

## Photometric test report

**Family**  
**Highbay 21**

**Order number: 52HN12DA4FMA**  
**EAN: 4069025350008**

**LP number**  
**59723\_128**

**serial**  
**documentation**  
**27.02.2025**

**siteco**

**Version** primary light control with lens, PMMA, housing, white, for Modario® rail, wide distribution

**Lamps** LED 4000 K | CRI ≥ 80

**Controlgear** ECG-DALI

**Rated values** Net luminous flux = 14000 lm  
Power consumption = 72.1 W  
Luminous efficacy = 194.2 lm/W

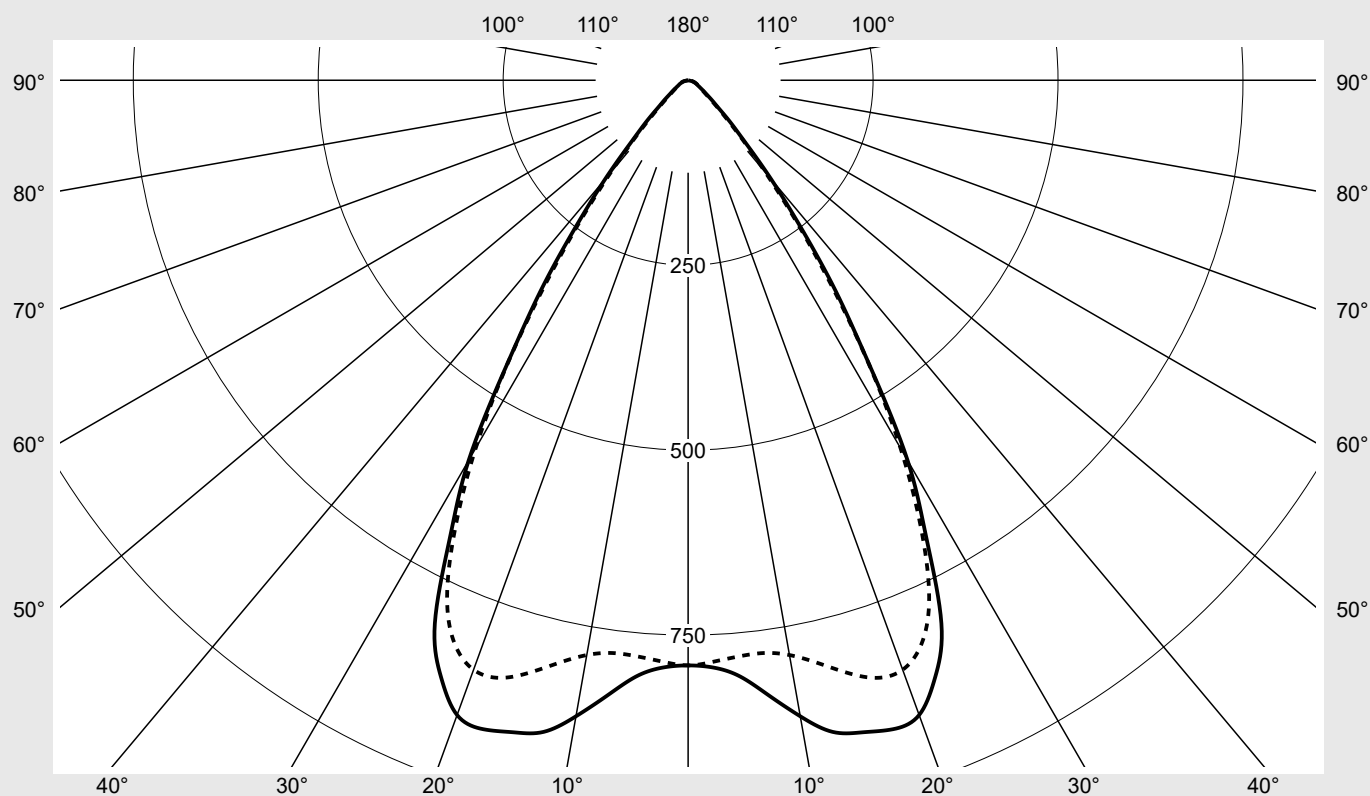


**Luminous intensity in cd/klm**

**C180-0**

**C270-90**

**Imax: 920 cd/klm**



### Classifications

DIN 5040 A 7 0  
CIE N1=90 N2=98 N3=100  
N4=100 N5=100

### Luminaire light output ratios

$\eta_{LB}$  100.0%  
 $\phi_u$  100.0%  
 $\phi_o$  0.0%

### Measurement conditions

DIN EN 13032 and DIN 5032

Photometric test report

|                                          |                                                  |                            |
|------------------------------------------|--------------------------------------------------|----------------------------|
| Family<br>Highbay 21                     | Order number: 52HN12DA4FMA<br>EAN: 4069025350008 | LP number<br>59723_128     |
| Table of values for luminous intensities |                                                  | Maximum luminous intensity |

sitEco

| C-<br>planes | 0,0°<br>180,0°               | 7,5°<br>172,5°<br>187,5°<br>352,5° | 15,0°<br>165,0°<br>195,0°<br>345,0° | 22,5°<br>157,5°<br>202,5°<br>337,5° | 30,0°<br>150,0°<br>210,0°<br>330,0° | 37,5°<br>142,5°<br>217,5°<br>322,5° | 45,0°<br>135,0°<br>225,0°<br>315,0° |
|--------------|------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| γ            | Luminous intensity in cd/klm |                                    |                                     |                                     |                                     |                                     |                                     |
| 0,0°         | 791.0                        | 791.0                              | 791.0                               | 791.0                               | 791.0                               | 791.0                               | 791.0                               |
| 2,5°         | 794.7                        | 794.4                              | 795.0                               | 795.0                               | 794.2                               | 792.8                               | 792.0                               |
| 5,0°         | 809.1                        | 811.4                              | 809.6                               | 807.9                               | 804.8                               | 800.8                               | 797.1                               |
| 7,5°         | 839.0                        | 837.9                              | 835.9                               | 831.3                               | 824.9                               | 817.3                               | 810.1                               |
| 10,0°        | 873.0                        | 873.9                              | 866.7                               | 857.6                               | 846.5                               | 834.6                               | 825.0                               |
| 12,5°        | 902.2                        | 899.8                              | 892.6                               | 881.8                               | 868.2                               | 853.9                               | 842.5                               |
| 15,0°        | 912.4                        | 911.0                              | 905.2                               | 895.6                               | 883.1                               | 869.5                               | 858.7                               |
