

Materská škola Blatnica - prístavba

SIMULÁCIA A VÝPOČET UMELEHO OSVETLENIA PRIESTOROV

Vlastnosti stavebných konštrukcií:

∴

Stavebné materiály: Stupeň odrazu 70/50/20

∴ Predkladajú sa biele steny a stropy

Koeficient údržby: 0,8 (LED SVIETIDLÁ V NIE PRAŠNOM PROSTREDÍ)

Date: 02.03.2021

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Photometric Results

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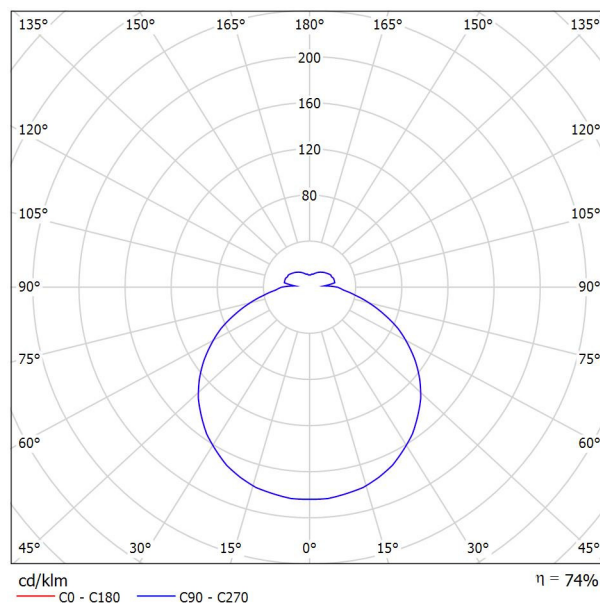


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OSMONT DELIA_1 LED-1L14B07KN62_PC22 4000 DELIA 1, 1 x LED module L14B07, 20W, d-300mm, shade PC / Luminaire Data Sheet

See our luminaire catalog for an image of the luminaire.

Luminous emittance 1:



Luminaire classification according to CIE: 84
CIE flux code: 41 72 91 84 74

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

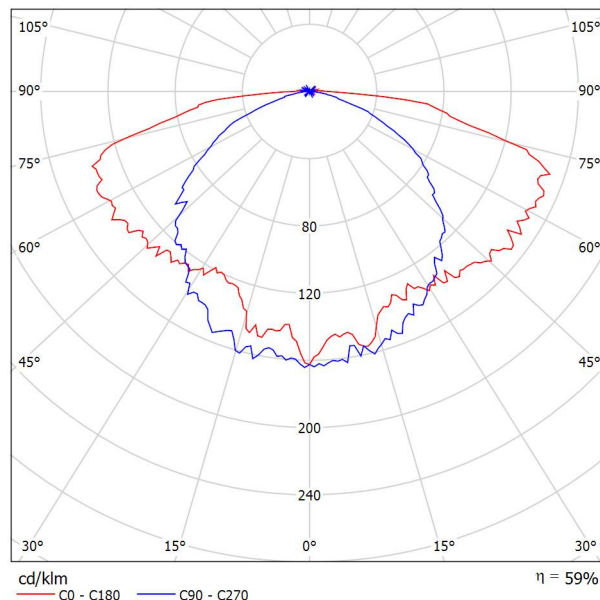


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OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC / Luminaire Data Sheet

Luminous emittance 1:

See our luminaire catalog for an image of the luminaire.



Luminaire classification according to CIE: 99
 CIE flux code: 35 64 89 99 59

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

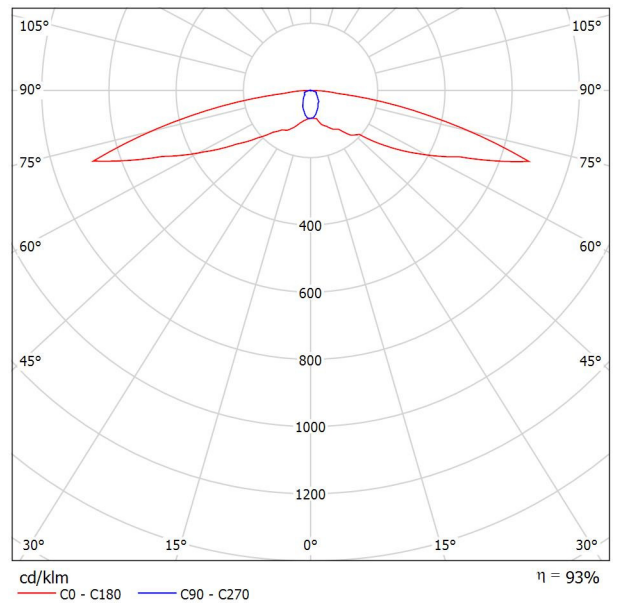


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OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC / Luminaire Data Sheet

Luminous emittance 1:

See our luminaire catalog for an image of the luminaire.



