

CUKRARNA

Installation : STOPNIŠČE

Project number : 409/16

Customer : SCAPELAB

Processed by : SCAPELAB

Date : 05.10.2016

The following values are based on exact calculations on calibrated lamps, luminaires and their arrangement. In practice, gradual divergences can occur.

Guarantee claims for luminaire data are excluded.

Relux and the luminaire manufacturers accept no liability for consequential damage and damage which is occasioned to the user or to third parties.

Object : CUKRARNA
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1 Luminaire data

1.1 Zumtobel, LINARIA LED2100-830 L908 PM LDE... (42184106)

1.1.1 Data sheet

Manufacturer: Zumtobel

42184106 surface mounted LINARIA LED2100-830 L908 PM LDE SRE [STD]

LED single batten luminaire for surface-mounting and suspending. DALI-controllable luminaire with integrated SELV converter. Primary and secondary optic for perfect dispersion of LED points and simultaneous indirect component for ceiling illumination. Energy-efficient LED single batten luminaire makes environmental and financial sense. total power: 21.7 W; LED service life lasts 50000 h before luminous flux is reduced to 80% of the initial value. Chromaticity tolerance (initial MacAdam): 4. Luminaire luminous flux: 2050 lm, Luminaire efficacy: 94 lm/W. Colour rendering Ra > 80, colour temperature 3000 K. Single batten luminaire of high quality aluminium extrusion, powder coated in aluminium-silver. Luminaire wired with halogen-free leads. For pendant mounting please order the following separately per luminaire: 1 LINARIA ceiling rose, 1 transparent supply cable and 2 cord suspensions. Dimensions: 908 x 30 x 67 mm. Weight: 1.2 kg

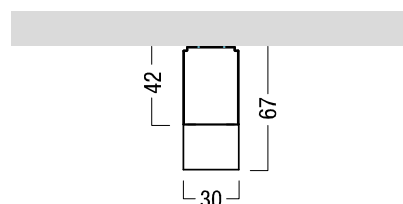
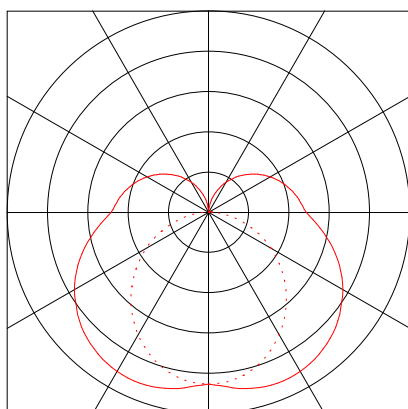
Luminaire data

Absolute Photometry
Luminaire efficacy : 94.47 lm/W
Classification : B31 ↓74.9% ↑25.1%
CIE Flux Codes : 35 63 85 75 100
UGR 4H 8H : 25.3 / 22.0
Power : 21.7 W
Luminous flux : 2050 lm

Equipped with

Quantity : 1
Designation : LED-Z42184106
Colour : Unknown
Colour reproduction : 80

Dimensions : 908 mm x 30 mm x 67 mm



L= 608/908/1208/1508/1808 mm

Object : CUKRARNA
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1 Luminaire data

1.2 ZUMTOBEL, ONLITE ERI (70446584 (STD - Standard))

1.2.1 Data sheet

Manufacturer: ZUMTOBEL

70446584 (STD - Standard)

ONLITE ERI

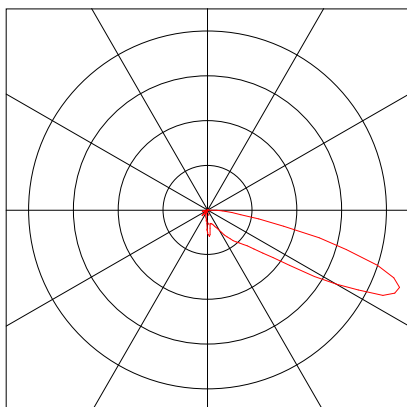
Luminaire data

Luminaire efficiency : 100%
Luminaire efficacy : 34 lm/W
Classification : A10 ↓99.6% ↑0.4%
CIE Flux Codes : 23 48 87 100 100
UGR 4H 8H : 47.8 / 20.8
Power : 1 W
Luminous flux : 34 lm

Equipped with

Quantity : 1
Designation : LED-Z396
0C8W
Colour :
Luminous flux : 34 lm

Dimensions : 15 mm x 15 mm x 2 mm

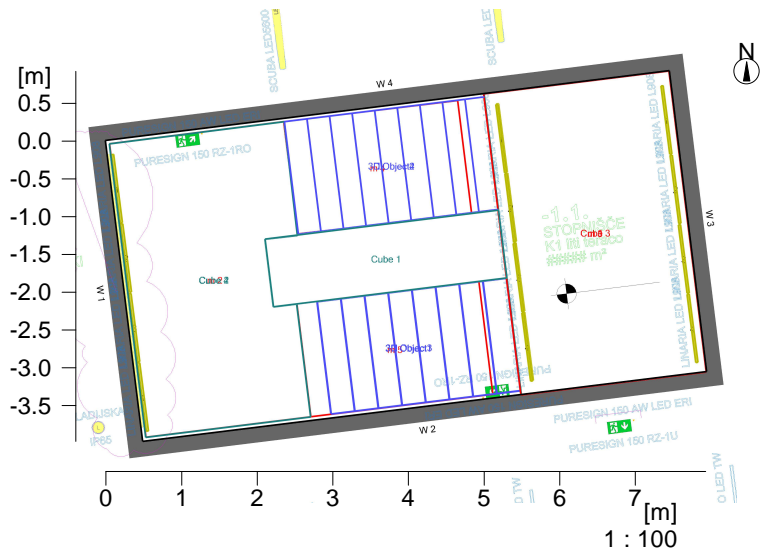


Object : CUKRARNA
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2 01_splošna osvetlitev

