# Lichttechnischer Prüfbefund

**Familie**

## Highbay 21

## Bestell-Nr.: 52HN11DB3LDA
## EAN: 4069025445179

| | |
|---|---|
| **Ausführung** | primäre Lichtlenkung mit Linse, PMMA, Gehäuse, weiß, eng strahlend |
| **Bestückung** | LED 3000 K \| CRI ≥ 80 |
| **Betriebsgerät** | EVG-DALI |
| **Einstellung** | AC-Betrieb |
| **Bemessungswerte** | Nettolichtstrom = 25590 lm<br>Systemleistung = 144.0 W<br>Lichtausbeute = 177.7 lm/W |

**LP-Nummer**

**59724_231**

**Seriendokumentation**
**24.04.2025**

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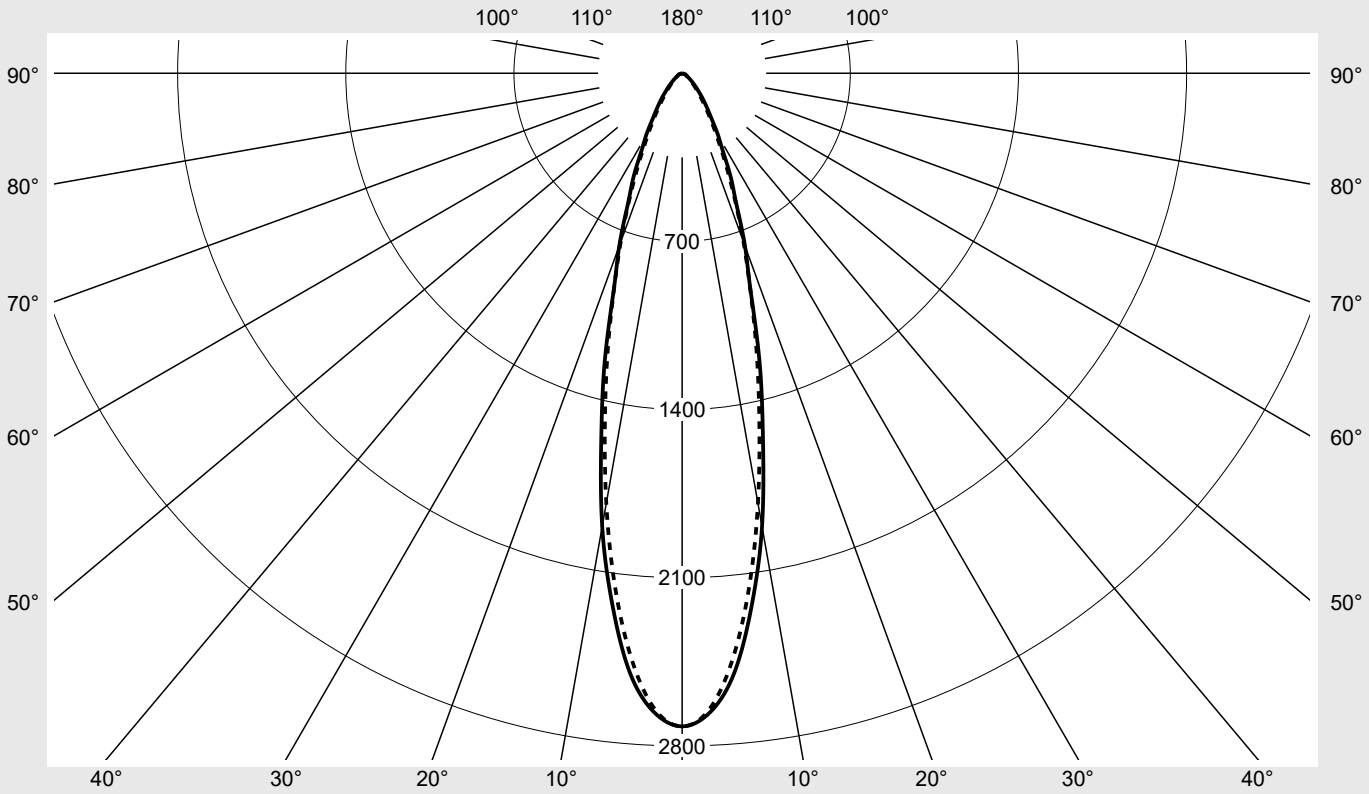
**Lichtstärke in cd/klm** C180-0 C270-90 **Imax: 2719 cd/klm**