Luminaire classification according to CIE: 100
 CIE flux code: 15 39 84 100 93

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

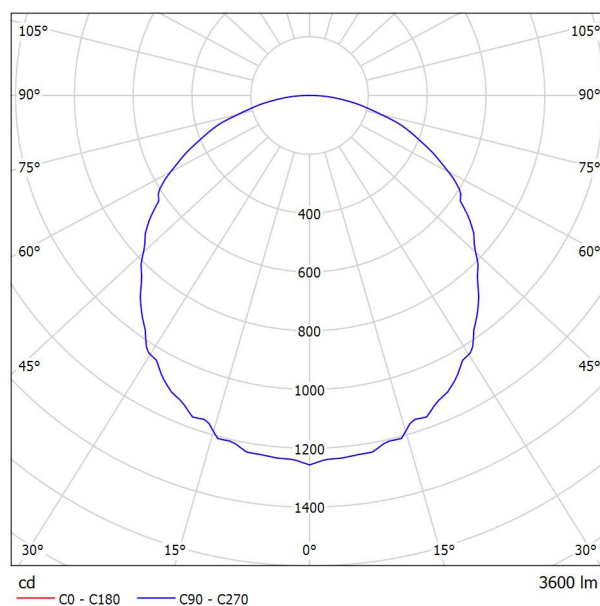


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V-TAC 6218 V-TAC LED Panel 45W 600 x 600 mm 4500K UGR / Luminaire Data Sheet

Luminous emittance 1:

See our luminaire catalog for an image of the luminaire.



Luminaire classification according to CIE: 100
 CIE flux code: 46 77 95 100 100

Luminous emittance 1:

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	17.1	18.4	17.4	18.6	18.9	17.1	18.4	17.4	18.6	18.9	
	3H	18.9	20.1	19.2	20.4	20.7	18.9	20.1	19.2	20.4	20.7	
	4H	19.6	20.8	20.0	21.1	21.4	19.6	20.8	20.0	21.1	21.4	
	6H	20.2	21.2	20.5	21.5	21.8	20.2	21.2	20.5	21.5	21.8	
	8H	20.3	21.4	20.7	21.7	22.0	20.3	21.4	20.7	21.7	22.0	
	12H	20.5	21.5	20.9	21.8	22.1	20.5	21.5	20.9	21.8	22.1	
4H	2H	17.7	18.8	18.0	19.1	19.4	17.7	18.8	18.0	19.1	19.4	
	3H	19.8	20.7	20.1	21.1	21.4	19.8	20.7	20.1	21.1	21.4	
	4H	20.6	21.5	21.0	21.8	22.2	20.6	21.5	21.0	21.8	22.2	
	6H	21.3	22.0	21.7	22.4	22.8	21.3	22.0	21.7	22.4	22.8	
	8H	21.5	22.2	22.0	22.6	23.0	21.5	22.2	22.0	22.6	23.0	
	12H	21.7	22.4	22.2	22.8	23.2	21.7	22.4	22.2	22.8	23.2	
8H	4H	20.9	21.6	21.4	22.0	22.4	20.9	21.6	21.4	22.0	22.4	
	6H	21.7	22.3	22.2	22.8	23.2	21.7	22.3	22.2	22.8	23.2	
	8H	22.1	22.6	22.6	23.1	23.5	22.1	22.6	22.6	23.1	23.5	
	12H	22.4	22.8	22.9	23.3	23.8	22.4	22.8	22.9	23.3	23.8	
	4H	21.0	21.6	21.4	22.0	22.5	21.0	21.6	21.4	22.0	22.5	
	6H	21.8	22.3	22.3	22.8	23.3	21.8	22.3	22.3	22.8	23.3	
12H	8H	22.2	22.7	22.7	23.1	23.6	22.2	22.7	22.7	23.1	23.6	
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		+0.3 / -0.6					+0.3 / -0.6					
Standard table		BK06					BK06					
Correction		0.4					0.4					
Summand												
Corrected Glare Indices referring to 3600lm Total Luminous Flux												

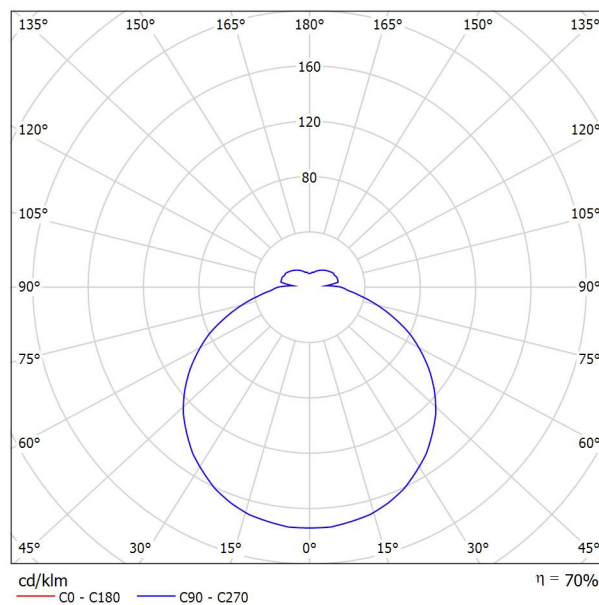


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**OSMONT DELIA_2 LED-1L16C07KN83_PC23 3000 DELIA 2, 1 x LED module L16C07,
28W, d-400mm, shade PC / Luminaire Data Sheet**

Luminous emittance 1:

See our luminaire catalog for an image of the luminaire.



Luminaire classification according to CIE: 84
CIE flux code: 41 72 91 84 70

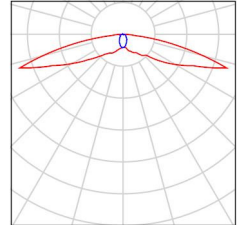
Due to missing symmetry properties, no UGR table can be displayed for this luminaire.

