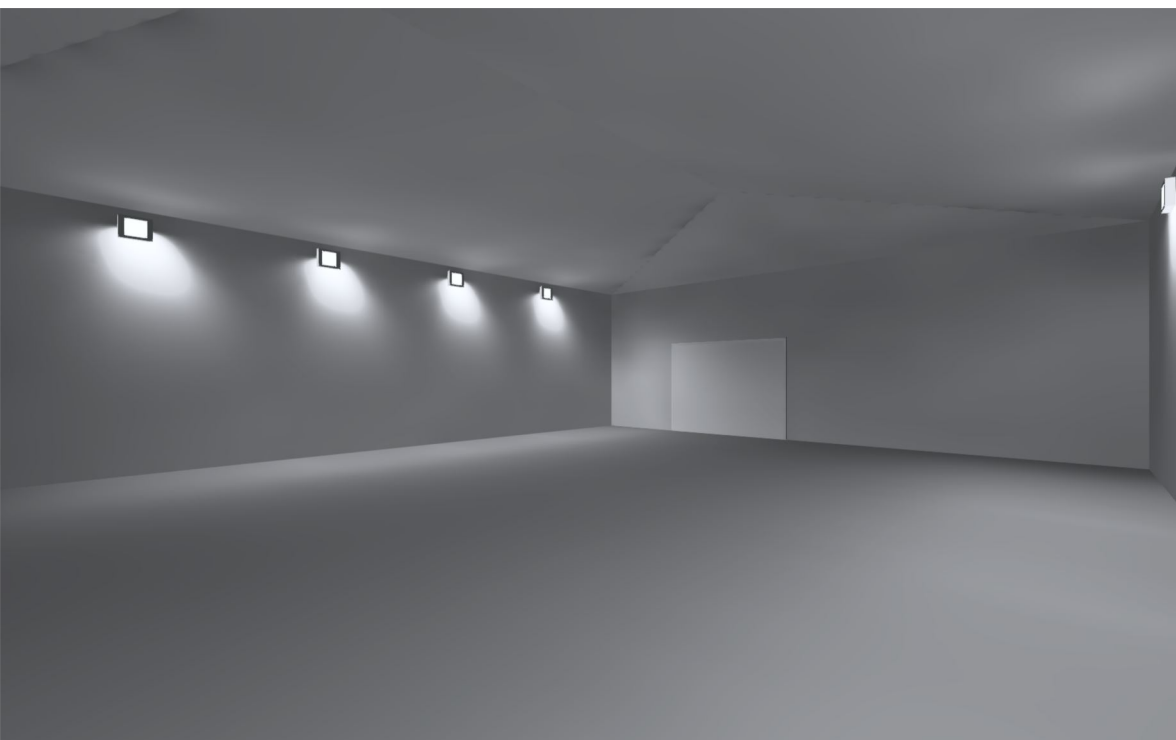




Project 0 sirusa

Preliminary remarks

Notes on planning:

The energy consumption quantities do not take into account light scenes and their dimming levels.

