

## Lichttechnischer Prüfbefund

Familie  
Silica® 21

Bestell-Nr.: 51MX31DC3DSB  
EAN: 4058352892800

LP-Nummer  
59281\_73



**Ausführung** Pendelleuchte, Reflektor, schwarz, direkt-/ indirekt strahlend, eng strahlend, UGR≤16 (L65≤3000cd/m<sup>2</sup>)

**Bestückung** LED 3000 K | CRI ≥ 80

**Betriebsgerät** EVG-DALI

**Bemessungswerte** Nettolichtstrom = 18230 lm  
Systemleistung = 113.3 W  
Lichtausbeute = 160.9 lm/W

Seriendokumentation  
02.08.2023

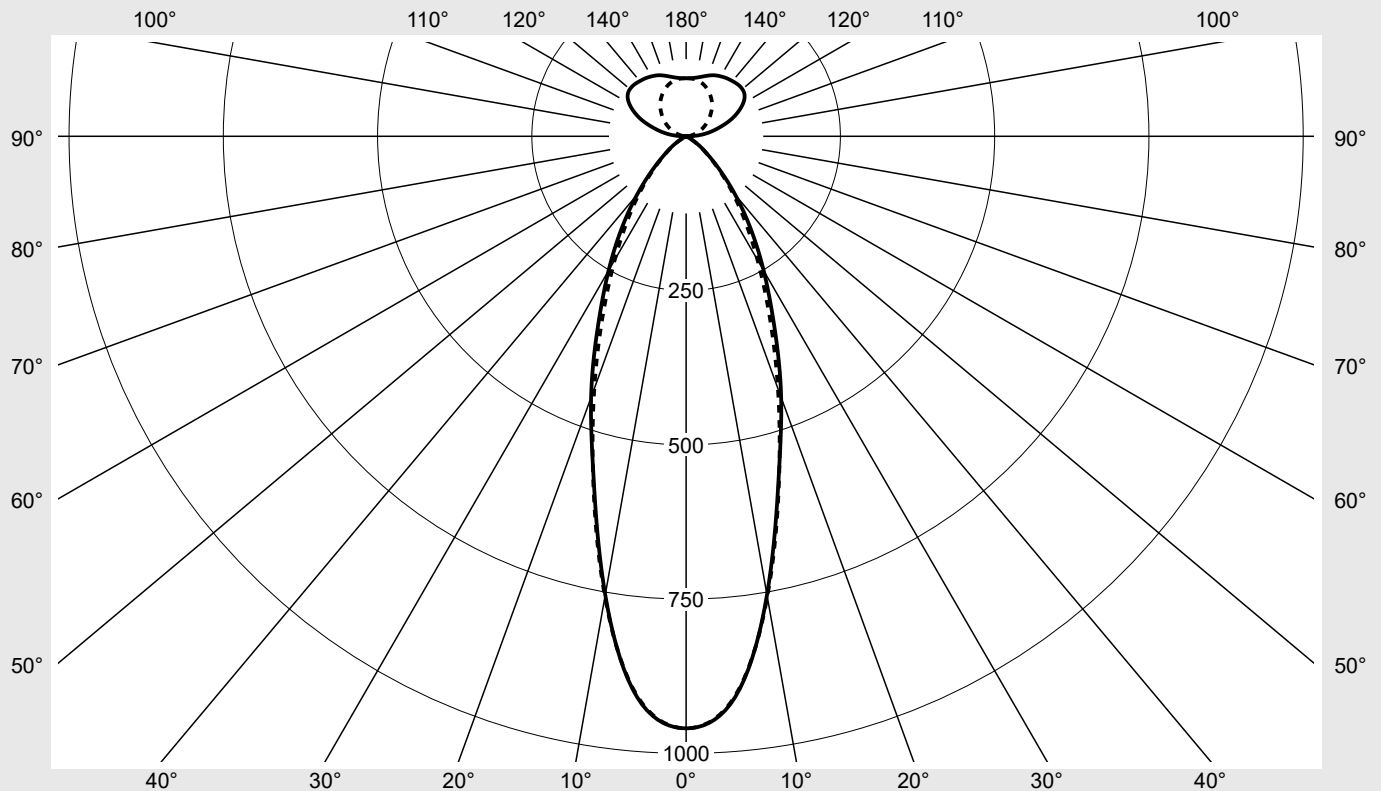
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Lichtstärke in cd/klm

