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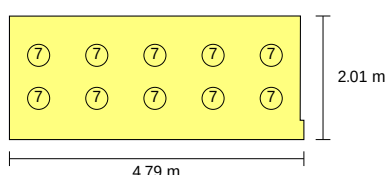
Calculation annex: Lighting

1. INTERIOR LIGHTING

SPACE			
Reference	Surface	Free height	Volume
Stairs (Floor 4)	9.54 m ²	2.34 m	22.36 m ³

Normal lighting	
Height of the workplane (m):	0.00
Height for glare rating verification UGR (m):	1.50
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.65
Minimum number of calculation points:	4

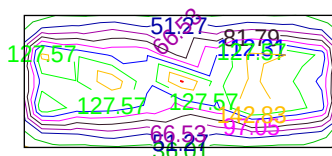
Lighting arrangement



Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
7	10	Surface downlight (1 x 4 W LED lamp)	129	32.15	50	10 x 4.00
						Total = 40.00 W

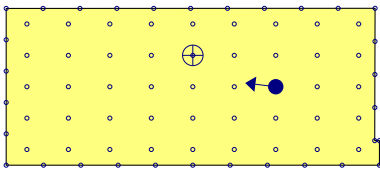
Module	Design values obtained
Minimum illuminance (lux):	76.21
Average maintained horizontal illuminance (lux):	125.41
Unified glare rating UGR:	11.00
Energy efficiency value of the installation VEEI (W / m^2):	3.34
Daylight factor (%) :	0.034
Total installed power per unit illuminated area (W / m^2):	4.19
Uniformity ratio (%) :	60.77
Colour rendering index:	85.00

Calculated illuminance values



Position of the worst-case calculated values

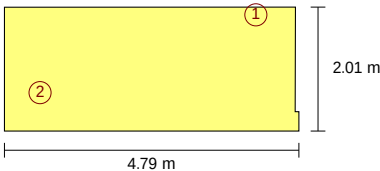
Calculation annex: Lighting



- ⊕ Minimum illuminance (76.21 lux)
- ◐ Unified glare rating (UGR = 11.00)
- Calculation points (Number of calculation points: 76)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80
Colour rendering index:	80.00

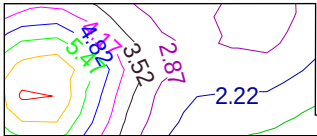
Lighting arrangement



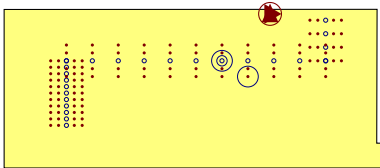
Nº	Quantity	Description
1	1	Normal (70 Lumens)
2	1	Normal (100 Lumens)

Design values obtained	
Minimum illuminance on the centre line of escape routes (lux):	3.48
Minimum illuminance on the centre band of escape routes (lux):	3.38
Minimum / maximum illuminance ratio (centre line of escape routes):	0.39
Height of the light placed at lower height (m):	2.15

Calculated illuminance values



Position of the worst-case calculated values



- ⊙ Minimum illuminance on the centre line of escape routes (3.48 lux)
- Minimum illuminance on the centre band of escape routes (3.38 lux)

Calculation annex: Lighting

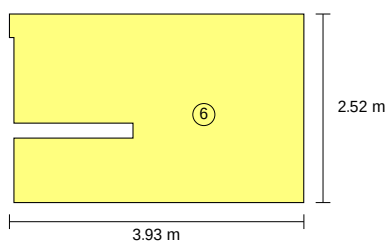
- Checkpoint at the centre line of the escape routes (Number of calculation points: 26)
- Checkpoint at the centre band of escape routes (Number of calculation points: 104)
- ▲ Safety and protection equipment or lighting distribution switchboard (Number of calculation points: 1)
- Worst-case illuminance in protection/safety equipment (6.54 lux)

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Technical room (Floor 4)	9.46 m ²	2.34 m	22.18 m ³

Normal lighting	
Height of the workplane (m):	0.00
Height for glare rating verification UGR (m):	1.50
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.55
Minimum number of calculation points:	4

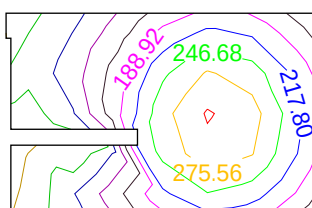
Lighting arrangement



Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
6	1	1200x300 mm 4300 lm	4332	100.74	99	1 x 43.00
						Total = 43.00 W

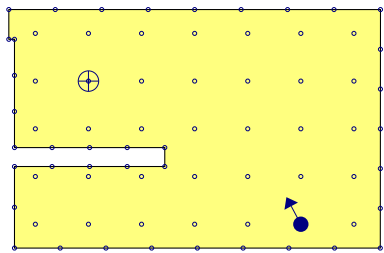
Design values obtained	
Minimum illuminance (lux):	117.27
Average maintained horizontal illuminance (lux):	232.49
Unified glare rating UGR:	27.00
Energy efficiency value of the installation VEEI (W/m ²):	1.96
Daylight factor (%):	0.002
Total installed power per unit illuminated area (W/m ²):	4.55
Uniformity ratio (%):	50.44
Colour rendering index:	80.00

Calculated illuminance values



Calculation annex: Lighting

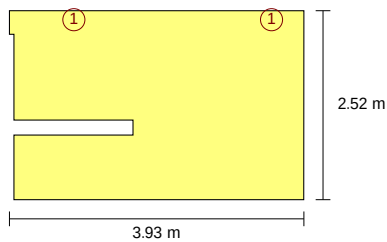
Position of the worst-case calculated values



- ⊕ Minimum illuminance (117.27 lux)
- Unified glare rating (UGR = 27.00)
- Calculation points (Number of calculation points: 73)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80
Colour rendering index:	80.00

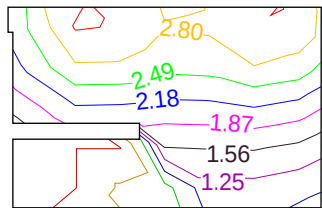
Lighting arrangement



N°	Quantity	Description
1	2	Normal (70 Lumens)

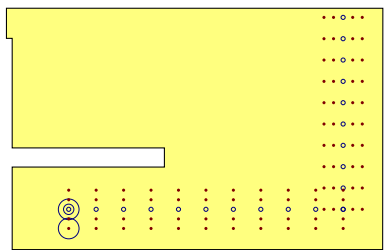
Design values obtained	
Minimum illuminance on the centre line of escape routes (lux):	0.00
Minimum illuminance on the centre band of escape routes (lux):	0.00
Minimum / maximum illuminance ratio (centre line of escape routes):	0.00
Height of the light placed at lower height (m):	2.15

Calculated illuminance values



Position of the worst-case calculated values

Calculation annex: Lighting



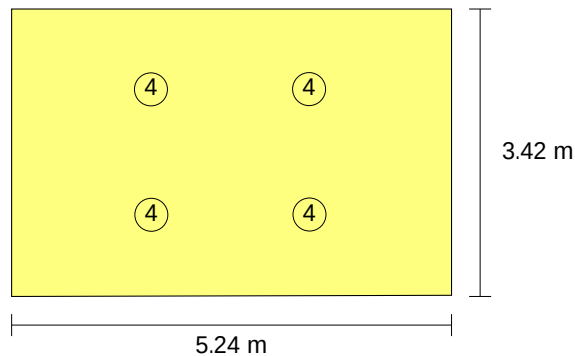
- ⊙ Minimum illuminance on the centre line of escape routes (0.00 lux)
- Minimum illuminance on the centre band of escape routes (0.00 lux)
 - Checkpoint at the centre line of the escape routes (Number of calculation points: 21)
 - Checkpoint at the centre band of escape routes (Number of calculation points: 84)

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 8 (Floor 3)	17.87 m ²	3.34 m	59.78 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.90
Minimum number of calculation points:	4

Lighting arrangement

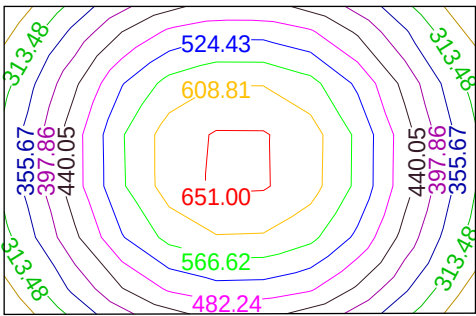


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	4	600x600 mm 4300 lm	4332	100.74	99	4 x 43.00
Total = 172.00 W						

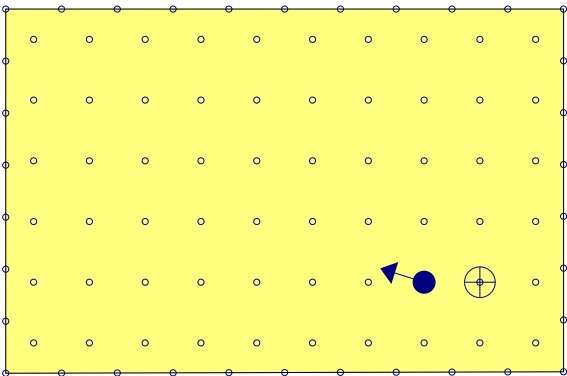
Design values obtained	
Minimum illuminance (lux):	424.62
Average maintained horizontal illuminance (lux):	543.67
Unified glare rating UGR:	17.00
Energy efficiency value of the installation VEEI (W/m ²):	1.77
Daylight factor (%):	3.411
Total installed power per unit illuminated area (W/m ²):	9.62
Uniformity ratio (%):	78.10
Colour rendering index:	80.00

Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

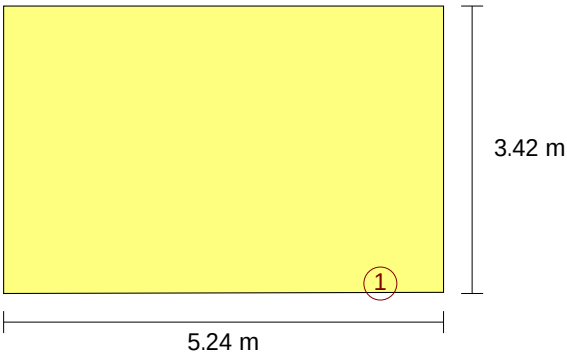


Produced by a version 10.0 for internal use of CYPE

- Minimum illuminance (424.62 lux)
- Unified glare rating (UGR = 17.00)
- Calculation points (Number of calculation points: 94)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement



Nº	Quantity	Description
1	1	Normal (70 Lumens)

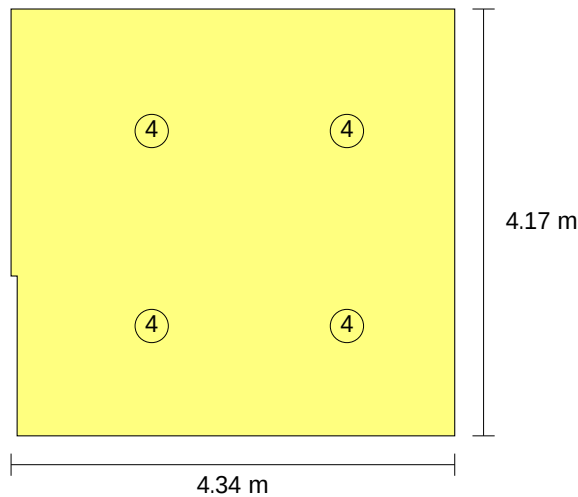
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 10 (Floor 3)	18.02 m ²	3.37 m	60.66 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.90
Minimum number of calculation points:	4

Lighting arrangement

Produced by a version for internal use of CYPE

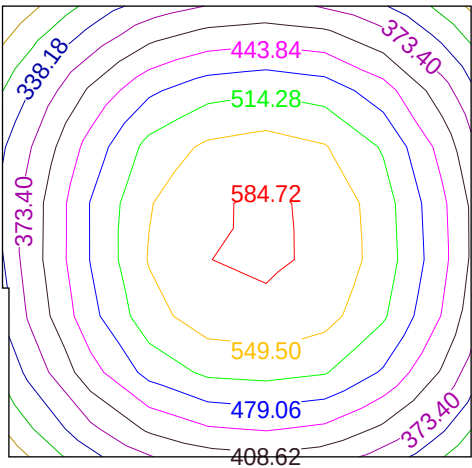


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	4	600x600 mm 4300 lm	4332	100.74	99	4 x 43.00
Total = 172.00 W						

Design values obtained	
Minimum illuminance (lux):	414.76
Average maintained horizontal illuminance (lux):	523.37
Unified glare rating UGR:	17.00
Energy efficiency value of the installation VEEI (W / m ²):	1.82
Daylight factor (%):	5.234
Total installed power per unit illuminated area (W / m ²):	9.54
Uniformity ratio (%):	79.25
Colour rendering index:	80.00

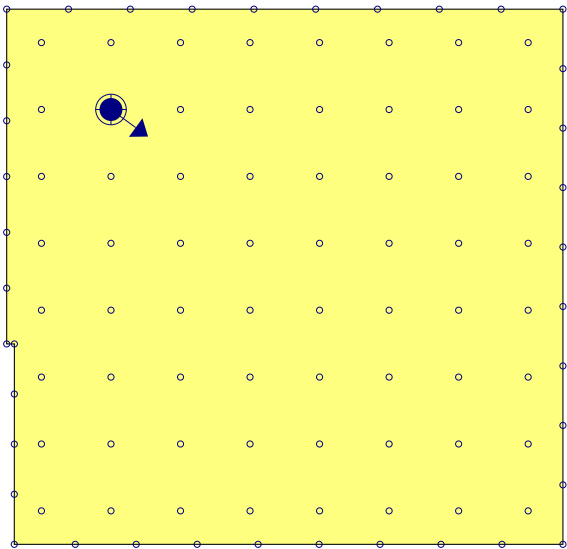
Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

Produced by a version for internal use of CYPE

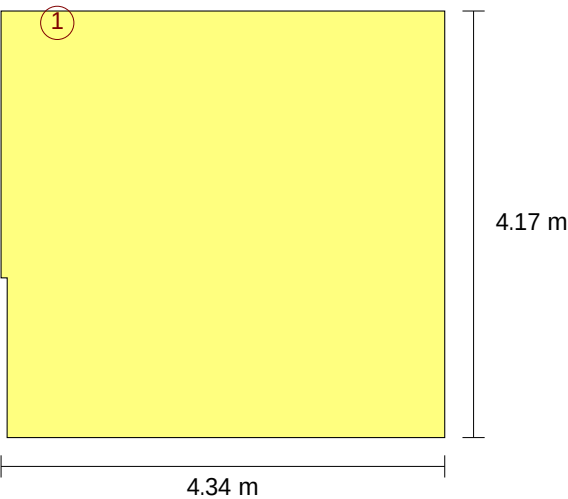


- ⊕ Minimum illuminance (414.76 lux)
- ◀● Unified glare rating (UGR = 17.00)
- Calculation points (Number of calculation points: 102)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement

Calculation annex: Lighting



N°	Quantity	Description
1	1	Normal (70 Lumens)