| 17,5°        | 919.8                        | 918.2                              | 913.1                               | 904.4                               | 892.7                               | 879.7                               | 870.3                               |
| 20,0°        | 913.1                        | 910.4                              | 906.8                               | 900.7                               | 891.6                               | 880.0                               | 870.9                               |
| 22,5°        | 873.0                        | 875.7                              | 872.3                               | 868.8                               | 863.2                               | 854.7                               | 847.2                               |
| 25,0°        | 810.1                        | 803.4                              | 805.6                               | 804.0                               | 800.6                               | 794.9                               | 789.9                               |
| 27,5°        | 697.5                        | 704.9                              | 702.5                               | 701.8                               | 699.9                               | 697.0                               | 693.3                               |
| 30,0°        | 593.2                        | 587.4                              | 585.8                               | 584.9                               | 582.5                               | 580.2                               | 578.9                               |
| 32,5°        | 456.1                        | 464.3                              | 462.1                               | 462.0                               | 458.3                               | 454.5                               | 453.6                               |
| 35,0°        | 347.7                        | 343.4                              | 342.9                               | 343.5                               | 340.5                               | 335.4                               | 333.2                               |
| 37,5°        | 248.6                        | 249.1                              | 246.7                               | 247.3                               | 245.8                               | 241.7                               | 237.9                               |
| 40,0°        | 174.7                        | 169.8                              | 171.0                               | 172.0                               | 172.0                               | 169.5                               | 166.1                               |
| 42,5°        | 115.9                        | 118.7                              | 117.3                               | 118.1                               | 118.9                               | 118.2                               | 116.5                               |
| 45,0°        | 82.2                         | 79.8                               | 80.4                                | 81.1                                | 81.3                                | 81.6                                | 80.9                                |
| 47,5°        | 56.5                         | 57.6                               | 57.2                                | 57.7                                | 57.6                                | 57.9                                | 57.5                                |
| 50,0°        | 42.4                         | 41.3                               | 41.7                                | 42.1                                | 42.1                                | 42.1                                | 42.0                                |
| 52,5°        | 32.0                         | 31.8                               | 31.7                                | 32.2                                | 32.5                                | 32.7                                | 32.7                                |
