Mohaddis - E - Azam Education Centre & Masjid - E - Madani

Object
Mohaddis - E - Azam Education Centre & Masjid - E - Madani
225C Ravenshouse Rd
Dewsbury
WF13 3QU

Table of Contents

Product data sheets

Site 1

Description

The Mosque Light Design using Dialux Evo Software is a project that involves the use of advanced lighting simulation software to create a highly efficient and visually appealing lighting system for a mosque. The design process involves careful consideration of the building's architecture, layout, and lighting requirements, as well as the latest trends and innovations in lighting technology.

Through the use of Dialux Evo software, the project team is able to create highly accurate 3D models of the mosque and simulate different lighting scenarios to determine the optimal lighting design. This includes the placement of lighting fixtures, the type of light source, the color temperature, and the light distribution.

The end result is a sophisticated lighting system that not only enhances the visual appeal of the mosque but also contributes to its energy efficiency and sustainability. By utilizing the latest lighting technology and design principles, the mosque light design project is able to provide a highly functional and aesthetically pleasing lighting solution for this important cultural and spiritual institution.

Images

Site 1

Luminaire list

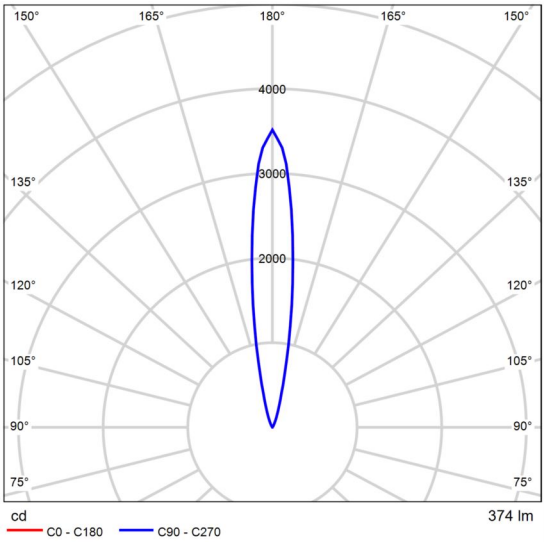
Φ_{total}	P_{total}	Luminous efficacy
42223 lm	1489.3 W	28.4 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
2	COLLINGWOOD	GL007A S NW	GL007A	8.0 W	369 lm	46.1 lm/W
9	COLLINGWOOD	GL009A S WW	GL009A S WW	22.0 W	879 lm	39.9 lm/W
41	COLLINGWOOD	LEDLINE 400 RGB 25X6	LEDLINE 400 RGB 25X6	12.9 W	29 lm	2.3 lm/W
4	COLLINGWOOD	MF02 IP NW	MF02 IP	1.0 W	66 lm	65.9 lm/W
66	COLLINGWOOD	UL010 WW	UL010	3.0 W	94 lm	31.5 lm/W
18	COLLINGWOOD	WL261SWW	WL261	22.0 W	1371 lm	62.3 lm/W
28	Whitecroft Lighting	S67W13KO	STARLINE FIXED IP67 SURFACE	5.3 W	29 lm	5.6 lm/W

Product data sheet

COLLINGWOOD - GL007A

Article No.	GL007A S NW
P	8.0 W
$\Phi_{Luminaire}$	369 lm
Luminous efficacy	46.1 lm/W
CCT	4000 K
CRI	84



Polar LDC

The GL007A is part of the drive over range from Collingwood's extensive ground lights. Containing 1x7W led unit that can be adjusted to 20˚, bringing greater flexibility and achieving equivalent light output to a 35W halogen.

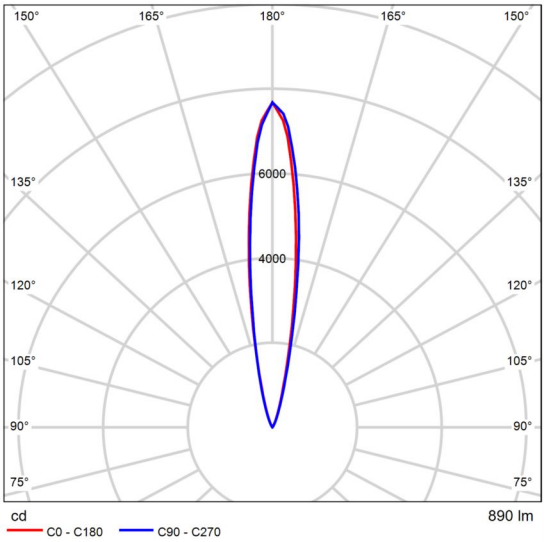
Containing 10mm toughened glass, stainless steel cover ring and integral power supply, the GL007A is well suited for drive over situations, permanent use outdoors and being part of a retrofit or new installation.

Available in both a flood or spot lens and 2 ambient LED colours.

Product data sheet

COLLINGWOOD - GL009A S WW

Article No.	GL009A S WW
P	22.0 W
$\Phi_{Luminaire}$	879 lm
Luminous efficacy	39.9 lm/W
CCT	3000 K
CRI	100



Polar LDC

The GL009A is Collingwood's biggest and brightest LED in the ground light range. Containing 3x 7W led units that can adjust to 20˚, bringing greater flexibility and achieving more light output that an 50W MR16 or 100W AR111 halogen lamp.

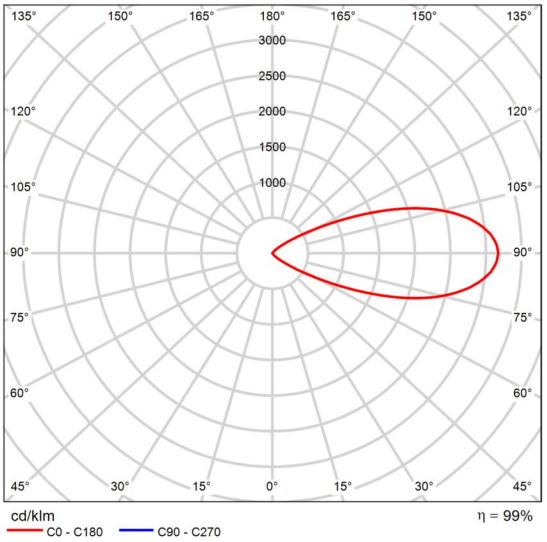
Containing 12mm toughened glass, stainless steel cover ring and integral power supply, the GL009A is well suited for driver over situations, permanent use outdoors and being part of a retrofit or new installation.