| Klassifizierungen | |
|---|---|
| DIN 5040 | A 7 0 |
| CIE | N1=89 N2=97 N3=99 N4=100 N5=100 |

| Leuchtenbetriebswirkungsgrade | |
|---|---|
| $\eta_{LB}$ | 100,0% |
| $\phi_u$ | 100,0% |
| $\phi_o$ | 0,0% |

**Messbedingungen**

DIN EN 13032 und DIN 5032

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## Wertetabelle Lichtstärkemessung

Maximale Lichtstärke

| C-Ebenen | 0,0° 180,0° | 7,5° 172,5° 187,5° 352,5° | 15,0° 165,0° 195,0° 345,0° | 22,5° 157,5° 202,5° 337,5° | 30,0° 150,0° 210,0° 330,0° | 37,5° 142,5° 217,5° 322,5° | 45,0° 135,0° 225,0° 315,0° |
|---|---|---|---|---|---|---|---|
| γ | Lichtstärke in cd/klm | | | | | | |
| 0,0° | 2718.5 | 2718.5 | 2718.5 | 2718.5 | 2718.5 | 2718.5 | 2718.5 |
| 2,5° | 2662.8 | 2671.1 | 2671.1 | 2670.6 | 2667.6 | 2663.3 | 2662.4 |
| 5,0° | 2502.8 | 2490.9 | 2498.0 | 2494.5 | 2487.6 | 2479.1 | 2473.3 |
| 7,5° | 2228.4 | 2233.8 | 2227.9 | 2223.2 | 2214.7 | 2203.4 | 2194.2 |
| 10,0° | 1915.8 | 1894.8 | 1902.8 | 1897.9 | 1890.8 | 1880.8 | 1870.9 |
| 12,5° | 1554.6 | 1560.7 | 1554.3 | 1552.6 | 1548.0 | 1540.2 | 1531.7 |
| 15,0° | 1246.2 | 1237.0 | 1237.4 | 1238.4 | 1237.7 | 1233.9 | 1229.0 |
| 17,5° | 947.1 | 964.7 | 959.6 | 960.0 | 960.5 | 959.5 | 958.4 |
| 20,0° | 765.0 | 752.2 | 754.6 | 751.6 | 749.0 | 747.8 | 747.5 |
| 22,5° | 591.2 | 598.6 | 590.3 | 583.2 | 577.5 | 573.8 | 572.1 |
| 25,0° | 481.4 | 472.8 | 470.4 | 460.9 | 451.8 | 445.8 | 443.1 |
| 27,5° | 370.5 | 376.3 | 371.1 | 363.9 | 355.1 | 347.9 | 344.8 |
| 30,0° | 301.2 | 297.9 | 295.0 | 290.6 | 284.7 | 279.0 | 275.2 |
| 32,5° | 234.8 | 237.8 | 234.9 | 232.8 | 229.2 | 225.3 | 220.4 |
| 35,0° | 189.2 | 188.5 | 187.7 | 186.9 | 184.4 | 180.6 | 175.3 |
| 37,5° | 154.0 | 153.7 | 151.7 | 151.0 | 148.4 | 144.9 | 141.0 |
| 40,0° | 125.7 | 123.3 | 123.0 | 121.9 | 119.1 | 115.8 | 113.2 |
| 42,5° | 99.2 | 100.3 | 99.3 | 98.6 | 95.9 | 92.9 | 90.7 |
| 45,0° | 81.4 | 79.6 | 79.7 | 79.0 | 77.2 | 74.6 | 72.7 |
| 47,5° | 64.2 | 64.9 | 64.5 | 64.0 | 62.8 | 60.9 | 59.5 |
| 50,0° | 52.5 | 51.6 | 51.8 | 51.7 | 51.0 | 49.9 | 49.1 |
| 52,5° | 41.7 | 41.9 | 41.8 | 42.1 | 41.9 | 41.4 | 40.9 |
| 55,0° | 33.9 | 33.5 | 34.1 | 34.8 | 35.0 | 35.0 | 34.7 |
| 57,5° | 27.1 | 27.4 | 28.1 | 29.2 | 29.7 | 29.7 | 29.6 |
| 60,0° | 22.3 | 22.3 | 23.0 | 24.6 | 25.8 | 25.8 | 25.5 |
| 62,5° | 19.0 | 19.2 | 19.6 | 20.7 | 22.4 | 22.3 | 22.0 |
| 65,0° | 17.0 | 16.8 | 17.2 | 18.3 | 19.8 | 19.1 | 19.1 |
| 67,5° | 14.7 | 14.8 | 14.9 | 16.1 | 17.2 | 16.3 | 16.1 |
| 70,0° | 12.8 | 12.5 | 12.6 | 13.8 | 14.3 | 13.8 | 13.9 |
| 72,5° | 11.3 | 11.1 | 10.9 | 11.6 | 11.4 | 11.2 | 11.7 |
| 75,0° | 9.7 | 9.3 | 8.9 | 9.6 | 9.3 | 9.1 | 9.3 |
| 77,5° | 7.4 | 7.4 | 7.1 | 7.5 | 7.1 | 6.8 | 7.1 |
| 80,0° | 4.9 | 4.7 | 4.8 | 4.8 | 4.5 | 4.5 | 4.8 |
| 82,5° | 2.2 | 2.3 | 2.3 | 2.4 | 2.4 | 2.5 | 2.7 |
| 85,0° | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 1.0 |
| 87,5° | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

