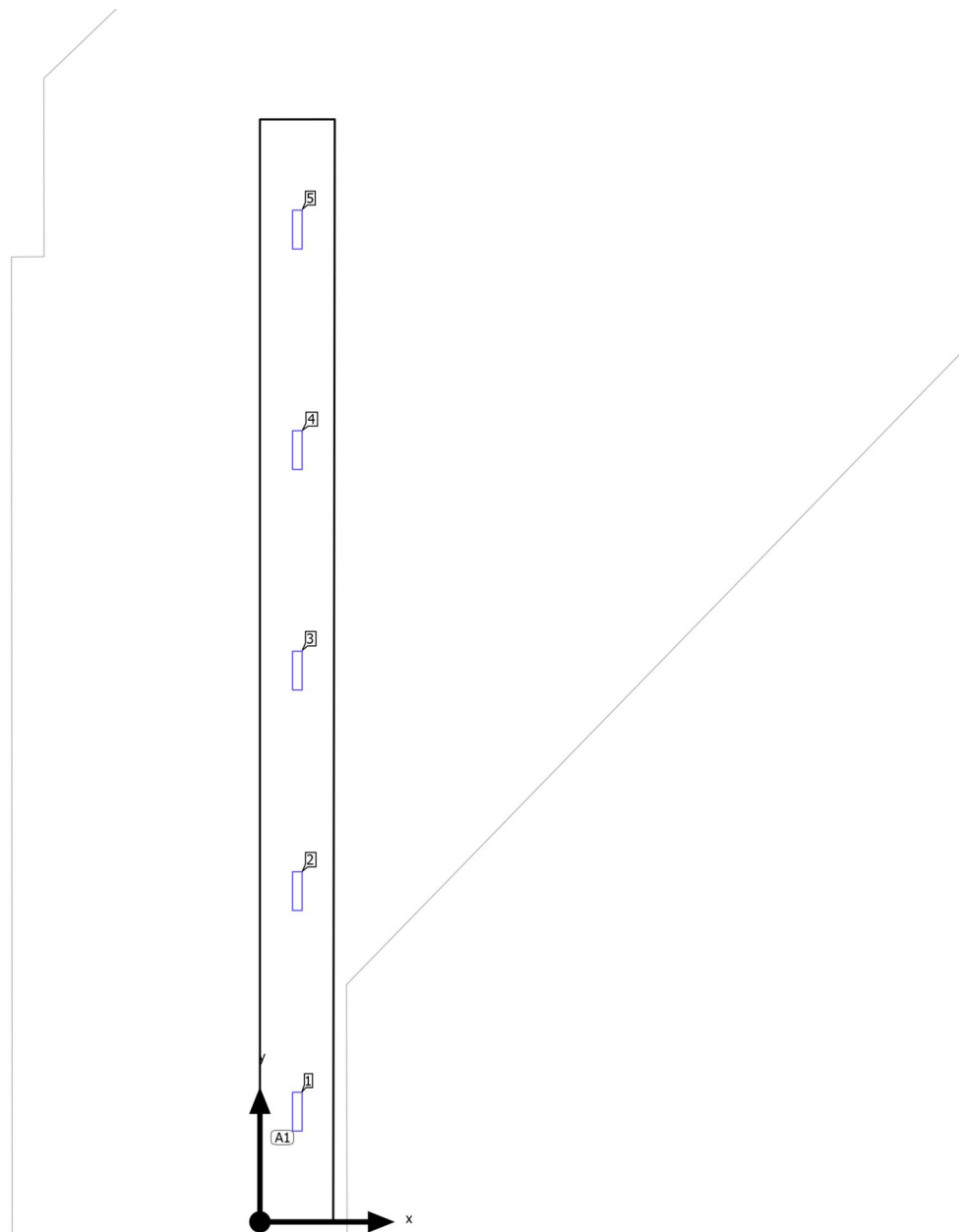
Utilization profile: Health care premises - Rooms for general use (5.37.2 Corridors: During the day)

Luminaire list

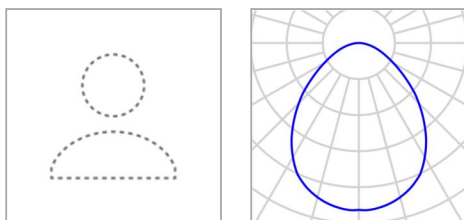
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
5	Not yet a DIALux member	0042695 START PANEL IP65 1200x300 4400lm 840 WHITE	4000K Ra80	18	36.1 W	4321 lm	119.7 lm/W