Available in both a flood or spot lens and 2 ambient LED colours.

Product data sheet

COLLINGWOOD - LEDLINE 400 RGB 25X6

Article No.	LEDLINE 400 RGB 25X6
P	12.9 W
Φ_{Lamp}	29 lm
$\Phi_{Luminaire}$	29 lm
η	99.42 %
Luminous efficacy	2.3 lm/W
CCT	– 7723 K
CRI	– -18



Polar LDC

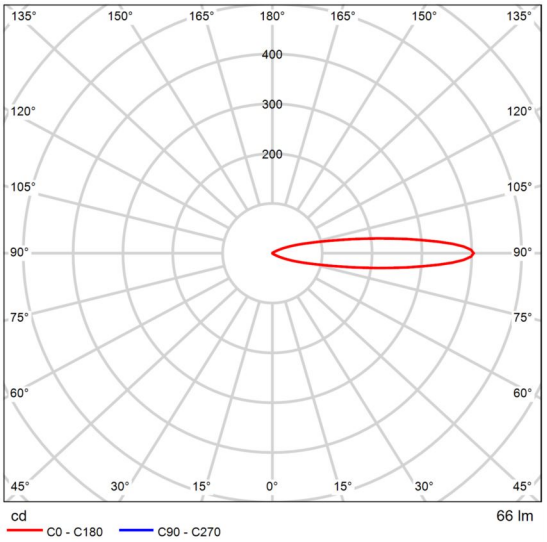
For the farthest throw of colour on the most stunning of architectural features, you need a wall-washing bar with asymmetric 25×6° lenses. The narrow beam bathes distant details in constantly changing colours. Unit features high-power Luxeon LEDs, 180° tilt, removable feet attach anywhere along the underside and easy control with DMX controllers.

Although the LEDs in RGB colour-change fittings can be run together to produce white light, the units are not designed to work this way. Using them as white lights shortens the product life and voids your warranty.

Product data sheet

COLLINGWOOD - MF02 IP

Article No.	MF02 IP NW
P	1.0 W
$\Phi_{Luminaire}$	66 lm
Luminous efficacy	65.9 lm/W
CCT	4000 K
CRI	84



Polar LDC

Mini wall lights are stylish and functional. Great for lighting pictures and focal items, as well as using for reading or simply adding style to walls, wooden beams and ceilings.

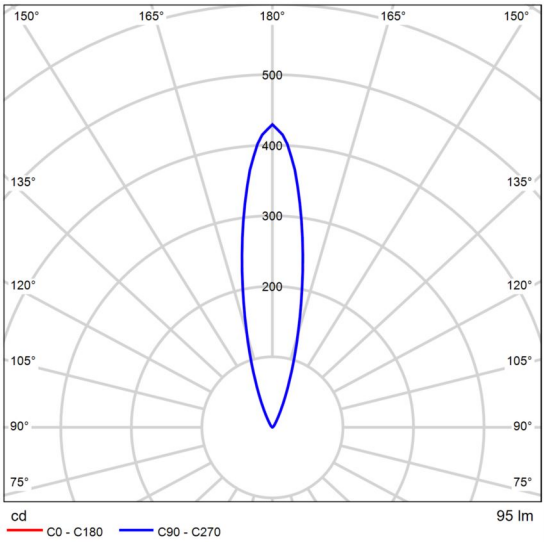
Made from marine grade stainless and IP rated to 65 allows for installation both indoor and out. You can chose from 6 ambient LED colours and 3 wall mounting brackets to suit any lighting scheme.

MF02 is a flood lens product.

Product data sheet

COLLINGWOOD - UL010

Article No.	UL010 WW
P	3.0 W
$\Phi_{Luminaire}$	94 lm
Luminous efficacy	31.5 lm/W
CCT	3000 K
CRI	100



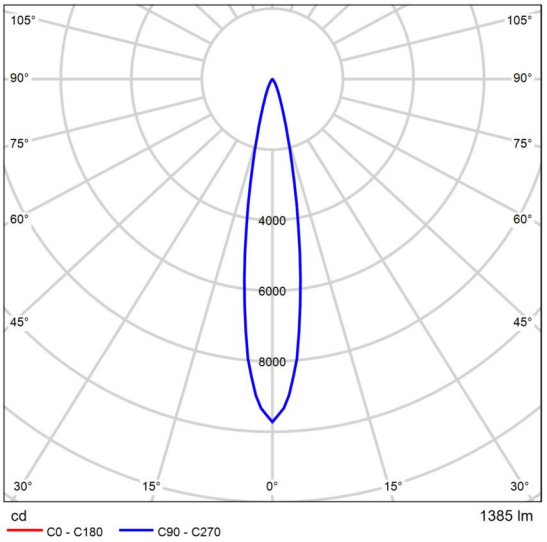
Polar LDC

Now you can light any corner of your garden – your pond or a tree, for example. This versatile swivel-mounted Universal light offers endless possibilities. With a 360° stainless-steel bracket, 18° beam angle, IP68 water-resistance rating, and bright 7W LED light output equivalent to a 35W halogen, it throws light into even the darkest and wettest environments.

Product data sheet

COLLINGWOOD - WL261

Article No.	WL261SWW
P	22.0 W
$\Phi_{Luminaire}$	1371 lm
Luminous efficacy	62.3 lm/W
CCT	3000 K
CRI	100



Polar LDC

Decorative and functional, the WL262 manages to combine both seamlessly.

