

EXTERNAL PADEL COURT LIGHTING

Installation : DLC NORTHWOOD

Project number : LS0807

Customer : EBS

Processed by : LS

Date : 04.03.2025

Project description:

SAMPLE CALCULATION BASED ON:

3 X PADEL COURTS

2 OPEN

1 COVERED BY A POLYCARBONATE CANOPY

6M COLUMN HEIGHTS

1 X LUMINAIRE PER COLUMN

0.9 MAINTENANCE FACTOR AS RECOMMENDED BY THE LTA PADEL COURT GUIDANCE

DESIGNED TO ACHIEVE THE MINIMUM RECOMMENDATIONS OF THE LAWN TENNIS ASSOCIATION PADEL COURT GUIDANCE FOR EXTERNAL PADEL COURTS.

300 LUX AND 0.5 UNIFORMITY

REGIONAL COMPETITION, SCHOOLS AND RECREATION

ACHIEVES 0.6 UNIFORMITY ON EACH COURT AS RECOMMENDED BY BS EN 12193: LIGHT AND LIGHTING - SPORTS LIGHTING.

5 X GLARE MEASURING POSITIONS ON ONE COURT - ALL COURTS HAVE THE SAME FLOODLIGHT LAYOUT.

MAX RG OF 36 - WELL BELOW THE MAXIMUM PERMITTED GR OF 55 - RG IS ONLY RELEVANT TO FLOODLIGHTS WITH A MOUNTING HEIGHT OF 10M AND ABOVE

The following values are based on precise calculations performed on calibrated lamps and luminaires, and their configurations, whereby gradual, unavoidable deviations can occur in practice. All guarantee claims are excluded for the specified data.

This exclusion of liability applies irrespective of the legal grounds for both damages and consequential damages suffered by users and third parties.

Object : EXTERNAL PADEL COURT LIGHTING
Installation : DLC NORTHWOOD
Project number : LS0807
Date : 04.03.2025



1 Luminaire data

1.1 BELL Lighting Limited, Skyline Virtus 150W-300W 4000K Asy... (11491)

1.1.1 Data sheet

Manufacturer: BELL Lighting Limited

11491 Skyline Virtus 150W-300W 4000K Asymmetric Floodlight

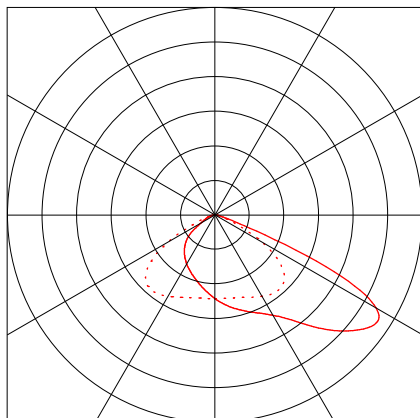
Luminaire data

Luminaire efficiency : 100%
Luminaire efficacy : 153.64 lm/W
Classification : A40 ↓100.0% ↑0.0%
CIE Flux Codes : 41 84 99 100 100
UGR 4H 8H : 38.2 / 32.1
Power : 225 W
Luminous flux : 34567.7 lm

Equipped with

Quantity : 1
Designation : LED 840
Colour : 4000K
Luminous flux : 34568 lm
Colour reproduction : 80