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Product data sheets

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Site 1

Building 1

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Site 1 - Building 1

Storey 1

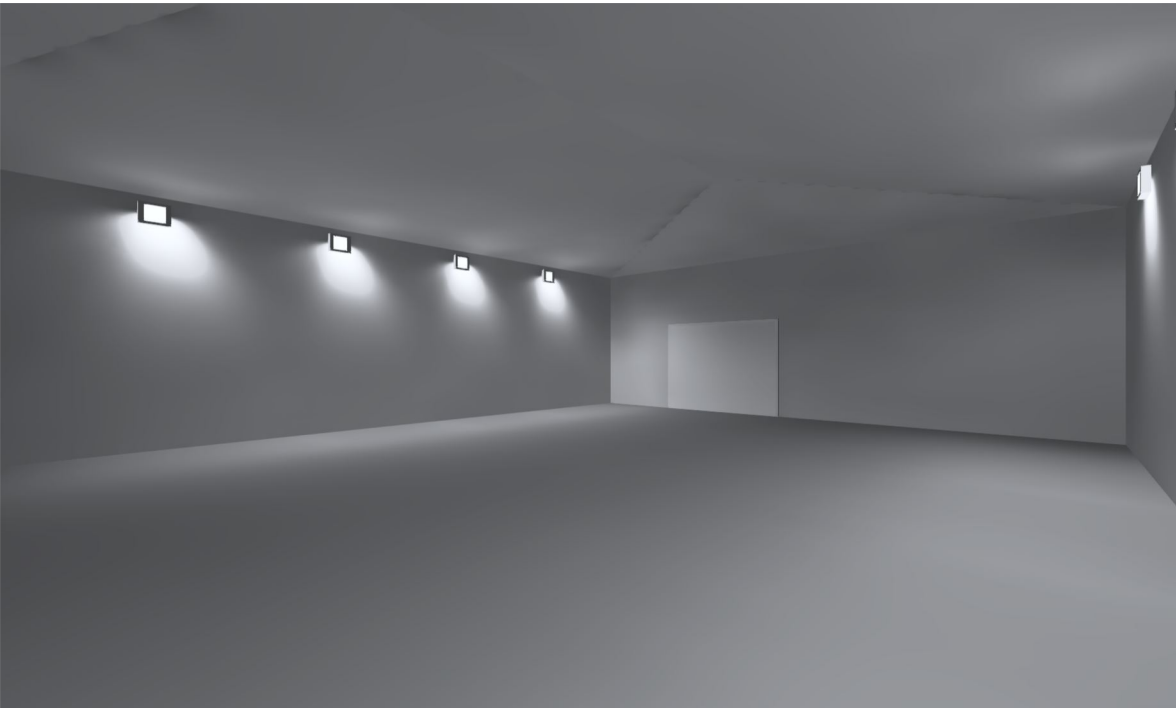
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Site 1 - Building 1 - Storey 1

Room 1

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Description

Luminaire list

 Φ_{total}

174552 lm

 P_{total}

1362.4 W

Luminous efficacy

128.1 lm/W

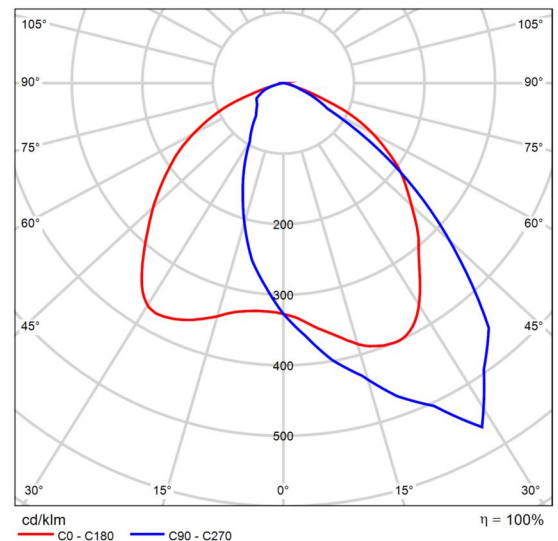
pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
8	EAE	3177028	PROLIT V.3	170.3 W	21819 lm	128.1 lm/W

Product data sheet

EAE - PROLIT V.3



Article No.	3177028
P	170.3 W
Φ_{Lamp}	21842 lm
$\Phi_{\text{Luminaire}}$	21819 lm
η	99.90 %
Luminous efficacy	128.1 lm/W
CCT	5700 K
CRI	80



Polar LDC

Prolit has been updated. Thanks to its gently designed new housing and high efficient electronic infrastructure, Prolit V.3 offers lumen packages for many different application areas as well as choice of wide range optics. With the efficacy up to 146lm/W, it provides high energy saving. It is perfect for the replacement of conventional and low efficient lighting systems.