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## Wertetabelle Lichtstärkemessung

Maximale Lichtstärke

| C-Ebenen | 52,5° 127,5° 232,5° 307,5° | 60,0° 120,0° 240,0° 300,0° | 67,5° 112,5° 247,5° 292,5° | 75,0° 105,0° 255,0° 285,0° | 82,5° 97,5° 262,5° 277,5° | 90,0° 270,0° | Phi-Zone | Summe Phi-Zone |
|---|---|---|---|---|---|---|---|---|
| γ | Lichtstärke in cd/klm | | | | | | Lichtstrom in lm/klm | |
| 0,0° | 2718.5 | 2718.5 | 2718.5 | 2718.5 | 2718.5 | 2718.5 | 4.1 | 4.1 |
| 2,5° | 2661.4 | 2660.0 | 2657.7 | 2657.0 | 2651.0 | 2647.2 | 31.8 | 35.9 |
| 5,0° | 2468.0 | 2461.9 | 2456.3 | 2452.9 | 2444.7 | 2440.4 | 59.1 | 95.0 |
| 7,5° | 2185.5 | 2176.0 | 2168.0 | 2162.0 | 2152.6 | 2148.3 | 78.5 | 173.5 |
| 10,0° | 1860.3 | 1847.8 | 1837.7 | 1831.0 | 1822.1 | 1817.6 | 88.9 | 262.4 |
| 12,5° | 1522.0 | 1510.4 | 1500.7 | 1495.5 | 1488.9 | 1485.2 | 90.6 | 353.0 |
| 15,0° | 1223.0 | 1215.3 | 1207.9 | 1204.2 | 1200.8 | 1197.6 | 86.8 | 439.8 |
| 17,5° | 955.3 | 949.4 | 945.6 | 944.9 | 945.8 | 944.0 | 78.6 | 518.5 |
| 20,0° | 745.4 | 741.8 | 741.4 | 743.7 | 748.0 | 747.7 | 70.2 | 588.6 |
| 22,5° | 571.4 | 571.2 | 573.5 | 575.9 | 579.7 | 580.1 | 60.8 | 649.4 |
| 25,0° | 443.2 | 444.5 | 446.3 | 448.3 | 449.2 | 448.8 | 52.5 | 701.9 |
| 27,5° | 344.0 | 344.5 | 345.1 | 346.1 | 344.9 | 343.6 | 44.7 | 746.7 |
| 30,0° | 273.7 | 273.8 | 273.9 | 272.4 | 270.2 | 268.2 | 38.5 | 785.2 |
| 32,5° | 217.7 | 217.2 | 215.9 | 213.7 | 211.0 | 209.4 | 32.9 | 818.1 |