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1.04 Spálňa herňa / Luminaire parts list

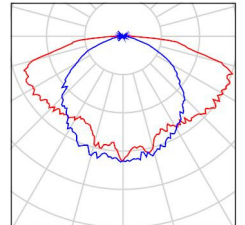
4 Pieces OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC
 Article No.: 182-B-303-00-00-01
 Luminous flux (Luminaire): 140 lm
 Luminous flux (Lamps): 150 lm
 Luminaire Wattage: 3.5 W
 Luminaire classification according to CIE: 100
 CIE flux code: 15 39 84 100 93
 Fitting: 1 x CREE(SD0057) (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



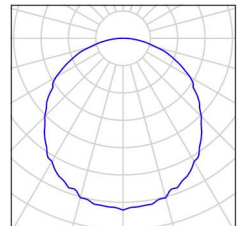
3 Pieces OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC
 Article No.: 277-B-312-00-00-00
 Luminous flux (Luminaire): 295 lm
 Luminous flux (Lamps): 500 lm
 Luminaire Wattage: 6.3 W
 Luminaire classification according to CIE: 99
 CIE flux code: 35 64 89 99 59
 Fitting: 40 x LM561B (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



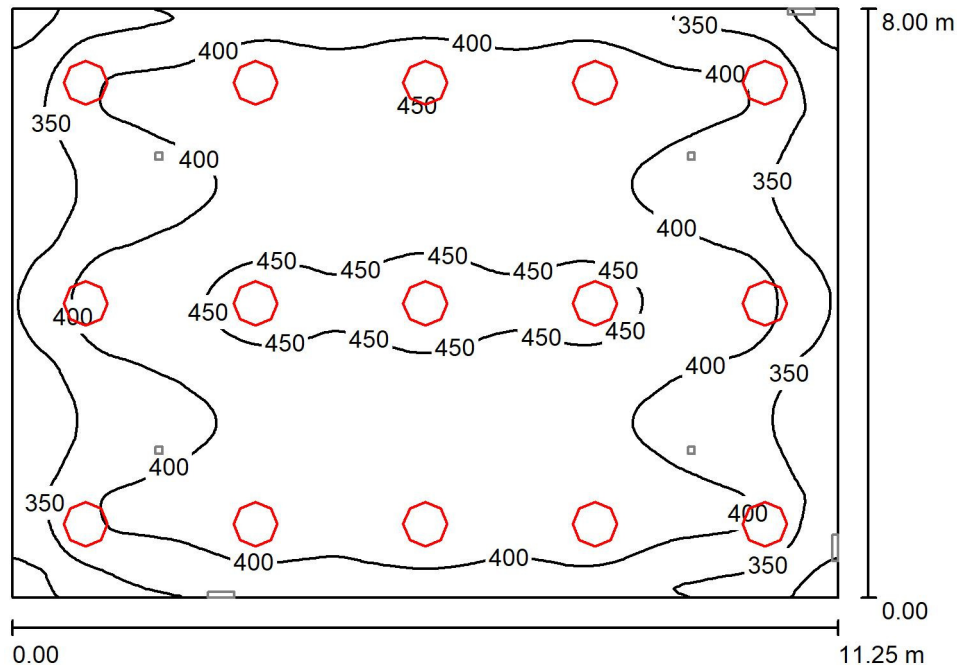
15 Pieces V-TAC 6218 V-TAC LED Panel 45W 600 x 600 mm 4500K UGR
 Article No.: 6218
 Luminous flux (Luminaire): 3600 lm
 Luminous flux (Lamps): 3600 lm
 Luminaire Wattage: 45.0 W
 Luminaire classification according to CIE: 100
 CIE flux code: 46 77 95 100 100
 Fitting: 1 x LED Panel 45W 600 x 600 mm 4500K UGR (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



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1.04 Spáľňa herňa / Štandardné osvetlenie / Summary



Height of Room: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:103

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u_0
Workplane	/	400	271	477	0.676
Floor	20	362	235	420	0.650
Ceiling	70	97	88	147	0.904
Walls (4)	50	249	114	417	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.668, Ceiling / Working Plane: 0.242.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	15	V-TAC 6218 V-TAC LED Panel 45W 600 x 600 mm 4500K UGR (1.000)	3600	3600	45.0
Total:			54000	54000	675.0

Specific connected load: $7.50 \text{ W/m}^2 = 1.87 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 90.00 m^2)



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1.04 Spálňa herňa / Štandardné osvetlenie / Photometric Results

Total Luminous Flux: 54000 lm
 Total Load: 675.0 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	311	89	400	/	/
Floor	270	91	362	20	23
Ceiling	0.49	97	97	70	22
Wall 1	170	86	255	50	41
Wall 2	153	87	241	50	38
Wall 3	170	86	255	50	41
Wall 4	153	87	240	50	38

Uniformity on the working plane

u0: 0.676 (1:1)

