

# LM-79

## Test Report

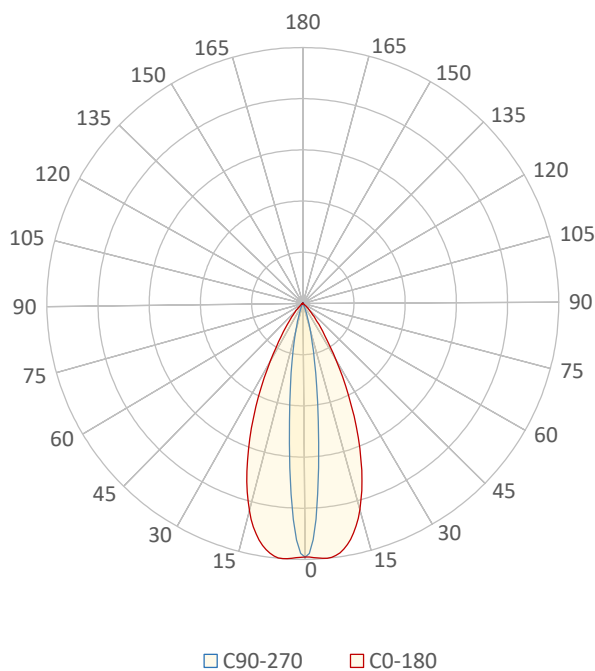
LM79-REVO-XL-4000K-CRI80-12x46DEG

### General Discription

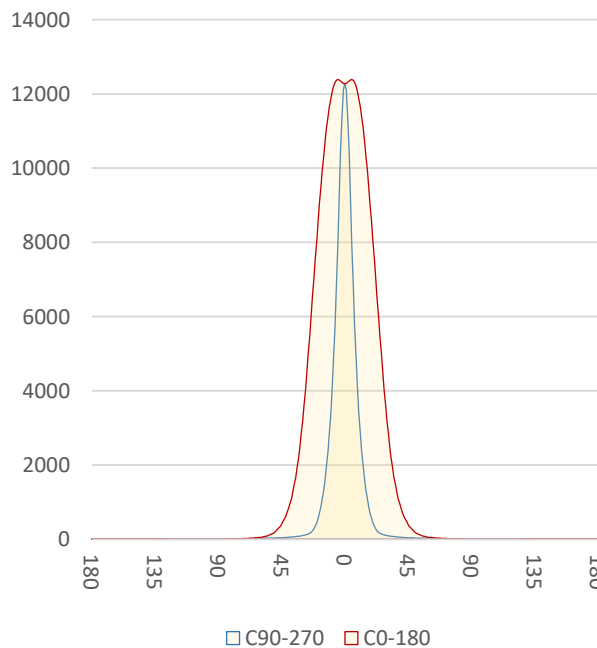
|                   |                    |
|-------------------|--------------------|
| Item number       | RX-1N-22-22        |
| Date and time     | 28-6-2018 16:27:07 |
| CCT (Kelvin)      | 3895 K             |
| Beam angle        | 13,2 x 47,2°       |
| Luminous flux     | 4666 lm            |
| Efficiency        | 127 lm/watt        |
| Weighted energy   | 36,9 kWh/1000h     |
| Power factor      | 0,95               |
| CRI (RA)          | 82,7               |
| Fidelity index Rf | Rf 82,4            |
| Gammut index Rg   | Rg 97,9            |
| Peak              | 12391 cd           |



Polar diagram



Cartesian diagram



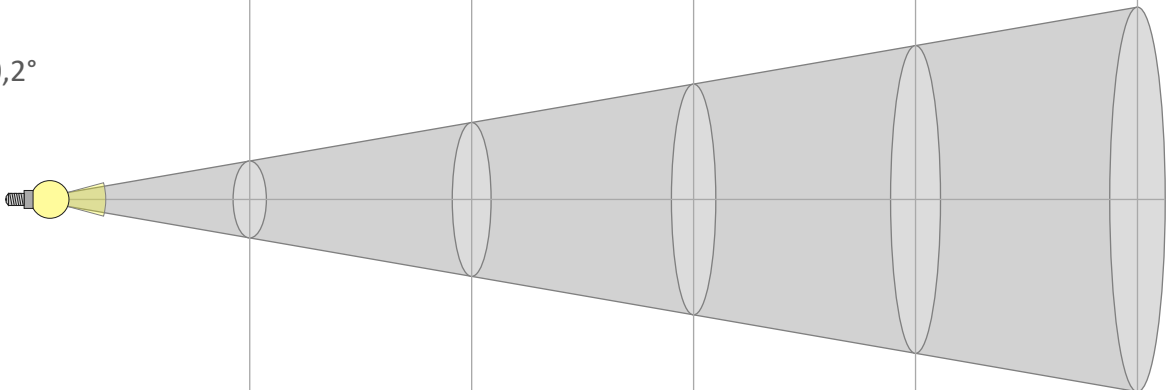
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### LM79-REVO-XL-4000K-CRI80-12x46DEG

