

# CUKRARNA

Installation : KONFERENČNA DVORANA - MEDETAŽA

Project number : 415/16

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.

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## 1 Luminaire data

### 1.1 ZUMTOBEL, TECTON HILIO TW 930-60 § 40... (D36758AA.Idt)

#### 1.1.1 Data sheet

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Manufacturer: ZUMTOBEL

D36758AA.Idt      TECTON HILIO TW 930-60 § 4000K - LCAI 75W 250mA TW Ip - P=62.6W /  
T=3960K / x=0.3776 / y=0.3614 / phi=5927.3lm

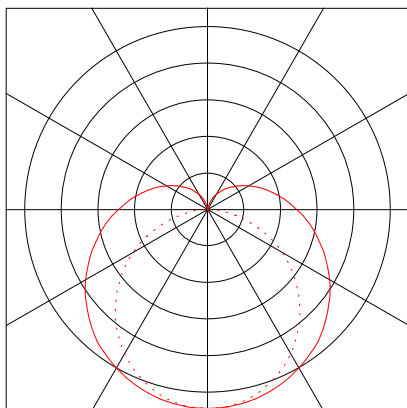
#### Luminaire data

Luminaire efficiency : 100%  
Luminaire efficacy : 94.68 lm/W  
Classification : B31 ↓81.8% ↑18.2%  
CIE Flux Codes : 37 65 86 82 100  
UGR 4H 8H : 26.4 / 24.1  
Power : 62.6 W  
Luminous flux : 5927 lm

#### Equipped with

Quantity : 1  
Designation : LED  
Colour : Unknown  
Luminous flux : 5927 lm

Dimensions : 1395 mm x 115 mm x 75 mm



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## 1 Luminaire data

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

#### 1.2.1 Data sheet

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Manufacturer: ZUMTOBEL

70446584 (STD - Standard)

ONLITE ERI

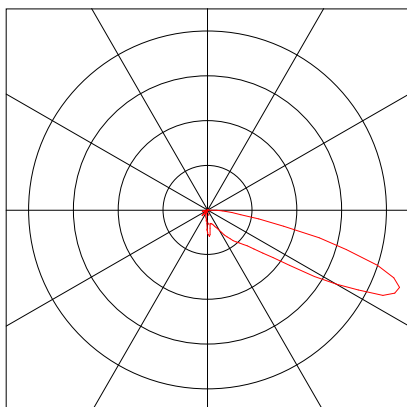
#### Luminaire data

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



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## 1 Luminaire data

### 1.3 Zumtobel, RESCLITE C ANTIPANIC ED NT1 WH ... (42180410)

#### 1.3.1 Data sheet

Manufacturer: Zumtobel

#### 42180410 ceiling recessed RESCLITE C ANTIPANIC ED NT1 WH [STD]

LED Safety luminaire for anti-panic lighting with min. 0.5 lx as specified in EN 1838; ceiling recessed; Luminaire with local battery supply for 1h emergency lighting for maintained or non-maintained mode, with automatic or central testing of emergency lighting function; room height 2.2 to 5 m; high power LED, cool white; large die-cast aluminium heat sink ensures optimum thermal management; gear box for installation in ceiling recess made of PC; lens made of polycarbonate (PC); luminaire housing made of die-cast aluminium in powder coated white finish, RAL 9016; luminaire can be installed quickly without tools; tool-free maintenance; through-wiring plug-in terminals for wire cross-sections up to 2.5 mm<sup>2</sup>; ball-proof design; luminaire total power: 4 W; power supply: 230V AC, 220V DC; rotary switch for mechanical address-setting; non-maintained and maintained mode possible, Maintained mode: +5°C to +30°C, Non-maintained mode: +5°C to +35°C; Dimensions: Ø85 x 28 mm; IP40; weight: 0.37 kg; Luminaire wired with halogen-free leads; suitable for recessed installation in concrete casting surround (please order separately).