2.1 Description, 01_splošna osvetlitev

2.1.1 Floor plan



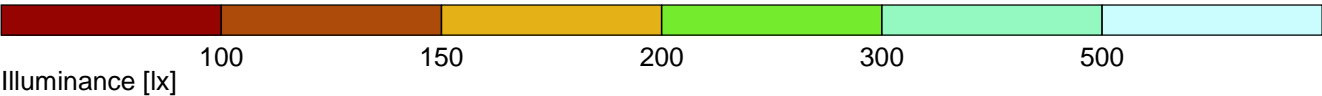
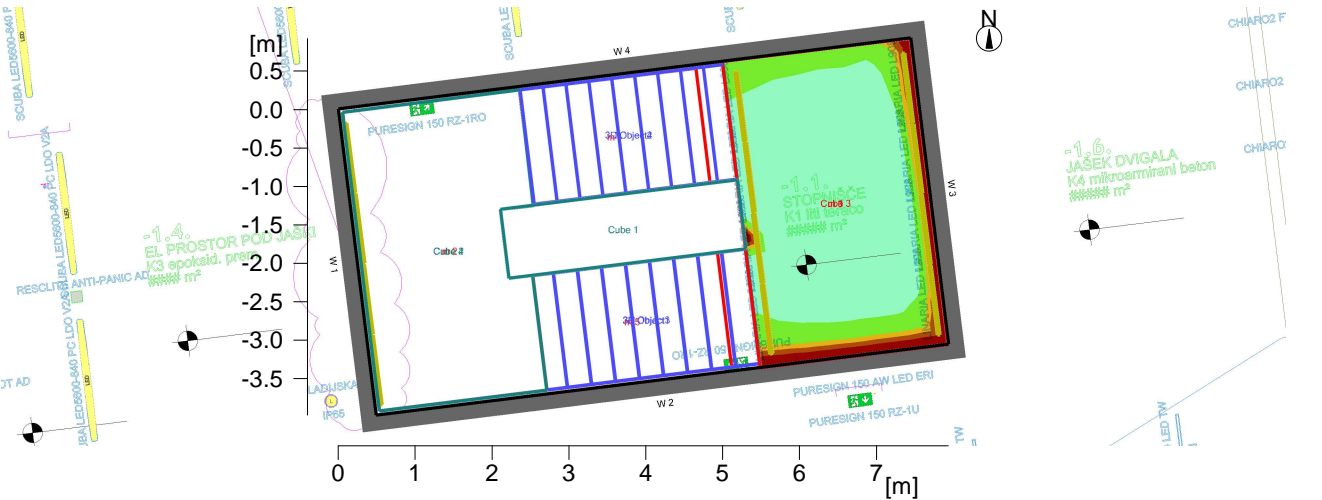
Wall	x	y	Length	Reflectance
1	48.87 m	144.82 m	4.00 m	50.0 %
2	56.31 m	145.74 m	7.50 m	50.0 %
3	55.82 m	149.71 m	4.00 m	50.0 %
4	48.38 m	148.79 m	7.50 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		6.00 m		
Height of reference plane		----		

Object : CUKRARNA
Installation : STOPNIŠČE
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2 01_splošna osvetlitev

2.2 Summary, 01_splošna osvetlitev

2.2.1 Result overview, Measuring area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	41000 lm
Total power	434 W
Total power per area (30.02 m²)	14.46 W/m²

Illuminance

Average illuminance	Eav	247 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	463 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

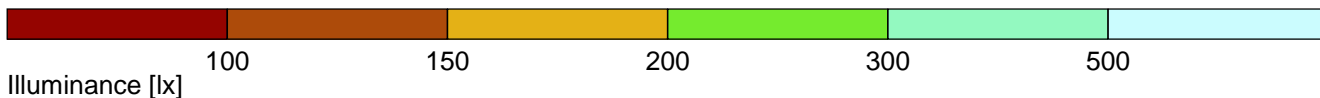
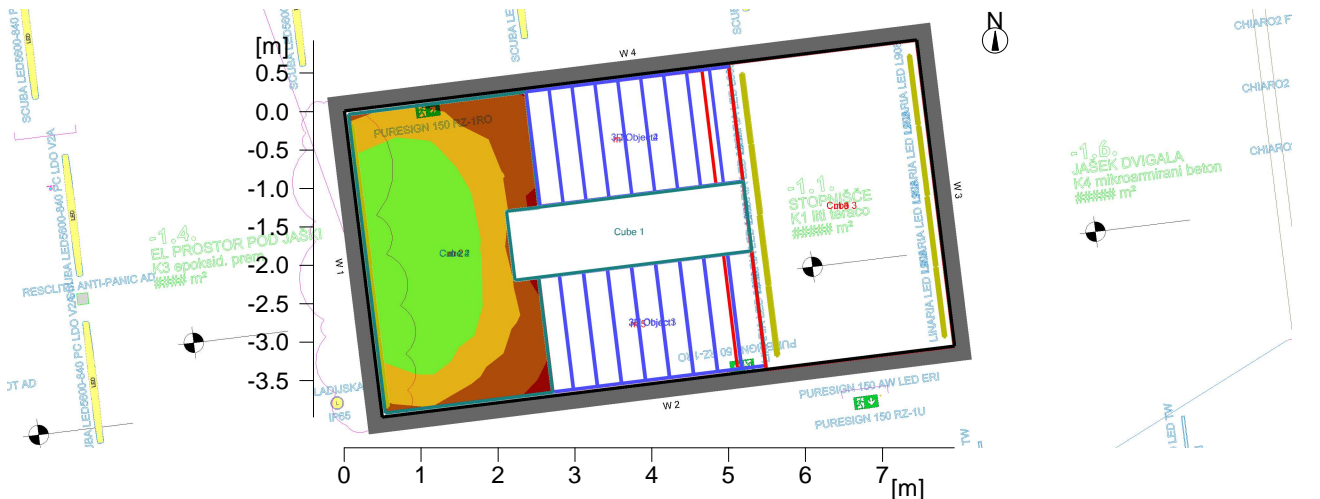
Type No.\Make

1	20	Zumtobel	
		Order No.	: 42184106
		Luminaire name	: LINARIA LED2100-830 L908 PM LDE SRE [STD]
		Equipment	: 1 x LED-Z42184106 22 W / 2050 lm

Object : CUKRARNA
Installation : STOPNIŠČE
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2.2 Summary, 01_splošna osvetlitev

2.2.2 Result overview, Measuring area 2



General

Calculation algorithm used
Height of evaluation surface
Maintenance factor

Average indirect fraction
1.98 m
0.80

Total luminous flux of all lamps
Total power
Total power per area (30.02 m²)

41000 lm
434 W
14.46 W/m²

Illuminance

Average illuminance	Eav	193 lx
Minimum illuminance	Emin	96 lx
Maximum illuminance	E _{max}	267 lx
Uniformity U _o	Emin/Em	1:2.02 (0.5)
Diversity U _d	Emin/E _{max}	1:2.78 (0.36)

