

Lichttechnischer Prüfbefund

**Familie**  
**Highbay 11**

**Bestell-Nr.: 51HN11DB4QMA**  
**EAN: 4069025349767**

**LP-Nummer**  
**59711\_5**



**Ausführung** primäre Lichtlenkung mit Linse, PMMA, Gehäuse, weiß, für Modario® Schiene, eng strahlend  
  
**Bestückung** LED 4000 K | CRI ≥ 80  
**Betriebsgerät** EVG-DALI  
**Bemessungswerte** Nettolichtstrom = 36000 lm  
Systemleistung = 177.7 W  
Lichtausbeute = 202.6 lm/W

**Seriendokumentation**  
**29.01.2025**





| Klassifizierungen |                    | Leuchtenbetriebswirkungsgrade |        |
|-------------------|--------------------|-------------------------------|--------|
| DIN 5040          | A 7 0              | ηLB                           | 100,0% |
| CIE               | N1=85 N2=97 N3=100 | φ <sub>u</sub>                | 100,0% |
|                   | N4=100 N5=100      | φ <sub>o</sub>                | 0,0%   |

| Messbedingungen           |
|---------------------------|
| DIN EN 13032 und DIN 5032 |

Lichttechnischer Prüfbefund

|                                 |                                                 |                      |
|---------------------------------|-------------------------------------------------|----------------------|
| Familie<br>Highbay 11           | Bestell-Nr.: 51HN11DB4QMA<br>EAN: 4069025349767 | LP-Nummer<br>59711_5 |
| Wertetabelle Lichtstärkemessung | Maximale Lichtstärke                            | siteco               |