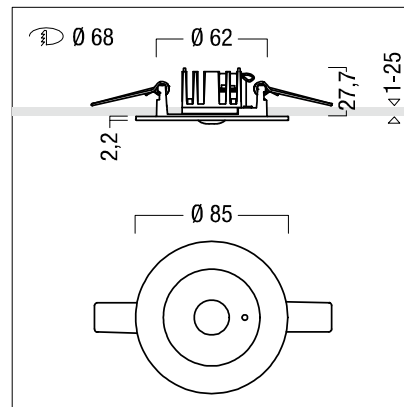
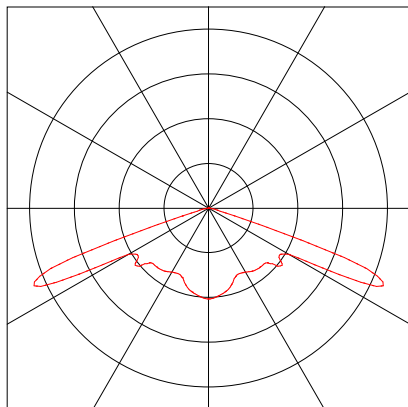
#### Luminaire data

Absolute Photometry  
Luminaire efficacy : 39.5 lm/W  
Classification : A20 ↓100.0% ↑0.0%  
CIE Flux Codes : 27 57 99 100 100  
UGR 4H 8H : 28.5 / 28.5  
Power : 4 W  
Luminous flux : 158 lm

#### Equipped with

Quantity : 1  
Designation : LED-Z633  
Colour : Unknown  
Colour reproduction :

Dimensions : Ø85 mm x 2 mm



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## 1 Luminaire data

### 1.4 ZUMTOBEL, RESCLITE C SPOT ED NSI... (42180428 (STD -...))

#### 1.4.1 Data sheet

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Manufacturer: ZUMTOBEL

42180428 (STD - Standard)

RESCLITE C SPOT ED NSI WH

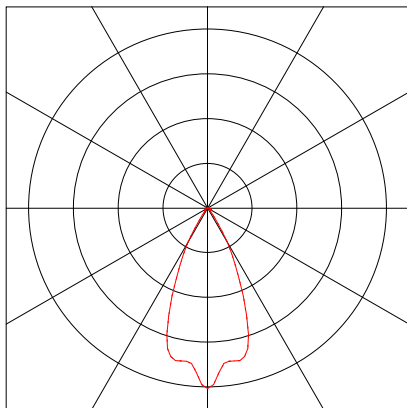
#### Luminaire data

Luminaire efficiency : 100%  
Luminaire efficacy : 38.6 lm/W  
Classification : A70 ↓100.0% ↑0.0%  
CIE Flux Codes : 89 95 98 100 100  
UGR 4H 8H : 13.4 / 16.1  
Power : 5 W  
Luminous flux : 193 lm

#### Equipped with

Quantity : 1  
Designation : LED-Z644 5W  
Colour :  
Luminous flux : 193 lm

Dimensions : 55 mm x 55 mm x 55 mm



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## 1 Luminaire data

### 1.5 Zumtobel, RESCLITE C SPOT AD NT3 WH [STD] (42180419)

#### 1.5.1 Data sheet

Manufacturer: Zumtobel

#### 42180419 surface mounted RESCLITE C SPOT AD NT3 WH [STD]

LED Safety luminaire for illuminating fire-fighting and first-aid equipment and danger spots with minimum output 5 lx; surface mounted; Luminaire with local battery supply for 3h emergency lighting function for maintained or non-maintained mode, automatic or central testing of emergency lighting function; room height 2.2 to 7 m; high power LED, cool white; large die-cast aluminium heat sink ensures optimum thermal management; lens made of polycarbonate (PC); luminaire housing made of die-cast aluminium in powder coated white finish, RAL 9016; gear tray made of galvanised sheet steel; housing can be installed quickly on gear tray without tools; tool-free maintenance; through-wiring plug-in terminals for wire cross-sections up to 2.5 mm<sup>2</sup>; side cable-entry possible; luminaire total power: 4.5 W; power supply: 230V AC; rotary switch for mechanical address-setting; non-maintained and maintained mode possible, Maintained mode: +5°C to +30°C, Non-maintained mode: +5°C to +35°C; Dimensions: 146 x 146 x 37 mm; IP40; weight: 0.71 kg; Luminaire wired with halogen-free leads