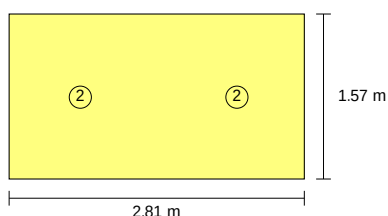
Produced by a version for internal use of CYPE

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
WC 3f (Floor 3)	4.42 m ²	3.34 m	14.77 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.44
Minimum number of calculation points:	4

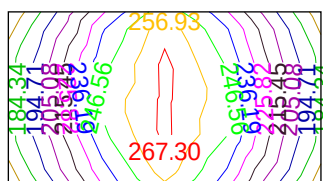
Lighting arrangement



Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
2	2	Downlight LED	1413	100.95	100	2 x 14.00
Total = 28.00 W						

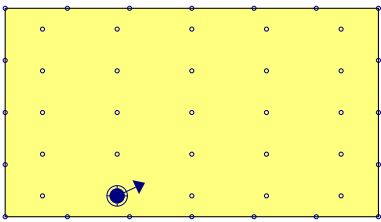
Design values obtained	
Minimum illuminance (lux):	232.57
Average maintained horizontal illuminance (lux):	250.40
Unified glare rating UGR:	0.00
Energy efficiency value of the installation VEEI (W/m ²):	2.53
Daylight factor (%):	0.000
Total installed power per unit illuminated area (W/m ²):	6.34
Uniformity ratio (%):	92.88
Colour rendering index:	80.00

Calculated illuminance values



Position of the worst-case calculated values

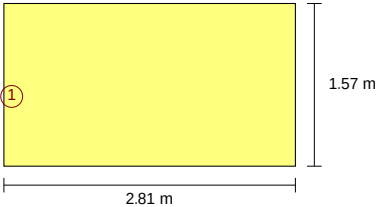
Calculation annex: Lighting



- ⊕ Minimum illuminance (232.57 lux)
- ◐ Unified glare rating (UGR = 0.00)
- Calculation points (Number of calculation points: 45)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement



N°	Quantity	Description
1	1	Normal (70 Lumens)

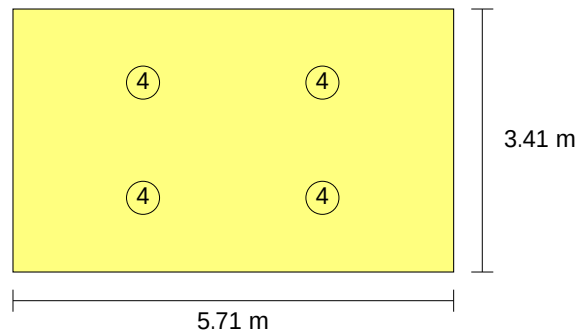
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 9 (Floor 3)	19.46 m ²	3.34 m	65.07 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.93
Minimum number of calculation points:	4

Lighting arrangement

Produced by a version for internal use of CYPE

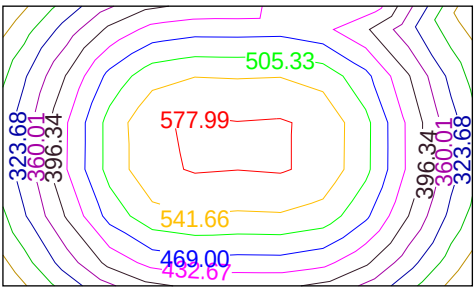


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	4	600x600 mm 4300 lm	4332	100.74	99	4 x 43.00
						Total = 172.00 W

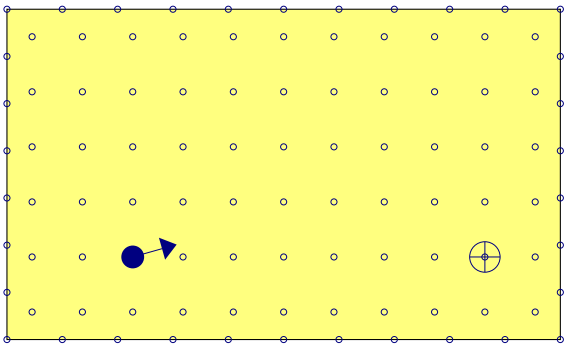
Design values obtained	
Minimum illuminance (lux):	396.66
Average maintained horizontal illuminance (lux):	503.49
Unified glare rating UGR:	17.00
Energy efficiency value of the installation VEEI (W / m ²):	1.76
Daylight factor (%):	5.784
Total installed power per unit illuminated area (W / m ²):	8.84
Uniformity ratio (%):	78.78
Colour rendering index:	80.00

Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

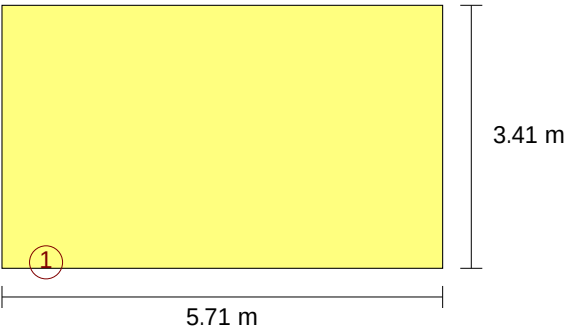


Produced by a version for internal use of CYPE

- Minimum illuminance (396.66 lux)
- Unified glare rating (UGR = 17.00)
- Calculation points (Number of calculation points: 100)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement



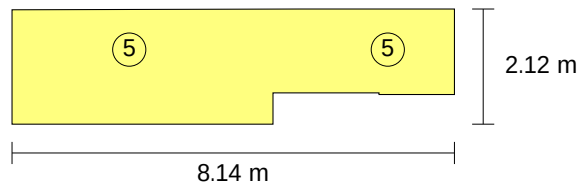
Nº	Quantity	Description
1	1	Normal (70 Lumens)

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Corridor 3 (Floor 3)	15.30 m ²	3.44 m	52.66 m ³

Normal lighting	
Height of the workplane (m):	0.00
Height for glare rating verification UGR (m):	1.50
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.45
Minimum number of calculation points:	4

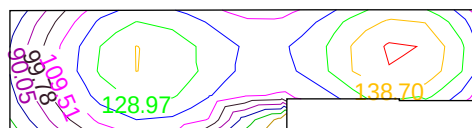
Lighting arrangement



Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
5	2	1200x300 mm 3600 lm	3541	101.17	99	2 x 35.00
						Total = 70.00 W

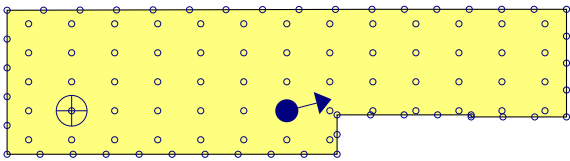
Design values obtained	
Minimum illuminance (lux):	107.39
Average maintained horizontal illuminance (lux):	129.39
Unified glare rating UGR:	17.00
Energy efficiency value of the installation VEEI (W / m ²):	3.54
Daylight factor (%):	4.840
Total installed power per unit illuminated area (W / m ²):	4.58
Uniformity ratio (%):	83.00
Colour rendering index:	80.00

Calculated illuminance values



Position of the worst-case calculated values

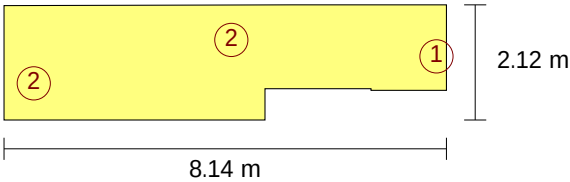
Calculation annex: Lighting



- ⊕ Minimum illuminance (107.39 lux)
- ←● Unified glare rating (UGR = 17.00)
- Calculation points (Number of calculation points: 105)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80
Colour rendering index:	80.00

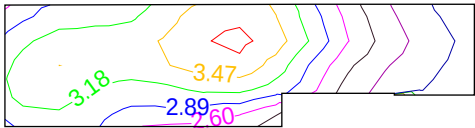
Lighting arrangement



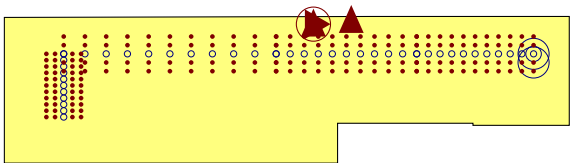
N°	Quantity	Description
1	1	Normal (70 Lumens)
2	2	Normal (100 Lumens)

Design values obtained	
Minimum illuminance on the centre line of escape routes (lux):	2.23
Minimum illuminance on the centre band of escape routes (lux):	2.15
Minimum / maximum illuminance ratio (centre line of escape routes):	0.46
Height of the light placed at lower height (m):	3.28

Calculated illuminance values



Position of the worst-case calculated values



- ⊙ Minimum illuminance on the centre line of escape routes (2.23 lux)
- Minimum illuminance on the centre band of escape routes (2.15 lux)

Calculation annex: Lighting

- Checkpoint at the centre line of the escape routes (Number of calculation points: 44)
- Checkpoint at the centre band of escape routes (Number of calculation points: 176)
- ▲ Safety and protection equipment or lighting distribution switchboard (Number of calculation points: 2)
- Worst-case illuminance in protection/safety equipment (5.89 lux)

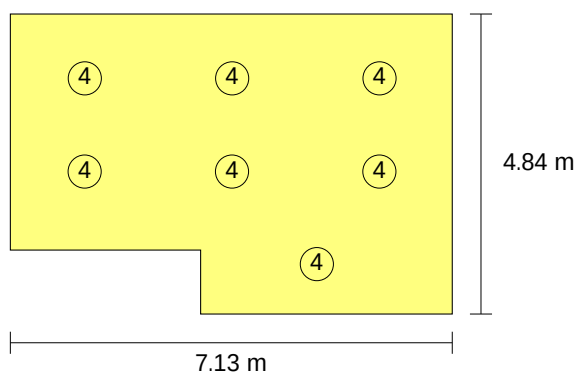
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 5 (Floor 2)	31.34 m ²	3.37 m	105.75 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	1.10
Minimum number of calculation points:	9

Lighting arrangement

Produced by a version for internal use of CYPE

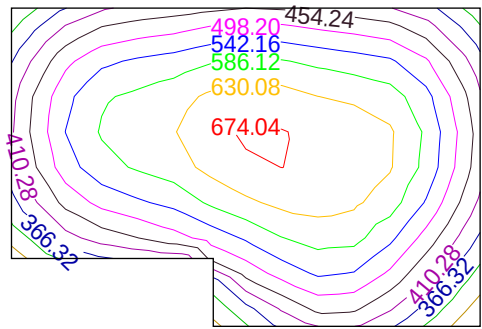


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	7	600x600 mm 4300 lm	4332	100.74	99	7 x 43.00
						Total = 301.00 W

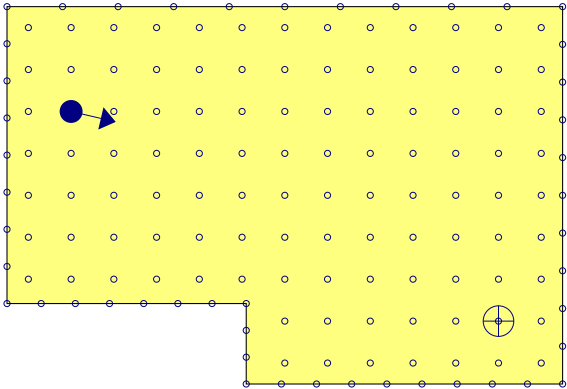
Design values obtained	
Minimum illuminance (lux):	418.89
Average maintained horizontal illuminance (lux):	587.05
Unified glare rating UGR:	19.00
Energy efficiency value of the installation VEEI (W/m ²):	1.64
Daylight factor (%):	5.065
Total installed power per unit illuminated area (W/m ²):	9.60
Uniformity ratio (%):	71.36
Colour rendering index:	80.00

Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

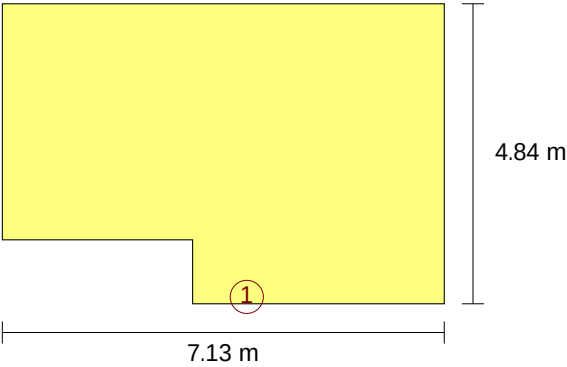


Produced by a version for internal use of CYPE

- Minimum illuminance (418.89 lux)
- Unified glare rating (UGR = 19.00)
- Calculation points (Number of calculation points: 152)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement



Nº	Quantity	Description
1	1	Normal (70 Lumens)

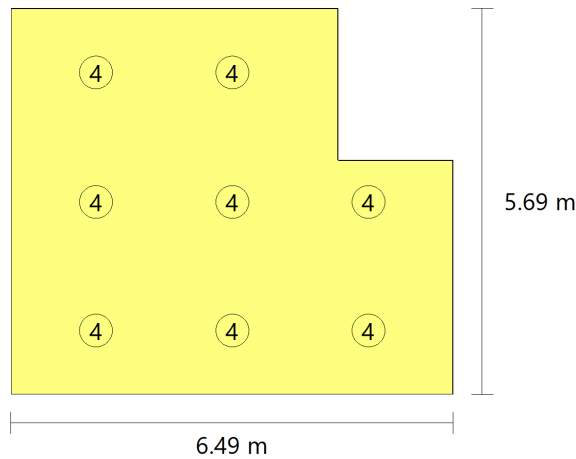
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Meeting room 2 (Floor 2)	33.14 m ²	3.34 m	110.86 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	1.18
Minimum number of calculation points:	9

Lighting arrangement

Produced by a version for internal use of CYPE

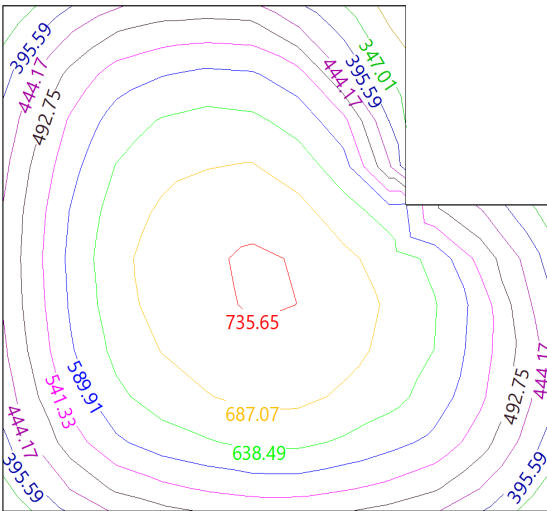


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	8	600x600 mm 4300 lm	4332	100.74	99	8 x 43.00
Total = 344.00 W						