| 35,0° | 172.5 | 170.5 | 168.2 | 166.4 | 165.0 | 164.5 | 27.8 | 845.9 |
| 37,5° | 138.1 | 135.6 | 133.3 | 132.0 | 130.7 | 130.3 | 23.7 | 869.5 |
| 40,0° | 110.2 | 108.1 | 106.1 | 104.8 | 103.7 | 103.1 | 20.0 | 889.6 |
| 42,5° | 88.5 | 86.8 | 85.0 | 83.9 | 83.2 | 82.7 | 16.9 | 906.5 |
| 45,0° | 71.2 | 69.8 | 68.4 | 67.3 | 66.9 | 66.6 | 14.2 | 920.7 |
| 47,5° | 58.5 | 57.3 | 56.0 | 55.1 | 54.8 | 54.6 | 12.1 | 932.8 |
| 50,0° | 48.3 | 47.1 | 46.0 | 45.5 | 45.1 | 44.8 | 10.3 | 943.0 |
| 52,5° | 40.2 | 39.3 | 38.3 | 37.7 | 37.1 | 36.8 | 8.7 | 951.8 |
| 55,0° | 34.1 | 33.4 | 32.5 | 31.7 | 31.0 | 30.7 | 7.5 | 959.3 |
| 57,5° | 29.3 | 29.0 | 28.2 | 27.0 | 26.3 | 26.1 | 6.6 | 965.9 |
| 60,0° | 25.7 | 25.8 | 24.8 | 23.5 | 22.8 | 22.6 | 5.8 | 971.6 |
| 62,5° | 22.4 | 22.9 | 21.8 | 20.7 | 20.1 | 19.9 | 5.1 | 976.8 |
| 65,0° | 19.6 | 20.2 | 19.7 | 18.4 | 17.9 | 17.8 | 4.6 | 981.4 |
| 67,5° | 16.7 | 17.6 | 17.8 | 16.4 | 16.0 | 16.0 | 4.1 | 985.5 |
| 70,0° | 14.1 | 15.0 | 15.6 | 14.4 | 14.4 | 14.6 | 3.6 | 989.1 |
| 72,5° | 11.7 | 12.4 | 13.4 | 12.9 | 13.2 | 13.4 | 3.1 | 992.3 |
| 75,0° | 9.5 | 10.4 | 12.0 | 11.4 | 11.8 | 11.9 | 2.7 | 995.0 |
| 77,5° | 7.2 | 8.1 | 9.6 | 9.6 | 10.0 | 10.2 | 2.1 | 997.1 |
| 80,0° | 5.1 | 5.7 | 7.0 | 7.5 | 7.6 | 8.0 | 1.5 | 998.6 |
| 82,5° | 3.0 | 3.6 | 4.5 | 5.0 | 5.3 | 5.6 | 0.9 | 999.5 |
| 85,0° | 1.2 | 1.7 | 2.3 | 2.7 | 3.1 | 3.3 | 0.4 | 999.9 |
| 87,5° | 0.4 | 0.4 | 0.5 | 0.6 | 0.8 | 0.9 | 0.1 | 1000.1 |

