

filename : LED-X-APLED5-SATINE.LDT  
 meas. number : 3215-C  
 luminaire number : LED-X/APLED5/SATINE  
 date / operator : 28-11-2013

**default lamp type(s)**

| no of lamps | lamp type      | luminaire lumens | input wattage |
|-------------|----------------|------------------|---------------|
| 1           | 5x700mA Panels | 2932 lm          | 38 W          |

**dimensions**

| luminaire |           | luminous area |           |
|-----------|-----------|---------------|-----------|
| length    | : 1405 mm | length        | : 1400 mm |
| width     | : 28 mm   | width         | : 25 mm   |
| height    | : 24 mm   | height        | : 5 mm    |

**coordinate system**

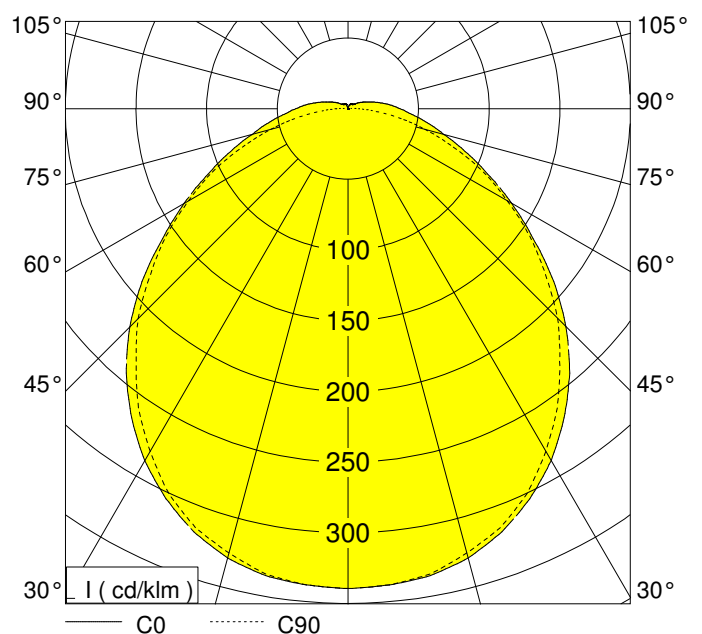
|               |                |                   |           |
|---------------|----------------|-------------------|-----------|
| no of planes  | : 24           | samples / plane   | : 37      |
| first c-plane | : 0.0 °        | first gamma-angle | : 0.0 °   |
| step angle    | : 15.0 °       | step angle        | : 5.0 °   |
| last c-plane  | : 345.0 °      | last gamma-angle  | : 180.0 ° |
| symmetrics    | : bi-symmetric |                   |           |