Building 1 · Përdhesa · Koridori

Luminaire layout plan



Building 1 · Përdhesa · Koridori

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	36.1 W
Article No.	0042695 START PANEL IP65 1200x300 4400lm 840 WHITE	$\Phi_{\text{Luminaire}}$	4321 lm
Article name	4000K Ra80		
Fitting	1x		

5 x Not yet a DIALux member 4000K Ra80

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	1.154 m / 3.400 m / 3.000 m	1.154 m	3.400 m	3.000 m	1
X-direction	1 pcs., Center - center, 2.307 m	1.154 m	10.201 m	3.000 m	2
Y-direction	5 pcs., Center - center, 6.801 m	1.154 m	17.002 m	3.000 m	3
		1.154 m	23.803 m	3.000 m	4
Arrangement	A1	1.154 m	30.604 m	3.000 m	5

Building 1 · Përdhesa · Koridori

Luminaire list Φ_{total}

21605 lm

 P_{total}

180.5 W

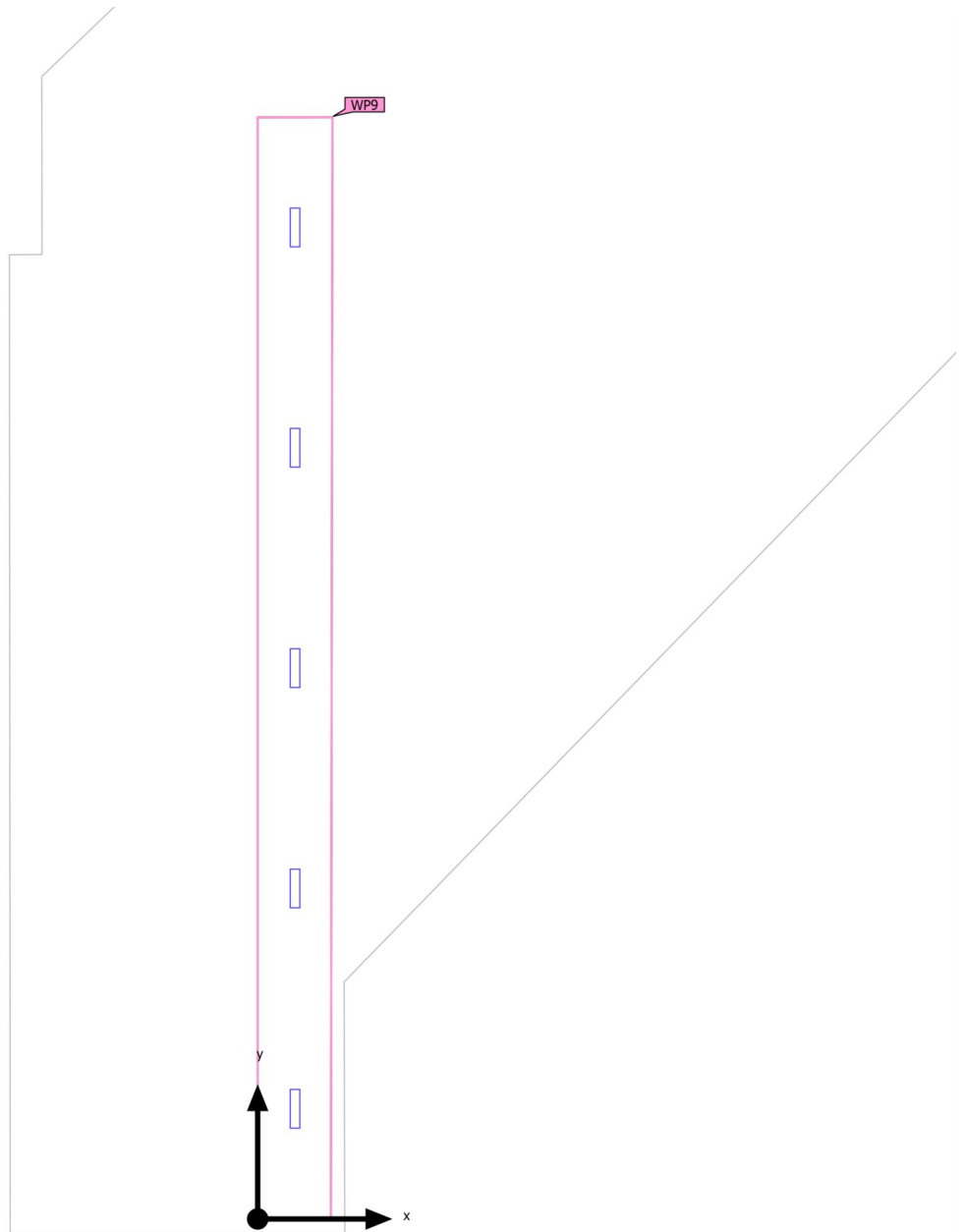
Luminous efficacy

119.7 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
5	Not yet a DIALux member	0042695	4000K Ra80 START PANEL IP65 1200x300 4400lm 840 WHITE	36.1 W	4321 lm	119.7 lm/W

