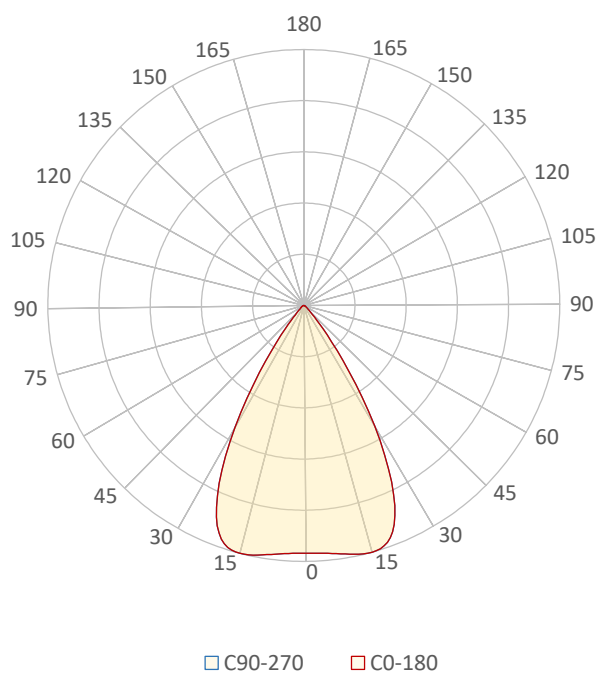


## General Discription

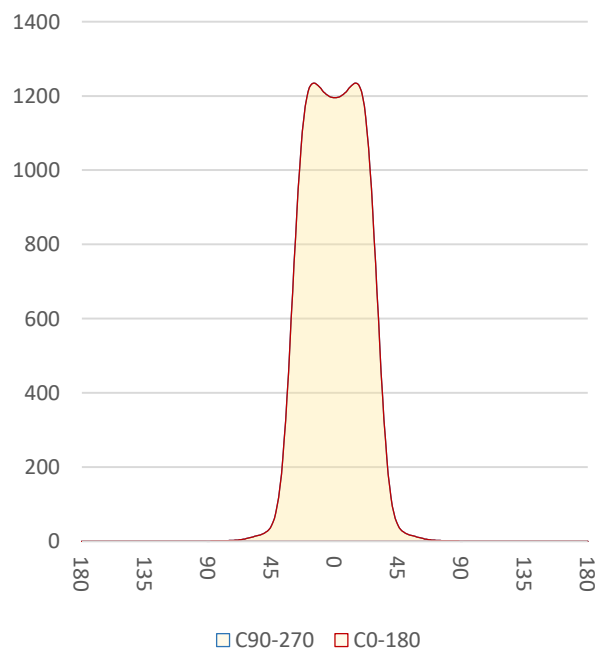
|                   |                    |
|-------------------|--------------------|
| Item number       | E-OM4-X-X-3090     |
| Date and time     | 2-12-2022 11:22:00 |
| CCT (Kelvin)      | 2961 K             |
| Beam angle        | 61,5°              |
| Luminous flux     | 1184 lm            |
| Efficiency        | 90 lm/watt         |
| Weighted energy   | 13,1 kWh/1000h     |
| Power factor      | 0,91               |
| CRI (RA)          | 93,2               |
| Fidelity index Rf | Rf 90,7            |
| Gammut index Rg   | Rg 103,1           |
| Peak              | 1235 cd            |



Polar diagram



Cartesian diagram



# LM-79

## Test Report

### LM79-EMERALD-OFFICE-M4-3000K-CRI90

| Beam details | 1m      | 2m     | 3m     | 4m    | 5m    |
|--------------|---------|--------|--------|-------|-------|
| <b>Lux*</b>  | 1195 lx | 299 lx | 133 lx | 75 lx | 48 lx |

