

LM-79

Test Report

LM79-RUBY-BRACKET-8-3000K-CRI80-MEDIUM

General Description

| | |
|-------------------|---------------------|
| Item number | RU-38-X-X-02-2-X |
| Date and time | 21-11-2016 10:51:36 |
| CCT (Kelvin) | 3035 K |
| Beam angle | 50,2° |
| Luminous flux | 5335 lm |
| Efficiency | 93 lm/watt |
| Weighted energy | 57,2 kWh/1000h |
| Power factor | 0,98 |
| CRI (RA) | 81,2 |
| Fidelity index Rf | Rf 82,5 |
| Gammut index Rg | Rg 95,1 |
| Peak | 6803 cd |



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| Beam details | 1m | 2m | 3m | 4m | 5m | | | | | | | | | | | | | | | | | | | |
|------------------------------------|-----------|-----------|----------|----------|------------------------|---------|--------|--------|--------|--------------------------|--------|--------|--------|--------|-------------------------------------|--------|--------|--------|--------|------------------------------------|--|--|--|--|
| Lux* | 6802 lx | 1701 lx | 756 lx | 425 lx | 272 lx | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>*measured at center of beam</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| Footcandles* | 632,0 fcd | 158,0 fcd | 70,2 fcd | 39,5 fcd | 25,3 fcd | | | | | | | | | | | | | | | | | | | |
| Beam width (meter) | 0,9 m | 1,9 m | 2,8 m | 3,7 m | 4,7 m | | | | | | | | | | | | | | | | | | | |
| Beam width (Feet) | 3,1 ft | 6,1 ft | 9,2 ft | 12,3 ft | 15,4 ft | | | | | | | | | | | | | | | | | | | |
| Beam intensities | | | | | | | | | | | | | | | | | | | | | | | | |
| 1m | 2m | 3m | 4m | 5m | 6m | 7m | 8m | 9m | 10m | 11m | 12m | 13m | 14m | 15m | 16m | 17m | 18m | 19m | 20m | | | | | |
| 6802lx | 1701lx | 756lx | 425lx | 272lx | 189lx | 139lx | 106lx | 84lx | 68lx | 56lx | 47lx | 40lx | 35lx | 30lx | 27lx | 24lx | 21lx | 19lx | 17lx | | | | | |
| 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 | | | | | |
| 632fcd | 158fcd | 70,2fcd | 39,5fcd | 25,3fcd | 17,6fcd | 12,9fcd | 9,9fcd | 7,8fcd | 6,3fcd | 5,2fcd | 4,4fcd | 3,7fcd | 3,2fcd | 2,8fcd | 2,5fcd | 2,2fcd | 2fcd | 1,8fcd | 1,6fcd | | | | | |
| 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° | | | | | |
| 6802 | 6802 | 6801 | 6799 | 6753 | 6581 | 6409 | 6018 | 5564 | 5086 | 4551 | 4017 | 3611 | 3240 | 2900 | 2633 | 2366 | 2030 | 1679 | 1321 | | | | | |
| 100% | 100% | 100% | 100% | 99% | 97% | 94% | 88% | 82% | 75% | 67% | 59% | 53% | 48% | 43% | 39% | 35% | 30% | 25% | 19% | | | | | |
| 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° | | | | | |
| 6802 | 6803 | 6791 | 6776 | 6717 | 6533 | 6350 | 5954 | 5497 | 5023 | 4508 | 3992 | 3594 | 3226 | 2891 | 2632 | 2373 | 2037 | 1684 | 1325 | | | | | |
| 100% | 100% | 100% | 100% | 99% | 96% | 93% | 88% | 81% | 74% | 66% | 59% | 53% | 47% | 43% | 39% | 35% | 30% | 25% | 19% | | | | | |
| 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° | | | | | |
| 6802 | 6802 | 6801 | 6799 | 6753 | 6581 | 6409 | 6018 | 5564 | 5086 | 4551 | 4017 | 3611 | 3240 | 2900 | 2633 | 2366 | 2030 | 1679 | 1321 | | | | | |
| 100% | 100% | 100% | 100% | 99% | 97% | 94% | 88% | 82% | 75% | 67% | 59% | 53% | 48% | 43% | 39% | 35% | 30% | 25% | 19% | | | | | |
| 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° | | | | | |
| 6802 | 6803 | 6791 | 6776 | 6717 | 6533 | 6350 | 5954 | 5497 | 5023 | 4508 | 3992 | 3594 | 3226 | 2891 | 2632 | 2373 | 2037 | 1684 | 1325 | | | | | |
| 100% | 100% | 100% | 100% | 99% | 96% | 93% | 88% | 81% | 74% | 66% | 59% | 53% | 47% | 43% | 39% | 35% | 30% | 25% | 19% | | | | | |
| Beam angle 50% | | | | | Field angle 10% | | | | | Cutoff angle 2,5% | | | | | Intensity ratio in 120° cone | | | | | Intensity ratio in 90° cone | | | | |
| 50,2° | | | | | 82,9° | | | | | 96,3° | | | | | 99,0% | | | | | 96,5% | | | | |