Housing: Aluminium injection housing

Diffuser: Tempered glass with serigraphy

Optic: 22° lens / 32° lens / 57° lens / 99° lens / Asymmetric lens

Power: 102 W / 150 W / 176 W / 206 W

Light Source: Power LED

Input Voltage: 220 - 240V AC

IP: IP66

CRI: >70

Installation: Floor Mounted

Building 1

Luminaire list Φ_{total}

174552 lm

 P_{total}

1362.4 W

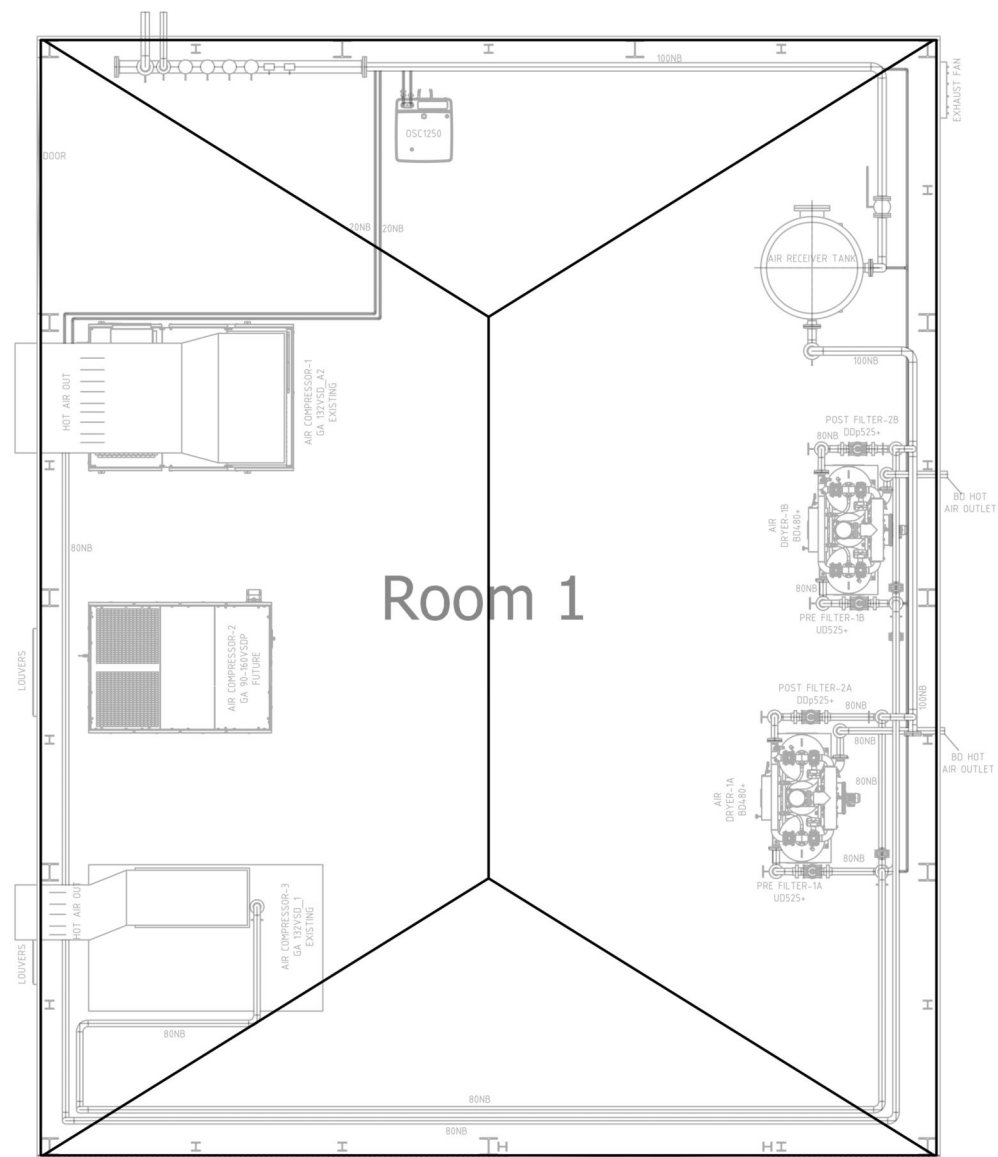
Luminous efficacy

128.1 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
8	EAE	3177028	PROLIT V.3	170.3 W	21819 lm	128.1 lm/W

Building 1 · Storey 1 (Light scene 1)

Room List



Building 1 · Storey 1 (Light scene 1)

Room List

Room 1

 P_{total}

1362.4 W

 A_{Room} 186.54 m²

Lighting power density

7.30 W/m² = 1.55 W/m²/100 lx (Room) $\bar{E}_{\text{perpendicular (Working plane)}}$

470 lx

pcs.	Manufacturer	Article No.	Article name	P	$\Phi_{\text{Luminaire}}$
8	EAE	3177028	PROLIT V.3	170.3 W	21819 lm