Design values obtained	
Minimum illuminance (lux):	446.20
Average maintained horizontal illuminance (lux):	640.70
Unified glare rating UGR:	19.00
Energy efficiency value of the installation VEEI (W / m ²):	1.62
Daylight factor (%):	2.481
Total installed power per unit illuminated area (W / m ²):	10.38
Uniformity ratio (%):	69.64
Colour rendering index:	80.00

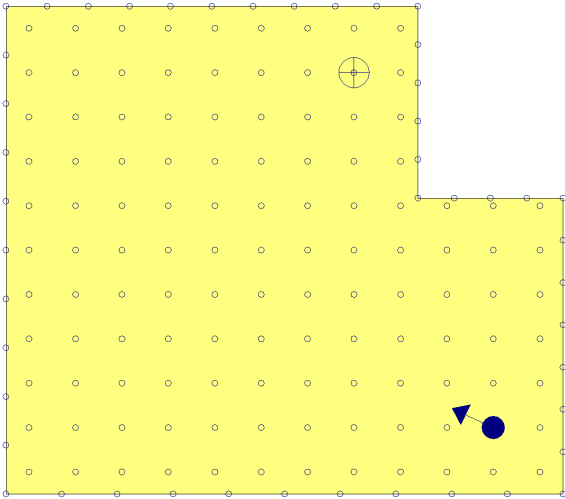
Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

Produced by a version for internal use of CYPE

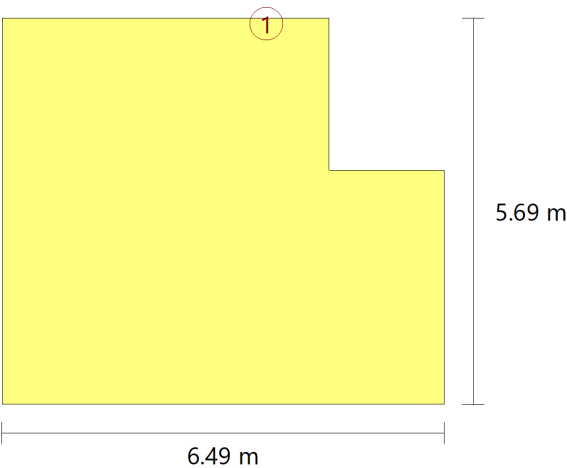


Minimum illuminance (446.20 lux)
Unified glare rating (UGR = 19.00)
Calculation points (Number of calculation points: 166)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement

Calculation annex: Lighting



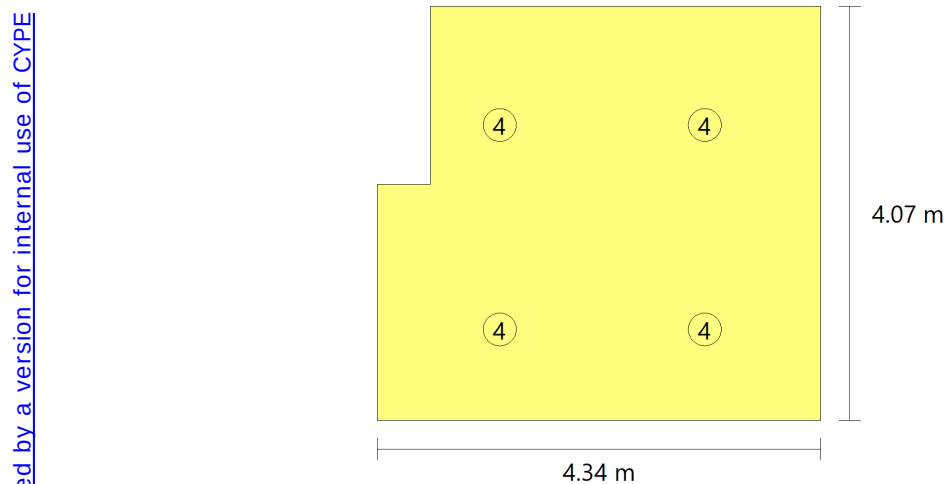
N°	Quantity	Description
1	1	Normal (70 Lumens)

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 7 (Floor 2)	16.75 m ²	3.40 m	57.02 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.81
Minimum number of calculation points:	4

Lighting arrangement

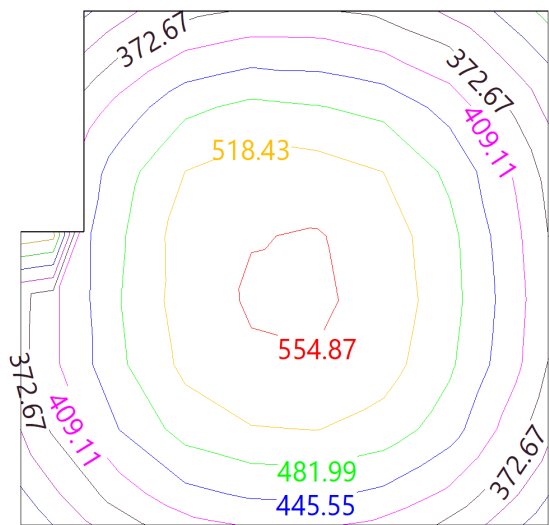


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	4	600x600 mm 4300 lm	4332	100.74	99	4 x 43.00
Total = 172.00 W						

Design values obtained	
Minimum illuminance (lux):	432.33
Average maintained horizontal illuminance (lux):	508.74
Unified glare rating UGR:	16.00
Energy efficiency value of the installation VEEI (W/m ²):	2.02
Daylight factor (%):	7.547
Total installed power per unit illuminated area (W/m ²):	10.27
Uniformity ratio (%):	84.98
Colour rendering index:	80.00

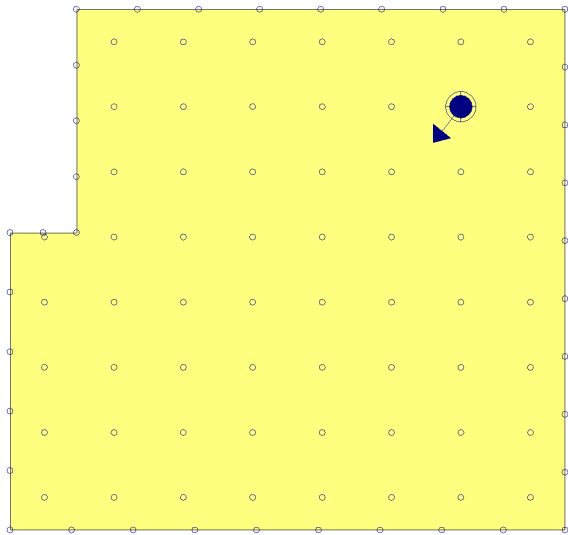
Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

Produced by a version for internal use of CYPE

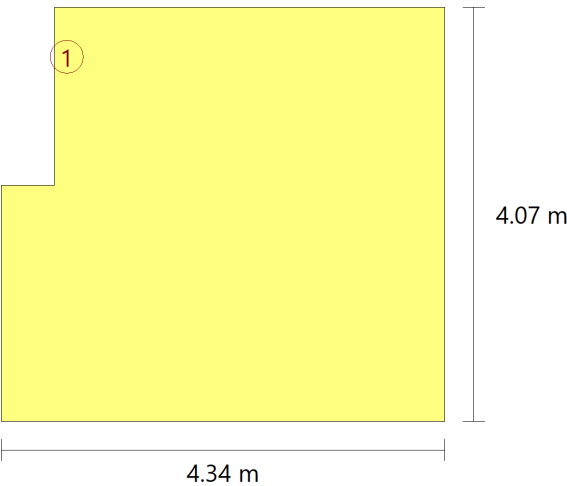


Minimum illuminance (432.33 lux)
Unified glare rating (UGR = 16.00)
Calculation points (Number of calculation points: 98)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement

Calculation annex: Lighting



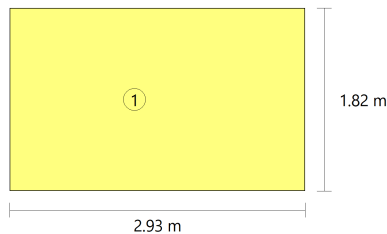
N°	Quantity	Description
1	1	Normal (70 Lumens)

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
WC 2f (Floor 2)	5.34 m ²	3.40 m	18.16 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.45
Minimum number of calculation points:	4

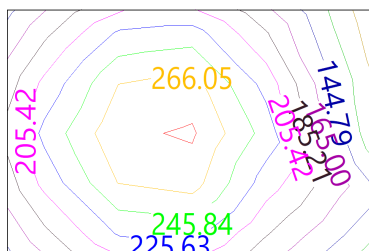
Lighting arrangement



Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
1	1	Surface downlight (1 x 35 W metal halide lamp)	3300	82.50	71	1 x 40.00
Total = 40.00 W						

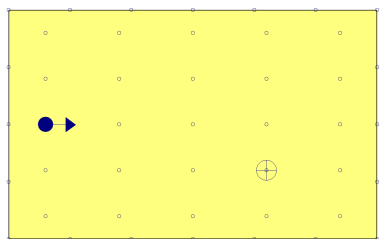
Design values obtained	
Minimum illuminance (lux):	215.98
Average maintained horizontal illuminance (lux):	248.89
Unified glare rating UGR:	0.00
Energy efficiency value of the installation VEEI (W/m ²):	3.01
Daylight factor (%):	0.000
Total installed power per unit illuminated area (W/m ²):	7.49
Uniformity ratio (%):	86.78
Colour rendering index:	85.00

Calculated illuminance values



Calculation annex: Lighting

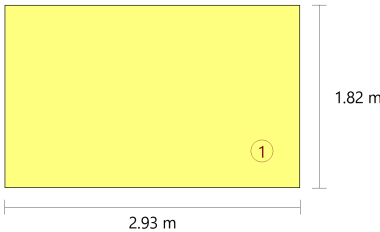
Position of the worst-case calculated values



Minimum illuminance (215.98 lux)
Unified glare rating (UGR = 0.00)
Calculation points (Number of calculation points: 45)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement



Nº	Quantity	Description
1	1	Normal (70 Lumens)

Produced by a version for internal use of CYFE

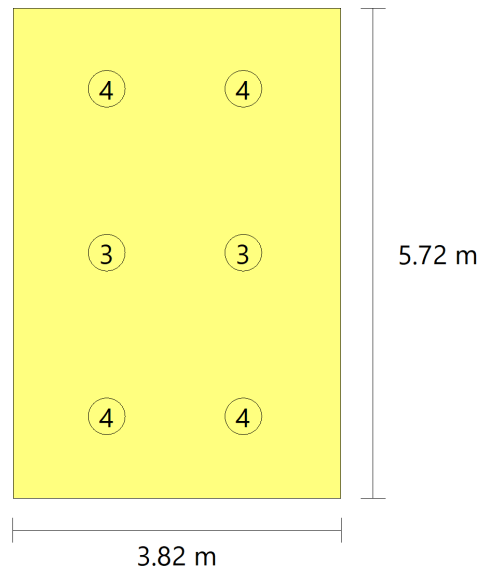
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 6 (Floor 2)	21.85 m ²	3.38 m	73.87 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.95
Minimum number of calculation points:	4

Lighting arrangement

Produced by a version for internal use of CYPE

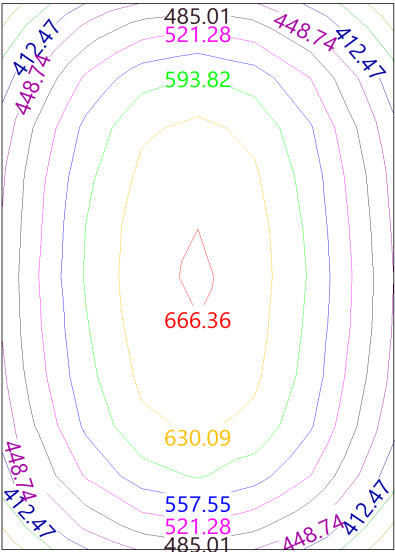


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
3	2	600x600 mm 3600 lm	3541	101.17	99	2 x 35.00
4	4	600x600 mm 4300 lm	4332	100.74	99	4 x 43.00
						Total = 242.00 W

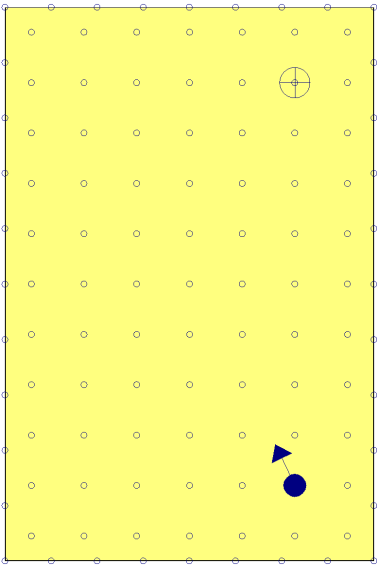
Design values obtained	
Minimum illuminance (lux):	521.37
Average maintained horizontal illuminance (lux):	605.57
Unified glare rating UGR:	17.00
Energy efficiency value of the installation VEEI (W/m ²):	1.83
Daylight factor (%):	7.085
Total installed power per unit illuminated area (W/m ²):	11.07
Uniformity ratio (%):	86.10
Colour rendering index:	80.00

Calculation annex: Lighting

Calculated illuminance values



Position of the worst-case calculated values

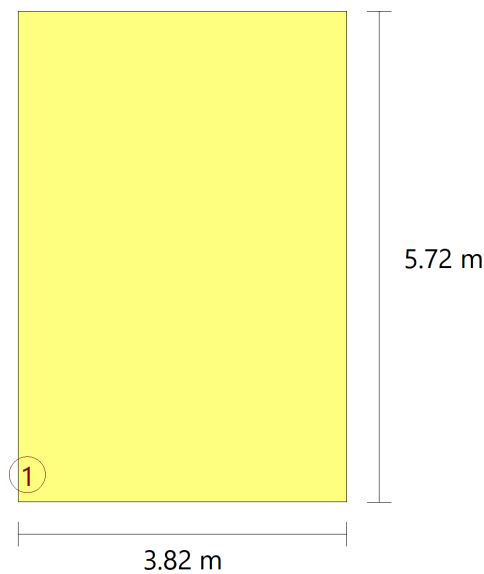


Minimum illuminance (521.37 lux)
Unified glare rating (UGR = 17.00)
Calculation points (Number of calculation points: 113)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement

Calculation annex: Lighting



N°	Quantity	Description
1	1	Normal (70 Lumens)

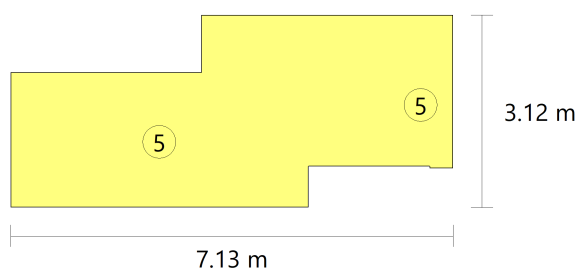
Produced by a version for internal use of CYPE

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Corridor 2 (Floor 2)	17.86 m ²	3.48 m	62.15 m ³