C180-0

C270-90

Imax: 959 cd/klm



## Klassifizierungen

DIN 5040 C 7 2  
CIE N1=86 N2=99 N3=100  
N4=59 N5=100

## Leuchtenbetriebswirkungsgrade

$\eta_{LB}$  100,0%  
 $\phi_u$  59,0%  
 $\phi_o$  41,0%

## Messbedingungen

DIN EN 13032 und DIN 5032

## Lichttechnischer Prüfbefund

|  |   |                                     |
|--|---|-------------------------------------|
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| <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°                    | 959.4      | 959.4                | 959.4                | 959.4                | 959.4                | 959.4                | 959.4       | 5.7      | 5.7               |
| 5°                    | 912.2      | 913.2                | 911.7                | 911.4                | 911.5                | 911.7                | 910.3       | 43.6     | 49.3              |
| 10°                   | 754.6      | 755.9                | 762.5                | 767.9                | 766.9                | 758.5                | 757.5       | 72.5     | 121.8             |
| 15°                   | 578.2      | 581.5                | 588.5                | 595.2                | 592.8                | 584.9                | 581.1       | 83.3     | 205.1             |
| 20°                   | 450.2      | 447.9                | 438.1                | 432.3                | 432.3                | 433.7                | 435.2       | 82.1     | 287.1             |
| 25°                   | 337.4      | 332.5                | 314.5                | 302.7                | 311.9                | 319.4                | 319.2       | 73.7     | 360.8             |
| 30°                   | 251.3      | 246.8                | 227.0                | 216.4                | 227.8                | 237.2                | 231.6       | 63.8     | 424.6             |
| 35°                   | 181.9      | 180.8                | 165.4                | 156.1                | 165.0                | 174.0                | 165.2       | 53.2     | 477.8             |
| 40°                   | 124.1      | 124.5                | 116.4                | 111.0                | 116.6                | 120.7                | 113.9       | 41.6     | 519.4             |
| 45°                   | 77.3       | 77.7                 | 75.1                 | 73.6                 | 76.6                 | 76.5                 | 72.7        | 29.4     | 548.8             |
| 50°                   | 44.9       | 46.1                 | 46.4                 | 46.4                 | 47.6                 | 45.7                 | 43.0        | 19.3     | 568.1             |
| 55°                   | 25.0       | 26.0                 | 27.2                 | 27.9                 | 28.2                 | 25.7                 | 24.0        | 11.9     | 580.0             |
| 60°                   | 7.9        | 9.6                  | 14.5                 | 15.8                 | 15.1                 | 10.6                 | 8.6         | 5.8      | 585.9             |
| 65°                   | 2.5        | 3.1                  | 4.5                  | 8.1                  | 4.9                  | 3.1                  | 2.7         | 2.2      | 588.0             |
| 70°                   | 1.0        | 1.1                  | 0.9                  | 1.6                  | 1.1                  | 1.3                  | 1.3         | 0.6      | 588.6             |
| 75°                   | 0.2        | 0.3                  | 0.3                  | 0.3                  | 0.3                  | 0.3                  | 0.3         | 0.2      | 588.8             |
| 80°                   | 0.0        | 0.1                  | 0.1                  | 0.1                  | 0.1                  | 0.1                  | 0.1         | 0.0      | 588.8             |
| 85°                   | 0.4        | 0.4                  | 0.4                  | 0.4                  | 0.4                  | 0.4                  | 0.4         | 0.2      | 589.1             |
| 90°                   | 4.7        | 4.6                  | 4.9                  | 4.8                  | 2.9                  | 1.0                  | 0.4         | 1.9      | 590.9             |
| 95°                   | 22.0       | 22.5                 | 24.1                 | 22.8                 | 14.6                 | 7.5                  | 3.9         | 9.5      | 600.4             |
| 100°                  | 39.3       | 40.4                 | 40.8                 | 35.7                 | 24.0                 | 13.5                 | 8.9         | 16.1     | 616.5             |
| 105°                  | 56.4       | 57.6                 | 56.5                 | 48.2                 | 33.0                 | 20.5                 | 15.0        | 22.2     | 638.7             |
| 110°                  | 75.8       | 76.1                 | 71.3                 | 59.4                 | 42.3                 | 27.6                 | 21.4        | 27.9     | 666.6             |
| 115°                  | 92.7       | 91.8                 | 84.7                 | 69.7                 | 51.3                 | 34.9                 | 28.6        | 32.5     | 699.2             |
| 120°                  | 106.6      | 104.9                | 95.6                 | 78.0                 | 59.7                 | 42.0                 | 35.6        | 35.7     | 734.9             |
| 125°                  | 115.7      | 112.5                | 102.2                | 85.6                 | 66.8                 | 48.7                 | 43.0        | 37.1     | 771.9             |
| 130°                  | 118.9      | 116.2                | 105.4                | 90.1                 | 72.2                 | 55.6                 | 50.5        | 36.7     | 808.6             |
| 135°                  | 118.7      | 116.2                | 106.6                | 93.2                 | 76.5                 | 62.0                 | 57.9        | 35.1     | 843.7             |
| 140°                  | 116.7      | 115.0                | 106.9                | 95.4                 | 80.1                 | 68.1                 | 65.7        | 32.7     | 876.4             |
| 145°                  | 114.8      | 113.6                | 106.8                | 96.6                 | 83.5                 | 73.7                 | 72.0        | 29.7     | 906.1             |
| 150°                  | 112.1      | 111.6                | 105.6                | 96.5                 | 86.2                 | 79.2                 | 77.7        | 26.2     | 932.3             |
| 155°                  | 109.0      | 108.7                | 103.0                | 96.1                 | 88.3                 | 84.0                 | 82.9        | 22.2     | 954.6             |
| 160°                  | 104.7      | 104.4                | 99.9                 | 95.3                 | 90.2                 | 87.8                 | 87.5        | 17.9     | 972.5             |
| 165°                  | 100.1      | 99.5                 | 97.2                 | 94.2                 | 92.0                 | 90.8                 | 90.9        | 13.5     | 985.9             |
| 170°                  | 96.6       | 96.1                 | 95.5                 | 94.2                 | 93.3                 | 93.1                 | 93.2        | 9.0      | 994.9             |
| 175°                  | 94.6       | 94.5                 | 94.0                 | 93.8                 | 93.8                 | 93.9                 | 93.9        | 4.5      | 999.4             |
| 180°                  | 94.1       | 94.1                 | 94.1                 | 94.1                 | 94.1                 | 94.1                 | 94.1        | 0.6      | 1000.0            |