| Beam details                                                                                                  |          |          |         |                 | 1m         |         | 2m        |                   | 3m        |        | 4m       |                              | 5m       |        |        |                             |        |        |        |
|---------------------------------------------------------------------------------------------------------------|----------|----------|---------|-----------------|------------|---------|-----------|-------------------|-----------|--------|----------|------------------------------|----------|--------|--------|-----------------------------|--------|--------|--------|
| Lux*                                                                                                          |          |          |         |                 | 12282 lx   |         | 3071 lx   |                   | 1365 lx   |        | 768 lx   |                              | 491 lx   |        |        |                             |        |        |        |
| <div><div>30,2°</div></div> |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
|                                                                                                               |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
|                                                                                                               |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
|                                                                                                               |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
| *measured at center of beam                                                                                   |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
| Footcandles*                                                                                                  |          |          |         |                 | 1141,1 fcd |         | 285,3 fcd |                   | 126,8 fcd |        | 71,3 fcd |                              | 45,6 fcd |        |        |                             |        |        |        |
| Beam width (meter)                                                                                            |          |          |         |                 | 0,5 m      |         | 1,1 m     |                   | 1,6 m     |        | 2,2 m    |                              | 2,7 m    |        |        |                             |        |        |        |
| Beam width (Feet)                                                                                             |          |          |         |                 | 1,8 ft     |         | 3,5 ft    |                   | 5,3 ft    |        | 7,1 ft   |                              | 8,9 ft   |        |        |                             |        |        |        |
| Beam intensities                                                                                              |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
| 1m                                                                                                            | 2m       | 3m       | 4m      | 5m              | 6m         | 7m      | 8m        | 9m                | 10m       | 11m    | 12m      | 13m                          | 14m      | 15m    | 16m    | 17m                         | 18m    | 19m    | 20m    |
| 12282lx                                                                                                       | 3071lx   | 1365lx   | 768lx   | 491lx           | 341lx      | 251lx   | 192lx     | 152lx             | 123lx     | 102lx  | 85lx     | 73lx                         | 63lx     | 55lx   | 48lx   | 42lx                        | 38lx   | 34lx   | 31lx   |
| 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 |
| 1141,1fcd                                                                                                     | 285,3fcd | 126,8fcd | 71,3fcd | 45,6fcd         | 31,7fcd    | 23,3fcd | 17,8fcd   | 14,1fcd           | 11,4fcd   | 9,4fcd | 7,9fcd   | 6,8fcd                       | 5,8fcd   | 5,1fcd | 4,5fcd | 3,9fcd                      | 3,5fcd | 3,2fcd | 2,9fcd |
|                                                                                                               |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
| 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°    |
| 12,3K                                                                                                         | 12,3K    | 12,4K    | 12,4K   | 12,2K           | 11,9K      | 11,4K   | 10,7K     | 10,0K             | 9,0K      | 8,1K   | 7,0K     | 6,0K                         | 5,0K     | 4,0K   | 3,2K   | 2,5K                        | 1,9K   | 1,5K   | 1,1K   |
| 100%                                                                                                          | 100%     | 101%     | 101%    | 99%             | 97%        | 93%     | 87%       | 81%               | 74%       | 66%    | 57%      | 49%                          | 41%      | 33%    | 26%    | 20%                         | 16%    | 12%    | 9%     |
|                                                                                                               |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
| 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°    |
| 12,3K                                                                                                         | 11,5K    | 9,3K     | 6,8K    | 4,8K            | 3,4K       | 2,4K    | 1,6K      | 1,1K              | 0,7K      | 0,4K   | 0,3K     | 0,2K                         | 0,1K     | 0,1K   | 0,1K   | 0,1K                        | 0,1K   | 0,1K   | 0,1K   |
| 100%                                                                                                          | 93%      | 75%      | 55%     | 39%             | 28%        | 19%     | 13%       | 9%                | 6%        | 4%     | 2%       | 2%                           | 1%       | 1%     | 1%     | 1%                          | 1%     | 1%     | 1%     |
|                                                                                                               |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
| 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°    |
| 12,3K                                                                                                         | 12,3K    | 12,4K    | 12,4K   | 12,2K           | 11,9K      | 11,4K   | 10,7K     | 10,0K             | 9,0K      | 8,1K   | 7,0K     | 6,0K                         | 5,0K     | 4,0K   | 3,2K   | 2,5K                        | 1,9K   | 1,5K   | 1,1K   |
| 100%                                                                                                          | 100%     | 101%     | 101%    | 99%             | 97%        | 93%     | 87%       | 81%               | 74%       | 66%    | 57%      | 49%                          | 41%      | 33%    | 26%    | 20%                         | 16%    | 12%    | 9%     |
|                                                                                                               |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
| 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°    |
| 12,3K                                                                                                         | 11,5K    | 9,3K     | 6,8K    | 4,8K            | 3,4K       | 2,4K    | 1,6K      | 1,1K              | 0,7K      | 0,4K   | 0,3K     | 0,2K                         | 0,1K     | 0,1K   | 0,1K   | 0,1K                        | 0,1K   | 0,1K   | 0,1K   |
| 100%                                                                                                          | 93%      | 75%      | 55%     | 39%             | 28%        | 19%     | 13%       | 9%                | 6%        | 4%     | 2%       | 2%                           | 1%       | 1%     | 1%     | 1%                          | 1%     | 1%     | 1%     |
|                                                                                                               |          |          |         |                 |            |         |           |                   |           |        |          |                              |          |        |        |                             |        |        |        |
| Beam angle 50%                                                                                                |          |          |         | Field angle 10% |            |         |           | Cutoff angle 2,5% |           |        |          | Intensity ratio in 120° cone |          |        |        | Intensity ratio in 90° cone |        |        |        |
| 30,2°                                                                                                         |          |          |         | 52,6°           |            |         |           | 68,5°             |           |        |          | 98,7%                        |          |        |        | 96,0%                       |        |        |        |