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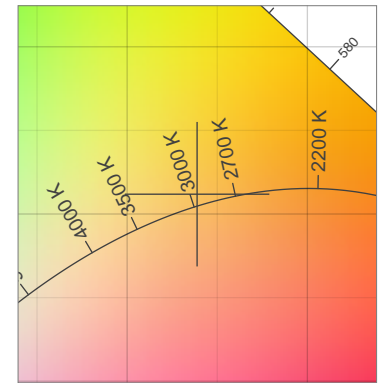
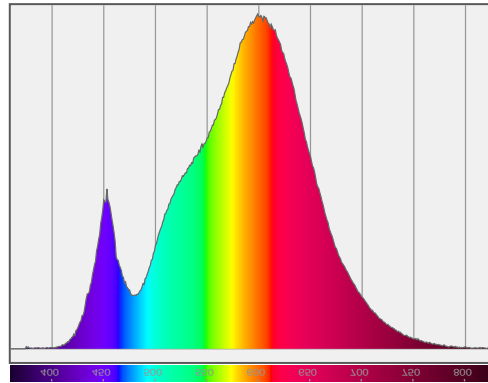
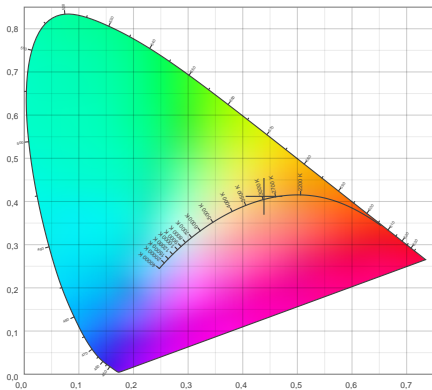
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Color details



CIE 1931

x: 0,439



Spectra

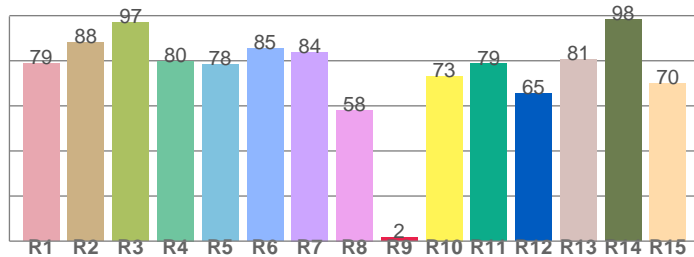
CIE 1931 ZOOM

3035 K

y: 0,412

Δuv : 0,0028

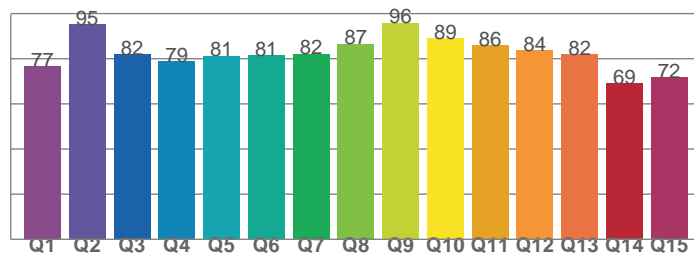
CRI: 81,2 (R1-R8)