Building 1 · Përdhesa · Koridori (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Koridori (Light scene 1)

Calculation objects

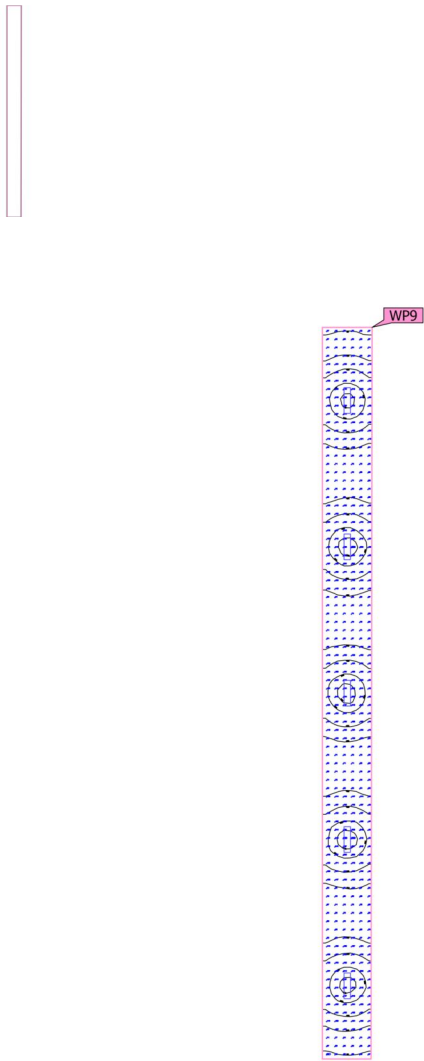
Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Koridori) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	133 lx (≥ 100 lx) ✓	44.9 lx	234 lx	0.34 (≥ 0.30) ✓	0.19	WP9

Utilization profile: Health care premises - Rooms for general use (5.37.2 Corridors: During the day)

Building 1 · Përdhesa · Koridori (Light scene 1)

Working plane (Koridori)

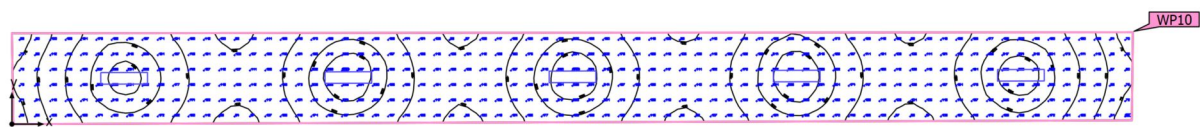


Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Koridori) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	133 lx (≥ 100 lx) ✓	44.9 lx	234 lx	0.34 (≥ 0.30) ✓	0.19	WP9

Utilization profile: Health care premises - Rooms for general use (5.37.2 Corridors: During the day)

Building 1 · Përdhesa · Koridori (Light scene 1)

Summary



Ground area	65.69 m²
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %
Light loss factor	0.80 (fixed)

Clearance height	3.000 m
Mounting height	3.000 m
Height _{Working plane}	0.000 m
Wall zone _{Working plane}	0.000 m

Building 1 · Përdhësa · Koridori (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	156 lx	$\geq 100 \text{ lx}$	✓	WP10
	g_1	0.41	≥ 0.40	✓	WP10
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	18	≤ 22	✓	
Consumption values ⁽²⁾	Consumption	199 kWh/a	max. 2350 kWh/a	✓	
Room	Lighting power density	2.75 W/m ²	–		
		1.76 W/m ² /100 lx	–		

(1) Based on a rectangular space of 28.685 m x 2.328 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

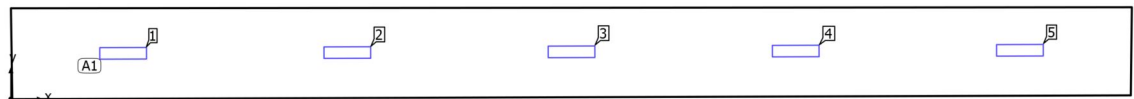
Utilization profile: Health care premises - Rooms for general use (5.37.2 Corridors: During the day)