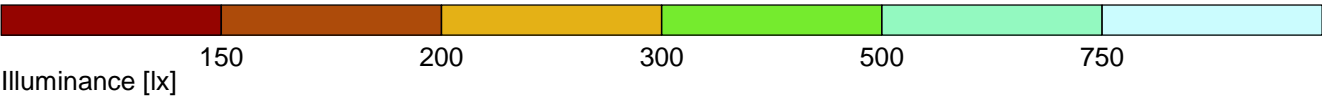
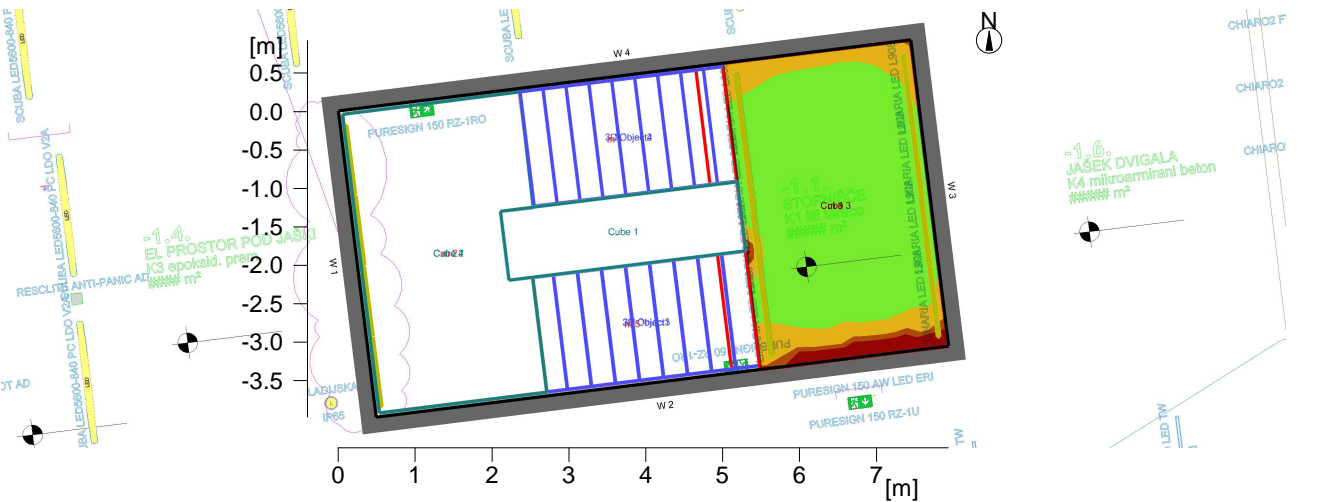
Type No.\Make

Zumtobel
 1 20 Order No. : 42184106
 Luminaire name : LINARIA LED2100-830 L908 PM LDE SRE [STD]
 Equipment : 1 x LED-Z42184106 22 W / 2050 lm

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

2.2 Summary, 01_splošna osvetlitev

2.2.3 Result overview, Measuring area 3



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	41000 lm
Total power	434 W
Total power per area (30.02 m²)	14.46 W/m²

Illuminance

Average illuminance	Eav	337 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	468 lx
Uniformity Uo	Emin/Em	1:46600 (0)
Diversity Ud	Emin/Emax	1:64800 (0)

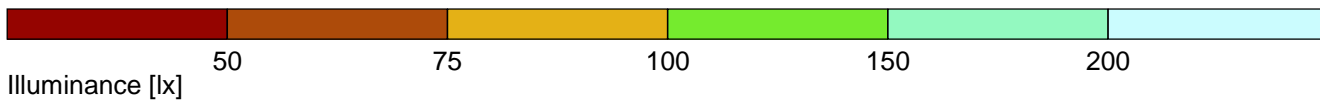
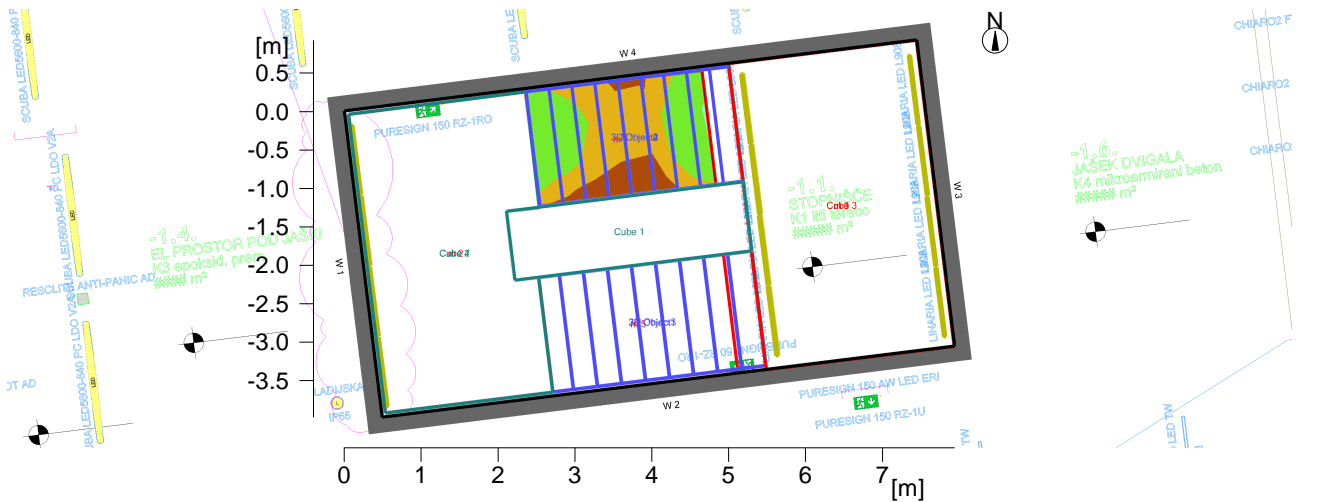
Type No.\Make

1	20	Zumtobel	
		Order No.	: 42184106
		Luminaire name	: LINARIA LED2100-830 L908 PM LDE SRE [STD]
		Equipment	: 1 x LED-Z42184106 22 W / 2050 lm

Object : CUKRARNA
Installation : STOPNIŠČE
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2.2 Summary, 01_splošna osvetlitev

2.2.4 Result overview, Measuring area 4



General

Calculation algorithm used
Maintenance factor

Average indirect fraction
0.80

Total luminous flux of all lamps
Total power
Total power per area (30.02 m²)

41000 lm
434 W
14.46 W/m²

Illuminance

Average illuminance	Eav	95 lx
Minimum illuminance	Emin	72 lx
Maximum illuminance	E _{max}	124 lx
Uniformity U _o	Emin/Em	1:1.32 (0.76)
Diversity U _d	Emin/E _{max}	1:1.73 (0.58)

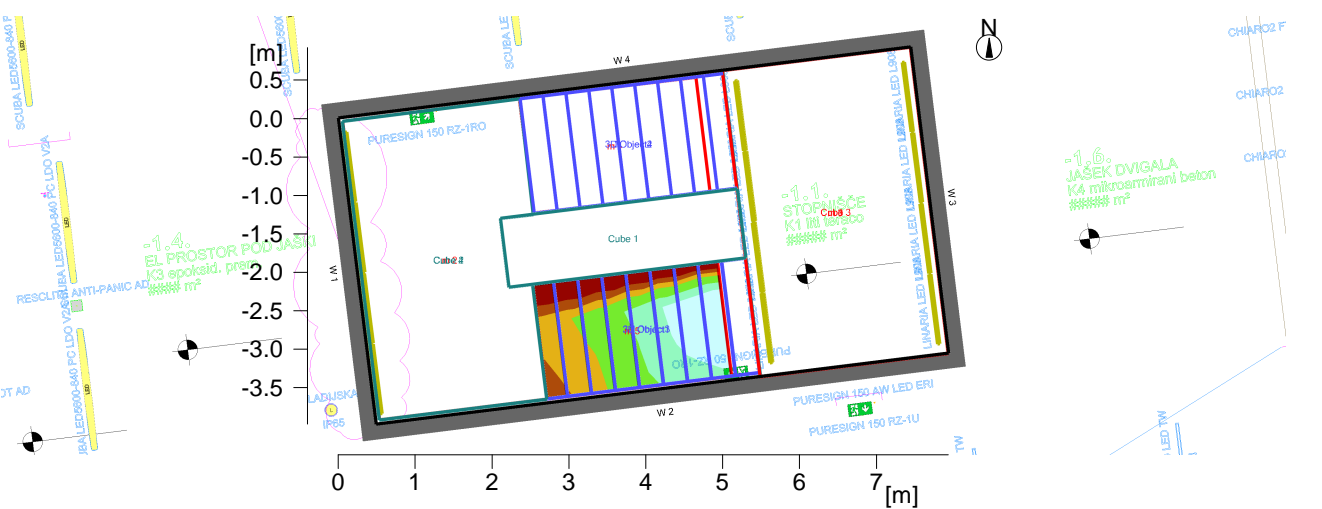
Type No.\Make

Zumtobel
 1 20 Order No. : 42184106
 Luminaire name : LINARIA LED2100-830 L908 PM LDE SRE [STD]
 Equipment : 1 x LED-Z42184106 22 W / 2050 lm

