



Railway Sidings - PH1 Typical Scenario

Installation : LED Bollards

Project number : LD/GCRE/PH1
Customer : Global Centre of Rail Excellence
Processed by : DJT
Date : 01.03.2023

Project description:

Plans supplied by the client: PHASE_1A_COMBINED_DRAWINGS_1.dwg plus DGN model
GCRE001-ARC-XX-SS-DR-EE-00063

Layouts to be completed using the specification provided by Arcadis, from the above drawings.

Results to be used to generate a lighting impact assessment and compliance report, for the Dark Skies Initiative, to satisfy the planning approval condition contained within Approval P2021/0327, from Neath Port Talbot County Borough Council.

Test for typical application and worst case scenarios - separate reports.

Upward light fraction is 0%.

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

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

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Date : 01.03.2023



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1 Luminaire data

1.1 Designplan, Trackline TRK-1200-630N-MT (TRK-1200-630N-MT)

1.1.1 Data sheet

Manufacturer: Designplan

TRK-1200-630N-MT

Trackline TRK-1200-630N-MT

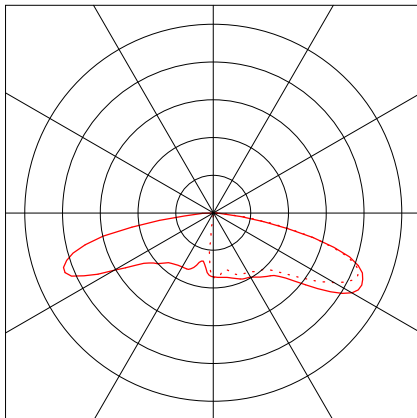
Luminaire data

Luminaire efficiency : 100%
Luminaire efficacy : 75.36 lm/W
Classification : A10 ↓100.0% ↑0.0%
CIE Flux Codes : 20 48 88 100 102
UGR 4H 8H : 34.7 / 13.3
Power : 8.4 W
Luminous flux : 633 lm

Equipped with

Quantity : 1
Designation : LED
Colour : 4000K
Luminous flux : 633 lm
Colour reproduction : >80

Dimensions : 135 mm x 92 mm x 50 mm

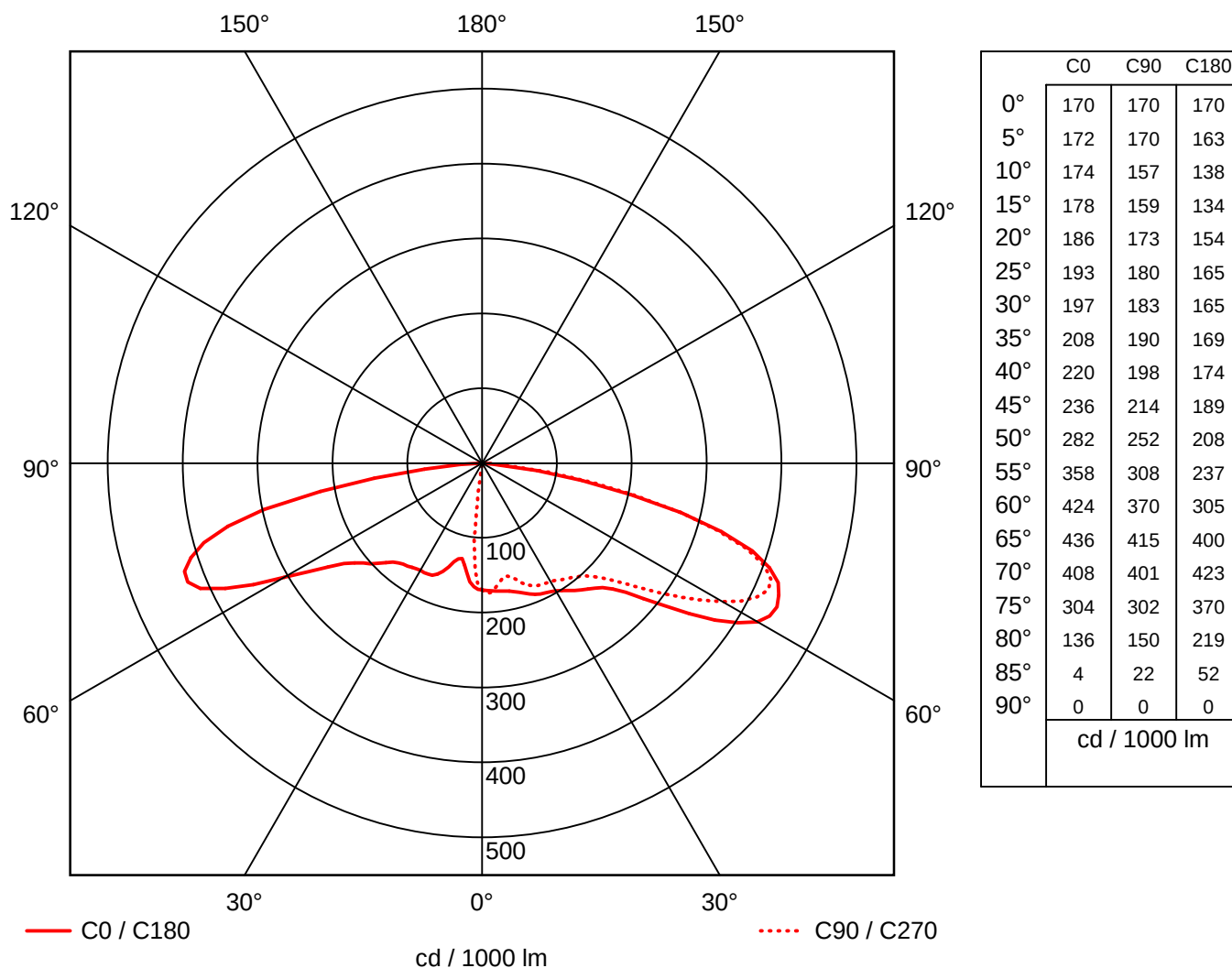


Object : Railway Sidings - PH1 Typical Scenario
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 Date : 01.03.2023



1.1 Designplan, Trackline TRK-1200-630N-MT (TRK-1200-630N-MT)

1.1.2 LDC



Manufacturer : Designplan
 Order number : TRK-1200-630N-MT
 Luminaire name : Trackline TRK-1200-630N-MT
 Equipment : 1 x LED 8.4 W / 633 lm
 Dimensions : L 135 mm x W 92 mm x H 50 mm
 File name : TRK-1200-630N-MT.Idt

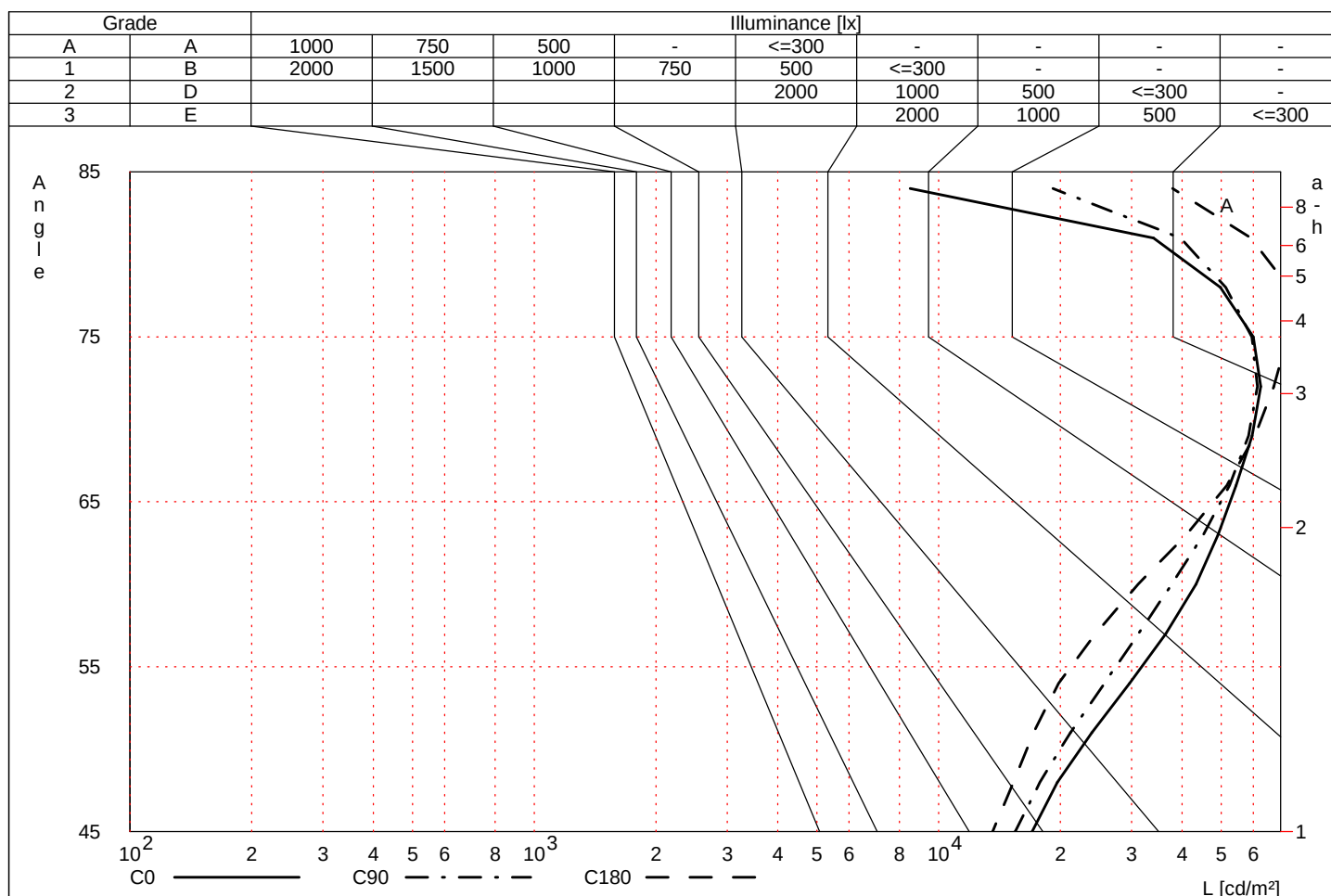
Efficiency factor : 100%
 Luminaire efficacy : 75.36 lm/W (A10)
 Light distribution : asymmetric
 Beam Angle : 76.4° C0
 76.5° C90
 79.1° C180
 -- C270

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1.1 Designplan, Trackline TRK-1200-630N-MT (TRK-1200-630N-MT)

1.1.3 Soellner diagram



Manufacturer : Designplan
 Order number : TRK-1200-630N-MT
 Luminaire name : Trackline TRK-1200-630N-MT
 Equipment : 1 x LED 8.4 W / 633 lm
 Dimensions : L 135 mm x W 92 mm x H 50 mm
 File name : TRK-1200-630N-MT.Idt

Efficiency factor : 100%
 Luminaire efficacy : 75.36 lm/W (A10)
 Light distribution : asymmetric
 Beam Angle : 76.4° C0
 76.5° C90
 79.1° C180
 -- C270

Object : Railway Sidings - PH1 Typical Scenario
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2 Exterior 1

2.1 Description, Exterior 1

2.1.1 Maintenance plan

Only through regular maintenance can compliance with the illuminances set out in standard EN 12464 be ensured for the lighting system. The maintenance intervals set out below must therefore be observed.