| 55,0°        | 25.6                         | 24.9                               | 25.0                                | 25.6                                | 26.1                                | 26.6                                | 26.9                                |
| 57,5°        | 20.6                         | 20.3                               | 20.3                                | 20.8                                | 21.4                                | 22.1                                | 22.4                                |
| 60,0°        | 17.2                         | 16.8                               | 16.6                                | 17.2                                | 18.2                                | 18.6                                | 18.9                                |
| 62,5°        | 14.5                         | 14.3                               | 13.9                                | 14.3                                | 15.3                                | 15.8                                | 16.0                                |
| 65,0°        | 13.1                         | 12.5                               | 12.0                                | 12.2                                | 13.0                                | 13.5                                | 13.7                                |
| 67,5°        | 11.1                         | 10.9                               | 10.3                                | 10.4                                | 11.4                                | 11.4                                | 11.5                                |
| 70,0°        | 9.4                          | 9.0                                | 8.7                                 | 8.7                                 | 9.6                                 | 9.3                                 | 9.5                                 |
| 72,5°        | 7.6                          | 7.5                                | 7.3                                 | 7.2                                 | 7.3                                 | 7.4                                 | 7.8                                 |
| 75,0°        | 5.9                          | 5.7                                | 5.6                                 | 5.7                                 | 5.6                                 | 5.7                                 | 6.1                                 |
| 77,5°        | 4.1                          | 4.1                                | 4.1                                 | 4.2                                 | 4.1                                 | 4.2                                 | 4.5                                 |
| 80,0°        | 2.6                          | 2.5                                | 2.5                                 | 2.7                                 | 2.7                                 | 2.8                                 | 2.9                                 |
| 82,5°        | 1.1                          | 1.2                                | 1.2                                 | 1.3                                 | 1.5                                 | 1.5                                 | 1.7                                 |
| 85,0°        | 0.5                          | 0.5                                | 0.5                                 | 0.5                                 | 0.5                                 | 0.5                                 | 0.6                                 |
| 87,5°        | 0.2                          | 0.3                                | 0.3                                 | 0.3                                 | 0.3                                 | 0.3                                 | 0.3                                 |

