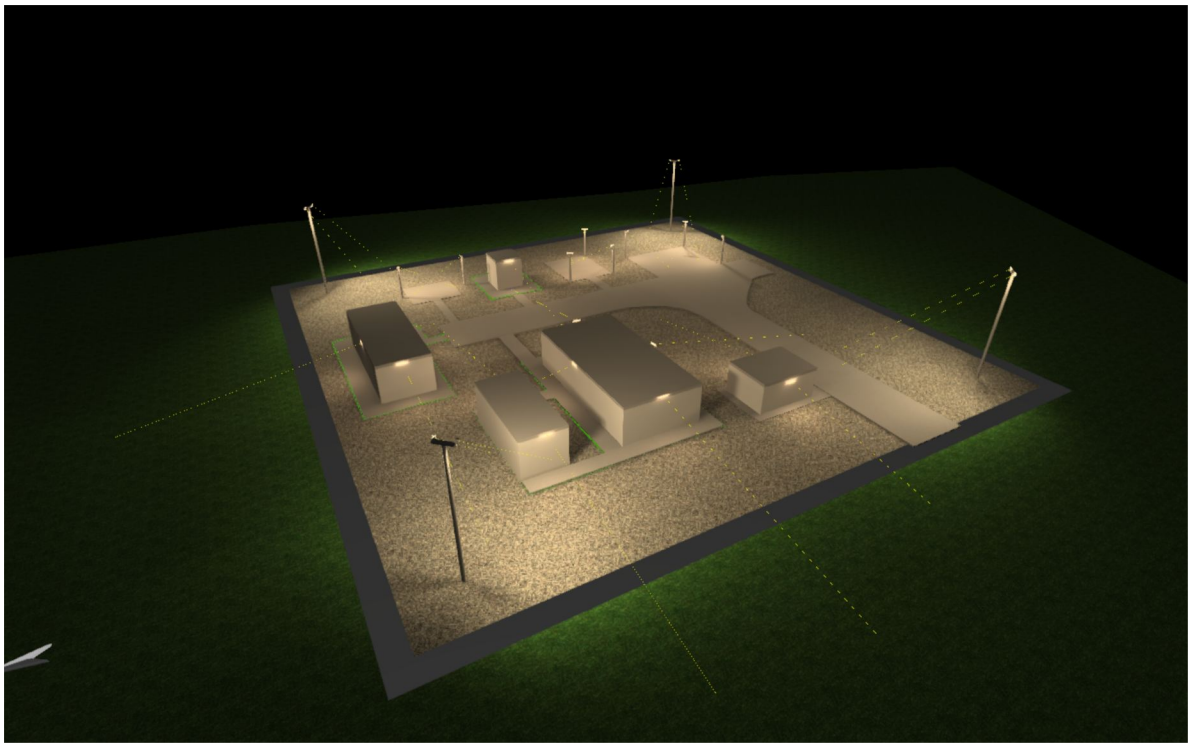
Appendix 2. Project Description

2.8. AGI Lighting Report (GNI, 2026)

Date 02/10/2025



2183 Rathmorrisy AGI

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Product data sheets

Rathmorrisy AGI

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BFG

Rathmorrisy AGI

E&I Kiosk

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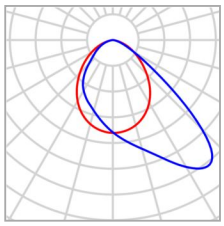
Luminaire list

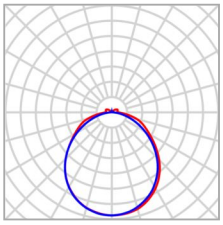
Φ_{total}	P_{total}	Luminous efficacy
281674 lm	1854.2 W	151.9 lm/W



pcs.	8
Manufacturer	Ansell Lighting
Article No.	AAZT4/ASY/1 (160W 3000K)
Article name	FLOODLIGHTS - Aztec Floodlight Asymetric 3000K
Fitting	1x AAZT4/ASY/1 (160W 3000K) FLOODLIGHTS - Aztec

P	160.0 W
Φ_{Lamp}	25576 lm
$\Phi_{Luminaire}$	25576 lm
η	100.00 %
Luminous efficacy	159.8 lm/W
CCT	3000 K
CRI	70

Luminaire list



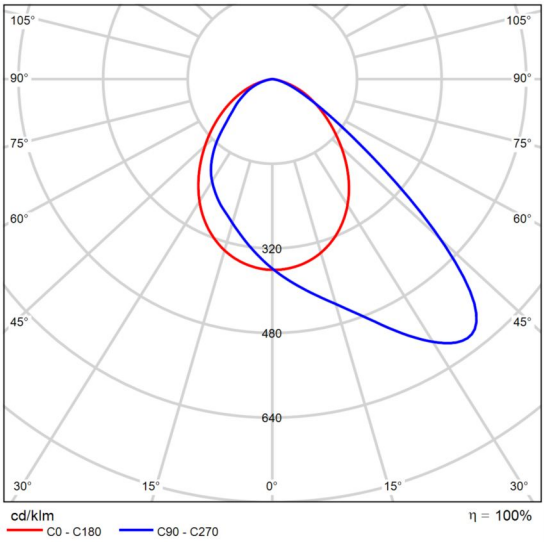
pcs.	22
Manufacturer	Appleton
Article No.	LNLED3CXXXXD
Article name	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version
Fitting	1x NA

P	26.1 W
Φ_{Lamp}	3504 lm
$\Phi_{Luminaire}$	3503 lm
η	99.97 %
Luminous efficacy	134.3 lm/W
CCT	3000 K
CRI	100

Product data sheet

Ansell Lighting - FLOODLIGHTS - Aztec Floodlight Asymetric 3000K

Article No.	AAZT4/ASY/1 (160W 3000K)
P	160.0 W
Φ_{Lamp}	25576 lm
$\Phi_{Luminaire}$	25576 lm
η	100.00 %
Luminous efficacy	159.8 lm/W
CCT	3000 K
CRI	70



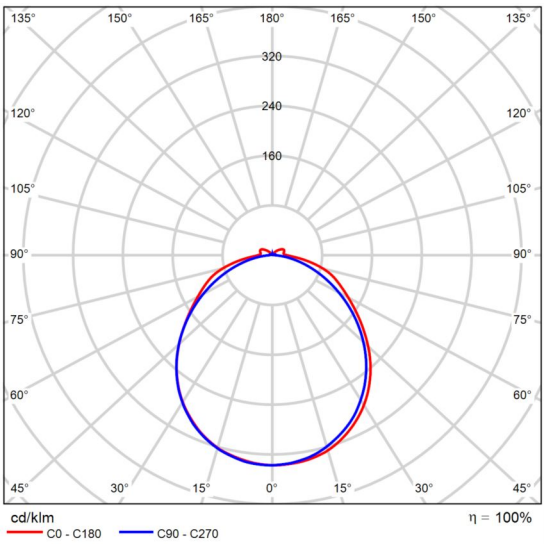
Polar LDC

• High performance die-cast aluminium LED floodlight
• High output, high efficiency asymmetric lens technology for anti-light pollution
• Integral photocell with 2 x lux settings and (deleted 'on-') off options
• 10KV surge protection on 120W to 320W, 6KV surge protection on 20W to 80W
• Marine grade construction ideal for coastal and adverse weather, swimming pool and chemical plant applications
• CCT selectable between 3000K, 4000K and 5000K
• Fast fit lever terminals ensure easy and speedy loop-in, loop installation
• Pre-installed breathable gland prevents internal moisture accumulation
• LED lifespan L80 100,000 hours
• Operating Temp -30°C - 50°C
• Non-dimmable

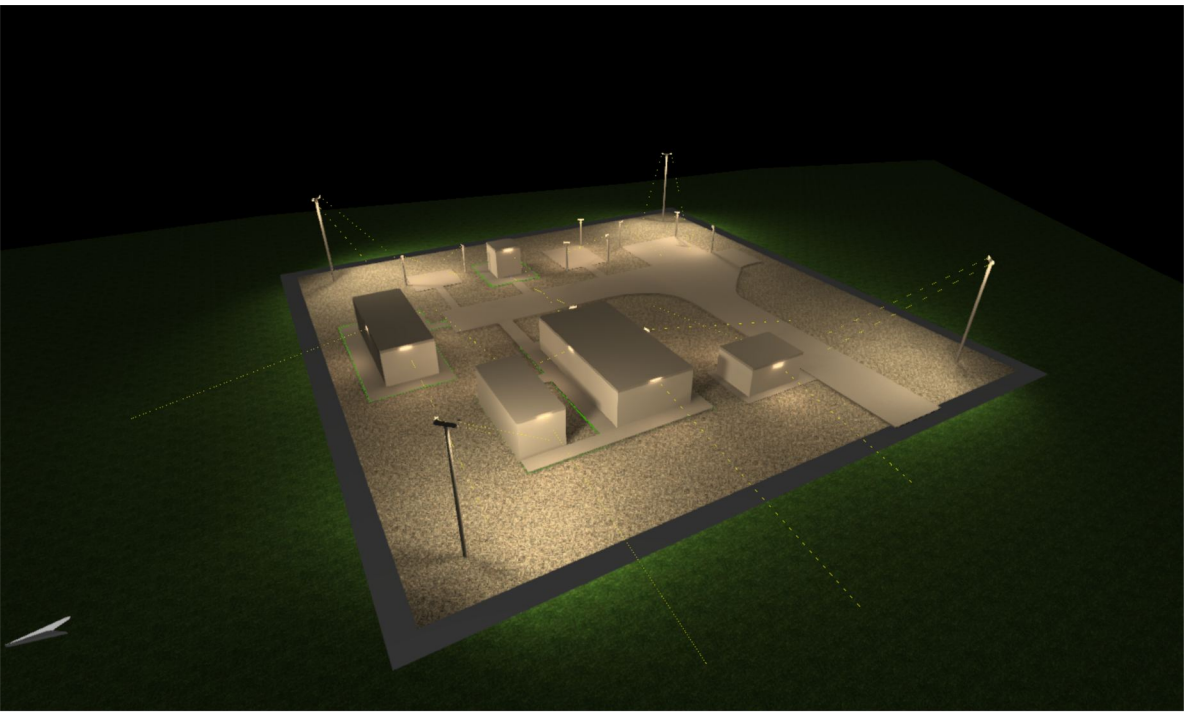
Product data sheet

Appleton - Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version

Article No.	LNLED3CXXXXD
P	26.1 W
Φ_{Lamp}	3504 lm
$\Phi_{Luminaire}$	3503 lm
η	99.97 %
Luminous efficacy	134.3 lm/W
CCT	3000 K
CRI	100