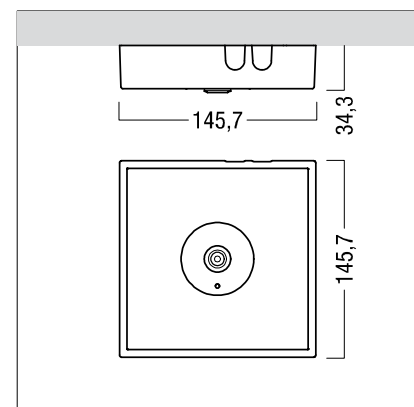
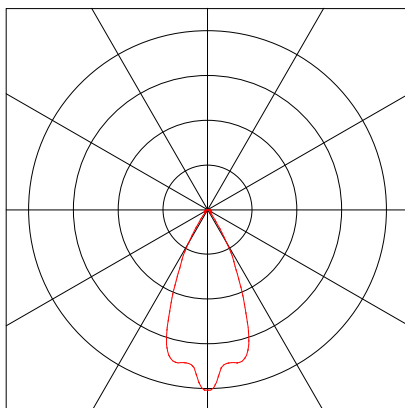
#### Luminaire data

Absolute Photometry  
Luminaire efficacy : 32.89 lm/W  
Classification : A70 ↓100.0% ↑0.0%  
CIE Flux Codes : 89 95 98 100 100  
UGR 4H 8H : 12.8 / 12.8  
Power : 4.5 W  
Luminous flux : 148 lm

#### Equipped with

Quantity : 1  
Designation : LED-Z649  
Colour : Unknown  
Colour reproduction :

Dimensions : 146 mm x 146 mm x 37 mm

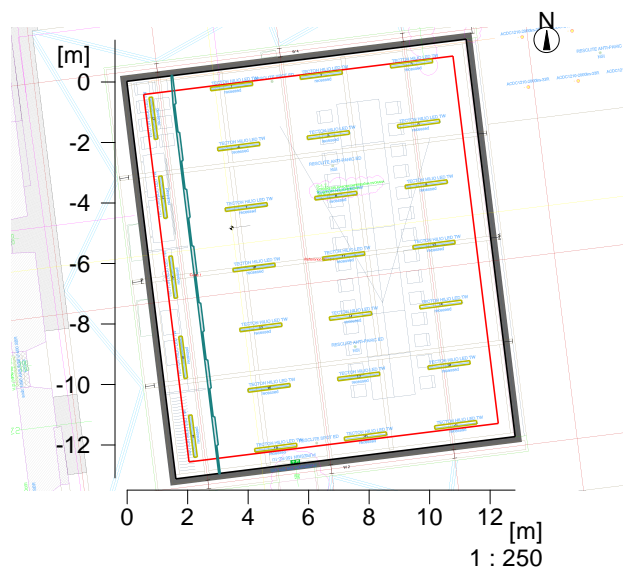


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## 2 01\_splošna osvetlitev

### 2.1 Description, 01\_splošna osvetlitev

#### 2.1.1 Floor plan



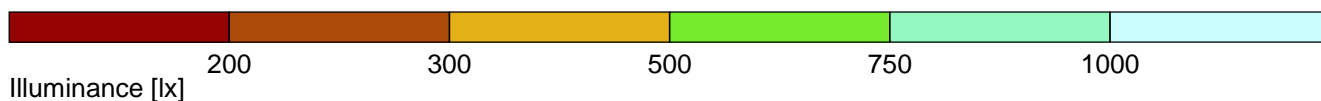
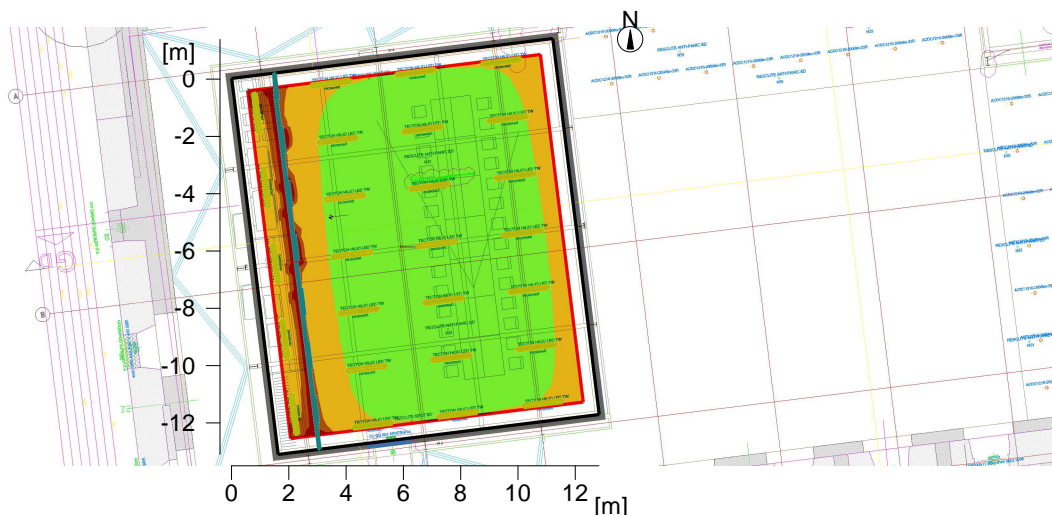
Wall	x	y	Length	Reflectance
1	40.10 m	32.82 m	13.20 m	50.0 %
2	51.31 m	34.21 m	11.29 m	50.0 %
3	49.69 m	47.31 m	13.19 m	50.0 %
4	38.48 m	45.92 m	11.29 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		3.50 m		
Height of reference plane		0.75 m		

