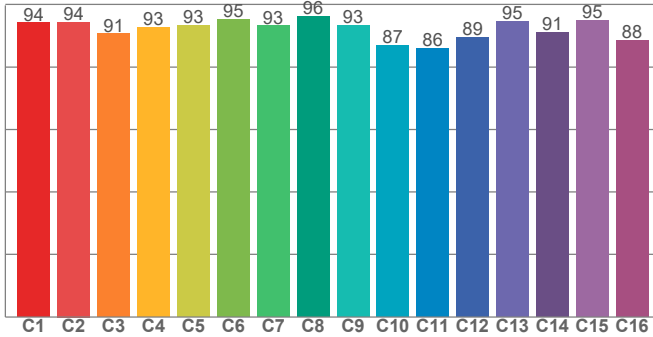
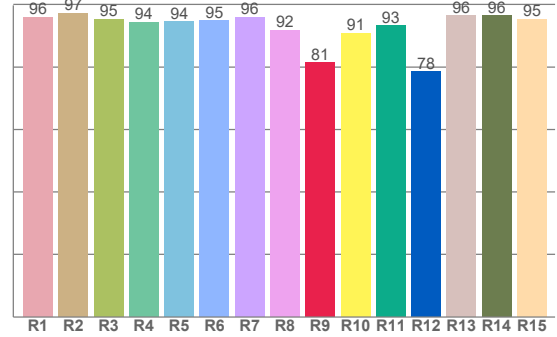


TM30: 91.9



CRI: 94.9 (R1-R8)



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

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 95.9 | 97.1 | 95.3 | 94.3 | 94.4 | 94.8 | 95.8 | 91.6 | 81.3 | 90.8 | 93.1 | 78.3 | 96.3 | 96.3 | 95.2 |

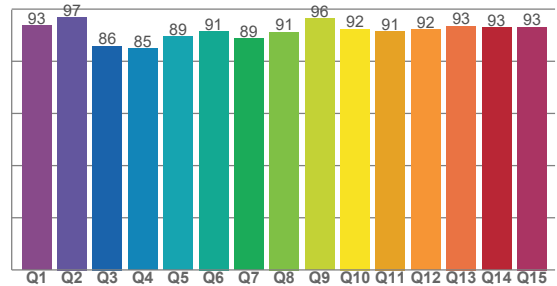
TM30 C values, 16 binned values out of total of 99 C values

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 94.0 | 94.3 | 90.5 | 92.6 | 93.3 | 95.2 | 93.1 | 96.1 | 93.3 | 87.0 | 85.9 | 89.5 | 94.6 | 91.1 | 94.8 | 88.5 |

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 93.5 | 96.8 | 85.8 | 84.9 | 89.5 | 91.4 | 88.7 | 91.1 | 96.2 | 92.3 | 91.4 | 92.0 | 93.3 | 92.9 | 93.0 |