Polar LDC



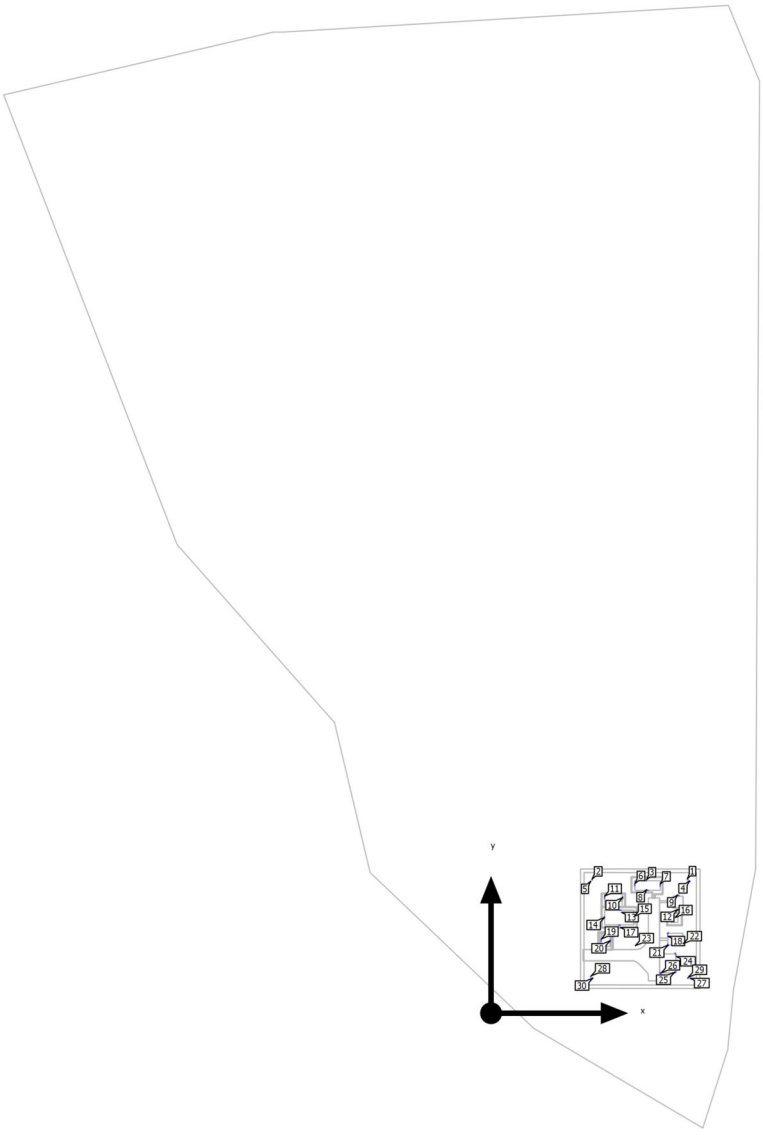
Rathmorrisy AGI

Description

Gas to BGE Cashla

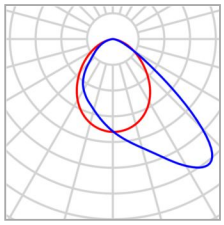
Rathmorrisy AGI

Luminaire layout plan



Rathmorrisy AGI

Luminaire layout plan



Manufacturer	Ansell Lighting
Article No.	AAZT4/ASY/1 (160W 3000K)
Article name	FLOODLIGHTS - Aztec Floodlight Asymetric 3000K
Fitting	1x AAZT4/ASY/1 (160W 3000K) FLOODLIGHTS - Aztec

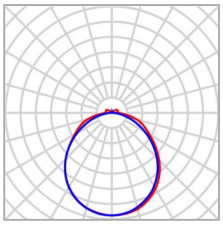
P	160.0 W
$\Phi_{Luminaire}$	25576 lm

Individual luminaires

X	Y	Mounting height	Luminaire
78.561 m	53.313 m	8.300 m	1
40.332 m	53.299 m	8.300 m	2
79.362 m	52.634 m	8.300 m	4
39.715 m	52.548 m	8.300 m	5
79.301 m	14.742 m	8.300 m	27
39.746 m	14.537 m	8.300 m	28
78.571 m	13.986 m	8.300 m	29
40.437 m	13.846 m	8.300 m	30

Rathmorrisy AGI

Luminaire layout plan



Manufacturer	Appleton	P	26.1 W
Article No.	LNLED3CXXXXD	$\Phi_{Luminaire}$	3503 lm
Article name	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version		
Fitting	1x NA		

Individual luminaires

X	Y	Mounting height	Luminaire
61.682 m	52.900 m	2.800 m	3
57.369 m	51.129 m	2.800 m	6
67.541 m	50.981 m	2.800 m	7
62.445 m	49.061 m	2.800 m	8
74.726 m	47.003 m	3.000 m	9
52.527 m	46.180 m	2.800 m	10
45.297 m	46.100 m	2.800 m	11
74.826 m	41.197 m	3.000 m	12
51.654 m	41.091 m	2.800 m	13
45.258 m	38.280 m	3.000 m	14
57.163 m	38.101 m	3.000 m	15
71.919 m	37.514 m	2.800 m	16

Rathmorrisy AGI

Luminaire layout plan

X	Y	Mounting height	Luminaire
51.232 m	35.104 m	3.000 m	17
70.615 m	31.854 m	3.000 m	18
43.930 m	28.950 m	2.000 m	19
47.538 m	28.950 m	2.200 m	20
70.592 m	27.208 m	3.000 m	21
76.429 m	27.171 m	3.000 m	22
45.719 m	26.582 m	2.000 m	23
73.613 m	23.699 m	3.000 m	24
73.538 m	16.329 m	3.000 m	25
67.603 m	16.000 m	3.000 m	26

Rathmorrisy AGI

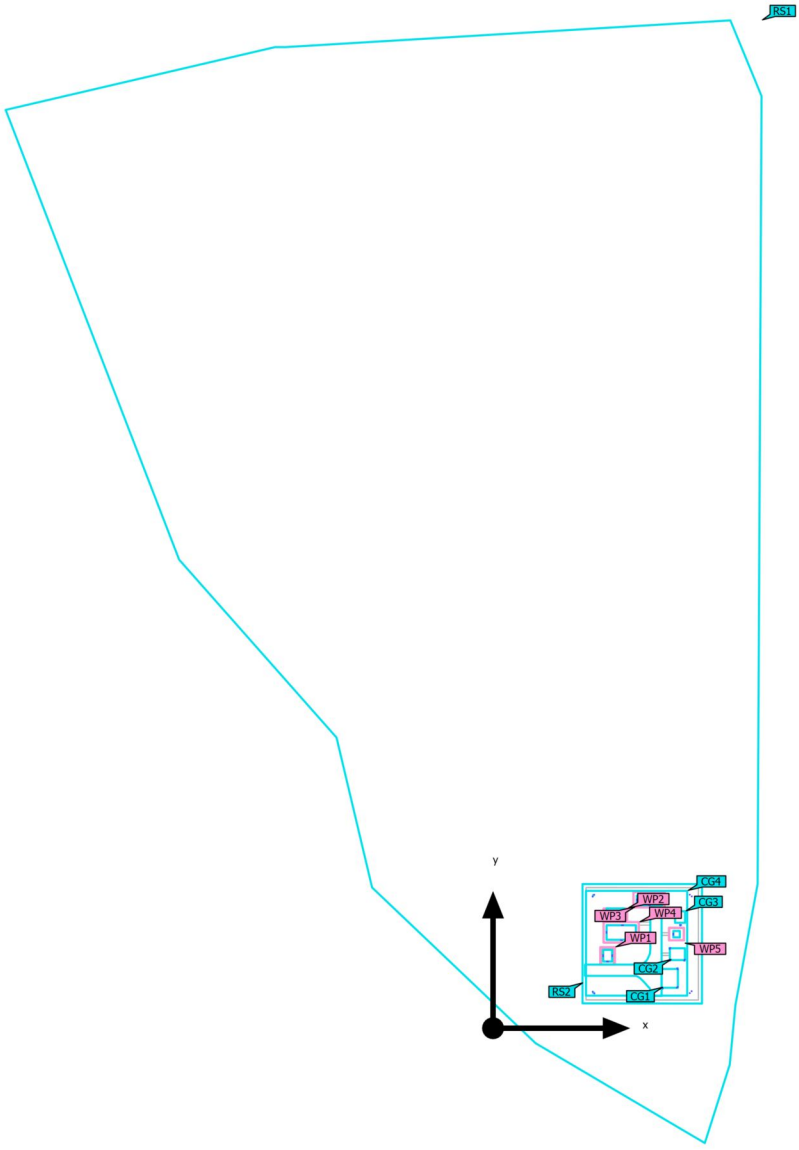
Luminaire list

Φ_{total}	P_{total}	Luminous efficacy
281674 lm	1854.2 W	151.9 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
8	Ansell Lighting	AAZT4/ASY/1 (160W 3000K)	FLOODLIGHTS - Aztec Floodlight Asymetric 3000K	160.0 W	25576 lm	159.8 lm/W
22	Appleton	LNLED3CXXXXD	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version	26.1 W	3503 lm	134.3 lm/W

Rathmorrisy AGI (Light scene 1)

Calculation objects



Rathmorrisy AGI (Light scene 1)

Calculation objects

Working planes

Properties	Ē (Target)	E_{min}	E_{max}	U_o (g_1) (Target)	g_2	Index
Working plane (E&I Kiosk) Perpendicular illuminance (adaptive) Height: 0.200 m, Wall zone: 0.000 m	56.6 lx (≥ 5.00 lx) ✓	15.7 lx	148 lx	0.28 (≥ 0.00) ✓	0.11	WP1
Working plane (BFG) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	34.7 lx (≥ 5.00 lx) ✓	12.1 lx	71.0 lx	0.35 (≥ 0.00) ✓	0.17	WP2
PBU Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	35.0 lx (≥ 5.00 lx) ✓	13.9 lx	70.8 lx	0.40 (≥ 0.00) ✓	0.20	WP3
Gas Regs Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	13.8 lx (≥ 5.00 lx) ✓	7.05 lx	16.9 lx	0.51 (≥ 0.00) ✓	0.42	WP4
Gas Analyser Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	50.2 lx (≥ 5.00 lx) ✓	23.5 lx	88.6 lx	0.47 (≥ 0.00) ✓	0.27	WP5

Surface result objects

Properties	Ø	min	max	U_o (g_1)	g_2	Index
Outside of AGI Perpendicular illuminance (adaptive) Height: 0.050 m	0.25 lx	0.001 lx	68.6 lx	0.004	0.000	RS1
Outside of AGI Luminance Height: 0.050 m	0.011 cd/m²	0.000 cd/m²	3.09 cd/m²	0.00	0.00	RS1
Road Perpendicular illuminance (adaptive) Height: 0.150 m	43.2 lx	24.1 lx	120 lx	0.56	0.20	RS2
Road Luminance Height: 0.150 m	4.71 cd/m²	2.63 cd/m²	13.1 cd/m²	0.56	0.20	RS2

Rathmorrisy AGI (Light scene 1)

Calculation objects

Calculation surfaces

Properties	$\bar{E}$	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Filters Perpendicular illuminance Height: 1.000 m	137 lx	53.0 lx	284 lx	0.39	0.19	CG1
Meters Perpendicular illuminance Height: 2.300 m	147 lx	25.4 lx	962 lx	0.17	0.026	CG2
HEX Perpendicular illuminance Height: 0.500 m	158 lx	85.2 lx	205 lx	0.54	0.42	CG3
Full Site Glare and Lighting Perpendicular illuminance Height: 0.200 m	63.5 lx	9.40 lx	203 lx	0.15	0.046	CG4

Rathmorrisy AGI (Light scene 1)