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## 2 01\_splošna osvetlitev

### 2.2 Summary, 01\_splošna osvetlitev

#### 2.2.1 Result overview, Evaluation area 1



#### General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	3.50 m
Maintenance factor	0.80
Total luminous flux of all lamps	154102 lm
Total power	1627.6 W
Total power per area (148.98 m <sup>2</sup> )	10.92 W/m <sup>2</sup> (1.98 W/m <sup>2</sup> /100lx)

#### Evaluation area 1

#### Reference plane 1.1

	Horizon
Em	553 lx
Emin	289 lx
Emin/Eav (Uo)	0.52
Emin/Emax (Ud)	0.45
UGR (6.4H 5.7H)	<=26.1
Position	0.75 m

#### Type No.\Make

1	26	<b>ZUMTOBEL</b>
		Order No. : D36758AA.ltd
		Luminaire name : TECTON HILIO TW 930-60 § 4000K - LCAI 75W 250mA TW Ip
		- P=62.6W / T=
		Equipment : 1 x LED 62.6 W / 5927 lm

scapelab

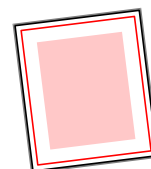
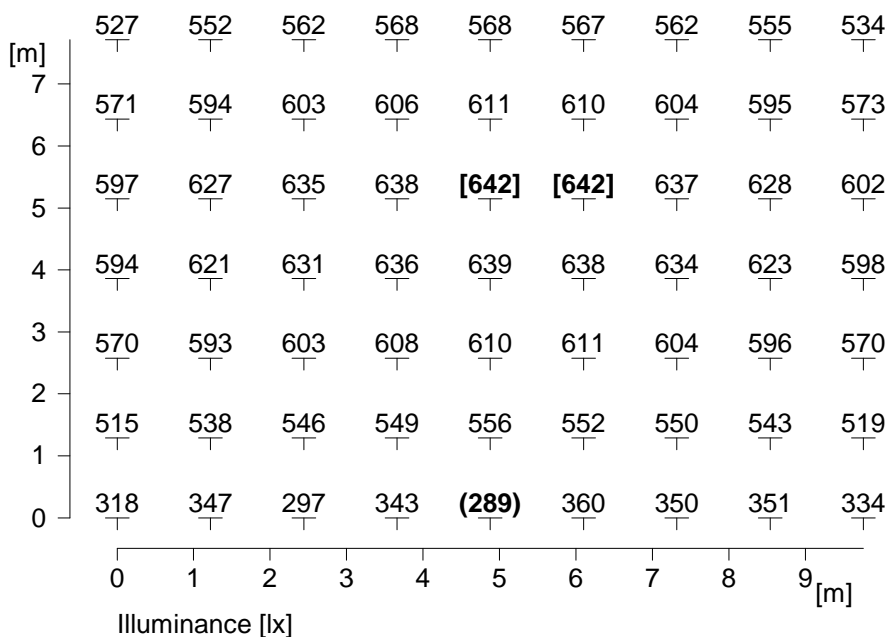