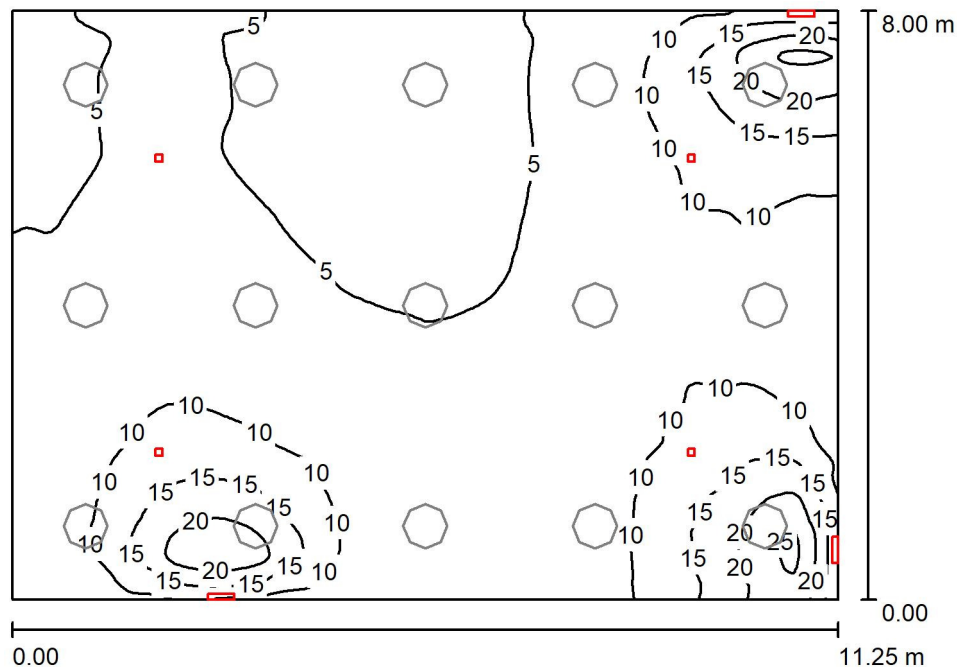
$E_{\min} / E_{\max}$: 0.567 (1:2)

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.668, Ceiling / Working Plane: 0.242.

Specific connected load: $7.50 \text{ W/m}^2 = 1.87 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 90.00 m^2)

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1.04 Spálňa herňa / Núdzové osvetlenie / Summary



Height of Room: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:103

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u_0
Workplane	/	8.18	3.69	26	0.451
Floor	20	7.19	3.83	16	0.533
Ceiling	70	5.79	1.83	174	0.316
Walls (4)	50	8.29	3.09	97	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 1.128, Ceiling / Working Plane: 0.707.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	4	OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC (1.000)	140	150	3.5
2	3	OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC (1.000)	295	500	6.3
Total:			1443	2100	32.9

Specific connected load: $0.37 \text{ W/m}^2 = 4.47 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 90.00 m^2)



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1.04 Spálňa herňa / Núdzové osvetlenie / Photometric Results

Total Luminous Flux: 1443 lm
 Total Load: 32.9 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	4.50	3.67	8.18	/	/
Floor	3.65	3.53	7.19	20	0.46
Ceiling	3.14	2.65	5.79	70	1.29
Wall 1	5.86	3.72	9.58	50	1.52
Wall 2	5.16	4.92	10	50	1.60
Wall 3	4.28	3.17	7.45	50	1.19
Wall 4	3.26	2.60	5.86	50	0.93

Uniformity on the working plane

u0: 0.451 (1:2)

E_{min} / E_{max}: 0.140 (1:7)

Illuminance Quotient (according to LG7): Walls / Working Plane: 1.128, Ceiling / Working Plane: 0.707.

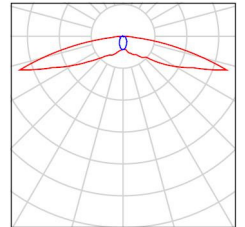
Specific connected load: 0.37 W/m² = 4.47 W/m²/100 lx (Ground area: 90.00 m²)

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1.02 Šatňa detí / Luminaire parts list

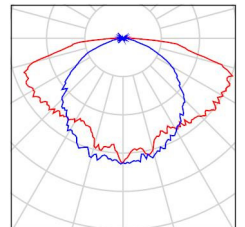
1 Pieces OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC
 Article No.: 182-B-303-00-00-01
 Luminous flux (Luminaire): 140 lm
 Luminous flux (Lamps): 150 lm
 Luminaire Wattage: 3.5 W
 Luminaire classification according to CIE: 100
 CIE flux code: 15 39 84 100 93
 Fitting: 1 x CREE(SD0057) (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



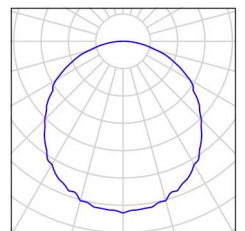
1 Pieces OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC
 Article No.: 277-B-312-00-00-00
 Luminous flux (Luminaire): 295 lm
 Luminous flux (Lamps): 500 lm
 Luminaire Wattage: 6.3 W
 Luminaire classification according to CIE: 99
 CIE flux code: 35 64 89 99 59
 Fitting: 40 x LM561B (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



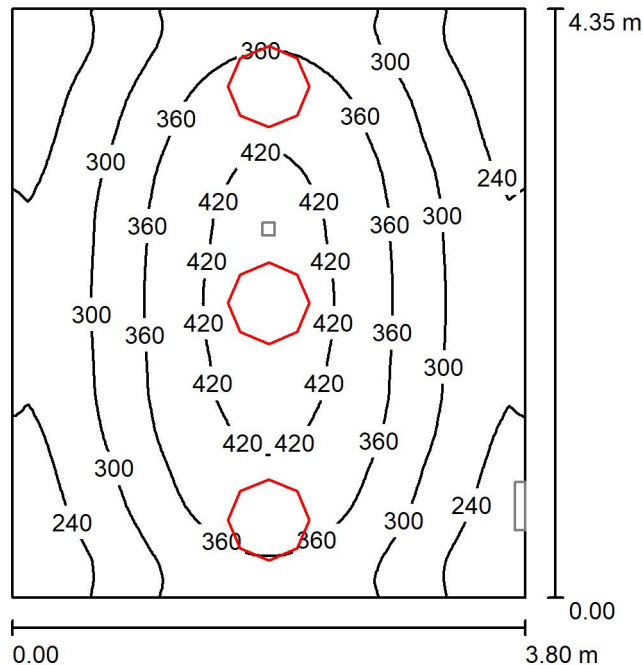
3 Pieces V-TAC 6218 V-TAC LED Panel 45W 600 x 600 mm 4500K UGR
 Article No.: 6218
 Luminous flux (Luminaire): 3600 lm
 Luminous flux (Lamps): 3600 lm
 Luminaire Wattage: 45.0 W
 Luminaire classification according to CIE: 100
 CIE flux code: 46 77 95 100 100
 Fitting: 1 x LED Panel 45W 600 x 600 mm 4500K UGR (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