\*measured at center of beam

|                           |           |          |          |         |         |
|---------------------------|-----------|----------|----------|---------|---------|
| <b>Footcandles*</b>       | 111,0 fcd | 27,8 fcd | 12,3 fcd | 6,9 fcd | 4,4 fcd |
| <b>Beam width (meter)</b> | 1,2 m     | 2,4 m    | 3,6 m    | 4,8 m   | 6 m     |
| <b>Beam width (Feet)</b>  | 3,9 ft    | 7,8 ft   | 11,7 ft  | 15,6 ft | 19,5 ft |

| Beam intensities |         |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1m               | 2m      | 3m      | 4m     | 5m     | 6m     | 7m     | 8m     | 9m     | 10m    | 11m    | 12m    | 13m    | 14m    | 15m    | 16m    | 17m    | 18m    | 19m    | 20m    |
| 1195lx           | 299lx   | 133lx   | 75lx   | 48lx   | 33lx   | 24lx   | 19lx   | 15lx   | 12lx   | 10lx   | 8lx    | 7lx    | 6lx    | 5lx    | 5lx    | 4lx    | 4lx    | 3lx    | 3lx    |
| 3,3ft            | 6,6ft   | 9,8ft   | 13,1ft | 16,4ft | 19,7ft | 23ft   | 26,2ft | 29,5ft | 32,8ft | 36,1ft | 39,4ft | 42,7ft | 45,9ft | 49,2ft | 52,5ft | 55,8ft | 59,1ft | 62,3ft | 65,6ft |
| 111fcd           | 27,8fcd | 12,3fcd | 6,9fcd | 4,4fcd | 3,1fcd | 2,3fcd | 1,7fcd | 1,4fcd | 1,1fcd | 0,9fcd | 0,8fcd | 0,7fcd | 0,6fcd | 0,5fcd | 0,4fcd | 0,4fcd | 0,3fcd | 0,3fcd | 0,3fcd |

| Intensities in 0° c-plane |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 0°                        | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20°  | 22°  | 24°  | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
| 1195                      | 1196 | 1199 | 1204 | 1211 | 1220 | 1228 | 1234 | 1234 | 1223 | 1195 | 1142 | 1060 | 950 | 820 | 674 | 525 | 388 | 271 | 181 |
| 100%                      | 100% | 100% | 101% | 101% | 102% | 103% | 103% | 103% | 102% | 100% | 96%  | 89%  | 80% | 69% | 56% | 44% | 32% | 23% | 15% |

| Intensities in 90° c-plane |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     |
|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 0°                         | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20°  | 22°  | 24°  | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
| 1195                       | 1196 | 1199 | 1204 | 1211 | 1220 | 1228 | 1234 | 1234 | 1223 | 1195 | 1142 | 1060 | 950 | 820 | 674 | 525 | 388 | 271 | 181 |
| 100%                       | 100% | 100% | 101% | 101% | 102% | 103% | 103% | 103% | 102% | 100% | 96%  | 89%  | 80% | 69% | 56% | 44% | 32% | 23% | 15% |

| Intensities in 180° c-plane |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 0°                          | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20°  | 22°  | 24°  | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
| 1195                        | 1196 | 1199 | 1204 | 1211 | 1220 | 1228 | 1234 | 1234 | 1223 | 1195 | 1142 | 1060 | 950 | 820 | 674 | 525 | 388 | 271 | 181 |
| 100%                        | 100% | 100% | 101% | 101% | 102% | 103% | 103% | 103% | 102% | 100% | 96%  | 89%  | 80% | 69% | 56% | 44% | 32% | 23% | 15% |

| Intensities in 270° c-plane |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 0°                          | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20°  | 22°  | 24°  | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
| 1195                        | 1196 | 1199 | 1204 | 1211 | 1220 | 1228 | 1234 | 1234 | 1223 | 1195 | 1142 | 1060 | 950 | 820 | 674 | 525 | 388 | 271 | 181 |
| 100%                        | 100% | 100% | 101% | 101% | 102% | 103% | 103% | 103% | 102% | 100% | 96%  | 89%  | 80% | 69% | 56% | 44% | 32% | 23% | 15% |

|                       |                        |                          |                                     |                                    |
|-----------------------|------------------------|--------------------------|-------------------------------------|------------------------------------|
| <b>Beam angle 50%</b> | <b>Field angle 10%</b> | <b>Cutoff angle 2,5%</b> | <b>Intensity ratio in 120° cone</b> | <b>Intensity ratio in 90° cone</b> |
| 61,5°                 | 79,6°                  | 94,2°                    | 99,3%                               | 97,1%                              |