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## UGR-Tabelle

Standardraum

| 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 x | y | Blickrichtung quer zur Leuchte (C0) | | | | | Blickrichtung längs zur Leuchte (C90) | | | | |
| 2H | 2H | 16,1 | 17,2 | 16,4 | 17,5 | 17,8 | 15,5 | 16,6 | 15,9 | 17,0 | 17,3 |
| | 3H | 16,5 | 17,5 | 16,9 | 17,8 | 18,2 | 16,2 | 17,2 | 16,5 | 17,5 | 17,8 |
| | 4H | 16,7 | 17,6 | 17,1 | 18,0 | 18,3 | 16,6 | 17,5 | 17,0 | 17,8 | 18,2 |
| | 6H | 16,9 | 17,7 | 17,3 | 18,1 | 18,4 | 17,0 | 17,8 | 17,4 | 18,2 | 18,6 |
| | 8H | 17,0 | 17,6 | 17,4 | 18,0 | 18,4 | 17,2 | 17,9 | 17,7 | 18,3 | 18,7 |
| | 12H | 16,9 | 17,6 | 17,4 | 17,9 | 18,4 | 17,3 | 17,9 | 17,7 | 18,3 | 18,7 |
| 4H | 2H | 16,2 | 17,1 | 16,6 | 17,5 | 17,9 | 15,8 | 16,7 | 16,2 | 17,0 | 17,4 |
| | 3H | 16,8 | 17,6 | 17,2 | 18,0 | 18,4 | 16,6 | 17,3 | 17,0 | 17,7 | 18,2 |
| | 4H | 17,1 | 17,8 | 17,6 | 18,2 | 18,7 | 17,1 | 17,8 | 17,6 | 18,2 | 18,7 |
| | 6H | 17,4 | 17,9 | 17,8 | 18,4 | 18,8 | 17,7 | 18,2 | 18,1 | 18,7 | 19,1 |
| | 8H | 17,4 | 17,9 | 17,9 | 18,3 | 18,8 | 17,9 | 18,4 | 18,4 | 18,8 | 19,3 |
| | 12H | 17,4 | 17,8 | 17,9 | 18,2 | 18,7 | 18,0 | 18,4 | 18,5 | 18,9 | 19,4 |
| 8H | 4H | 17,2 | 17,7 | 17,7 | 18,2 | 18,7 | 17,2 | 17,7 | 17,7 | 18,2 | 18,7 |
| | 6H | 17,5 | 17,9 | 18,0 | 18,4 | 18,9 | 17,8 | 18,2 | 18,3 | 18,7 | 19,2 |
| | 8H | 17,5 | 17,9 | 18,0 | 18,4 | 18,9 | 18,1 | 18,4 | 18,6 | 18,9 | 19,4 |
| | 12H | 17,5 | 17,8 | 18,0 | 18,3 | 18,8 | 18,3 | 18,5 | 18,8 | 19,0 | 19,6 |
| 12H | 4H | 17,2 | 17,6 | 17,7 | 18,1 | 18,6 | 17,2 | 17,6 | 17,7 | 18,1 | 18,6 |
| | 6H | 17,5 | 17,8 | 18,0 | 18,3 | 18,9 | 17,8 | 18,2 | 18,4 | 18,7 | 19,2 |
| | 8H | 17,5 | 17,8 | 18,1 | 18,3 | 18,9 | 18,1 | 18,4 | 18,6 | 18,9 | 19,4 |