Dimensions : 380 mm x 380 mm x 75 mm

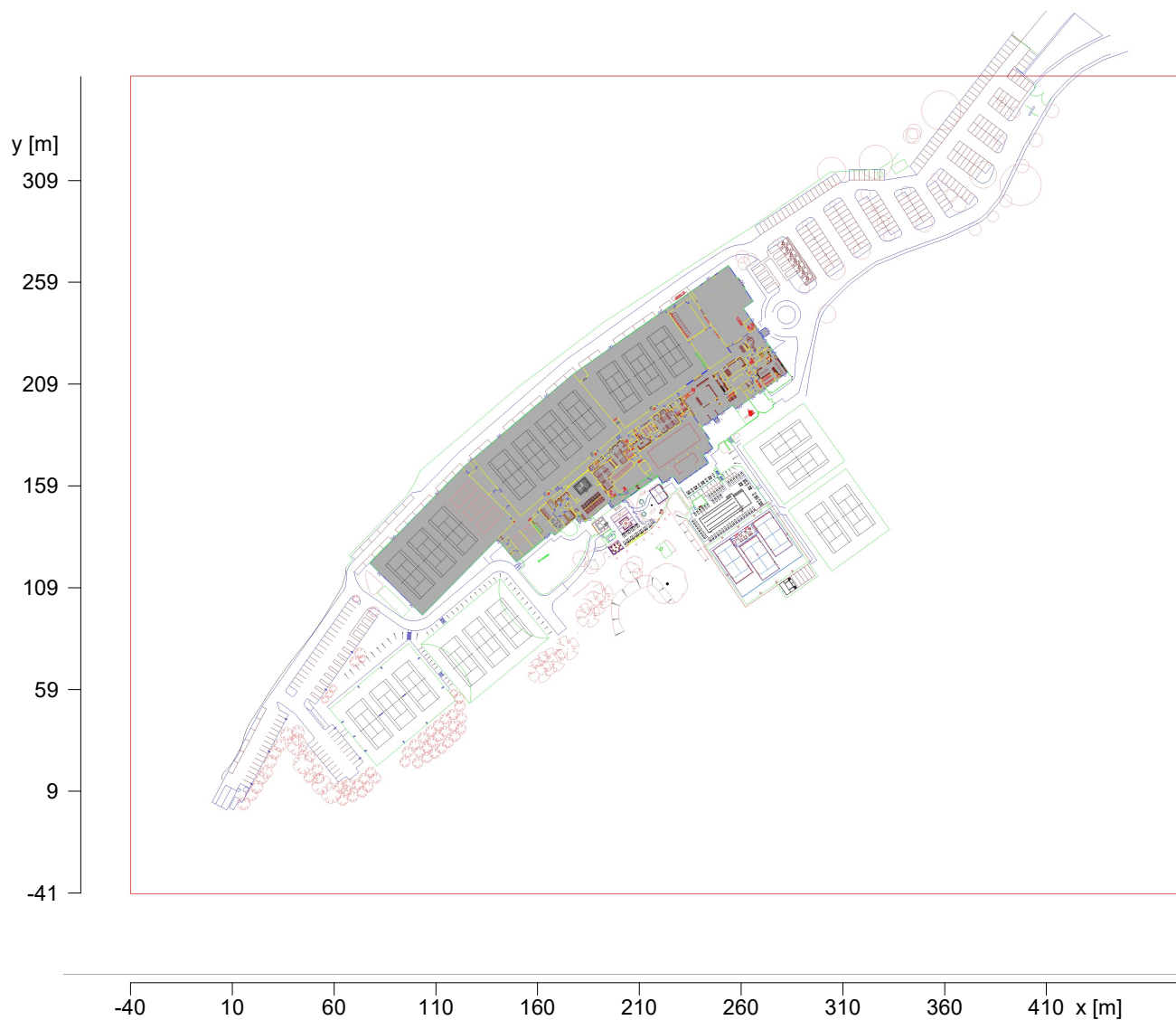




2 Exterior 1

2.1 Description, Exterior 1

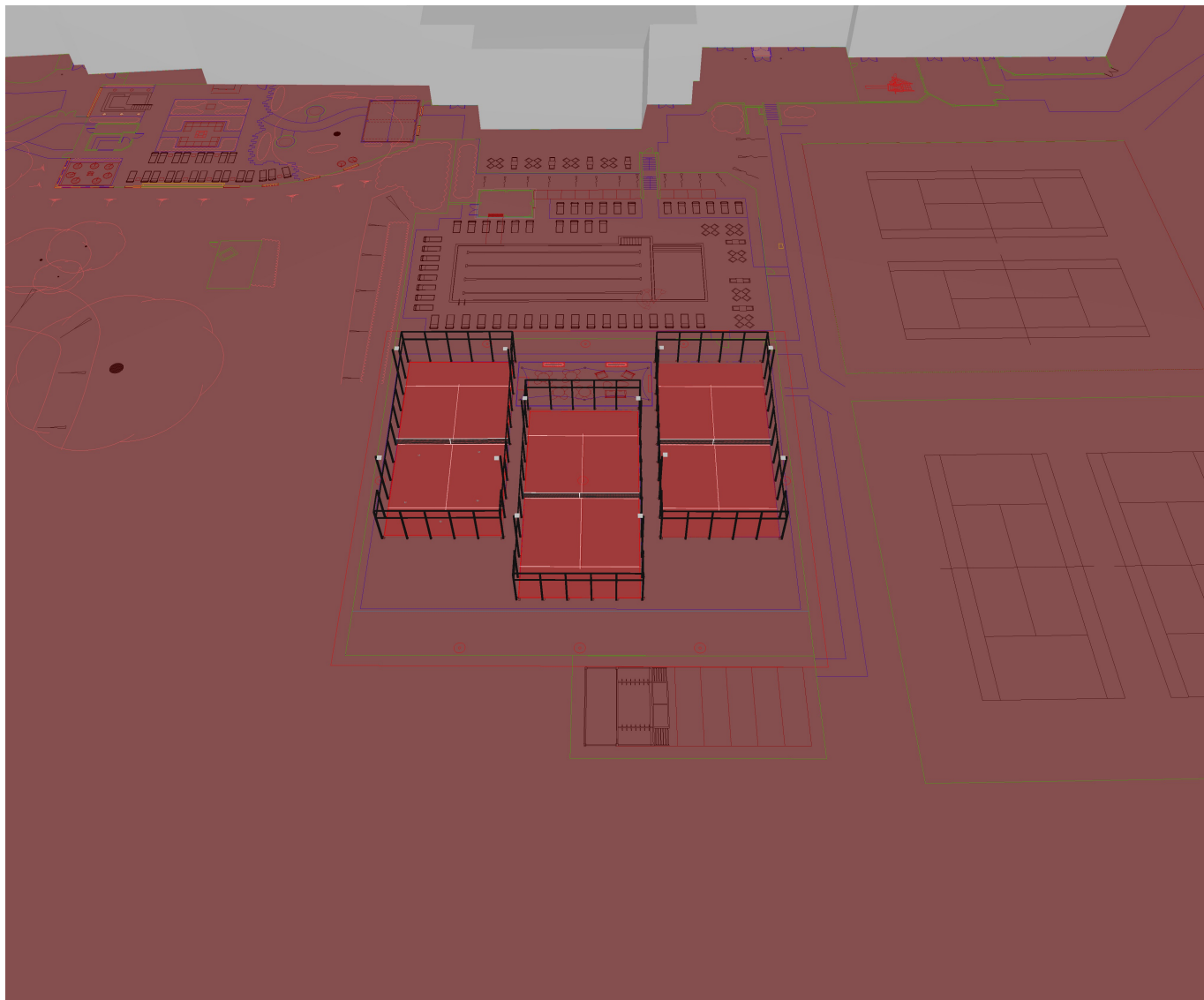
2.1.1 Floor plan





2.1 Description, Exterior 1

2.1.2 3D view, View 1



Object : EXTERNAL PADEL COURT LIGHTING
 Installation : DLC NORTHWOOD
 Project number : LS0807
 Date : 04.03.2025



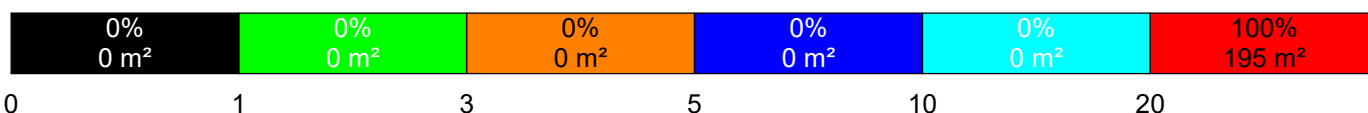
2 Exterior 1

2.2 Summary, Exterior 1

2.2.1 Result overview, PADEL COURT 1



-40 10 60 110 160 210 260 310 360 410 x [m]