Calculation objects

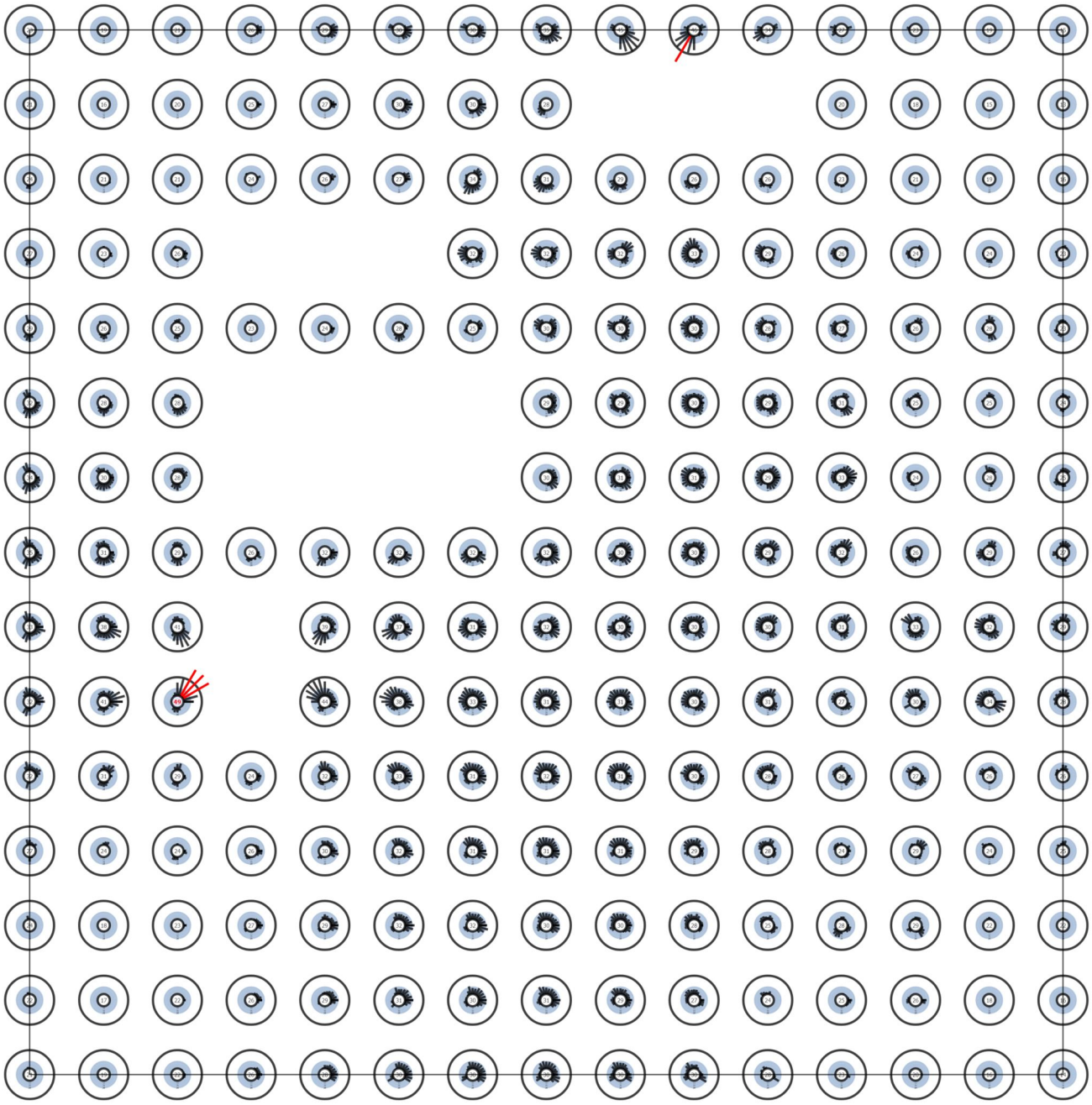
Full Site Glare and Lighting (R_G)

Strongest glare at	45°
max	49
Target	≤45
Viewing sector	0° - 360°
Step width	15°
Angle of inclination	-15°
Height	1.700 m
Index	CG4
Method	Exact calculation according to CIE 112

Rathmorrisy AGI (Light scene 1)

Calculation objects

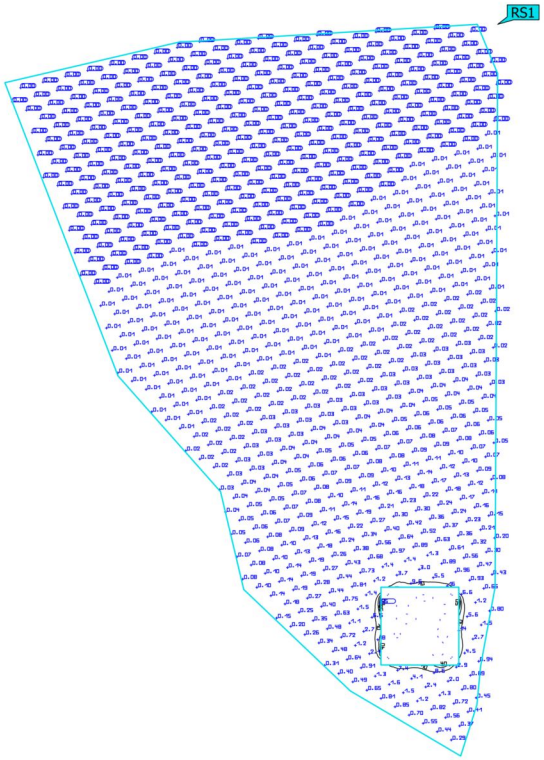
Full Site Glare and Lighting (R_G)



Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

Rathmorrisy AGI (Light scene 1)

Outside of AGI

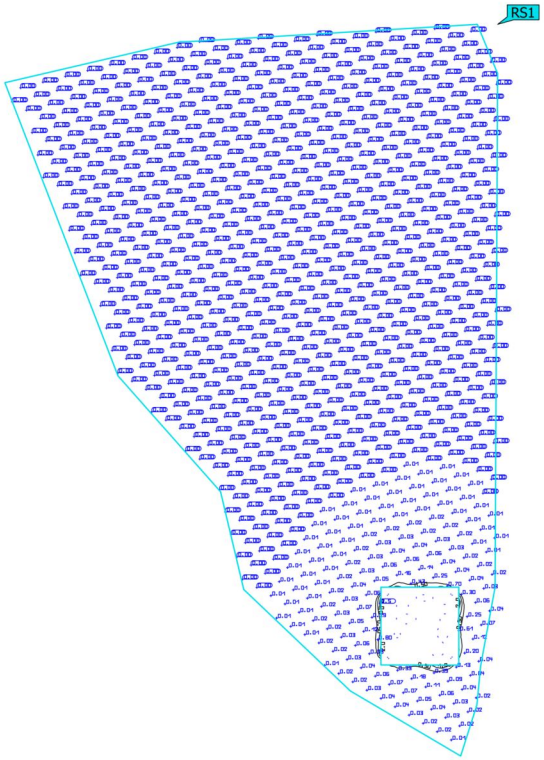


Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Outside of AGI Perpendicular illuminance (adaptive) Height: 0.050 m	0.25 lx	0.001 lx	68.6 lx	0.004	0.000	RS1

Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

Rathmorrisy AGI (Light scene 1)

Outside of AGI

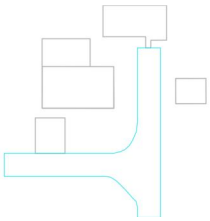


Properties	Ø	min	max	U_o (g_1)	g_2	Index
Outside of AGI Luminance Height: 0.050 m	0.011 cd/m²	0.000 cd/m²	3.09 cd/m²	0.00	0.00	RS1

Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

Rathmorrisy AGI (Light scene 1)

Road

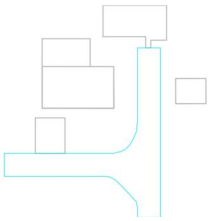


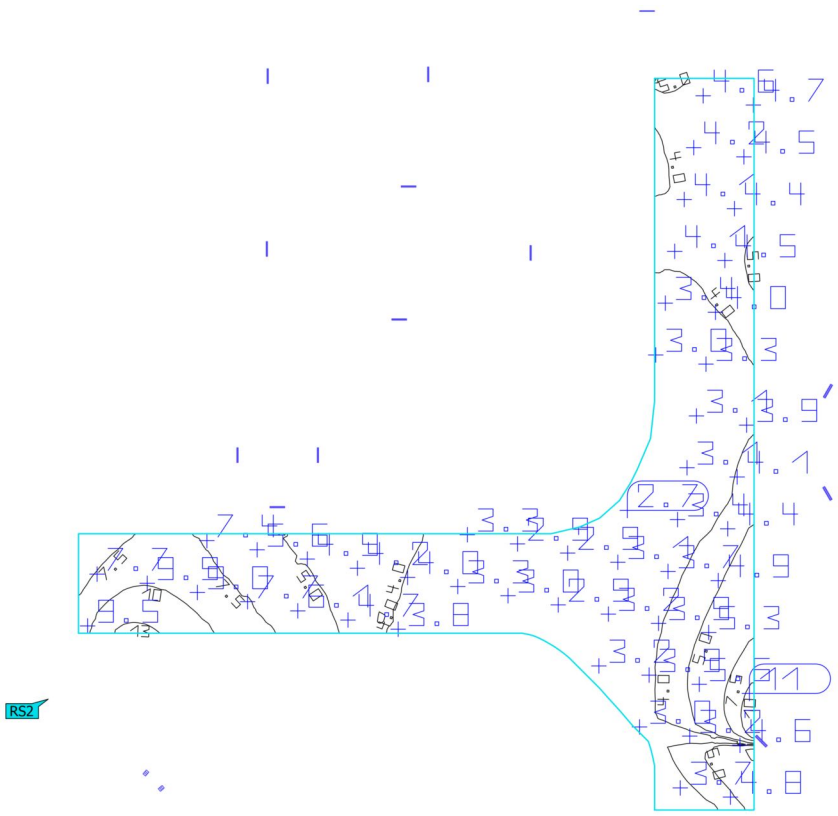
Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Road Perpendicular illuminance (adaptive) Height: 0.150 m	43.2 lx	24.1 lx	120 lx	0.56	0.20	RS2

Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

Rathmorrisy AGI (Light scene 1)

Road



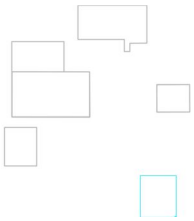


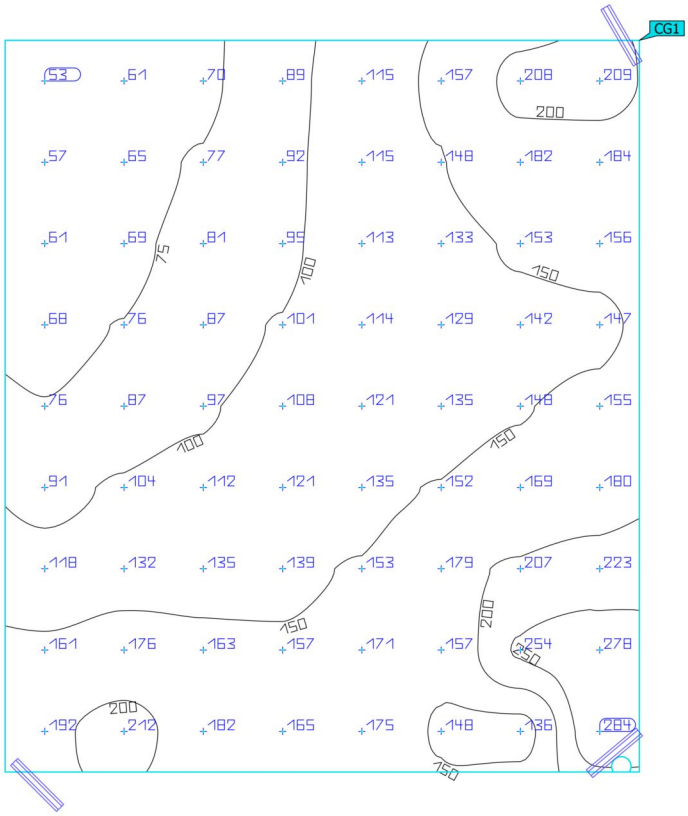
Properties	Ø	min	max	U_o (g_1)	g_2	Index
Road Luminance Height: 0.150 m	4.71 cd/m²	2.63 cd/m²	13.1 cd/m²	0.56	0.20	RS2

Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

Rathmorrisy AGI (Light scene 1)