Scene
Pollution : High

Designplan TRK-1200-630N-MT
IP rating : IP6X
Lamp type : LED
Lifetime (L80) : 50000h
Operating time : 5000h
Maintenance interval : Annual
Maintenance factor : 0.89

References to maintenance:

Îlluminants must be replaced by light sources with the same characteristic values (luminous flux, light colour, colour rendition). Any starters must also be replaced when the lamp is changed..

The room and the light-deflecting surfaces must be maintained in such a way that the original reflectance properties are retained.

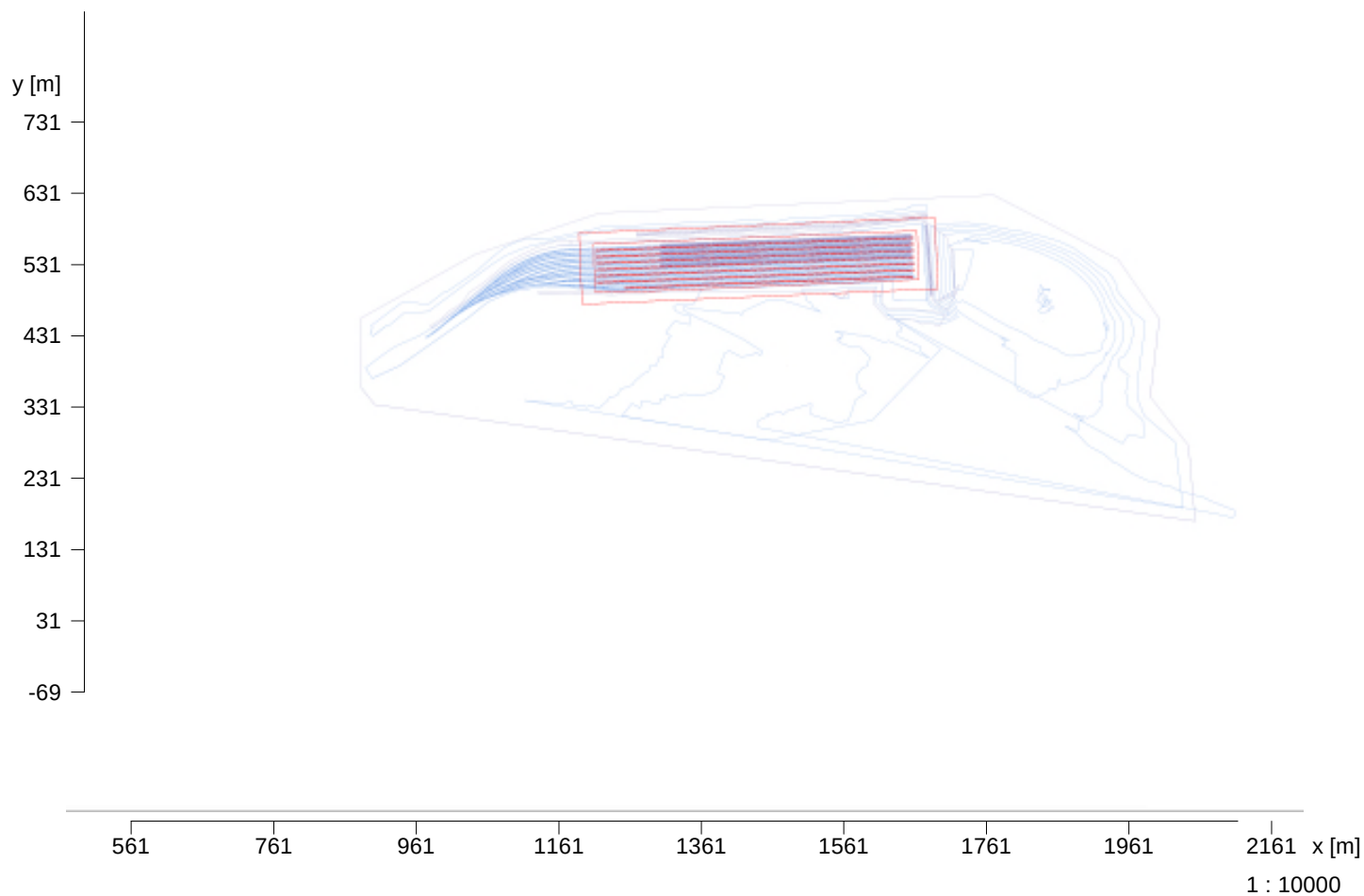
The manufacturers' cleaning instructions are to be observed.

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2.1 Description, Exterior 1

2.1.2 Floor plan



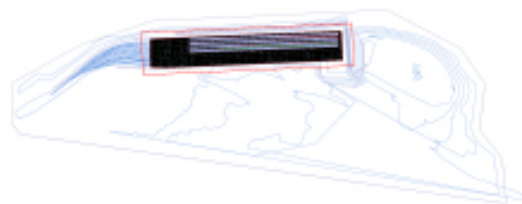
Object : Railway Sidings - PH1 Typical Scenario
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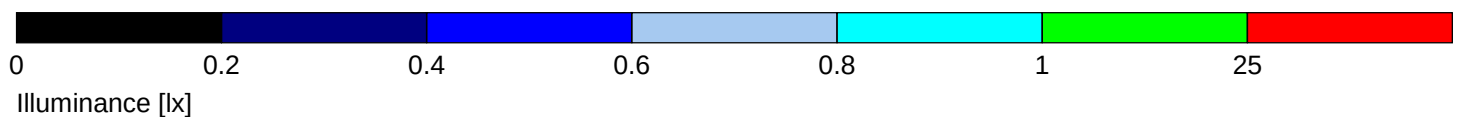
2 Exterior 1

2.2 Summary, Exterior 1

2.2.1 Result overview, All Tracks



561 761 961 1161 1361 1561 1761 1961 2161 x [m]



General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m ²)	0.00 W/m ²

Illuminance

Average illuminance	Em	1 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	114 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

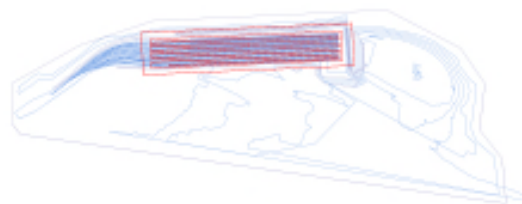
1 36 x	Designplan
	Order No. : TRK-1200-630N-MT
	Luminaire name : Trackline TRK-1200-630N-MT
	Equipment : 1 x LED 8.4 W / 633 lm
	Maintenance factor: 0.89

Object : Railway Sidings - PH1 Typical Scenario
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2.2 Summary, Exterior 1

2.2.2 Result overview, Inverted Sky Glow



561 761 961 1161 1361 1561 1761 1961 2161 x [m]



General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m ²)	0.00 W/m ²

Illuminance

Average illuminance	Em	0.04 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	0.88 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

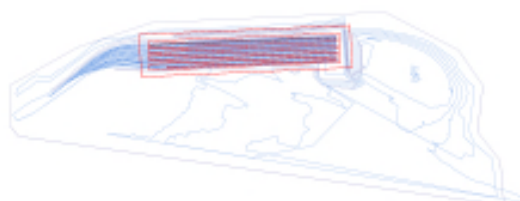
1 36 x	Designplan
	Order No. : TRK-1200-630N-MT
	Luminaire name : Trackline TRK-1200-630N-MT
	Equipment : 1 x LED 8.4 W / 633 lm
	Maintenance factor: 0.89

Object : Railway Sidings - PH1 Typical Scenario
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2.2 Summary, Exterior 1

2.2.3 Result overview, Path 1



561 761 961 1161 1361 1561 1761 1961 2161 x [m]

0 0.2

Illuminance [lx]

General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m ²)	0.00 W/m ²

Illuminance

Average illuminance	Em	0 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	0 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

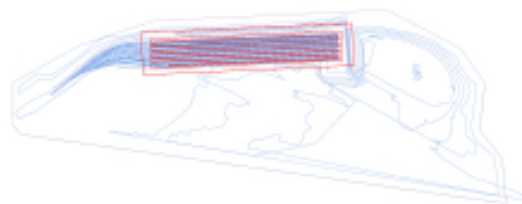
1	36 x	Designplan
		Order No. : TRK-1200-630N-MT
		Luminaire name : Trackline TRK-1200-630N-MT
		Equipment : 1 x LED 8.4 W / 633 lm
		Maintenance factor: 0.89

Object : Railway Sidings - PH1 Typical Scenario
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2.2 Summary, Exterior 1

2.2.4 Result overview, Path 2



561 761 961 1161 1361 1561 1761 1961 2161 x [m]

0 0.2
 Illuminance [lx]

General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m²)	0.00 W/m²

Illuminance

Average illuminance	Em	0 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	0.02 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

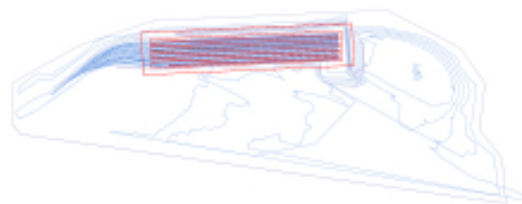
1 36 x	Designplan
	Order No. : TRK-1200-630N-MT
	Luminaire name : Trackline TRK-1200-630N-MT
	Equipment : 1 x LED 8.4 W / 633 lm
	Maintenance factor: 0.89

Object : Railway Sidings - PH1 Typical Scenario
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2.2 Summary, Exterior 1

2.2.5 Result overview, Path 3



561 761 961 1161 1361 1561 1761 1961 2161 x [m]



General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m²)	0.00 W/m²

Illuminance

Average illuminance	Em	16 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	105 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

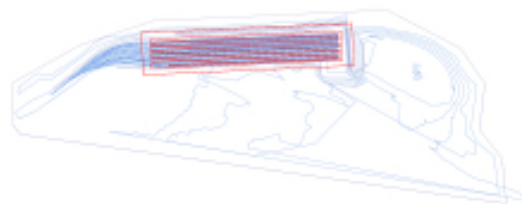
1 36 x 	Designplan	
	Order No.	: TRK-1200-630N-MT
	Luminaire name	: Trackline TRK-1200-630N-MT
	Equipment	: 1 x LED 8.4 W / 633 lm
	Maintenance factor:	0.89

Object : Railway Sidings - PH1 Typical Scenario
 Installation : LED Bollards
 Project number : LD/GCRE/PH1
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2.2 Summary, Exterior 1

2.2.6 Result overview, Path 4



561 761 961 1161 1361 1561 1761 1961 2161 x [m]

0 0.2
 Illuminance [lx]

General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m²)	0.00 W/m²

Illuminance

Average illuminance	Em	0 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	0.01 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

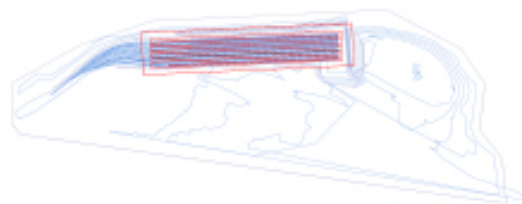
1	36 x	Designplan
		Order No. : TRK-1200-630N-MT
		Luminaire name : Trackline TRK-1200-630N-MT
		Equipment : 1 x LED 8.4 W / 633 lm
		Maintenance factor: 0.89

Object : Railway Sidings - PH1 Typical Scenario
 Installation : LED Bollards
 Project number : LD/GCRE/PH1
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2.2 Summary, Exterior 1