| C-<br>Ebenen | 0°<br>180°            | 15°<br>165°<br>195°<br>345° | 30°<br>150°<br>210°<br>330° | 45°<br>135°<br>225°<br>315° | 60°<br>120°<br>240°<br>300° | 75°<br>105°<br>255°<br>285° | 90°<br>270° | Phi-Zone             | Summe<br>Phi-Zone |
|--------------|-----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|----------------------|-------------------|
| γ            | Lichtstärke in cd/klm |                             |                             |                             |                             |                             |             | Lichtstrom in lm/klm |                   |
| 0,0°         | 2678.6                | 2678.6                      | 2678.6                      | 2678.6                      | 2678.6                      | 2678.6                      | 2678.6      | 4.0                  | 4.0               |
| 2,5°         | 2608.0                | 2619.4                      | 2619.4                      | 2616.5                      | 2617.6                      | 2616.2                      | 2606.1      | 31.3                 | 35.3              |
| 5,0°         | 2420.1                | 2415.7                      | 2414.1                      | 2408.4                      | 2406.6                      | 2402.3                      | 2391.7      | 57.6                 | 92.8              |
| 7,5°         | 2113.4                | 2116.1                      | 2112.3                      | 2103.0                      | 2097.6                      | 2090.5                      | 2079.6      | 75.2                 | 168.1             |
| 10,0°        | 1780.1                | 1768.7                      | 1762.7                      | 1751.6                      | 1743.6                      | 1735.2                      | 1724.7      | 83.4                 | 251.5             |
| 12,5°        | 1410.1                | 1409.3                      | 1404.7                      | 1395.9                      | 1388.1                      | 1380.5                      | 1373.1      | 82.8                 | 334.3             |
| 15,0°        | 1106.5                | 1097.8                      | 1095.0                      | 1089.4                      | 1083.1                      | 1078.4                      | 1073.9      | 77.3                 | 411.5             |
| 17,5°        | 830.1                 | 840.2                       | 835.5                       | 831.1                       | 826.6                       | 824.9                       | 824.1       | 68.5                 | 480.0             |
| 20,0°        | 671.1                 | 661.9                       | 651.8                       | 643.2                       | 639.9                       | 639.4                       | 641.0       | 60.8                 | 540.8             |
| 22,5°        | 531.9                 | 530.5                       | 514.2                       | 498.9                       | 497.0                       | 496.6                       | 496.8       | 53.4                 | 594.2             |
| 25,0°        | 450.6                 | 441.3                       | 420.6                       | 401.3                       | 399.0                       | 395.8                       | 392.4       | 47.9                 | 642.1             |
| 27,5°        | 370.8                 | 368.7                       | 351.4                       | 331.7                       | 326.8                       | 321.1                       | 316.0       | 43.1                 | 685.2             |
| 30,0°        | 320.4                 | 312.1                       | 300.8                       | 284.1                       | 278.0                       | 270.2                       | 264.7       | 39.7                 | 724.9             |
| 32,5°        | 271.0                 | 266.8                       | 259.0                       | 245.6                       | 238.0                       | 229.0                       | 224.7       | 36.5                 | 761.4             |
| 35,0°        | 235.8                 | 228.9                       | 222.7                       | 210.5                       | 201.6                       | 193.0                       | 191.7       | 33.3                 | 794.7             |
| 37,5°        | 204.4                 | 197.8                       | 191.5                       | 181.1                       | 172.0                       | 164.3                       | 162.4       | 30.3                 | 825.0             |
| 40,0°        | 176.7                 | 170.7                       | 163.1                       | 154.3                       | 146.1                       | 138.3                       | 135.6       | 27.3                 | 852.2             |
| 42,5°        | 147.6                 | 145.5                       | 138.6                       | 130.6                       | 123.2                       | 115.8                       | 113.3       | 24.2                 | 876.4             |
| 45,0°        | 126.0                 | 121.8                       | 116.3                       | 109.0                       | 102.0                       | 95.3                        | 93.2        | 21.1                 | 897.6             |
| 47,5°        | 103.2                 | 101.5                       | 97.1                        | 90.9                        | 84.6                        | 78.4                        | 76.7        | 18.3                 | 915.9             |
| 50,0°        | 85.9                  | 82.9                        | 79.4                        | 74.6                        | 69.1                        | 63.7                        | 61.9        | 15.5                 | 931.4             |
| 52,5°        | 69.0                  | 67.2                        | 64.5                        | 61.0                        | 56.2                        | 51.6                        | 49.7        | 13.0                 | 944.4             |
| 55,0°        | 55.6                  | 54.1                        | 52.2                        | 49.5                        | 45.7                        | 41.7                        | 40.0        | 10.9                 | 955.3             |
| 57,5°        | 43.6                  | 43.1                        | 41.8                        | 39.8                        | 37.0                        | 33.6                        | 32.2        | 9.0                  | 964.3             |
| 60,0°        | 33.2                  | 33.3                        | 33.9                        | 32.4                        | 30.5                        | 27.5                        | 26.1        | 7.4                  | 971.7             |
| 62,5°        | 25.9                  | 26.0                        | 27.0                        | 26.2                        | 25.1                        | 22.4                        | 21.3        | 6.1                  | 977.8             |
| 65,0°        | 21.6                  | 21.2                        | 21.7                        | 21.3                        | 20.9                        | 18.8                        | 17.7        | 5.1                  | 982.9             |
| 67,5°        | 17.0                  | 17.1                        | 17.8                        | 17.0                        | 17.3                        | 15.6                        | 14.8        | 4.3                  | 987.2             |
| 70,0°        | 13.5                  | 13.4                        | 14.4                        | 13.6                        | 14.1                        | 13.0                        | 12.4        | 3.5                  | 990.7             |
| 72,5°        | 11.0                  | 10.8                        | 10.9                        | 10.9                        | 11.0                        | 10.7                        | 10.6        | 2.8                  | 993.5             |
| 75,0°        | 9.0                   | 8.4                         | 8.4                         | 8.3                         | 8.6                         | 9.0                         | 8.9         | 2.3                  | 995.8             |
| 77,5°        | 6.6                   | 6.4                         | 6.2                         | 6.2                         | 6.6                         | 7.3                         | 7.4         | 1.8                  | 997.5             |
| 80,0°        | 4.4                   | 4.2                         | 4.1                         | 4.2                         | 4.7                         | 5.7                         | 5.8         | 1.3                  | 998.8             |
| 82,5°        | 2.0                   | 2.1                         | 2.2                         | 2.4                         | 3.0                         | 3.9                         | 4.1         | 0.8                  | 999.6             |
| 85,0°        | 0.8                   | 0.8                         | 0.8                         | 1.0                         | 1.5                         | 2.2                         | 2.4         | 0.4                  | 999.9             |
| 87,5°        | 0.3                   | 0.3                         | 0.3                         | 0.3                         | 0.3                         | 0.4                         | 0.5         | 0.1                  | 1000.0            |
| 90,0°        | 0.0                   | 0.0                         | 0.0                         | 0.0                         | 0.0                         | 0.0                         | 0.0         | 0.0                  | 1000.0            |