## Leuchtdichten-Tabelle

Max. für $\gamma >= 65°$

Lichttechnische Abmessungen in mm: L = 852, B = 264

| C-Ebenen | 0,0° 180,0° | 10,0° 170,0° 190,0° 350,0° | 20,0° 160,0° 200,0° 340,0° | 30,0° 150,0° 210,0° 330,0° | 40,0° 140,0° 220,0° 320,0° | 50,0° 130,0° 230,0° 310,0° | 60,0° 120,0° 240,0° 300,0° | 70,0° 110,0° 250,0° 290,0° | 80,0° 100,0° 260,0° 280,0° | 90,0° 270,0° |
|---|---|---|---|---|---|---|---|---|---|---|
| γ | Leuchtdichte in cd/m² | | | | | | | | | |
| 45,0° | 13095.5 | 12784.2 | 12767.1 | 12422.8 | 11888.3 | 11533.8 | 11236.7 | 10938.4 | 10783.3 | 10712.0 |
| 50,0° | 9283.4 | 9128.3 | 9168.5 | 9024.9 | 8782.0 | 8610.9 | 8337.5 | 8099.4 | 8000.3 | 7923.9 |
| 55,0° | 6724.7 | 6660.6 | 6863.2 | 6951.8 | 6920.9 | 6799.3 | 6630.5 | 6394.6 | 6178.8 | 6097.7 |
| 60,0° | 5080.7 | 5113.0 | 5480.1 | 5881.2 | 5844.5 | 5833.4 | 5873.7 | 5560.8 | 5232.0 | 5147.9 |
| 65,0° | 4586.7 | 4548.5 | 4806.5 | 5318.1 | 5127.6 | 5218.2 | 5441.7 | 5211.0 | 4861.0 | 4803.4 |
| 70,0° | 4253.8 | 4161.3 | 4493.9 | 4746.8 | 4577.9 | 4637.8 | 4992.6 | 5118.1 | 4781.7 | 4848.2 |
| 75,0° | 4252.0 | 4023.9 | 4168.6 | 4092.4 | 3994.4 | 4131.4 | 4554.4 | 5312.2 | 5154.5 | 5235.3 |
| 80,0° | 3209.7 | 3088.0 | 3175.0 | 2976.5 | 3003.4 | 3226.4 | 3757.4 | 4765.5 | 4924.9 | 5216.5 |
| 85,0° | 1054.7 | 1027.8 | 1050.8 | 1066.5 | 1179.3 | 1430.7 | 2187.8 | 3154.0 | 3886.1 | 4329.9 |