**performance**

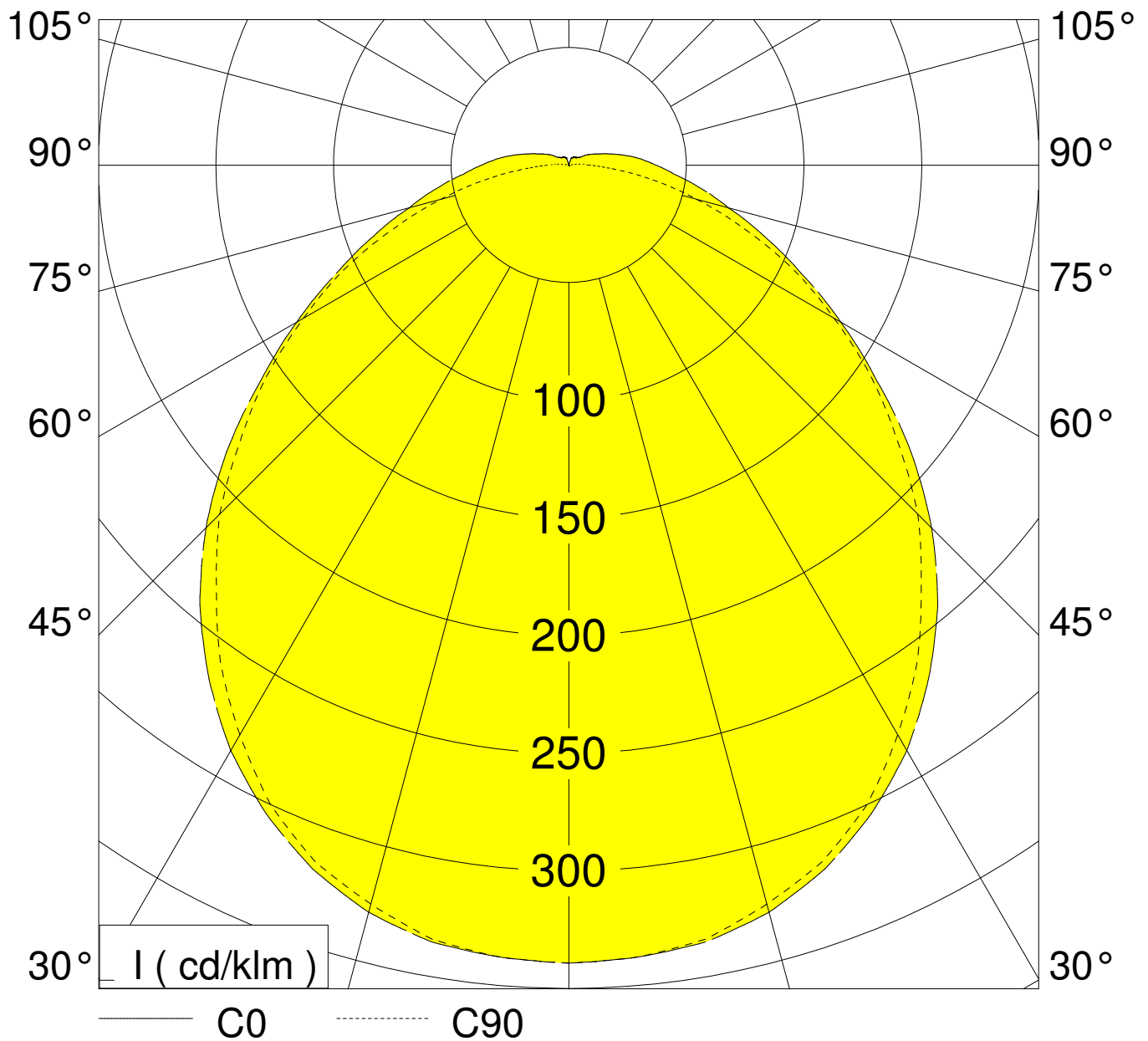
light output ratio : 100.0 %  
 DFF : 95.5 %  
 UFF : 4.5 %

**classification**

LiTG / DIN : A41  
 UTE : 0.95D+0.05T 0.95E+0.05T  
 CIE : 47 77 93 95 100  
 BZ : 4 4 4 4 5 5 5 5 5



Measurements made are in absolute units  
 The luminaire is treated as if it was a lamp as it  
 is not possible to measure each LED separately  
 - hence an LOR of 100%  
 The Light output ratio in real terms would be  
 less than 100%. If it was possible to compare  
 real LED lumens with the total output from the  
 luminaire we could obtain an actual LOR  
 This also means that the total lumens emitted  
 from the LED's would be greater than the 2932  
 lumens measured.  
 In reality the LED lumens would approximate to  
 this value divided by the actual Light Output