Lichttechnischer Prüfbefund

|                       |     |                                     |                                                 |      |      |      |                                       |      |                      |      |      |
|-----------------------|-----|-------------------------------------|-------------------------------------------------|------|------|------|---------------------------------------|------|----------------------|------|------|
| Familie<br>Highbay 11 |     |                                     | Bestell-Nr.: 51HN11DB4QMA<br>EAN: 4069025349767 |      |      |      |                                       |      | LP-Nummer<br>59711_5 |      |      |
| UGR-Tabelle           |     |                                     | Standardraum                                    |      |      |      |                                       |      | siteco               |      |      |
| Reflexionsgrad Decke  |     | 0,7                                 | 0,7                                             | 0,5  | 0,5  | 0,3  | 0,7                                   | 0,7  | 0,5                  | 0,5  | 0,3  |
| Reflexionsgrad Wände  |     | 0,5                                 | 0,3                                             | 0,5  | 0,3  | 0,3  | 0,5                                   | 0,3  | 0,5                  | 0,3  | 0,3  |
| Reflexionsgrad Boden  |     | 0,2                                 | 0,2                                             | 0,2  | 0,2  | 0,2  | 0,2                                   | 0,2  | 0,2                  | 0,2  | 0,2  |
| Raumabmessungen       |     | Blickrichtung quer zur Leuchte (C0) |                                                 |      |      |      | Blickrichtung längs zur Leuchte (C90) |      |                      |      |      |
| x                     | y   |                                     |                                                 |      |      |      |                                       |      |                      |      |      |
| 2H                    | 2H  | 19,5                                | 20,7                                            | 19,9 | 21,0 | 21,3 | 18,3                                  | 19,5 | 18,7                 | 19,8 | 20,1 |
|                       | 3H  | 19,8                                | 20,8                                            | 20,1 | 21,1 | 21,5 | 18,6                                  | 19,7 | 19,0                 | 20,0 | 20,4 |
|                       | 4H  | 19,8                                | 20,8                                            | 20,2 | 21,1 | 21,5 | 18,8                                  | 19,7 | 19,2                 | 20,1 | 20,4 |
|                       | 6H  | 19,9                                | 20,7                                            | 20,3 | 21,1 | 21,5 | 18,9                                  | 19,7 | 19,3                 | 20,1 | 20,5 |
|                       | 8H  | 20,0                                | 20,7                                            | 20,4 | 21,0 | 21,5 | 19,0                                  | 19,7 | 19,4                 | 20,1 | 20,5 |
|                       | 12H | 19,9                                | 20,6                                            | 20,3 | 21,0 | 21,4 | 19,0                                  | 19,7 | 19,5                 | 20,1 | 20,5 |
| 4H                    | 2H  | 19,6                                | 20,5                                            | 20,0 | 20,9 | 21,3 | 18,5                                  | 19,5 | 18,9                 | 19,8 | 20,2 |
|                       | 3H  | 19,9                                | 20,7                                            | 20,3 | 21,1 | 21,5 | 18,9                                  | 19,7 | 19,4                 | 20,1 | 20,5 |
|                       | 4H  | 20,0                                | 20,7                                            | 20,5 | 21,1 | 21,6 | 19,1                                  | 19,8 | 19,6                 | 20,2 | 20,7 |
|                       | 6H  | 20,1                                | 20,7                                            | 20,6 | 21,1 | 21,6 | 19,3                                  | 19,9 | 19,8                 | 20,3 | 20,8 |
|                       | 8H  | 20,1                                | 20,6                                            | 20,6 | 21,1 | 21,5 | 19,4                                  | 19,9 | 19,9                 | 20,4 | 20,9 |
|                       | 12H | 20,1                                | 20,5                                            | 20,6 | 21,0 | 21,5 | 19,5                                  | 19,9 | 20,0                 | 20,4 | 20,9 |
| 8H                    | 4H  | 20,0                                | 20,5                                            | 20,5 | 21,0 | 21,5 | 19,2                                  | 19,7 | 19,6                 | 20,1 | 20,6 |
|                       | 6H  | 20,1                                | 20,5                                            | 20,6 | 21,0 | 21,5 | 19,4                                  | 19,8 | 19,9                 | 20,3 | 20,8 |
|                       | 8H  | 20,1                                | 20,4                                            | 20,6 | 20,9 | 21,5 | 19,5                                  | 19,8 | 20,0                 | 20,3 | 20,9 |
|                       | 12H | 20,0                                | 20,3                                            | 20,6 | 20,9 | 21,4 | 19,6                                  | 19,9 | 20,1                 | 20,4 | 20,9 |
| 12H                   | 4H  | 20,0                                | 20,4                                            | 20,5 | 20,9 | 21,4 | 19,1                                  | 19,6 | 19,6                 | 20,0 | 20,5 |
|                       | 6H  | 20,1                                | 20,4                                            | 20,6 | 20,9 | 21,4 | 19,4                                  | 19,7 | 19,9                 | 20,2 | 20,7 |
|                       | 8H  | 20,1                                | 20,4                                            | 20,6 | 20,9 | 21,4 | 19,5                                  | 19,8 | 20,0                 | 20,3 | 20,8 |