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.07 m
Maintenance factor	0.90
Total luminous flux	414816 lm
Total power	2700 W
Total power per area (208520.00 m ²)	0.01 W/m ²

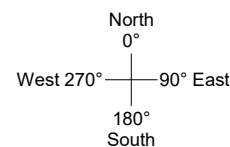
Illuminance

Average illuminance	$\bar{E}_m$	337 lx
Minimum illuminance	E_{min}	204 lx
Maximum illuminance	E_{max}	456 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.66 (0.6)
Diversity U_d	E_{min}/E_{max}	1:2.24 (0.45)

Observer Rg

$L_{ve} = 0.84 \text{ cd/m}^2$, $\bar{E}_i = 375 \text{ lx}$, $\rho = 20 \%$

No.	Description	Position	$R_{G,max}$	Direction
5	RG 5	257 m/114 m/1.6 m	36.2	46° (-2°)



Type No. Make

Object : EXTERNAL PADEL COURT LIGHTING
Installation : DLC NORTHWOOD
Project number : LS0807
Date : 04.03.2025



2 Exterior 1

2.2 Summary, Exterior 1

2.2.1 Result overview, PADEL COURT 1

		BELL Lighting Limited
1	12 x	Order No. : 11491
		Luminaire name : Skyline Virtus 150W-300W 4000K Asymmetric Floodlight
		Equipment : 1 x LED 840 225 W / 34568 lm

Object : EXTERNAL PADEL COURT LIGHTING
 Installation : DLC NORTHWOOD
 Project number : LS0807
 Date : 04.03.2025

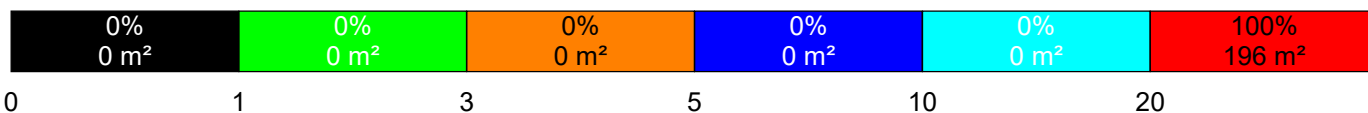


2.2 Summary, Exterior 1

2.2.2 Result overview, PADEL COURT 2



-40 10 60 110 160 210 260 310 360 410 x [m]



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.07 m
Maintenance factor	0.90
Total luminous flux	414816 lm
Total power	2700 W
Total power per area (208520.00 m ²)	0.01 W/m ²

Illuminance

Average illuminance	$\bar{E}_m$	349 lx
Minimum illuminance	E_{min}	212 lx
Maximum illuminance	E_{max}	450 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.65 (0.61)
Diversity U_d	E_{min}/E_{max}	1:2.12 (0.47)

Type No. Make

1	12 x	BELL Lighting Limited
		Order No. : 11491
		Luminaire name : Skyline Virtus 150W-300W 4000K Asymmetric Floodlight
		Equipment : 1 x LED 840 225 W / 34568 lm

Object : EXTERNAL PADEL COURT LIGHTING
 Installation : DLC NORTHWOOD
 Project number : LS0807
 Date : 04.03.2025

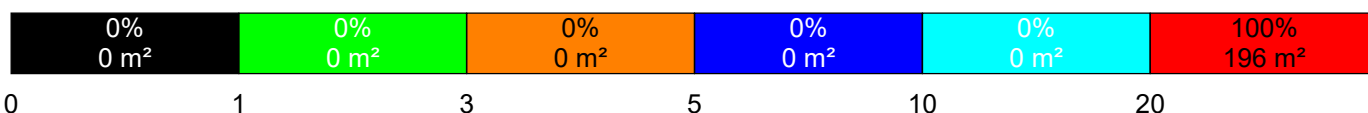


2.2 Summary, Exterior 1

2.2.3 Result overview, PADEL COURT 3



-40 10 60 110 160 210 260 310 360 410 x [m]



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.07 m
Maintenance factor	0.90
Total luminous flux	414816 lm
Total power	2700 W
Total power per area (208520.00 m ²)	0.01 W/m ²

Illuminance

Average illuminance	$\bar{E}_m$	320 lx
Minimum illuminance	E_{min}	196 lx
Maximum illuminance	E_{max}	436 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.63 (0.61)
Diversity U_d	E_{min}/E_{max}	1:2.23 (0.45)

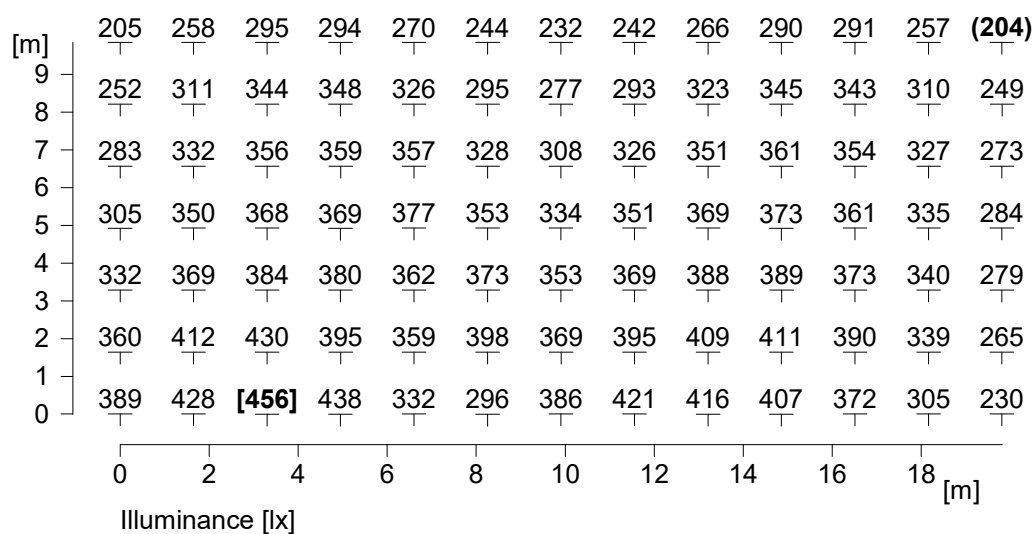
Type No. \ Make

BELL Lighting Limited	
1	Order No. : 11491
12 x	Luminaire name : Skyline Virtus 150W-300W 4000K Asymmetric Floodlight
	Equipment : 1 x LED 840 225 W / 34568 lm