Building 1 · Storey 1

Luminaire list Φ_{total}

174552 lm

 P_{total}

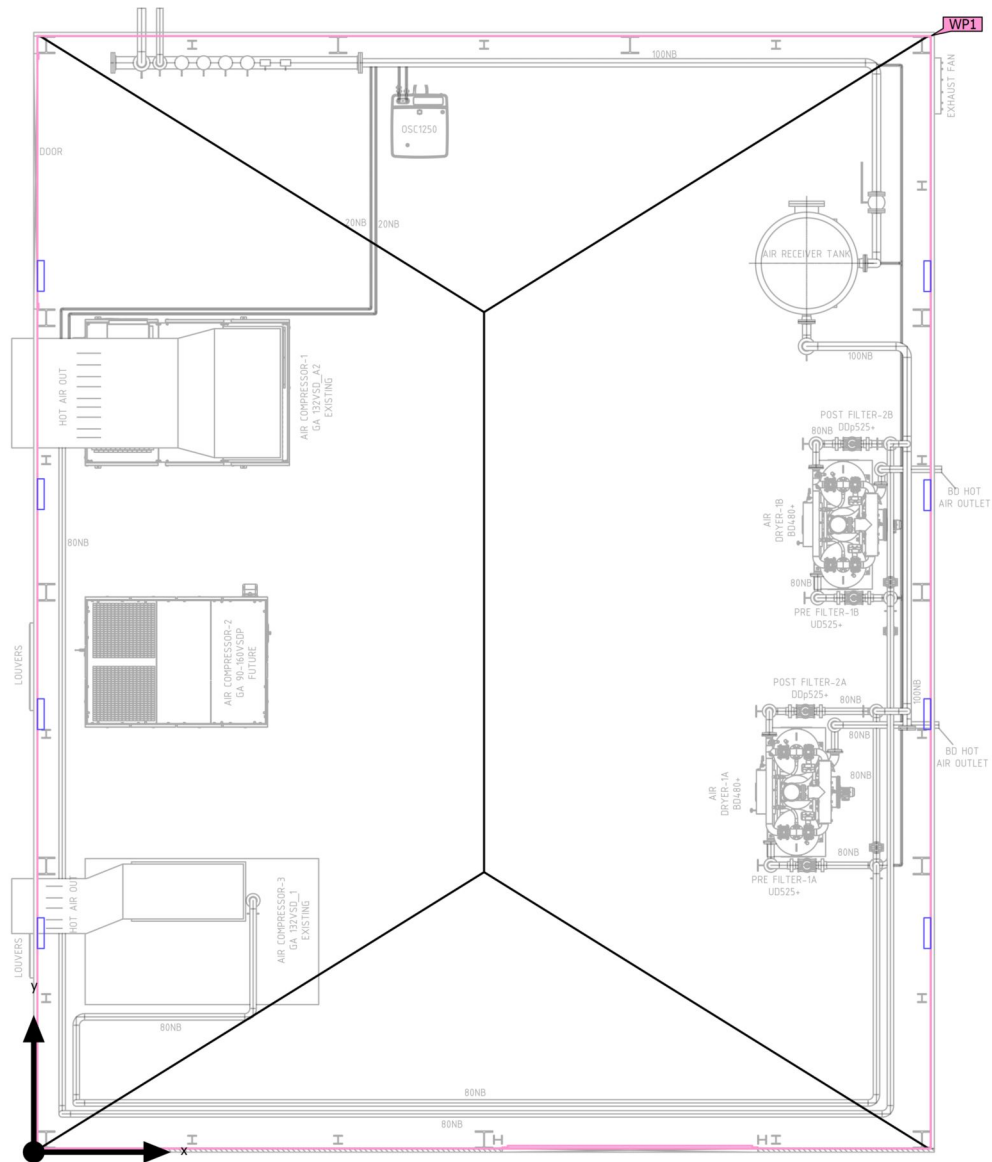
1362.4 W

Luminous efficacy

128.1 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
8	EAE	3177028	PROLIT V.3	170.3 W	21819 lm	128.1 lm/W