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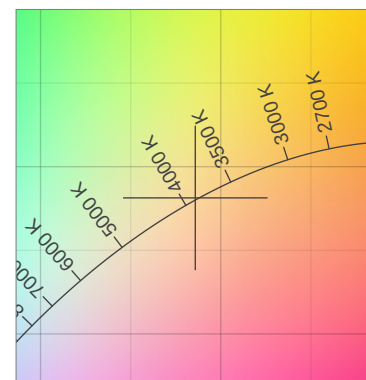
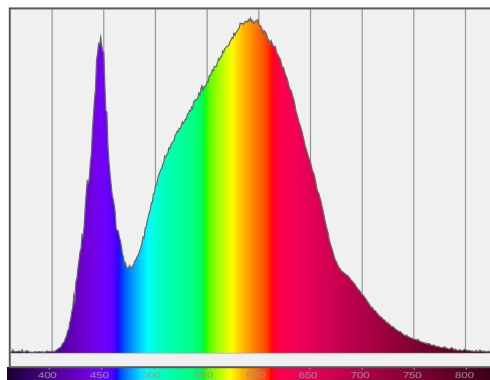
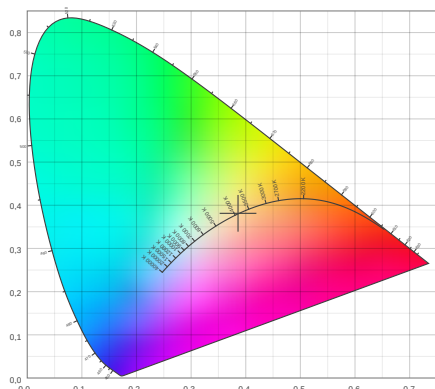
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LM79-REVO-XL-4000K-CRI80-12x46DEG

