

## Lichttechnischer Prüfbefund

Familie  
**Monsun® 12**

Bestell-Nr.: **51FP20FP460H**  
EAN: **4058352405710**

LP-Nummer  
**59060\_35**



**Ausführung** Prismenwanne, opal, PC, breit strahlend  
**Bestückung** LED 4000 K | CRI ≥ 80  
**Betriebsgerät** EVG-DALI CLO  
**Bemessungswerte** Nettolichtstrom = 5450 lm  
Systemleistung = 34.6 W  
Lichtausbeute = 157.4 lm/W

Seriendokumentation  
26.08.2020

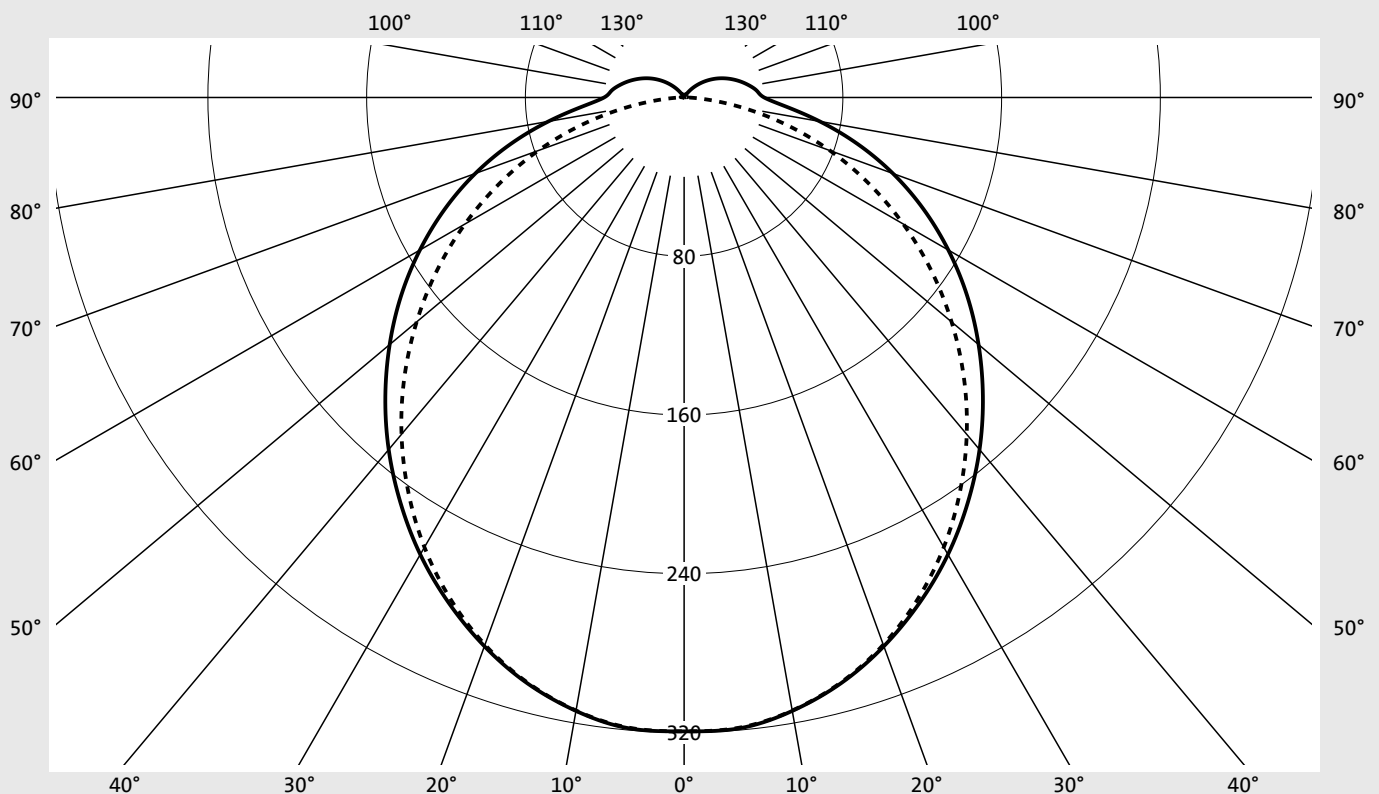
siteco

Lichtstärke in cd/klm

C180-0

C270-90

Imax: 319 cd/klm



#### Klassifizierungen

DIN 5040 A 4 1  
CIE N1=45 N2=75 N3=93  
N4=94 N5=100

#### Leuchtenbetriebswirkungsgrade

$\eta_{LB}$  100,0%  
 $\phi_u$  93,7%  
 $\phi_o$  6,3%

#### Messbedingungen

DIN EN 13032 und DIN 5032

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|  |   |                                     |
|--|---|-------------------------------------|
| <b>Familie</b><br><b>Monsun® 12</b>    | <b>Bestell-Nr.: 51FP20FP460H</b><br><b>EAN: 4058352405710</b> | <b>LP-Nummer</b><br><b>59060_35</b> |
| <b>Wertetabelle Lichtstärkemessung</b> |   | <b>Maximale Lichtstärke</b>         |
|  |   | <b>siteco</b>                       |