Building 1 · Storey 1 (Light scene 1)

Calculation objects

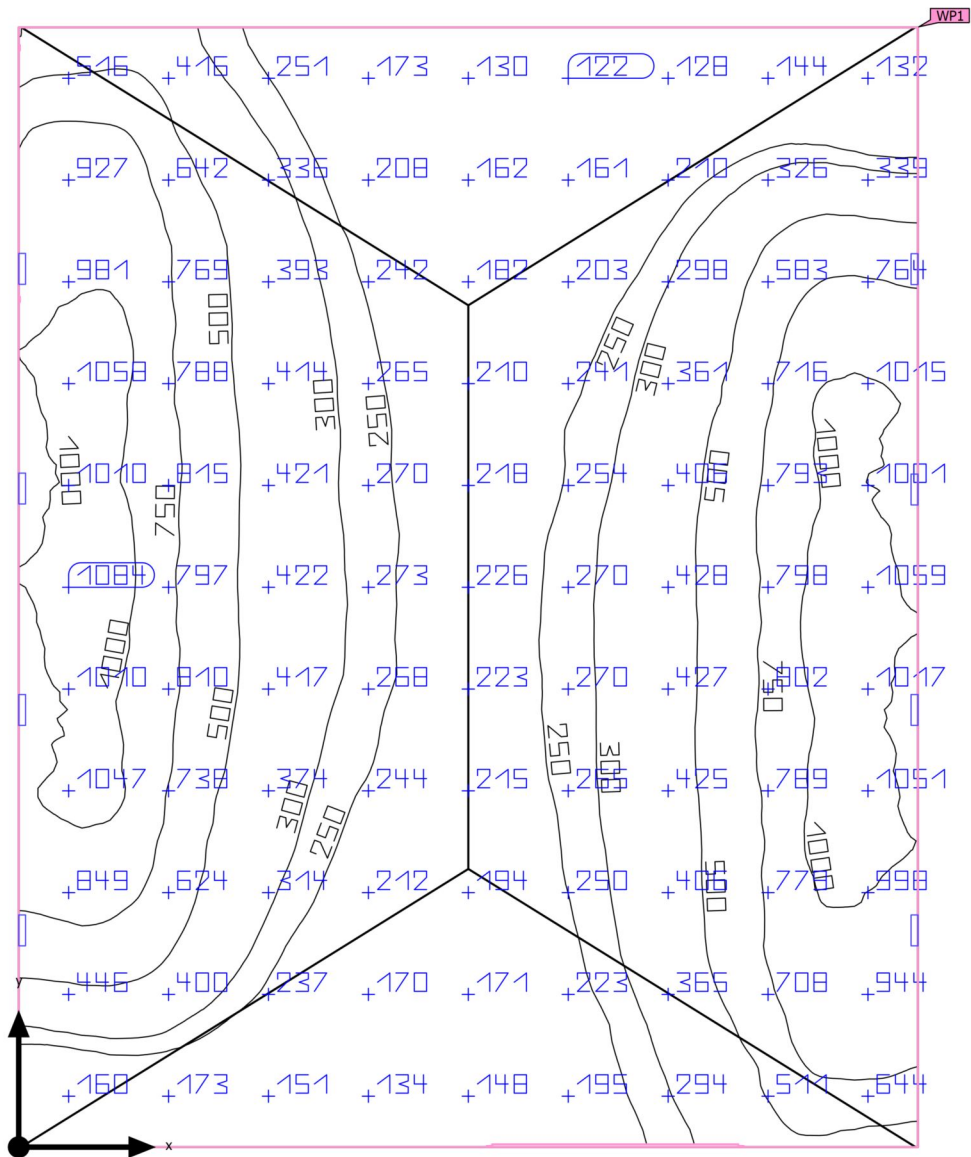
Building 1 · Storey 1 (Light scene 1)

Calculation objects

Working planes

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	g_1	g_2	Index
Working plane (Room 1) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	470 lx (≥ 500 lx) ✗	109 lx	1100 lx	0.23	0.099	WP1

Building 1 · Storey 1 · Room 1 (Light scene 1)