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

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 |
|------|------|------|------|------|------|------|------|
| 78,7 | 88,2 | 96,9 | 79,9 | 78,4 | 85,4 | 83,9 | 58,1 |
| R9 | R10 | R11 | R12 | R13 | R14 | R15 | |
| 1,5 | 73,2 | 78,6 | 65,3 | 80,7 | 98,3 | 70,2 | |

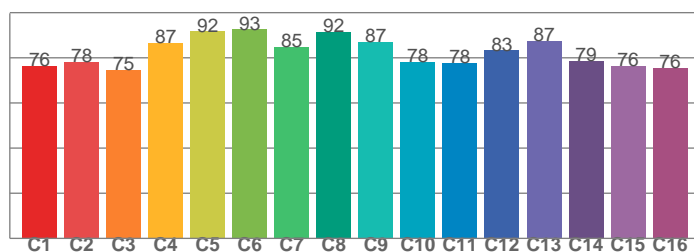
CQS: 81,3



CQS values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 |
|------|------|------|------|------|------|------|------|
| 76,8 | 95,3 | 82,1 | 79,0 | 81,3 | 81,4 | 82,2 | 86,6 |
| Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | |
| 95,9 | 88,9 | 86,0 | 83,6 | 82,1 | 69,1 | 71,8 | |

TM30: 82,5



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

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 |
|------|------|------|------|------|------|------|------|
| 76,4 | 78,1 | 74,8 | 86,7 | 91,8 | 92,6 | 84,8 | 91,5 |
| C9 | C10 | C11 | C12 | C13 | C14 | C15 | |
| 87,1 | 78,0 | 77,8 | 83,3 | 87,4 | 78,7 | 76,4 | |

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 | Δuv |
| 3035 K | 81,2 | 1,5 | 82,5 | 95,1 | 81,3 | 0,439 | 0,412 | 0,248 | 0,350 | 0,0028 |