| C-<br>Ebenen | 0°<br>180°            | 15°                  | 30°                  | 45°                  | 60°                  | 75°                  | 90°<br>270° | Phi-Zone             | Summe<br>Phi-Zone |
|--------------|-----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------|----------------------|-------------------|
|              |                       | 165°<br>195°<br>345° | 150°<br>210°<br>330° | 135°<br>225°<br>315° | 120°<br>240°<br>300° | 105°<br>255°<br>285° |             |                      |                   |
| γ            | Lichtstärke in cd/klm |                      |                      |                      |                      |                      |             | Lichtstrom in lm/klm |                   |
| 0°           | 319.4                 | 319.4                | 319.4                | 319.4                | 319.4                | 319.4                | 319.4       | 1.9                  | 1.9               |
| 5°           | 319.1                 | 317.8                | 316.0                | 317.2                | 318.6                | 318.6                | 318.8       | 15.2                 | 17.1              |
| 10°          | 313.9                 | 312.8                | 311.0                | 312.1                | 313.5                | 313.5                | 313.7       | 29.8                 | 46.9              |
| 15°          | 305.6                 | 304.7                | 302.7                | 303.7                | 305.0                | 304.9                | 305.2       | 43.2                 | 90.1              |
| 20°          | 294.3                 | 293.5                | 291.4                | 292.2                | 293.3                | 293.1                | 293.5       | 54.9                 | 145.0             |
| 25°          | 280.9                 | 280.2                | 277.7                | 277.9                | 278.8                | 278.5                | 278.8       | 64.6                 | 209.6             |
| 30°          | 265.9                 | 265.3                | 262.4                | 261.6                | 261.9                | 261.4                | 261.7       | 72.0                 | 281.6             |
| 35°          | 249.2                 | 248.5                | 245.6                | 243.7                | 242.9                | 242.2                | 242.4       | 77.0                 | 358.5             |
| 40°          | 231.6                 | 230.8                | 227.5                | 224.6                | 222.7                | 221.4                | 221.6       | 79.5                 | 438.0             |
| 45°          | 212.9                 | 211.8                | 208.5                | 204.2                | 201.3                | 199.0                | 199.4       | 79.5                 | 517.5             |
| 50°          | 193.7                 | 192.3                | 188.8                | 183.7                | 179.4                | 175.9                | 176.0       | 77.3                 | 594.9             |
| 55°          | 174.1                 | 172.4                | 168.8                | 162.7                | 157.2                | 152.3                | 152.1       | 73.1                 | 667.9             |
| 60°          | 153.8                 | 152.1                | 148.1                | 141.4                | 134.9                | 128.8                | 127.5       | 66.9                 | 734.9             |
| 65°          | 133.1                 | 131.4                | 127.0                | 119.9                | 112.8                | 105.5                | 102.8       | 59.2                 | 794.0             |
| 70°          | 112.0                 | 110.4                | 105.0                | 98.0                 | 90.2                 | 82.2                 | 78.2        | 49.9                 | 843.9             |
| 75°          | 90.5                  | 88.8                 | 83.0                 | 75.7                 | 67.3                 | 58.8                 | 53.6        | 39.3                 | 883.2             |
| 80°          | 69.4                  | 67.4                 | 62.0                 | 54.0                 | 45.3                 | 36.4                 | 30.4        | 28.3                 | 911.6             |
| 85°          | 51.2                  | 49.1                 | 43.8                 | 35.9                 | 26.7                 | 17.7                 | 11.3        | 18.6                 | 930.2             |
| 90°          | 40.3                  | 38.3                 | 33.0                 | 25.3                 | 16.4                 | 7.5                  | 1.9         | 12.9                 | 943.1             |
| 95°          | 36.9                  | 35.1                 | 30.2                 | 22.8                 | 14.1                 | 5.6                  | 1.6         | 11.6                 | 954.7             |
| 100°         | 33.7                  | 31.9                 | 27.1                 | 20.1                 | 11.9                 | 4.0                  | 1.5         | 10.1                 | 964.8             |
| 105°         | 30.1                  | 28.5                 | 23.8                 | 17.3                 | 9.5                  | 2.6                  | 1.3         | 8.6                  | 973.4             |
| 110°         | 26.5                  | 24.6                 | 20.5                 | 14.4                 | 7.3                  | 1.5                  | 1.2         | 7.1                  | 980.4             |
| 115°         | 22.8                  | 21.1                 | 17.3                 | 11.6                 | 5.2                  | 1.3                  | 1.2         | 5.7                  | 986.1             |
| 120°         | 19.1                  | 17.5                 | 14.1                 | 8.9                  | 3.4                  | 1.3                  | 1.1         | 4.4                  | 990.5             |
| 125°         | 15.4                  | 13.9                 | 10.8                 | 6.2                  | 1.7                  | 1.2                  | 1.0         | 3.2                  | 993.6             |
| 130°         | 11.8                  | 10.5                 | 7.7                  | 3.9                  | 1.4                  | 1.2                  | 1.0         | 2.2                  | 995.8             |
| 135°         | 8.3                   | 7.2                  | 5.0                  | 2.0                  | 1.4                  | 1.2                  | 1.1         | 1.4                  | 997.2             |
| 140°         | 5.1                   | 4.3                  | 2.5                  | 1.6                  | 1.3                  | 1.1                  | 1.0         | 0.8                  | 998.0             |
| 145°         | 2.4                   | 2.0                  | 1.8                  | 1.6                  | 1.4                  | 1.2                  | 1.2         | 0.5                  | 998.5             |
| 150°         | 1.9                   | 1.9                  | 1.8                  | 1.5                  | 1.4                  | 1.3                  | 1.2         | 0.4                  | 999.0             |
| 155°         | 1.8                   | 1.8                  | 1.6                  | 1.5                  | 1.4                  | 1.3                  | 1.3         | 0.4                  | 999.3             |
| 160°         | 1.6                   | 1.6                  | 1.5                  | 1.5                  | 1.4                  | 1.4                  | 1.3         | 0.3                  | 999.6             |
| 165°         | 1.5                   | 1.5                  | 1.4                  | 1.4                  | 1.4                  | 1.4                  | 1.3         | 0.2                  | 999.8             |
| 170°         | 1.4                   | 1.4                  | 1.4                  | 1.4                  | 1.4                  | 1.4                  | 1.3         | 0.1                  | 999.9             |
| 175°         | 1.3                   | 1.3                  | 1.3                  | 1.4                  | 1.4                  | 1.4                  | 1.3         | 0.1                  | 1000.0            |
| 180°         | 1.3                   | 1.3                  | 1.3                  | 1.3                  | 1.3                  | 1.3                  | 1.3         | 0.0                  | 1000.0            |

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|-------------------------------------|---|-------------------------------------|