CQS: 90.8



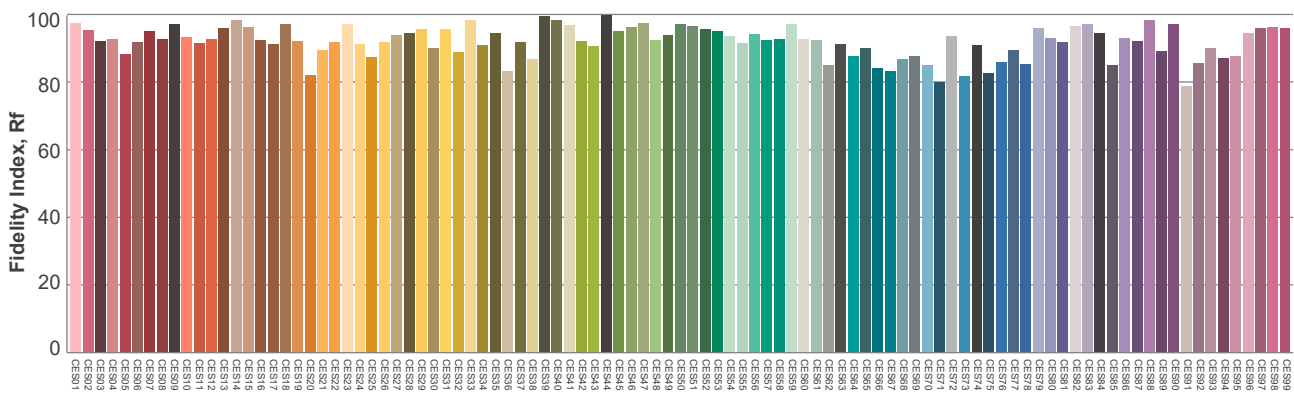
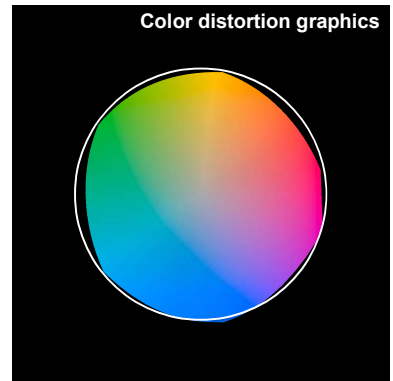
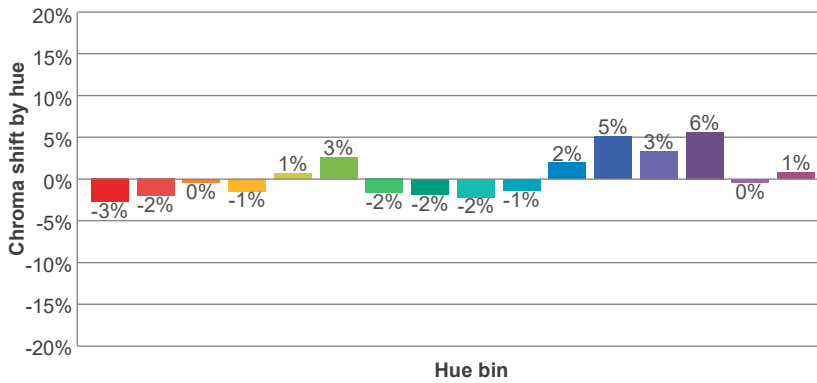
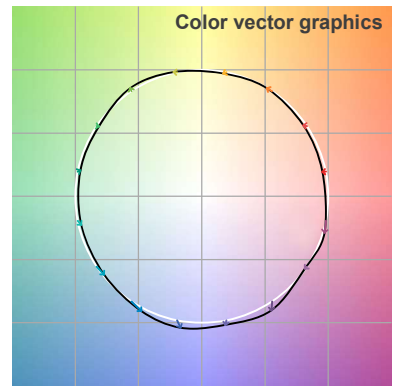
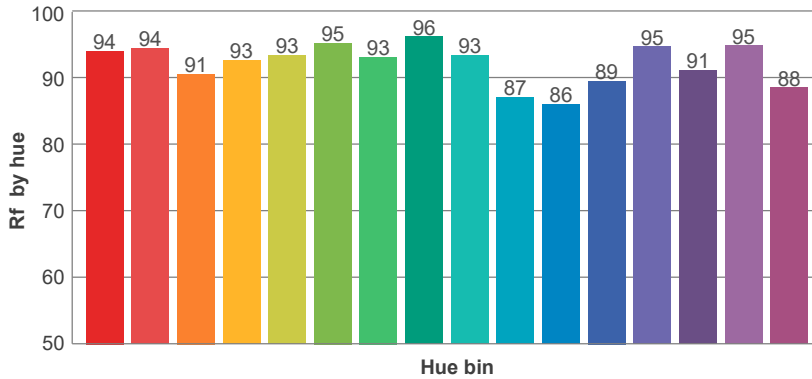
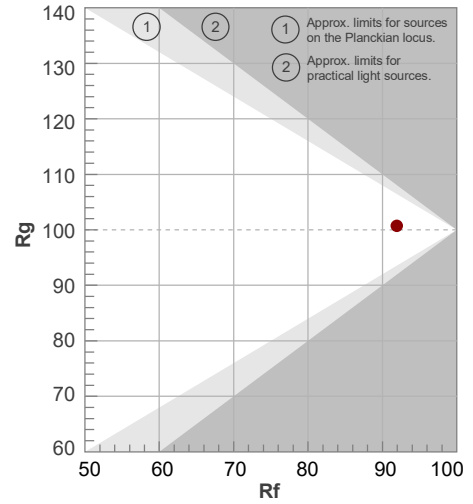
Color parameters

| 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 |
| 2824 K | 94.9 | 81.3 | 91.9 | 100.7 | 90.8 | 0.447 | 0.402 | 0.258 | 0.348 | -0.0020 |