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## 2 01\_splošna osvetlitev

### 2.3 Calculation results, 01\_splošna osvetlitev

#### 2.3.1 Table, Reference plane 1.1 (E)



Height of the reference plane

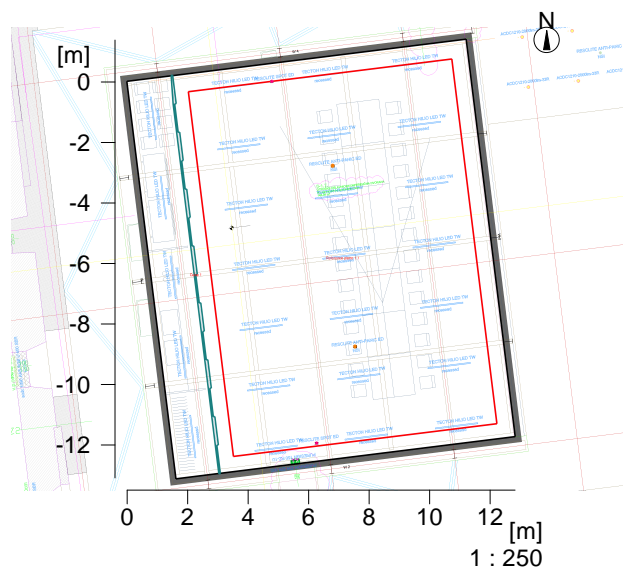
Average illuminance	Eav	: 0.75 m
Minimum illuminance	Emin	: 553 lx
Maximum illuminance	Emax	: 289 lx
Uniformity Uo	Emin/Eav	: 642 lx
Diversity Ud	Emin/Emax	: 1 : 1.91 (0.52)
		: 1 : 2.22 (0.45)

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### 3 02\_varnostna osvetlitev

#### 3.1 Description, 02\_varnostna osvetlitev

##### 3.1.1 Floor plan



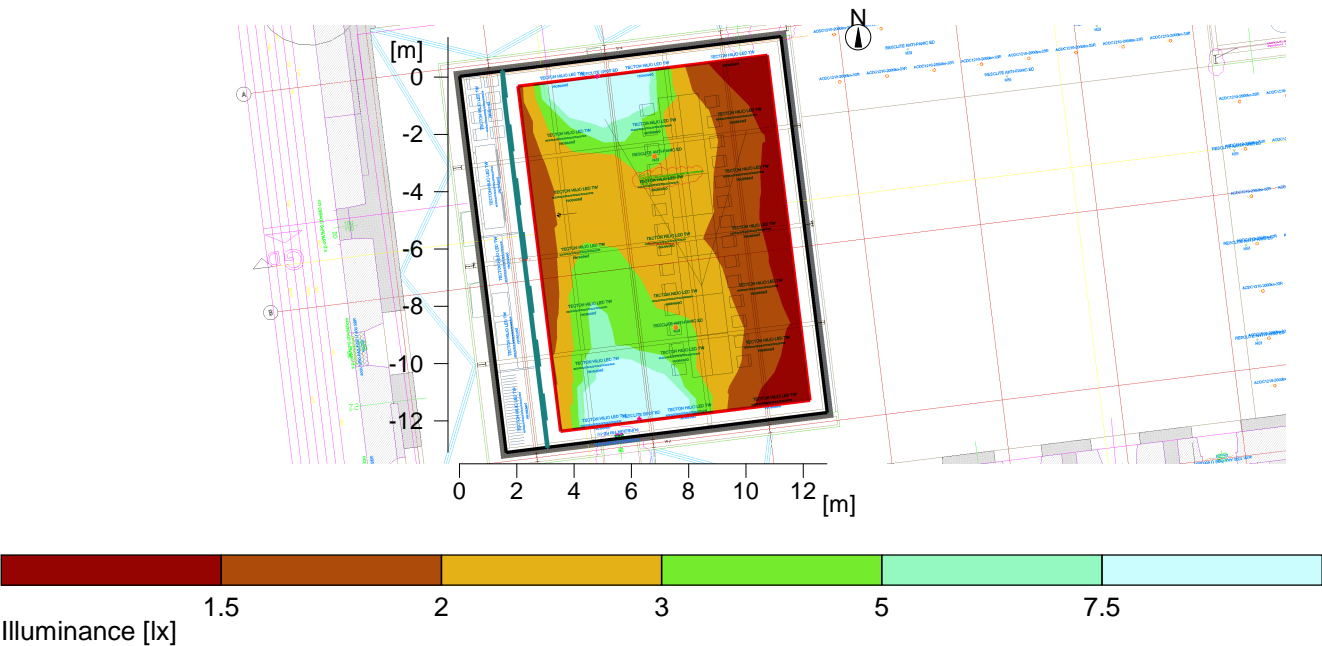
Wall	x	y	Length	Reflectance
1	40.10 m	32.82 m	13.20 m	50.0 %
2	51.31 m	34.21 m	11.29 m	50.0 %
3	49.69 m	47.31 m	13.19 m	50.0 %
4	38.48 m	45.92 m	11.29 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		3.50 m		
Height of reference plane		0.03 m		