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|                                          |                                                  |                            |
|------------------------------------------|--------------------------------------------------|----------------------------|
| Family<br>Highbay 21                     | Order number: 52HN12DA4FMA<br>EAN: 4069025350008 | LP number<br>59723_128     |
| Table of values for luminous intensities |                                                  | Maximum luminous intensity |
|                                          |                                                  | siteco                     |

| C-<br>planes | 52,5°<br>127,5°<br>232,5°<br>307,5° | 60,0°<br>120,0°<br>240,0°<br>300,0° | 67,5°<br>112,5°<br>247,5°<br>292,5° | 75,0°<br>105,0°<br>255,0°<br>285,0° | 82,5°<br>97,5°<br>262,5°<br>277,5° | 90,0°<br>270,0° | Phi-zone                | Total<br>Phi-zone |
|--------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------------------------------|-----------------|-------------------------|-------------------|
| γ            | Luminous intensity in cd/klm        |                                     |                                     |                                     |                                    |                 | Luminous flux in lm/klm |                   |
| 0,0°         | 791.0                               | 791.0                               | 791.0                               | 791.0                               | 791.0                              | 791.0           | 1.2                     | 1.2               |
| 2,5°         | 791.3                               | 790.7                               | 790.0                               | 789.4                               | 788.0                              | 786.7           | 9.5                     | 10.7              |
| 5,0°         | 794.2                               | 790.9                               | 788.1                               | 786.0                               | 783.2                              | 781.9           | 19.1                    | 29.7              |
| 7,5°         | 803.7                               | 797.3                               | 791.2                               | 786.8                               | 782.5                              | 780.9           | 29.0                    | 58.7              |
| 10,0°        | 816.7                               | 808.7                               | 801.4                               | 796.1                               | 791.2                              | 788.9           | 39.5                    | 98.2              |
| 12,5°        | 833.0                               | 825.3                               | 818.6                               | 813.6                               | 808.7                              | 806.6           | 50.4                    | 148.6             |
| 15,0°        | 850.7                               | 844.9                               | 836.9                               | 832.9                               | 831.6                              | 829.0           | 61.4                    | 210.0             |
| 17,5°        | 864.2                               | 859.8                               | 856.6                               | 853.6                               | 849.6                              | 847.0           | 72.4                    | 282.5             |
| 20,0°        | 864.8                               | 860.1                               | 856.9                               | 853.9                               | 850.4                              | 848.0           | 82.3                    | 364.7             |
| 22,5°        | 841.4                               | 836.7                               | 833.2                               | 829.7                               | 826.8                              | 824.5           | 89.2                    | 453.9             |
| 25,0°        | 786.0                               | 782.5                               | 779.1                               | 775.6                               | 772.9                              | 771.0           | 91.6                    | 545.4             |
| 27,5°        | 691.2                               | 689.6                               | 687.4                               | 684.8                               | 682.7                              | 681.4           | 87.8                    | 633.3             |
| 30,0°        | 578.6                               | 579.1                               | 578.3                               | 576.4                               | 575.3                              | 574.3           | 79.6                    | 712.9             |
| 32,5°        | 454.5                               | 456.7                               | 457.0                               | 455.4                               | 454.6                              | 454.3           | 67.4                    | 780.2             |
| 35,0°        | 335.0                               | 337.7                               | 338.0                               | 336.6                               | 336.0                              | 336.2           | 53.3                    | 833.5             |