|        | C 0.0    | C 15.0 | C 30.0 | C 45.0 | C 60.0 | C 75.0 | C 90.0 | C 105.0 |
|--------|----------|--------|--------|--------|--------|--------|--------|---------|
| 0.0°   | 338.99   | 338.99 | 338.99 | 338.99 | 338.99 | 338.99 | 338.99 | 338.99  |
| 5.0°   | 337.69   | 337.69 | 337.69 | 337.69 | 337.69 | 337.69 | 337.69 | 337.69  |
| 10.0°  | 335.09   | 335.09 | 335.09 | 333.89 | 332.59 | 333.19 | 333.89 | 333.19  |
| 15.0°  | 328.59   | 327.99 | 327.39 | 326.19 | 324.99 | 324.99 | 324.99 | 324.99  |
| 20.0°  | 318.19   | 318.29 | 318.49 | 316.59 | 314.79 | 314.79 | 314.89 | 314.79  |
| 25.0°  | 304.09   | 304.29 | 304.49 | 302.69 | 300.89 | 300.29 | 299.79 | 300.29  |
| 30.0°  | 287.19   | 286.89 | 286.49 | 283.49 | 280.59 | 279.99 | 279.49 | 279.99  |
| 35.0°  | 266.49   | 266.89 | 267.29 | 263.09 | 258.99 | 258.49 | 257.99 | 258.49  |
| 40.0°  | 243.79   | 242.79 | 241.69 | 239.99 | 238.39 | 235.69 | 232.89 | 235.69  |
| 45.0°  | 217.99   | 217.69 | 217.49 | 216.49 | 215.39 | 212.59 | 209.69 | 212.59  |
| 50.0°  | 189.89   | 190.39 | 190.89 | 188.59 | 186.29 | 184.29 | 182.19 | 184.29  |
| 55.0°  | 159.79   | 161.69 | 163.49 | 160.69 | 157.79 | 157.29 | 156.89 | 157.29  |
| 60.0°  | 133.49   | 134.29 | 135.09 | 134.59 | 134.19 | 132.09 | 129.99 | 132.09  |
| 65.0°  | 108.90   | 110.50 | 112.00 | 109.60 | 107.10 | 106.40 | 105.70 | 106.40  |
| 70.0°  | 88.30    | 88.20  | 88.20  | 86.30  | 84.40  | 81.90  | 79.40  | 81.90   |
| 75.0°  | 70.30    | 69.80  | 69.30  | 66.50  | 63.70  | 60.00  | 56.30  | 60.00   |
| 80.0°  | 57.00    | 56.80  | 56.50  | 52.30  | 48.10  | 42.20  | 36.30  | 42.20   |
| 85.0°  | 45.00    | 44.20  | 43.30  | 38.10  | 33.10  | 25.70  | 18.40  | 25.70   |
| 90.0°  | 37.00    | 35.00  | 33.20  | 27.40  | 21.60  | 14.90  | 8.20   | 14.90   |
| 95.0°  | 30.60    | 27.80  | 25.10  | 19.50  | 14.00  | 9.70   | 5.40   | 9.70    |
| 100.0° | 24.00    | 21.40  | 18.80  | 13.90  | 9.00   | 4.50   | 0.00   | 4.50    |
| 105.0° | 18.40    | 16.60  | 14.70  | 10.30  | 5.80   | 2.90   | 0.00   | 2.90    |
| 110.0° | 14.00    | 12.20  | 10.50  | 7.20   | 3.90   | 2.00   | 0.00   | 2.00    |
| 115.0° | 11.00    | 9.70   | 8.30   | 6.10   | 3.80   | 1.90   | 0.00   | 1.90    |
| 120.0° | 8.70     | 7.10   | 5.50   | 4.70   | 3.80   | 1.90   | 0.00   | 1.90    |
| 125.0° | 5.70     | 5.40   | 5.10   | 4.30   | 3.40   | 1.70   | 0.00   | 1.70    |
| 130.0° | 5.10     | 4.80   | 4.60   | 4.00   | 3.40   | 1.70   | 0.00   | 1.70    |
| 135.0° | 4.40     | 4.30   | 4.20   | 2.10   | 0.00   | 0.00   | 0.00   | 0.00    |
| 140.0° | 4.40     | 4.30   | 4.20   | 2.10   | 0.00   | 0.00   | 0.00   | 0.00    |
| 145.0° | 4.30     | 4.30   | 4.20   | 2.10   | 0.00   | 0.00   | 0.00   | 0.00    |
| 150.0° | 4.00     | 4.10   | 4.10   | 2.00   | 0.00   | 0.00   | 0.00   | 0.00    |
| 155.0° | 3.50     | 3.50   | 3.60   | 1.80   | 0.00   | 0.00   | 0.00   | 0.00    |
| 160.0° | 3.20     | 3.30   | 3.30   | 1.70   | 0.00   | 0.00   | 0.00   | 0.00    |
| 165.0° | 0.00     | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    |
| 170.0° | 0.00     | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    |
| 175.0° | 0.00     | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    |
| 180.0° | 0.00     | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    |
|        | cd / klm |        |        |        |        |        |        |         |