2.2.7 Result overview, Path 5



561 761 961 1161 1361 1561 1761 1961 2161 x [m]

0 0.2

Illuminance [lx]

General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m ²)	0.00 W/m ²

Illuminance

Average illuminance	Em	0 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	0 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

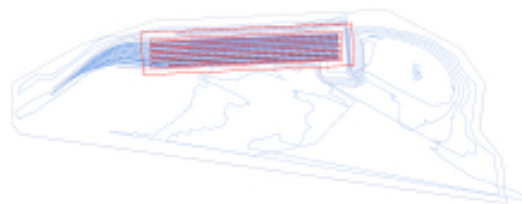
1	36 x	Designplan
		Order No. : TRK-1200-630N-MT
		Luminaire name : Trackline TRK-1200-630N-MT
		Equipment : 1 x LED 8.4 W / 633 lm
		Maintenance factor: 0.89

Object : Railway Sidings - PH1 Typical Scenario
 Installation : LED Bollards
 Project number : LD/GCRE/PH1
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2.2 Summary, Exterior 1

2.2.8 Result overview, Path 6



561 761 961 1161 1361 1561 1761 1961 2161 x [m]

0 0.2
 Illuminance [lx]

General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m²)	0.00 W/m²

Illuminance

Average illuminance	Em	0 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	0 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

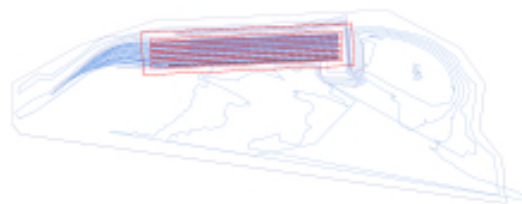
1	36 x	Designplan
		Order No. : TRK-1200-630N-MT
		Luminaire name : Trackline TRK-1200-630N-MT
		Equipment : 1 x LED 8.4 W / 633 lm
		Maintenance factor: 0.89

Object : Railway Sidings - PH1 Typical Scenario
 Installation : LED Bollards
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2.2 Summary, Exterior 1

2.2.9 Result overview, Path 7



561 761 961 1161 1361 1561 1761 1961 2161 x [m]

0 0.2
 Illuminance [lx]

General

Calculation algorithm used	low indirect fraction
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	22788 lm
Total power	302.4 W
Total power per area (684048.62 m ²)	0.00 W/m ²

Illuminance

Average illuminance	Em	0 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	0 lx
Uniformity Uo	Emin/Em	1:--- (---)
Diversity Ud	Emin/Emax	1:--- (---)

Type No.\Make

1	36 x	Designplan
		Order No. : TRK-1200-630N-MT
		Luminaire name : Trackline TRK-1200-630N-MT
		Equipment : 1 x LED 8.4 W / 633 lm
		Maintenance factor: 0.89



2 Exterior 1

2.3 Calculation results, Exterior 1

2.3.1 Table, All Tracks (E)



Average illuminance	Em	: 1 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 114 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---

Object : Railway Sidings - PH1 Typical Scenario
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Project number : LD/GCRE/PH1
Date : 01.03.2023

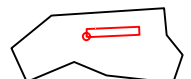


2 Exterior 1

2.3 Calculation results, Exterior 1

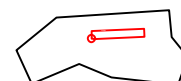
2.3.1 Table, All Tracks (E)

(0) (0) (0) (0) (0) (0) (0) (0) Part2





2.3.1 Table, All Tracks (E)





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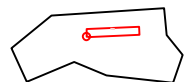
2.3.1 Table, All Tracks (E)





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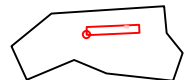
2.3.1 Table, All Tracks (E)





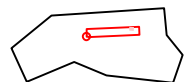
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2.3.1 Table, All Tracks (E)

[illegible]

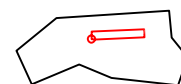


2.3.1 Table, All Tracks (E)





2.3.1 Table, All Tracks (E)



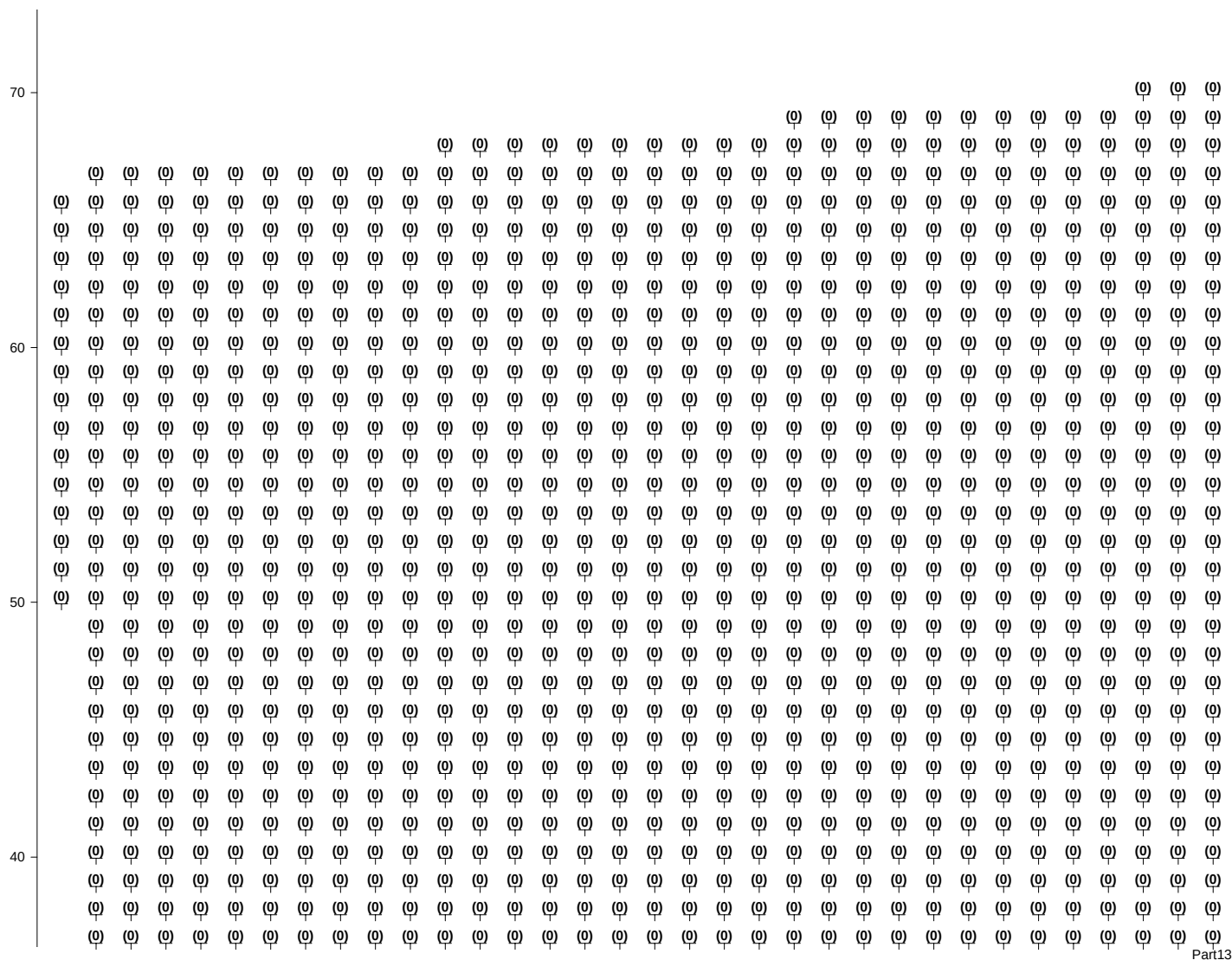
Object : Railway Sidings - PH1 Typical Scenario
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Project number : LD/GCRE/PH1
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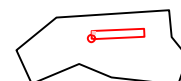
2 Exterior 1

2.3 Calculation results, Exterior 1

2.3.1 Table, All Tracks (E)



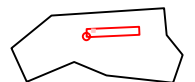
Part13





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Part14





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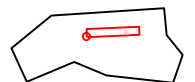
Part16





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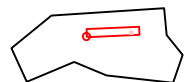
Part21





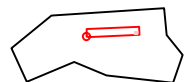
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Part22





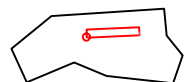
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2.3.1 Table, All Tracks (E)



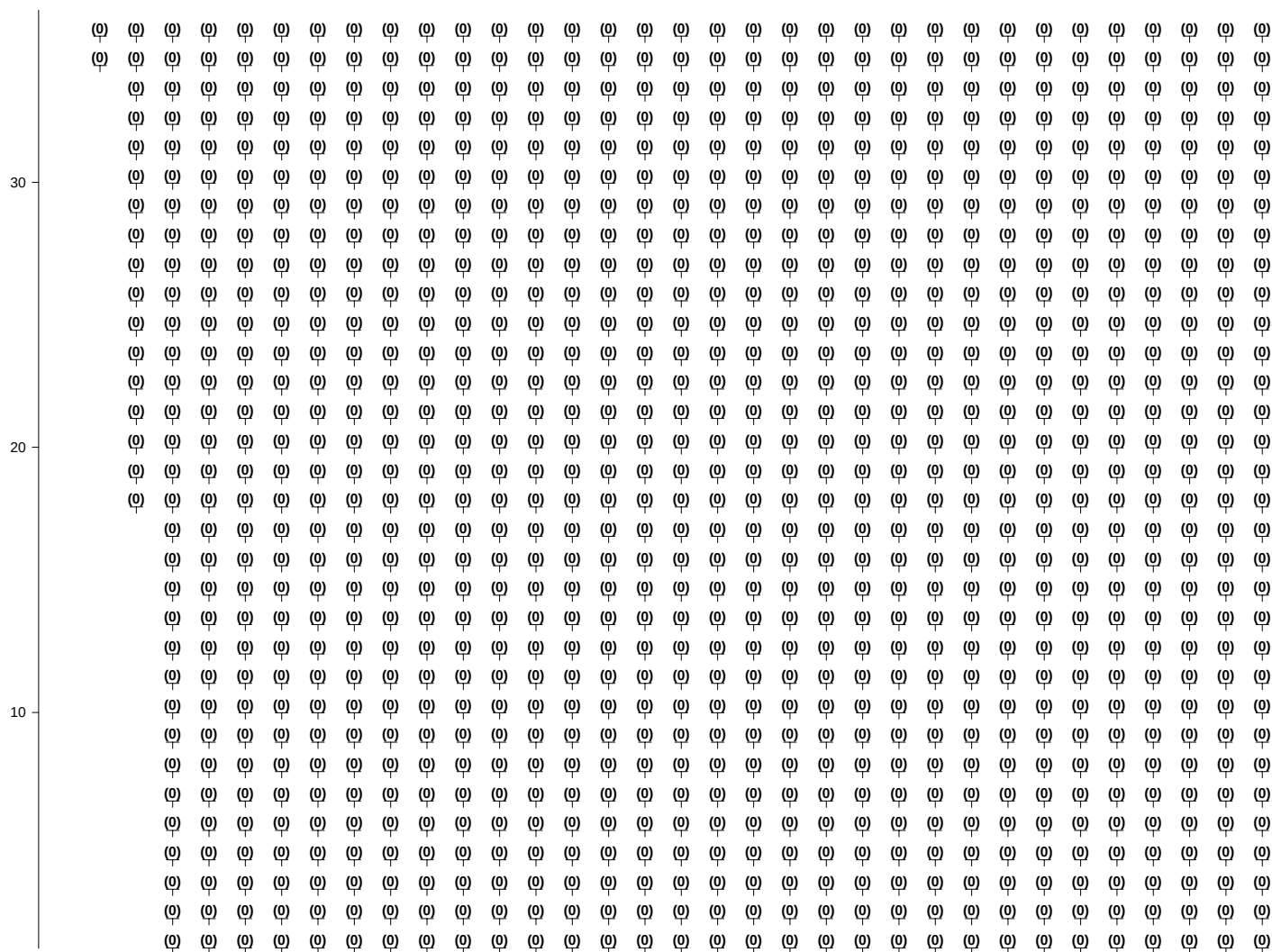
Object : Railway Sidings - PH1 Typical Scenario
Installation : LED Bollards
Project number : LD/GCRE/PH1
Date : 01.03.2023