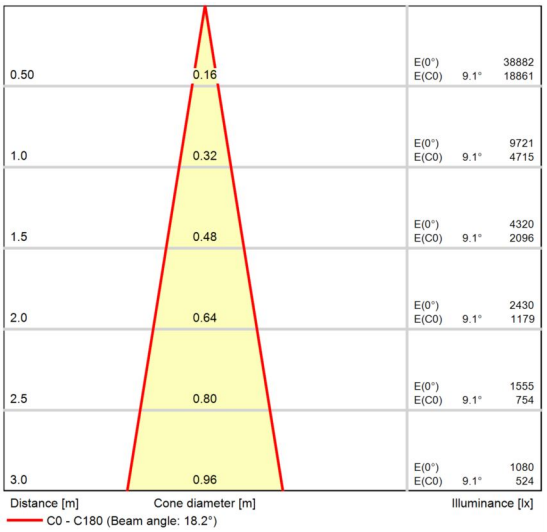
Features & Benefits:

IP mains connector included

Complete with wall fixings

Matt silver, sand blasted & anodised finish ensuring longevity

Low glare

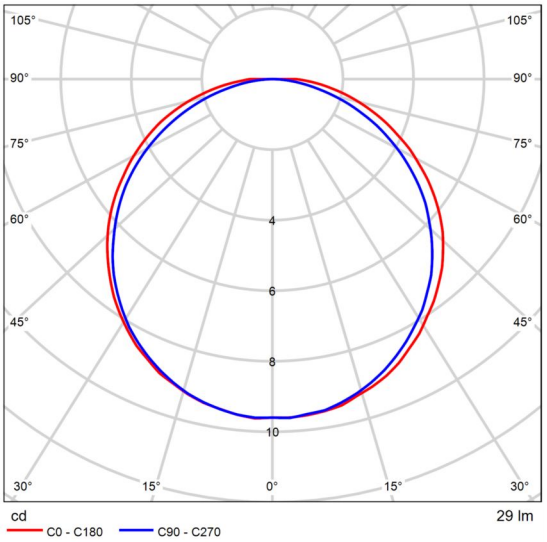


Cone diagram

Product data sheet

Whitecroft Lighting - STARLINE FIXED IP67 SURFACE

Article No.	S67W13KO
P	5.3 W
$\Phi_{Luminaire}$	29 lm
Luminous efficacy	5.6 lm/W
CCT	3114 K
CRI	80

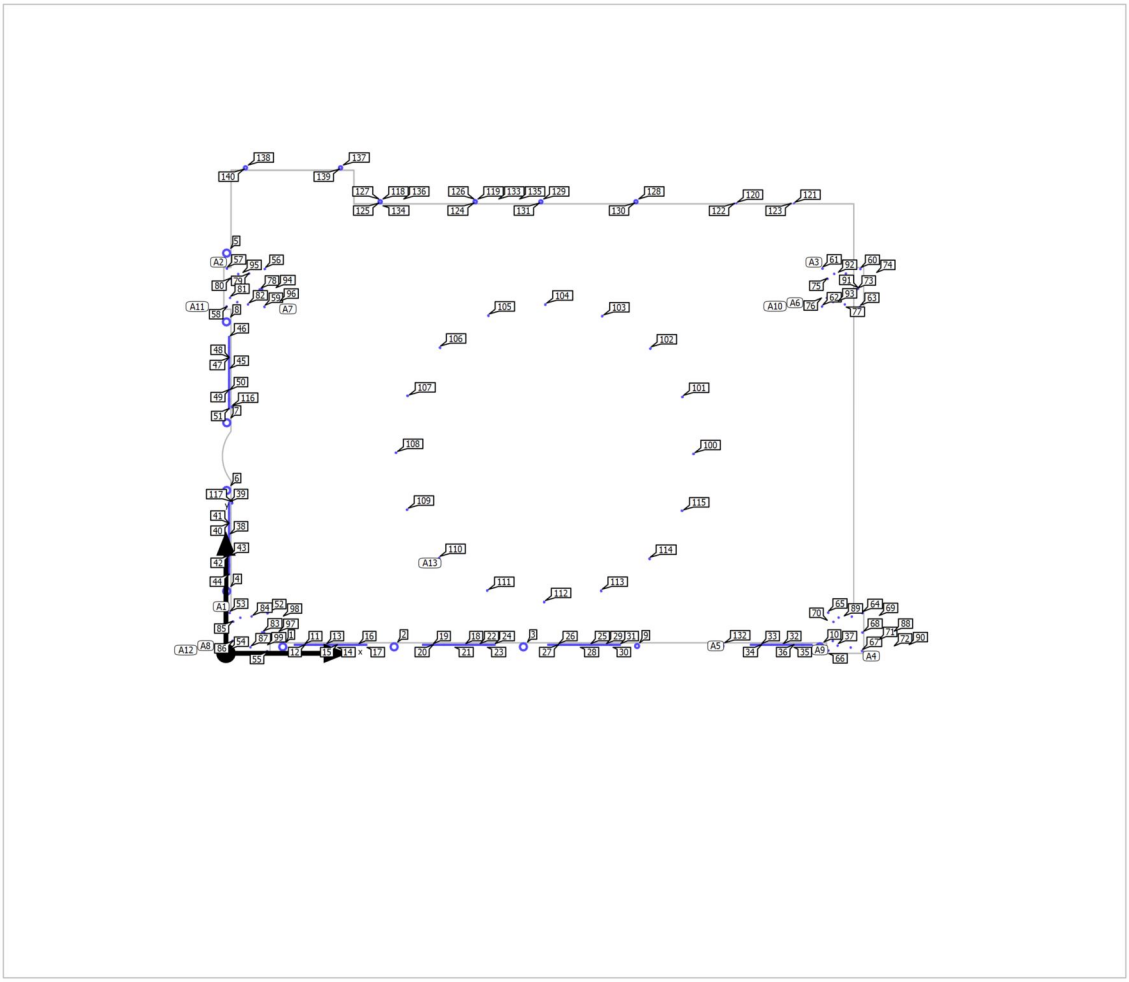


Polar LDC

Surface mounted IP67 extruded aluminium luminaire suitable for individual or continuous mounting. With factory fitted LED tape, pre-wired connectors and a range of accessories to suit. With 3000K LEDs – as Whitecroft Lighting STARLINE FIXED IP67 SURFACE

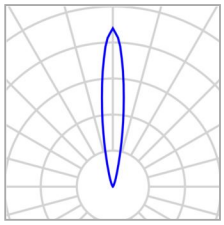
Site 1

Luminaire layout plan



Site 1

Luminaire layout plan



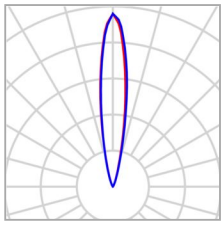
Manufacturer	COLLINGWOOD	P	8.0 W
Article No.	GL007A S NW	$\Phi_{Luminaire}$	369 lm
Article name	GL007A		
Fitting	1x GL007A		

Individual luminaires

X	Y	Mounting height	Luminaire
15.200 m	0.270 m	3.124 m	9
18.316 m	0.270 m	3.124 m	132