2 Exterior 1

2.3 Calculation results, Exterior 1

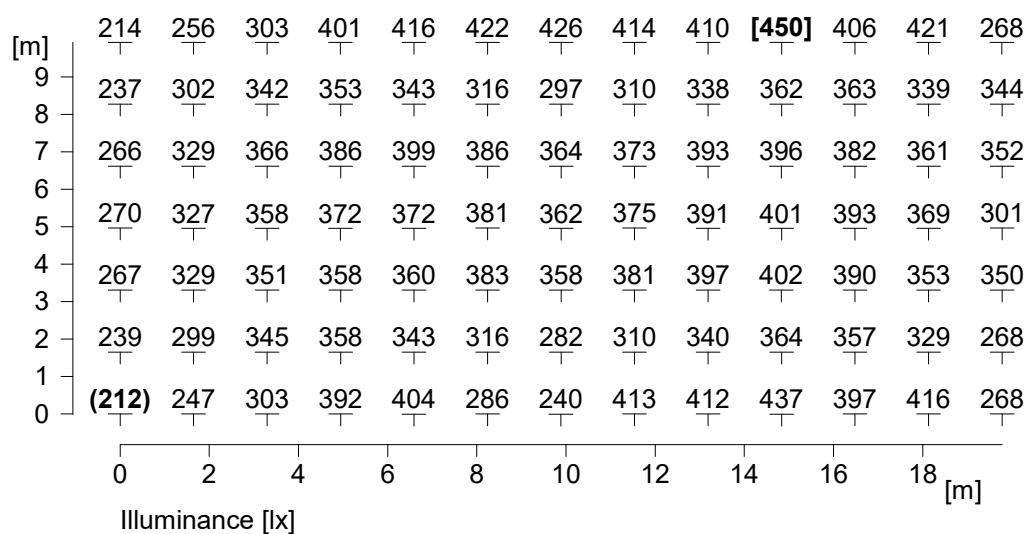
2.3.2 Table, PADEL COURT 1 (E)



Height reference plane	: 0.07 m
Average illuminance	$\bar{E}_m$: 337 lx
Minimum illuminance	E_{min} : 204 lx
Maximum illuminance	E_{max} : 456 lx
Uniformity U_o	$E_{min}/\bar{E}_m$: 1 : 1.66 (0.60)
Diversity U_d	E_{min}/E_{max} : 1 : 2.24 (0.45)

2.3 Calculation results, Exterior 1

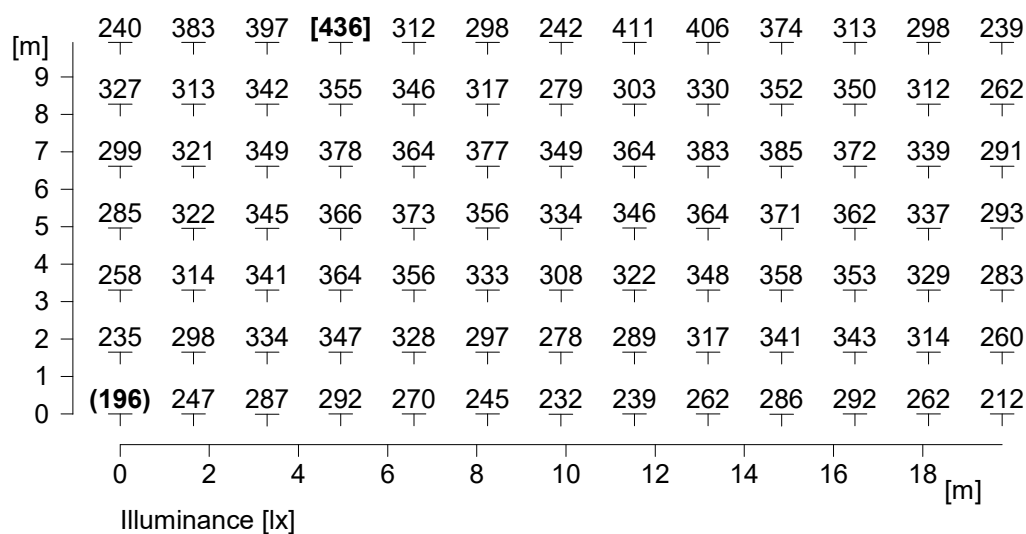
2.3.3 Table, PADEL COURT 2 (E)



Height reference plane	: 0.07 m
Average illuminance	$\bar{E}_m$: 349 lx
Minimum illuminance	E_{min} : 212 lx
Maximum illuminance	E_{max} : 450 lx
Uniformity U_o	$E_{min}/\bar{E}_m$: 1 : 1.65 (0.61)
Diversity U_d	E_{min}/E_{max} : 1 : 2.12 (0.47)