Normal lighting	
Height of the workplane (m):	0.00
Height for glare rating verification UGR (m):	1.50
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.51
Minimum number of calculation points:	4

Lighting arrangement

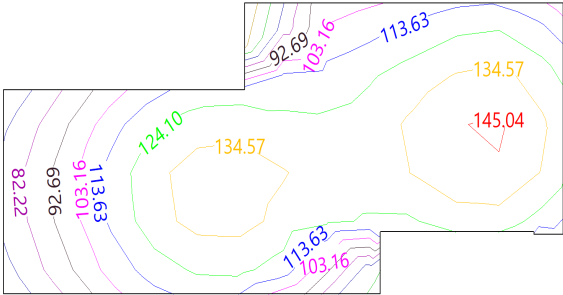


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
5	2	1200x300 mm 3600 lm	3541	101.17	99	2 x 35.00
						Total = 70.00 W

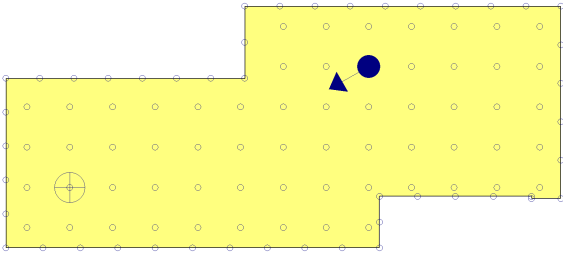
Design values obtained	
Minimum illuminance (lux):	98.03
Average maintained horizontal illuminance (lux):	129.12
Unified glare rating UGR:	17.00
Energy efficiency value of the installation VEEI (W/m ²):	3.04
Daylight factor (%):	0.042
Total installed power per unit illuminated area (W/m ²):	3.92
Uniformity ratio (%):	75.92
Colour rendering index:	80.00

Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

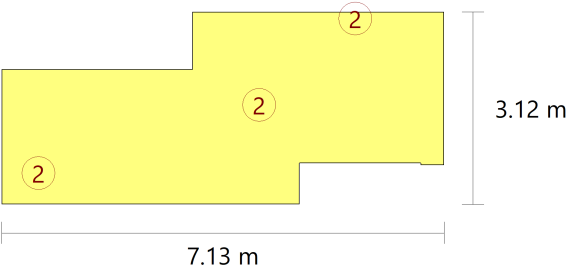


Produced by e-versions for internal use of CYPE

Minimum illuminance (98.03 lux)
 Unified glare rating (UGR = 17.00)
 Calculation points (Number of calculation points: 108)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80
Colour rendering index:	80.00

Lighting arrangement

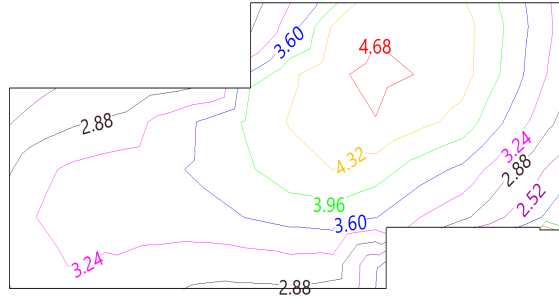


Nº	Quantity	Description
2	3	Normal (100 Lumens)

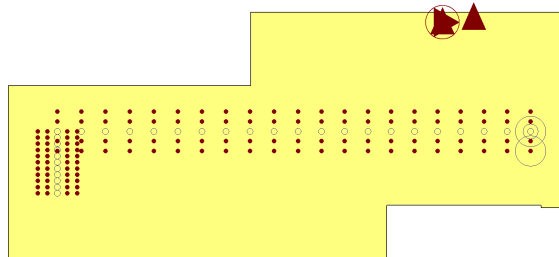
Design values obtained	
Minimum illuminance on the centre line of escape routes (lux):	3.68
Minimum illuminance on the centre band of escape routes (lux):	3.44
Minimum / maximum illuminance ratio (centre line of escape routes):	0.64
Height of the light placed at lower height (m):	3.42

Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values



Minimum illuminance on the centre line of escape routes (3.68 lux)

Minimum illuminance on the centre band of escape routes (3.44 lux)

Checkpoint at the centre line of the escape routes (Number of calculation points: 33)

Checkpoint at the centre band of escape routes (Number of calculation points: 132)

Safety and protection equipment or lighting distribution switchboard (Number of calculation points: 2)

Worst-case illuminance in protection/safety equipment (7.43 lux)

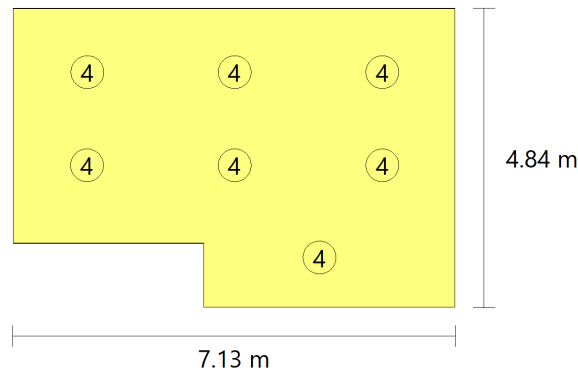
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 2 (Floor 1)	31.34 m ²	3.40 m	106.67 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	1.06
Minimum number of calculation points:	9

Lighting arrangement

Produced by a version for internal use of CYPE

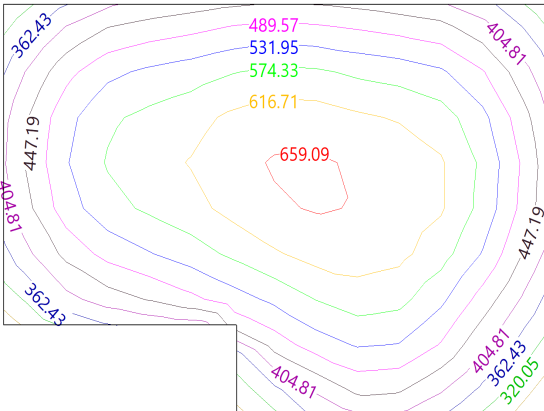


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	7	600x600 mm 4300 lm	4332	100.74	99	7 x 43.00
						Total = 301.00 W

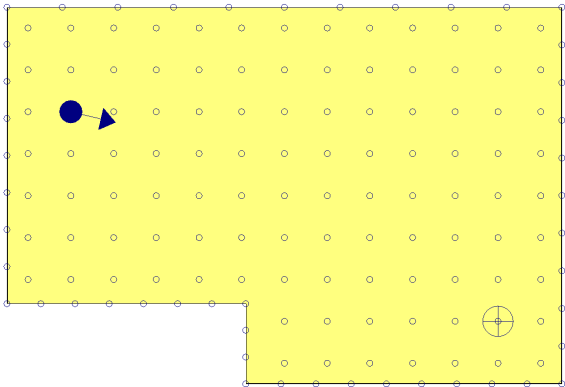
Design values obtained	
Minimum illuminance (lux):	414.48
Average maintained horizontal illuminance (lux):	576.69
Unified glare rating UGR:	18.00
Energy efficiency value of the installation VEEI (W/m ²):	1.67
Daylight factor (%):	5.100
Total installed power per unit illuminated area (W/m ²):	9.60
Uniformity ratio (%):	71.87
Colour rendering index:	80.00

Calculated illuminance values

Calculation annex: Lighting



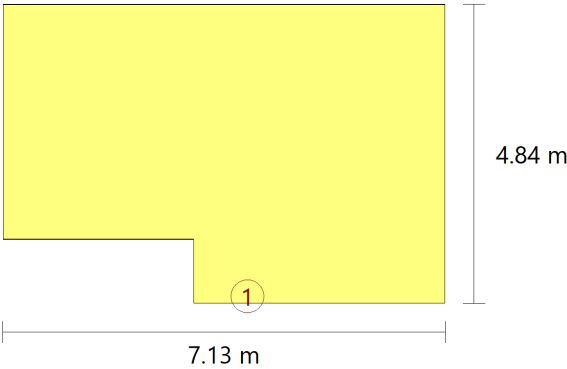
Position of the worst-case calculated values



Minimum illuminance (414.48 lux)
Unified glare rating (UGR = 18.00)
Calculation points (Number of calculation points: 152)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement



N°	Quantity	Description
1	1	Normal (70 Lumens)

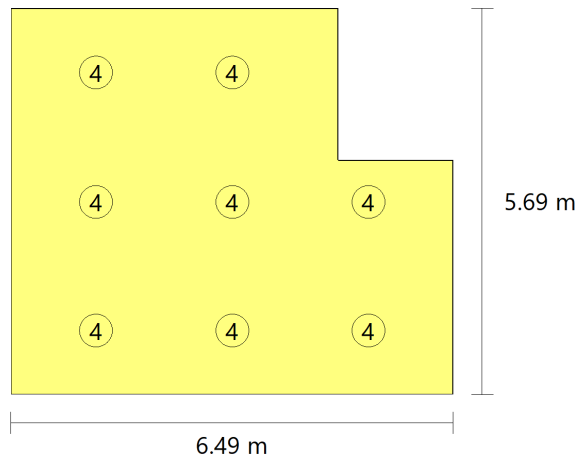
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Meeting room (Floor 1)	33.14 m ²	3.40 m	112.79 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	1.10
Minimum number of calculation points:	9

Lighting arrangement

Produced by a version for internal use of CYPE

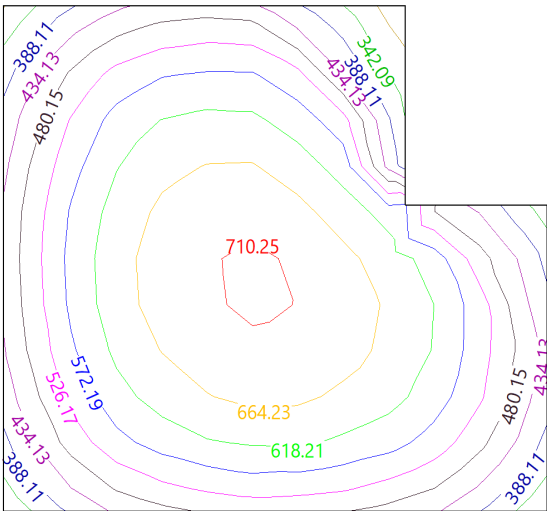


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	8	600x600 mm 4300 lm	4332	100.74	99	8 x 43.00
Total = 344.00 W						

Design values obtained	
Minimum illuminance (lux):	433.58
Average maintained horizontal illuminance (lux):	619.04
Unified glare rating UGR:	18.00
Energy efficiency value of the installation VEEI (W / m ²):	1.68
Daylight factor (%):	2.484
Total installed power per unit illuminated area (W / m ²):	10.38
Uniformity ratio (%):	70.04
Colour rendering index:	80.00

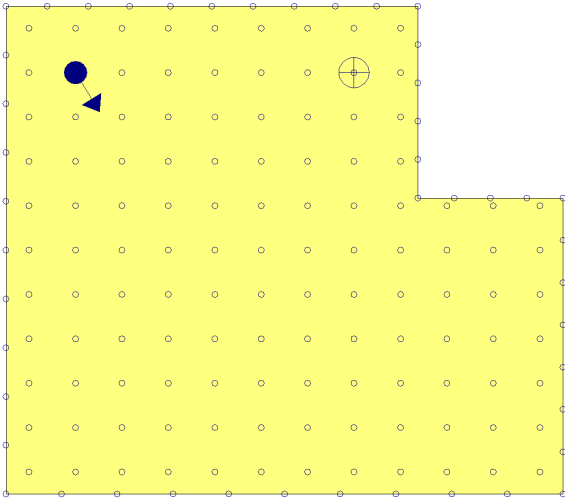
Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

Produced by a version for internal use of CYPE

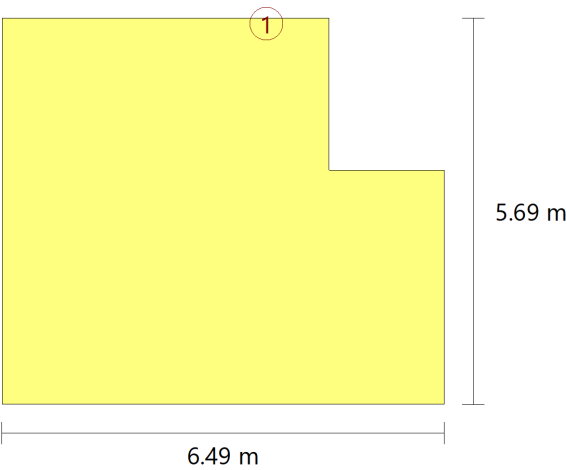


Minimum illuminance (433.58 lux)
Unified glare rating (UGR = 18.00)
Calculation points (Number of calculation points: 166)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement

Calculation annex: Lighting



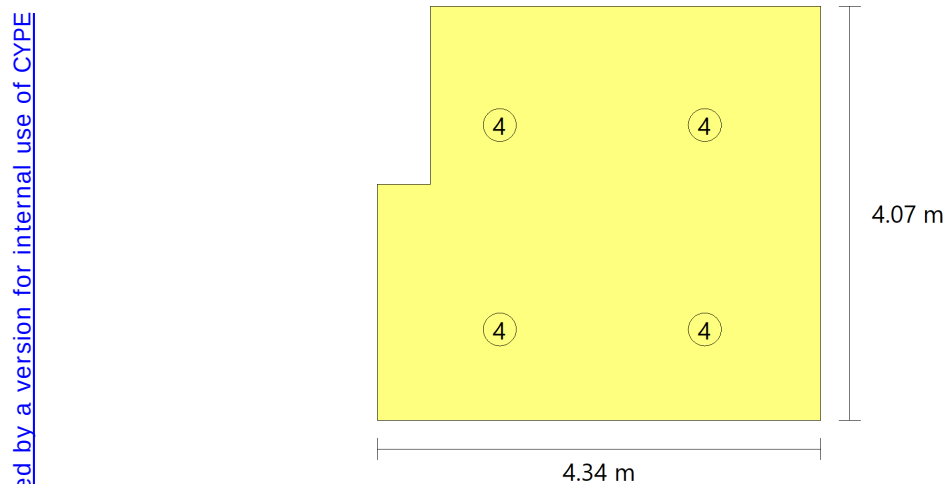
N°	Quantity	Description
1	1	Normal (70 Lumens)

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 3 (Floor 1)	16.75 m ²	3.40 m	57.02 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.81
Minimum number of calculation points:	4

Lighting arrangement

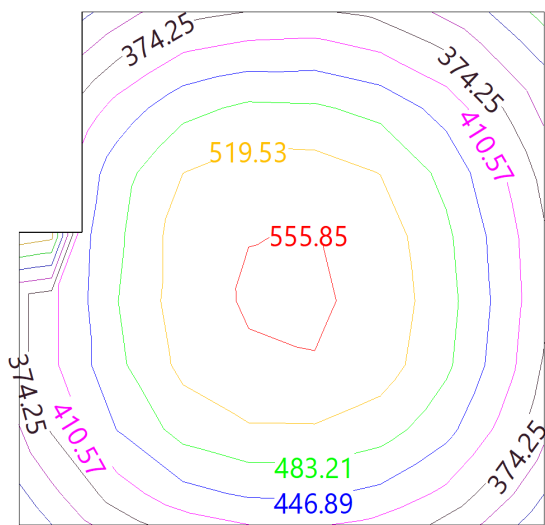


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	4	600x600 mm 4300 lm	4332	100.74	99	4 x 43.00
Total = 172.00 W						