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

2.2 Summary, 01_splošna osvetlitev

2.2.5 Result overview, Measuring area 5



General

Calculation algorithm used
Maintenance factor

Average indirect fraction
0.80

Total luminous flux of all lamps
Total power
Total power per area (30.02 m²)

41000 lm
434 W
14.46 W/m²

Illuminance

Average illuminance	Eav	112 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	275 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

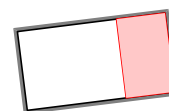
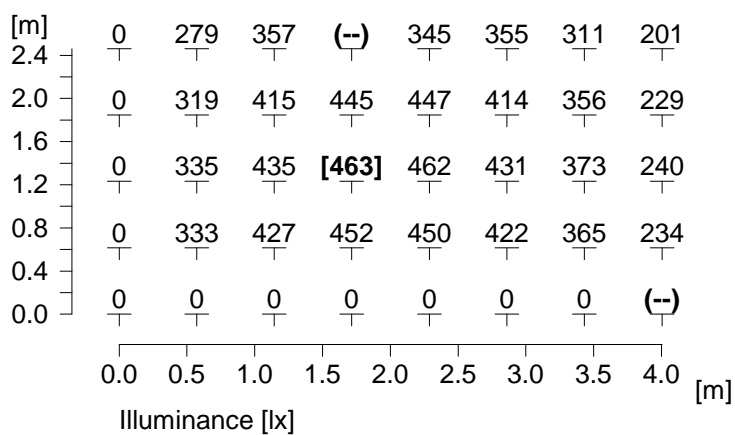
1	20	Zumtobel	
		Order No.	: 42184106
		Luminaire name	: LINARIA LED2100-830 L908 PM LDE SRE [STD]
		Equipment	: 1 x LED-Z42184106 22 W / 2050 lm

Object : CUKRARNA
Installation : STOPNIŠČE
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Date : 05.10.2016

2 01_splošna osvetlitev

2.3 Calculation results, 01_splošna osvetlitev

2.3.1 Table, Measuring area 1 (E)

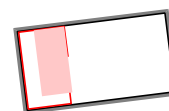
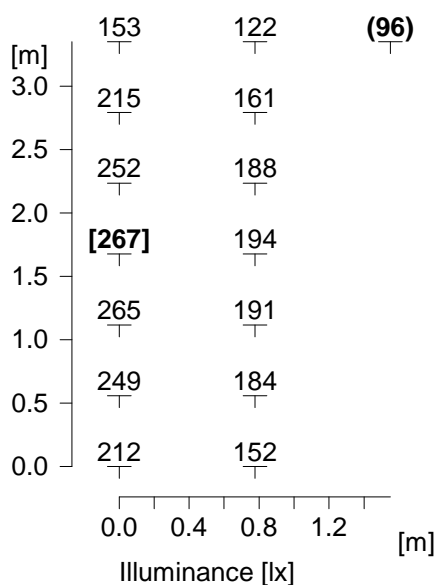


Average illuminance	Eav	: 247 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 463 lx
Uniformity Uo	Emin/Eav	: ---
Diversity Ud	Emin/Emax	: ---

Object : CUKRARNA
Installation : STOPNIŠČE
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2.3 Calculation results, 01_splošna osvetlitev

2.3.2 Table, Measuring area 2 (E)



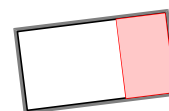
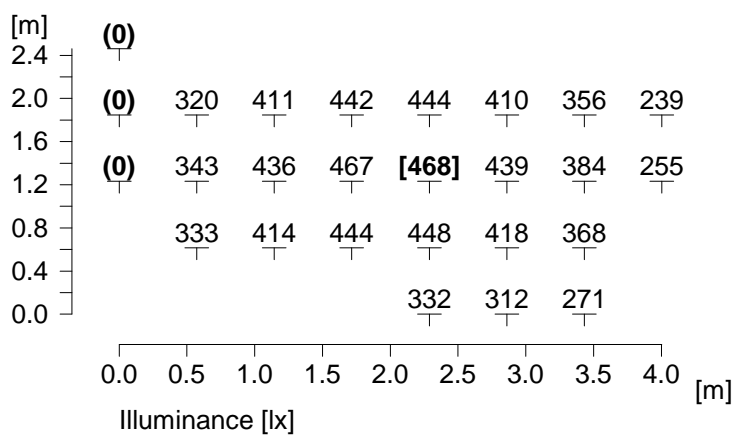
Height of the reference plane

Average illuminance	Eav	: 1.98 m
Minimum illuminance	Emin	: 193 lx
Maximum illuminance	Emax	: 96 lx
Uniformity Uo	Emin/Eav	: 1 : 2.02 (0.50)
Diversity Ud	Emin/Emax	: 1 : 2.78 (0.36)

Object : CUKRARNA
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2.3 Calculation results, 01_splošna osvetlitev

2.3.3 Table, Measuring area 3 (E)

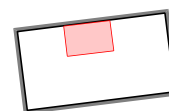
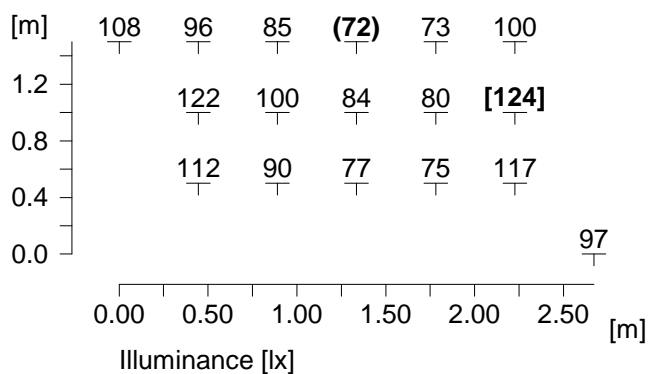


Average illuminance	Eav	: 337 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 468 lx
Uniformity Uo	Emin/Eav	: 1 : 46635.16 (0.00)
Diversity Ud	Emin/Emax	: 1 : 64840.93 (0.00)

Object : CUKRARNA
Installation : STOPNIŠČE
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2.3 Calculation results, 01_splošna osvetlitev