2.3 Calculation results, Exterior 1

2.3.4 Table, PADEL COURT 3 (E)

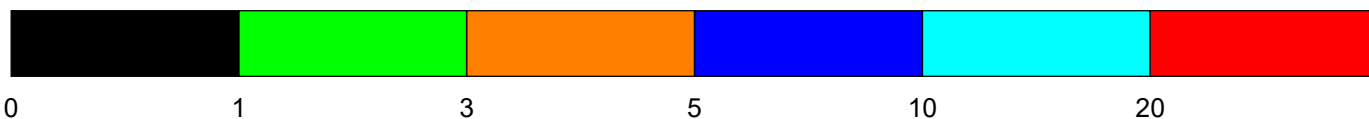
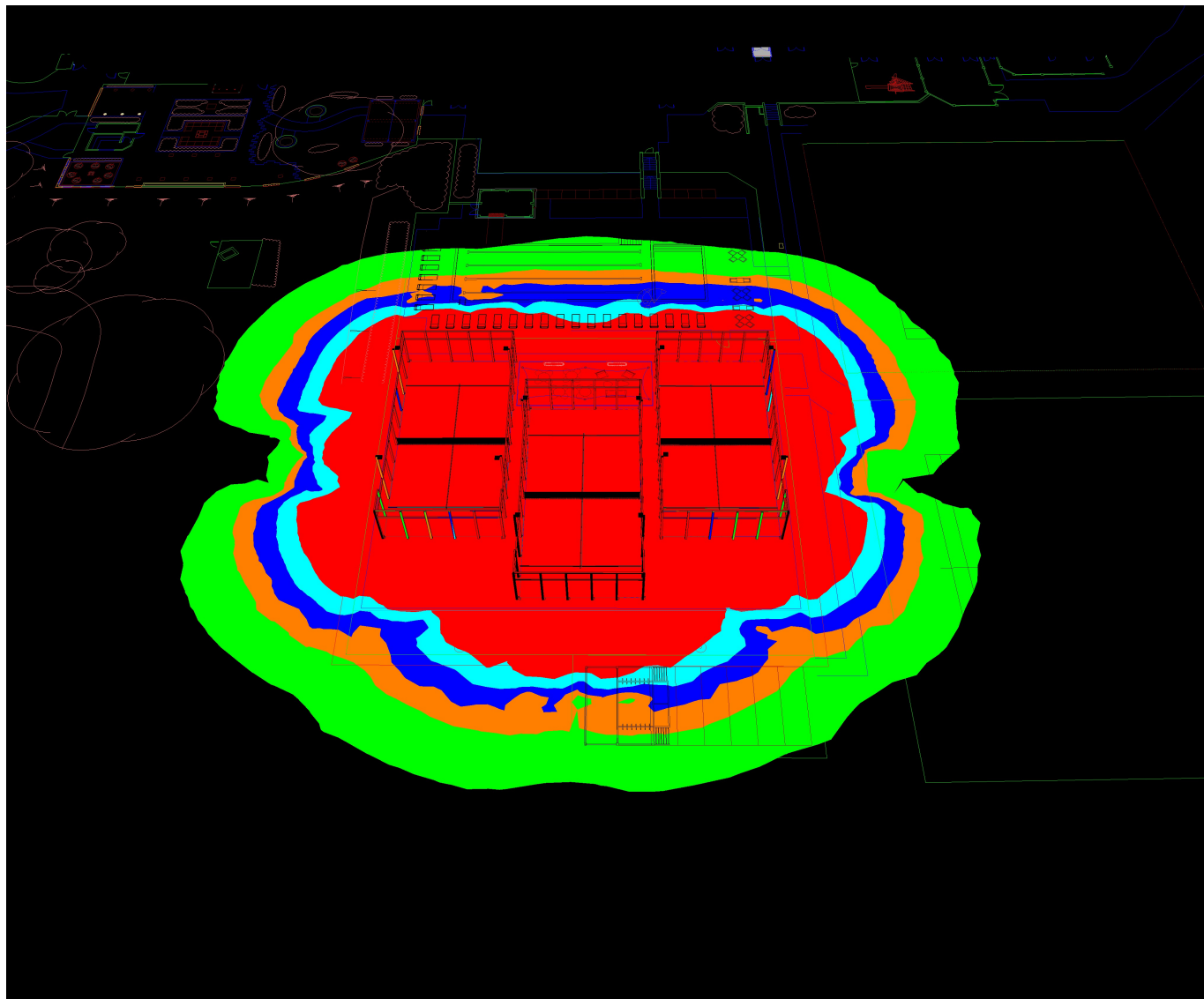


Height reference plane	: 0.07 m
Average illuminance	$\bar{E}_m$: 320 lx
Minimum illuminance	E_{min} : 196 lx
Maximum illuminance	E_{max} : 436 lx
Uniformity U_o	$E_{min}/\bar{E}_m$: 1 : 1.63 (0.61)
Diversity U_d	E_{min}/E_{max} : 1 : 2.23 (0.45)



2.3 Calculation results, Exterior 1

2.3.5 3D pseudo colours, View 1 (E)