| Leuchtdichten-Tabelle |                       | Max. für $\gamma \geq 65^\circ$ |                             | Lichttechnische<br>Abmessungen in mm: |                             | L = 852<br>B = 264          |             |
|-----------------------|-----------------------|---------------------------------|-----------------------------|---------------------------------------|-----------------------------|-----------------------------|-------------|
| C-<br>Ebenen          | 0°<br>180°            | 15°<br>165°<br>195°<br>345°     | 30°<br>150°<br>210°<br>330° | 45°<br>135°<br>225°<br>315°           | 60°<br>120°<br>240°<br>300° | 75°<br>105°<br>255°<br>285° | 90°<br>270° |
| $\gamma$              | Leuchtdichte in cd/m² |                                 |                             |                                       |                             |                             |             |
| 45,0°                 | 28517.0               | 27564.9                         | 26323.2                     | 24676.8                               | 23087.8                     | 21577.4                     | 21094.4     |
| 50,0°                 | 21378.3               | 20634.0                         | 19760.0                     | 18586.8                               | 17193.1                     | 15850.6                     | 15401.9     |
| 55,0°                 | 15512.2               | 15092.2                         | 14569.3                     | 13812.5                               | 12748.5                     | 11636.6                     | 11168.9     |
| 60,0°                 | 10643.1               | 10654.6                         | 10852.8                     | 10368.8                               | 9752.2                      | 8798.7                      | 8359.5      |
| 65,0°                 | 8171.5                | 8033.6                          | 8215.8                      | 8082.9                                | 7912.1                      | 7110.3                      | 6721.0      |
| 70,0°                 | 6331.0                | 6254.7                          | 6719.4                      | 6345.5                                | 6585.1                      | 6062.4                      | 5793.8      |
| 75,0°                 | 5550.1                | 5208.7                          | 5220.5                      | 5150.0                                | 5313.2                      | 5540.2                      | 5530.3      |
| 80,0°                 | 4049.0                | 3898.8                          | 3771.6                      | 3839.8                                | 4290.5                      | 5210.4                      | 5316.4      |
| 85,0°                 | 1498.5                | 1480.1                          | 1548.1                      | 1750.1                                | 2686.6                      | 3955.6                      | 4482.6      |

Lichttechnischer Prüfbefund

|                                     |                                                               |                                    |
|-------------------------------------|---------------------------------------------------------------|------------------------------------|
| <b>Familie</b><br><b>Highbay 11</b> | <b>Bestell-Nr.: 51HN11DB4QMA</b><br><b>EAN: 4069025349767</b> | <b>LP-Nummer</b><br><b>59711_5</b> |
|-------------------------------------|---------------------------------------------------------------|------------------------------------|