Design values obtained	
Minimum illuminance (lux):	432.66
Average maintained horizontal illuminance (lux):	509.30
Unified glare rating UGR:	16.00
Energy efficiency value of the installation VEEI (W/m ²):	2.02
Daylight factor (%):	8.298
Total installed power per unit illuminated area (W/m ²):	10.27
Uniformity ratio (%):	84.95
Colour rendering index:	80.00

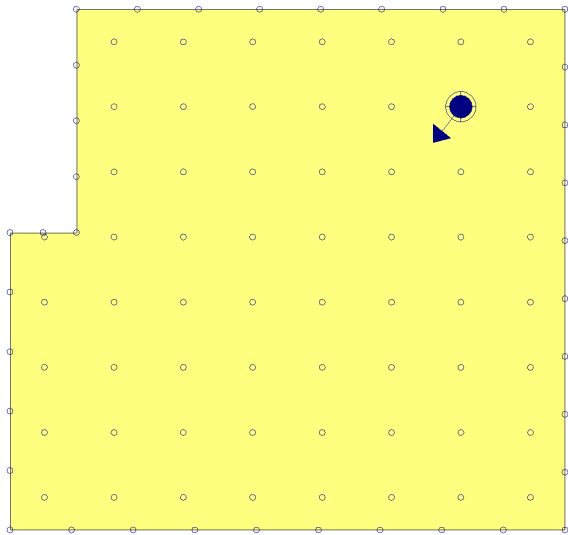
Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

Produced by a version for internal use of CYPE

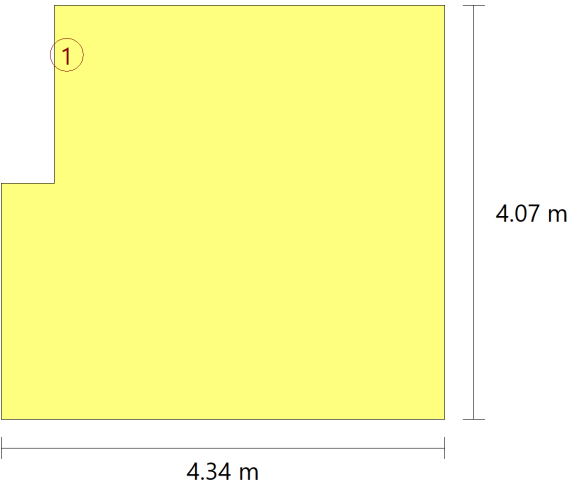


Minimum illuminance (432.66 lux)
Unified glare rating (UGR = 16.00)
Calculation points (Number of calculation points: 98)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement

Calculation annex: Lighting



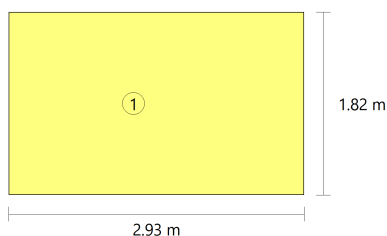
N°	Quantity	Description
1	1	Normal (70 Lumens)

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
WC 1f (Floor 1)	5.34 m ²	3.40 m	18.16 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.45
Minimum number of calculation points:	4

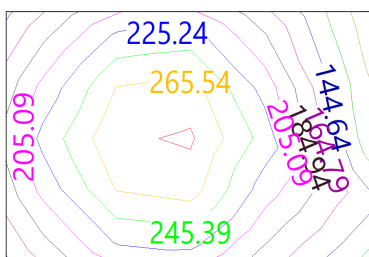
Lighting arrangement



Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
1	1	Surface downlight (1 x 35 W metal halide lamp)	3300	82.50	71	1 x 40.00
						Total = 40.00 W

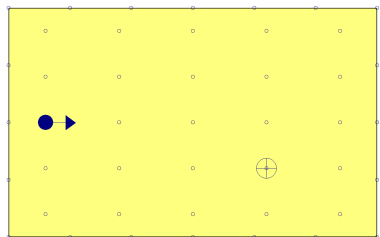
Design values obtained	
Minimum illuminance (lux):	215.79
Average maintained horizontal illuminance (lux):	248.85
Unified glare rating UGR:	0.00
Energy efficiency value of the installation VEEI (W/m ²):	3.01
Daylight factor (%):	0.000
Total installed power per unit illuminated area (W/m ²):	7.49
Uniformity ratio (%):	86.72
Colour rendering index:	85.00

Calculated illuminance values



Calculation annex: Lighting

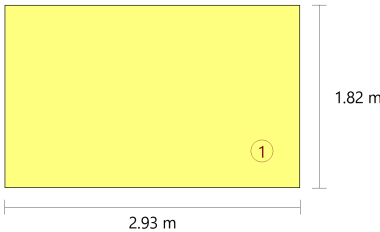
Position of the worst-case calculated values



Minimum illuminance (215.79 lux)
Unified glare rating (UGR = 0.00)
Calculation points (Number of calculation points: 45)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement



Nº	Quantity	Description
1	1	Normal (70 Lumens)

Produced by a version for internal use of CYFE

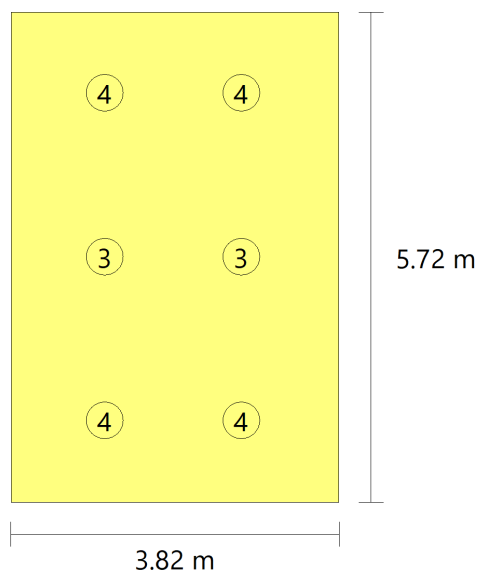
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 4 (Floor 1)	21.85 m ²	3.40 m	74.36 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.93
Minimum number of calculation points:	4

Lighting arrangement

Produced by a version for internal use of CYPE

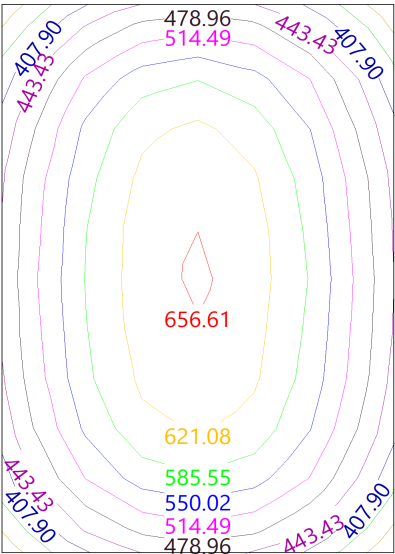


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
3	2	600x600 mm 3600 lm	3541	101.17	99	2 x 35.00
4	4	600x600 mm 4300 lm	4332	100.74	99	4 x 43.00
						Total = 242.00 W

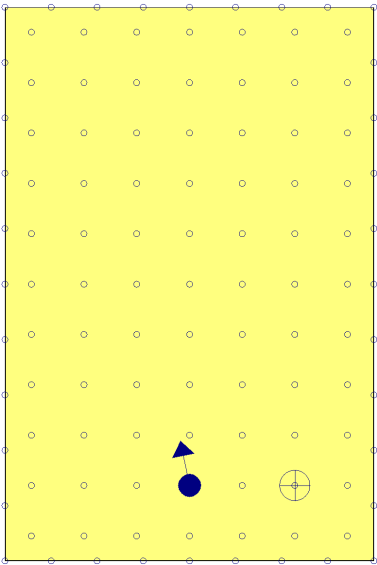
Design values obtained	
Minimum illuminance (lux):	512.67
Average maintained horizontal illuminance (lux):	595.35
Unified glare rating UGR:	17.00
Energy efficiency value of the installation VEEI (W/m ²):	1.86
Daylight factor (%):	7.101
Total installed power per unit illuminated area (W/m ²):	11.07
Uniformity ratio (%):	86.11
Colour rendering index:	80.00

Calculation annex: Lighting

Calculated illuminance values



Position of the worst-case calculated values

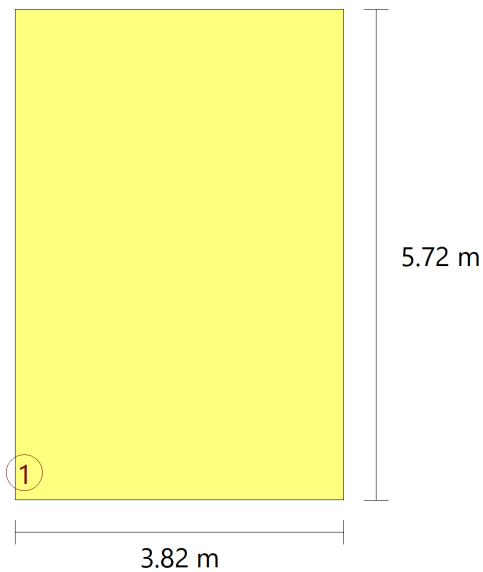


Minimum illuminance (512.67 lux)
Unified glare rating (UGR = 17.00)
Calculation points (Number of calculation points: 113)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement

Calculation annex: Lighting



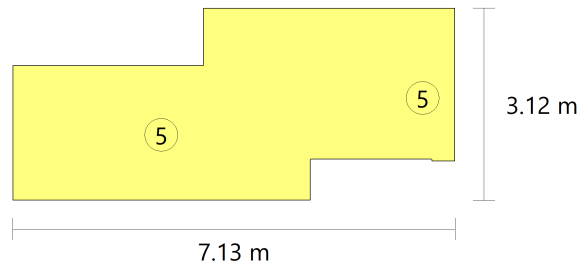
N°	Quantity	Description
1	1	Normal (70 Lumens)

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Corridor (Floor 1)	17.86 m ²	3.48 m	62.15 m ³

Normal lighting	
Height of the workplane (m):	0.00
Height for glare rating verification UGR (m):	1.50
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.51
Minimum number of calculation points:	4

Lighting arrangement

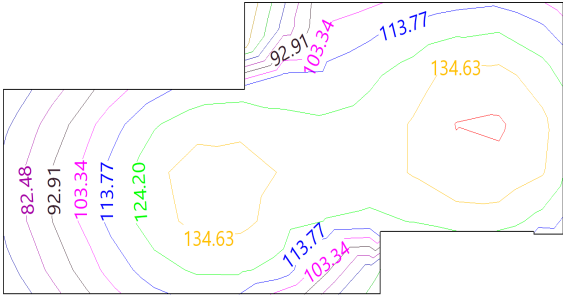


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
5	2	1200x300 mm 3600 lm	3541	101.17	99	2 x 35.00
						Total = 70.00 W

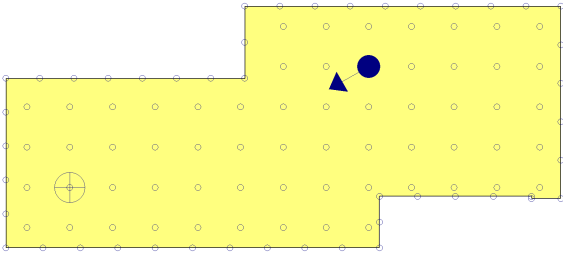
Design values obtained	
Minimum illuminance (lux):	99.27
Average maintained horizontal illuminance (lux):	129.13
Unified glare rating UGR:	17.00
Energy efficiency value of the installation VEEI (W/m ²):	3.04
Daylight factor (%):	0.018
Total installed power per unit illuminated area (W/m ²):	3.92
Uniformity ratio (%):	76.88
Colour rendering index:	80.00

Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

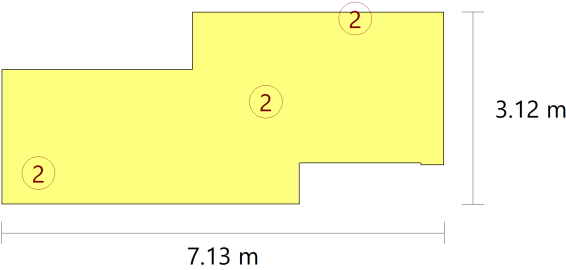


Produced by e-versions for internal use of CYPE

Minimum illuminance (99.27 lux)
 Unified glare rating (UGR = 17.00)
 Calculation points (Number of calculation points: 108)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80
Colour rendering index:	80.00

Lighting arrangement

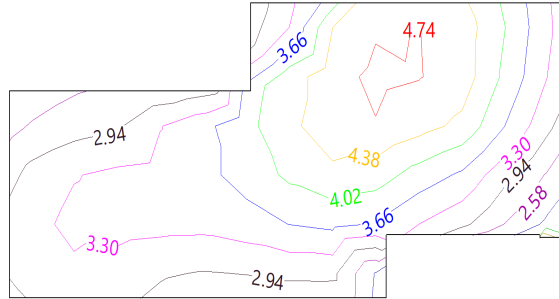


Nº	Quantity	Description
2	3	Normal (100 Lumens)

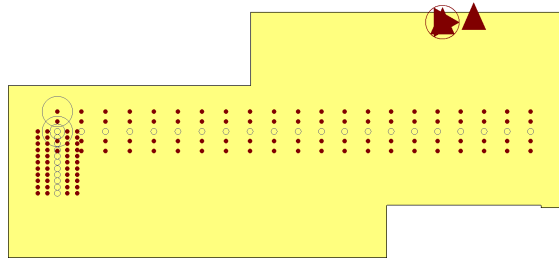
Design values obtained	
Minimum illuminance on the centre line of escape routes (lux):	3.66
Minimum illuminance on the centre band of escape routes (lux):	3.45
Minimum / maximum illuminance ratio (centre line of escape routes):	0.64
Height of the light placed at lower height (m):	3.42

Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values



Minimum illuminance on the centre line of escape routes (3.66 lux)

Minimum illuminance on the centre band of escape routes (3.45 lux)

Checkpoint at the centre line of the escape routes (Number of calculation points: 33)

Checkpoint at the centre band of escape routes (Number of calculation points: 132)

Safety and protection equipment or lighting distribution switchboard (Number of calculation points: 2)

Worst-case illuminance in protection/safety equipment (7.62 lux)