2 Exterior 1

2.3 Calculation results, Exterior 1

2.3.1 Table, All Tracks (E)

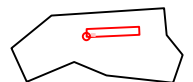


Part25



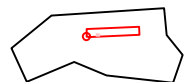


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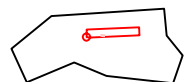


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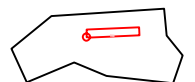




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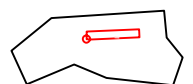


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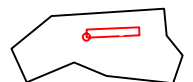
LUMEN
DESIGNERS





LUMEN
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2.3.1 Table, All Tracks (E)

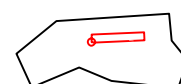
[illegible]

300

Part32



2.3.1 Table, All Tracks (E)

[illegible]

350

Part33

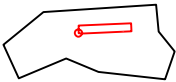


2 Exterior 1

2.3 Calculation results, Exterior 1

2.3.1 Table, All Tracks (E)

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



400

Part34

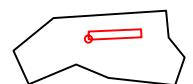
Object : Railway Sidings - PH1 Typical Scenario
Installation : LED Bollards
Project number : LD/GCRE/PH1
Date : 01.03.2023



2 Exterior 1

2.3 Calculation results, Exterior 1

2.3.1 Table, All Tracks (E)



Part35

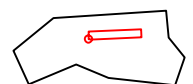
Object : Railway Sidings - PH1 Typical Scenario
Installation : LED Bollards
Project number : LD/GCRE/PH1
Date : 01.03.2023



2 Exterior 1

2.3 Calculation results, Exterior 1

2.3.1 Table, All Tracks (E)



450 - -

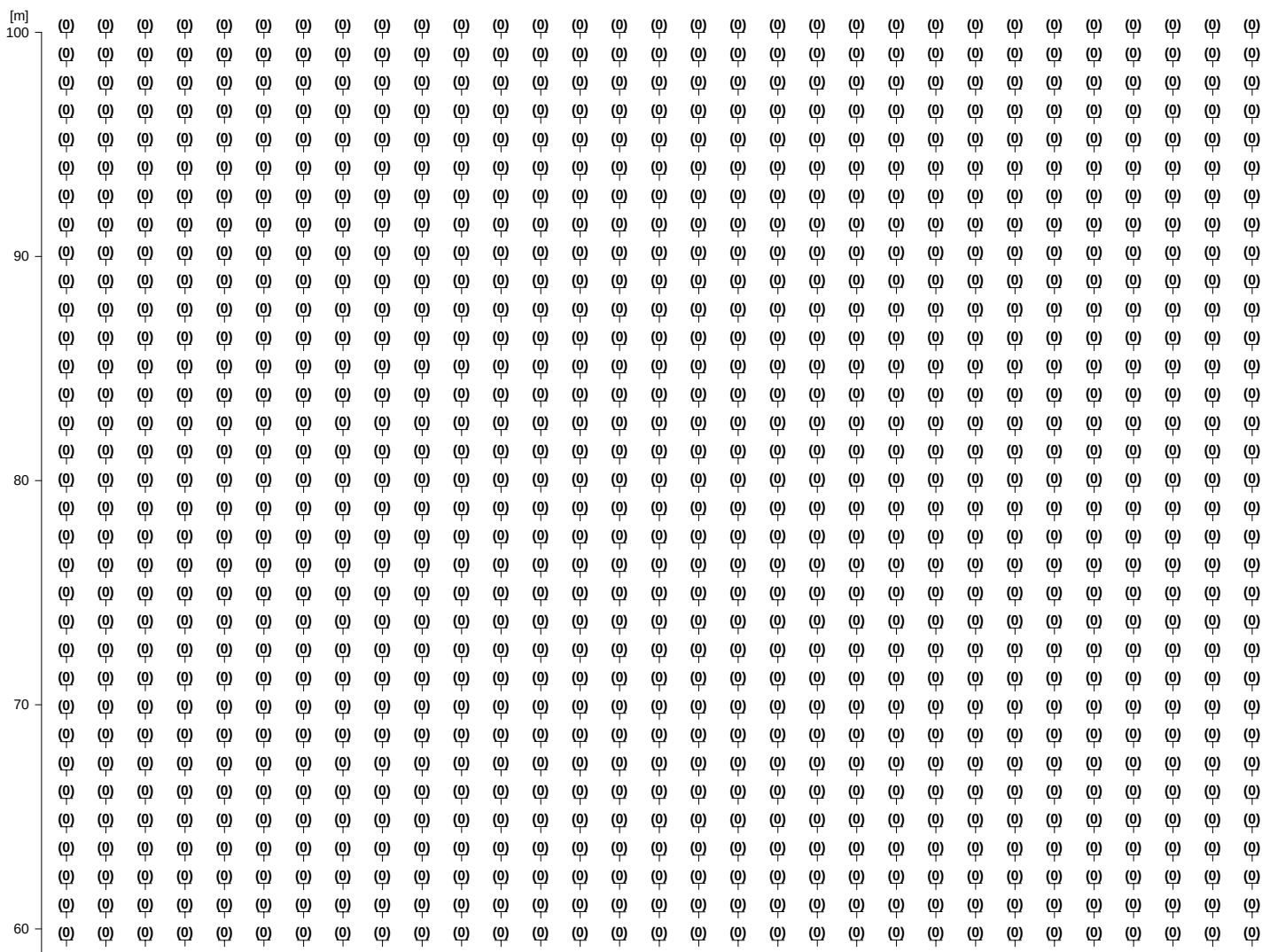
Part36

Object : Railway Sidings - PH1 Typical Scenario
 Installation : LED Bollards
 Project number : LD/GCRE/PH1
 Date : 01.03.2023



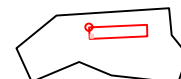
2.3 Calculation results, Exterior 1

2.3.2 Table, Inverted Sky Glow (E)



Part1

Average illuminance	Em	: 0.04 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0.88 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---



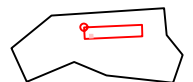


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2.3.2 Table, Inverted Sky Glow (E)

[illegible]

Part2



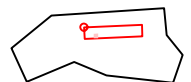


LUMEN
DESIGNERS

2.3.2 Table, Inverted Sky Glow (E)

[illegible]

Part3



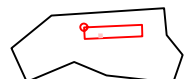


LUMEN
DESIGNERS

2.3.2 Table, Inverted Sky Glow (E)

[illegible]

Part4

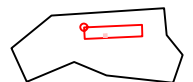




LUMEN
DESIGNERS

2.3.2 Table, Inverted Sky Glow (E)

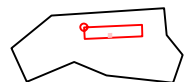
Part5





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Part6

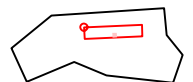




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2.3.2 Table, Inverted Sky Glow (E)

Part7

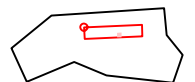




LUMEN
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2.3.2 Table, Inverted Sky Glow (E)

Part8

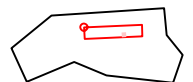




LUMEN
DESIGNERS

2.3.2 Table, Inverted Sky Glow (E)

Part9

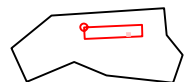




LUMEN
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2.3.2 Table, Inverted Sky Glow (E)

Part10

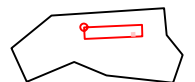




LUMEN
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2.3.2 Table, Inverted Sky Glow (E)

Part11

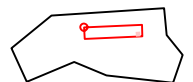




LUMEN
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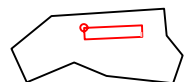
2.3.2 Table, Inverted Sky Glow (E)

Part12





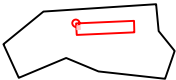
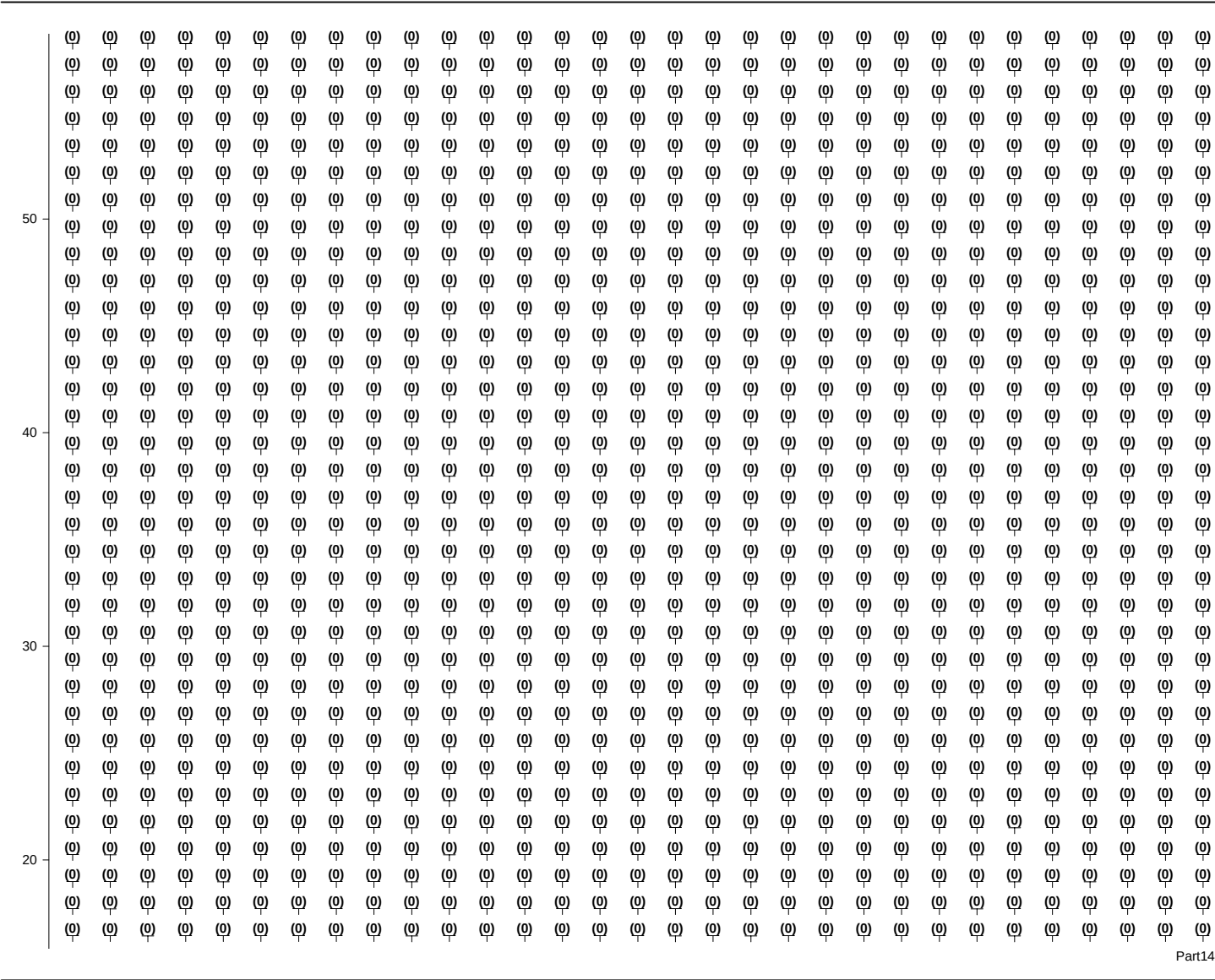
LUMEN
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2.3 Calculation results, Exterior 1