### Color details



CIE 1931

x: 0,386

3895 K

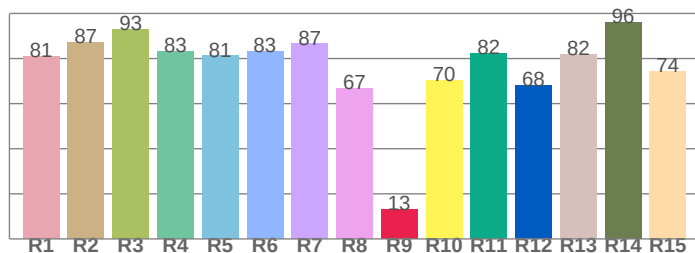
y: 0,381

Spectra

CIE 1931 ZOOM

$\Delta uv$ : 0,0006

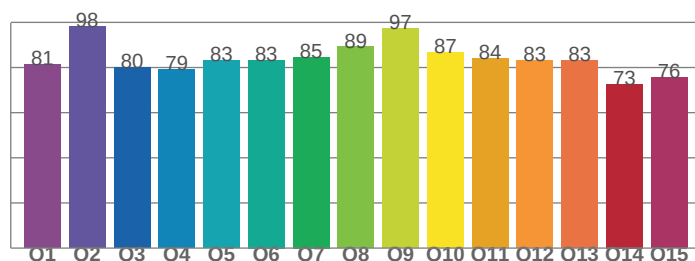
CRI: **82,7** (R1-R8)



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

| R1   | R2   | R3   | R4   | R5   | R6   | R7   | R8   |
|------|------|------|------|------|------|------|------|
| 80,8 | 87,3 | 92,8 | 83,1 | 81,2 | 83,1 | 86,5 | 66,8 |
| R9   | R10  | R11  | R12  | R13  | R14  | R15  |      |
| 13,0 | 70,4 | 82,3 | 68,1 | 81,9 | 95,9 | 74,5 |      |

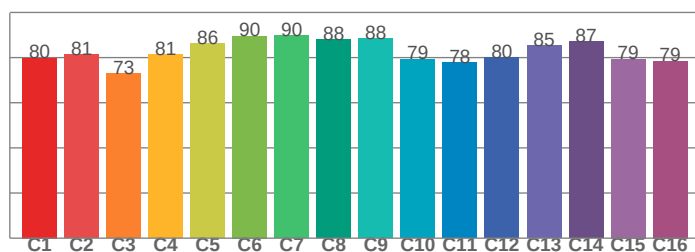
CQS: **82,8**



CQS values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   |
|------|------|------|------|------|------|------|------|
| 81,4 | 98,1 | 80,2 | 79,1 | 83,0 | 83,3 | 84,7 | 89,1 |
| Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |      |
| 97,2 | 86,8 | 84,1 | 83,1 | 83,1 | 72,7 | 75,7 |      |

TM30: **82,4**



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

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   |
|------|------|------|------|------|------|------|------|
| 79,8 | 81,3 | 72,8 | 81,4 | 86,1 | 89,6 | 89,6 | 88,0 |
| C9   | C10  | C11  | C12  | C13  | C14  | C15  |      |
| 88,4 | 79,3 | 77,9 | 79,9 | 85,4 | 87,2 | 79,4 |      |

### 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                | $\Delta uv$                     |
| 3895 K            | 82,7                  | 13,0          | 82,4           | 97,9        | 82,8                | 0,386                     | 0,381                     | 0,227            | 0,336            | 0,0006                          |



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LM79-REVO-XL-4000K-CRI80-12x46DEG