Site 1

Luminaire layout plan



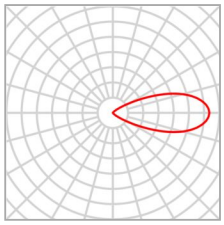
Manufacturer	COLLINGWOOD	P	22.0 W
Article No.	GL009A S WW	$\Phi_{Luminaire}$	879 lm
Article name	GL009A S WW		
Fitting	1x GL009A S ww		

Individual luminaires

X	Y	Mounting height	Luminaire
2.100 m	0.239 m	-0.084 m	1
6.218 m	0.239 m	-0.084 m	2
10.997 m	0.239 m	-0.084 m	3
0.026 m	2.298 m	-0.084 m	4
0.025 m	14.800 m	-0.085 m	5
0.027 m	6.025 m	-0.085 m	6
0.030 m	8.527 m	-0.084 m	7
0.017 m	12.257 m	-0.084 m	8
21.957 m	0.240 m	-0.084 m	10

Site 1

Luminaire layout plan



Manufacturer	COLLINGWOOD
Article No.	LEDLINE 400 RGB 25X6
Article name	LEDLINE 400 RGB 25X6
Fitting	1x LEDLINE 400 RGB 25X6 R, 1x LEDLINE 400 RGB 25X6 G, 1x LEDLINE 400 RGB 25X6 B

P	12.9 W
$\Phi_{Luminaire}$	29 lm

Individual luminaires

X	Y	Mounting height	Luminaire
2.726 m	0.315 m	0.733 m	11
3.125 m	0.315 m	0.733 m	12
3.522 m	0.315 m	0.733 m	13
3.921 m	0.315 m	0.733 m	14
4.314 m	0.315 m	0.733 m	15
4.716 m	0.315 m	0.733 m	16
5.008 m	0.315 m	0.733 m	17
8.663 m	0.315 m	0.733 m	18
7.468 m	0.315 m	0.733 m	19
7.867 m	0.315 m	0.733 m	20
8.264 m	0.315 m	0.733 m	21

Site 1

Luminaire layout plan

X	Y	Mounting height	Luminaire
9.056 m	0.315 m	0.733 m	22
9.458 m	0.315 m	0.733 m	23
9.750 m	0.315 m	0.733 m	24
13.293 m	0.315 m	0.733 m	25
12.098 m	0.315 m	0.733 m	26
12.497 m	0.315 m	0.733 m	27
12.894 m	0.315 m	0.733 m	28
13.686 m	0.315 m	0.733 m	29
14.088 m	0.315 m	0.733 m	30
14.380 m	0.315 m	0.733 m	31
20.383 m	0.315 m	0.733 m	32
19.587 m	0.315 m	0.733 m	33
19.984 m	0.315 m	0.733 m	34
20.776 m	0.315 m	0.733 m	35
21.178 m	0.315 m	0.733 m	36
21.470 m	0.315 m	0.733 m	37
0.114 m	4.192 m	0.721 m	38
0.114 m	5.387 m	0.721 m	39
0.114 m	4.988 m	0.721 m	40
0.114 m	4.591 m	0.721 m	41
0.114 m	3.799 m	0.721 m	42
0.114 m	3.397 m	0.721 m	43
0.114 m	3.105 m	0.721 m	44
0.114 m	10.318 m	0.721 m	45

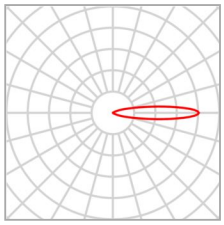
Site 1

Luminaire layout plan

X	Y	Mounting height	Luminaire
0.114 m	11.513 m	0.721 m	46
0.114 m	11.115 m	0.721 m	47
0.114 m	10.717 m	0.721 m	48
0.114 m	9.925 m	0.721 m	49
0.114 m	9.523 m	0.721 m	50
0.114 m	9.231 m	0.721 m	51

Site 1

Luminaire layout plan



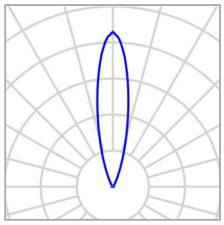
Manufacturer	COLLINGWOOD	P	1.0 W
Article No.	MF02 IP NW	$\Phi_{Luminaire}$	66 lm
Article name	MF02 IP		
Fitting	1x MF02IP		

Individual luminaires

X	Y	Mounting height	Luminaire
18.868 m	16.641 m	2.800 m	120
21.000 m	16.640 m	2.800 m	121
18.791 m	16.631 m	6.959 m	122
20.884 m	16.630 m	6.959 m	123

Site 1

Luminaire layout plan



Manufacturer	COLLINGWOOD	P	3.0 W
Article No.	UL010 WW	$\Phi_{Luminaire}$	94 lm
Article name	UL010		
Fitting	1x UL010		

4 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	1.554 m / 1.464 m / 8.790 m
Arrangement	A1

X	Y	Mounting height	Luminaire
1.554 m	1.464 m	8.790 m	52
0.152 m	1.510 m	8.790 m	53
0.107 m	0.108 m	8.790 m	54
1.509 m	0.063 m	8.790 m	55

4 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	1.453 m / 14.197 m / 8.790 m
Arrangement	A2

X	Y	Mounting height	Luminaire
1.453 m	14.197 m	8.790 m	56
0.051 m	14.243 m	8.790 m	57
0.006 m	12.841 m	8.790 m	58
1.408 m	12.796 m	8.790 m	59

Site 1

Luminaire layout plan

4 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	23.471 m / 14.197 m / 8.790 m
Arrangement	A3

X	Y	Mounting height	Luminaire
23.471 m	14.197 m	8.790 m	60
22.070 m	14.243 m	8.790 m	61
22.024 m	12.841 m	8.790 m	62
23.426 m	12.796 m	8.790 m	63

4 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	23.547 m / 1.471 m / 8.790 m
Arrangement	A4

X	Y	Mounting height	Luminaire
23.547 m	1.471 m	8.790 m	64
22.280 m	1.516 m	8.790 m	65
22.257 m	0.115 m	8.790 m	66
23.502 m	0.070 m	8.790 m	67

5 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	23.533 m / 0.792 m / 11.400 m
Arrangement	A5

X	Y	Mounting height	Luminaire
23.533 m	0.792 m	11.400 m	68
23.118 m	1.362 m	11.400 m	69
22.448 m	1.144 m	11.400 m	70
22.448 m	0.439 m	11.400 m	71
23.118 m	0.221 m	11.400 m	72