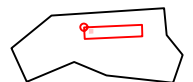
2.3.2 Table, Inverted Sky Glow (E)





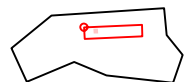
LUMEN
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Part15



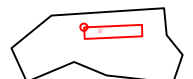


Part16



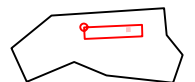


Part17



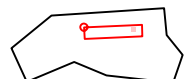


Part23



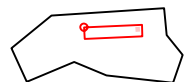


LUMEN
DESIGNERS



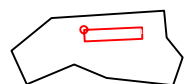


LUMEN
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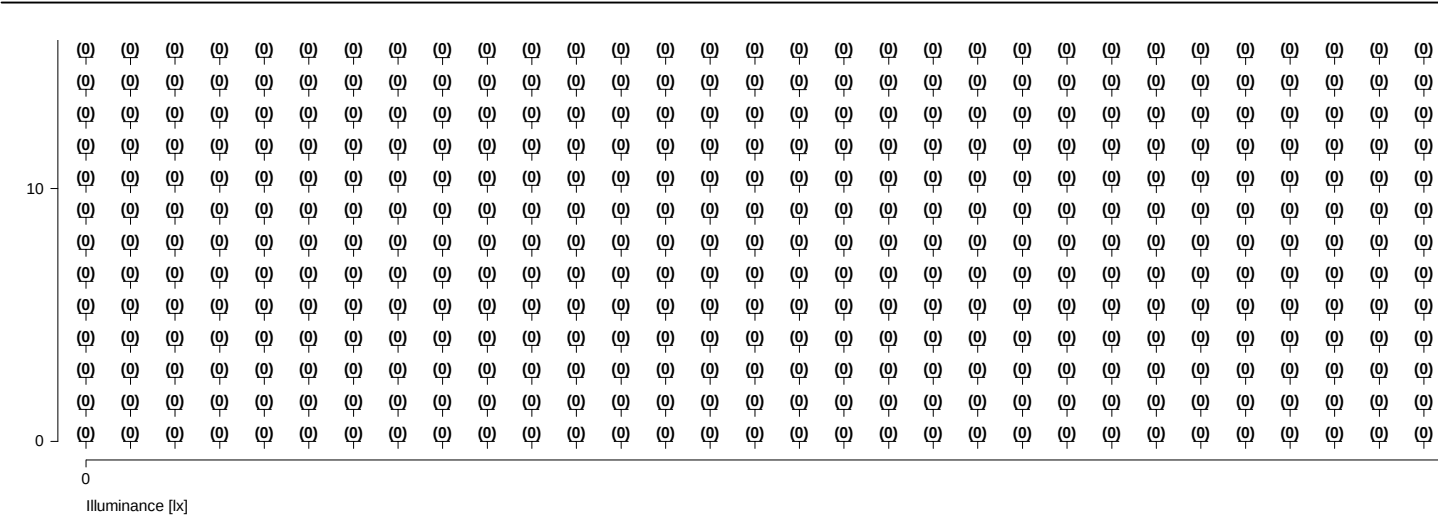
LUMEN
DESIGNERS





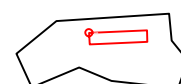
2.3 Calculation results, Exterior 1

2.3.2 Table, Inverted Sky Glow (E)



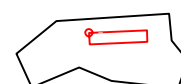


2.3.2 Table, Inverted Sky Glow (E)

[illegible]



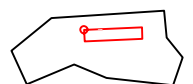
2.3.2 Table, Inverted Sky Glow (E)

[illegible]



LUMEN
DESIGNERS

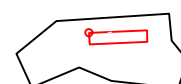
150



Part30



2.3.2 Table, Inverted Sky Glow (E)

[illegible]

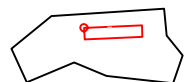
Part31



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DESIGNERS

2.3.2 Table, Inverted Sky Glow (E)

200

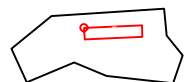


Part32



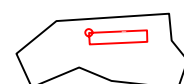
LUMEN
DESIGNERS

2.3.2 Table, Inverted Sky Glow (E)





2.3.2 Table, Inverted Sky Glow (E)





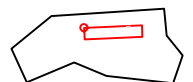
LUMEN
DESIGNERS



LUMEN
DESIGNERS

2.3.2 Table, Inverted Sky Glow (E)

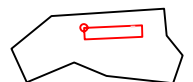
400



Part36

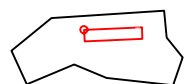


LUMEN
DESIGNERS





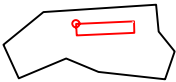
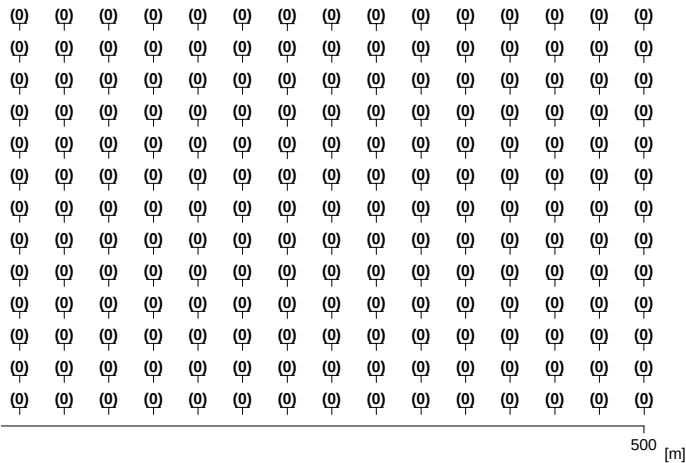
LUMEN
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2.3 Calculation results, Exterior 1

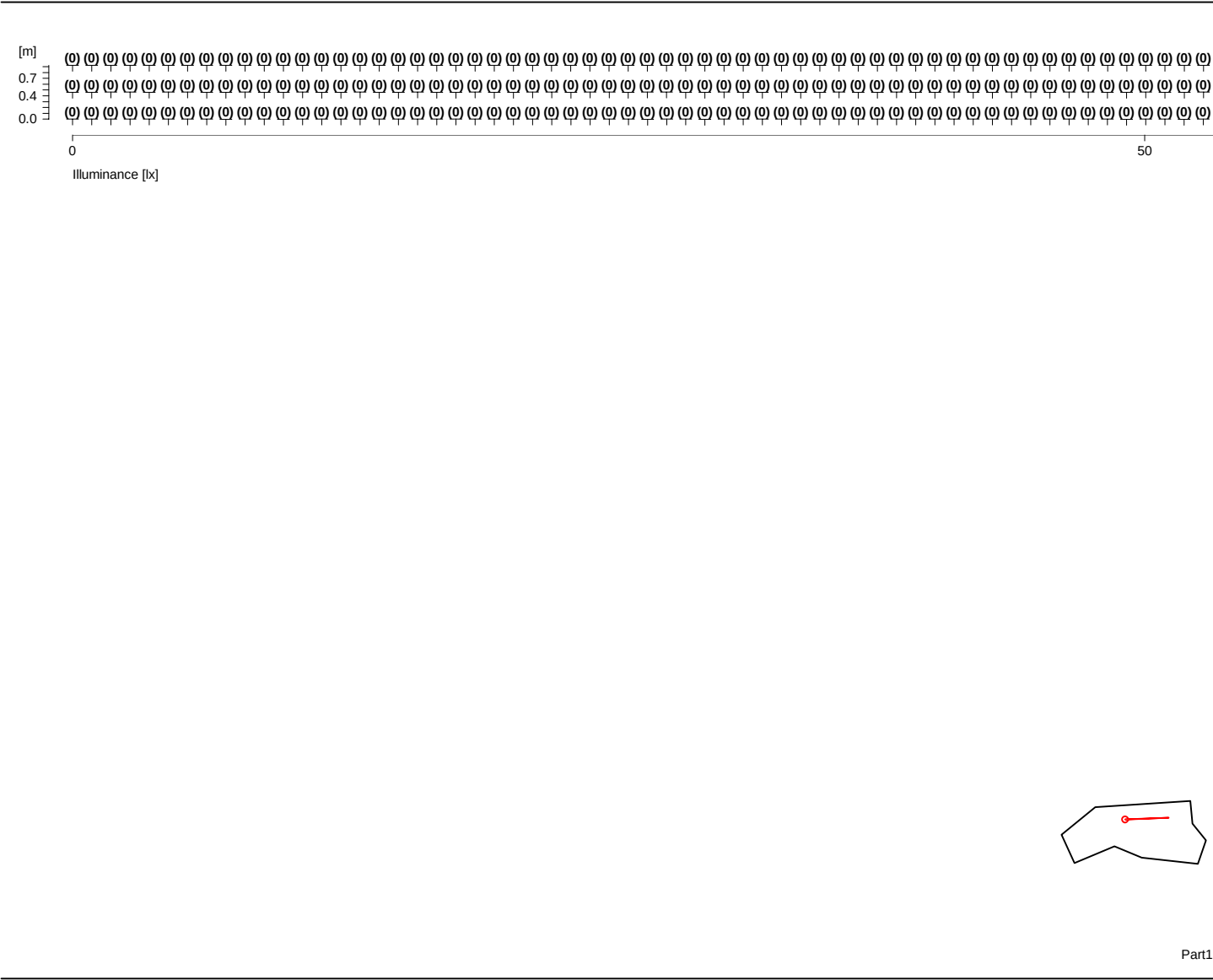
2.3.2 Table, Inverted Sky Glow (E)





2.3 Calculation results, Exterior 1

2.3.3 Table, Path 1 (E)



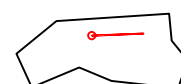
Average illuminance	Em	: 0 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---



2.3.3 Table, Path 1 (E)

[illegible]

100



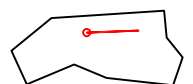
Part2



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2.3.3 Table, Path 1 (E)

150



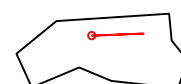
Part3



2.3.3 Table, Path 1 (E)

[illegible]

200



Part4

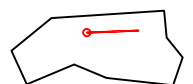


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2.3.3 Table, Path 1 (E)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1

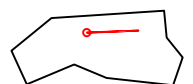
250



Part5



2.3.3 Table, Path 1 (E)

[illegible]

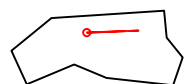
Part6



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2.3.3 Table, Path 1 (E)