Luminaire list

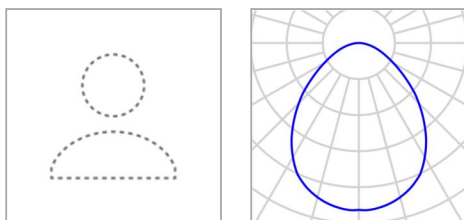
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
5	Not yet a DIALux member	0042695 START PANEL IP65 1200x300 4400lm 840 WHITE	4000K Ra80	18	36.1 W	4321 lm	119.7 lm/W

Building 1 · Përdhesa · Koridori

Luminaire layout plan



Building 1 · Përdhësa · Koridori

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	36.1 W
Article No.	0042695 START PANEL IP65 1200x300 4400lm 840 WHITE	$\Phi_{\text{Luminaire}}$	4321 lm
Article name	4000K Ra80		
Fitting	1x		

5 x Not yet a DIALux member 4000K Ra80

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	2.872 m / 1.174 m / 3.000 m	2.872 m	1.174 m	3.000 m	1
X-direction	5 pcs., Center - center, 5.737 m	8.610 m	1.193 m	3.000 m	2
Y-direction	1 pcs., Center - center, 2.328 m	14.347 m	1.212 m	3.000 m	3
		20.084 m	1.232 m	3.000 m	4
Arrangement	A1	25.821 m	1.251 m	3.000 m	5

Building 1 · Përdhesa · Koridori

Luminaire list Φ_{total}

21605 lm

 P_{total}

180.5 W

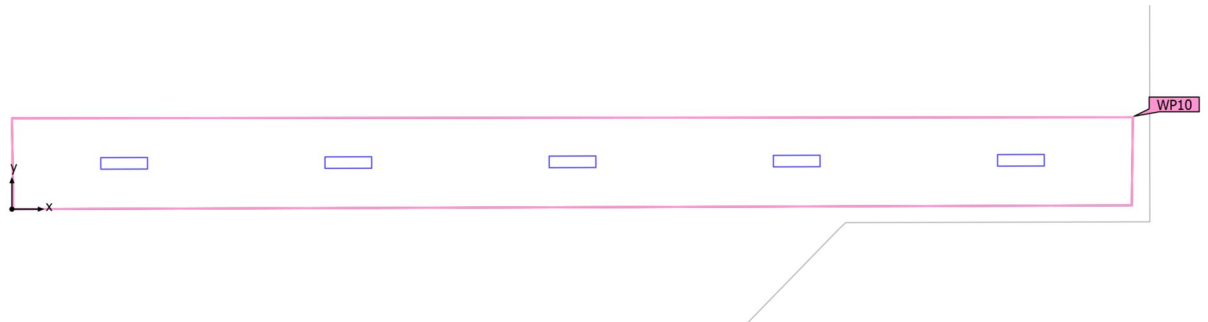
Luminous efficacy

119.7 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
5	Not yet a DIALux member	0042695	4000K Ra80 START PANEL IP65 1200x300 4400lm 840 WHITE	36.1 W	4321 lm	119.7 lm/W

Building 1 · Përdhesa · Koridori (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Koridori (Light scene 1)

Calculation objects

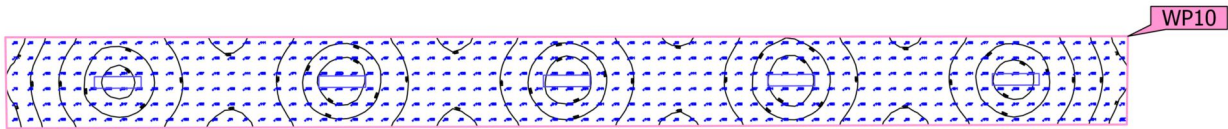
Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Koridori) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	156 lx (≥ 100 lx) ✓	63.3 lx	240 lx	0.41 (≥ 0.40) ✓	0.26	WP10

Utilization profile: Health care premises - Rooms for general use (5.37.2 Corridors: During the day)

Building 1 · Përdhesa · Koridori (Light scene 1)

Working plane (Koridori)