Summary

Building 1 · Storey 1 · Room 1 (Light scene 1)

Summary

Results

	Symbol	Calculated	Target	Check	Index
Working plane	$\bar{E}_{\text{perpendicular}}$	470 lx	≥ 500 lx	✗	WP1
	g_1	0.23	-	-	WP1
Consumption values	Consumption	3750 kWh/a	max. 6550 kWh/a	✓	
Room	Lighting power density	7.30 W/m ²	-	-	
		1.55 W/m ² /100 lx	-	-	

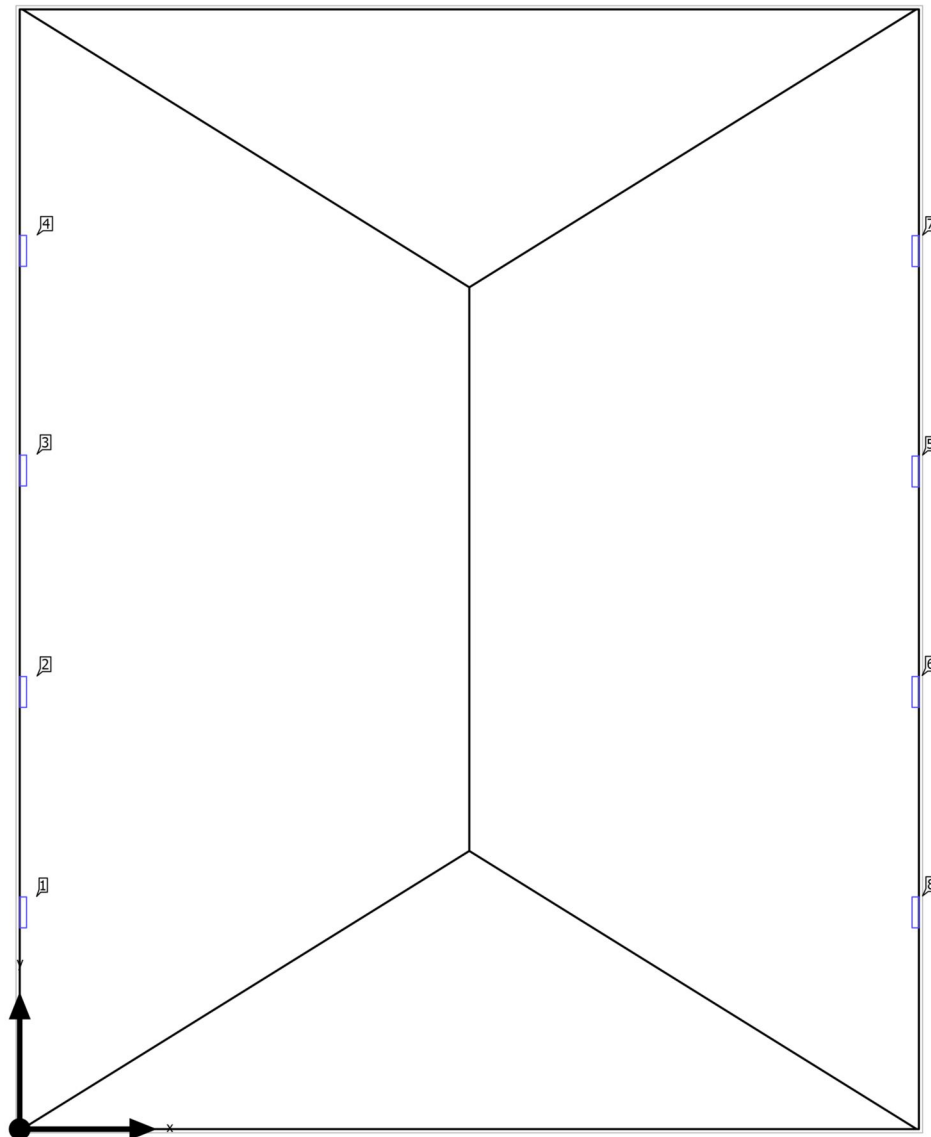
Utilisation profile: DIALux presetting, Standard (office)