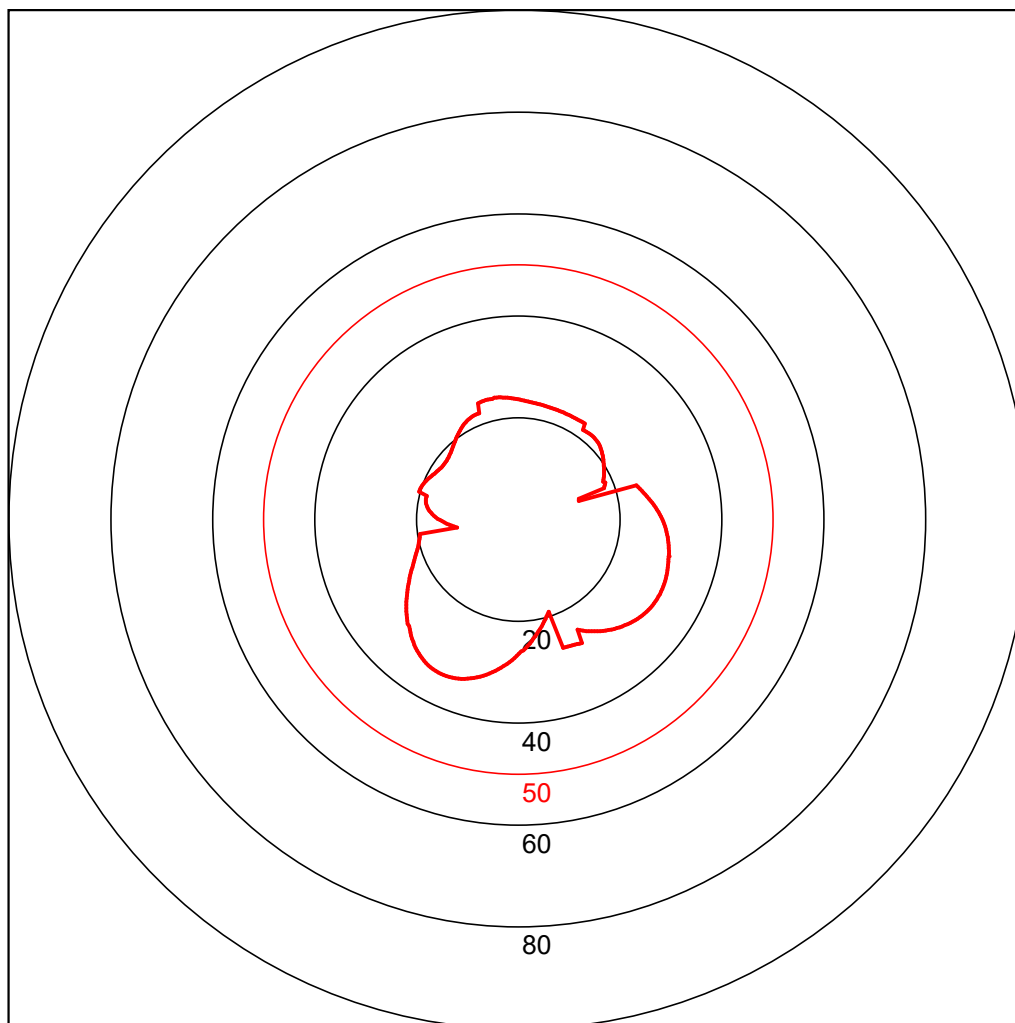


Illuminance [lx]



2.3 Calculation results, Exterior 1

2.3.6 Glare rating - RG 1



$L_{ve} = 0.84 \text{ cd/m}^2$, $\bar{E}_i = 370 \text{ lx}$, $\rho = 20 \%$

No. Description

1 RG 1

Position

259 m/122 m/1.6 m

$R_{G,max}$

33.9

Direction

207° (-2°)

North

0°

West 270° 90° East

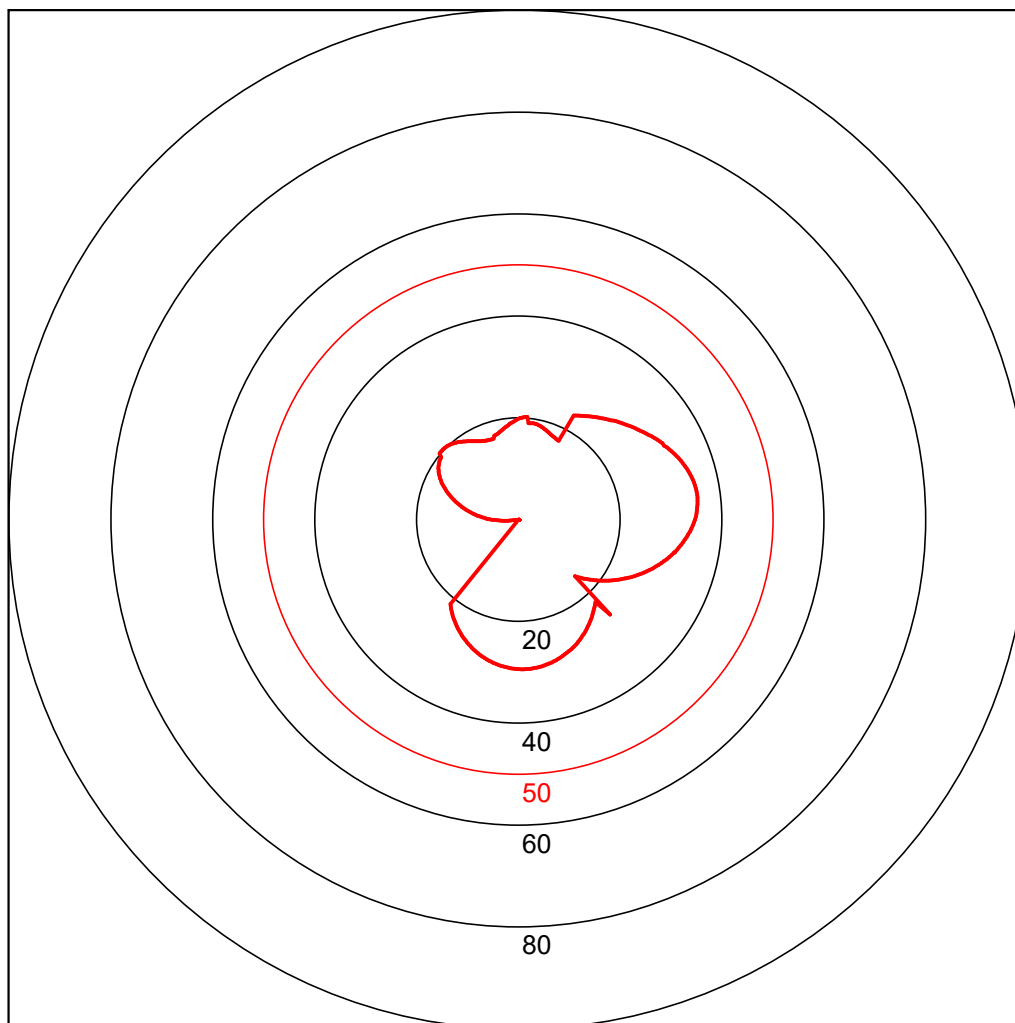
180°

South



2.3 Calculation results, Exterior 1

2.3.7 Glare rating - RG 2



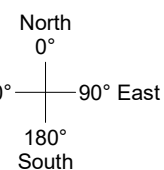
$L_{ve} = 0.84 \text{ cd/m}^2$, $\bar{E}_i = 370 \text{ lx}$, $\rho = 20 \%$