Filters



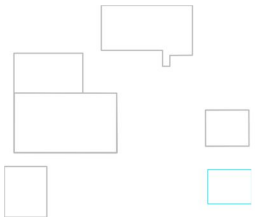


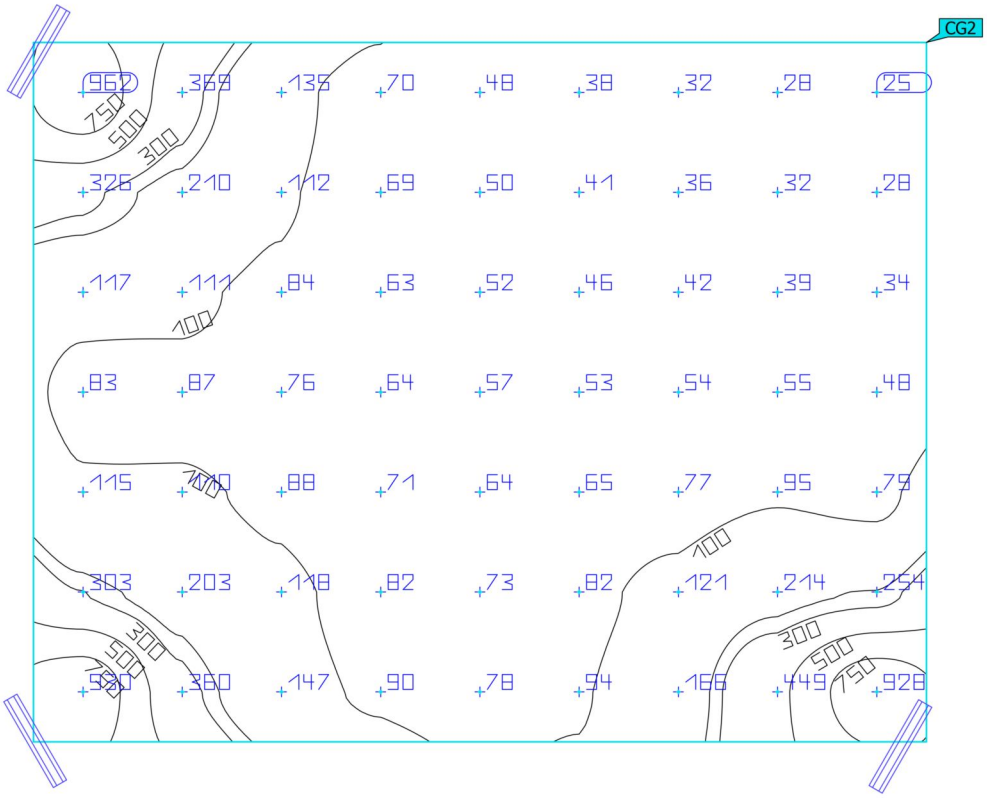
Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Filters Perpendicular illuminance Height: 1.000 m	137 lx	53.0 lx	284 lx	0.39	0.19	CG1

Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

Rathmorrisy AGI (Light scene 1)

Meters



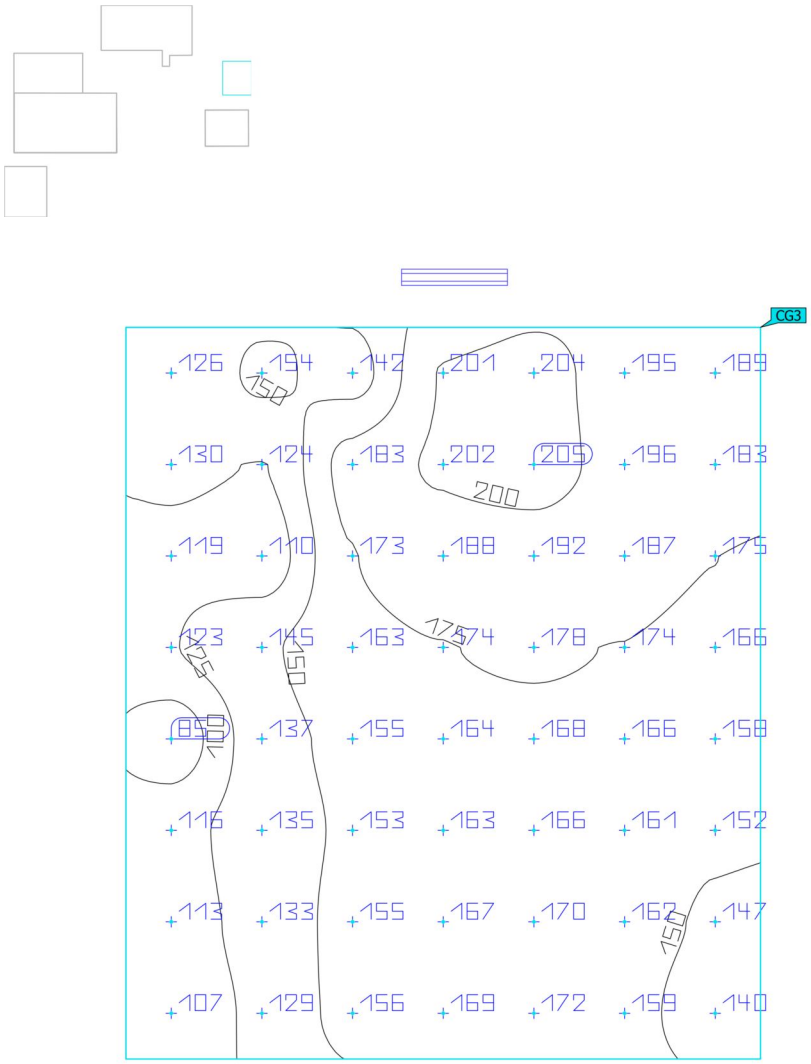


Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Meters Perpendicular illuminance Height: 2.300 m	147 lx	25.4 lx	962 lx	0.17	0.026	CG2

Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

Rathmorrisy AGI (Light scene 1)

HEX

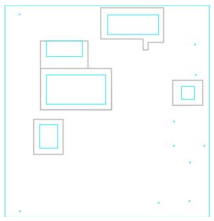


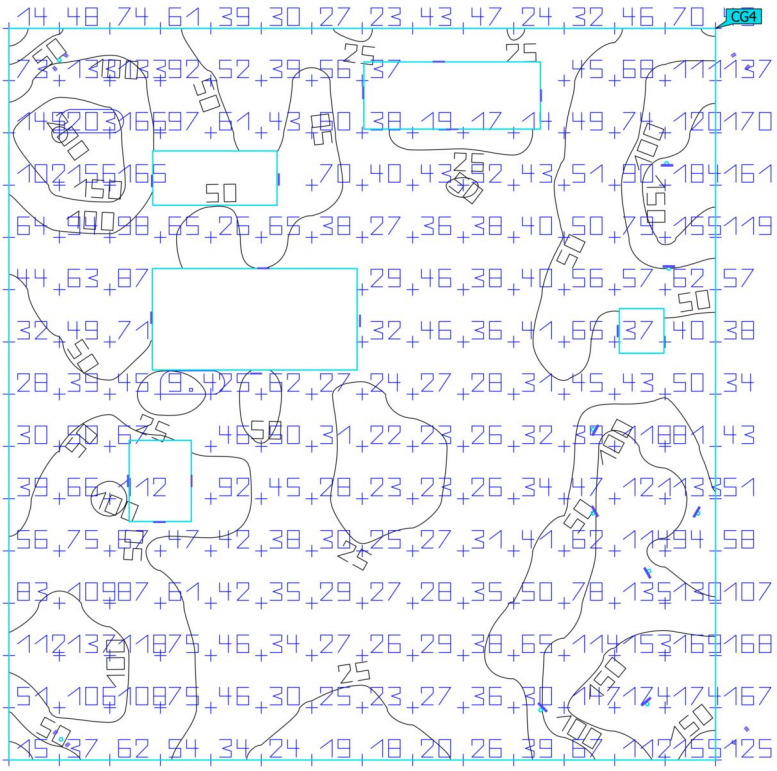
Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
HEX Perpendicular illuminance Height: 0.500 m	158 lx	85.2 lx	205 lx	0.54	0.42	CG3

Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

Rathmorrisy AGI (Light scene 1)

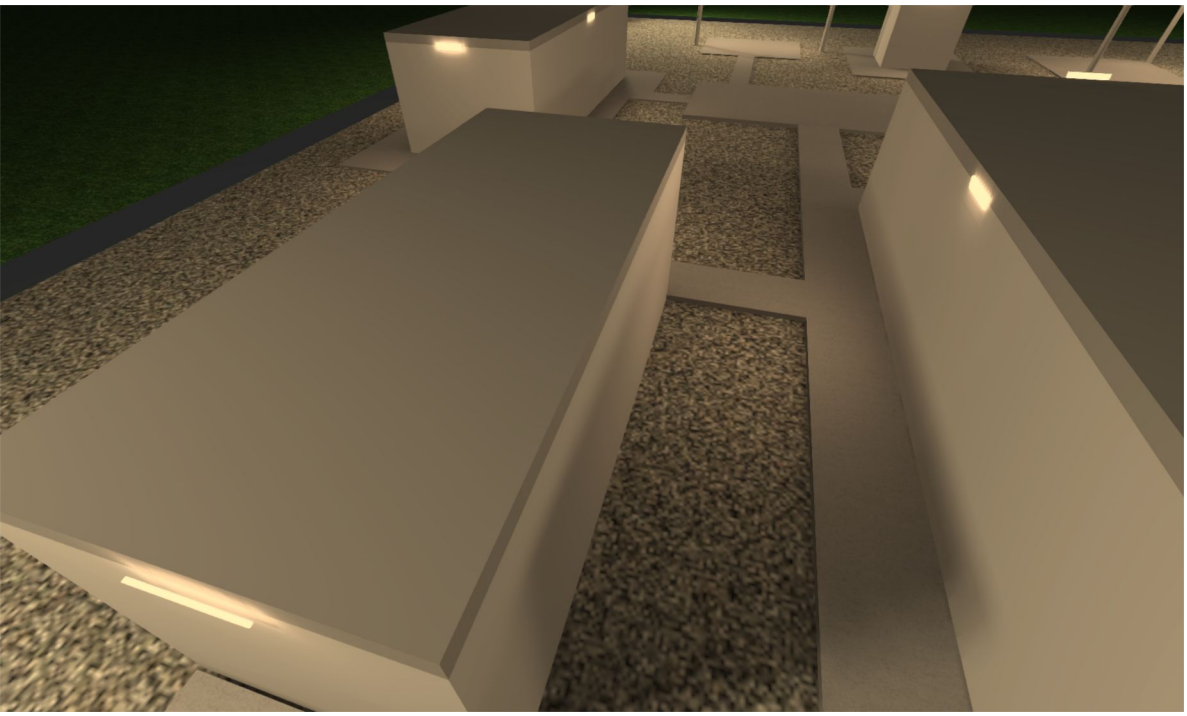
Full Site Glare and Lighting





Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Full Site Glare and Lighting Perpendicular illuminance Height: 0.200 m	63.5 lx	9.40 lx	203 lx	0.15	0.046	CG4

Utilisation profile: Industrial sites and storage areas (5.7.4 Demanding electrical, machine and piping installations, inspection)