| 37,5°        | 239.3                               | 241.4                               | 241.0                               | 239.6                               | 239.1                              | 239.2           | 40.5                    | 874.0             |
| 40,0°        | 166.2                               | 166.4                               | 164.7                               | 163.3                               | 162.9                              | 163.0           | 29.6                    | 903.6             |
| 42,5°        | 115.3                               | 113.5                               | 111.1                               | 110.0                               | 109.8                              | 109.7           | 21.3                    | 924.9             |
| 45,0°        | 79.0                                | 76.9                                | 75.1                                | 74.3                                | 74.0                               | 73.9            | 15.2                    | 940.1             |
| 47,5°        | 56.0                                | 54.4                                | 53.1                                | 52.3                                | 51.9                               | 51.7            | 11.2                    | 951.3             |
| 50,0°        | 40.9                                | 39.8                                | 38.8                                | 38.0                                | 37.5                               | 37.4            | 8.5                     | 959.8             |
| 52,5°        | 31.8                                | 30.8                                | 29.9                                | 29.1                                | 28.8                               | 28.7            | 6.8                     | 966.6             |
| 55,0°        | 25.9                                | 25.0                                | 24.2                                | 23.4                                | 23.2                               | 23.3            | 5.6                     | 972.3             |
| 57,5°        | 21.7                                | 20.8                                | 20.1                                | 19.5                                | 19.4                               | 19.6            | 4.8                     | 977.0             |
| 60,0°        | 18.6                                | 18.0                                | 17.1                                | 16.6                                | 16.8                               | 17.1            | 4.2                     | 981.2             |
| 62,5°        | 16.0                                | 15.6                                | 14.7                                | 14.4                                | 14.7                               | 15.1            | 3.6                     | 984.8             |
| 65,0°        | 14.0                                | 13.6                                | 12.8                                | 12.7                                | 13.1                               | 13.5            | 3.2                     | 988.1             |
| 67,5°        | 12.0                                | 12.1                                | 11.2                                | 11.1                                | 11.6                               | 12.1            | 2.9                     | 991.0             |
| 70,0°        | 9.8                                 | 10.4                                | 9.7                                 | 9.7                                 | 10.2                               | 10.6            | 2.5                     | 993.4             |
| 72,5°        | 7.8                                 | 8.3                                 | 8.3                                 | 8.3                                 | 8.8                                | 9.1             | 2.1                     | 995.5             |
| 75,0°        | 6.2                                 | 6.3                                 | 6.8                                 | 6.9                                 | 7.3                                | 7.6             | 1.6                     | 997.1             |
| 77,5°        | 4.6                                 | 4.9                                 | 5.3                                 | 5.5                                 | 5.8                                | 6.0             | 1.3                     | 998.4             |
| 80,0°        | 3.1                                 | 3.4                                 | 3.7                                 | 4.0                                 | 4.2                                | 4.4             | 0.9                     | 999.2             |
| 82,5°        | 1.8                                 | 2.1                                 | 2.4                                 | 2.6                                 | 2.8                                | 2.9             | 0.5                     | 999.7             |
| 85,0°        | 0.7                                 | 1.0                                 | 1.2                                 | 1.3                                 | 1.6                                | 1.6             | 0.2                     | 1000.0            |
| 87,5°        | 0.3                                 | 0.3                                 | 0.3                                 | 0.3                                 | 0.4                                | 0.4             | 0.1                     | 1000.0            |