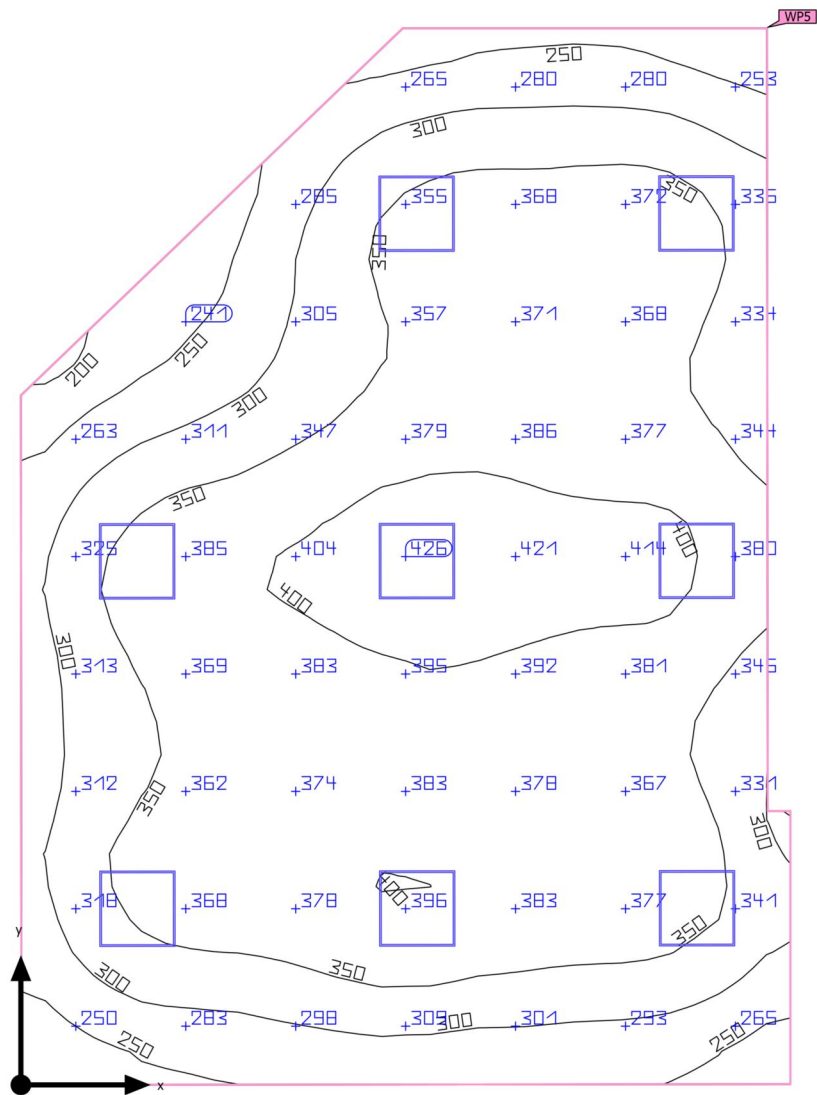


Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Koridori) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	156 lx (≥ 100 lx) ✓	63.3 lx	240 lx	0.41 (≥ 0.40) ✓	0.26	WP10

Utilization profile: Health care premises - Rooms for general use (5.37.2 Corridors: During the day)

Building 1 · Përdhesa · Zyre e Arsimitareve (Light scene 1)

Summary



Ground area	45.37 m²
Reflection factors	Ceiling: 70.0 %, Walls: 50.0 %, Floor: 20.0 %
Light loss factor	0.80 (fixed)

Clearance height	3.000 m
Mounting height	3.000 m
Height _{Working plane}	0.800 m
Wall zone _{Working plane}	0.000 m

Building 1 · Përdhësa · Zyre e Arsimtareve (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	342 lx	≥ 300 lx	✓	WP5
	g_1	0.56	≥ 0.50	✓	WP5
Glare valuation ⁽¹⁾	$R_{UG, \text{max}}$	20	≤ 19	✗	
Consumption values ⁽²⁾	Consumption	447 kWh/a	max. 1600 kWh/a	✓	
Room	Lighting power density	5.11 W/m ²	–		
		1.49 W/m ² /100 lx	–		

(1) Based on a rectangular space of 6.087 m x 8.359 m and SHR of 0.25.

(2) Calculated using DIN:18599-4.