5 x COLLINGWOOD UL010

Site 1

Luminaire layout plan

Type	Circle Arrangement
1st luminaire (X/Y/Z)	23.314 m / 13.480 m / 11.400 m
Arrangement	A6

X	Y	Mounting height	Luminaire
23.314 m	13.480 m	11.400 m	73
22.899 m	14.050 m	11.400 m	74
22.229 m	13.832 m	11.400 m	75
22.229 m	13.127 m	11.400 m	76
22.899 m	12.909 m	11.400 m	77

5 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	1.250 m / 13.480 m / 11.400 m
Arrangement	A7

X	Y	Mounting height	Luminaire
1.250 m	13.480 m	11.400 m	78
0.835 m	14.050 m	11.400 m	79
0.165 m	13.832 m	11.400 m	80
0.165 m	13.127 m	11.400 m	81
0.835 m	12.909 m	11.400 m	82

5 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	1.341 m / 0.800 m / 11.400 m
Arrangement	A8

X	Y	Mounting height	Luminaire
1.341 m	0.800 m	11.400 m	83
0.927 m	1.371 m	11.400 m	84
0.256 m	1.153 m	11.400 m	85
0.256 m	0.447 m	11.400 m	86
0.927 m	0.229 m	11.400 m	87

3 x COLLINGWOOD UL010

Site 1

Luminaire layout plan

Type	Circle Arrangement
1st luminaire (X/Y/Z)	23.533 m / 0.792 m / 13.396 m
Arrangement	A9

X	Y	Mounting height	Luminaire
23.533 m	0.792 m	13.396 m	88
22.633 m	1.311 m	13.396 m	89
22.633 m	0.272 m	13.396 m	90

3 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	23.369 m / 13.503 m / 13.396 m
Arrangement	A10

X	Y	Mounting height	Luminaire
23.369 m	13.503 m	13.396 m	91
22.469 m	14.022 m	13.396 m	92
22.469 m	12.983 m	13.396 m	93

3 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	1.336 m / 13.495 m / 13.396 m
Arrangement	A11

X	Y	Mounting height	Luminaire
1.336 m	13.495 m	13.396 m	94
0.436 m	14.015 m	13.396 m	95
0.436 m	12.976 m	13.396 m	96

3 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	1.412 m / 0.786 m / 13.396 m
Arrangement	A12

X	Y	Mounting height	Luminaire
1.412 m	0.786 m	13.396 m	97
0.512 m	1.306 m	13.396 m	98
0.512 m	0.267 m	13.396 m	99

Site 1

Luminaire layout plan

16 x COLLINGWOOD UL010

Type	Circle Arrangement
1st luminaire (X/Y/Z)	17.287 m / 7.396 m / 8.352 m
Arrangement	A13

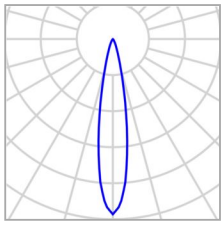
X	Y	Mounting height	Luminaire
17.287 m	7.396 m	8.352 m	100
16.868 m	9.501 m	8.352 m	101
15.676 m	11.285 m	8.352 m	102
13.892 m	12.478 m	8.352 m	103
11.787 m	12.896 m	8.352 m	104
9.682 m	12.478 m	8.352 m	105
7.898 m	11.285 m	8.352 m	106
6.706 m	9.501 m	8.352 m	107
6.287 m	7.396 m	8.352 m	108
6.706 m	5.291 m	8.352 m	109
7.898 m	3.507 m	8.352 m	110
9.682 m	2.315 m	8.352 m	111
11.787 m	1.896 m	8.352 m	112
13.892 m	2.315 m	8.352 m	113
15.676 m	3.507 m	8.352 m	114
16.868 m	5.291 m	8.352 m	115

Individual luminaires

X	Y	Mounting height	Luminaire
0.211 m	9.120 m	7.322 m	116
0.211 m	5.555 m	7.328 m	117

Site 1

Luminaire layout plan



Manufacturer	COLLINGWOOD	P	22.0 W
Article No.	WL261SWW	$\Phi_{Luminaire}$	1371 lm
Article name	WL261		
Fitting	1x WL261		

Individual luminaires

X	Y	Mounting height	Luminaire
5.700 m	16.625 m	6.748 m	118
9.215 m	16.625 m	6.764 m	119
9.215 m	16.625 m	6.764 m	124
5.700 m	16.625 m	6.748 m	125
9.215 m	16.625 m	2.766 m	126
5.700 m	16.625 m	2.749 m	127
15.157 m	16.625 m	2.766 m	128
11.643 m	16.625 m	2.749 m	129
15.157 m	16.625 m	6.644 m	130
11.643 m	16.625 m	6.628 m	131
9.215 m	16.625 m	6.764 m	133
5.700 m	16.625 m	6.748 m	134
9.215 m	16.625 m	6.764 m	135

Site 1

Luminaire layout plan

X	Y	Mounting height	Luminaire
5.700 m	16.625 m	6.748 m	136
4.236 m	17.879 m	6.764 m	137
0.722 m	17.879 m	6.748 m	138
4.236 m	17.879 m	2.708 m	139
0.722 m	17.879 m	2.692 m	140