2.3.4 Table, Measuring area 4 (E)

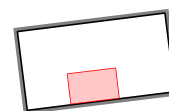
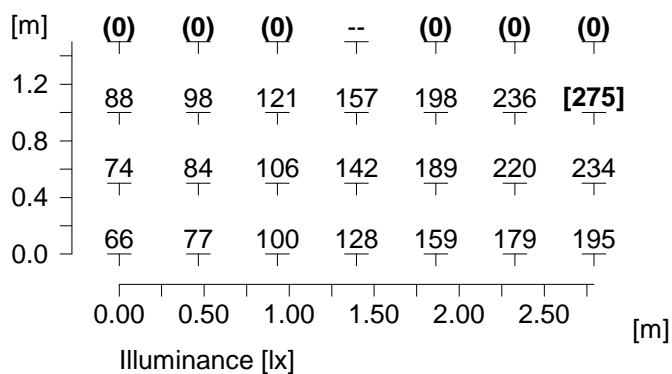


Average illuminance	Eav	: 95 lx
Minimum illuminance	Emin	: 72 lx
Maximum illuminance	Emax	: 124 lx
Uniformity Uo	Emin/Eav	: 1 : 1.32 (0.76)
Diversity Ud	Emin/Emax	: 1 : 1.73 (0.58)

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

2.3 Calculation results, 01_splošna osvetlitev

2.3.5 Table, Measuring area 5 (E)



Average illuminance	Eav	: 112 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 275 lx
Uniformity Uo	Emin/Eav	: ---
Diversity Ud	Emin/Emax	: ---

Object : CUKRARNA
Installation : STOPNIŠČE
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2.3 Calculation results, 01_splošna osvetlitev

2.3.6 3D luminance, View 1



Luminance in the scene

Minimum: : 0 cd/m²

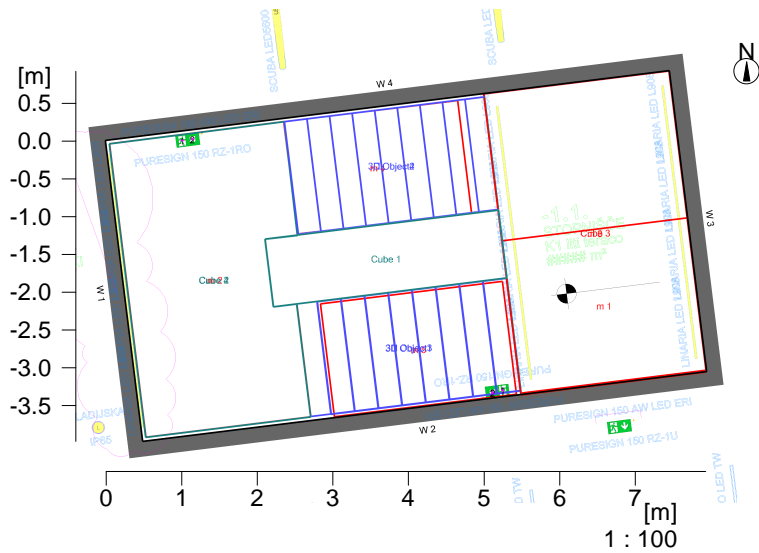
Maximum: : 543 cd/m²

Object : CUKRARNA
Installation : STOPNIŠČE
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3 01_varnostna osvetlitev

3.1 Description, 01_varnostna osvetlitev

3.1.1 Floor plan



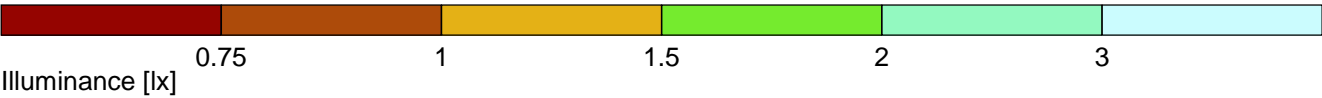
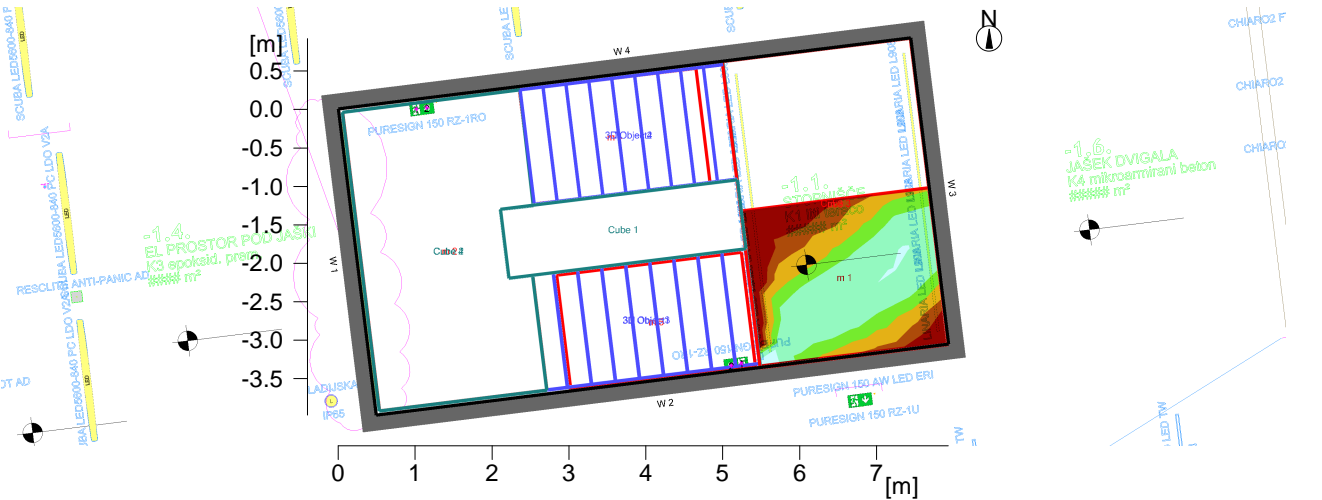
Wall	x	y	Length	Reflectance
1	48.87 m	144.82 m	4.00 m	50.0 %
2	56.31 m	145.74 m	7.50 m	50.0 %
3	55.82 m	149.71 m	4.00 m	50.0 %
4	48.38 m	148.79 m	7.50 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		6.00 m		
Height of reference plane		----		

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
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3 01_varnostna osvetlitev

3.2 Summary, 01_varnostna osvetlitev

3.2.1 Result overview, Measuring area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	204 lm
Total power	6 W
Total power per area (30.02 m²)	0.20 W/m²

Illuminance

Average illuminance	Eav	1.65 lx
Minimum illuminance	Emin	0.58 lx
Maximum illuminance	Emax	2.94 lx
Uniformity Uo	Emin/Em	1:2.83 (0.35)
Diversity Ud	Emin/Emax	1:5.04 (0.2)