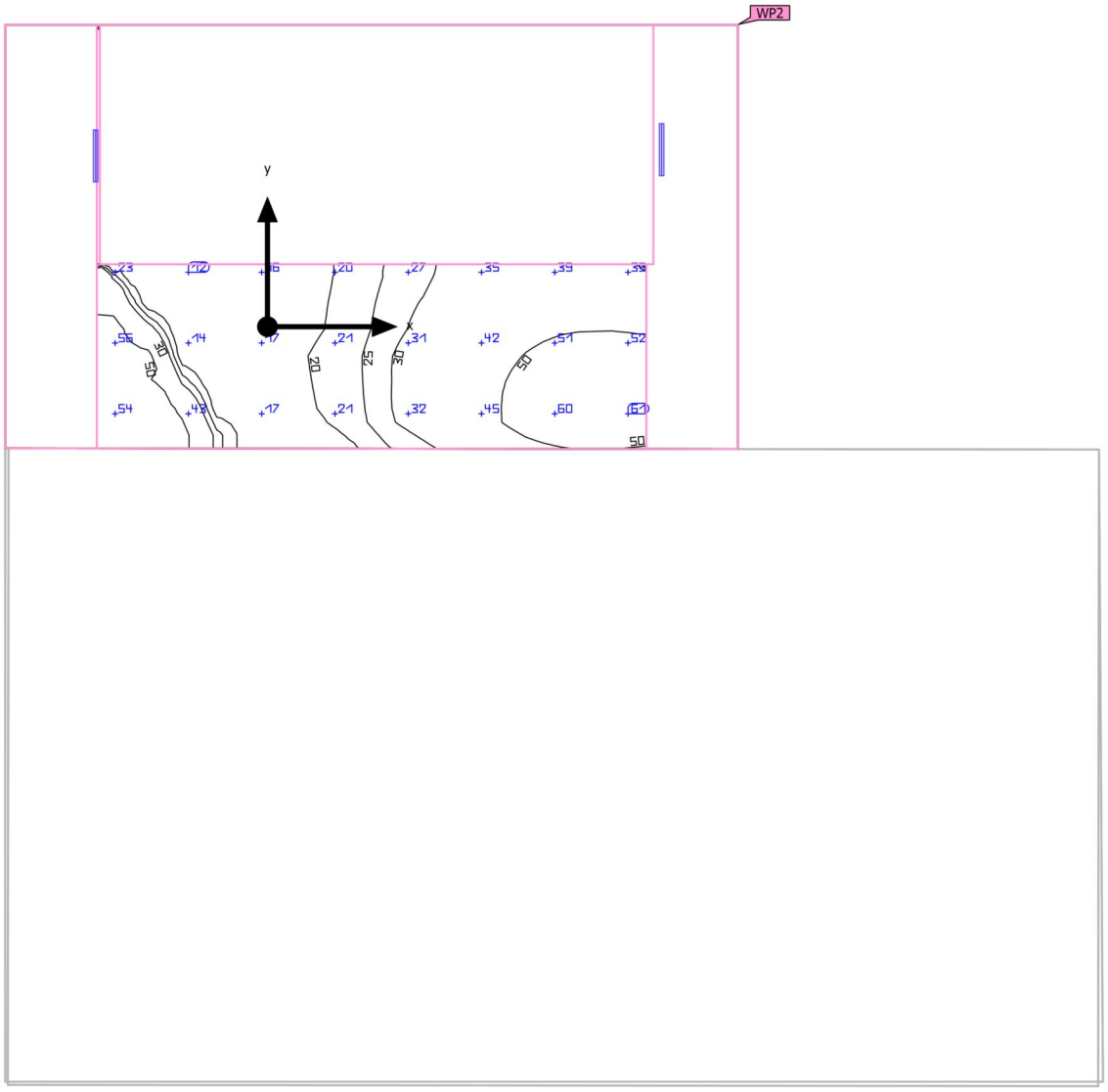


BFG

Description

BFG (Light scene 1)

Summary



		Mounting height	2.700 m
Ground area	51.11 m²	Height Working plane	0.000 m
Maintenance factor	0.80 (fixed)	Wall zone Working plane	0.000 m

BFG (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{perpendicular}$	34.7 lx	≥ 5.00 lx	✓	WP2
	U_o (g_1)	0.35	≥ 0.00	✓	WP2
Energy estimation(2)	Consumption	457 kWh/a	max. 1800 kWh/a	✓	
Space	Lighting power density	1.02 W/m²	–		
		2.94 W/m²/100 lx	–		

(1) Based on a rectangular space of 5.443 m x 9.400 m and SHR of 0.25.
(2) Calculated using DIN:18599-4.

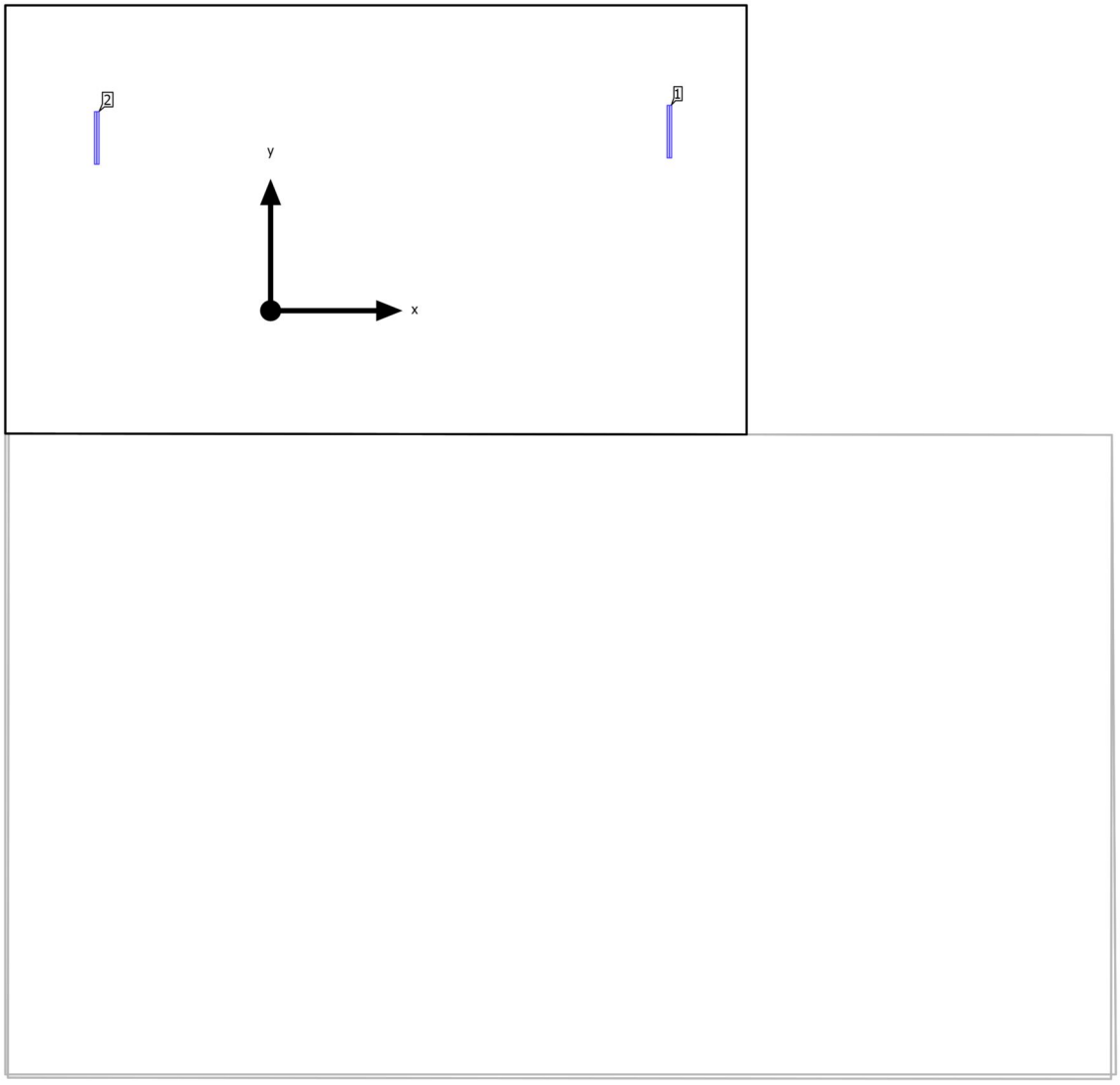
Utilisation profile: General circulation areas at outdoor workplaces (5.1.1 Walkways exclusively for pedestrians)

Luminaire list

pcs.	Manufacturer	Article No.	Article name	R_{UG}	P	Φ	Luminous efficacy
2	Appleton	LNLED3CX XXXD	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version	–	26.1 W	3503 lm	134.3 lm/W

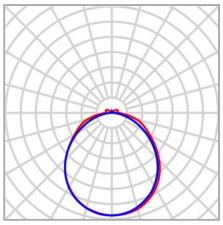
BFG

Luminaire layout plan



BFG

Luminaire layout plan



Manufacturer	Appleton	P	26.1 W
Article No.	LNLED3CXXXXD	$\Phi_{Luminaire}$	3503 lm
Article name	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version		
Fitting	1x NA		

Individual luminaires

X	Y	Mounting height	Luminaire
5.041 m	2.271 m	2.700 m	1
-2.189 m	2.191 m	2.700 m	2

BFG

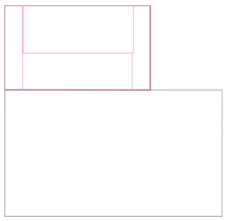
Luminaire list

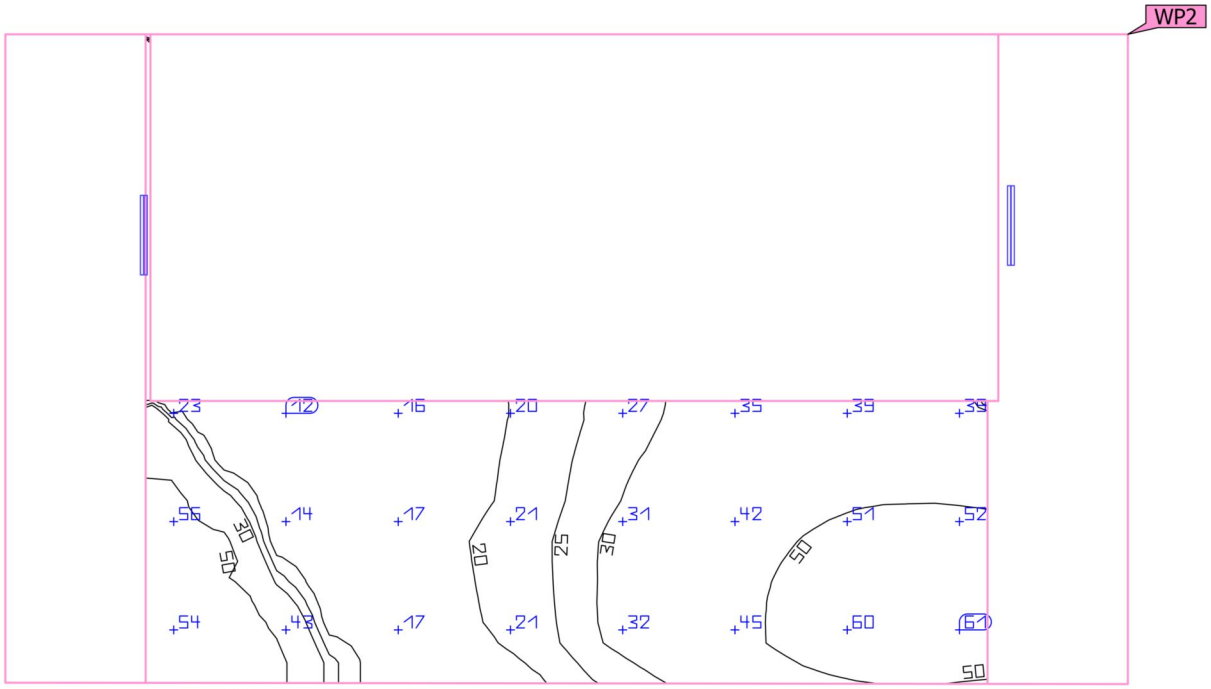
Φ_{total}	P_{total}	Luminous efficacy
7006 lm	52.2 W	134.2 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
2	Appleton	LNLED3CXXXXD	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version	26.1 W	3503 lm	134.3 lm/W

BFG (Light scene 1)