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

| UGR-Tabelle     |     | Standardraum                        |      |      |      |      |                                       |      |      |      |      |
|-----------------|-----|-------------------------------------|------|------|------|------|---------------------------------------|------|------|------|------|
| Raumabmessungen |     | Blickrichtung quer zur Leuchte (C0) |      |      |      |      | Blickrichtung längs zur Leuchte (C90) |      |      |      |      |
| x               | y   |                                     |      |      |      |      |                                       |      |      |      |      |
| 2H              | 2H  | 14,3                                | 15,1 | 15,1 | 15,9 | 17,0 | 14,2                                  | 15,0 | 15,0 | 15,8 | 16,9 |
|                 | 3H  | 14,0                                | 14,7 | 14,9 | 15,6 | 16,7 | 13,9                                  | 14,6 | 14,8 | 15,5 | 16,6 |
|                 | 4H  | 13,8                                | 14,5 | 14,7 | 15,4 | 16,5 | 13,8                                  | 14,4 | 14,7 | 15,3 | 16,4 |
|                 | 6H  | 13,7                                | 14,3 | 14,6 | 15,2 | 16,3 | 13,6                                  | 14,2 | 14,5 | 15,1 | 16,2 |
|                 | 8H  | 13,6                                | 14,1 | 14,5 | 15,0 | 16,2 | 13,5                                  | 14,0 | 14,4 | 14,9 | 16,1 |
|                 | 12H | 13,5                                | 13,9 | 14,4 | 14,9 | 16,1 | 13,4                                  | 13,9 | 14,4 | 14,8 | 16,0 |
| 4H              | 2H  | 14,0                                | 14,7 | 14,9 | 15,6 | 16,7 | 13,9                                  | 14,5 | 14,8 | 15,4 | 16,5 |
|                 | 3H  | 13,7                                | 14,3 | 14,7 | 15,2 | 16,4 | 13,6                                  | 14,2 | 14,5 | 15,1 | 16,2 |
|                 | 4H  | 13,6                                | 14,1 | 14,5 | 15,0 | 16,2 | 13,5                                  | 14,0 | 14,4 | 14,9 | 16,1 |
|                 | 6H  | 13,4                                | 13,8 | 14,4 | 14,8 | 16,0 | 13,3                                  | 13,7 | 14,3 | 14,7 | 15,9 |
|                 | 8H  | 13,3                                | 13,7 | 14,3 | 14,6 | 15,9 | 13,2                                  | 13,6 | 14,2 | 14,6 | 15,8 |
|                 | 12H | 13,2                                | 13,5 | 14,2 | 14,5 | 15,7 | 13,1                                  | 13,5 | 14,1 | 14,4 | 15,6 |
| 8H              | 4H  | 13,3                                | 13,7 | 14,3 | 14,7 | 15,9 | 13,2                                  | 13,6 | 14,2 | 14,5 | 15,8 |
|                 | 6H  | 13,2                                | 13,5 | 14,2 | 14,5 | 15,7 | 13,0                                  | 13,3 | 14,0 | 14,3 | 15,6 |
|                 | 8H  | 13,1                                | 13,4 | 14,1 | 14,3 | 15,6 | 13,0                                  | 13,3 | 14,0 | 14,2 | 15,5 |
|                 | 12H | 13,0                                | 13,2 | 14,0 | 14,2 | 15,5 | 12,9                                  | 13,1 | 13,9 | 14,1 | 15,4 |
| 12H             | 4H  | 13,2                                | 13,6 | 14,2 | 14,5 | 15,7 | 13,1                                  | 13,4 | 14,1 | 14,4 | 15,6 |
|                 | 6H  | 13,1                                | 13,3 | 14,1 | 14,3 | 15,6 | 13,0                                  | 13,2 | 14,0 | 14,2 | 15,5 |
|                 | 8H  | 13,0                                | 13,2 | 14,0 | 14,2 | 15,5 | 12,9                                  | 13,1 | 13,9 | 14,1 | 15,4 |