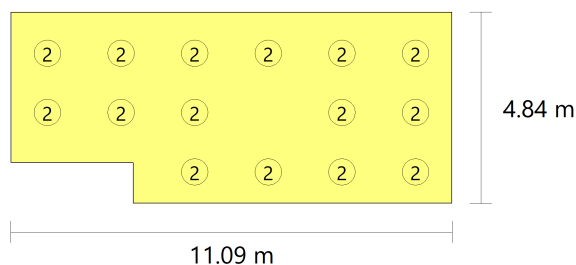
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Dining room (Ground floor)	50.51 m ²	3.40 m	171.90 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	1.28
Minimum number of calculation points:	9

Lighting arrangement

Produced by a version for internal use of CYPE

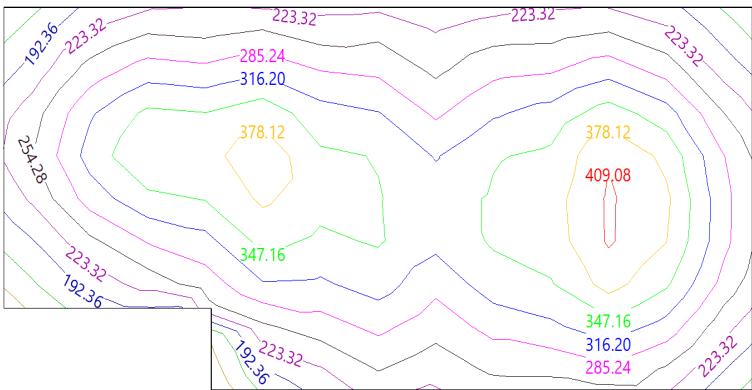


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
2	15	Downlight LED	1413	100.95	100	15 x 14.00
Total = 210.00 W						

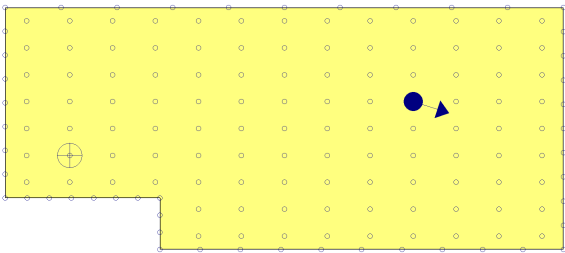
Design values obtained	
Minimum illuminance (lux):	246.91
Average maintained horizontal illuminance (lux):	329.07
Unified glare rating UGR:	18.00
Energy efficiency value of the installation VEEI (W/m ²):	1.26
Daylight factor (%):	5.164
Total installed power per unit illuminated area (W/m ²):	4.16
Uniformity ratio (%):	75.03
Colour rendering index:	80.00

Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

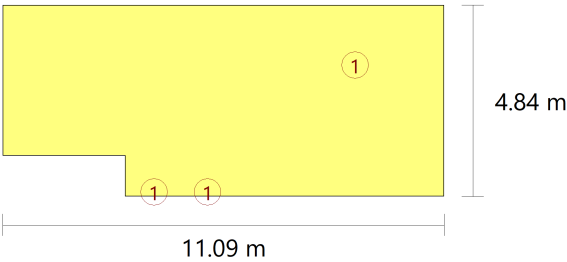


Produced by a software for internal use of CYPE

Minimum illuminance (246.91 lux)
 Unified glare rating (UGR = 18.00)
 Calculation points (Number of calculation points: 157)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80
Colour rendering index:	80.00

Lighting arrangement

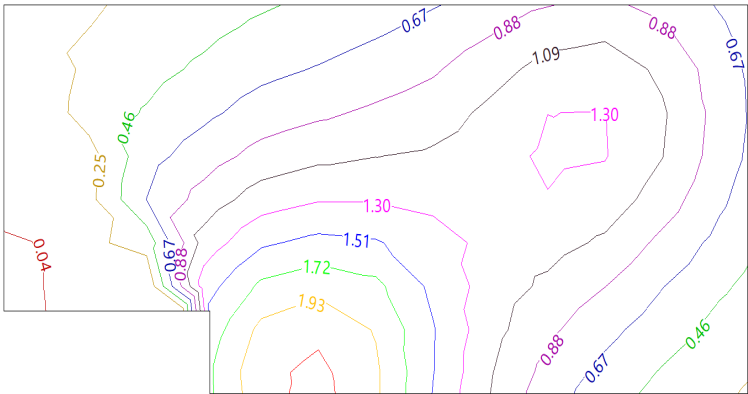


Nº	Quantity	Description
1	3	Normal (70 Lumens)

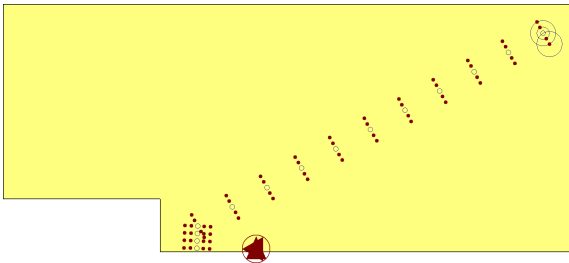
Design values obtained	
Minimum illuminance on the centre line of escape routes (lux):	0.98
Minimum illuminance on the centre band of escape routes (lux):	0.96
Minimum / maximum illuminance ratio (centre line of escape routes):	0.37
Height of the light placed at lower height (m):	3.32

Calculation annex: Lighting

Calculated illuminance values



Position of the worst-case calculated values



Produced by a version for internal use of CYPE

- Minimum illuminance on the centre line of escape routes (0.98 lux)
- Minimum illuminance on the centre band of escape routes (0.96 lux)
- Checkpoint at the centre line of the escape routes (Number of calculation points: 15)
- Checkpoint at the centre band of escape routes (Number of calculation points: 60)
- Safety and protection equipment or lighting distribution switchboard (Number of calculation points: 1)
- Worst-case illuminance in protection/safety equipment (4.91 lux)

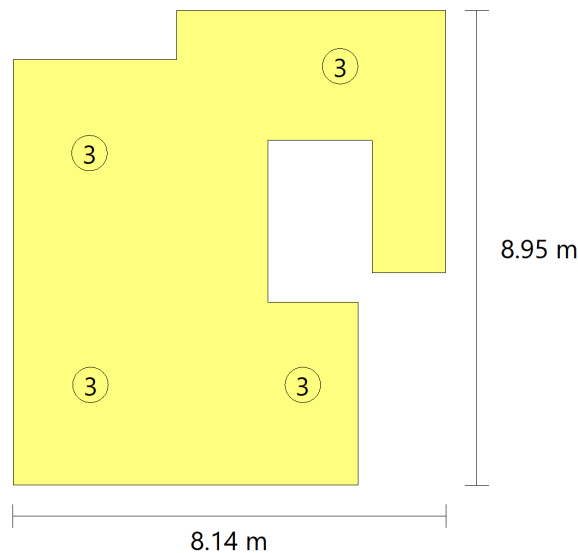
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Hall (Ground floor)	57.59 m ²	3.43 m	197.43 m ³

Normal lighting	
Height of the workplane (m):	0.00
Height for glare rating verification UGR (m):	1.50
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.81
Minimum number of calculation points:	4

Lighting arrangement

Produced by a version for internal use of CYPE

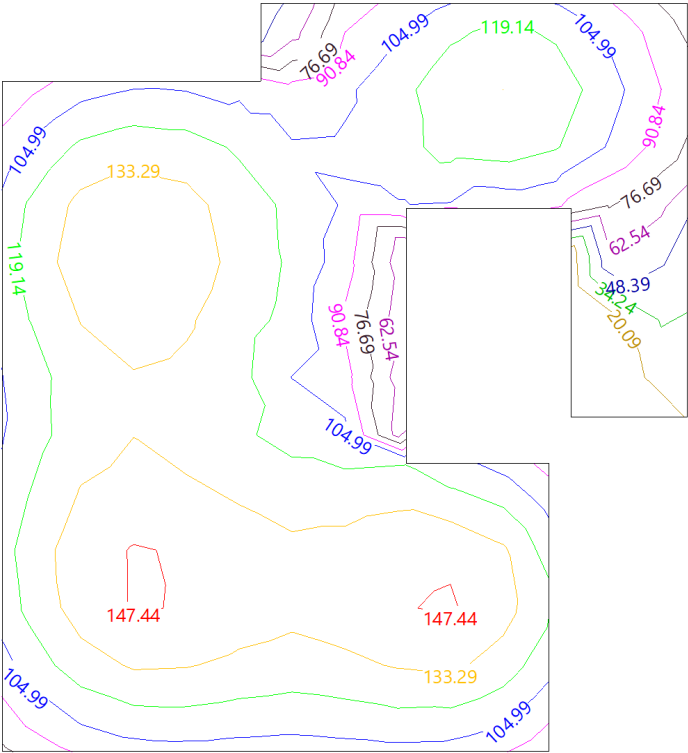


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
3	4	600x600 mm 3600 lm	3541	101.17	99	4 x 35.00
Total = 140.00 W						

Design values obtained	
Minimum illuminance (lux):	88.47
Average maintained horizontal illuminance (lux):	127.50
Unified glare rating UGR:	18.00
Energy efficiency value of the installation VEEI (W/m ²):	1.91
Daylight factor (%):	1.841
Total installed power per unit illuminated area (W/m ²):	2.43
Uniformity ratio (%):	69.39
Colour rendering index:	80.00

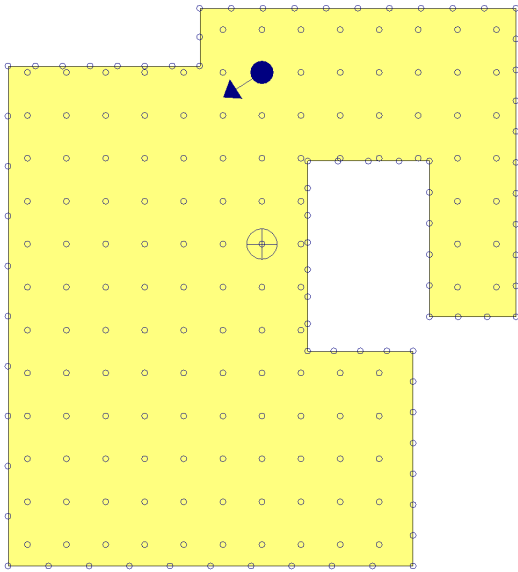
Calculated illuminance values

Calculation annex: Lighting



Produced by a version for internal use of CYPE

Position of the worst-case calculated values

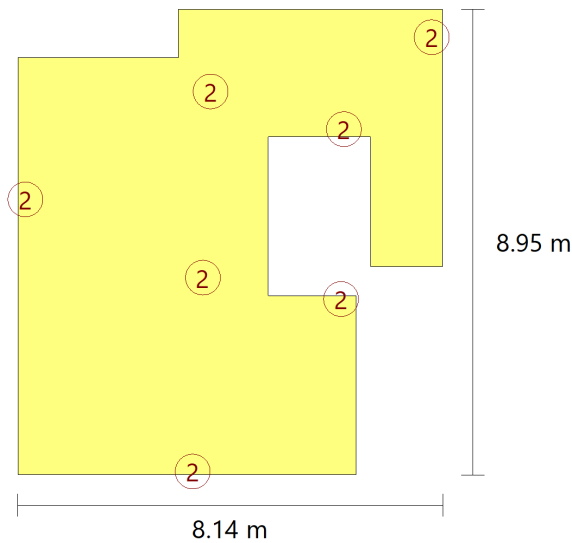


Minimum illuminance (88.47 lux)
Unified glare rating (UGR = 18.00)
Calculation points (Number of calculation points: 214)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80
Colour rendering index:	80.00

Lighting arrangement

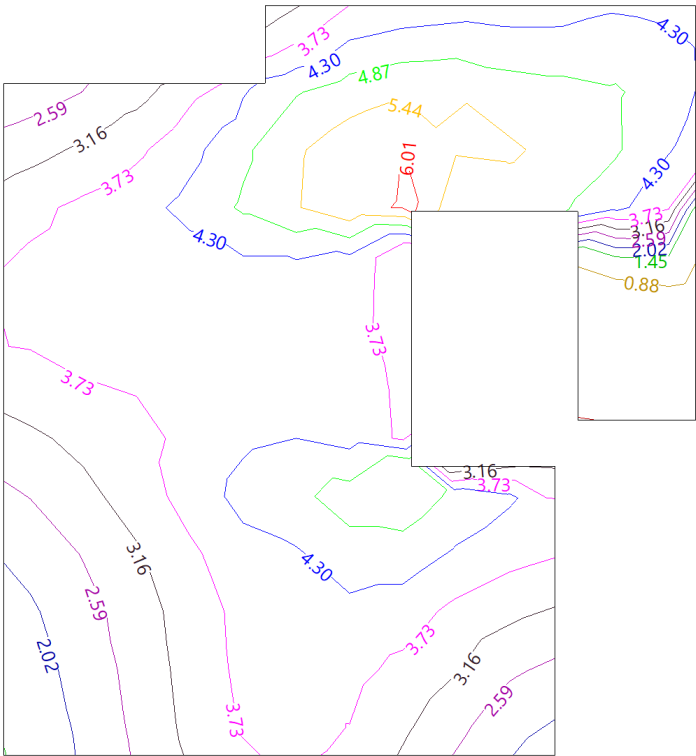
Calculation annex: Lighting



N°	Quantity	Description
2	7	Normal (100 Lumens)

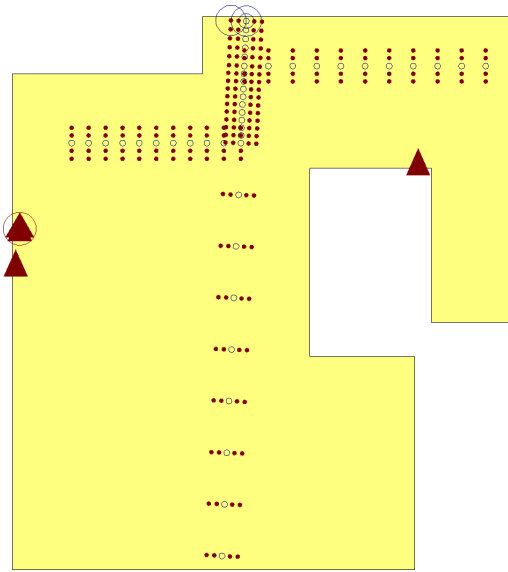
Design values obtained	
Minimum illuminance on the centre line of escape routes (lux):	4.29
Minimum illuminance on the centre band of escape routes (lux):	4.07
Minimum / maximum illuminance ratio (centre line of escape routes):	0.60
Height of the light placed at lower height (m):	3.35

Calculated illuminance values



Position of the worst-case calculated values

Calculation annex: Lighting



Minimum illuminance on the centre line of escape routes (4.29 lux)

Minimum illuminance on the centre band of escape routes (4.07 lux)

Checkpoint at the centre line of the escape routes (Number of calculation points: 48)

Checkpoint at the centre band of escape routes (Number of calculation points: 192)

Safety and protection equipment or lighting distribution switchboard (Number of calculation points: 3)

Worst-case illuminance in protection/safety equipment (6.31 lux)