Photometric test report

| Family<br>Highbay 21         |     |                     | Order number: 52HN12DA4FMA<br>EAN: 4069025350008 |      |      |      |                    |      | LP number<br>59723_128 |      |      |
|------------------------------|-----|---------------------|--------------------------------------------------|------|------|------|--------------------|------|------------------------|------|------|
| UGR-Table                    |     |                     | Standard room                                    |      |      |      |                    |      | siteco                 |      |      |
| Reflection factor of ceiling | 0.7 | 0.7                 | 0.5                                              | 0.5  | 0.3  | 0.7  | 0.7                | 0.5  | 0.5                    | 0.3  |      |
| Reflection factor of walls   | 0.5 | 0.3                 | 0.5                                              | 0.3  | 0.3  | 0.5  | 0.3                | 0.5  | 0.3                    | 0.3  |      |
| Reflection factor of floor   | 0.2 | 0.2                 | 0.2                                              | 0.2  | 0.2  | 0.2  | 0.2                | 0.2  | 0.2                    | 0.2  |      |
| Room dimensions              |     | View crosswise (C0) |                                                  |      |      |      | View endwise (C90) |      |                        |      |      |
| x                            | y   |                     |                                                  |      |      |      |                    |      |                        |      |      |
| 2H                           | 2H  | 18.1                | 19.4                                             | 18.5 | 19.7 | 20.0 | 17.9               | 19.2 | 18.3                   | 19.5 | 19.8 |
|                              | 3H  | 18.2                | 19.2                                             | 18.5 | 19.6 | 19.9 | 18.0               | 19.1 | 18.4                   | 19.4 | 19.8 |
|                              | 4H  | 18.2                | 19.2                                             | 18.6 | 19.5 | 19.9 | 18.1               | 19.1 | 18.5                   | 19.4 | 19.8 |
|                              | 6H  | 18.1                | 19.0                                             | 18.6 | 19.4 | 19.8 | 18.1               | 19.0 | 18.5                   | 19.4 | 19.8 |
|                              | 8H  | 18.2                | 19.0                                             | 18.7 | 19.4 | 19.8 | 18.2               | 19.0 | 18.7                   | 19.4 | 19.8 |
|                              | 12H | 18.2                | 18.9                                             | 18.6 | 19.3 | 19.7 | 18.2               | 18.9 | 18.7                   | 19.3 | 19.7 |
| 4H                           | 2H  | 18.0                | 19.0                                             | 18.4 | 19.4 | 19.7 | 17.9               | 18.8 | 18.2                   | 19.2 | 19.6 |
|                              | 3H  | 18.1                | 18.9                                             | 18.5 | 19.3 | 19.7 | 18.0               | 18.8 | 18.4                   | 19.2 | 19.6 |
|                              | 4H  | 18.1                | 18.9                                             | 18.6 | 19.3 | 19.7 | 18.1               | 18.8 | 18.5                   | 19.2 | 19.7 |
|                              | 6H  | 18.1                | 18.7                                             | 18.6 | 19.2 | 19.7 | 18.2               | 18.8 | 18.6                   | 19.2 | 19.7 |
|                              | 8H  | 18.1                | 18.7                                             | 18.6 | 19.1 | 19.6 | 18.2               | 18.7 | 18.7                   | 19.2 | 19.7 |
|                              | 12H | 18.1                | 18.6                                             | 18.6 | 19.0 | 19.5 | 18.3               | 18.7 | 18.8                   | 19.1 | 19.6 |
| 8H                           | 4H  | 18.1                | 18.6                                             | 18.6 | 19.1 | 19.6 | 18.0               | 18.6 | 18.5                   | 19.0 | 19.5 |
|                              | 6H  | 18.1                | 18.5                                             | 18.6 | 19.0 | 19.5 | 18.1               | 18.6 | 18.6                   | 19.1 | 19.6 |
|                              | 8H  | 18.0                | 18.4                                             | 18.6 | 18.9 | 19.5 | 18.2               | 18.6 | 18.7                   | 19.1 | 19.6 |
|                              | 12H | 18.0                | 18.3                                             | 18.6 | 18.8 | 19.4 | 18.2               | 18.5 | 18.7                   | 19.0 | 19.6 |
| 12H                          | 4H  | 18.1                | 18.5                                             | 18.6 | 19.0 | 19.5 | 18.1               | 18.5 | 18.6                   | 19.0 | 19.5 |
|                              | 6H  | 18.1                | 18.4                                             | 18.6 | 18.9 | 19.5 | 18.2               | 18.5 | 18.7                   | 19.0 | 19.5 |
|                              | 8H  | 18.1                | 18.3                                             | 18.6 | 18.9 | 19.4 | 18.2               | 18.5 | 18.7                   | 19.0 | 19.5 |