|        | C 120.0  | C 135.0 | C 150.0 | C 165.0 | C 180.0 | C 195.0 | C 210.0 | C 225.0 |
|--------|----------|---------|---------|---------|---------|---------|---------|---------|
| 0.0°   | 338.99   | 338.99  | 338.99  | 338.99  | 338.99  | 338.99  | 338.99  | 338.99  |
| 5.0°   | 337.69   | 337.69  | 337.69  | 337.69  | 337.69  | 337.69  | 337.69  | 337.69  |
| 10.0°  | 332.59   | 333.89  | 335.09  | 335.09  | 335.09  | 335.09  | 335.09  | 333.89  |
| 15.0°  | 324.99   | 326.19  | 327.39  | 327.99  | 328.59  | 327.99  | 327.39  | 326.19  |
| 20.0°  | 314.79   | 316.59  | 318.49  | 318.29  | 318.19  | 318.29  | 318.49  | 316.59  |
| 25.0°  | 300.89   | 302.69  | 304.49  | 304.29  | 304.09  | 304.29  | 304.49  | 302.69  |
| 30.0°  | 280.59   | 283.49  | 286.49  | 286.89  | 287.19  | 286.89  | 286.49  | 283.49  |
| 35.0°  | 258.99   | 263.09  | 267.29  | 266.89  | 266.49  | 266.89  | 267.29  | 263.09  |
| 40.0°  | 238.39   | 239.99  | 241.69  | 242.79  | 243.79  | 242.79  | 241.69  | 239.99  |
| 45.0°  | 215.39   | 216.49  | 217.49  | 217.69  | 217.99  | 217.69  | 217.49  | 216.49  |
| 50.0°  | 186.29   | 188.59  | 190.89  | 190.39  | 189.89  | 190.39  | 190.89  | 188.59  |
| 55.0°  | 157.79   | 160.69  | 163.49  | 161.69  | 159.79  | 161.69  | 163.49  | 160.69  |
| 60.0°  | 134.19   | 134.59  | 135.09  | 134.29  | 133.49  | 134.29  | 135.09  | 134.59  |
| 65.0°  | 107.10   | 109.60  | 112.00  | 110.50  | 108.90  | 110.50  | 112.00  | 109.60  |
| 70.0°  | 84.40    | 86.30   | 88.20   | 88.20   | 88.30   | 88.20   | 88.20   | 86.30   |
| 75.0°  | 63.70    | 66.50   | 69.30   | 69.80   | 70.30   | 69.80   | 69.30   | 66.50   |
| 80.0°  | 48.10    | 52.30   | 56.50   | 56.80   | 57.00   | 56.80   | 56.50   | 52.30   |
| 85.0°  | 33.10    | 38.10   | 43.30   | 44.20   | 45.00   | 44.20   | 43.30   | 38.10   |
| 90.0°  | 21.60    | 27.40   | 33.20   | 35.00   | 37.00   | 35.00   | 33.20   | 27.40   |
| 95.0°  | 14.00    | 19.50   | 25.10   | 27.80   | 30.60   | 27.80   | 25.10   | 19.50   |
| 100.0° | 9.00     | 13.90   | 18.80   | 21.40   | 24.00   | 21.40   | 18.80   | 13.90   |
| 105.0° | 5.80     | 10.30   | 14.70   | 16.60   | 18.40   | 16.60   | 14.70   | 10.30   |
| 110.0° | 3.90     | 7.20    | 10.50   | 12.20   | 14.00   | 12.20   | 10.50   | 7.20    |
| 115.0° | 3.80     | 6.10    | 8.30    | 9.70    | 11.00   | 9.70    | 8.30    | 6.10    |
| 120.0° | 3.80     | 4.70    | 5.50    | 7.10    | 8.70    | 7.10    | 5.50    | 4.70    |
| 125.0° | 3.40     | 4.30    | 5.10    | 5.40    | 5.70    | 5.40    | 5.10    | 4.30    |
| 130.0° | 3.40     | 4.00    | 4.60    | 4.80    | 5.10    | 4.80    | 4.60    | 4.00    |
| 135.0° | 0.00     | 2.10    | 4.20    | 4.30    | 4.40    | 4.30    | 4.20    | 2.10    |
| 140.0° | 0.00     | 2.10    | 4.20    | 4.30    | 4.40    | 4.30    | 4.20    | 2.10    |
| 145.0° | 0.00     | 2.10    | 4.20    | 4.30    | 4.30    | 4.30    | 4.20    | 2.10    |
| 150.0° | 0.00     | 2.00    | 4.10    | 4.10    | 4.00    | 4.10    | 4.10    | 2.00    |
| 155.0° | 0.00     | 1.80    | 3.60    | 3.50    | 3.50    | 3.50    | 3.60    | 1.80    |
| 160.0° | 0.00     | 1.70    | 3.30    | 3.30    | 3.20    | 3.30    | 3.30    | 1.70    |
| 165.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 170.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 175.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 180.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
|        | cd / klm |         |         |         |         |         |         |         |