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1.02 Šatňa detí / Štandardné osvetlenie / Summary



Height of Room: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:56

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	$u0$
Workplane	/	323	184	447	0.571
Floor	20	259	180	326	0.693
Ceiling	70	87	54	195	0.614
Walls (4)	50	193	69	1011	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.656, Ceiling / Working Plane: 0.270.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	3	V-TAC 6218 V-TAC LED Panel 45W 600 x 600 mm 4500K UGR (1.000)	3600	3600	45.0
Total:			10800	10800	135.0

Specific connected load: $8.17 \text{ W/m}^2 = 2.53 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 16.53 m^2)



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1.02 Šatňa detí / Štandardné osvetlenie / Photometric Results

Total Luminous Flux: 10800 lm
 Total Load: 135.0 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	236	87	323	/	/
Floor	176	83	259	20	17
Ceiling	0.50	87	87	70	19
Wall 1	140	75	215	50	34
Wall 2	97	77	173	50	28
Wall 3	140	76	216	50	34
Wall 4	97	76	173	50	28

Uniformity on the working plane

u0: 0.571 (1:2)

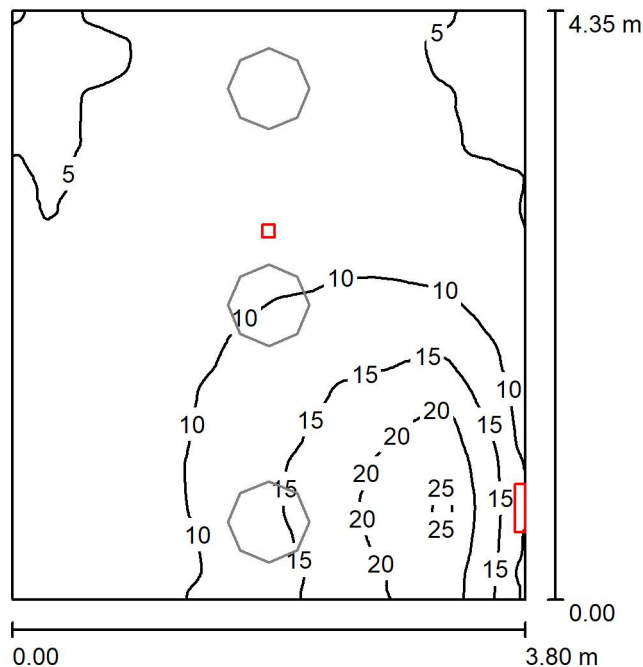
$E_{\min} / E_{\max}$: 0.413 (1:2)

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.656, Ceiling / Working Plane: 0.270.

Specific connected load: $8.17 \text{ W/m}^2 = 2.53 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 16.53 m^2)

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1.02 Šatňa detí / Núdzové osvetlenie / Summary



Height of Room: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:56

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u_0
Workplane	/	9.47	3.96	26	0.418
Floor	20	7.56	3.70	14	0.489
Ceiling	70	8.98	2.44	176	0.272
Walls (4)	50	8.19	2.52	57	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.992, Ceiling / Working Plane: 0.948.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	1	OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC (1.000)	140	150	3.5
2	1	OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC (1.000)	295	500	6.3
Total:			435	650	9.8

Specific connected load: $0.59 \text{ W/m}^2 = 6.26 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 16.53 m^2)



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1.02 Šatňa detí / Núdzové osvetlenie / Photometric Results

Total Luminous Flux: 435 lm
 Total Load: 9.8 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	4.62	4.85	9.47	/	/
Floor	3.40	4.16	7.56	20	0.48
Ceiling	5.28	3.69	8.98	70	2.00
Wall 1	7.88	4.57	12	50	1.98
Wall 2	1.35	5.03	6.38	50	1.02
Wall 3	4.30	3.15	7.45	50	1.18
Wall 4	3.65	3.28	6.94	50	1.10

Uniformity on the working plane

u0: 0.418 (1:2)

E_{min} / E_{max}: 0.154 (1:6)

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.992, Ceiling / Working Plane: 0.948.

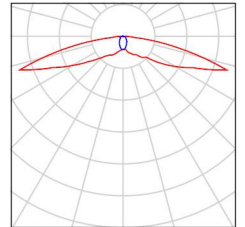
Specific connected load: 0.59 W/m² = 6.26 W/m²/100 lx (Ground area: 16.53 m²)

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1.03 Umyváreň / Luminaire parts list

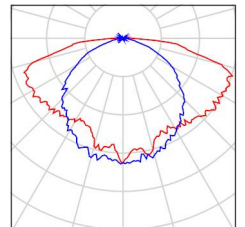
1 Pieces OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC
 Article No.: 182-B-303-00-00-01
 Luminous flux (Luminaire): 140 lm
 Luminous flux (Lamps): 150 lm
 Luminaire Wattage: 3.5 W
 Luminaire classification according to CIE: 100
 CIE flux code: 15 39 84 100 93
 Fitting: 1 x CREE(SD0057) (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