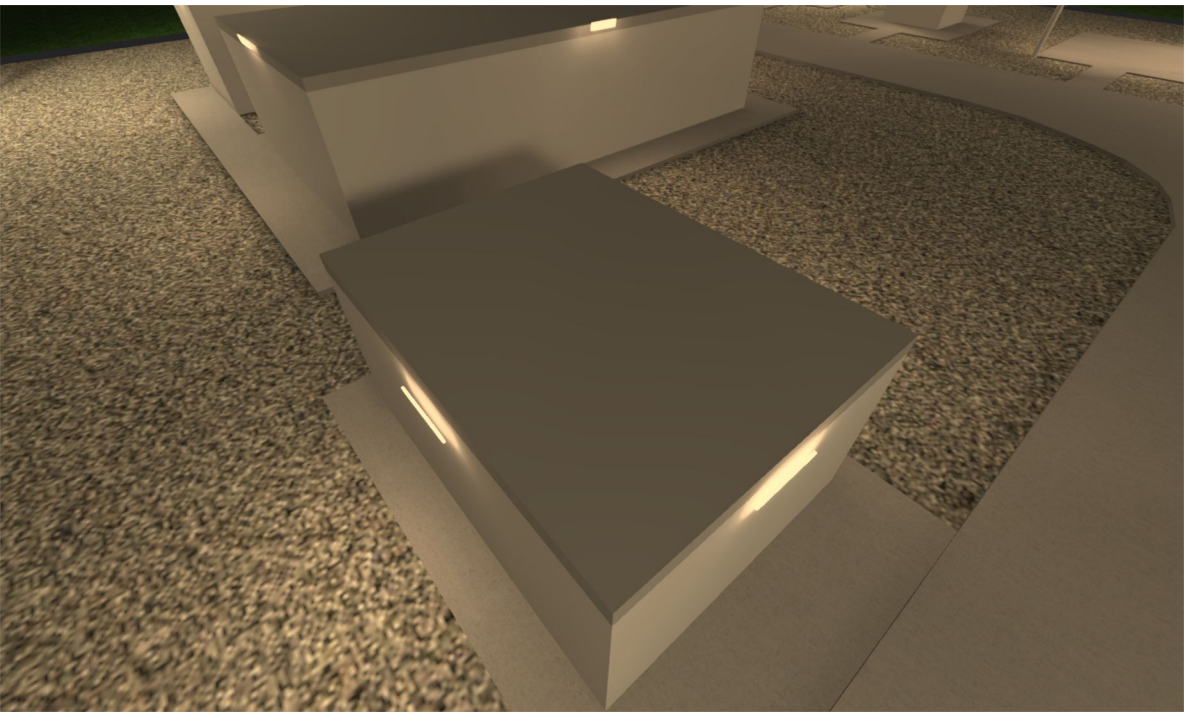
Working plane (BFG)





Properties	Ē (Target)	E_{min}	E_{max}	U_o (g_1) (Target)	g_2	Index
Working plane (BFG) Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	34.7 lx (≥ 5.00 lx) ✓	12.1 lx	71.0 lx	0.35 (≥ 0.00) ✓	0.17	WP2

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

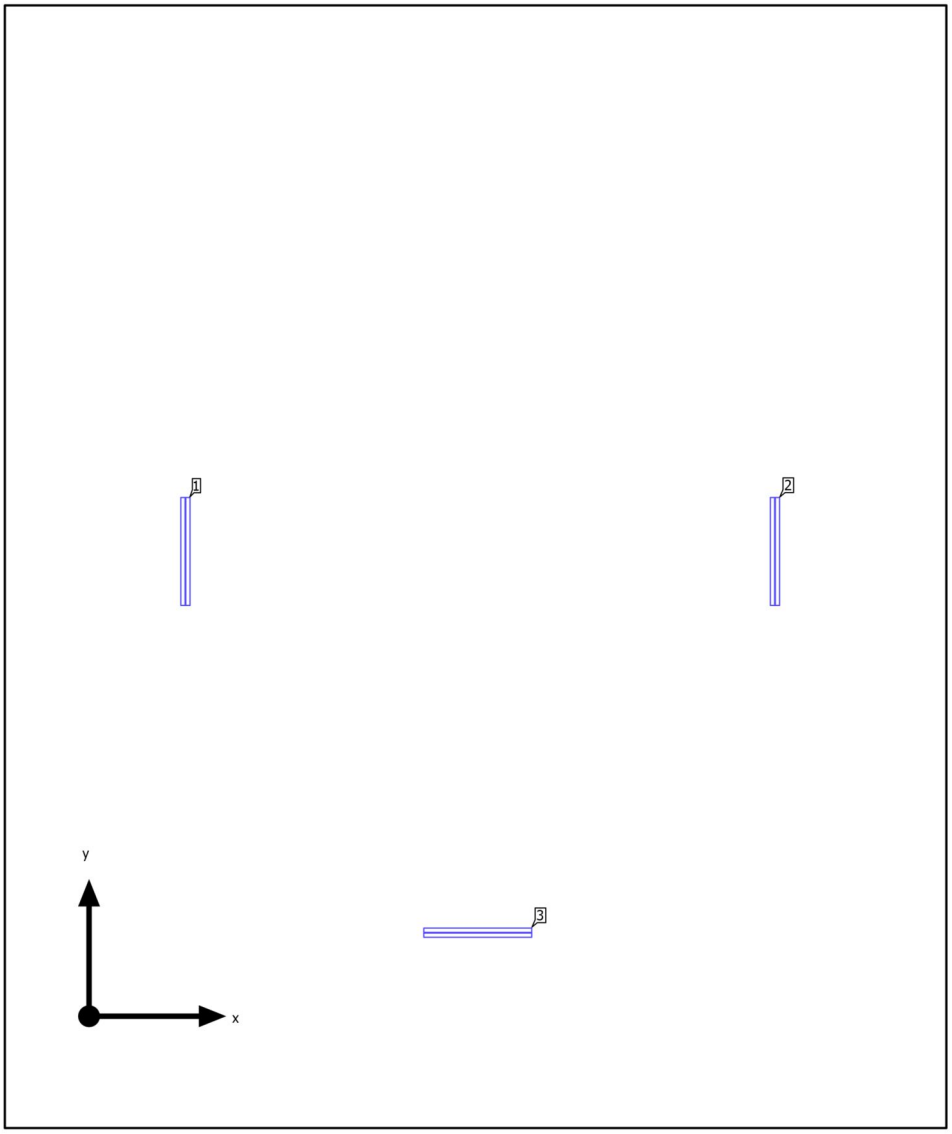


E&I Kiosk

Description

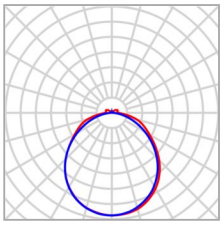
E&I Kiosk

Luminaire layout plan



E&I Kiosk

Luminaire layout plan



Manufacturer	Appleton	P	26.1 W
Article No.	LNLED3CXXXXD	$\Phi_{Luminaire}$	3503 lm
Article name	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version		
Fitting	1x NA		

Individual luminaires

X	Y	Mounting height	Luminaire
0.610 m	2.868 m	2.000 m	1
4.218 m	2.867 m	2.200 m	2
2.399 m	0.500 m	2.000 m	3

E&I Kiosk

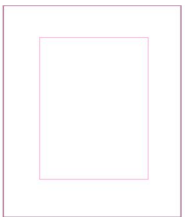
Luminaire list

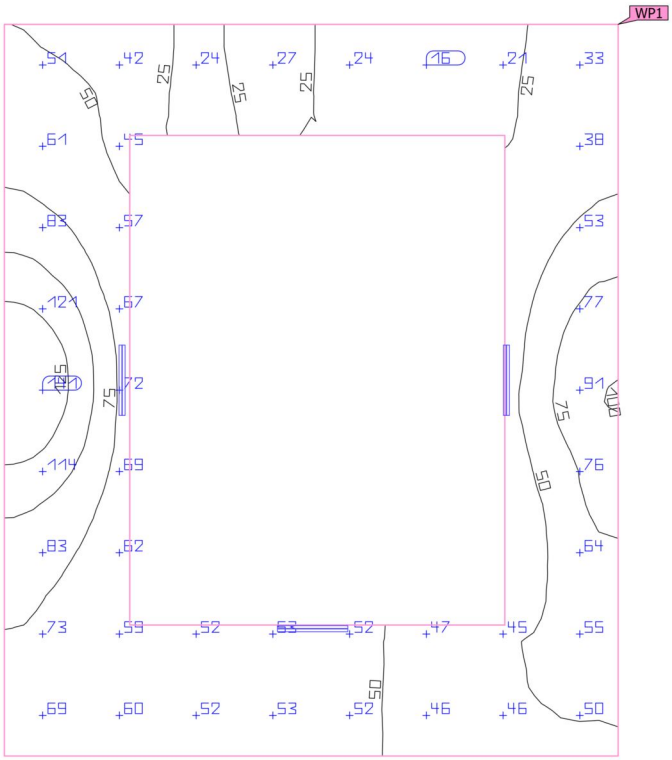
Φ_{total}	P_{total}	Luminous efficacy
10509 lm	78.3 W	134.2 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
3	Appleton	LNLED3CXXXXD	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version	26.1 W	3503 lm	134.3 lm/W

E&I Kiosk (Light scene 1)

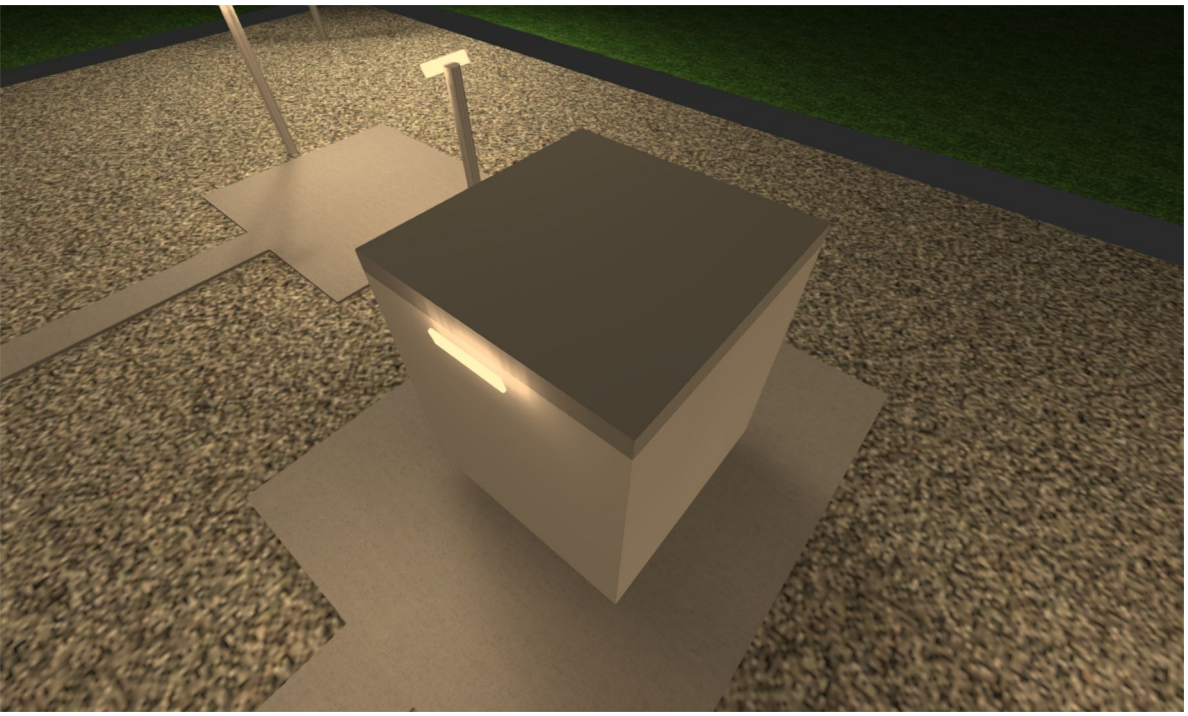
Working plane (E&I Kiosk)