|        | C 240.0  | C 255.0 | C 270.0 | C 285.0 | C 300.0 | C 315.0 | C 330.0 | C 345.0 |
|--------|----------|---------|---------|---------|---------|---------|---------|---------|
| 0.0°   | 338.99   | 338.99  | 338.99  | 338.99  | 338.99  | 338.99  | 338.99  | 338.99  |
| 5.0°   | 337.69   | 337.69  | 337.69  | 337.69  | 337.69  | 337.69  | 337.69  | 337.69  |
| 10.0°  | 332.59   | 333.19  | 333.89  | 333.19  | 332.59  | 333.89  | 335.09  | 335.09  |
| 15.0°  | 324.99   | 324.99  | 324.99  | 324.99  | 324.99  | 326.19  | 327.39  | 327.99  |
| 20.0°  | 314.79   | 314.79  | 314.89  | 314.79  | 314.79  | 316.59  | 318.49  | 318.29  |
| 25.0°  | 300.89   | 300.29  | 299.79  | 300.29  | 300.89  | 302.69  | 304.49  | 304.29  |
| 30.0°  | 280.59   | 279.99  | 279.49  | 279.99  | 280.59  | 283.49  | 286.49  | 286.89  |
| 35.0°  | 258.99   | 258.49  | 257.99  | 258.49  | 258.99  | 263.09  | 267.29  | 266.89  |
| 40.0°  | 238.39   | 235.69  | 232.89  | 235.69  | 238.39  | 239.99  | 241.69  | 242.79  |
| 45.0°  | 215.39   | 212.59  | 209.69  | 212.59  | 215.39  | 216.49  | 217.49  | 217.69  |
| 50.0°  | 186.29   | 184.29  | 182.19  | 184.29  | 186.29  | 188.59  | 190.89  | 190.39  |
| 55.0°  | 157.79   | 157.29  | 156.89  | 157.29  | 157.79  | 160.69  | 163.49  | 161.69  |
| 60.0°  | 134.19   | 132.09  | 129.99  | 132.09  | 134.19  | 134.59  | 135.09  | 134.29  |
| 65.0°  | 107.10   | 106.40  | 105.70  | 106.40  | 107.10  | 109.60  | 112.00  | 110.50  |
| 70.0°  | 84.40    | 81.90   | 79.40   | 81.90   | 84.40   | 86.30   | 88.20   | 88.20   |
| 75.0°  | 63.70    | 60.00   | 56.30   | 60.00   | 63.70   | 66.50   | 69.30   | 69.80   |
| 80.0°  | 48.10    | 42.20   | 36.30   | 42.20   | 48.10   | 52.30   | 56.50   | 56.80   |
| 85.0°  | 33.10    | 25.70   | 18.40   | 25.70   | 33.10   | 38.10   | 43.30   | 44.20   |
| 90.0°  | 21.60    | 14.90   | 8.20    | 14.90   | 21.60   | 27.40   | 33.20   | 35.00   |
| 95.0°  | 14.00    | 9.70    | 5.40    | 9.70    | 14.00   | 19.50   | 25.10   | 27.80   |
| 100.0° | 9.00     | 4.50    | 0.00    | 4.50    | 9.00    | 13.90   | 18.80   | 21.40   |
| 105.0° | 5.80     | 2.90    | 0.00    | 2.90    | 5.80    | 10.30   | 14.70   | 16.60   |
| 110.0° | 3.90     | 2.00    | 0.00    | 2.00    | 3.90    | 7.20    | 10.50   | 12.20   |
| 115.0° | 3.80     | 1.90    | 0.00    | 1.90    | 3.80    | 6.10    | 8.30    | 9.70    |
| 120.0° | 3.80     | 1.90    | 0.00    | 1.90    | 3.80    | 4.70    | 5.50    | 7.10    |
| 125.0° | 3.40     | 1.70    | 0.00    | 1.70    | 3.40    | 4.30    | 5.10    | 5.40    |
| 130.0° | 3.40     | 1.70    | 0.00    | 1.70    | 3.40    | 4.00    | 4.60    | 4.80    |
| 135.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 2.10    | 4.20    | 4.30    |
| 140.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 2.10    | 4.20    | 4.30    |
| 145.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 2.10    | 4.20    | 4.30    |
| 150.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 2.00    | 4.10    | 4.10    |
| 155.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 1.80    | 3.60    | 3.50    |
| 160.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 1.70    | 3.30    | 3.30    |
| 165.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 170.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 175.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 180.0° | 0.00     | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
|        | cd / klm |         |         |         |         |         |         |         |