Luminaire list

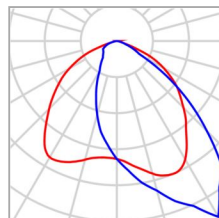
pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
8	EAE	3177028	PROLIT V.3	170.3 W	21819 lm	128.1 lm/W

Building 1 · Storey 1 · Room 1

Luminaire layout plan



Building 1 · Storey 1 · Room 1

Luminaire layout plan

Manufacturer	EAE	P	170.3 W
Article No.	3177028	$\Phi_{\text{Luminaire}}$	21819 lm
Article name	PROLIT V.3		
Fitting	1x PRL 176Z 57SC00 AS 21K8 V.3		

Individual luminaires

X	Y	Mounting height	Luminaire
0.000 m	2.950 m	4.000 m	1
0.000 m	5.950 m	4.000 m	2
0.000 m	8.964 m	4.000 m	3
0.000 m	11.953 m	4.000 m	4
12.240 m	8.950 m	4.000 m	5
12.240 m	5.950 m	4.000 m	6
12.240 m	11.950 m	4.000 m	7
12.240 m	2.950 m	4.000 m	8

Building 1 · Storey 1 · Room 1

Luminaire list Φ_{total}

174552 lm

 P_{total}

1362.4 W

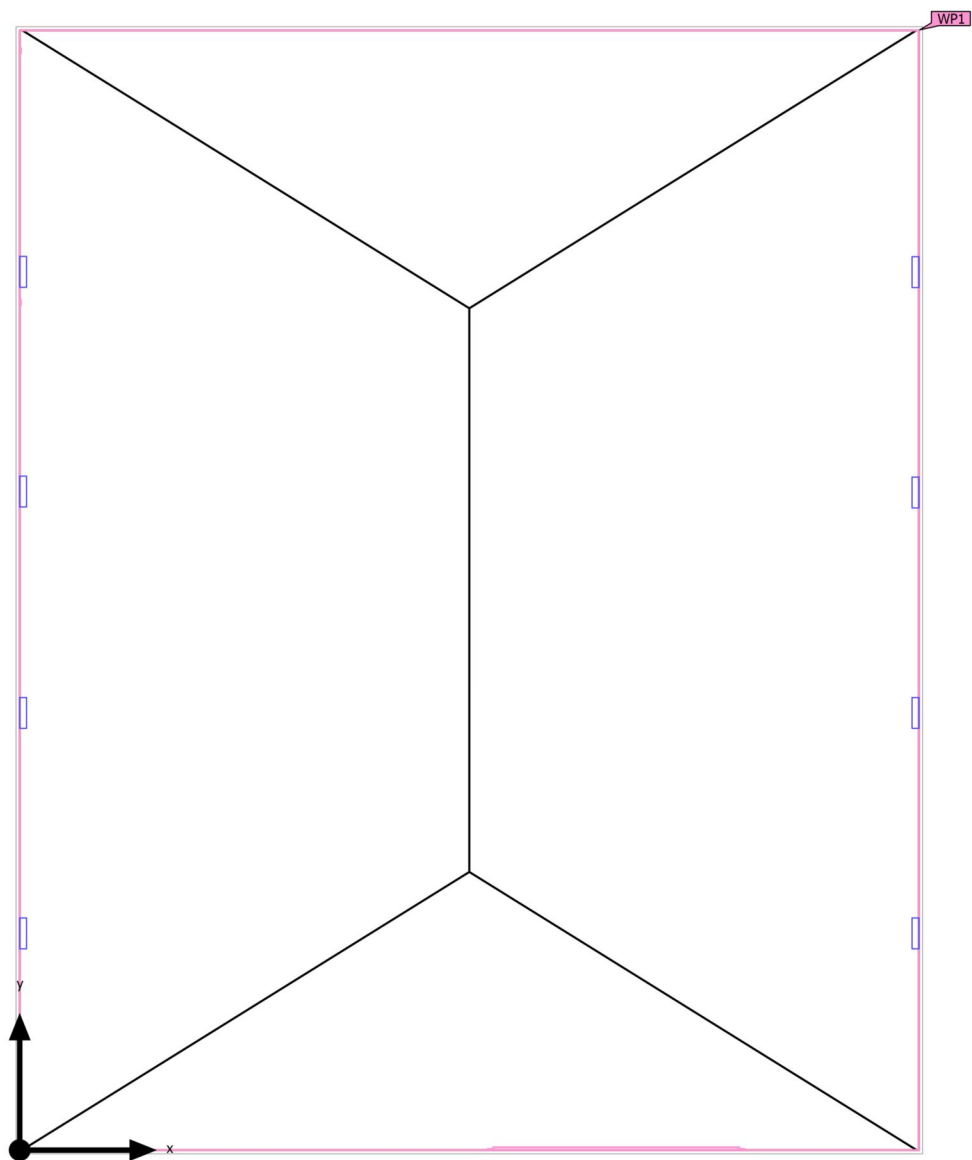
Luminous efficacy

128.1 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
8	EAE	3177028	PROLIT V.3	170.3 W	21819 lm	128.1 lm/W

Building 1 · Storey 1 · Room 1 (Light scene 1)

Calculation objects



Building 1 · Storey 1 · Room 1 (Light scene 1)

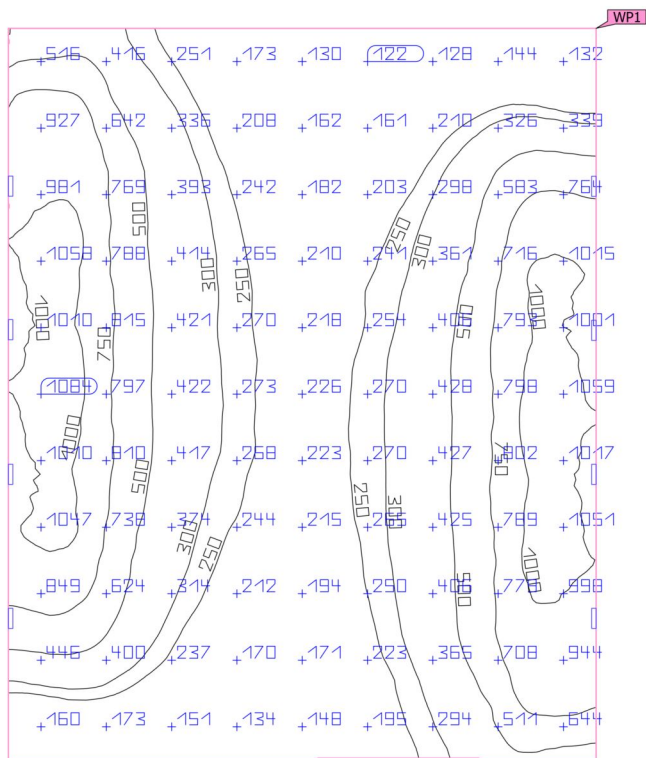
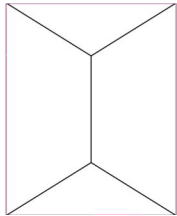
Calculation objects

Working planes

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	g_1	g_2	Index
Working plane (Room 1) Perpendicular illuminance (adaptive) Height: 0.800 m, Wall zone: 0.000 m	470 lx (≥ 500 lx) ✗	109 lx	1100 lx	0.23	0.099	WP1

Utilisation profile: DIALux presetting, Standard (office)

Building 1 · Storey 1 · Room 1 (Light scene 1)

Working plane (Room 1)

Properties	$\bar{E}$ (Target)	E_{min}	E_{max}	g_1	g_2	Index
Working plane (Room 1)	470 lx	109 lx	1100 lx	0.23	0.099	WP1
Perpendicular illuminance (adaptive)	(≥ 500 lx)					
Height: 0.800 m, Wall zone: 0.000 m	✗					

Utilisation profile: DIALux presetting, Standard (office)

Glossary

A

A	Formula symbol for a surface in the geometry
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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.
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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
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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).
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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.
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D

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: %
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Glossary

Daylight quotient effective area	A calculation surface within which the daylight quotient is calculated.
E	
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: %
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.

Glossary

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/m² year
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/m² 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).

Glossary

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
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 $RMF \times LMF \times LLMF \times LSF$.
P	
P	(Engl. power) Electric power consumption Unit: watt Abbreviation: W
R	
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.

Glossary

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.
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.