**Leuchtdichten in cd/m²**

γ 65°

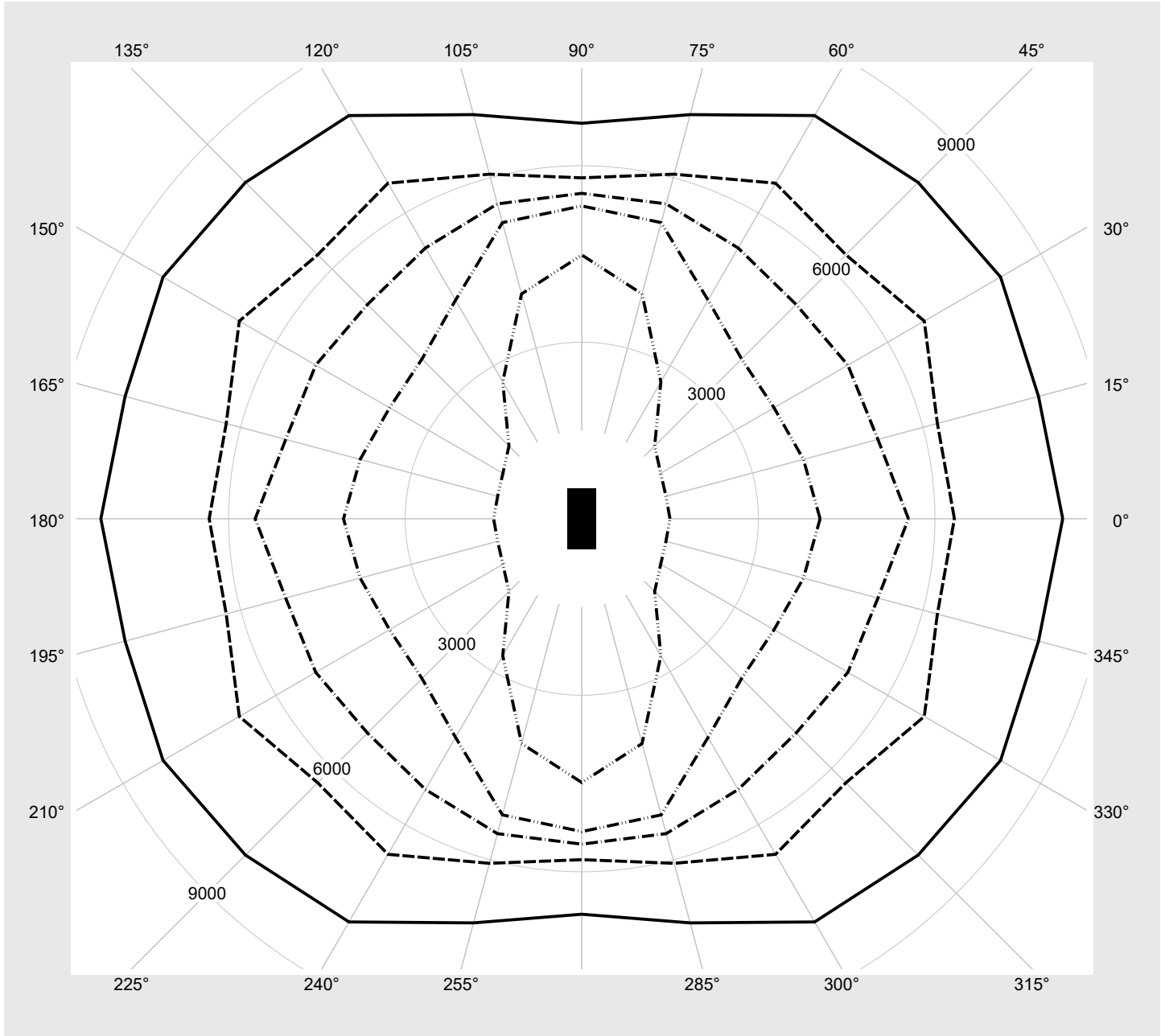
γ 70°

γ 75°

γ 80°

γ 85°

siteco



Lichttechnischer Prüfbefund

|                       |                                                 |                           |
|-----------------------|-------------------------------------------------|---------------------------|
| Familie<br>Highbay 11 | Bestell-Nr.: 51HN11DB4QMA<br>EAN: 4069025349767 | LP-Nummer<br>59711_5      |
| Dimmstufen-Tabelle    |                                                 | Umgebungstemperatur: 25°C |

siteco

| Lichtstrom<br>[%] | Dimmstufe<br>linear | Dimmstufe<br>logarithmisch | Lichtstrom<br>[lm] | Systemleistung<br>[W] |
|-------------------|---------------------|----------------------------|--------------------|-----------------------|
| 100               | 254                 | 254                        | 36000              | 177.7                 |
| 95                | 241                 | 252                        | 34258              | 168.3                 |
| 90                | 227                 | 250                        | 32370              | 158.2                 |
| 85                | 214                 | 248                        | 30612              | 149.0                 |
| 80                | 201                 | 245                        | 28833              | 139.6                 |
| 75                | 188                 | 243                        | 27050              | 130.5                 |
| 70                | 175                 | 240                        | 25256              | 121.2                 |
| 65                | 162                 | 238                        | 23457              | 112.2                 |
| 60                | 149                 | 234                        | 21641              | 103.1                 |
| 55                | 136                 | 231                        | 19822              | 94.1                  |
| 50                | 123                 | 227                        | 17982              | 85.1                  |
| 45                | 111                 | 224                        | 16268              | 76.9                  |
| 40                | 98                  | 219                        | 14402              | 68.0                  |
| 35                | 86                  | 214                        | 12670              | 59.9                  |
| 30                | 73                  | 208                        | 10780              | 51.0                  |
| 25                | 61                  | 202                        | 9014               | 43.0                  |
| 20                | 49                  | 194                        | 7241               | 35.1                  |
| 15                | 37                  | 183                        | 5454               | 27.2                  |
| 10                | 25                  | 169                        | 3653               | 19.3                  |
| 5                 | 13                  | 145                        | 1834               | 11.1                  |
| 1                 | 4                   | 102                        | 463                | 4.8                   |