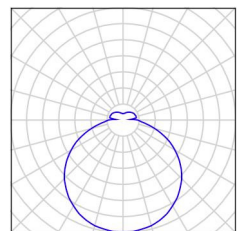
2 Pieces OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC
 Article No.: 277-B-312-00-00-00
 Luminous flux (Luminaire): 295 lm
 Luminous flux (Lamps): 500 lm
 Luminaire Wattage: 6.3 W
 Luminaire classification according to CIE: 99
 CIE flux code: 35 64 89 99 59
 Fitting: 40 x LM561B (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



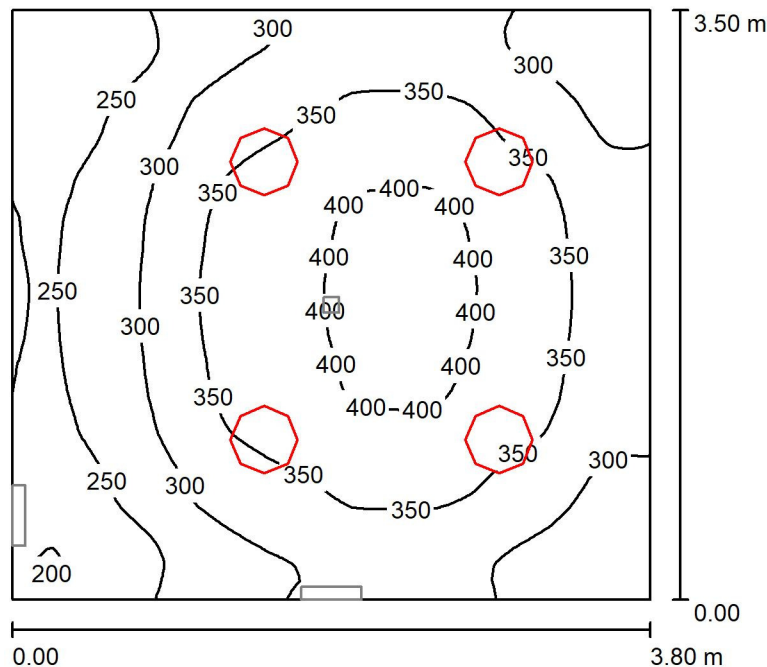
4 Pieces OSMONT DELIA_2 LED-1L16C07KN83_PC23
 3000 DELIA 2, 1 x LED module L16C07, 28W, d-400mm, shade PC
 Article No.: DELIA_2 LED-1L16C07KN83_PC23 3000
 Luminous flux (Luminaire): 2582 lm
 Luminous flux (Lamps): 3690 lm
 Luminaire Wattage: 28.0 W
 Luminaire classification according to CIE: 84
 CIE flux code: 41 72 91 84 70
 Fitting: 1 x LED (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



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1.03 Umyváreň / Štandardné osvetlenie / Summary



Height of Room: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:45

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	$u0$
Workplane	/	320	194	414	0.605
Floor	20	250	173	304	0.695
Ceiling	70	196	71	2613	0.362
Walls (4)	50	218	117	408	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.757, Ceiling / Working Plane: 0.610.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	4	OSMONT DELIA_2 LED- 1L16C07KN83_PC23 3000 DELIA 2, 1 x LED module L16C07, 28W, d-400mm, shade PC (1.000)	2582	3690	28.0
Total:			10328	14760	112.0

Specific connected load: $8.42 \text{ W/m}^2 = 2.63 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 13.30 m^2)



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1.03 Umyváreň / Štandardné osvetlenie / Photometric Results

Total Luminous Flux: 10328 lm
 Total Load: 112.0 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	195	125	320	/	/
Floor	140	110	250	20	16
Ceiling	95	100	196	70	44
Wall 1	120	101	221	50	35
Wall 2	133	106	239	50	38
Wall 3	124	101	226	50	36
Wall 4	91	96	187	50	30

Uniformity on the working plane

u0: 0.605 (1:2)

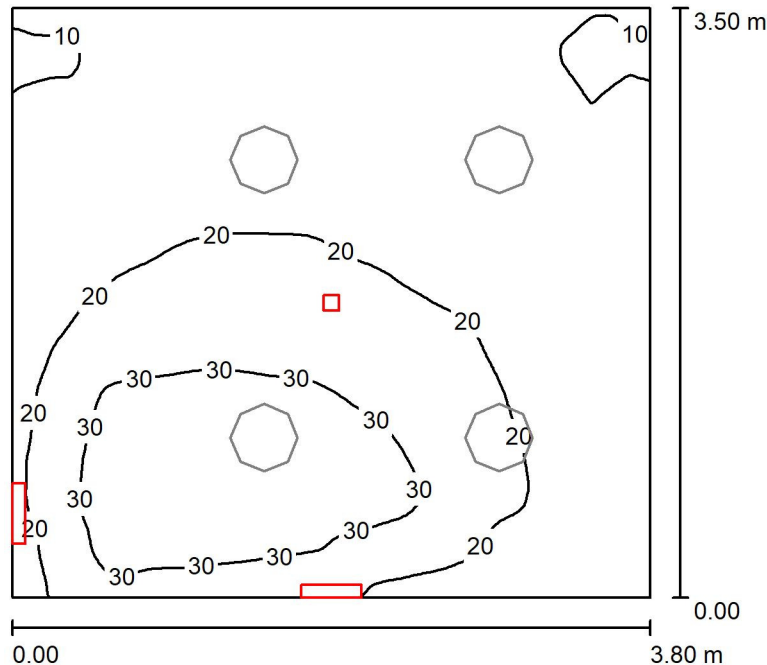
E_{min} / E_{max}: 0.468 (1:2)

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.757, Ceiling / Working Plane: 0.610.