No. Description
 2 RG 2

Position
 255 m/119 m/1.6 m

$R_{G,max}$
 35.4

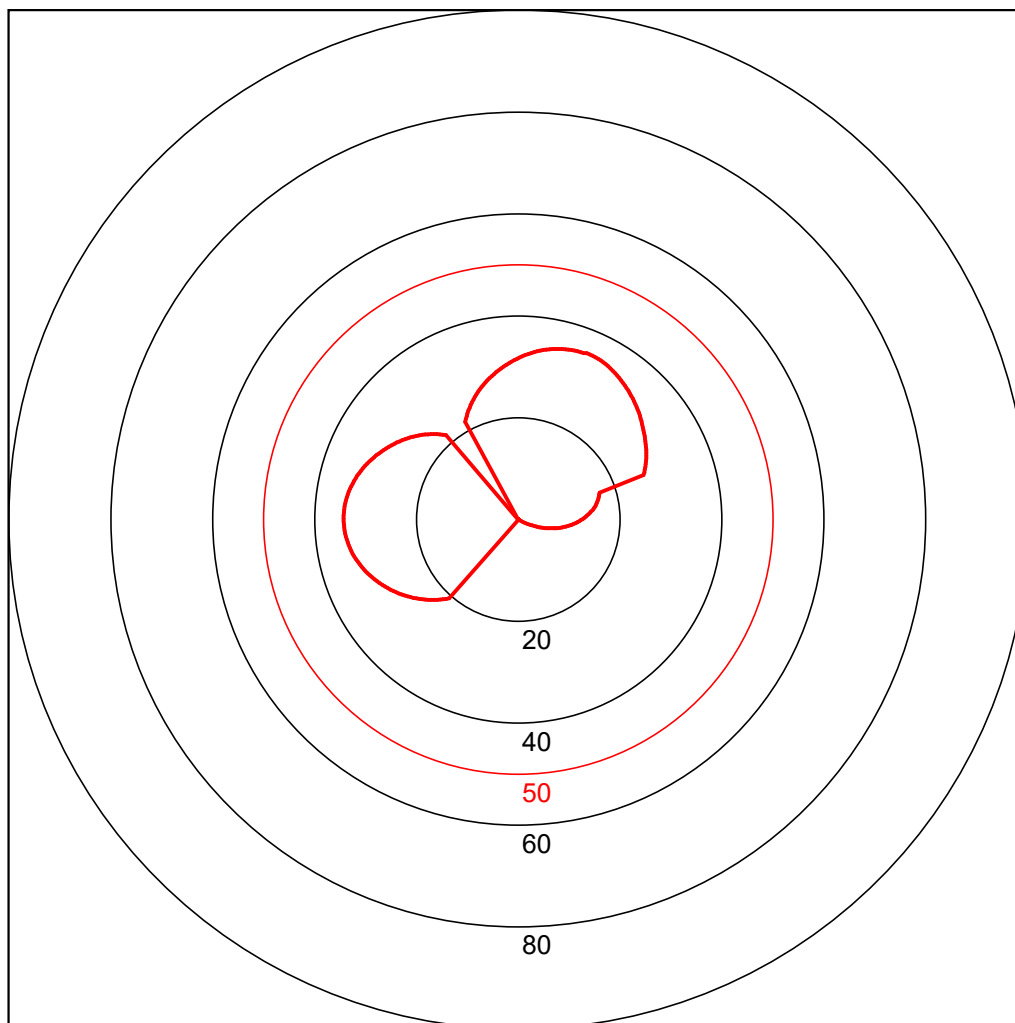
Direction
 $82^\circ (-2^\circ)$





2.3 Calculation results, Exterior 1

2.3.8 Glare rating - RG 3



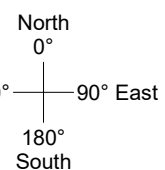
$L_{ve} = 0.84 \text{ cd/m}^2$, $\bar{E}_i = 370 \text{ lx}$, $\rho = 20 \%$