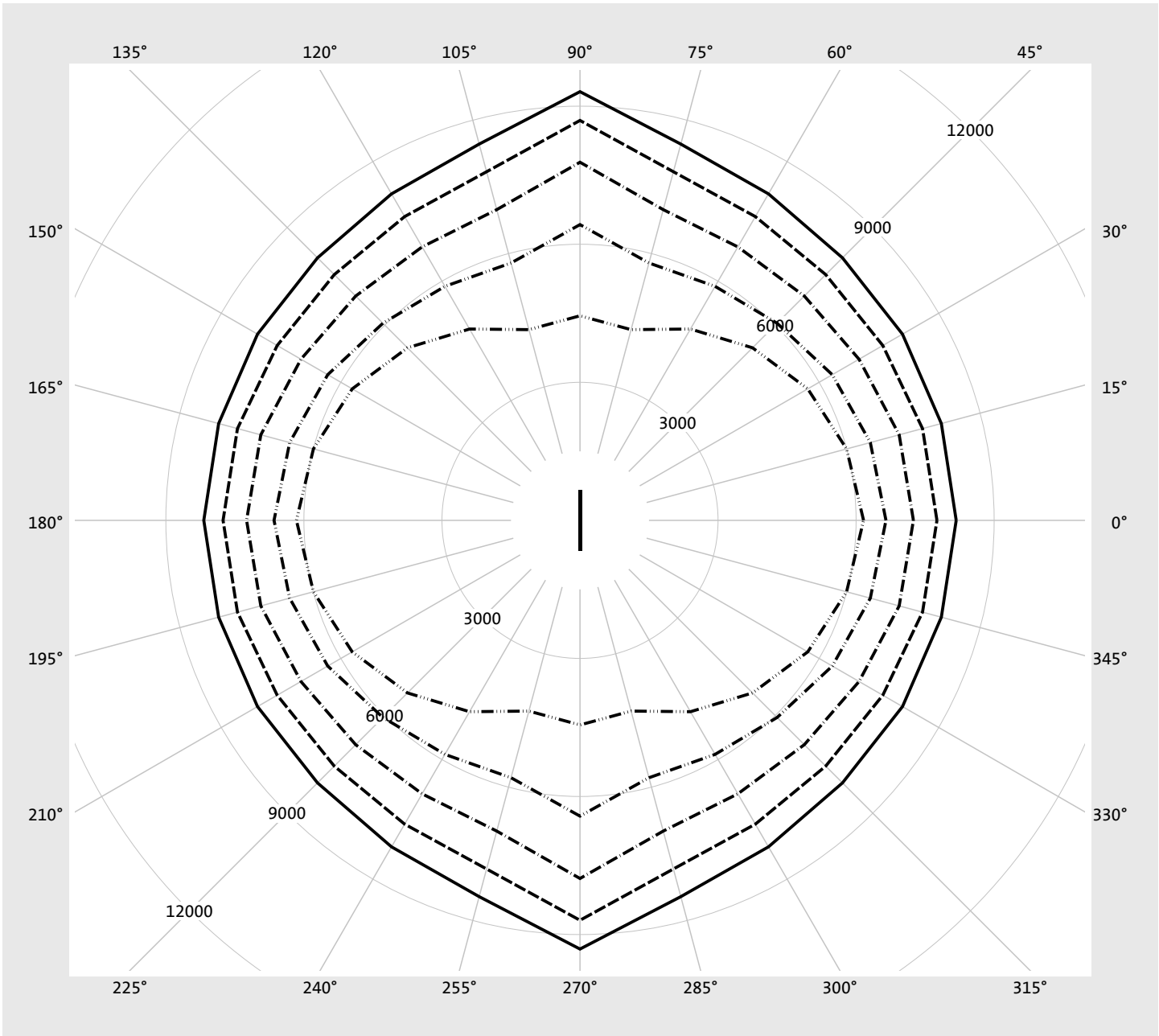
| UGR-Tabelle          |           | Standardraum                        |      |      |      |      |                                       |      |      |      |      |
|----------------------|-----------|-------------------------------------|------|------|------|------|---------------------------------------|------|------|------|------|
| Raumabmessungen      |           | Blickrichtung quer zur Leuchte (C0) |      |      |      |      | Blickrichtung längs zur Leuchte (C90) |      |      |      |      |
| x                    | y         |                                     |      |      |      |      |                                       |      |      |      |      |
| 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  |      |
| <b>2H</b>            | <b>2H</b> | 20,0                                | 21,7 | 20,3 | 22,0 | 22,3 | 19,8                                  | 21,5 | 20,2 | 21,8 | 22,2 |
|                      | 3H        | 21,8                                | 23,4 | 22,2 | 23,7 | 24,1 | 21,4                                  | 22,9 | 21,7 | 23,3 | 23,6 |
|                      | 4H        | 22,6                                | 24,1 | 23,0 | 24,5 | 24,8 | 22,0                                  | 23,5 | 22,4 | 23,8 | 24,2 |
|                      | 6H        | 23,4                                | 24,7 | 23,8 | 25,1 | 25,5 | 22,4                                  | 23,8 | 22,8 | 24,1 | 24,5 |
|                      | 8H        | 23,7                                | 25,0 | 24,1 | 25,4 | 25,8 | 22,5                                  | 23,8 | 23,0 | 24,2 | 24,6 |
|                      | 12H       | 24,0                                | 25,2 | 24,4 | 25,6 | 26,0 | 22,6                                  | 23,8 | 23,0 | 24,2 | 24,6 |
| <b>4H</b>            | <b>2H</b> | 20,7                                | 22,2 | 21,1 | 22,6 | 22,9 | 20,6                                  | 22,1 | 21,0 | 22,4 | 22,8 |