| glare rating according to UGR                    |      |                                 |      |      |      |                                 |                |      |      |      |      |
|--|------|---------------------------------|------|------|------|---------------------------------|----------------|------|------|------|------|
| ρ-ceiling  |      | 70                              | 70   | 50   | 50   | 30                              | 70             | 70   | 50   | 50   | 30   |
| ρ-walls  |      | 50                              | 30   | 50   | 30   | 30                              | 50             | 30   | 50   | 30   | 30   |
| ρ-workplane                                      |      | 20                              | 20   | 20   | 20   | 20                              | 20             | 20   | 20   | 20   | 20   |
| room dimensions<br>X                      Y      |      | viewed crosswise                |      |      |      |                                 | viewed endwise |      |      |      |      |
| 2H   | 2H   | 22.6                            | 24.1 | 22.9 | 24.3 | 24.6                            | 23.0           | 24.4 | 23.3 | 24.7 | 25.0 |
|  | 3H   | 23.5                            | 24.6 | 23.8 | 24.9 | 25.2                            | 23.9           | 25.1 | 24.3 | 25.3 | 25.6 |
|  | 4H   | 24.2                            | 25.3 | 24.5 | 25.6 | 25.9                            | 24.6           | 25.7 | 25.0 | 26.0 | 26.3 |
|  | 6H   | 24.8                            | 25.9 | 25.2 | 26.2 | 26.5                            | 25.1           | 26.2 | 25.5 | 26.5 | 26.8 |
|  | 8H   | 25.2                            | 26.2 | 25.6 | 26.6 | 26.9                            | 25.4           | 26.4 | 25.8 | 26.8 | 27.1 |
|  | 12H  | 25.5                            | 26.6 | 25.9 | 26.9 | 27.3                            | 25.6           | 26.6 | 26.0 | 27.0 | 27.3 |
| 4H   | 2H   | 22.8                            | 23.9 | 23.2 | 24.2 | 24.5                            | 23.1           | 24.2 | 23.4 | 24.5 | 24.8 |
|  | 3H   | 24.5                            | 25.6 | 24.9 | 25.9 | 26.3                            | 24.9           | 25.9 | 25.3 | 26.3 | 26.6 |
|  | 4H   | 25.4                            | 26.5 | 25.9 | 26.8 | 27.2                            | 25.8           | 26.8 | 26.2 | 27.2 | 27.6 |
|  | 6H   | 26.0                            | 26.9 | 26.5 | 27.3 | 27.7                            | 26.2           | 27.1 | 26.7 | 27.5 | 27.9 |
|  | 8H   | 26.5                            | 27.2 | 26.9 | 27.7 | 28.1                            | 26.6           | 27.4 | 27.0 | 27.8 | 28.2 |
|  | 12H  | 27.0                            | 27.8 | 27.5 | 28.3 | 28.8                            | 27.0           | 27.7 | 27.5 | 28.2 | 28.7 |
| 8H   | 4H   | 25.6                            | 26.4 | 26.1 | 26.9 | 27.3                            | 25.9           | 26.7 | 26.4 | 27.1 | 27.6 |
|  | 6H   | 26.9                            | 27.6 | 27.4 | 28.2 | 28.7                            | 27.0           | 27.8 | 27.6 | 28.3 | 28.9 |
|  | 8H   | 27.5                            | 28.2 | 28.1 | 28.8 | 29.4                            | 27.5           | 28.3 | 28.1 | 28.8 | 29.4 |
|  | 12H  | 28.0                            | 28.6 | 28.5 | 29.1 | 29.8                            | 27.8           | 28.4 | 28.4 | 29.0 | 29.6 |
| 12H  | 4H   | 25.8                            | 26.6 | 26.4 | 27.1 | 27.6                            | 26.1           | 26.9 | 26.6 | 27.4 | 27.9 |
|  | 6H   | 27.1                            | 27.8 | 27.7 | 28.4 | 29.0                            | 27.3           | 28.0 | 27.8 | 28.5 | 29.2 |
|  | 8H   | 27.6                            | 28.2 | 28.2 | 28.8 | 29.4                            | 27.6           | 28.2 | 28.2 | 28.8 | 29.4 |
| variation of observer position                   |      |                                 |      |      |      |                                 |                |      |      |      |      |
| S =  | 1.0H | +0.1/                      -0.1 |      |      |      | +0.1/                      -0.1 |                |      |      |      |      |
|  | 1.5H | +0.2/                      -0.3 |      |      |      | +0.2/                      -0.3 |                |      |      |      |      |
|  | 2.0H | +0.3/                      -0.6 |      |      |      | +0.3/                      -0.5 |                |      |      |      |      |
| standard-table                                   |      | BK07                            |      |      |      |                                 | BK06           |      |      |      |      |
| correction for luminaire                         |      | 10.4                            |      |      |      |                                 | 10.1           |      |      |      |      |
| correct glare indices for a total flux of 2932lm |      |                                 |      |      |      |                                 |                |      |      |      |      |