Specific connected load: 8.42 W/m² = 2.63 W/m²/100 lx (Ground area: 13.30 m²)

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1.03 Umyváreň / Núdzové osvetlenie / Summary



Height of Room: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:45

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u_0
Workplane	/	20	9.20	39	0.465
Floor	20	16	9.12	25	0.585
Ceiling	70	21	5.72	183	0.279
Walls (4)	50	15	5.90	101	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.868, Ceiling / Working Plane: 1.038.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	1	OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC (1.000)	140	150	3.5
2	2	OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC (1.000)	295	500	6.3
Total:			730	1150	16.1

Specific connected load: $1.21 \text{ W/m}^2 = 6.13 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 13.30 m^2)



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1.03 Umyváreň / Núdzové osvetlenie / Photometric Results

Total Luminous Flux: 730 lm
 Total Load: 16.1 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	9.84	9.92	20	/	/
Floor	7.21	8.37	16	20	0.99
Ceiling	13	7.22	21	70	4.57
Wall 1	9.77	9.44	19	50	3.06
Wall 2	6.42	6.98	13	50	2.13
Wall 3	8.00	6.68	15	50	2.34
Wall 4	3.95	9.24	13	50	2.10

Uniformity on the working plane

u0: 0.465 (1:2)

$E_{\min} / E_{\max}$: 0.238 (1:4)

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.868, Ceiling / Working Plane: 1.038.

Specific connected load: $1.21 \text{ W/m}^2 = 6.13 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 13.30 m^2)

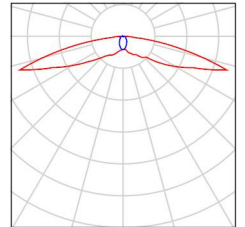


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1.06 Hračky / Luminaire parts list

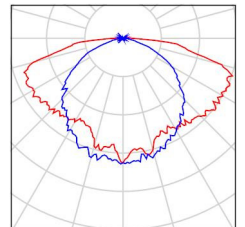
1 Pieces OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC
 Article No.: 182-B-303-00-00-01
 Luminous flux (Luminaire): 140 lm
 Luminous flux (Lamps): 150 lm
 Luminaire Wattage: 3.5 W
 Luminaire classification according to CIE: 100
 CIE flux code: 15 39 84 100 93
 Fitting: 1 x CREE(SD0057) (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



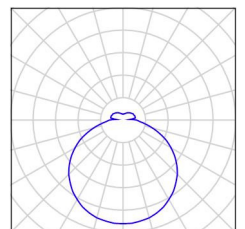
1 Pieces OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC
 Article No.: 277-B-312-00-00-00
 Luminous flux (Luminaire): 295 lm
 Luminous flux (Lamps): 500 lm
 Luminaire Wattage: 6.3 W
 Luminaire classification according to CIE: 99
 CIE flux code: 35 64 89 99 59
 Fitting: 40 x LM561B (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



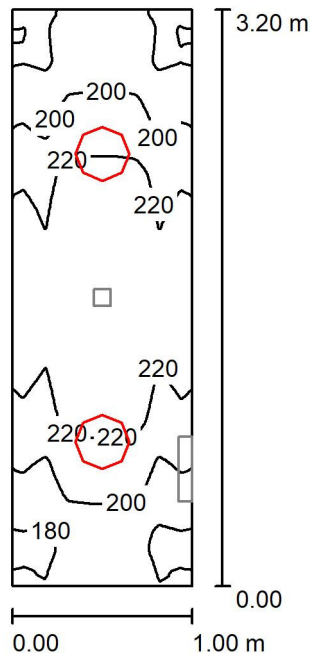
2 Pieces OSMONT DELIA_1 LED-1L14B07KN62_PC22
 4000 DELIA 1, 1 x LED module L14B07, 20W, d-300mm, shade PC
 Article No.: DELIA_1 LED-1L14B07KN62_PC22 4000
 Luminous flux (Luminaire): 1998 lm
 Luminous flux (Lamps): 2700 lm
 Luminaire Wattage: 20.0 W
 Luminaire classification according to CIE: 84
 CIE flux code: 41 72 91 84 74
 Fitting: 1 x LED (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



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1.06 Hračky / Štandardné osvetlenie / Summary



Height of Room: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:42

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u_0
Workplane	/	209	174	236	0.833
Floor	20	138	118	152	0.856
Ceiling	70	292	103	3110	0.353
Walls (4)	50	201	52	765	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 1.183, Ceiling / Working Plane: 1.396.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	2	OSMONT DELIA_1 LED- 1L14B07KN62_PC22 4000 DELIA 1, 1 x LED module L14B07, 20W, d-300mm, shade PC (1.000)	1998	2700	20.0
Total:			3996	5400	40.0

Specific connected load: $12.50 \text{ W/m}^2 = 5.98 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 3.20 m^2)



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1.06 Hračky / Štandardné osvetlenie / Photometric Results

Total Luminous Flux: 3996 lm
 Total Load: 40.0 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	110	99	209	/	/
Floor	70	67	138	20	8.76
Ceiling	149	143	292	70	65
Wall 1	93	98	192	50	31
Wall 2	101	103	204	50	33
Wall 3	93	99	192	50	31
Wall 4	101	103	204	50	32

Uniformity on the working plane

u0: 0.833 (1:1)

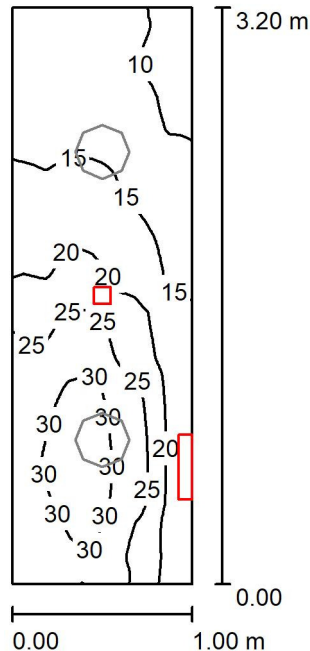
$E_{\min} / E_{\max}$: 0.738 (1:1)

Illuminance Quotient (according to LG7): Walls / Working Plane: 1.183, Ceiling / Working Plane: 1.396.