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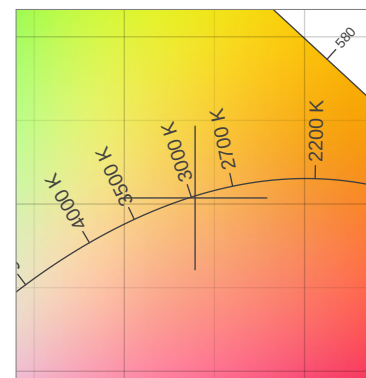
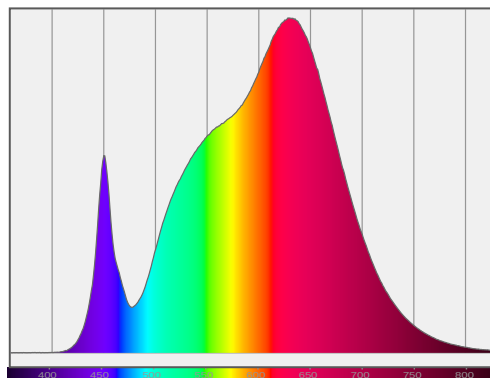
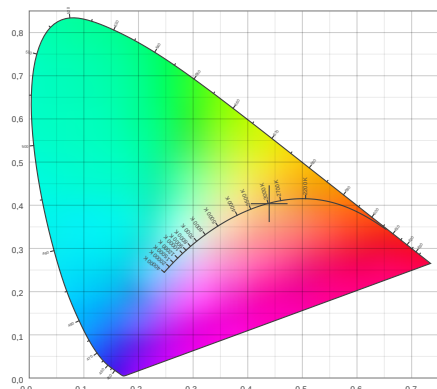
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# LM-79

## Test Report

### LM79-EMERALD-OFFICE-M4-3000K-CRI90

#### Color details



CIE 1931

x: 0,439



Spectra

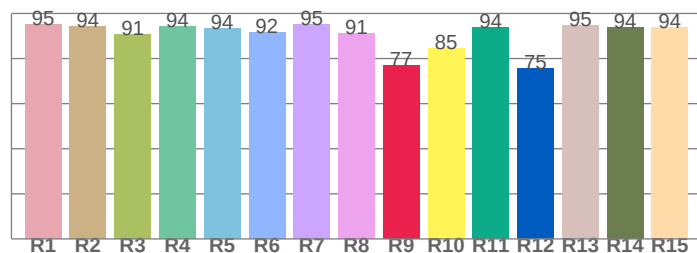
CIE 1931 ZOOM

2961 K

y: 0,404

$\Delta uv: -0,0005$

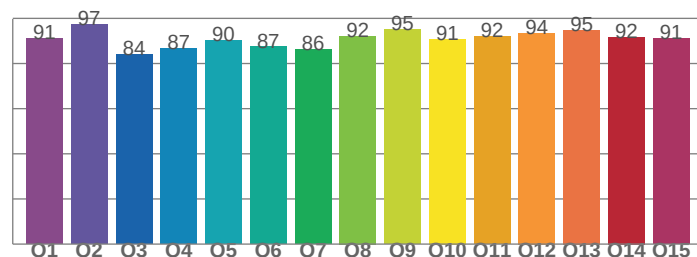
CRI: 93,2 (R1-R8)



CRI values, R1-R8 are used to calculate final CRI value

| R1   | R2   | R3   | R4   | R5   | R6   | R7   | R8   |
|------|------|------|------|------|------|------|------|
| 95,3 | 94,4 | 90,7 | 94,2 | 93,6 | 91,6 | 95,0 | 91,2 |
| R9   | R10  | R11  | R12  | R13  | R14  | R15  |      |
| 77,0 | 84,6 | 94,0 | 75,5 | 94,9 | 93,7 | 93,7 |      |

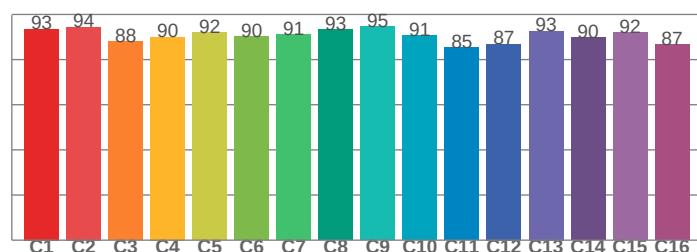
CQS: 90,2



CQS values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   |
|------|------|------|------|------|------|------|------|
| 91,2 | 97,2 | 84,1 | 86,8 | 90,3 | 87,4 | 86,1 | 92,2 |
| Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |      |
| 95,0 | 90,9 | 91,8 | 93,5 | 94,8 | 91,8 | 91,2 |      |