350

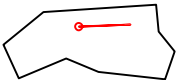


Part7



2.3 Calculation results, Exterior 1

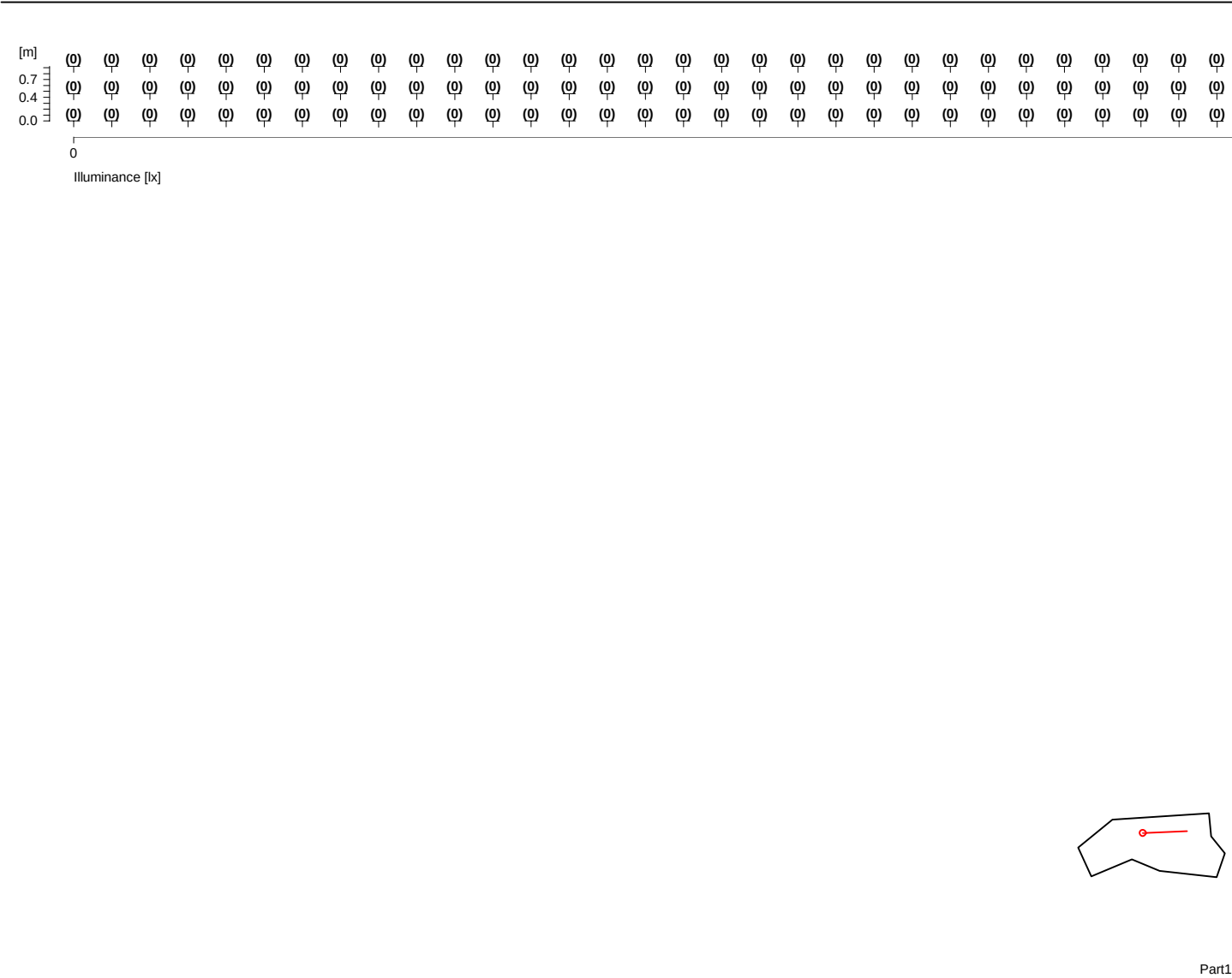
2.3.3 Table, Path 1 (E)





2.3 Calculation results, Exterior 1

2.3.4 Table, Path 2 (E)

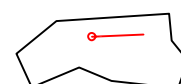


Average illuminance	Em	: 0 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0.02 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---





2.3.4 Table, Path 2 (E)

[illegible]

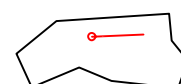
Part3



2.3.4 Table, Path 2 (E)

[illegible]

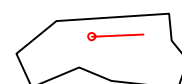
100



Part4



2.3.4 Table, Path 2 (E)

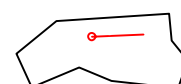
[illegible]

Part5



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2.3.4 Table, Path 2 (E)

[illegible]



2.3.4 Table, Path 2 (E)

[illegible]

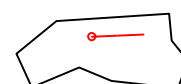
200



Part7



2.3.4 Table, Path 2 (E)

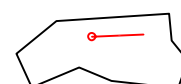
[illegible]

Part8



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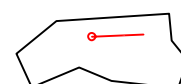
2.3.4 Table, Path 2 (E)

[illegible]



2.3.4 Table, Path 2 (E)

(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)
(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)
(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	)	(	[0.02]	(	)	(	)	(	)	(	)	(	)	(	)

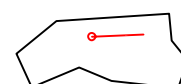


Part10



2.3.4 Table, Path 2 (E)

Figure 1 illustrates a sequence of 300 nodes arranged in two rows. The top row contains 29 nodes, and the bottom row contains 291 nodes. Each node is a circle containing a number. The top row nodes are labeled 0, 0.01, 0.02, ..., 0.98, 0.99. The bottom row nodes are labeled 0.01, 0.02, 0.03, ..., 0.98, 0.99. A horizontal line with an arrow points from the first node in the bottom row to the last node in the bottom row, indicating a sequence. A label '300' is placed below the line, indicating the total number of nodes.





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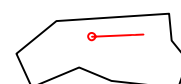
2.3.4 Table, Path 2 (E)

[illegible]

Part12



2.3.4 Table, Path 2 (E)

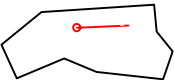
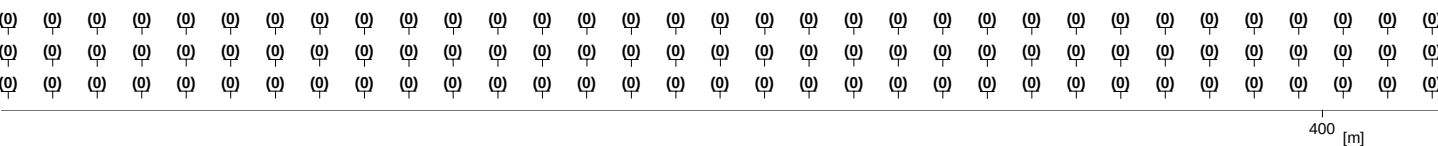
[illegible]

Part13



2.3 Calculation results, Exterior 1

2.3.4 Table, Path 2 (E)

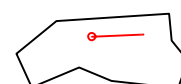


Part14



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2.3.4 Table, Path 2 (E)

[illegible]

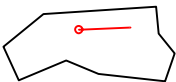
Part15



2.3 Calculation results, Exterior 1

2.3.4 Table, Path 2 (E)

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

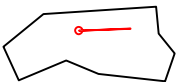
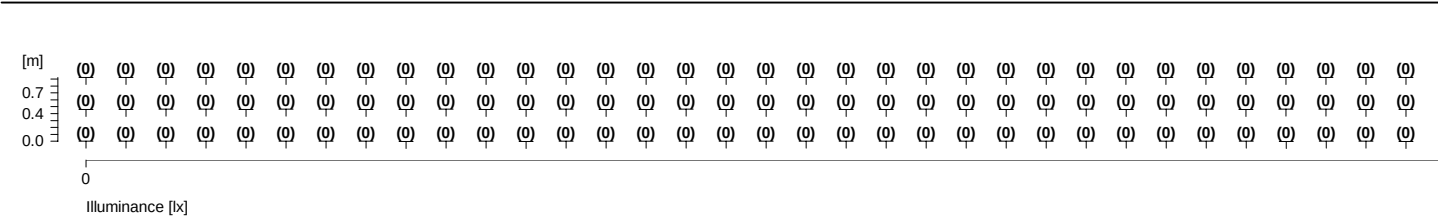


Part16



2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)



Part1

Average illuminance	Em	: 16 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 105 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---

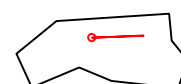


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2.3.5 Table, Path 3 (E)

[illegible]

50

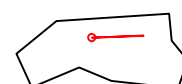


Part2



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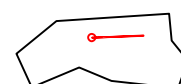
2.3.5 Table, Path 3 (E)

[illegible]

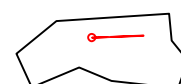
Part3



2.3.5 Table, Path 3 (E)

[illegible]

Part4

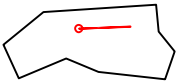
[illegible]



2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

12	27	41	40	23	10	5	4	8	19	33	43	33	15	6	4	5	12	26	41	41	24	10	5	4	8	18	32	44	34	16	7	4	5	11	25
16	32	58	53	31	12	5	5	10	24	44	64	47	20	8	4	6	15	31	57	55	33	13	5	5	9	23	42	64	48	21	8	4	6	14	30
18	34	92	75	39	13	6	5	11	26	54	105	55	23	8	5	7	17	33	89	79	41	14	6	5	10	25	51	104	56	25	9	5	7	16	32



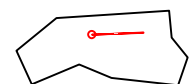
Object : Railway Sidings - PH1 Typical Scenario
 Installation : LED Bollards
 Project number : LD/GCRE/PH1
 Date : 01.03.2023



2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

40	42	25	11	5	4	7	17	31	44	35	17	7	4	5	11	24	39	42	26	11	5	4	7	17	30	43	36	18	7	2	1	1	1	2	3			
55	56	35	13	6	5	9	22	41	64	48	22	9	5	6	14	30	53	56	36	14	6	5	9	21	39	63	48	23	8	3	1	1	1	2	4			
84	82	43	15	6	5	10	24	49	102	57	26	9	5	6	16	31	80	85	45	16	6	5	10	23	46	99	57	27	9	3	1	1	1	2	4			
200																																						



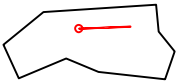
Part7



2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

8	20	33	43	32	15	6	4	6	13	27	41	40	23	10	5	4	8	19	33	43	33	16	7	6	10	23	37	42	28	12	5	3	3	6	15
10	25	45	62	45	19	7	4	7	16	32	59	53	31	12	5	5	10	24	44	63	47	20	9	7	13	28	50	58	39	16	6	3	3	7	19
11	27	58	103	54	22	8	5	7	18	35	92	74	38	13	6	5	11	26	55	104	55	24	9	7	14	29	71	91	49	18	6	3	4	8	22
																																			250

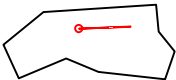




2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

30	43	38	19	8	5	5	12	26	40	41	25	11	5	4	8	18	31	43	35	17	7	4	5	10	23	37	41	27	12	5	4	7	17	31	43
36	62	50	26	10	5	6	15	30	55	55	34	14	6	5	9	22	41	63	48	22	9	4	6	13	28	50	57	38	15	6	5	9	21	39	63
43	99	63	31	11	6	7	17	32	84	81	43	15	6	5	10	24	49	101	57	26	9	5	6	15	29	74	88	48	17	7	5	9	24	47	102