### TM30 details

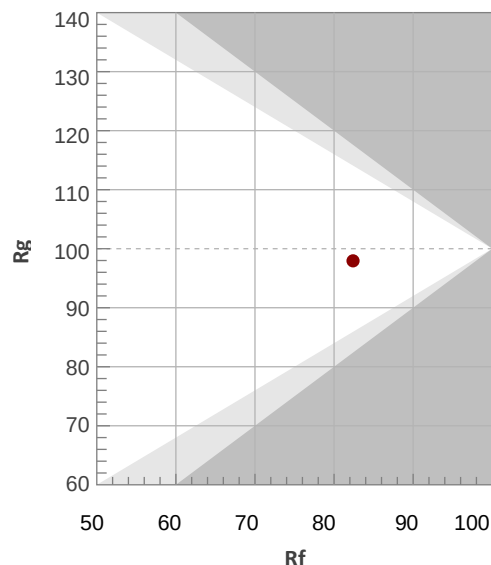
Rf 82,4

Fidelity index Rf

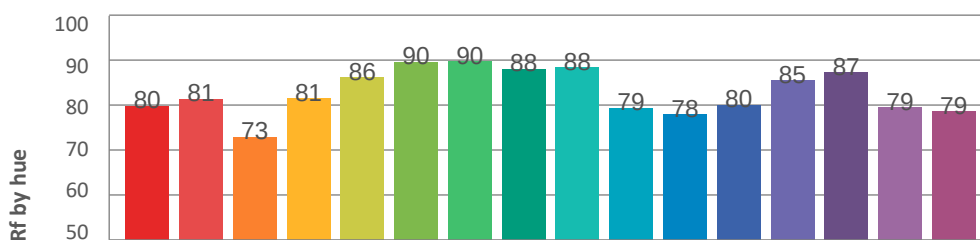
Rg 97,9

Gamut index Rg

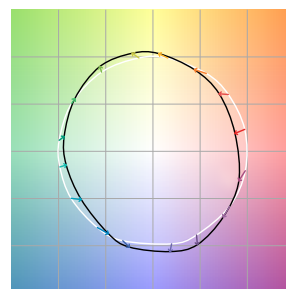
| Hue Bin | R <sub>f</sub> | Graphic shifts (%) |      |
|---------|----------------|--------------------|------|
|         |                | Chroma             | Hue  |
| 1       | 80             | -11%               | -2%  |
| 2       | 81             | -8%                | 6%   |
| 3       | 73             | -4%                | 13%  |
| 4       | 81             | 3%                 | 10%  |
| 5       | 86             | 6%                 | 6%   |
| 6       | 90             | 6%                 | -2%  |
| 7       | 90             | 0%                 | -6%  |
| 8       | 88             | -4%                | -5%  |
| 9       | 88             | -7%                | -1%  |
| 10      | 79             | -8%                | 7%   |
| 11      | 78             | -1%                | 13%  |
| 12      | 80             | 5%                 | 8%   |
| 13      | 85             | 8%                 | -3%  |
| 14      | 87             | 9%                 | -5%  |
| 15      | 79             | 1%                 | -13% |
| 16      | 79             | -5%                | -12% |