|                 |                |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                 |
|-----------------|----------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------|
| Luminance table |                | Max. for $\gamma \geq 65^\circ$     |                                     | Photometric dimensions in mm:       |                                     |                                     |                                     | L = 426<br>B = 264                  |                                     |                 |
| C-planes        | 0,0°<br>180,0° | 10,0°<br>170,0°<br>190,0°<br>350,0° | 20,0°<br>160,0°<br>200,0°<br>340,0° | 30,0°<br>150,0°<br>210,0°<br>330,0° | 40,0°<br>140,0°<br>220,0°<br>320,0° | 50,0°<br>130,0°<br>230,0°<br>310,0° | 60,0°<br>120,0°<br>240,0°<br>300,0° | 70,0°<br>110,0°<br>250,0°<br>290,0° | 80,0°<br>100,0°<br>260,0°<br>280,0° | 90,0°<br>270,0° |
|                 |                | Luminance in cd/m²                  |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                 |
| $\gamma$        |                |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                 |
| 45,0°           | 14476.2        | 14028.1                             | 14239.0                             | 14318.1                             | 14347.6                             | 14028.5                             | 13530.1                             | 13159.9                             | 13037.9                             | 13002.0         |
| 50,0°           | 8212.1         | 7985.8                              | 8135.3                              | 8154.0                              | 8152.9                              | 7998.3                              | 7711.1                              | 7454.8                              | 7292.0                              | 7234.9          |
| 55,0°           | 5559.9         | 5397.2                              | 5517.3                              | 5658.2                              | 5810.2                              | 5698.9                              | 5416.9                              | 5190.6                              | 5049.2                              | 5066.4          |
| 60,0°           | 4277.5         | 4154.2                              | 4224.2                              | 4522.3                              | 4664.4                              | 4656.7                              | 4485.9                              | 4211.2                              | 4162.2                              | 4249.4          |
| 65,0°           | 3848.9         | 3625.2                              | 3547.5                              | 3839.5                              | 4016.1                              | 4130.7                              | 4014.5                              | 3744.9                              | 3813.7                              | 3984.1          |
| 70,0°           | 3435.5         | 3244.6                              | 3139.3                              | 3477.3                              | 3401.2                              | 3528.9                              | 3775.8                              | 3513.7                              | 3653.1                              | 3872.3          |
| 75,0°           | 2825.2         | 2727.3                              | 2739.9                              | 2712.2                              | 2795.6                              | 2954.8                              | 3045.5                              | 3316.6                              | 3445.0                              | 3655.4          |
| 80,0°           | 1842.4         | 1783.4                              | 1897.5                              | 1968.5                              | 2001.4                              | 2187.7                              | 2435.9                              | 2754.9                              | 2960.8                              | 3134.9          |
| 85,0°           | 719.9          | 701.8                               | 713.5                               | 717.0                               | 784.0                               | 988.2                               | 1392.6                              | 1734.1                              | 2126.4                              | 2318.1          |