No. Description
 3 RG 3

Position
 261 m/114 m/1.6 m

$R_{G,max}$
 35.3

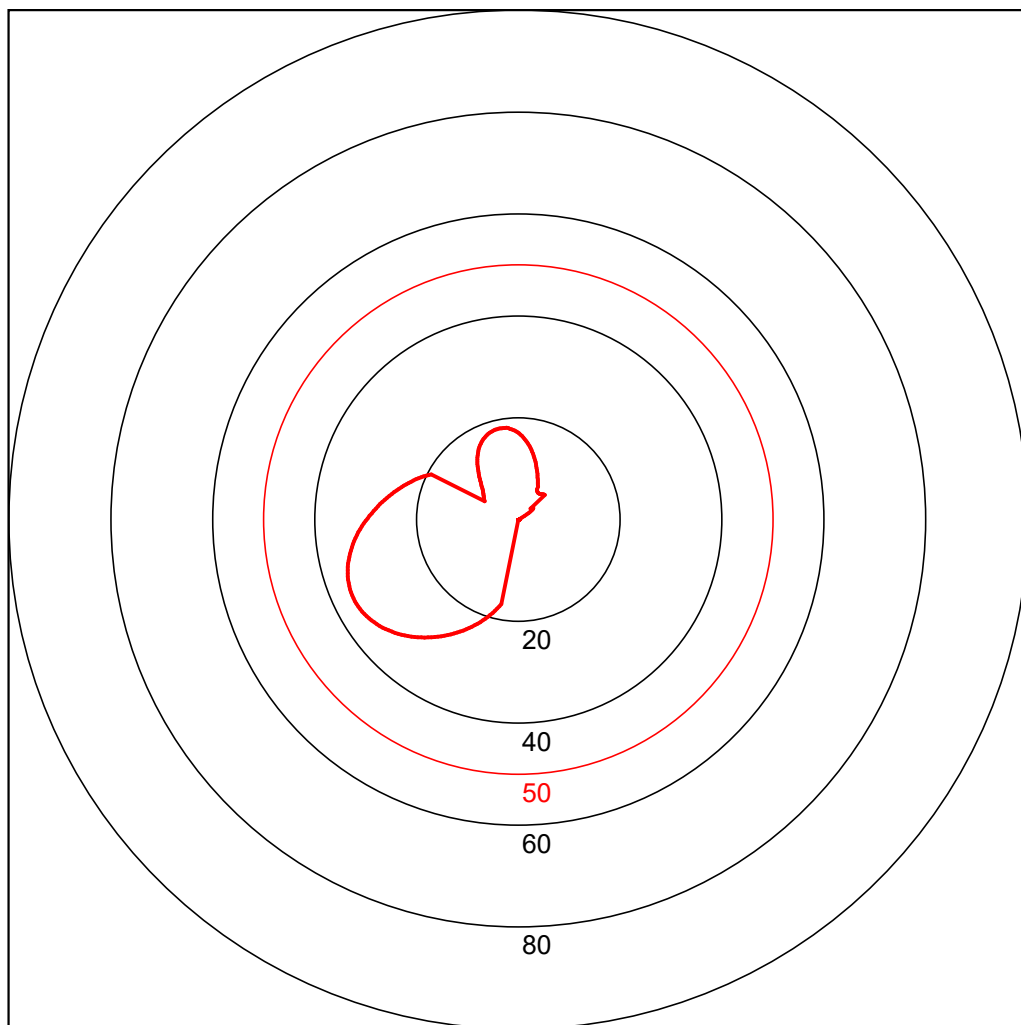
Direction
 23° (-2°)





2.3 Calculation results, Exterior 1

2.3.9 Glare rating - RG 4



$L_{ve} = 0.84 \text{ cd/m}^2$, $\bar{E}_i = 370 \text{ lx}$, $\rho = 20 \%$

No. Description

4 RG 4

Position

262 m/118 m/1.6 m

$R_{G,max}$

35.9

Direction

245° (-2°)

North

0°

West 270° 90° East

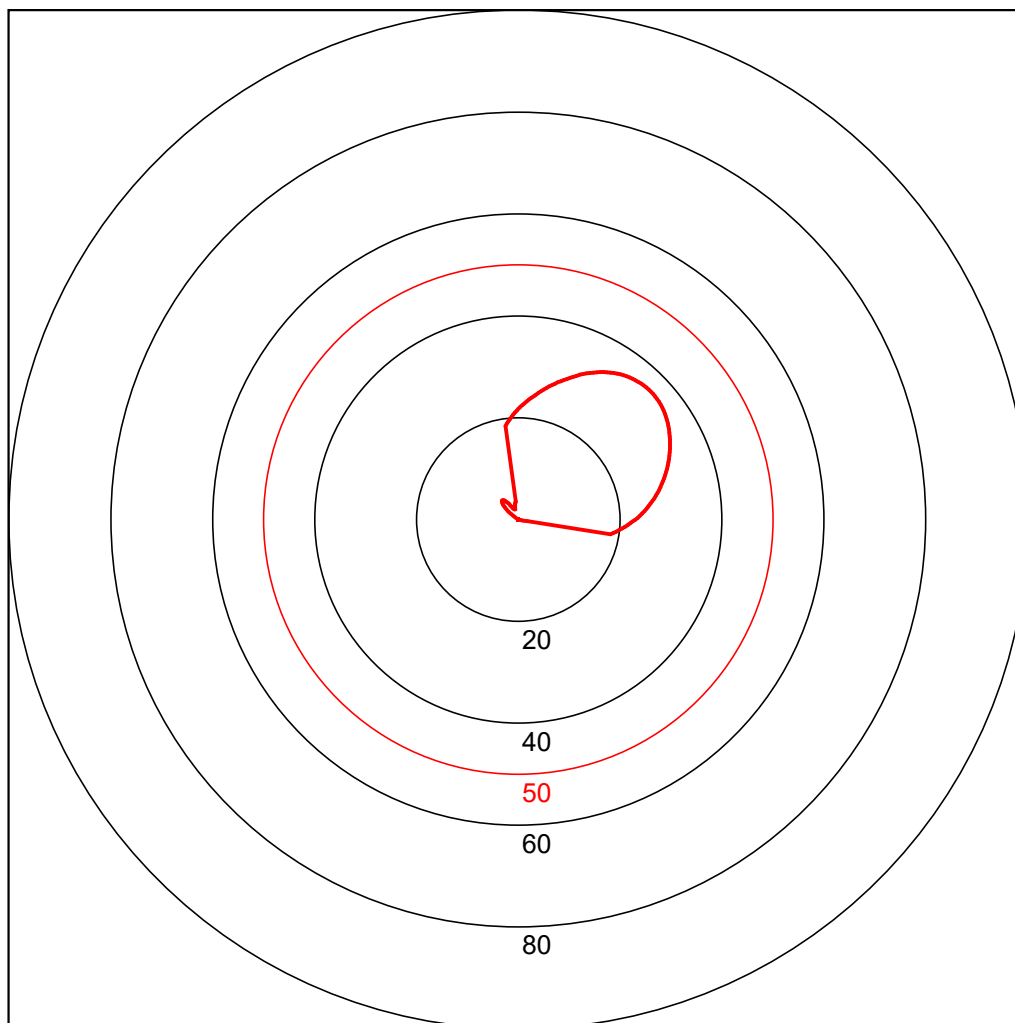
180°

South



2.3 Calculation results, Exterior 1

2.3.10 Glare rating - RG 5



$L_{ve} = 0.84 \text{ cd/m}^2$, $\bar{E}_i = 370 \text{ lx}$, $\rho = 20 \%$

No. Description
 5 RG 5

Position
 257 m/114 m/1.6 m

$R_{G,max}$
 36.2

Direction
 $46^\circ (-2^\circ)$