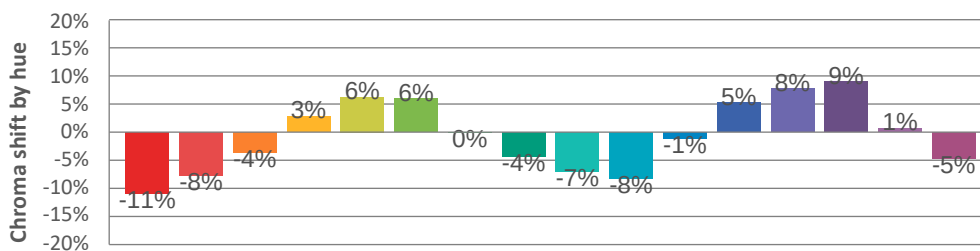
### Hue binH



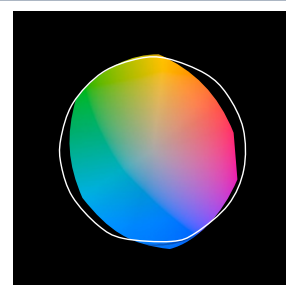
### Color vector graphics



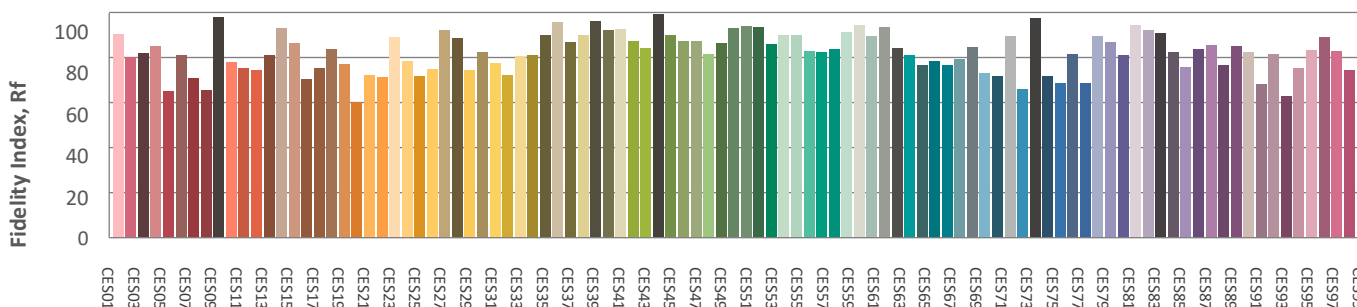
### Hue bin



### 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  | 20,6                                           | 21,3 | 20,9 | 21,5 | 21,7 | 13,5                                    | 14,2 | 13,8 | 14,4 | 14,6 |
|                                                                 | 3H  | 20,5                                           | 21,2 | 20,8 | 21,4 | 21,7 | 13,7                                    | 14,3 | 14,0 | 14,5 | 14,8 |
|                                                                 | 4H  | 20,5                                           | 21,1 | 20,8 | 21,4 | 21,6 | 13,7                                    | 14,3 | 14,0 | 14,6 | 14,8 |
|                                                                 | 6H  | 20,5                                           | 21,0 | 20,8 | 21,3 | 21,6 | 13,7                                    | 14,2 | 14,0 | 14,5 | 14,8 |
|                                                                 | 8H  | 20,4                                           | 21,0 | 20,8 | 21,3 | 21,6 | 13,7                                    | 14,2 | 14,0 | 14,5 | 14,8 |
|                                                                 | 12H | 20,4                                           | 20,9 | 20,8 | 21,2 | 21,5 | 13,6                                    | 14,1 | 14,0 | 14,4 | 14,8 |
| 4H                                                              | 2H  | 20,4                                           | 21,0 | 20,7 | 21,3 | 21,5 | 13,6                                    | 14,2 | 13,9 | 14,5 | 14,8 |
|                                                                 | 3H  | 20,4                                           | 20,9 | 20,7 | 21,2 | 21,5 | 13,9                                    | 14,4 | 14,2 | 14,7 | 15,0 |
|                                                                 | 4H  | 20,4                                           | 20,8 | 20,8 | 21,1 | 21,5 | 14,0                                    | 14,4 | 14,3 | 14,7 | 15,1 |
|                                                                 | 6H  | 20,3                                           | 20,7 | 20,7 | 21,1 | 21,5 | 14,0                                    | 14,3 | 14,4 | 14,7 | 15,1 |
|                                                                 | 8H  | 20,3                                           | 20,6 | 20,7 | 21,0 | 21,4 | 14,0                                    | 14,3 | 14,4 | 14,7 | 15,1 |
|                                                                 | 12H | 20,3                                           | 20,6 | 20,7 | 21,0 | 21,4 | 13,9                                    | 14,2 | 14,4 | 14,6 | 15,0 |
| 8H                                                              | 4H  | 20,3                                           | 20,6 | 20,7 | 21,0 | 21,4 | 14,0                                    | 14,3 | 14,4 | 14,7 | 15,1 |
|                                                                 | 6H  | 20,2                                           | 20,5 | 20,7 | 20,9 | 21,4 | 14,0                                    | 14,2 | 14,5 | 14,7 | 15,1 |
|                                                                 | 8H  | 20,2                                           | 20,4 | 20,7 | 20,9 | 21,3 | 14,0                                    | 14,2 | 14,5 | 14,7 | 15,1 |
|                                                                 | 12H | 20,2                                           | 20,3 | 20,7 | 20,8 | 21,3 | 14,0                                    | 14,2 | 14,5 | 14,6 | 15,1 |
| 12H                                                             | 4H  | 20,2                                           | 20,5 | 20,7 | 20,9 | 21,3 | 13,9                                    | 14,2 | 14,4 | 14,6 | 15,0 |
|                                                                 | 6H  | 20,2                                           | 20,4 | 20,7 | 20,8 | 21,3 | 14,0                                    | 14,2 | 14,5 | 14,6 | 15,1 |
|                                                                 | 8H  | 20,2                                           | 20,3 | 20,7 | 20,8 | 21,3 | 14,0                                    | 14,2 | 14,5 | 14,6 | 15,1 |
| Variation of the observer position for the luminaire distance S |     |                                                |      |      |      |      |                                         |      |      |      |      |
| S = 1,0H                                                        |     | +4,9 / -6,2                                    |      |      |      |      | +3,8 / -3,1                             |      |      |      |      |
| S = 1,5H                                                        |     | +7,6 / -7,2                                    |      |      |      |      | +5,3 / -3,8                             |      |      |      |      |
| S = 2,0H                                                        |     | +9,6 / -8,1                                    |      |      |      |      | +7,1 / -4,5                             |      |      |      |      |
| Standard table                                                  |     | BK00                                           |      |      |      |      | BK01                                    |      |      |      |      |
| Correction summand                                              |     | 2,1                                            |      |      |      |      | -4,1                                    |      |      |      |      |
| Corrected glare indices referring to 4666lm total luminous flux |     |                                                |      |      |      |      |                                         |      |      |      |      |



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