TM30: 90,7



TM30 values, 16 binned values out of total of 99 values

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   |
|------|------|------|------|------|------|------|------|
| 93,5 | 94,4 | 87,9 | 90,0 | 92,0 | 90,2 | 91,1 | 93,3 |
| C9   | C10  | C11  | C12  | C13  | C14  | C15  |      |
| 94,6 | 90,7 | 85,4 | 87,0 | 92,6 | 89,6 | 92,1 |      |

#### Color parameters

| Color temperature | Color rendering index | Red component | Color fidelity | Color gamut | Color quality scale | Color coordinate cie 1931 | Color coordinate cie 1931 | Color coordinate | Color coordinate | Color deviation from black body |
|-------------------|-----------------------|---------------|----------------|-------------|---------------------|---------------------------|---------------------------|------------------|------------------|---------------------------------|
| CCT               | CRI                   | CRI R9        | TM30 Rf        | TM30 Rg     | CQS                 | x                         | y                         | u                | v                | $\Delta uv$                     |
| 2961 K            | 93,2                  | 77,0          | 90,7           | 103,1       | 90,2                | 0,439                     | 0,404                     | 0,252            | 0,348            | -0,0005                         |



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# LM-79

## Test Report

LM79-EMERALD-OFFICE-M4-3000K-CRI90

### TM30 details

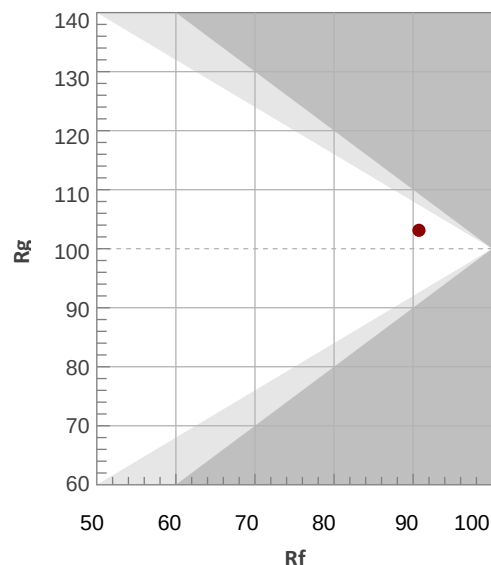
Rf 90,7

Fidelity index Rf

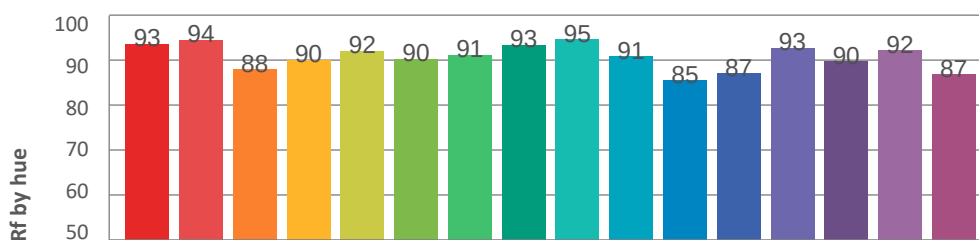
Rg 103,1

Gamut index Rg

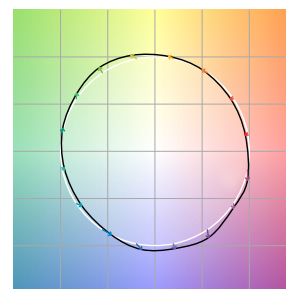
| Hue Bin | R <sub>f</sub> | Graphic shifts (%) |      |
|---------|----------------|--------------------|------|
|         |                | Chroma             | Hue  |
| 1       | 93             | -3%                | -2%  |
| 2       | 94             | -2%                | 2%   |
| 3       | 88             | 0%                 | 6%   |
| 4       | 90             | 1%                 | 5%   |
| 5       | 92             | 5%                 | 5%   |
| 6       | 90             | 6%                 | 0%   |
| 7       | 91             | 3%                 | -5%  |
| 8       | 93             | 1%                 | -4%  |
| 9       | 95             | -2%                | -1%  |
| 10      | 91             | -4%                | 5%   |
| 11      | 85             | -1%                | 11%  |
| 12      | 87             | 5%                 | 6%   |
| 13      | 93             | 5%                 | 0%   |
| 14      | 90             | 8%                 | -4%  |
| 15      | 92             | 2%                 | -4%  |
| 16      | 87             | 2%                 | -11% |