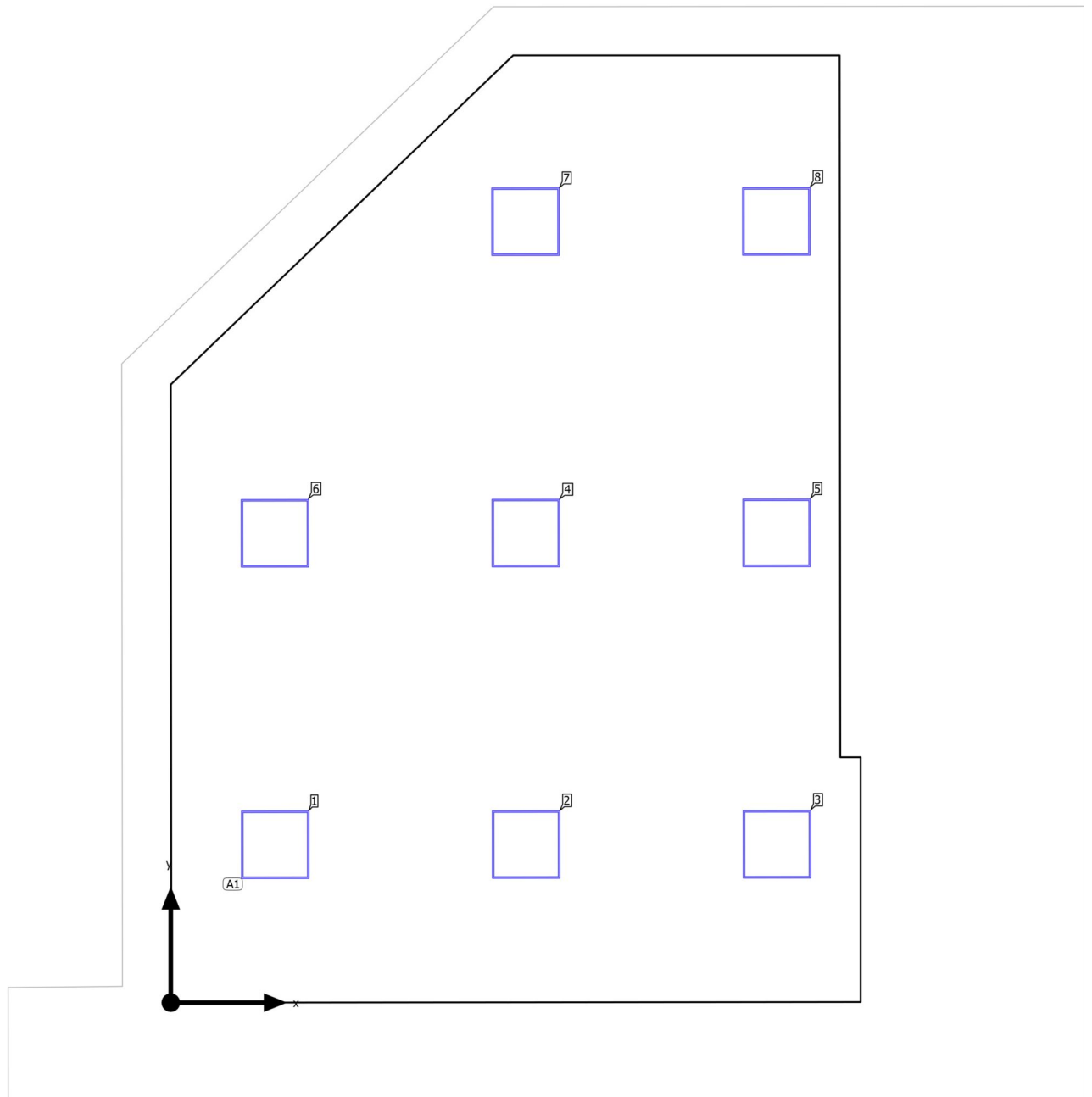
Utilization profile: Educational premises - Educational buildings (5.36.20 Teacher's Staff Common Room)

Luminaire list

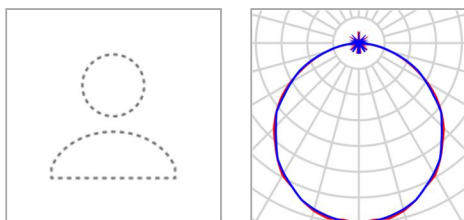
pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
8	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	20	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhesa · Zyre e Arsimtareve

Luminaire layout plan



Building 1 · Përdhësa · Zyre e Arsimitareve

Luminaire layout plan

Manufacturer	Not yet a DIALux member	P	29.0 W
Article No.	0044623	$\Phi_{\text{Luminaire}}$	3200 lm
Article name	START Panel Eco 600x600 3200lm 830		
Fitting	1x LED		