Site 1

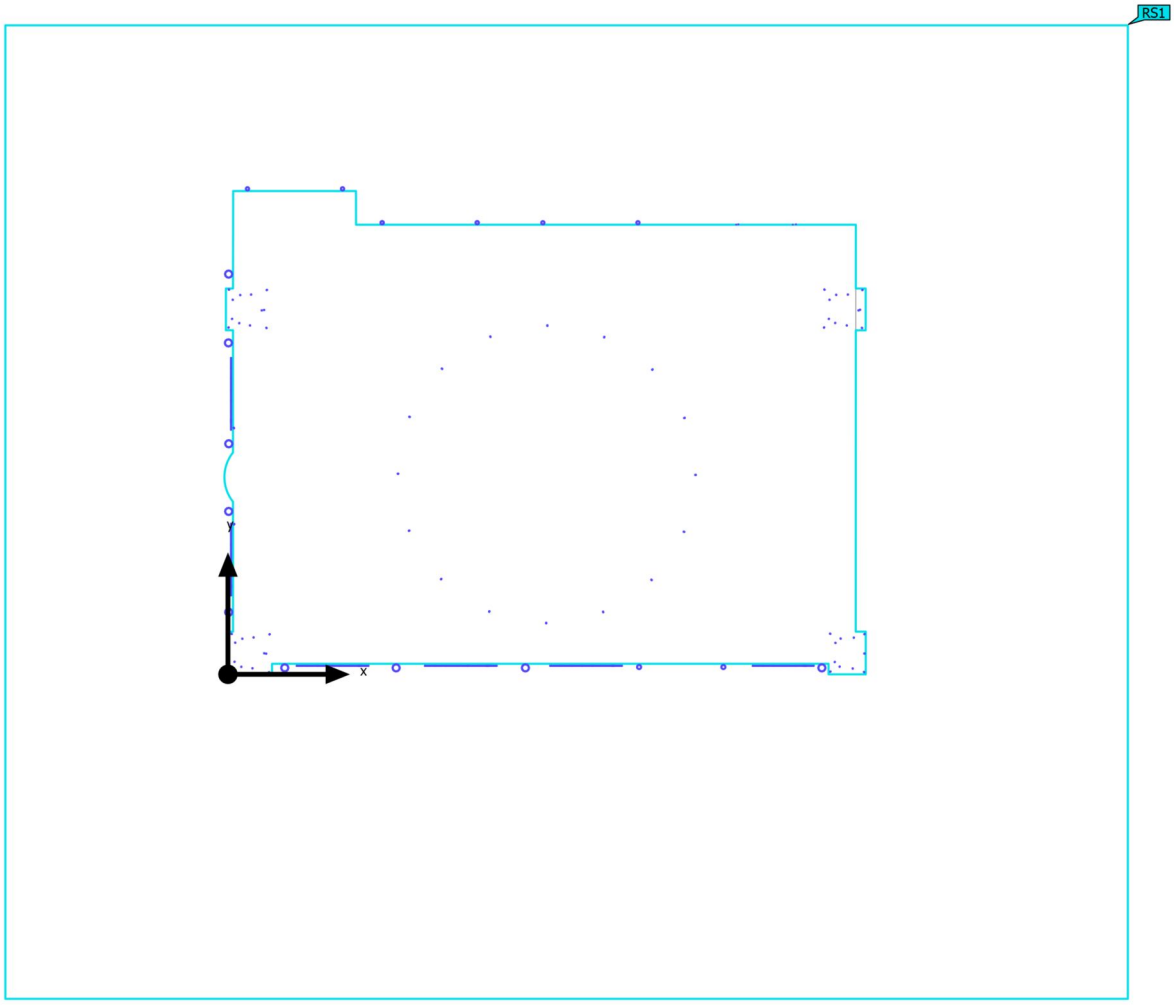
Luminaire list

Φ_{total}	P_{total}	Luminous efficacy
41411 lm	1340.9 W	30.9 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
2	COLLINGWOOD	GL007A S NW	GL007A	8.0 W	369 lm	46.1 lm/W
9	COLLINGWOOD	GL009A S WW	GL009A S WW	22.0 W	879 lm	39.9 lm/W
41	COLLINGWOOD	LEDLINE 400 RGB 25X6	LEDLINE 400 RGB 25X6	12.9 W	29 lm	2.3 lm/W
4	COLLINGWOOD	MF02 IP NW	MF02 IP	1.0 W	66 lm	65.9 lm/W
66	COLLINGWOOD	UL010 WW	UL010	3.0 W	94 lm	31.5 lm/W
18	COLLINGWOOD	WL261SWW	WL261	22.0 W	1371 lm	62.3 lm/W

Site 1 (Light scene 1)

Calculation objects



Site 1 (Light scene 1)

Calculation objects

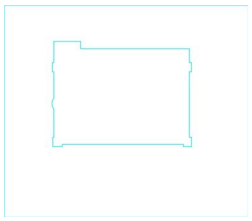
Surface result objects

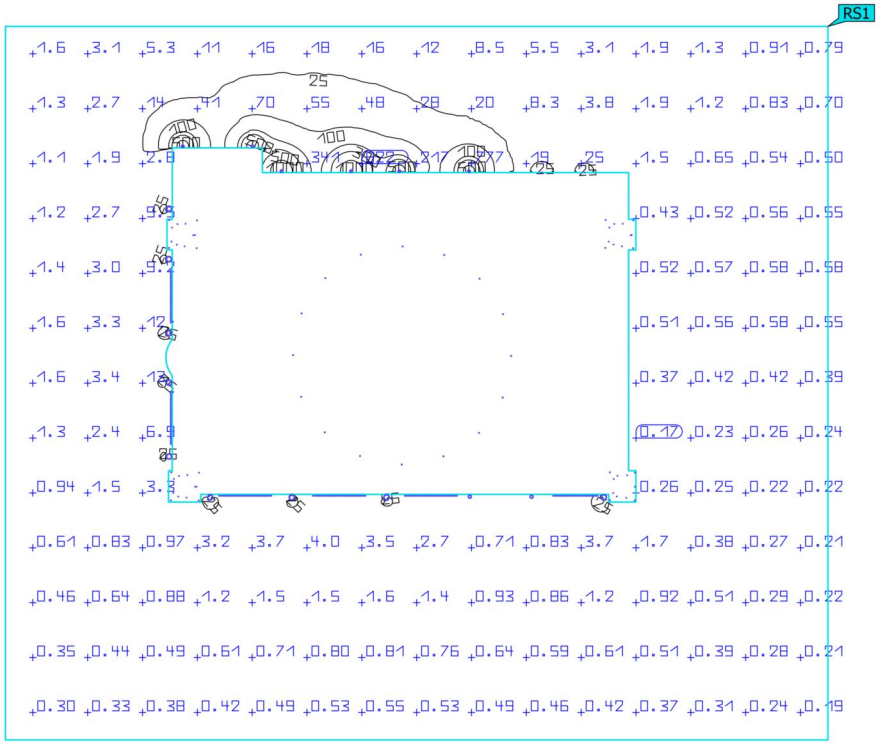
Properties	Ø	min	max	$\bar{E}/E_{min}$	E_{max}/E_{min}	Index
Surface result object 8 Perpendicular illuminance (adaptive) Height: -0.084 m	13.1 lx	0.000 lx	1742 lx	-	-	RS1
Surface result object 8 Luminance Height: -0.084 m	1.17 cd/m²	0.000 cd/m²	156 cd/m²	-	-	RS1