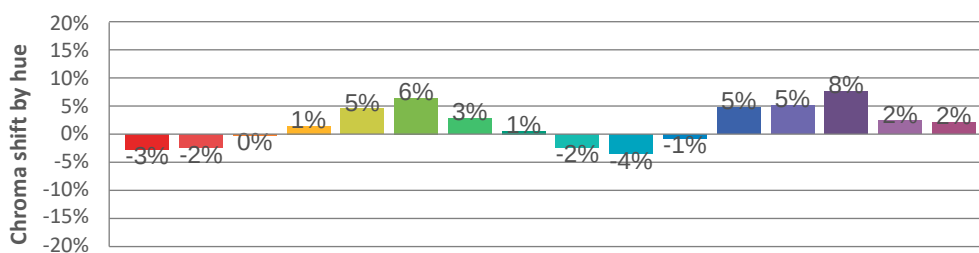
### Hue binH



### Color vector graphics



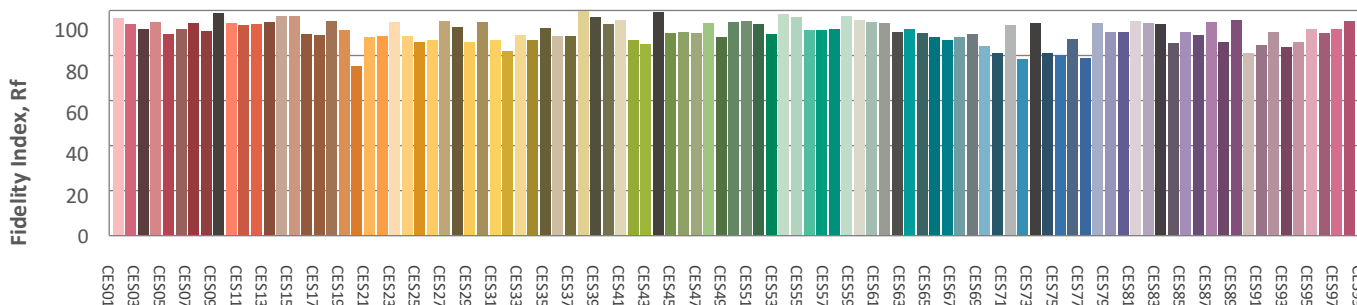
### Hue bin



### Color distortion graphics



### Color Evaluation Sample



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## Glare Evaluation According to UGR