|                      | 3H        | 22,7                                | 24,0 | 23,2 | 24,4 | 24,8 | 22,3                                  | 23,6 | 22,8 | 24,0 | 24,4 |
|                      | 4H        | 23,7                                | 24,9 | 24,1 | 25,3 | 25,7 | 23,1                                  | 24,2 | 23,5 | 24,6 | 25,1 |
|                      | 6H        | 24,6                                | 25,6 | 25,0 | 26,0 | 26,5 | 23,6                                  | 24,6 | 24,1 | 25,0 | 25,5 |
|                      | 8H        | 25,0                                | 25,9 | 25,4 | 26,3 | 26,8 | 23,8                                  | 24,7 | 24,2 | 25,2 | 25,6 |
|                      | 12H       | 25,3                                | 26,2 | 25,8 | 26,6 | 27,1 | 23,9                                  | 24,7 | 24,4 | 25,2 | 25,7 |
| <b>8H</b>            | <b>4H</b> | 24,0                                | 25,0 | 24,5 | 25,4 | 25,9 | 23,5                                  | 24,4 | 24,0 | 24,9 | 25,3 |
|                      | 6H        | 25,1                                | 25,9 | 25,6 | 26,3 | 26,8 | 24,2                                  | 25,0 | 24,7 | 25,4 | 25,9 |
|                      | 8H        | 25,6                                | 26,3 | 26,1 | 26,7 | 27,3 | 24,4                                  | 25,1 | 24,9 | 25,6 | 26,1 |
|                      | 12H       | 26,1                                | 26,7 | 26,6 | 27,2 | 27,7 | 24,6                                  | 25,2 | 25,1 | 25,7 | 26,2 |
| <b>12H</b>           | <b>4H</b> | 24,1                                | 24,9 | 24,6 | 25,4 | 25,9 | 23,6                                  | 24,4 | 24,1 | 24,9 | 25,4 |
|                      | 6H        | 25,2                                | 25,9 | 25,7 | 26,3 | 26,9 | 24,3                                  | 25,0 | 24,8 | 25,5 | 26,0 |
|                      | 8H        | 25,7                                | 26,3 | 26,2 | 26,8 | 27,3 | 24,6                                  | 25,2 | 25,1 | 25,7 | 26,2 |