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TM30 details

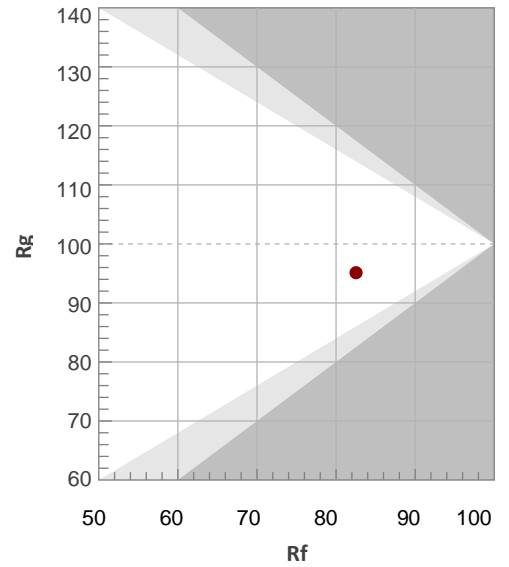
Rf 82,5

Fidelity index Rf

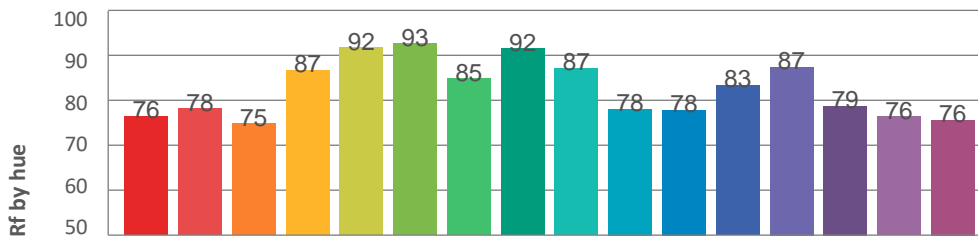
Rg 95,1

Gamut index Rg

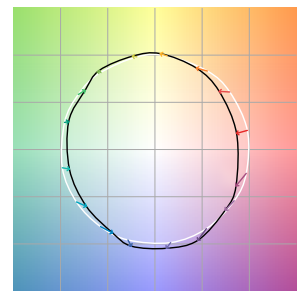
| Hue Bin | R _f | Graphic shifts (%) | |
|---------|----------------|--------------------|------|
| | | Chroma | Hue |
| 1 | 76 | -12% | -1% |
| 2 | 78 | -9% | 7% |
| 3 | 75 | -4% | 11% |
| 4 | 87 | 1% | 8% |
| 5 | 92 | 2% | 4% |
| 6 | 93 | 3% | -2% |
| 7 | 85 | -4% | -8% |
| 8 | 92 | -4% | -2% |
| 9 | 87 | -7% | 3% |
| 10 | 78 | -6% | 10% |
| 11 | 78 | -2% | 14% |
| 12 | 83 | 6% | 5% |
| 13 | 87 | 5% | -6% |
| 14 | 79 | 5% | -14% |
| 15 | 76 | -2% | -14% |
| 16 | 76 | -8% | -15% |