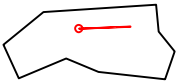




2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

36	17	7	4	5	11	23	37	41	26	11	5	2	2	4	9	22	35	41	29	13	6	4	6	14	29	43	39	21	10	8	14	27	41	40
49	23	9	5	6	13	28	51	56	37	15	5	2	2	5	12	26	47	57	40	17	7	5	7	18	35	62	51	28	12	9	17	32	58	53
59	28	10	5	6	15	30	75	85	46	17	6	3	3	5	13	27	66	90	50	20	7	5	8	21	41	98	66	34	14	10	19	36	92	73
300																																		



Part10

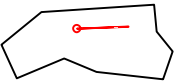


2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

23	9	4	2	3	6	14	28	42	39	21	9	4	4	9	20	34	43	31	14	6	4	6	13	27	41	40	22	10	5	4	8	20	33	42	32
31	12	4	2	3	7	17	34	61	52	29	11	5	5	11	25	46	61	44	19	7	4	7	17	33	59	53	30	12	5	5	10	24	45	61	46
38	13	5	3	3	7	20	39	96	69	35	13	6	6	12	27	61	99	55	22	8	5	8	19	36	93	72	37	13	6	5	11	26	57	100	56

350



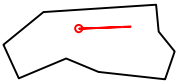
Part11



2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

16	8	7	13	27	41	40	23	9	4	2	3	8	18	32	41	32	15	6	3	2	3	7	17	31	43	35	17	7	4	5	11	24	38	42	27
20	9	8	17	32	58	53	31	12	5	3	4	9	23	42	60	46	20	7	3	2	3	8	21	40	62	49	23	9	5	6	14	29	52	56	37
23	10	9	19	35	92	74	39	13	5	3	4	11	25	53	99	56	24	8	3	2	4	9	24	48	100	59	27	10	5	6	15	30	78	84	46



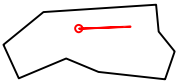
Part12



2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

12	5	4	7	16	30	43	37	18	8	4	5	10	23	37	41	27	12	6	4	7	16	29	43	37	20	9	7	13	26	40	40	24	10	4	2		
15	6	5	8	21	39	62	49	24	10	5	6	13	28	49	55	38	16	7	5	8	20	37	61	50	26	12	9	16	31	56	53	32	13	5	3		
17	7	5	9	23	46	99	60	29	11	5	6	15	29	72	84	48	18	7	5	9	22	44	98	62	31	13	10	18	34	88	75	40	14	5	3		
400 [m]																																					

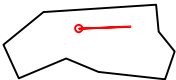




2.3 Calculation results, Exterior 1

2.3.5 Table, Path 3 (E)

3	6	15	29	42	38	20	9	4	5	10	22	35	41	29	13	6	4	6	14	28	41	38	21	8	3	1	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
3	7	19	35	60	50	27	11	5	5	12	26	47	58	41	18	7	5	7	18	34	60	51	28	11	4	1	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
4	8	21	42	96	64	32	12	5	6	13	28	66	91	52	20	8	5	8	20	40	94	67	34	12	4	1	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

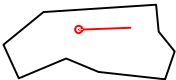
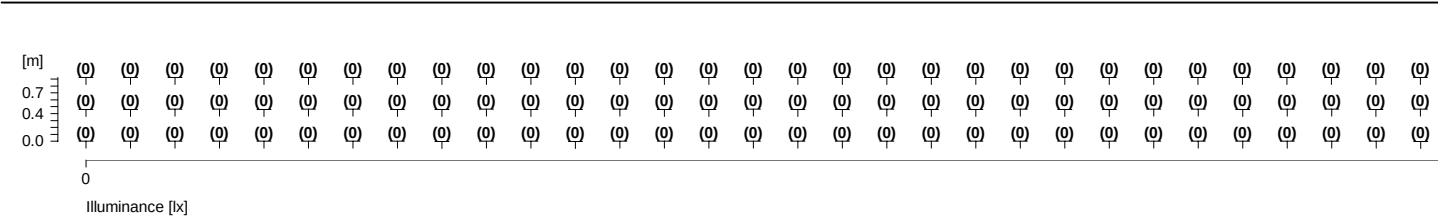


Part14



2.3 Calculation results, Exterior 1

2.3.6 Table, Path 4 (E)

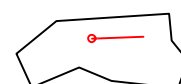


Part1

Average illuminance	Em	: 0 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0.01 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---



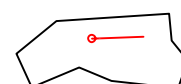
2.3.6 Table, Path 4 (E)

[illegible]



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2.3.6 Table, Path 4 (E)

[illegible]

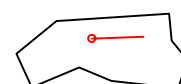
Part3



2.3.6 Table, Path 4 (E)

[illegible]

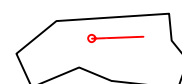
100



Part4



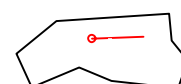
2.3.6 Table, Path 4 (E)

[illegible]

Part5



2.3.6 Table, Path 4 (E)

[illegible]

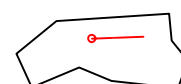
Part6



2.3.6 Table, Path 4 (E)

[illegible]

200



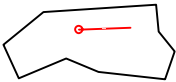
Part7



2.3 Calculation results, Exterior 1

2.3.6 Table, Path 4 (E)

(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0,01)	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	(0)	(0)		
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	(0)	(0)	(0)	
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	[0,01]	(0)	(0)	(0)	(0)

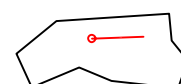




2.3.6 Table, Path 4 (E)

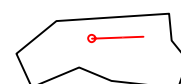
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	[0..01]	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

250





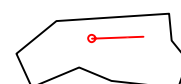
2.3.6 Table, Path 4 (E)

[illegible]

Part10



2.3.6 Table, Path 4 (E)

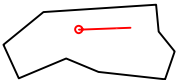




2.3 Calculation results, Exterior 1

2.3.6 Table, Path 4 (E)

(0)	(0)	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

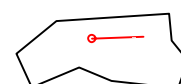


Part12



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2.3.6 Table, Path 4 (E)

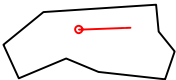
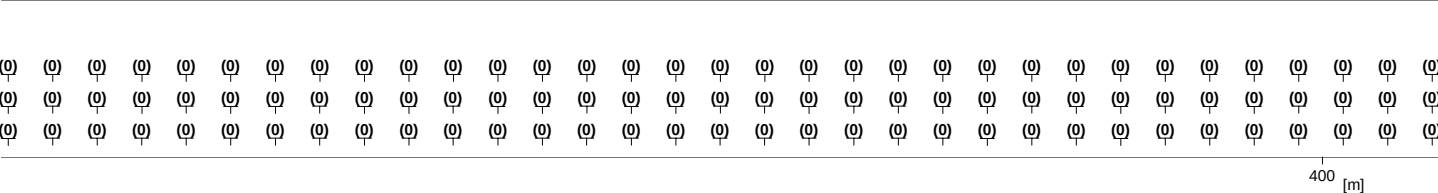
[illegible]

Part13



2.3 Calculation results, Exterior 1

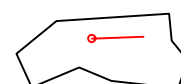
2.3.6 Table, Path 4 (E)



Part14



2.3.6 Table, Path 4 (E)

[illegible]

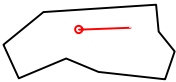
Part15



2.3 Calculation results, Exterior 1

2.3.6 Table, Path 4 (E)

(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

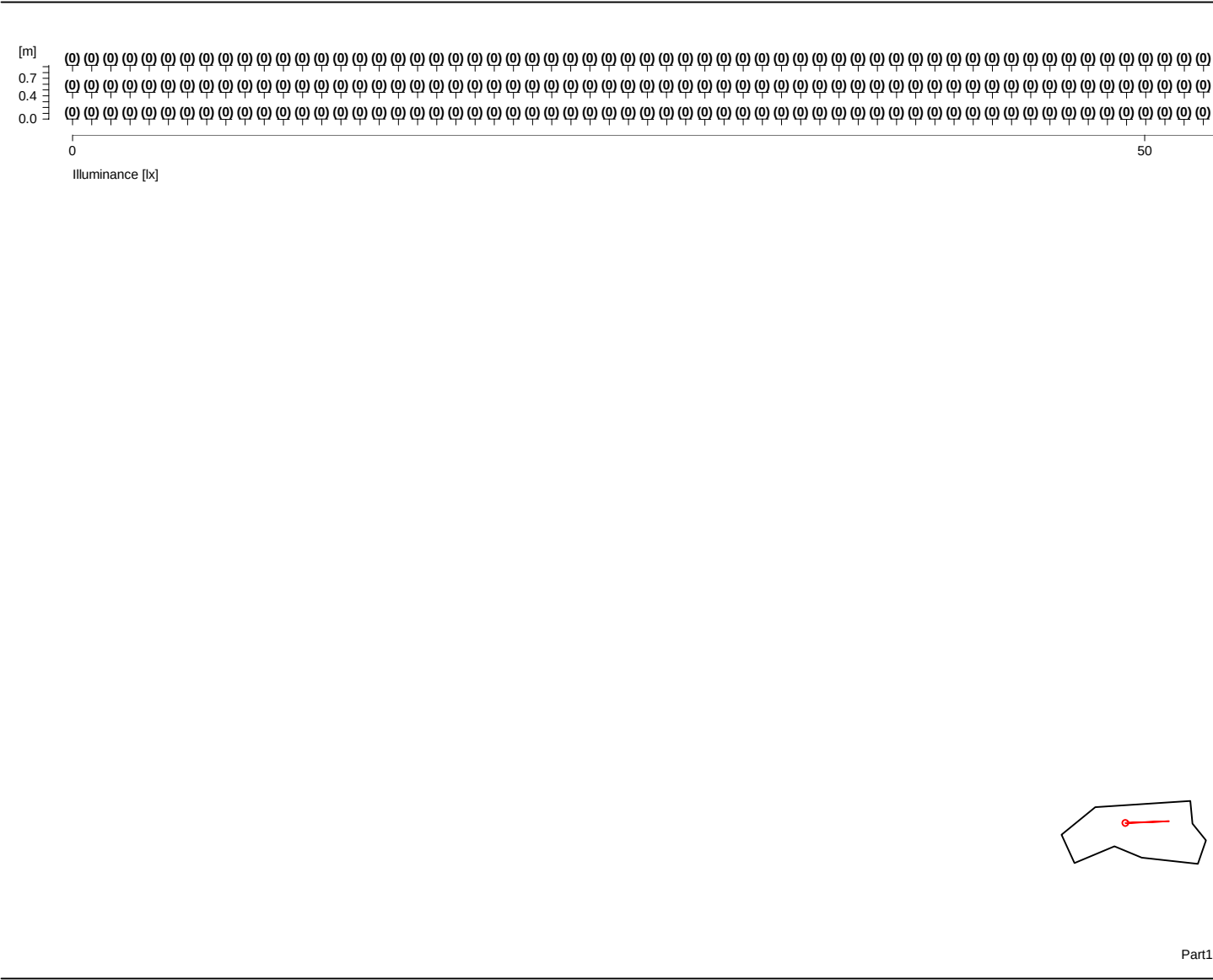


Part16



2.3 Calculation results, Exterior 1

2.3.7 Table, Path 5 (E)



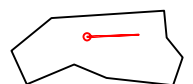
Average illuminance	Em	: 0 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---



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2.3.7 Table, Path 5 (E)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1

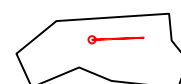




2.3.7 Table, Path 5 (E)

[illegible]