Utilisation profile: General circulation areas at outdoor workplaces (5.1.1 Walkways exclusively for pedestrians)

Site 1 (Light scene 1)

Surface result object 8



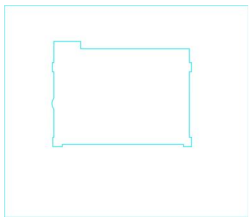


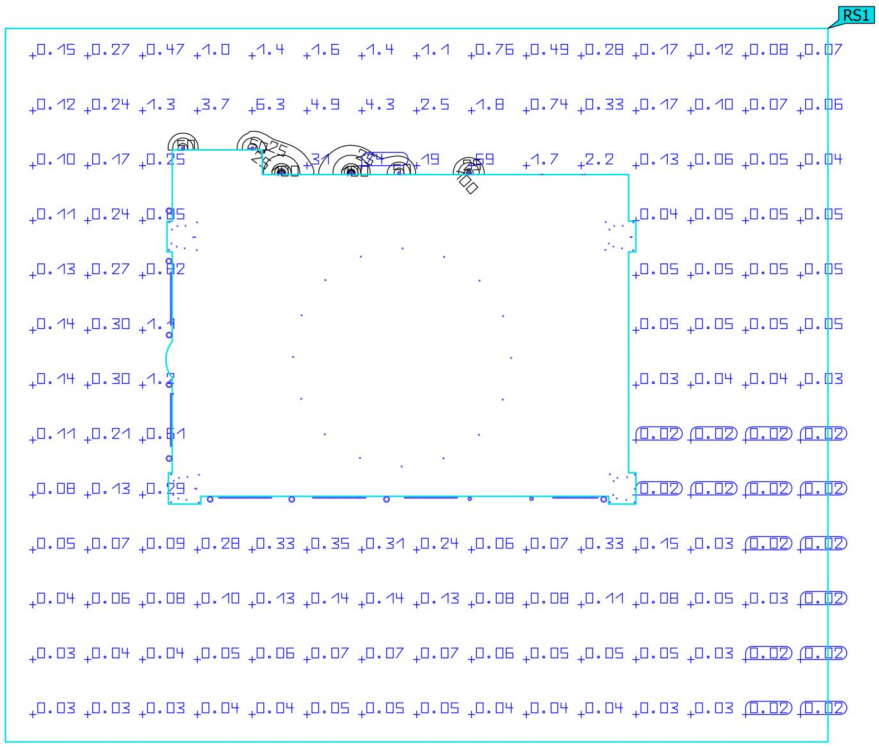
Properties	Ē	E_{min}	E_{max}	Ē/E_{min}	E_{max}/E_{min}	Index
Surface result object 8 Perpendicular illuminance (adaptive) Height: -0.084 m	13.1 lx	0.000 lx	1742 lx	-	-	RS1

Utilisation profile: General circulation areas at outdoor workplaces (5.1.1 Walkways exclusively for pedestrians)

Site 1 (Light scene 1)

Surface result object 8



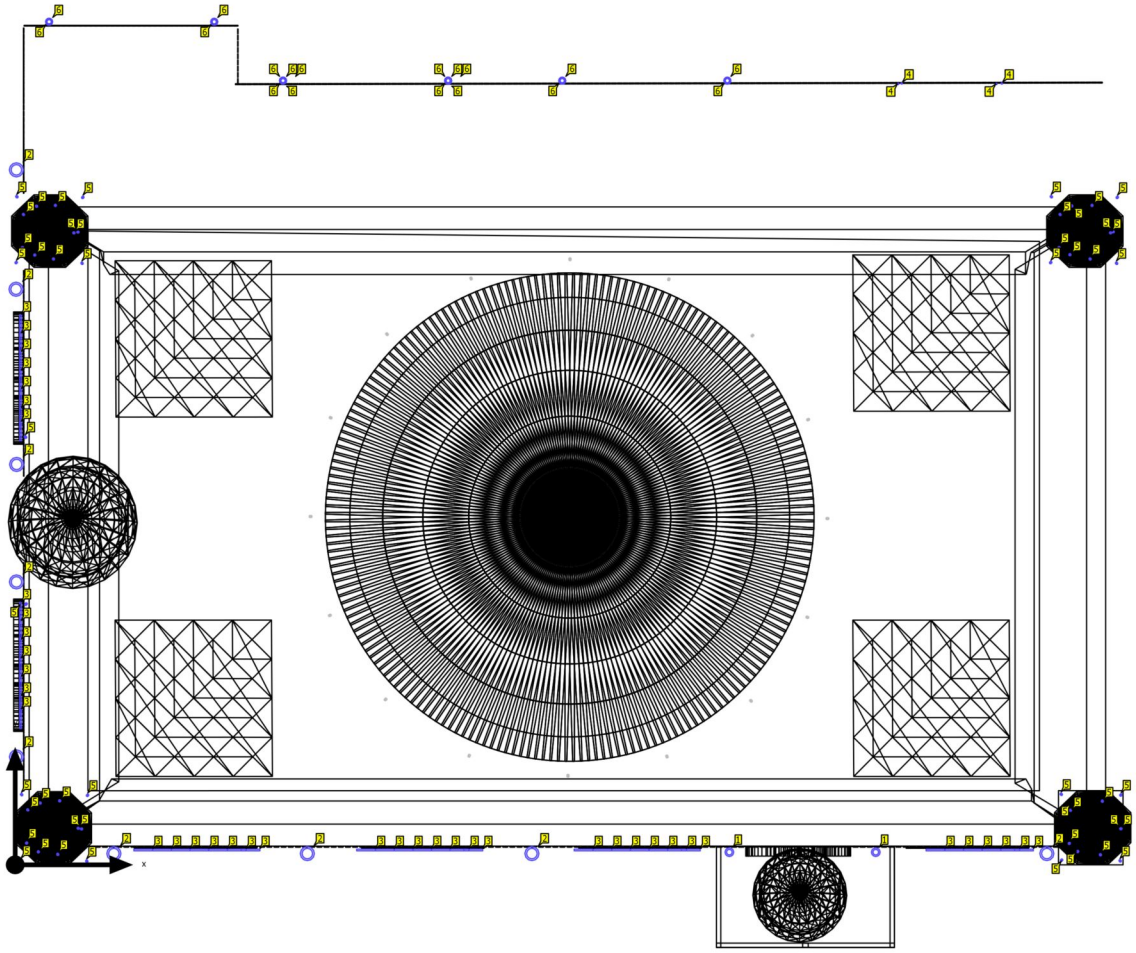


Properties	Ø	min	max	$\bar{E}/E_{min}$	E_{max}/E_{min}	Index
Surface result object 8 Luminance Height: -0.084 m	1.17 cd/m²	0.000 cd/m²	156 cd/m²	-	-	RS1