| Leuchtdichten-Tabelle             |          | Max. für $\gamma \geq 65^\circ$ |        | Lichttechnische Abmessungen in mm: |        | L = 1590 | H(C0) = 21  | H(C180) = 21 |
|-----------------------------------|----------|---------------------------------|--------|------------------------------------|--------|----------|-------------|--------------|
|                                   |          |                                 |        |                                    |        | B = 87   | H(C90) = 21 | H(C270) = 21 |
| C-Ebenen                          | $\gamma$ | 0°                              | 15°    | 30°                                | 45°    | 60°      | 75°         | 90°          |
|                                   |          | 180°                            | 165°   | 150°                               | 135°   | 120°     | 105°        | 90°          |
|                                   |          |                                 | 195°   | 210°                               | 225°   | 240°     | 255°        | 270°         |
|                                   |          |                                 | 345°   | 330°                               | 315°   | 300°     | 285°        |              |
| Leuchtdichte in cd/m <sup>2</sup> |          |                                 |        |                                    |        |          |             |              |
| 45°                               |          | 9558.0                          | 9544.8 | 9555.5                             | 9643.3 | 9904.7   | 10311.5     | 10963.1      |
| 50°                               |          | 9220.8                          | 9193.8 | 9208.3                             | 9271.9 | 9500.7   | 9893.0      | 10618.5      |
| 55°                               |          | 8893.5                          | 8849.9 | 8863.1                             | 8889.6 | 9083.7   | 9446.3      | 10252.9      |
| 60°                               |          | 8543.5                          | 8500.4 | 8496.8                             | 8495.9 | 8651.6   | 8977.7      | 9822.6       |
| 65°                               |          | 8175.6                          | 8129.8 | 8092.5                             | 8067.0 | 8192.0   | 8464.9      | 9315.1       |
| 70°                               |          | 7757.0                          | 7706.4 | 7598.7                             | 7552.1 | 7621.8   | 7842.7      | 8689.8       |
| 75°                               |          | 7245.7                          | 7181.1 | 7002.5                             | 6893.9 | 6861.6   | 6990.0      | 7781.7       |
| 80°                               |          | 6649.3                          | 6531.9 | 6330.6                             | 6057.6 | 5871.5   | 5790.0      | 6426.7       |
| 85°                               |          | 6162.6                          | 5997.7 | 5715.3                             | 5302.6 | 4800.8   | 4290.6      | 4445.2       |