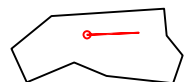
150



Part3



2.3.7 Table, Path 5 (E)

[illegible]

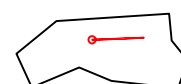
Part4



2.3.7 Table, Path 5 (E)

[illegible]

250

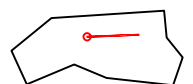


Part5



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2.3.7 Table, Path 5 (E)

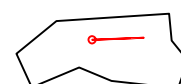




2.3.7 Table, Path 5 (E)

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350

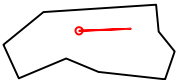


Part7



2.3 Calculation results, Exterior 1

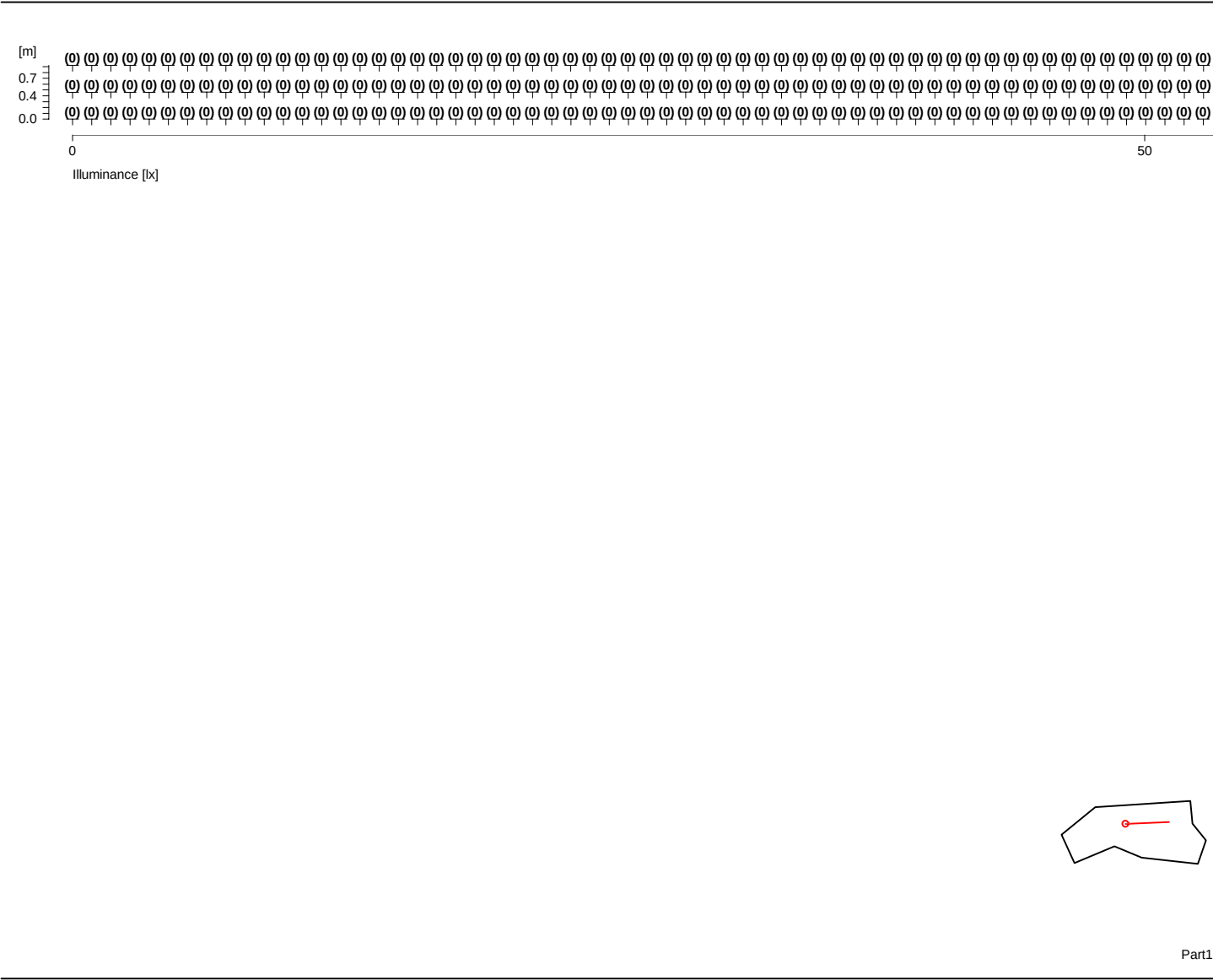
2.3.7 Table, Path 5 (E)





2.3 Calculation results, Exterior 1

2.3.8 Table, Path 6 (E)



Average illuminance	Em	: 0 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---



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2.3.8 Table, Path 6 (E)

100



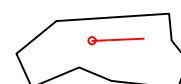
Part2



2.3.8 Table, Path 6 (E)

[illegible]

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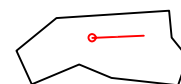
Part3



2.3.8 Table, Path 6 (E)

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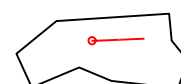
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2.3.8 Table, Path 6 (E)

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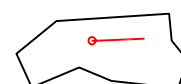
Part5



2.3.8 Table, Path 6 (E)

[illegible]

300



Part6



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2.3.8 Table, Path 6 (E)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1

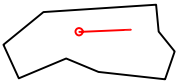


Part7



2.3 Calculation results, Exterior 1

2.3.8 Table, Path 6 (E)

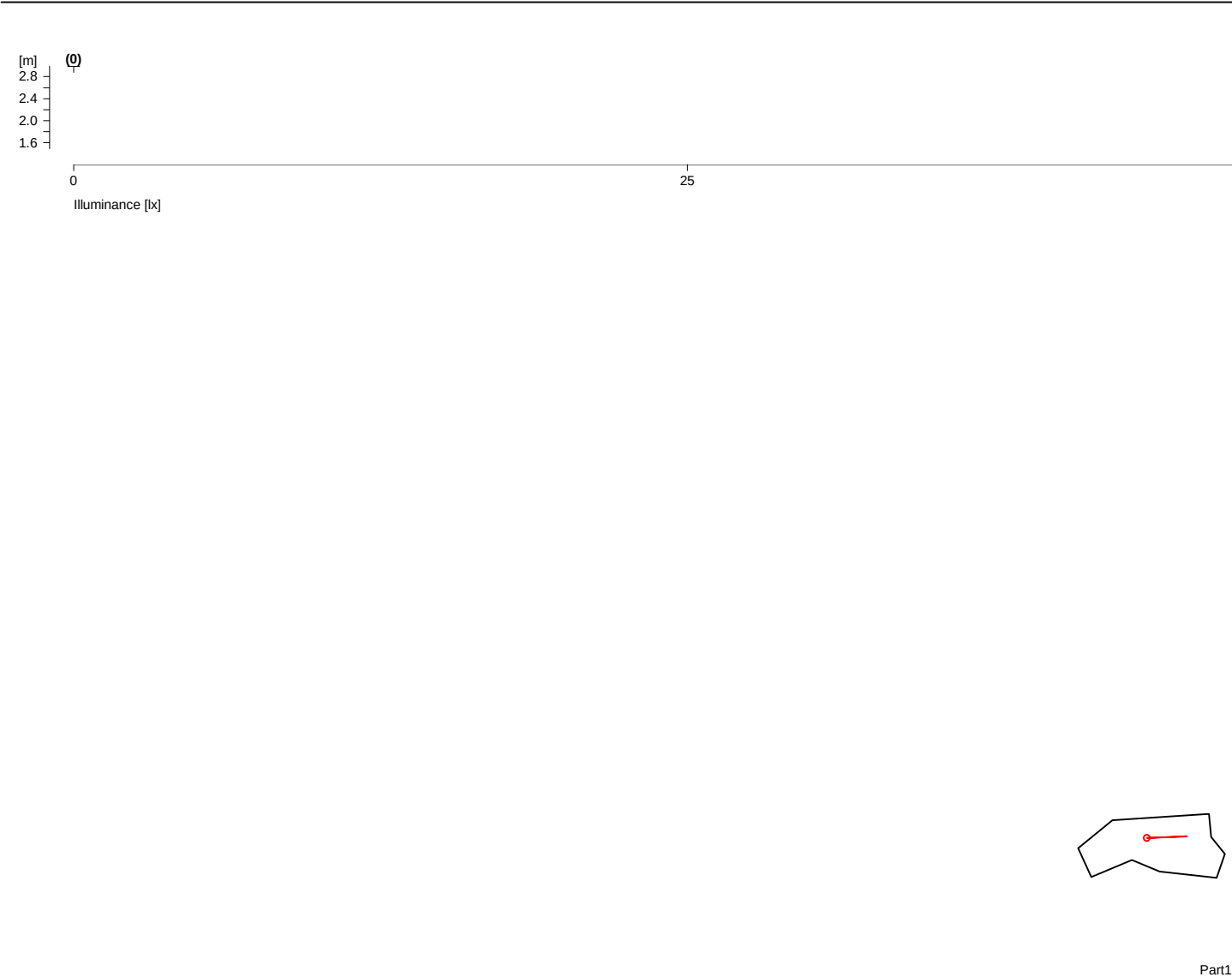


Object : Railway Sidings - PH1 Typical Scenario
Installation : LED Bollards
Project number : LD/GCRE/PH1
Date : 01.03.2023



2.3 Calculation results, Exterior 1

2.3.9 Table, Path 7 (E)



Part1

Average illuminance	Em	: 0 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---

Object : Railway Sidings - PH1 Typical Scenario
Installation : LED Bollards
Project number : LD/GCRE/PH1
Date : 01.03.2023

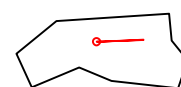


2.3 Calculation results, Exterior 1

2.3.9 Table, Path 7 (E)

50

75

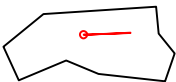


Part2



2.3 Calculation results, Exterior 1

2.3.9 Table, Path 7 (E)

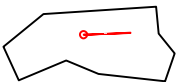
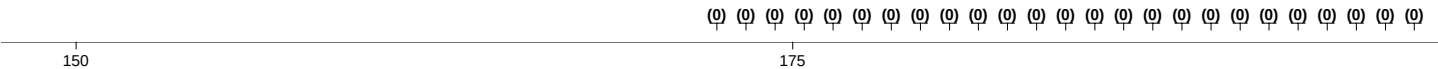


Part3



2.3 Calculation results, Exterior 1

2.3.9 Table, Path 7 (E)

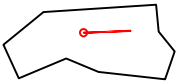
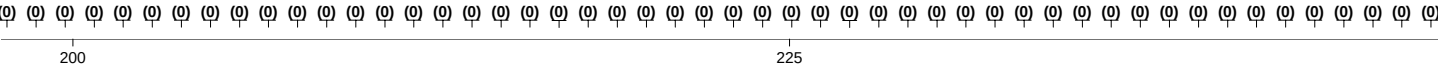


Part4



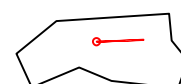
2.3 Calculation results, Exterior 1

2.3.9 Table, Path 7 (E)





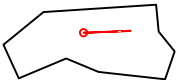
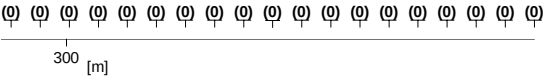
2.3.9 Table, Path 7 (E)





2.3 Calculation results, Exterior 1

2.3.9 Table, Path 7 (E)



Part7