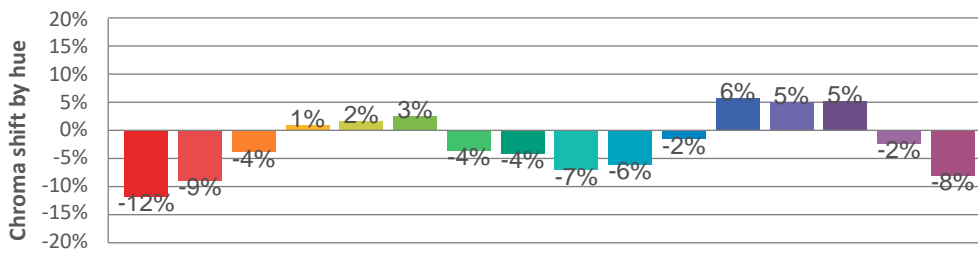
Hue binH



Color vector graphics



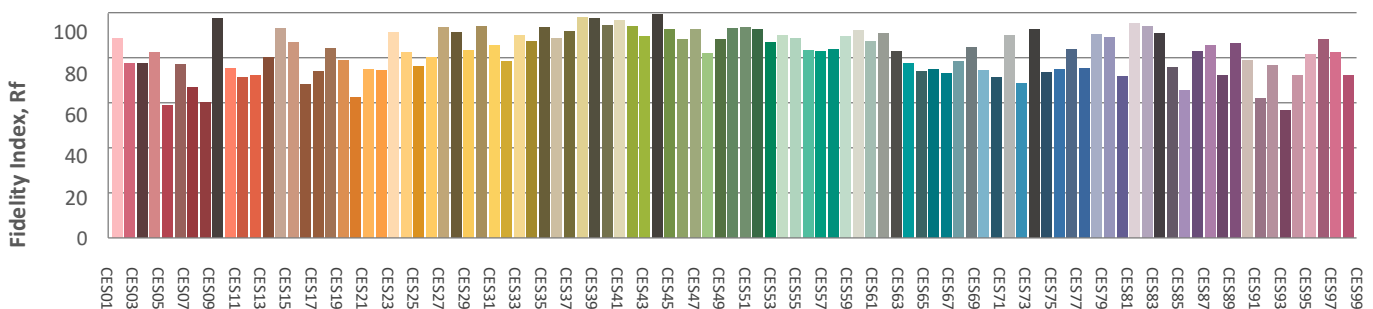
Hue bin



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 X Y | Viewing direction at right angles to lamp axis | | | | | Viewing direction parallel to lamp axis | | | | | |
| 2H | 2H | 22,4 | 23,1 | 22,7 | 23,3 | 23,5 | 22,4 | 23,1 | 22,7 | 23,3 | 23,5 |
| | 3H | 22,3 | 22,9 | 22,6 | 23,1 | 23,4 | 22,3 | 22,9 | 22,6 | 23,1 | 23,4 |
| | 4H | 22,2 | 22,8 | 22,5 | 23,1 | 23,3 | 22,2 | 22,8 | 22,5 | 23,1 | 23,3 |
| | 6H | 22,1 | 22,7 | 22,5 | 23,0 | 23,3 | 22,1 | 22,7 | 22,5 | 23,0 | 23,3 |
| | 8H | 22,1 | 22,6 | 22,4 | 22,9 | 23,2 | 22,1 | 22,6 | 22,4 | 22,9 | 23,2 |
| | 12H | 22,1 | 22,6 | 22,4 | 22,9 | 23,2 | 22,1 | 22,6 | 22,4 | 22,9 | 23,2 |
| 4H | 2H | 22,2 | 22,8 | 22,5 | 23,1 | 23,3 | 22,2 | 22,8 | 22,5 | 23,1 | 23,3 |
| | 3H | 22,1 | 22,6 | 22,4 | 22,9 | 23,2 | 22,1 | 22,6 | 22,4 | 22,9 | 23,2 |
| | 4H | 22,0 | 22,4 | 22,4 | 22,8 | 23,1 | 22,0 | 22,4 | 22,4 | 22,8 | 23,1 |
| | 6H | 21,9 | 22,3 | 22,3 | 22,7 | 23,0 | 21,9 | 22,3 | 22,3 | 22,7 | 23,0 |
| | 8H | 21,9 | 22,2 | 22,3 | 22,6 | 23,0 | 21,9 | 22,2 | 22,3 | 22,6 | 23,0 |
| | 12H | 21,8 | 22,1 | 22,3 | 22,5 | 23,0 | 21,8 | 22,1 | 22,3 | 22,5 | 23,0 |
| 8H | 4H | 21,9 | 22,2 | 22,3 | 22,6 | 23,0 | 21,9 | 22,2 | 22,3 | 22,6 | 23,0 |
| | 6H | 21,8 | 22,0 | 22,3 | 22,5 | 22,9 | 21,8 | 22,0 | 22,3 | 22,5 | 22,9 |
| | 8H | 21,8 | 22,0 | 22,2 | 22,4 | 22,9 | 21,8 | 22,0 | 22,2 | 22,4 | 22,9 |
| | 12H | 21,7 | 21,9 | 22,2 | 22,3 | 22,8 | 21,7 | 21,9 | 22,2 | 22,3 | 22,8 |
| 12H | 4H | 21,8 | 22,1 | 22,3 | 22,5 | 23,0 | 21,8 | 22,1 | 22,3 | 22,5 | 23,0 |
| | 6H | 21,8 | 22,0 | 22,2 | 22,4 | 22,9 | 21,8 | 22,0 | 22,2 | 22,4 | 22,9 |
| | 8H | 21,7 | 21,9 | 22,2 | 22,3 | 22,8 | 21,7 | 21,9 | 22,2 | 22,3 | 22,8 |
| Variation of the observer position for the luminaire distance S | | | | | | | | | | | |
| S = 1,0H | +4,6 / -10,8 | | | | | +4,6 / -10,8 | | | | | |
| S = 1,5H | +7,4 / -14,1 | | | | | +7,4 / -14,1 | | | | | |
| S = 2,0H | +9,4 / -17,6 | | | | | +9,4 / -17,6 | | | | | |
| Standard table | BK00 | | | | | BK00 | | | | | |
| Correction summand | 3,8 | | | | | 3,8 | | | | | |
| Corrected glare indices referring to 5335lm total luminous flux | | | | | | | | | | | |



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