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3 02\_varnostna osvetlitev

3.2 Summary, 02\_varnostna osvetlitev

3.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	702 lm
Total power	18.0 W
Total power per area (106.12 m²)	0.17 W/m² (4.54 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal
Em	3.74 lx
Emin	1.23 lx
Emin/Eav (Uo)	0.33
Emin/Emax (Ud)	0.06
Position	0.03 m

Type No.\Make

4	2	<b>ZUMTOBEL</b>	
		Order No.	: 42180428 (STD - Standard)
		Luminaire name	: RESCLITE C SPOT ED NSI WH
		Equipment	: 1 x LED-Z644 5W 5 W / 193 lm

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### 3 02\_varnostna osvetlitev

#### 3.2 Summary, 02\_varnostna osvetlitev

##### 3.2.1 Result overview, Evaluation area 1

3	2	<b>Zumtobel</b>	
		Order No.	: 42180410
		Luminaire name	: RESCLITE C ANTIPANIC ED NT1 WH [STD]
		Equipment	: 1 x LED-Z633 4 W / 158 lm

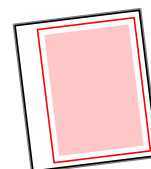
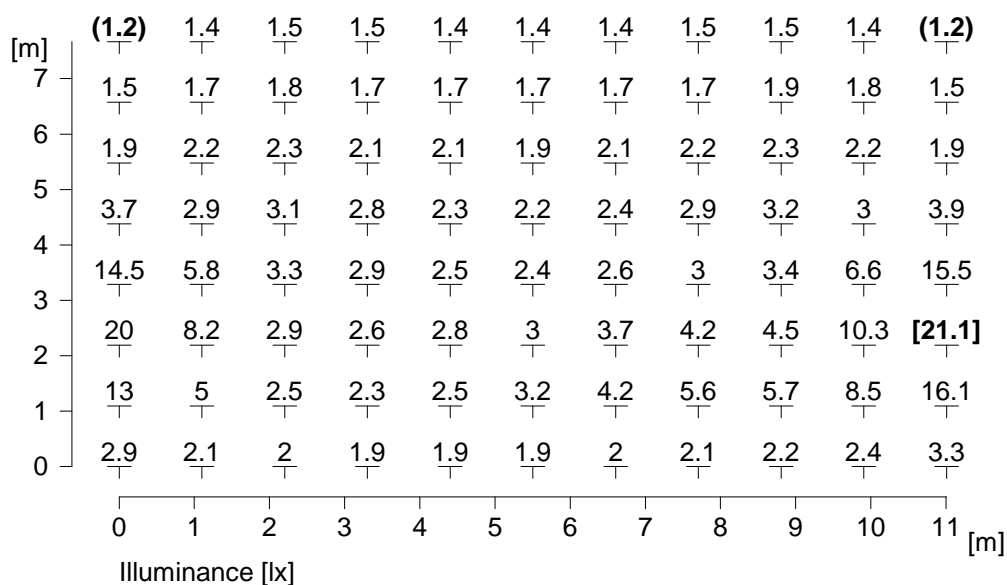


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### 3 02\_varnostna osvetlitev

#### 3.3 Calculation results, 02\_varnostna osvetlitev

##### 3.3.1 Table, Reference plane 1.1 (E)



Height of the reference plane

Average illuminance	Eav	: 0.03 m
Minimum illuminance	Emin	: 3.7 lx
Maximum illuminance	Emax	: 1.2 lx
Uniformity Uo	Emin/Eav	: 21.1 lx
Diversity Ud	Emin/Emax	: 1 : 3.03 (0.33)
		: 1 : 17.11 (0.06)