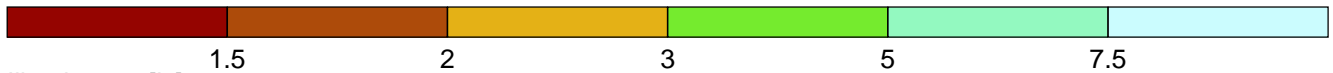
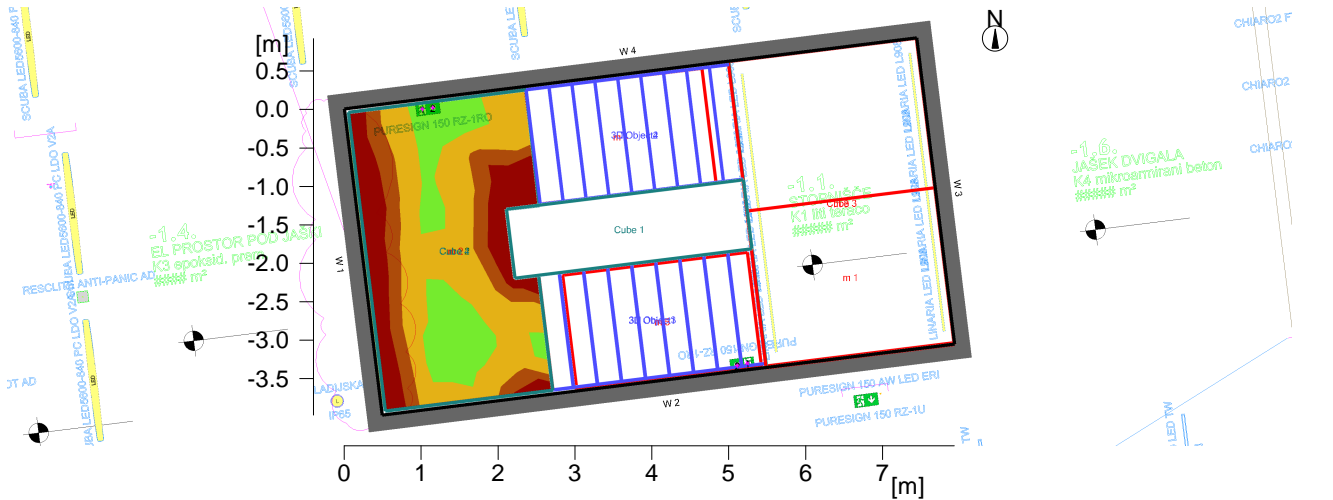
Type No.\Make

2	6	ZUMTOBEL	
		Order No.	: 70446584 (STD - Standard)
		Luminaire name	: ONLITE ERI
		Equipment	: 1 x LED-Z396 0C8W 1 W / 34 lm

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

3.2 Summary, 01_varnostna osvetlitev

3.2.2 Result overview, Measuring area 2



General

Calculation algorithm used
Height of evaluation surface
Maintenance factor

Average indirect fraction
1.49 m
0.80

Total luminous flux of all lamps
Total power
Total power per area (30.02 m²)

204 lm
6 W
0.20 W/m²

Illuminance

Average illuminance	Eav	2.76 lx
Minimum illuminance	Emin	1.69 lx
Maximum illuminance	E _{max}	3.83 lx
Uniformity U _o	Emin/Em	1:1.63 (0.61)
Diversity U _d	Emin/E _{max}	1:2.27 (0.44)

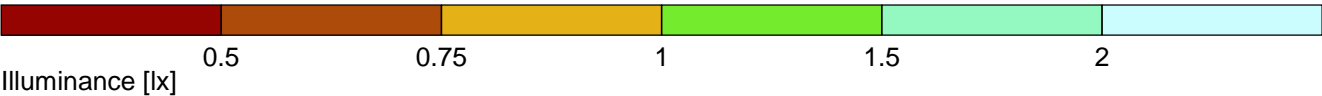
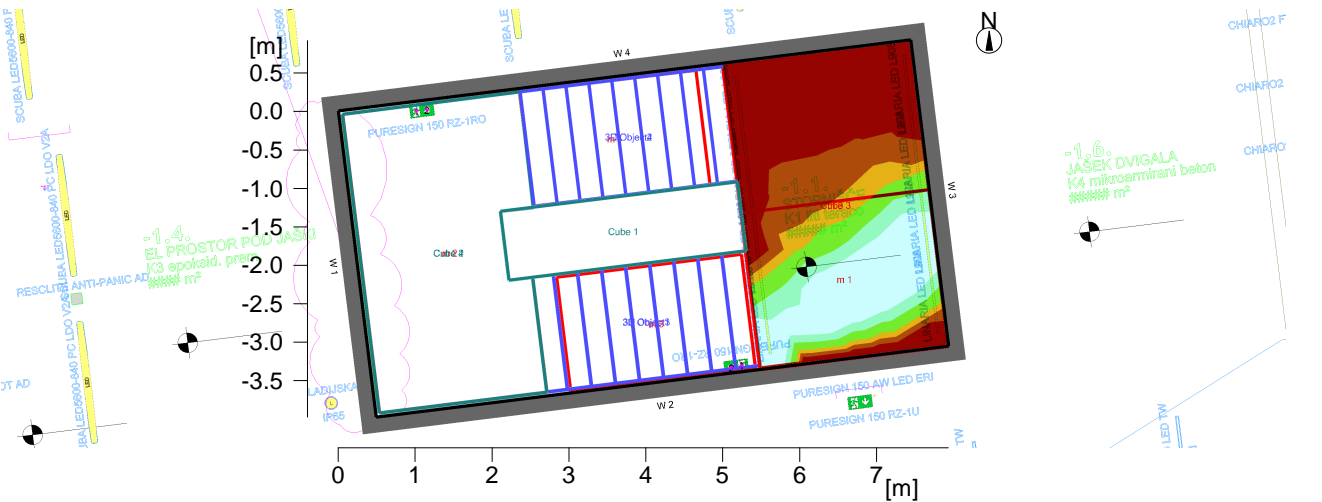
Type No.\Make

ZUMTOBEL
 Order No. : 70446584 (STD - Standard)
 Luminaire name : ONLITE ERI
 Equipment : 1 x LED-Z396 0C8W 1 W / 34 lm

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

3.2 Summary, 01_varnostna osvetlitev

3.2.3 Result overview, Measuring area 3



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	204 lm
Total power	6 W
Total power per area (30.02 m²)	0.20 W/m²

Illuminance

Average illuminance	Eav	0.88 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	2.85 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