Properties	Ē (Target)	E_{min}	E_{max}	U_o (g_1) (Target)	g_2	Index
Working plane (E&I Kiosk) Perpendicular illuminance (adaptive) Height: 0.200 m, Wall zone: 0.000 m	56.6 lx (≥ 5.00 lx) ✓	15.7 lx	148 lx	0.28 (≥ 0.00) ✓	0.11	WP1

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

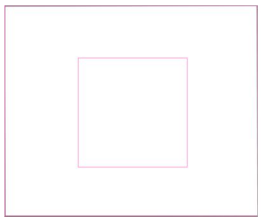


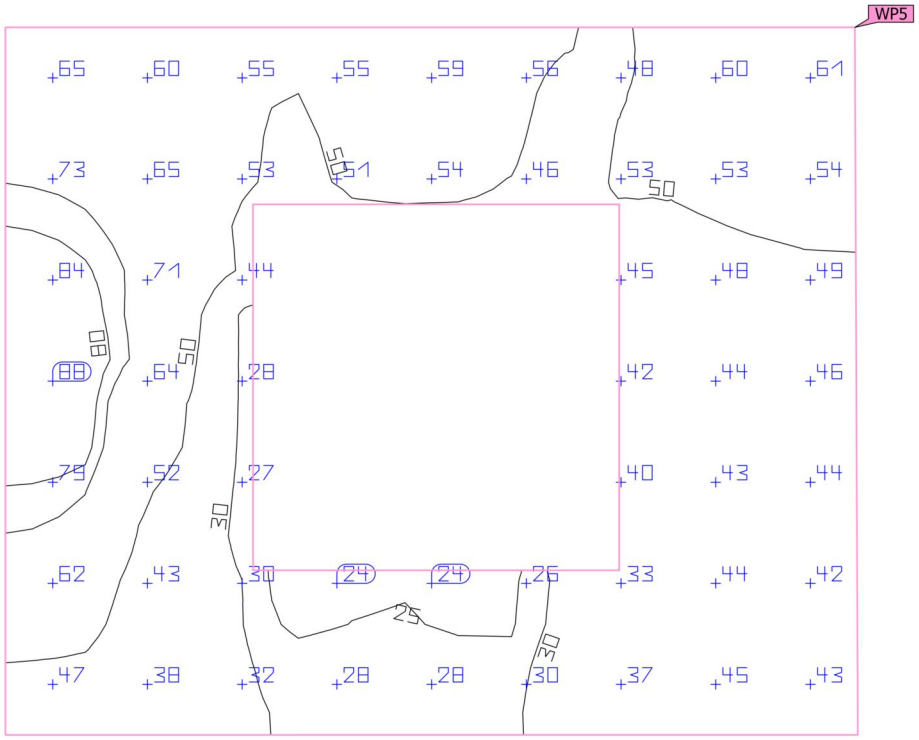
Gas Analyser

Description

Gas Analyser (Light scene 1)

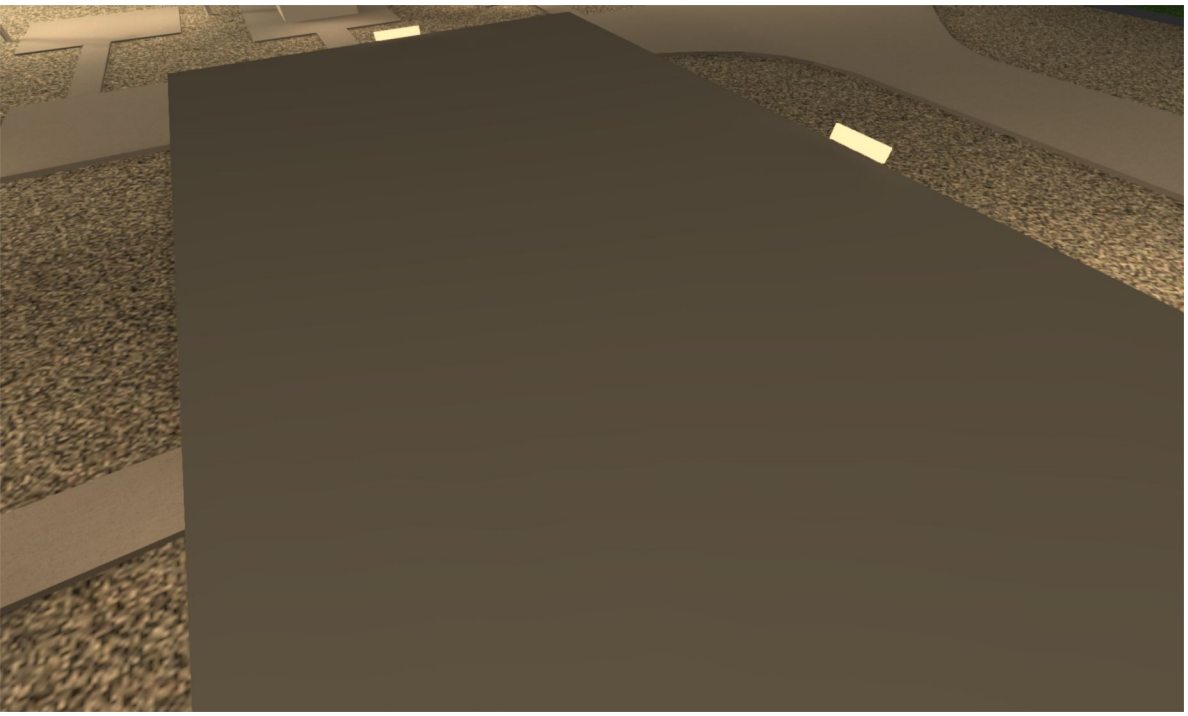
Gas Analyser





Properties	Ē (Target)	E_{min}	E_{max}	U_o (g_1) (Target)	g_2	Index
Gas Analyser Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	50.2 lx (≥ 5.00 lx) ✓	23.5 lx	88.6 lx	0.47 (≥ 0.00) ✓	0.27	WP5

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

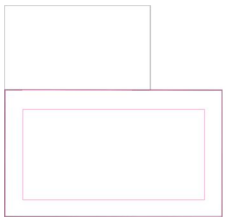


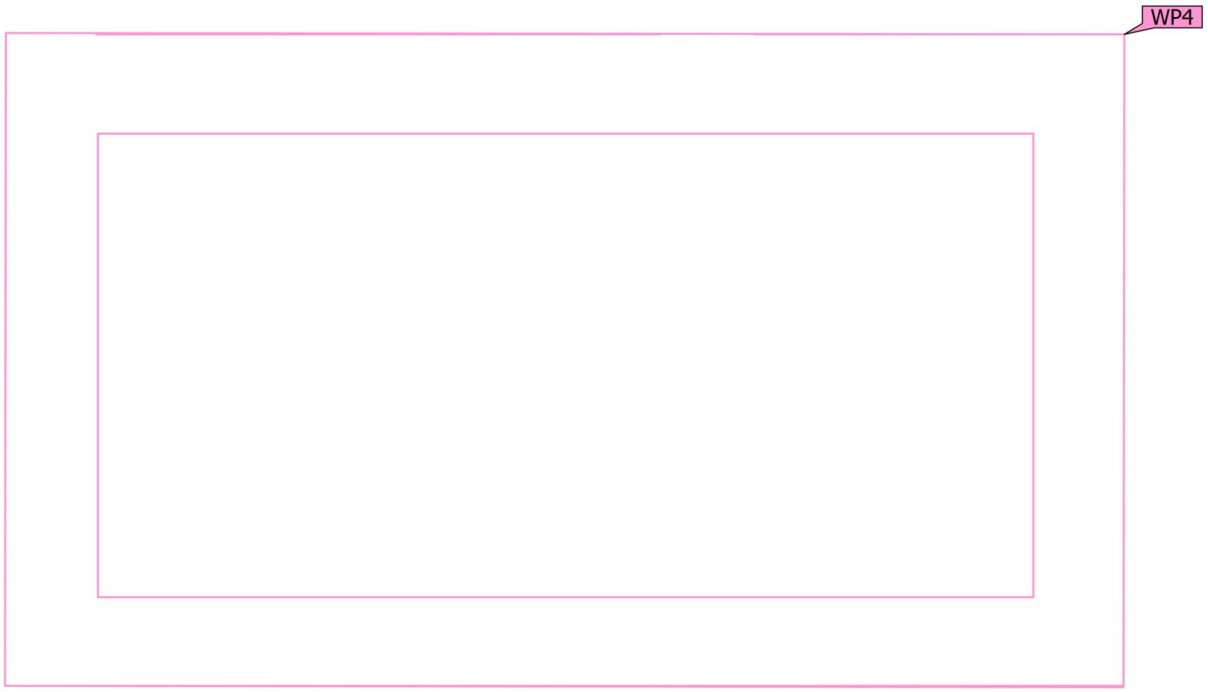
Gas Regs

Description

Gas Regs (Light scene 1)

Gas Regs



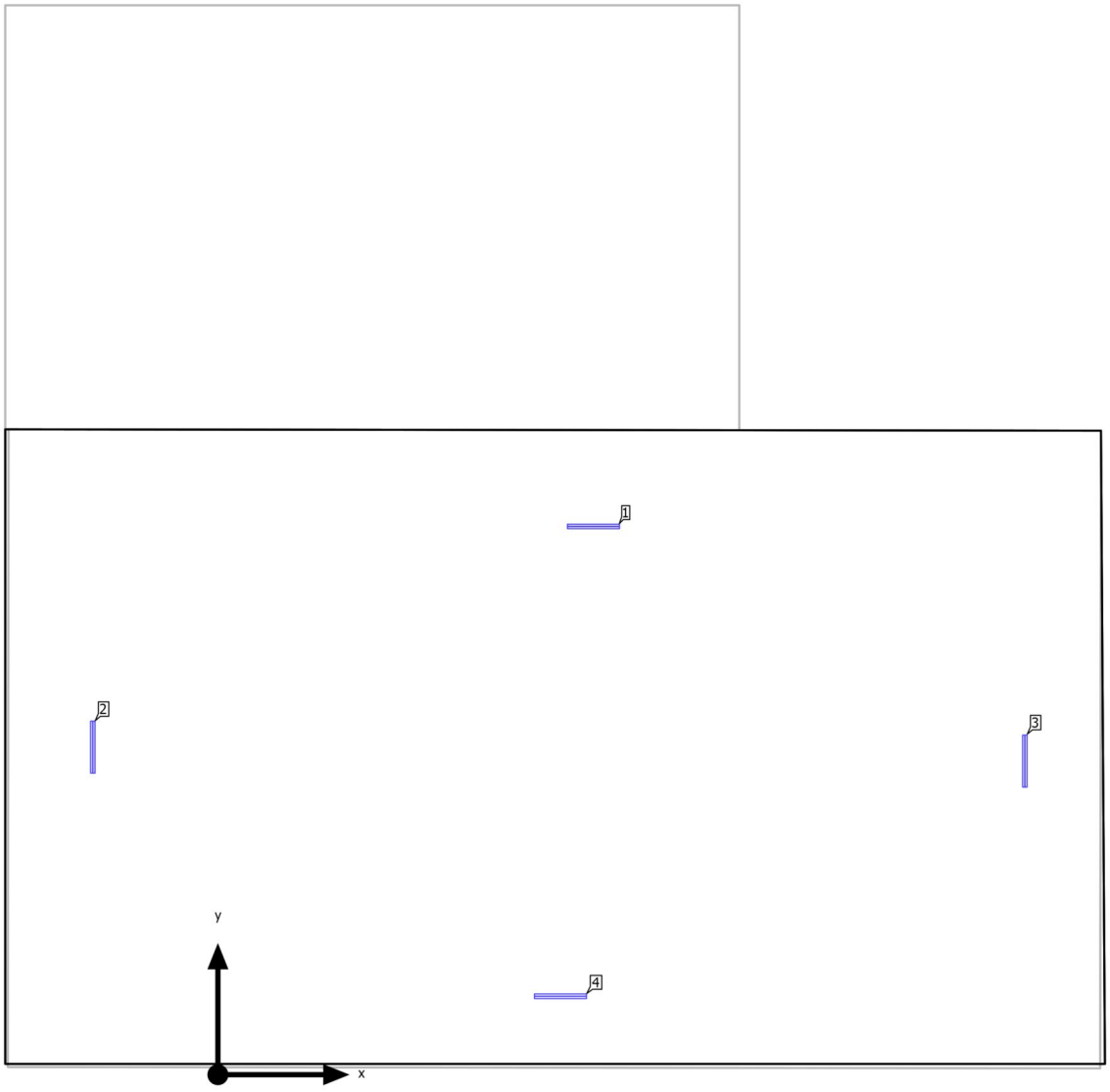


Properties	Ē (Target)	E_{min}	E_{max}	U_o (g_1) (Target)	g_2	Index
Gas Regs Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	13.8 lx (≥ 5.00 lx) ✓	7.05 lx	16.9 lx	0.51 (≥ 0.00) ✓	0.42	WP4