Utilisation profile: General circulation areas at outdoor workplaces (5.1.1 Walkways exclusively for pedestrians)

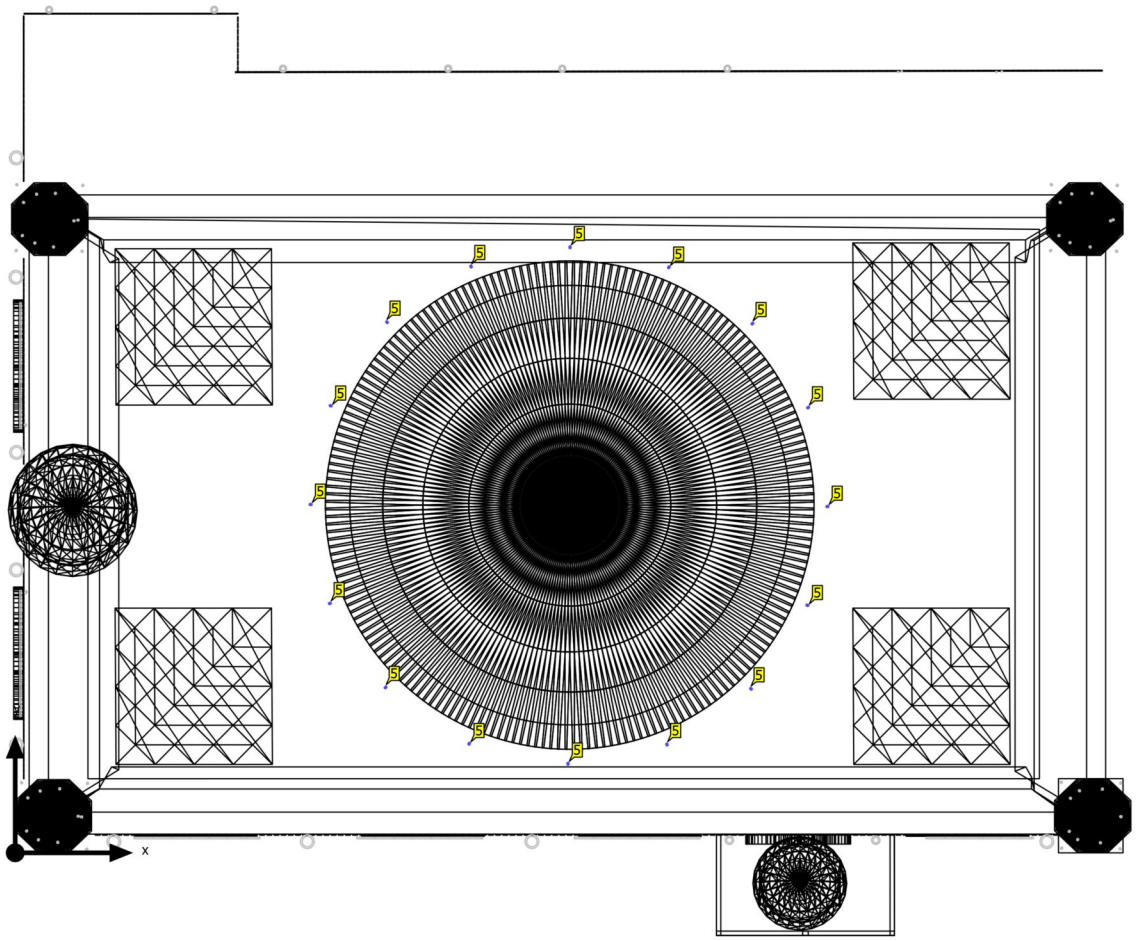
Site 1

Control group CG 1



Site 1

Control group CG 2



Site 1

Control groups

Control group	CG 1	CG 2
Light scene 1	100	100

Dimming values [%]

pcs.	Manufacturer	Article No.	Article name	P	Index
2	COLLINGWOOD	GL007A S NW	GL007A	8.0 W	1
9	COLLINGWOOD	GL009A S WW	GL009A S WW	22.0 W	2
41	COLLINGWOOD	LEDLINE 400 RGB 25X6	LEDLINE 400 RGB 25X6	12.9 W	3
4	COLLINGWOOD	MF02 IP NW	MF02 IP	1.0 W	4
66	COLLINGWOOD	UL010 WW	UL010	3.0 W	5
18	COLLINGWOOD	WL261SWW	WL261	22.0 W	6

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	(Engl. correlated colour temperature) Body temperature of a thermal radiator which serves to describe its light colour. Unit: Kelvin [K]. The lesser the numerical value the redder; the greater the numerical value the bluer the light colour. The colour temperature of gas-discharge lamps and semi-conductors are termed "correlated colour temperature" in contrast to the colour temperature of thermal radiators. Allocation of the light colours to the colour temperature ranges acc. to EN 12464-1: Light colour - colour 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	(Engl. colour rendering index) Designation for the colour rendering index of a luminaire or a lamp acc. to DIN 6169: 1976 or CIE 13.3: 1995. The general colour 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 colours (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 (Engl. daylight factor) Unit: %
Daylight quotient effective area	A calculation surface within which the daylight quotient is calculated.

E

Energy evaluation	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. 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. 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.
Eta (η)	(light output ratio) 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. Unit: %

Glossary

G

g_1	Often also U_o (Engl. 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	(Engl. lighting energy numeric indicator) Lighting energy numeric indicator acc. to EN 15193 Unit: $kWh/(m^2 * a)$

Glossary

LLMF	(Engl. 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	(Engl. 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	(Engl. 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 metre 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

Maintenance factor	See MF
MF	(Engl. 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 x LMF x LLMF x LSF.

P

P	(Engl. 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 colour of the surface.
RMF	(Engl. 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.

W

Wall zone	Circumferential area between working plane and walls which 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.