|                                                                 |     |                                                |      |      |      |      |                                         |      |      |      |      |
|-----------------------------------------------------------------|-----|------------------------------------------------|------|------|------|------|-----------------------------------------|------|------|------|------|
| p Ceiling                                                       |     | 70                                             | 70   | 50   | 50   | 30   | 70                                      | 70   | 50   | 50   | 30   |
| p Walls                                                         |     | 50                                             | 30   | 50   | 30   | 30   | 50                                      | 30   | 50   | 30   | 30   |
| p Floor                                                         |     | 20                                             | 20   | 20   | 20   | 20   | 20                                      | 20   | 20   | 20   | 20   |
| Room size<br>X      Y                                           |     | Viewing direction at right angles to lamp axis |      |      |      |      | Viewing direction parallel to lamp axis |      |      |      |      |
| 2H                                                              | 2H  | 21,6                                           | 22,2 | 21,7 | 22,4 | 22,6 | 21,6                                    | 22,2 | 21,7 | 22,4 | 22,6 |
|                                                                 | 3H  | 21,3                                           | 22,1 | 21,7 | 22,3 | 22,4 | 21,3                                    | 22,1 | 21,7 | 22,3 | 22,4 |
|                                                                 | 4H  | 21,2                                           | 21,9 | 21,6 | 22,2 | 22,4 | 21,2                                    | 21,9 | 21,6 | 22,2 | 22,4 |
|                                                                 | 6H  | 21,2                                           | 21,8 | 21,5 | 22,1 | 22,5 | 21,2                                    | 21,8 | 21,5 | 22,1 | 22,5 |
|                                                                 | 8H  | 21,2                                           | 21,8 | 21,5 | 22,1 | 22,5 | 21,2                                    | 21,8 | 21,5 | 22,1 | 22,5 |
|                                                                 | 12H | 21,1                                           | 21,7 | 21,5 | 22,0 | 22,5 | 21,1                                    | 21,7 | 21,5 | 22,0 | 22,5 |
| 4H                                                              | 2H  | 21,2                                           | 22,0 | 21,6 | 22,2 | 22,4 | 21,2                                    | 22,0 | 21,6 | 22,2 | 22,4 |
|                                                                 | 3H  | 21,1                                           | 21,7 | 21,5 | 22,0 | 22,5 | 21,1                                    | 21,7 | 21,5 | 22,0 | 22,5 |
|                                                                 | 4H  | 21,0                                           | 21,5 | 21,4 | 21,9 | 22,4 | 21,0                                    | 21,5 | 21,4 | 21,9 | 22,4 |
|                                                                 | 6H  | 20,9                                           | 21,5 | 21,4 | 21,8 | 22,1 | 20,9                                    | 21,5 | 21,4 | 21,8 | 22,1 |
|                                                                 | 8H  | 20,9                                           | 21,4 | 21,4 | 21,7 | 22,1 | 20,9                                    | 21,4 | 21,4 | 21,7 | 22,1 |
|                                                                 | 12H | 20,8                                           | 21,2 | 21,3 | 21,6 | 22,1 | 20,8                                    | 21,2 | 21,3 | 21,6 | 22,1 |
| 8H                                                              | 4H  | 20,9                                           | 21,4 | 21,4 | 21,7 | 22,1 | 20,9                                    | 21,4 | 21,4 | 21,7 | 22,1 |
|                                                                 | 6H  | 20,8                                           | 21,1 | 21,3 | 21,6 | 22,1 | 20,8                                    | 21,1 | 21,3 | 21,6 | 22,1 |
|                                                                 | 8H  | 20,8                                           | 21,1 | 21,3 | 21,6 | 22,2 | 20,8                                    | 21,1 | 21,3 | 21,6 | 22,2 |
|                                                                 | 12H | 20,7                                           | 20,9 | 21,3 | 21,5 | 22,1 | 20,7                                    | 20,9 | 21,3 | 21,5 | 22,1 |
| 12H                                                             | 4H  | 20,8                                           | 21,2 | 21,3 | 21,6 | 22,1 | 20,8                                    | 21,2 | 21,3 | 21,6 | 22,1 |
|                                                                 | 6H  | 20,8                                           | 21,1 | 21,3 | 21,6 | 22,2 | 20,8                                    | 21,1 | 21,3 | 21,6 | 22,2 |
|                                                                 | 8H  | 20,7                                           | 20,9 | 21,3 | 21,5 | 22,1 | 20,7                                    | 20,9 | 21,3 | 21,5 | 22,1 |
| Variation of the observer position for the luminaire distance S |     |                                                |      |      |      |      |                                         |      |      |      |      |
| S = 1.0H                                                        |     | 6,0 / -11,4                                    |      |      |      |      | 6,0 / -11,4                             |      |      |      |      |
| S = 1.5H                                                        |     | 8,7 / -13,8                                    |      |      |      |      | 8,7 / -13,8                             |      |      |      |      |
| S = 2.0H                                                        |     | 10,7 / -16,0                                   |      |      |      |      | 10,7 / -16,0                            |      |      |      |      |
| Standard table                                                  |     | n/a                                            |      |      |      |      | n/a                                     |      |      |      |      |
| Correction summand                                              |     | n/a                                            |      |      |      |      | n/a                                     |      |      |      |      |
| Corrected glare indices referring to 1184lm total luminous flux |     |                                                |      |      |      |      |                                         |      |      |      |      |