## Leuchtdichten-Tabelle Max. für $\gamma \geq 65^\circ$

Lichttechnische Abmessungen in mm: **L = 2940**  
**B = 49**

| C-<br>Ebenen | $\gamma$ | Leuchtdichte in cd/m <sup>2</sup> |                             |                             |                             |                             |                             |             |
|--------------|----------|-----------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|
|              |          | 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° |
| 45°          |          | 13826.2                           | 13896.9                     | 13442.3                     | 13176.2                     | 13708.6                     | 13697.1                     | 13011.9     |
| 50°          |          | 8846.3                            | 9073.5                      | 9126.6                      | 9142.6                      | 9378.8                      | 8996.7                      | 8471.6      |
| 55°          |          | 5510.1                            | 5732.7                      | 5996.5                      | 6161.4                      | 6220.9                      | 5675.3                      | 5284.8      |
| 60°          |          | 1999.4                            | 2426.6                      | 3680.7                      | 3987.4                      | 3825.7                      | 2676.2                      | 2168.5      |
| 65°          |          | 733.9                             | 919.5                       | 1346.2                      | 2419.7                      | 1465.4                      | 930.9                       | 809.4       |
| 70°          |          | 377.0                             | 400.3                       | 337.1                       | 584.2                       | 411.4                       | 462.9                       | 472.1       |
| 75°          |          | 95.3                              | 134.5                       | 133.0                       | 170.1                       | 165.7                       | 158.9                       | 129.6       |
| 80°          |          | 30.6                              | 40.8                        | 40.8                        | 51.0                        | 66.3                        | 75.8                        | 80.9        |
| 85°          |          | 615.6                             | 599.6                       | 583.7                       | 550.3                       | 537.2                       | 530.0                       | 537.2       |