8 x Not yet a DIALux member START Panel Eco 600x600 3200lm 830

Type	Field Arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	0.922 m / 1.394 m / 3.000 m	0.922 m	1.394 m	3.000 m	1
X-direction	3 pcs., Center - center, Distances not equal	3.137 m	1.396 m	3.000 m	2
		5.351 m	1.398 m	3.000 m	3
Y-direction	3 pcs., Center - center, Distances not equal	3.134 m	4.145 m	3.000 m	4
		5.349 m	4.147 m	3.000 m	5
Arrangement	A1	0.920 m	4.143 m	3.000 m	6
		3.132 m	6.894 m	3.000 m	7
		5.346 m	6.896 m	3.000 m	8

Building 1 · Përdhësa · Zyre e Arsimitareve

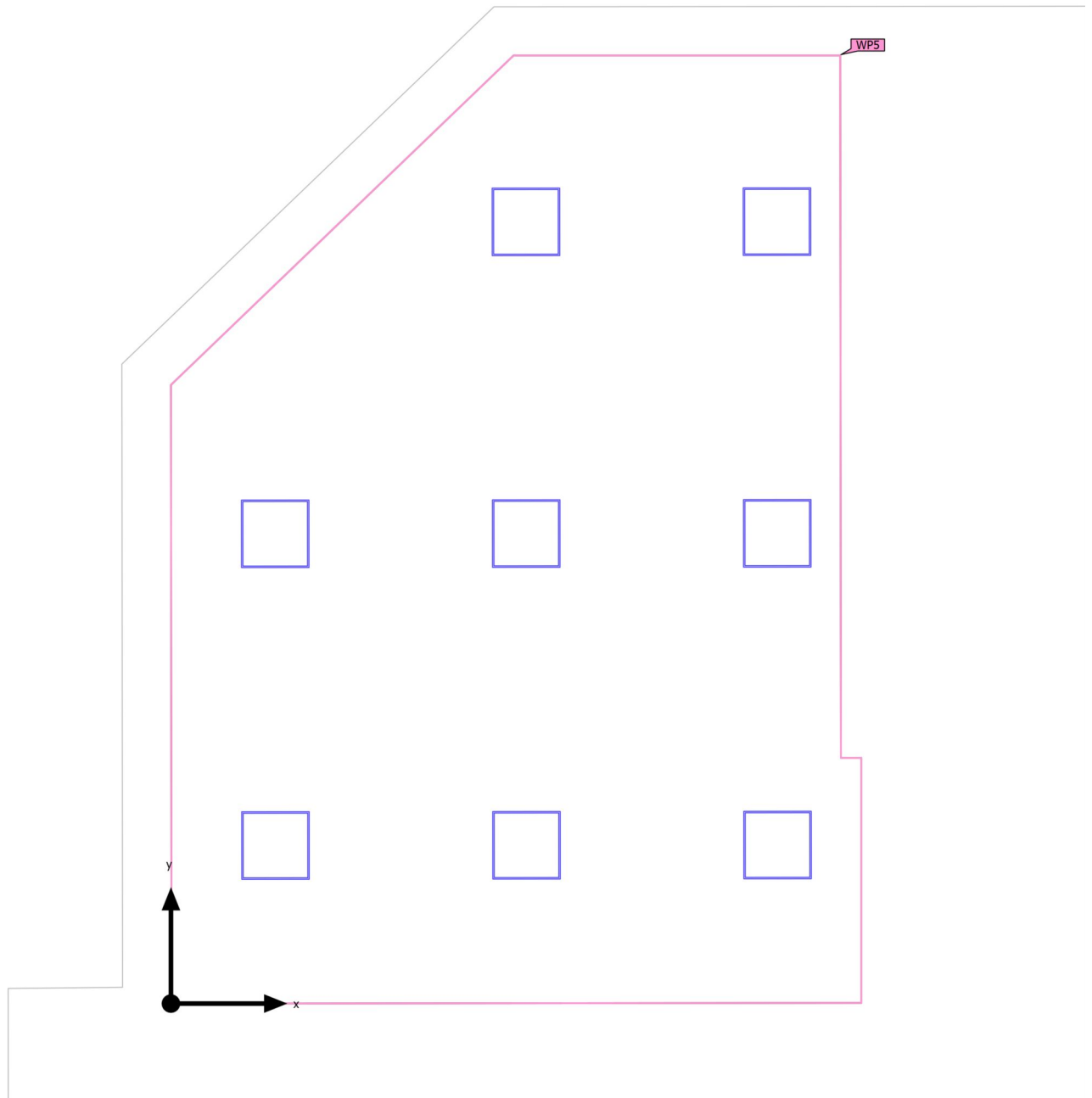
Luminaire list

Φ_{total} 25600 lm	P_{total} 232.0 W	Luminous efficacy 110.3 lm/W
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pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
8	Not yet a DIALux member	0044623	START Panel Eco 600x600 3200lm 830	29.0 W	3200 lm	110.3 lm/W