Photometric test report

Family  
Highbay 21

Order number: 52HN12DA4FMA  
EAN: 4069025350008

LP number  
59723\_128

Luminance values in cd/m²

γ 65°

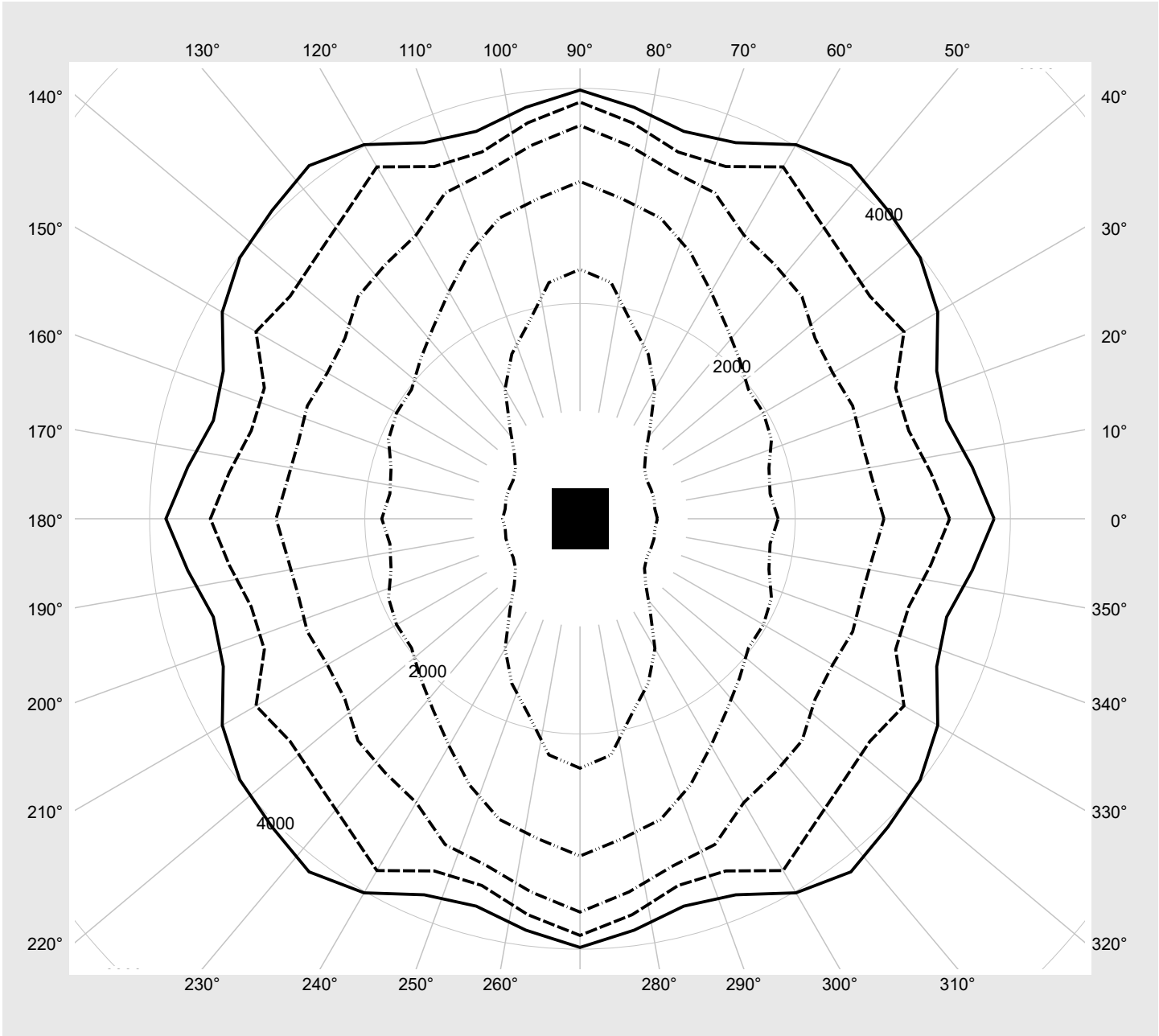
γ 70°

γ 75°

γ 80°

γ 85°

siteco



Photometric test report

|                      |                                                  |                                 |
|----------------------|--------------------------------------------------|---------------------------------|
| Family<br>Highbay 21 | Order number: 52HN12DA4FMA<br>EAN: 4069025350008 | LP number<br>59723_128          |
| Dimming levels table |                                                  | environmental temperature: 25°C |
|                      |                                                  | siteco                          |

| Luminous flux<br>% | Dimming level<br>linear | Dimming level<br>logarithmic | Luminous flux<br>[lm] | Power consumption<br>[W] |
|--------------------|-------------------------|------------------------------|-----------------------|--------------------------|
| 100                | ----                    | ----                         | ----                  | ----                     |
| 95                 | 241                     | 252                          | 13303                 | 68.3                     |
| 90                 | 228                     | 250                          | 12606                 | 64.7                     |
| 85                 | 215                     | 248                          | 11901                 | 61.0                     |
| 80                 | 202                     | 246                          | 11197                 | 57.4                     |
| 75                 | 189                     | 243                          | 10494                 | 53.5                     |
| 70                 | 176                     | 241                          | 9782                  | 49.9                     |
| 65                 | 164                     | 238                          | 9126                  | 46.6                     |
| 60                 | 151                     | 235                          | 8413                  | 42.9                     |
| 55                 | 138                     | 232                          | 7695                  | 39.3                     |
| 50                 | 125                     | 228                          | 6976                  | 35.7                     |
| 45                 | 113                     | 224                          | 6313                  | 32.4                     |
| 40                 | 100                     | 220                          | 5591                  | 28.8                     |
| 35                 | 88                      | 215                          | 4919                  | 25.5                     |
| 30                 | 75                      | 209                          | 4192                  | 22.0                     |
| 25                 | 63                      | 203                          | 3520                  | 18.7                     |
| 20                 | 50                      | 194                          | 2785                  | 15.1                     |
| 15                 | 38                      | 184                          | 2109                  | 11.9                     |
| 10                 | 25                      | 169                          | 1374                  | 8.4                      |
| 5                  | 13                      | 145                          | 690                   | 4.9                      |
| 2                  | 5                       | 110                          | 235                   | 2.5                      |