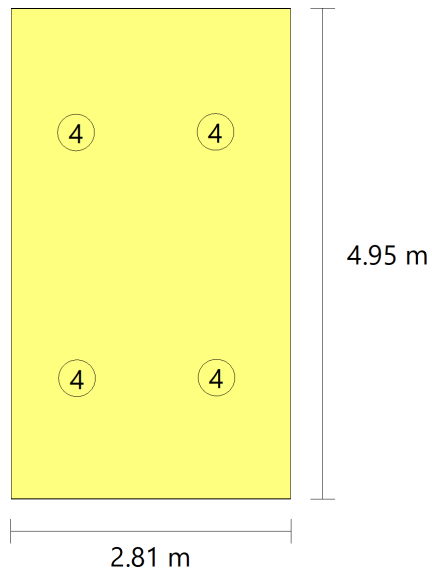
Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
Office 1 (Ground floor)	13.92 m ²	3.40 m	47.38 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.73
Minimum number of calculation points:	4

Lighting arrangement

Produced by a version for internal use of CYPE

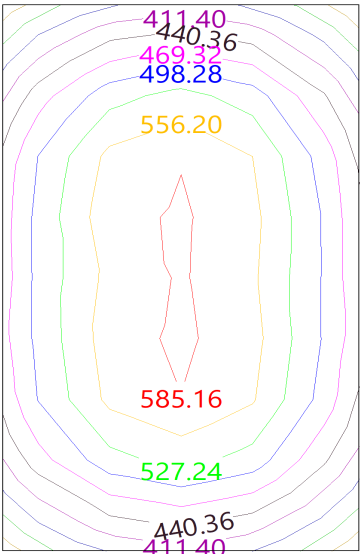


Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
4	4	600x600 mm 4300 lm	4332	100.74	99	4 x 43.00
						Total = 172.00 W

Design values obtained	
Minimum illuminance (lux):	506.36
Average maintained horizontal illuminance (lux):	551.80
Unified glare rating UGR:	15.00
Energy efficiency value of the installation VEEI (W / m ²):	2.24
Daylight factor (%):	4.327
Total installed power per unit illuminated area (W / m ²):	12.35
Uniformity ratio (%):	91.77
Colour rendering index:	80.00

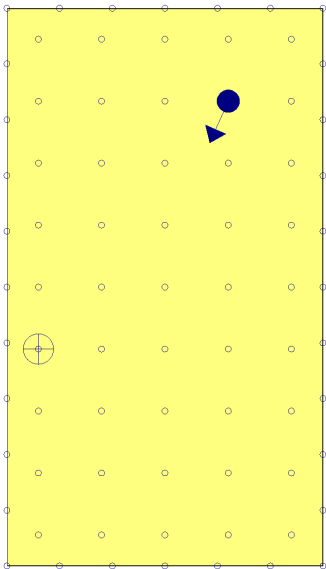
Calculated illuminance values

Calculation annex: Lighting



Position of the worst-case calculated values

Produced by a version for internal use of CYPE

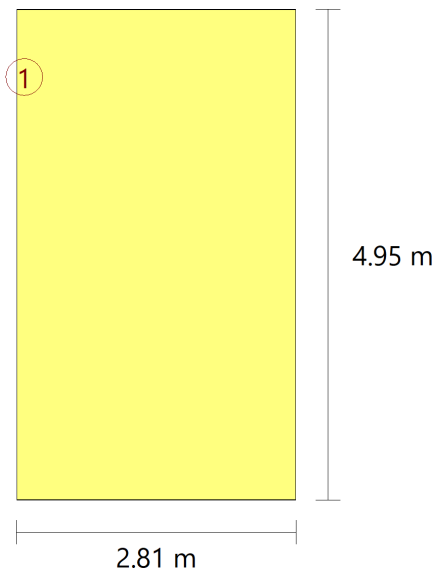


Minimum illuminance (506.36 lux)
 Unified glare rating (UGR = 15.00)
 Calculation points (Number of calculation points: 77)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement

Calculation annex: Lighting



N°	Quantity	Description
1	1	Normal (70 Lumens)

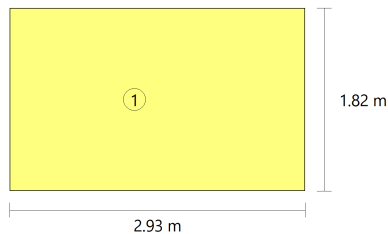
Produced by a version for internal use of CYPE

Calculation annex: Lighting

SPACE			
Reference	Surface	Free height	Volume
WC gf (Ground floor)	5.34 m ²	3.40 m	18.16 m ³

Normal lighting	
Height of the workplane (m):	0.85
Height for glare rating verification UGR (m):	1.20
Reflectance coefficient (Floors):	0.20
Reflectance coefficient (Ceilings):	0.70
Reflectance coefficient (Walls):	0.50
Maintenance factor:	0.80
Local index K:	0.45
Minimum number of calculation points:	4

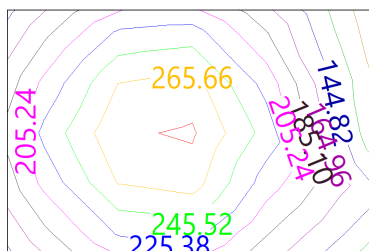
Lighting arrangement



Type	Quantity	Description	Total luminous flux (lm)	Efficiency (lm/(W))	LOR (%)	Total power (W)
1	1	Surface downlight (1 x 35 W metal halide lamp)	3300	82.50	71	1 x 40.00
						Total = 40.00 W

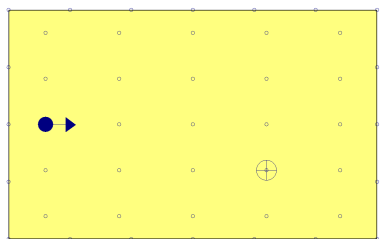
Design values obtained	
Minimum illuminance (lux):	215.93
Average maintained horizontal illuminance (lux):	248.92
Unified glare rating UGR:	0.00
Energy efficiency value of the installation VEEI (W/m ²):	3.01
Daylight factor (%):	0.000
Total installed power per unit illuminated area (W/m ²):	7.49
Uniformity ratio (%):	86.75
Colour rendering index:	85.00

Calculated illuminance values



Calculation annex: Lighting

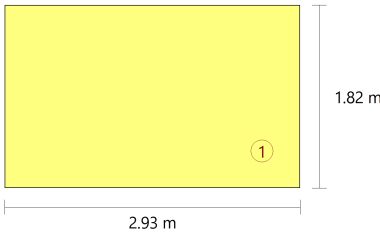
Position of the worst-case calculated values



Minimum illuminance (215.93 lux)
Unified glare rating (UGR = 0.00)
Calculation points (Number of calculation points: 45)

Emergency lighting	
Reflectance coefficient:	0.00
Maintenance factor:	0.80

Lighting arrangement



Nº	Quantity	Description
1	1	Normal (70 Lumens)

Produced by a version for internal use of CYFE

2. PHOTOMETRIC CURVES

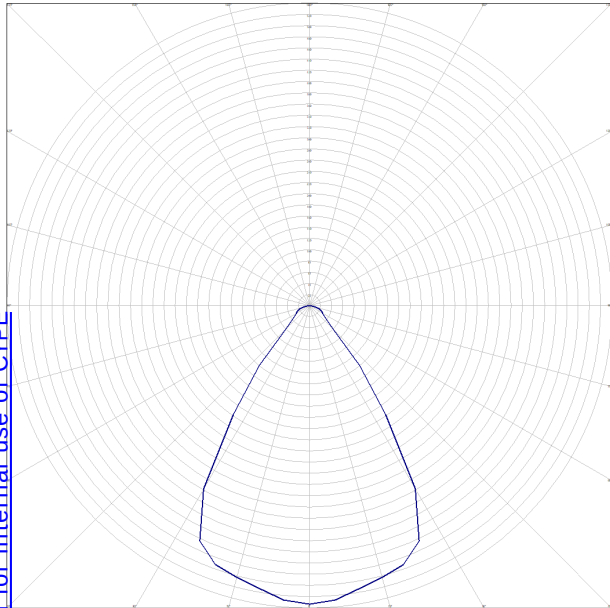
LIGHTING TYPES (Normal lighting)

Type 1

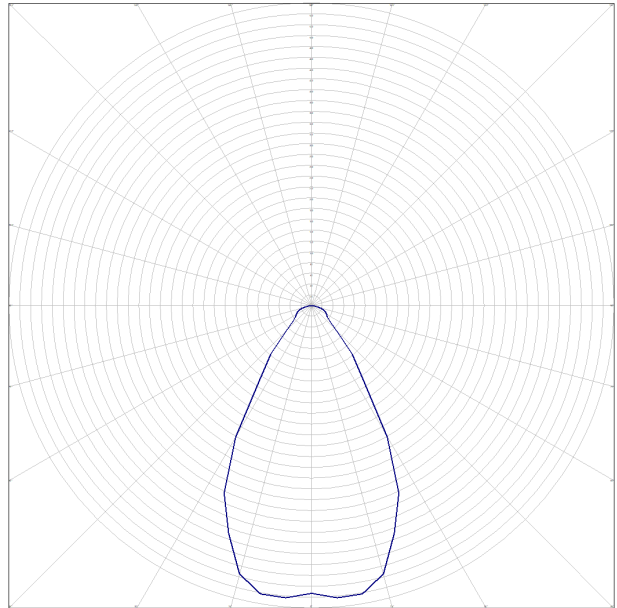
Surface downlight (1 x 35 W metal halide lamp) (Total number of lights used in the project: 3)

Photometric curves

PLANE C0 - C180



PLANE C90 - C270

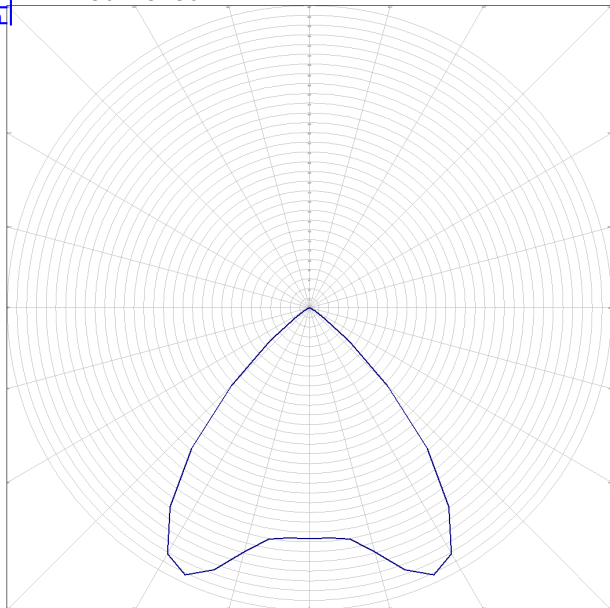


Type 2

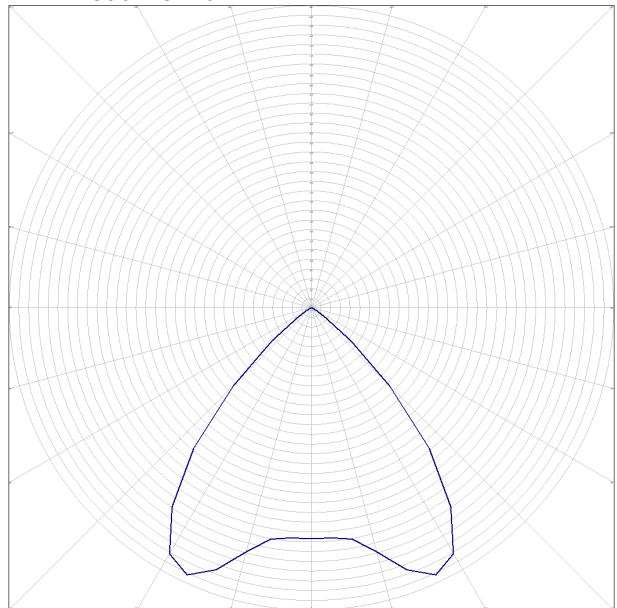
Downlight LED (Total number of lights used in the project: 17)

Photometric curves

PLANE C0 - C180



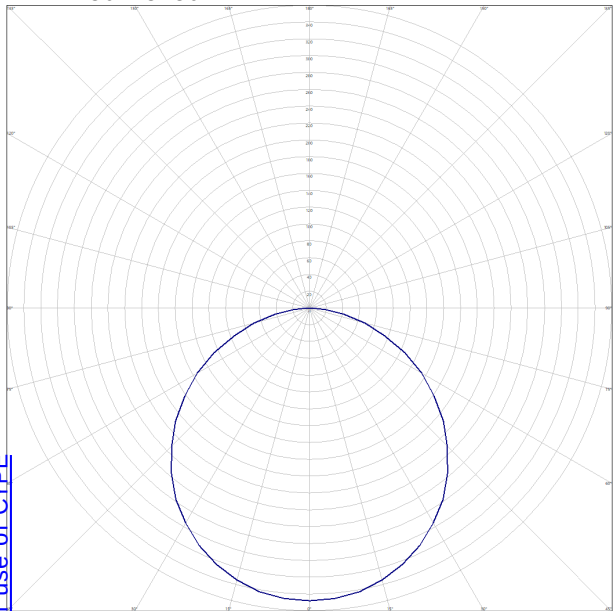
PLANE C90 - C270



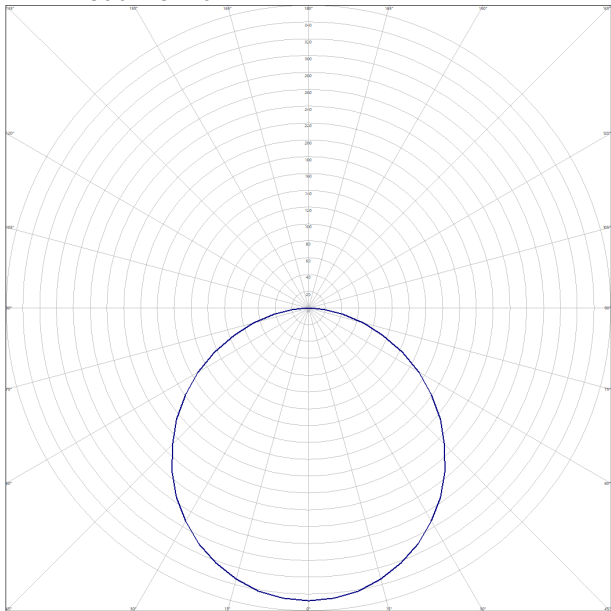
Calculation annex: Lighting

Type 3
600x600 mm 3600 lm (Total number of lights used in the project: 8)