Building 1 · Përdhësa · Zyre e Arsimitareve (Light scene 1)

Calculation objects



Building 1 · Përdhësa · Zyre e Arsimitareve (Light scene 1)

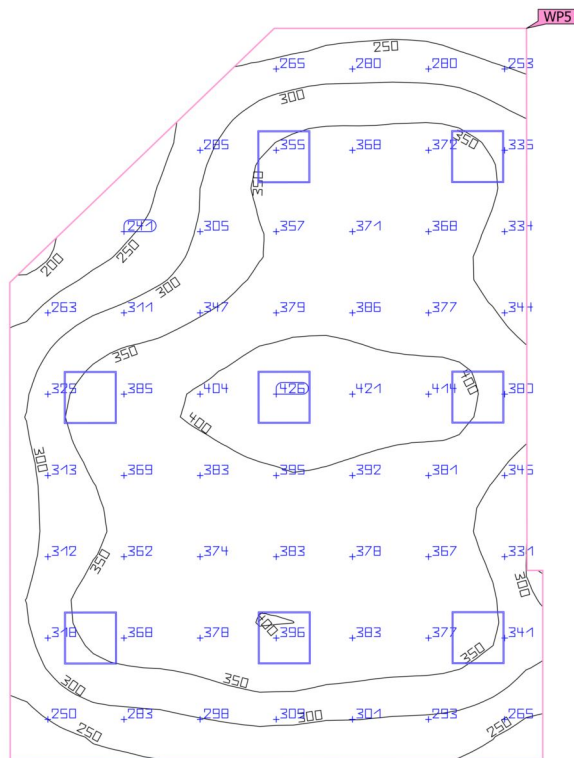
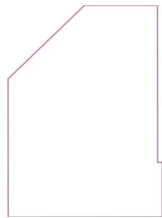
Calculation objects

Working planes

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Zyre e Arsimitareve) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	342 lx (≥ 300 lx) ✓	190 lx	428 lx	0.56 (≥ 0.50) ✓	0.44	WP5

Utilization profile: Educational premises - Educational buildings (5.36.20 Teacher's Staff Common Room)

Building 1 · Përdhësa · Zyre e Arsimitareve (Light scene 1)

Working plane (Zyre e Arsimitareve)

Properties	\bar{E} (Target)	E_{min}	E_{max}	g_1 (Target)	g_2	Index
Working plane (Zyre e Arsimitareve)	342 lx	190 lx	428 lx	0.56	0.44	WP5
Perpendicular illuminance (adaptive)	(≥ 300 lx)			(≥ 0.50)		
Height: 0.800 m, Wall zone: 0.000 m	✓			✓		

Utilization profile: Educational premises - Educational buildings (5.36.20 Teacher's Staff Common Room)

Glossary

A

A

Formula symbol for a surface in the geometry

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.

C

CCT

(correlated color temperature)

Body temperature of a thermal radiator that serves to describe its light color. Unit: Kelvin [K]. The lesser the numerical value the redder; the greater the numerical value the bluer the light color. The color temperature of gas-discharge lamps and semi-conductors are termed "correlated color temperature" in contrast to the color temperature of thermal radiators.

Allocation of the light colors to the color temperature ranges acc. to EN 12464-1:

Light color - color temperature [K]

warm white (ww) < 3,300 K

neutral white (nw) ≥ 3,300 – 5,300 K

daylight white (dw) > 5,300 K

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).

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.

CRI

(color rendering index)

Designation for the color rendering index of a luminaire or a lamp acc. to DIN 6169: 1976 or CIE 13.3: 1995.

The general color 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 colors (see DIN 6169 or CIE 1974) to a reference light source.

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 (daylight factor) Unit: %
Daylight quotient effective area	A calculation surface within which the daylight quotient is calculated.

E

Energy evaluation	<p>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.</p> <p>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.</p> <p>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.</p>
Eta (η)	<p>(light output ratio)</p> <p>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.</p> <p>Unit: %</p>

Glossary

G

g_1	Often also U_o (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	(lighting energy numeric indicator) Lighting energy numeric indicator acc. to EN 15193 Unit: kWh/m ² year
Light loss factor	See MF

Glossary

LLMF	(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	(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	(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 meter Abbreviation: cd/m^2 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

MF

(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

(power)

Electric power consumption

Unit: watt

Abbreviation: W

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 color of the surface.

RMF

(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.

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.
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W

Wall zone	Circumferential area between working plane and walls that 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.