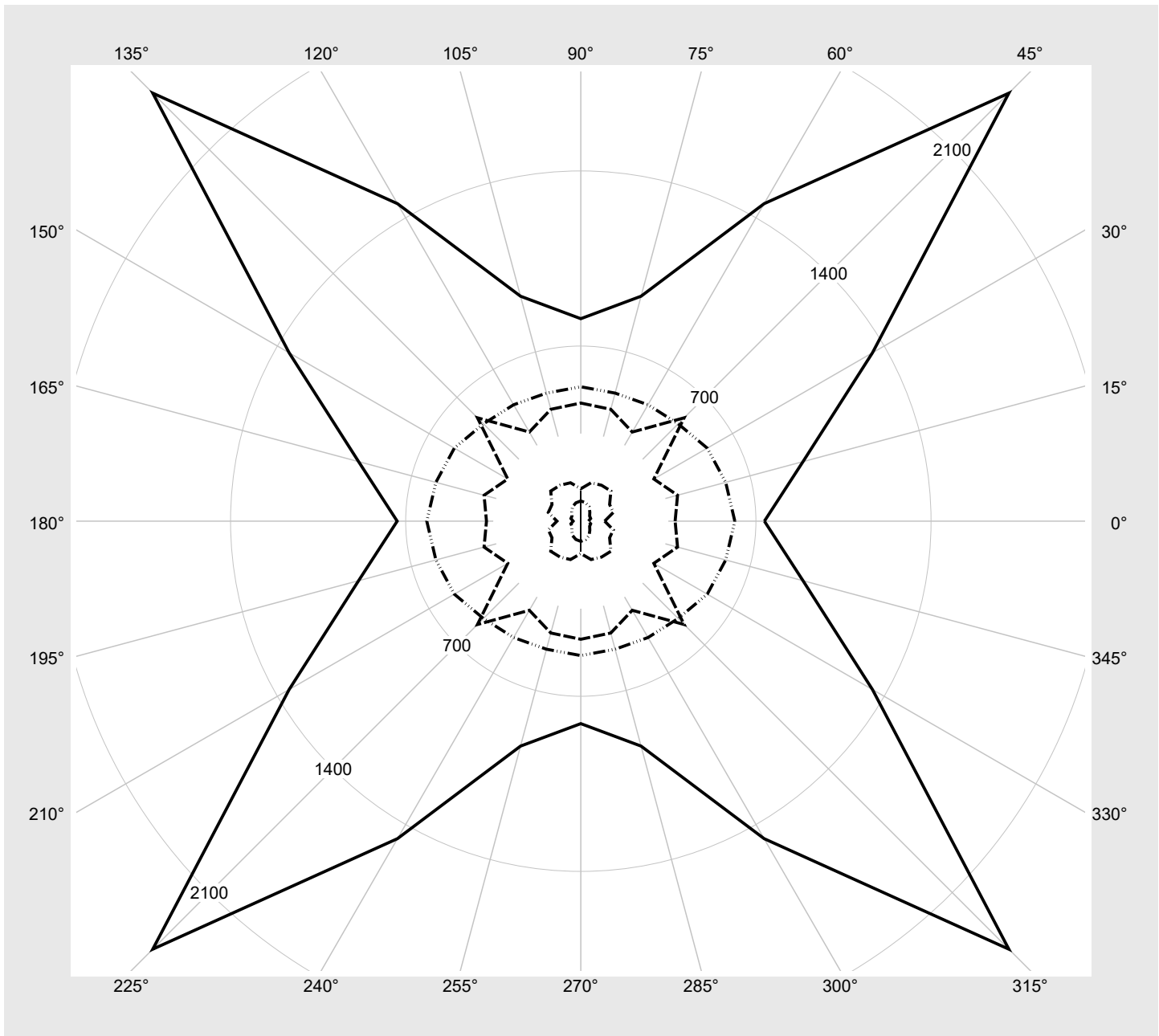
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|                              |   |                              |
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|------------------------------|---|------------------------------|

**Leuchtdichten in cd/m<sup>2</sup>**

|              |              |              |              |              |
|--------------|--------------|--------------|--------------|--------------|
| $\gamma$ 65° | $\gamma$ 70° | $\gamma$ 75° | $\gamma$ 80° | $\gamma$ 85° |
|--------------|--------------|--------------|--------------|--------------|

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

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

| Lichtstrom [%] | Dimmstufe linear | Dimmstufe logarithmisch | Lichtstrom [lm] | Systemleistung [W] |
|----------------|------------------|-------------------------|-----------------|--------------------|
| 100            | 254              | 254                     | 18230           | 113.3              |
| 95             | 240              | 252                     | 17286           | 107.2              |
| 90             | 227              | 250                     | 16398           | 101.1              |
| 85             | 214              | 248                     | 15510           | 95.7               |
| 80             | 201              | 245                     | 14614           | 90.2               |
| 75             | 187              | 243                     | 13643           | 84.0               |
| 70             | 174              | 240                     | 12734           | 78.1               |
| 65             | 161              | 237                     | 11819           | 72.8               |
| 60             | 149              | 234                     | 10968           | 67.3               |
| 55             | 136              | 231                     | 10035           | 61.8               |
| 50             | 123              | 227                     | 9100            | 56.3               |
| 45             | 111              | 224                     | 8232            | 50.9               |
| 40             | 98               | 219                     | 7284            | 45.6               |
| 35             | 86               | 214                     | 6405            | 40.4               |
| 30             | 73               | 208                     | 5446            | 34.9               |
| 25             | 61               | 202                     | 4558            | 29.6               |
| 20             | 49               | 194                     | 3663            | 24.4               |
| 15             | 37               | 183                     | 2761            | 19.1               |
| 10             | 25               | 169                     | 1858            | 13.8               |
| 5              | 12               | 142                     | 875             | 8.0                |
| 2              | 5                | 110                     | 343             | 4.1                |