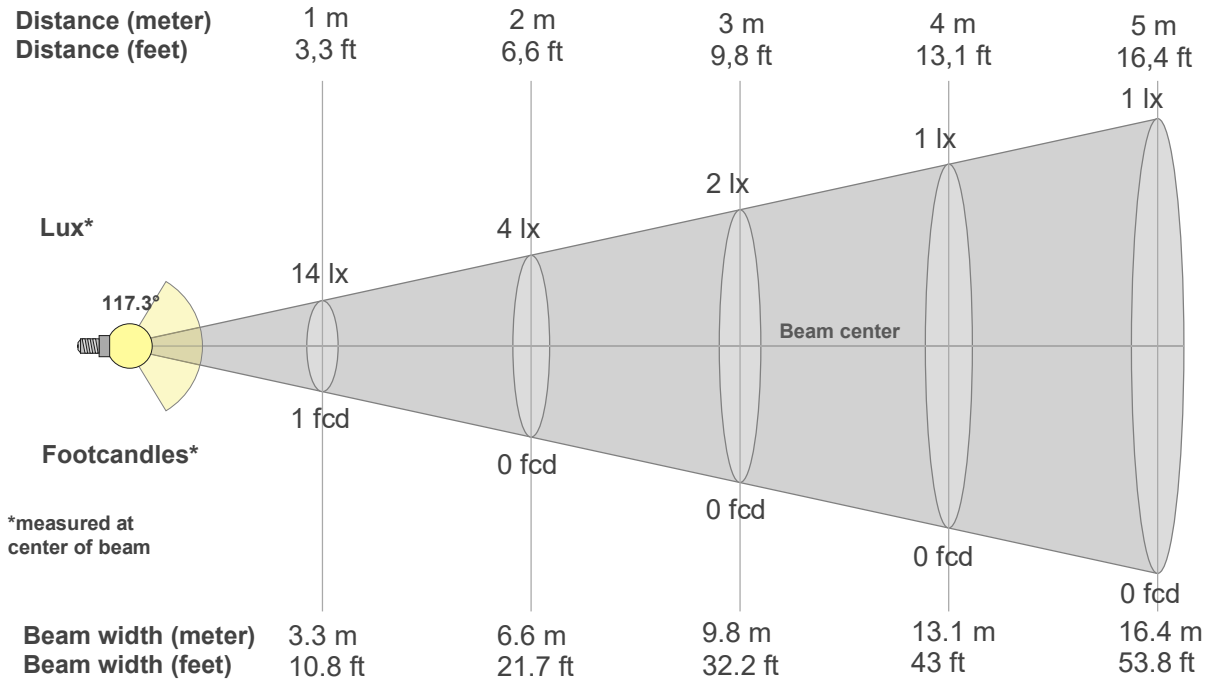
Rf 91.9
Fidelity index Rf

Rg 100.7
Gammut index Rg

| Hue Bin | R _f | Graphic shifts (%) | |
|---------|----------------|--------------------|-----|
| | | Chroma | Hue |
| 1 | 94 | -3% | 0% |
| 2 | 94 | -2% | 2% |
| 3 | 91 | 0% | 5% |
| 4 | 93 | -1% | 2% |
| 5 | 93 | 1% | 3% |
| 6 | 95 | 3% | -1% |
| 7 | 93 | -2% | -1% |
| 8 | 96 | -2% | -1% |
| 9 | 93 | -2% | 3% |
| 10 | 87 | -1% | 8% |
| 11 | 86 | 2% | 11% |
| 12 | 89 | 5% | 4% |
| 13 | 95 | 3% | -2% |
| 14 | 91 | 6% | -4% |
| 15 | 95 | 0% | -2% |
| 16 | 88 | 1% | -9% |



Color Evaluation Sample



Beam intensities from 1-20m

| | | | | | | | | | | | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1m | 2m | 3m | 4m | 5m | 6m | 7m | 8m | 9m | 10m | 11m | 12m | 13m | 14m | 15m | 16m | 17m | 18m | 19m | 20m |
| 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 |
| 14lx | 4lx | 2lx | 1lx | 1lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx |
| 1.3fcd | 0.3fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd |

Intensities in 0° c-plane

| | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
| 14.4 | 14.3 | 13.7 | 12.8 | 11.5 | 9.9 | 8.2 | 6.3 | 4.5 | 2.7 | 1.5 | 1.2 | 1.1 | 0.9 | 0.9 | 0.7 | 0.6 | 0.5 | 0.3 | 0.2 |
| 100% | 99% | 95% | 88% | 80% | 69% | 57% | 44% | 31% | 19% | 10% | 8% | 7% | 6% | 6% | 5% | 4% | 3% | 2% | 1% |

Intensities in 90° c-plane

| | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
| 14.4 | 14.3 | 13.7 | 12.8 | 11.5 | 9.9 | 8.2 | 6.3 | 4.5 | 2.7 | 1.5 | 1.2 | 1.1 | 0.9 | 0.9 | 0.7 | 0.6 | 0.5 | 0.3 | 0.2 |
| 100% | 99% | 95% | 88% | 80% | 69% | 57% | 44% | 31% | 19% | 10% | 8% | 7% | 6% | 6% | 5% | 4% | 3% | 2% | 1% |

Intensities in 180° c-plane

| | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
| 14.4 | 14.4 | 13.8 | 12.9 | 11.5 | 9.9 | 8.2 | 6.4 | 4.5 | 2.7 | 1.4 | 1.0 | 1.0 | 0.9 | 0.8 | 0.7 | 0.6 | 0.5 | 0.4 | 0.3 |
| 100% | 100% | 96% | 89% | 80% | 69% | 57% | 44% | 31% | 18% | 9% | 7% | 7% | 6% | 5% | 5% | 4% | 3% | 3% | 2% |

Intensities in 270° c-plane

| | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
| 14.4 | 14.4 | 13.8 | 12.9 | 11.5 | 9.9 | 8.2 | 6.4 | 4.5 | 2.7 | 1.4 | 1.0 | 1.0 | 0.9 | 0.8 | 0.7 | 0.6 | 0.5 | 0.4 | 0.3 |
| 100% | 100% | 96% | 89% | 80% | 69% | 57% | 44% | 31% | 18% | 9% | 7% | 7% | 6% | 5% | 5% | 4% | 3% | 3% | 2% |

| | | | | |
|-----------------------|------------------------|--------------------------|-------------------------------------|------------------------------------|
| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
| 117.3° | 180.1° | 326.3° | 65.8% | 44.2% |