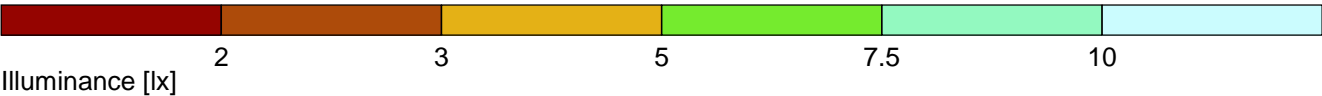
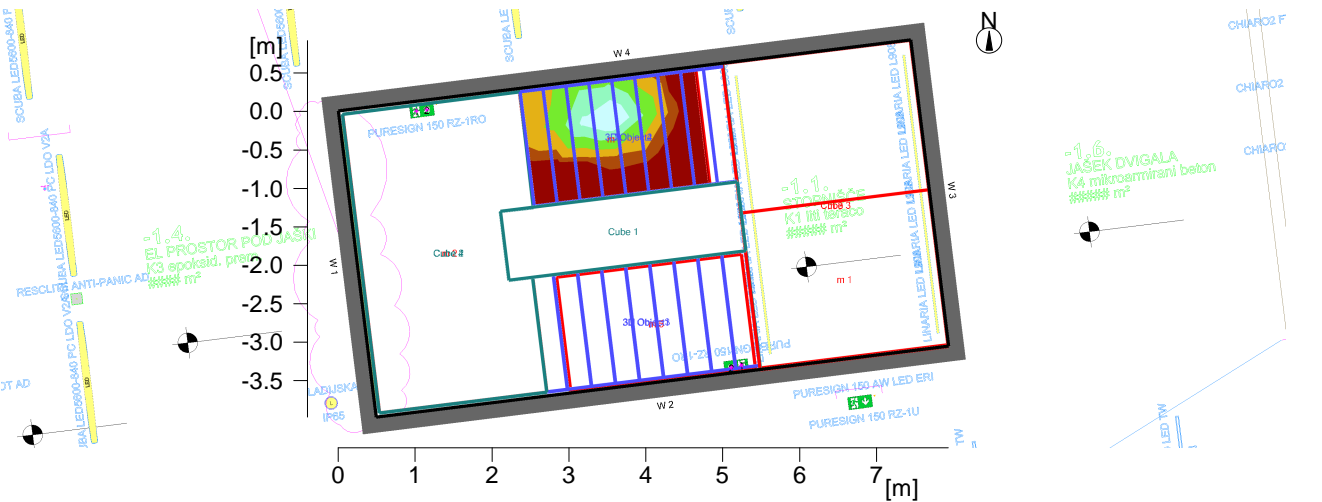
Type No.\Make

2	6	ZUMTOBEL	
		Order No.	: 70446584 (STD - Standard)
		Luminaire name	: ONLITE ERI
		Equipment	: 1 x LED-Z396 0C8W 1 W / 34 lm

Object : CUKRARNA
Installation : STOPNIŠČE
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Date : 05.10.2016

3.2 Summary, 01_varnostna osvetlitev

3.2.4 Result overview, Measuring area 4



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	204 lm
Total power	6 W
Total power per area (30.02 m²)	0.20 W/m²

Illuminance

Average illuminance	Eav	4.6 lx
Minimum illuminance	Emin	0.3 lx
Maximum illuminance	Emax	13.1 lx
Uniformity Uo	Emin/Em	1:15.5 (0.06)
Diversity Ud	Emin/Emax	1:44.4 (0.02)

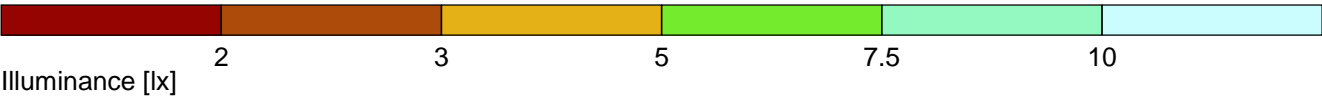
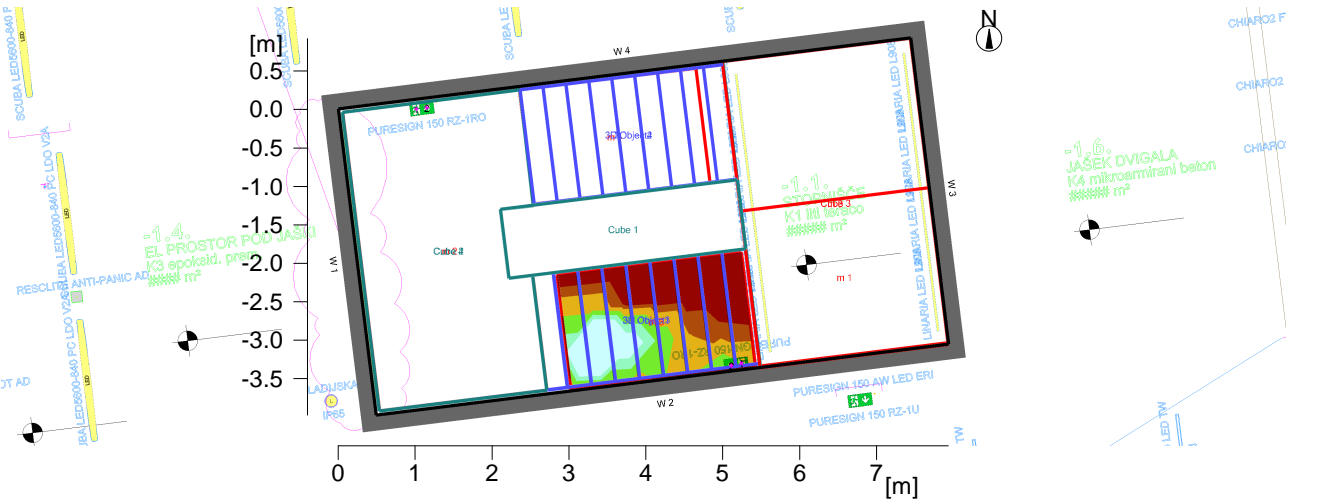
Type No.\Make

2	6	ZUMTOBEL	
		Order No.	: 70446584 (STD - Standard)
		Luminaire name	: ONLITE ERI
		Equipment	: 1 x LED-Z396 0C8W 1 W / 34 lm

Object : CUKRARNA
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3.2 Summary, 01_varnostna osvetlitev

3.2.5 Result overview, Measuring area 5



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	204 lm
Total power	6 W
Total power per area (30.02 m²)	0.20 W/m²

Illuminance

Average illuminance	Eav	4.3 lx
Minimum illuminance	Emin	0.8 lx
Maximum illuminance	Emax	26.7 lx
Uniformity Uo	Emin/Em	1:5.68 (0.18)
Diversity Ud	Emin/Emax	1:35.5 (0.03)

Type No.\Make

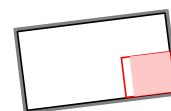
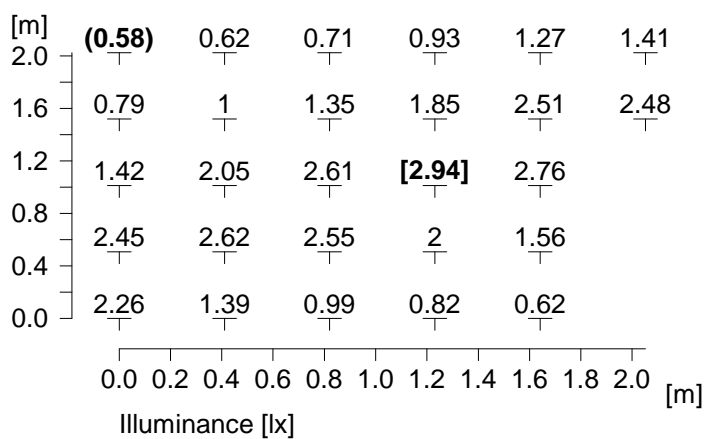
2	6	ZUMTOBEL	
		Order No.	: 70446584 (STD - Standard)
		Luminaire name	: ONLITE ERI
		Equipment	: 1 x LED-Z396 0C8W 1 W / 34 lm