Photometric curves
PLANE C0 - C180

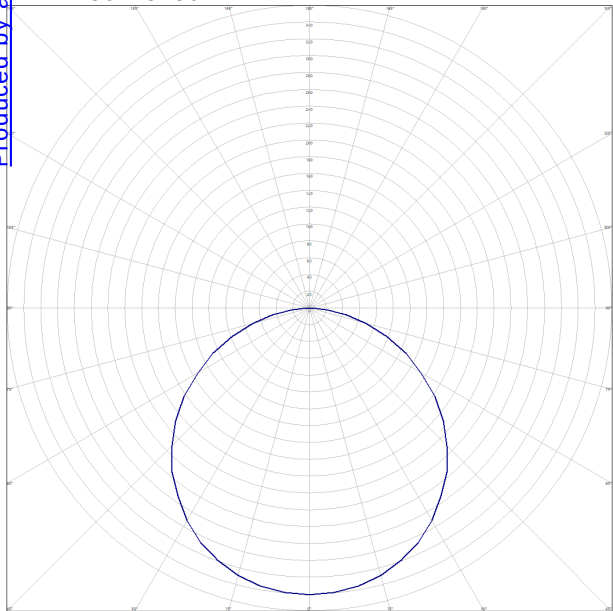


PLANE C90 - C270

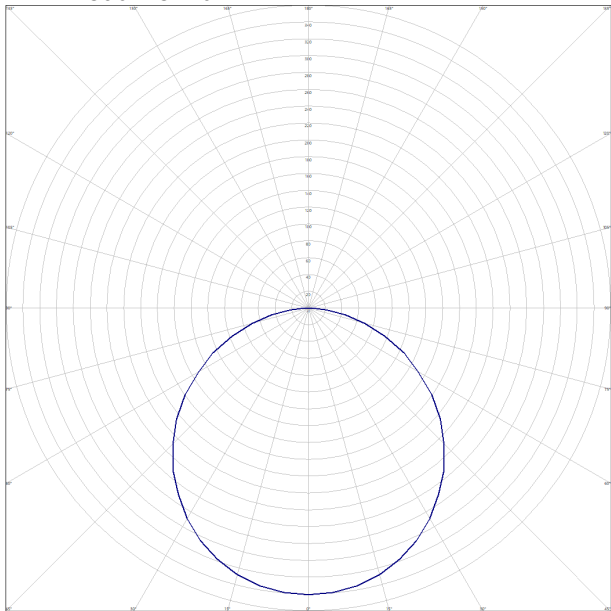


Type 4
600x600 mm 4300 lm (Total number of lights used in the project: 62)

Photometric curves
PLANE C0 - C180



PLANE C90 - C270

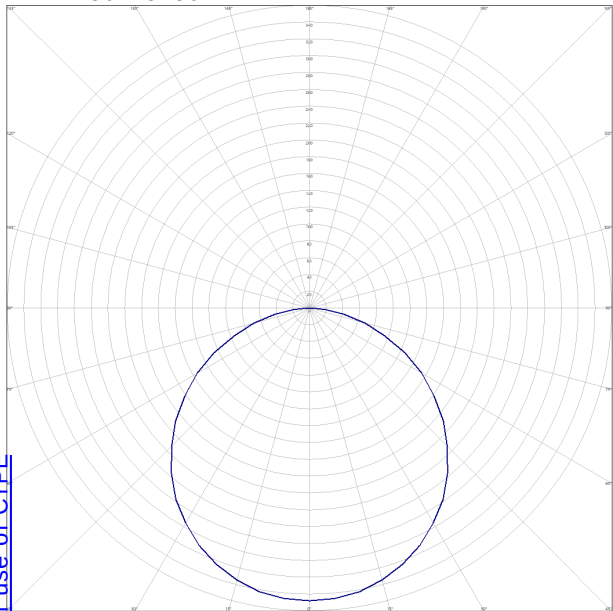


Produced by a version for internal use of CYPE

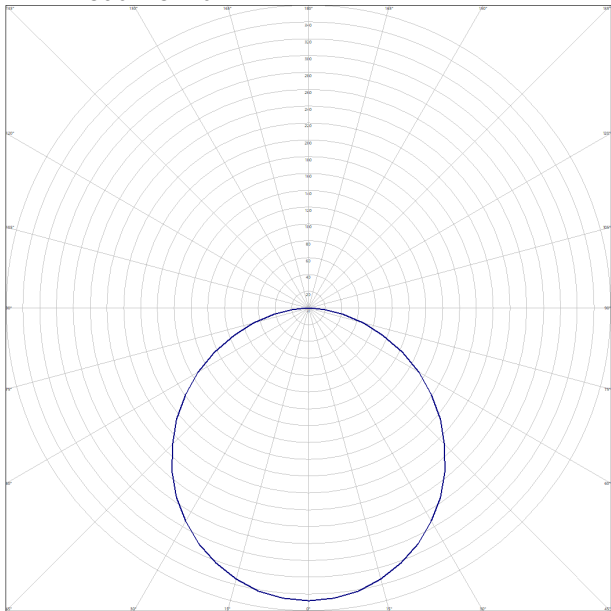
Calculation annex: Lighting

Type 5
1200x300 mm 3600 lm (Total number of lights used in the project: 6)

Photometric curves
PLANE C0 - C180

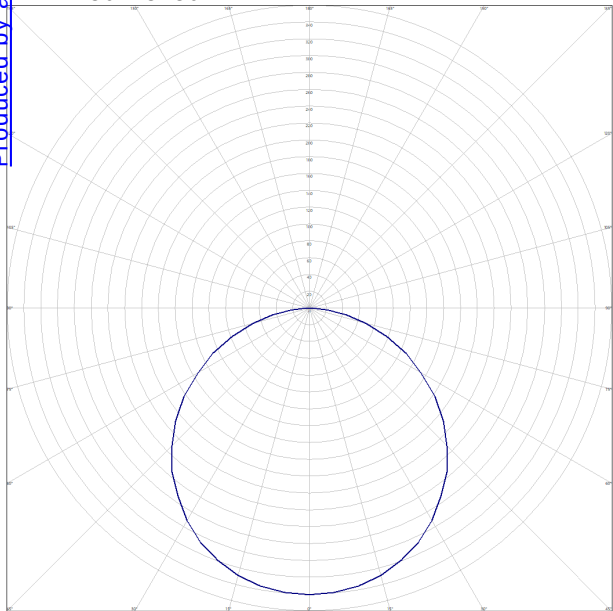


PLANE C90 - C270

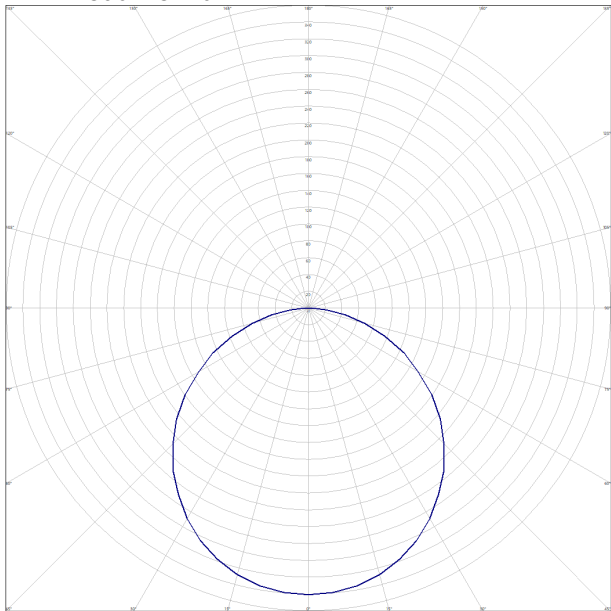


Type 6
1200x300 mm 4300 lm (Total number of lights used in the project: 1)

Photometric curves
PLANE C0 - C180



PLANE C90 - C270



Produced by a version for internal use of CYPE

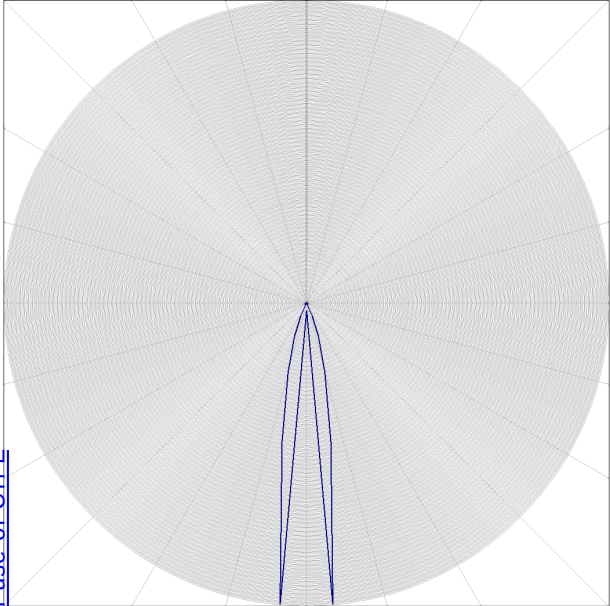
Calculation annex: Lighting

Type 7

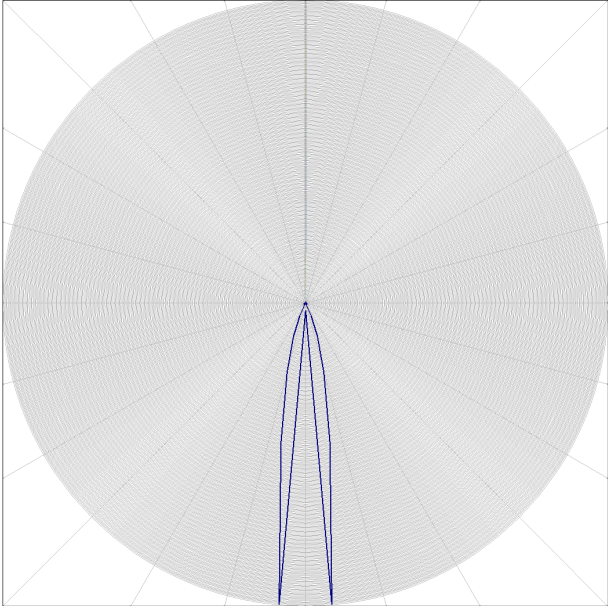
Surface downlight (1 x 4 W LED lamp) (Total number of lights used in the project: 10)

Photometric curves

PLANE C0 - C180



PLANE C90 - C270



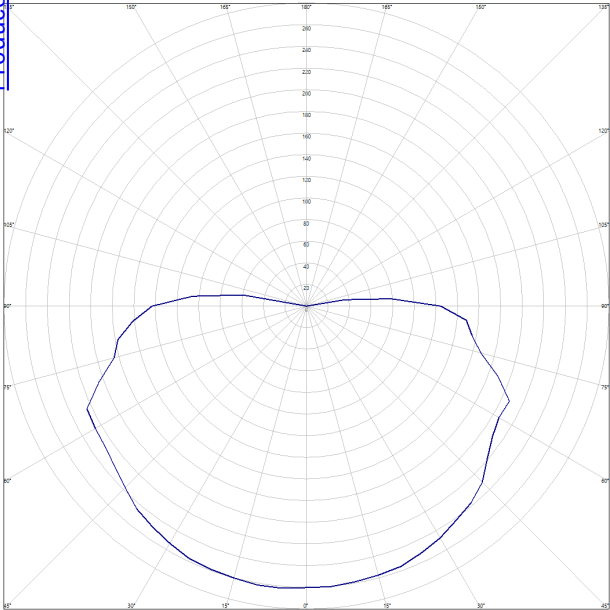
LIGHTING TYPES (Emergency lighting)

Type 1

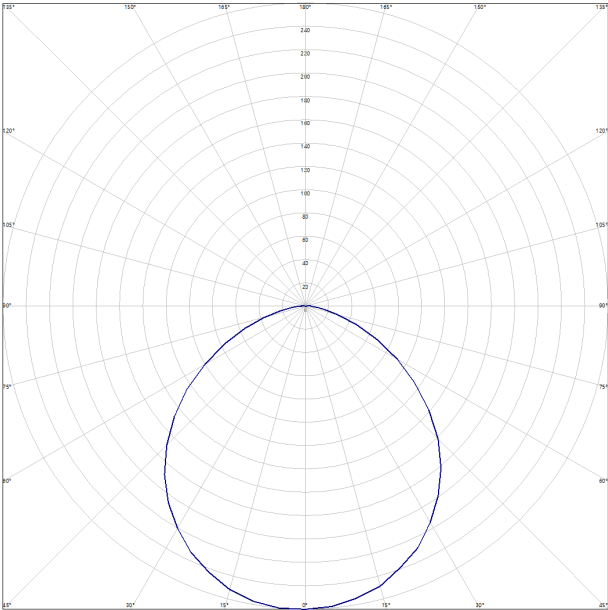
Normal (70 Lumens) (Total number of lights used in the project: 25)

Photometric curves

PLANE C0 - C180



PLANE C90 - C270

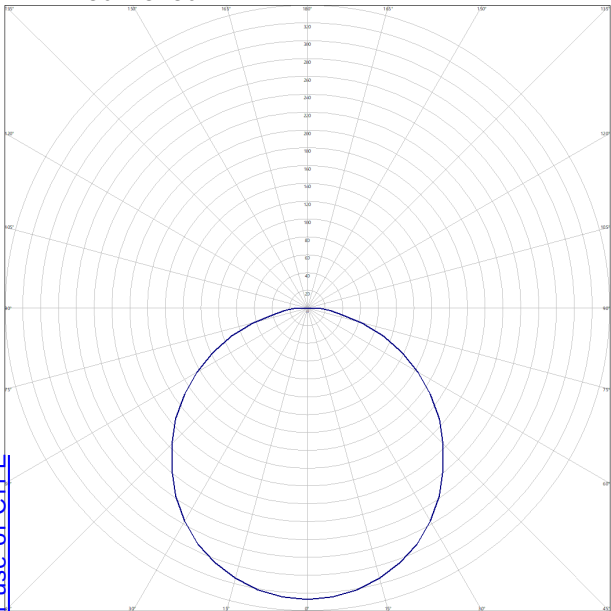


Produced by a version for internal use of CYPE

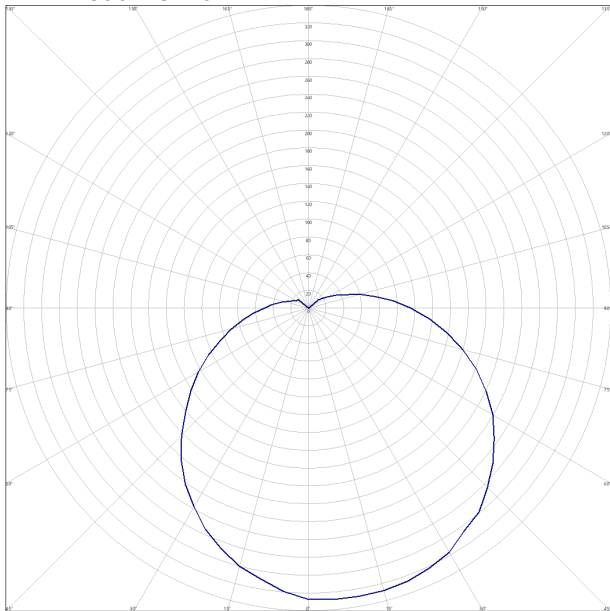
Calculation annex: Lighting

Type 2
Normal (100 Lumens) (Total number of lights used in the project: 16)

Photometric curves
PLANE C0 - C180



PLANE C90 - C270



Produced by a version for internal use of CYPE