| class |   | glare rating for service value of illuminance (lx) |      |      |     |       |       |      |       |       |
|-------|---|--|------|------|-----|-------|-------|------|-------|-------|
| A     | A | 1000   | 750  | 500  | --  | ≤ 300 |       |      |       |       |
| 1     | B | 2000   | 1500 | 1000 | 750 | 500   | ≤ 300 |      |       |       |
| 2     | D |  |      |      |     | 2000  | 1000  | 500  | ≤ 300 |       |
| 3     | E |  |      |      |     |       | 2000  | 1000 | 500   | ≤ 300 |

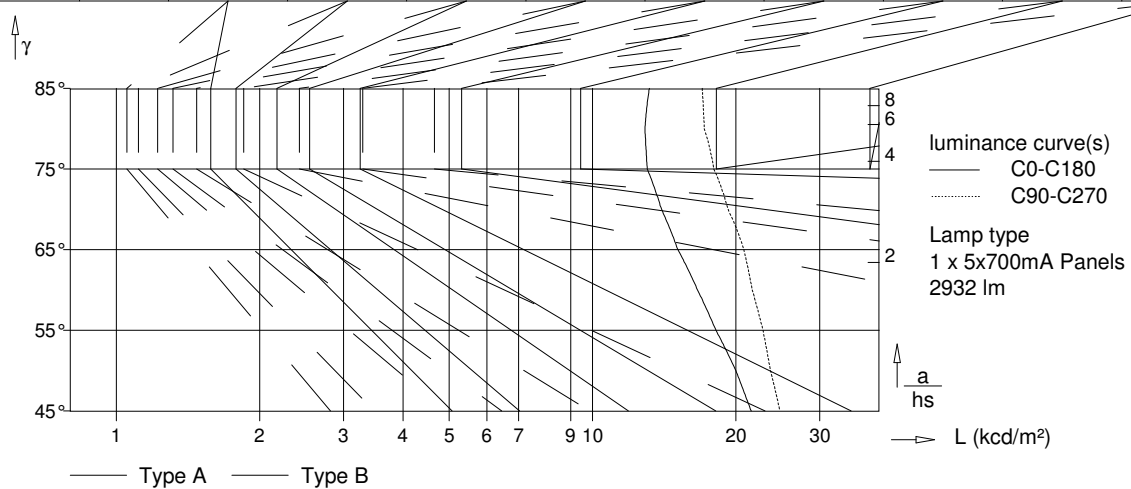


Tabelle der berechneten Leuchtdichten

| gamma | C 0     | C 90    | C 180   | C 270   |
|-------|---------|---------|---------|---------|
| 45°   | 21521.3 | 24753.8 | 21521.3 | 24753.8 |
| 50°   | 19984.4 | 23643.6 | 19984.4 | 23643.6 |
| 55°   | 18152.9 | 22798.1 | 18152.9 | 22798.1 |
| 60°   | 16611.6 | 21645.8 | 16611.6 | 21645.8 |
| 65°   | 15106.2 | 20791.7 | 15106.2 | 20791.7 |
| 70°   | 13957.1 | 19257.7 | 13957.1 | 19257.7 |
| 75°   | 13028.4 | 17982.1 | 13028.4 | 17982.1 |
| 80°   | 12883.6 | 17163.5 | 12883.6 | 17163.5 |
| 85°   | 13162.1 | 16991.1 | 13162.1 | 16991.1 |

alle Werte in cd/m²