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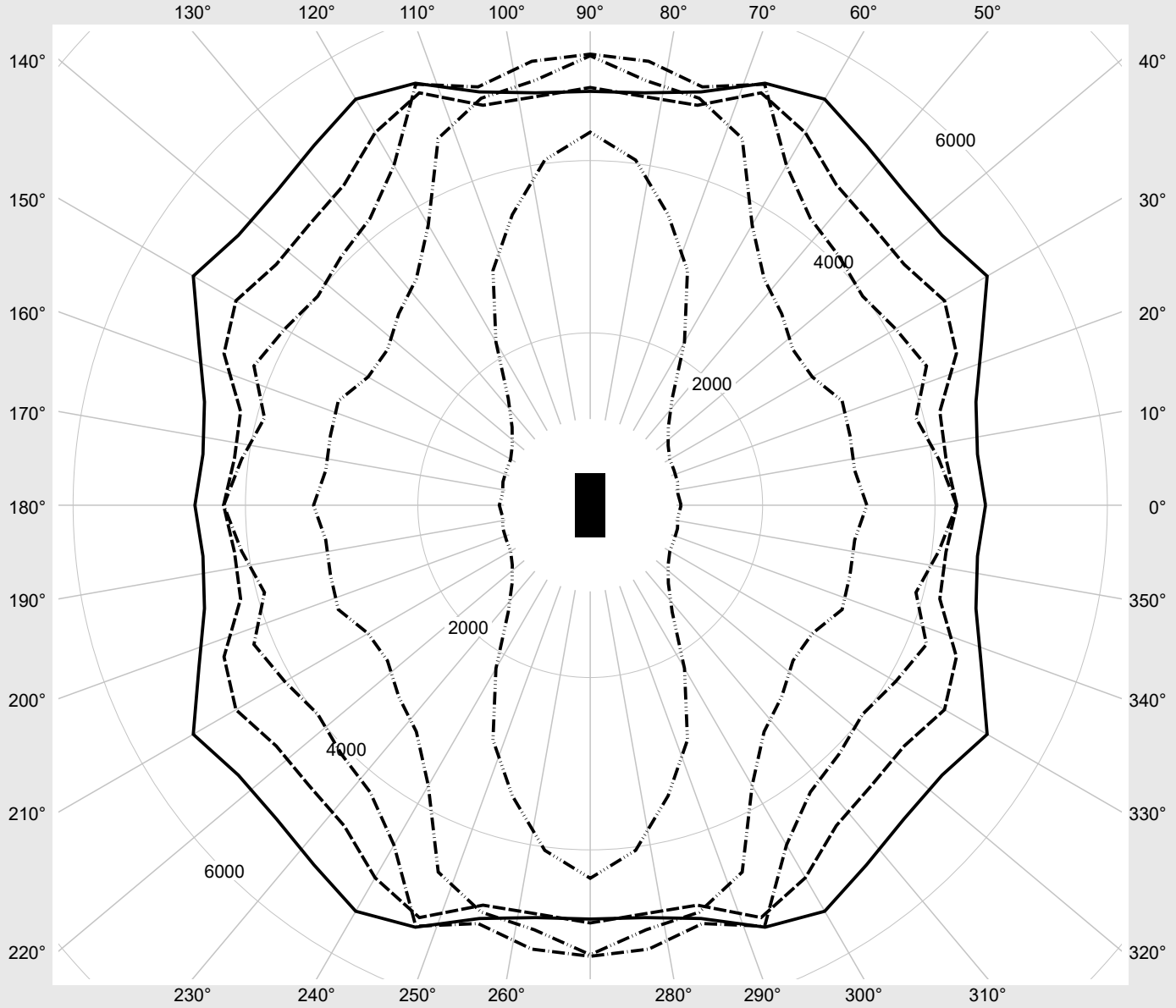
**Leuchtdichten in cd/m²**

γ 65° γ 70° γ 75° γ 80° γ 85°



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### Dimmstufen-Tabelle

Umgebungstemperatur: 25°C

| Lichtstrom [%] | Dimmstufe linear | Dimmstufe logarithmisch | Lichtstrom [lm] | Systemleistung [W] |
|---|---|---|---|---|
| 100 | 254 | 254 | 25590 | 144.0 |
| 95 | 241 | 252 | 24320 | 136.5 |
| 90 | 228 | 250 | 23047 | 129.1 |
| 85 | 215 | 248 | 21768 | 121.6 |
| 80 | 202 | 246 | 20481 | 114.0 |
| 75 | 189 | 243 | 19194 | 106.8 |
| 70 | 176 | 241 | 17895 | 99.4 |
| 65 | 163 | 238 | 16600 | 92.2 |
| 60 | 151 | 235 | 15397 | 85.2 |
| 55 | 138 | 232 | 14091 | 77.9 |
| 50 | 125 | 228 | 12780 | 70.7 |
| 45 | 113 | 224 | 11561 | 63.9 |
| 40 | 100 | 220 | 10241 | 56.7 |
| 35 | 87 | 215 | 8913 | 49.4 |
| 30 | 75 | 209 | 7685 | 42.8 |
| 25 | 63 | 203 | 6448 | 36.2 |
| 20 | 50 | 194 | 5110 | 29.2 |
| 15 | 38 | 184 | 3866 | 22.5 |
| 10 | 25 | 169 | 2518 | 15.5 |
| 5 | 13 | 145 | 1267 | 8.6 |
| 2 | 5 | 110 | 433 | 4.0 |