Specific connected load: $12.50 \text{ W/m}^2 = 5.98 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 3.20 m^2)

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1.06 Hračky / Núdzové osvetlenie / Summary



Height of Room: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:42

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u_0
Workplane	/	20	8.95	33	0.455
Floor	20	12	7.06	18	0.583
Ceiling	70	37	7.25	190	0.197
Walls (4)	50	22	3.84	109	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 1.378, Ceiling / Working Plane: 1.869.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	1	OPTIS 182-B-303-00-00-01 C.LEDLUX SPOT2-A-V 230V AC DC (1.000)	140	150	3.5
2	1	OPTIS 277-B-312-00-00-00 C.TRENDLUX2 /230V AC/DC (1.000)	295	500	6.3
Total:			435	650	9.8

Specific connected load: $3.06 \text{ W/m}^2 = 15.56 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 3.20 m^2)



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1.06 Hračky / Núdzové osvetlenie / Photometric Results

Total Luminous Flux: 435 lm
 Total Load: 9.8 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	8.51	11	20	/	/
Floor	4.66	7.46	12	20	0.77
Ceiling	21	16	37	70	8.19
Wall 1	19	15	34	50	5.40
Wall 2	4.08	13	17	50	2.69
Wall 3	6.82	7.54	14	50	2.29
Wall 4	16	10	26	50	4.12

Uniformity on the working plane

u0: 0.455 (1:2)

$E_{\min} / E_{\max}$: 0.271 (1:4)

Illuminance Quotient (according to LG7): Walls / Working Plane: 1.378, Ceiling / Working Plane: 1.869.

Specific connected load: $3.06 \text{ W/m}^2 = 15.56 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 3.20 m^2)

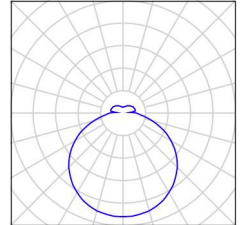


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1.05 Sklad / Luminaire parts list

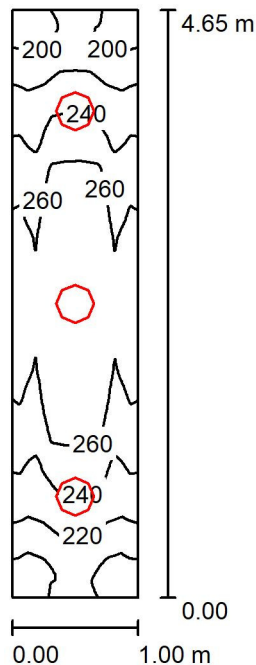
3 Pieces OSMONT DELIA_1 LED-1L14B07KN62_PC22
4000 DELIA 1, 1 x LED module L14B07, 20W, d-
300mm, shade PC
Article No.: DELIA_1 LED-1L14B07KN62_PC22
4000
Luminous flux (Luminaire): 1998 lm
Luminous flux (Lamps): 2700 lm
Luminaire Wattage: 20.0 W
Luminaire classification according to CIE: 84
CIE flux code: 41 72 91 84 74
Fitting: 1 x LED (Correction Factor 1.000).

See our luminaire
catalog for an image of
the luminaire.



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1.05 Sklad / Štandardné osvetlenie / Summary



Height of Room: 3.000 m, Mounting Height: 3.000 m, Maintenance factor: 0.80

Values in Lux, Scale 1:60

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u_0
Workplane	/	243	185	279	0.762
Floor	20	166	134	186	0.811
Ceiling	70	304	115	3091	0.379
Walls (4)	50	219	59	784	/

Workplane:

Height: 0.750 m
 Grid: 128 x 128 Points
 Boundary Zone: 0.000 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 1.102, Ceiling / Working Plane: 1.250.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	3	OSMONT DELIA_1 LED- 1L14B07KN62_PC22 4000 DELIA 1, 1 x LED module L14B07, 20W, d-300mm, shade PC (1.000)	1998	2700	20.0
Total:			5994	8100	60.0

Specific connected load: $12.90 \text{ W/m}^2 = 5.31 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 4.65 m^2)



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1.05 Sklad / Štandardné osvetlenie / Photometric Results

Total Luminous Flux: 5994 lm
 Total Load: 60.0 W
 Maintenance factor: 0.80
 Boundary Zone: 0.000 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	132	111	243	/	/
Floor	88	78	166	20	11
Ceiling	154	149	304	70	68
Wall 1	102	104	206	50	33
Wall 2	110	112	221	50	35
Wall 3	102	105	206	50	33
Wall 4	110	112	221	50	35

Uniformity on the working plane

u0: 0.762 (1:1)

E_{min} / E_{max}: 0.664 (1:2)

Illuminance Quotient (according to LG7): Walls / Working Plane: 1.102, Ceiling / Working Plane: 1.250.

Specific connected load: 12.90 W/m² = 5.31 W/m²/100 lx (Ground area: 4.65 m²)