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

3 01_varnostna osvetlitev

3.3 Calculation results, 01_varnostna osvetlitev

3.3.1 Table, Measuring area 1 (E)

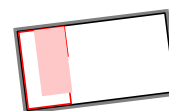
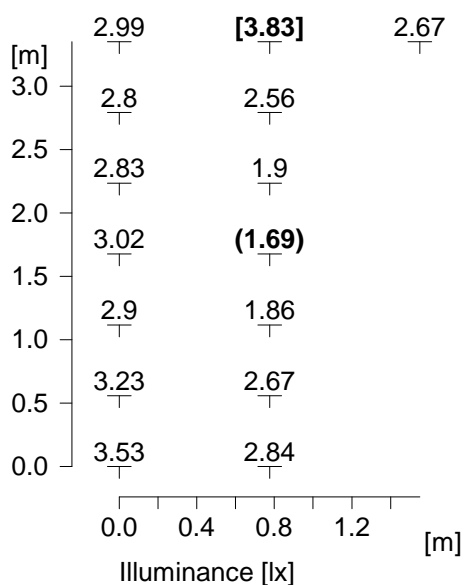


Average illuminance	Eav	: 1.65 lx
Minimum illuminance	Emin	: 0.58 lx
Maximum illuminance	Emax	: 2.94 lx
Uniformity Uo	Emin/Eav	: 1 : 2.83 (0.35)
Diversity Ud	Emin/Emax	: 1 : 5.04 (0.20)

Object : CUKRARNA
Installation : STOPNIŠČE
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3.3 Calculation results, 01_varnostna osvetlitev

3.3.2 Table, Measuring area 2 (E)



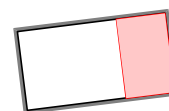
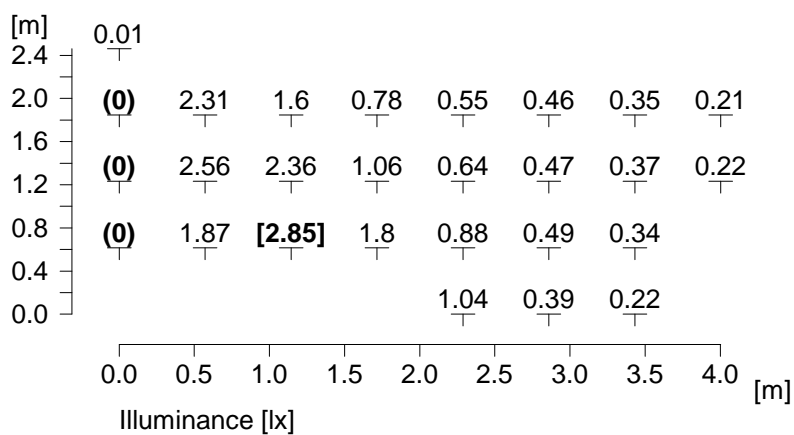
Height of the reference plane

Average illuminance	Eav	: 1.49 m
Minimum illuminance	Emin	: 2.76 lx
Maximum illuminance	Emax	: 1.69 lx
Uniformity Uo	Emin/Eav	: 3.83 lx
Diversity Ud	Emin/Emax	: 1 : 1.63 (0.61)
		: 1 : 2.27 (0.44)

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

3.3 Calculation results, 01_varnostna osvetlitev

3.3.3 Table, Measuring area 3 (E)

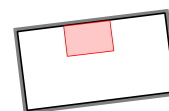
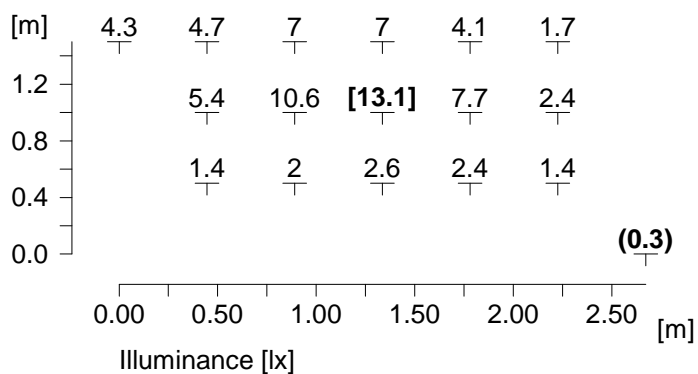


Average illuminance	Eav	: 0.88 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 2.85 lx
Uniformity Uo	Emin/Eav	: ---
Diversity Ud	Emin/Emax	: ---

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

3.3 Calculation results, 01_varnostna osvetlitev

3.3.4 Table, Measuring area 4 (E)

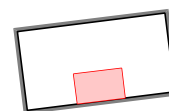
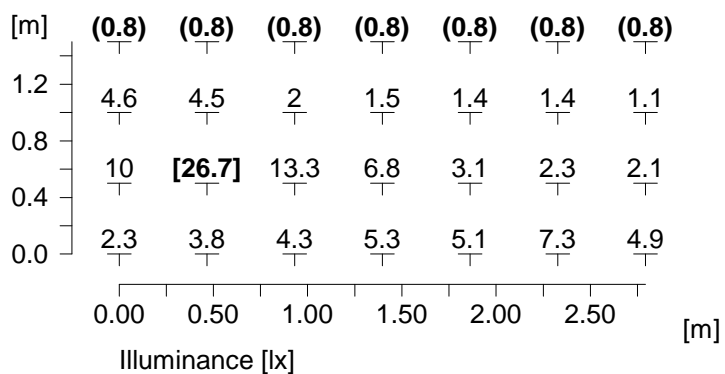


Average illuminance	Eav	: 4.6 lx
Minimum illuminance	Emin	: 0.3 lx
Maximum illuminance	Emax	: 13.1 lx
Uniformity Uo	Emin/Eav	: 1 : 15.54 (0.06)
Diversity Ud	Emin/Emax	: 1 : 44.44 (0.02)

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

3.3 Calculation results, 01_varnostna osvetlitev

3.3.5 Table, Measuring area 5 (E)



Average illuminance	Eav	: 4.3 lx
Minimum illuminance	Emin	: 0.8 lx
Maximum illuminance	Emax	: 26.7 lx
Uniformity Uo	Emin/Eav	: 1 : 5.68 (0.18)
Diversity Ud	Emin/Emax	: 1 : 35.52 (0.03)

Object : CUKRARNA
Installation : STOPNIŠČE
Project number : 409/16
Date : 05.10.2016

3.3 Calculation results, 01_varnostna osvetlitev

3.3.6 3D luminance, View 1



Luminance in the scene

Minimum: : 0 cd/m²

Maximum: : 4.4 cd/m²