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|                                     |   |                                     |
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Leuchtdichten in cd/m<sup>2</sup>      γ 65°    γ 70°    γ 75°    γ 80°    γ 85°      **siteco**



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| <b>Dimmstufen-Tabelle</b>           |   | <b>Umgebungstemperatur: 25°C</b>    |
| <b>siteco</b>                       |   |                                     |

| Lichtstrom [%] | Dimmstufe linear | Dimmstufe logarithmisch | Lichtstrom [lm] | Systemleistung [W] Lebensdauerbeginn | Systemleistung [W] Lebensdauerende | Systemleistung [W] Durchschnitt |
|----------------|------------------|-------------------------|-----------------|--------------------------------------|------------------------------------|---------------------------------|
| 100            | 254              | 254                     | 5450            | 34.6                                 | 38.9                               | 36.8                            |
| 95             | 241              | 252                     | 5185            | 33.0                                 | 37.0                               | 35.0                            |
| 90             | 227              | 250                     | 4895            | 31.1                                 | 34.8                               | 33.0                            |
| 85             | 214              | 248                     | 4624            | 29.4                                 | 33.0                               | 31.2                            |
| 80             | 201              | 246                     | 4352            | 27.7                                 | 31.0                               | 29.4                            |
| 75             | 188              | 244                     | 4078            | 26.0                                 | 29.1                               | 27.6                            |
| 70             | 176              | 241                     | 3822            | 24.5                                 | 27.4                               | 25.9                            |
| 65             | 163              | 239                     | 3545            | 22.8                                 | 25.4                               | 24.1                            |
| 60             | 150              | 236                     | 3266            | 21.2                                 | 23.5                               | 22.4                            |
| 55             | 138              | 233                     | 3007            | 19.6                                 | 21.8                               | 20.7                            |
| 50             | 125              | 230                     | 2725            | 18.0                                 | 20.0                               | 19.0                            |
| 45             | 113              | 227                     | 2463            | 16.4                                 | 18.2                               | 17.3                            |
| 40             | 100              | 223                     | 2178            | 14.8                                 | 16.3                               | 15.6                            |
| 35             | 88               | 219                     | 1913            | 13.2                                 | 14.7                               | 13.9                            |
| 30             | 75               | 214                     | 1627            | 11.5                                 | 12.8                               | 12.1                            |
| 25             | 63               | 209                     | 1360            | 10.0                                 | 11.0                               | 10.5                            |
| 20             | 51               | 202                     | 1091            | 8.4                                  | 9.3                                | 8.8                             |
| 15             | 39               | 195                     | 820             | 7.0                                  | 7.6                                | 7.3                             |
| 10             | 27               | 187                     | 549             | 5.5                                  | 5.8                                | 5.7                             |
| 5              | 15               | 176                     | 275             | 4.1                                  | 4.3                                | 4.2                             |