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

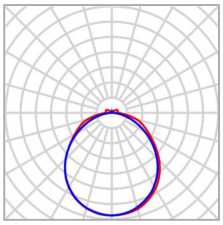
Gas Regulators

Luminaire layout plan



Gas Regulators

Luminaire layout plan



Manufacturer	Appleton	P	26.1 W
Article No.	LNLED3CXXXXD	$\Phi_{Luminaire}$	3503 lm
Article name	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version		
Fitting	1x NA		

Individual luminaires

X	Y	Mounting height	Luminaire
4.809 m	7.007 m	2.800 m	1
-1.587 m	4.196 m	3.000 m	2
10.318 m	4.017 m	3.000 m	3
4.387 m	1.020 m	3.000 m	4

Gas Regulators

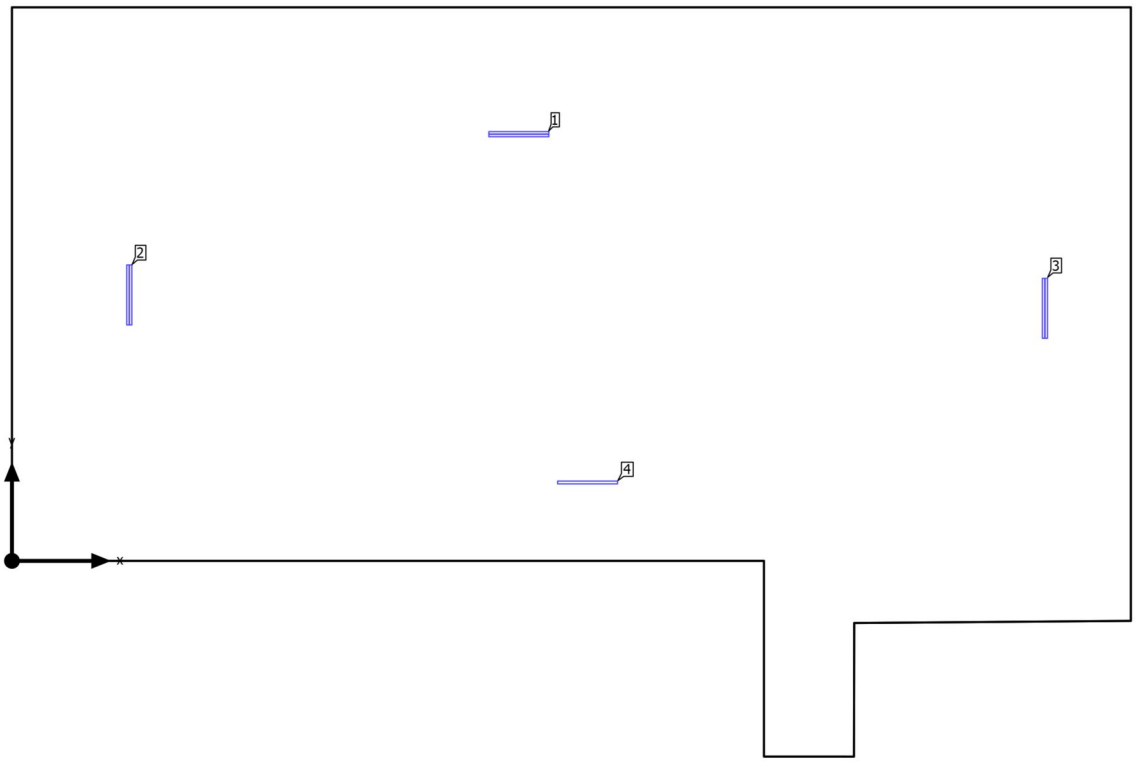
Luminaire list

Φ_{total}	P_{total}	Luminous efficacy
14012 lm	104.4 W	134.2 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
4	Appleton	LNLED3CXXXXD	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version	26.1 W	3503 lm	134.3 lm/W

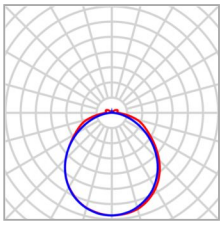
PBU

Luminaire layout plan



PBU

Luminaire layout plan



Manufacturer	Appleton	P	26.1 W
Article No.	LNLED3CXXXXD	$\Phi_{Luminaire}$	3503 lm
Article name	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version		
Fitting	1x NA		

Individual luminaires

X	Y	Mounting height	Luminaire
5.631 m	4.726 m	2.700 m	1
1.319 m	2.955 m	2.700 m	2
11.490 m	2.806 m	2.700 m	3
6.395 m	0.887 m	2.700 m	4

PBU

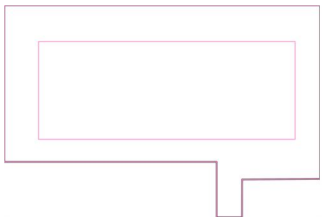
Luminaire list

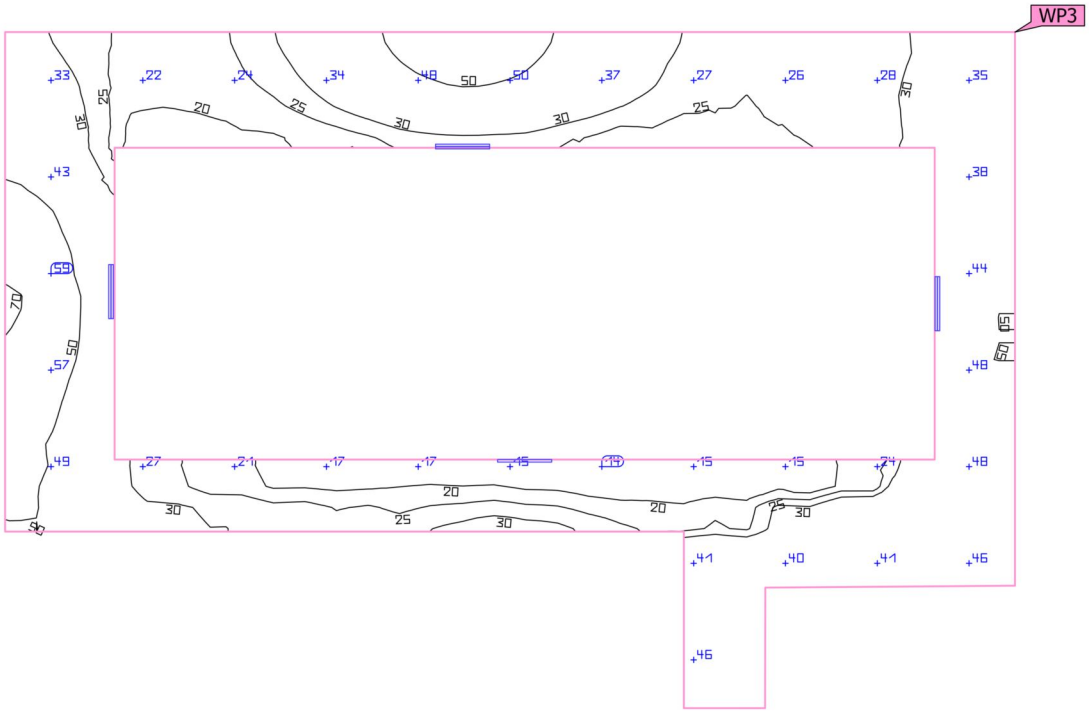
Φ_{total}	P_{total}	Luminous efficacy
14012 lm	104.4 W	134.2 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
4	Appleton	LNLED3CXXXXD	Appleton Linmaster LED luminaire, Zone 2, 700mm, 3000 lm, 5000K, Diffused Polycarbonate , Standard version	26.1 W	3503 lm	134.3 lm/W

PBU (Light scene 1)

PBU





Properties	Ē (Target)	E_{min}	E_{max}	U_o (g_1) (Target)	g_2	Index
PBU Perpendicular illuminance (adaptive) Height: 0.000 m, Wall zone: 0.000 m	35.0 lx (≥ 5.00 lx) ✓	13.9 lx	70.8 lx	0.40 (≥ 0.00) ✓	0.20	WP3

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

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.
Environmental zones	The assessment of intrusive light and light immission depends on the environment of the lighting installation. Depending on the standard, 4-6 different zones are defined, ranging from highly protected areas in natural settings to urban areas, commercial zones, and industrial zones.
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.

K

k_S	The glare effect of a light source can be described by the glare metric k_S. It relates the solid angle of the glaring light source as seen from the point of immission, the ambient luminance, and the maximum allowable luminance.

Glossary

L

LENI	(Engl. lighting energy numeric indicator) Lighting energy numeric indicator acc. to EN 15193 Unit: kWh/(m^2 * a)
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

Glossary

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

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.

O

Obtrusive light/Light immission	To protect the nocturnal environment and minimize problems for humans, flora, and fauna, it is necessary to limit obtrusive light (also known as light pollution), which can cause serious physiological and ecological issues for individuals and the environment. Light immission refers to the disturbing influence of emitted light from artificial light sources.
Operating times	The assessment of obtrusive light and light immission depends on the operating times of the lighting installation. Depending on the standard, 1-3 different operating times are specified. In the absence of specific details, an operating time between 06:00 and 22:00 can be assumed.

P

P	(Engl. power) Electric power consumption Unit: watt Abbreviation: W

Glossary

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.
R_{DLO}	The ratio of the luminous flux emitted below the horizontal plane to the total lamp luminous flux of a luminaire or lighting installation in its operational position.
R_G	The glare directly caused by luminaires of an outdoor lighting installation is determined using the CIE Glare Rating (RG) method. To calculate this, the equivalent veiling luminance of the surroundings is needed. There are four options for determining this: • An exact calculation according to CIE 112, based on the scene area. • A simplified method according to EN 12464-2, based on the scene area. • Using a custom calculation area to determine the equivalent veiling luminance. • Specifying a fixed value for easy comparability.
R_{UF}	upward flux ratio The ratio of the luminous flux emitted directly or reflected above the horizontal plane to the luminous flux that cannot be avoided under ideal conditions to achieve the illuminance level on a deliberately illuminated area.
R_{UL}	upward light ratio The ratio of the luminous flux emitted above the horizontal plane to the luminous flux of a luminaire or lighting installation in its operational position. The luminaire efficiency is considered in this calculation.
R_{ULO}	upward light output ratio The ratio of the luminous flux emitted above the horizontal plane to the total lamp luminous flux of a luminaire or lighting installation in its operational position.
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).
RUG (max)	(unified glare rating) Measure for the psychological glare effect in interiors. In addition to luminaire luminance, the RUG 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 RUG values for various indoor workplaces.

Glossary

RUG observer	Calculation point in the room, for the DIALux the RUG 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).

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.

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.