

PHOTOMETRIC TEST REPORT

KINZO 140

astro

LIGHT EFFICIENCY:

57 Lumen/Watt

LIGHT QUALITY:

CRI: 81.1

COLOR TEMPERATURE:

2742 K

OUTPUT: 696 lm

PEAK: 1018 cd

POWER: 12.1 W

PF: 0.99

Tracking number: [n/a](#)

Product name:

Kinzo 140

Item number:

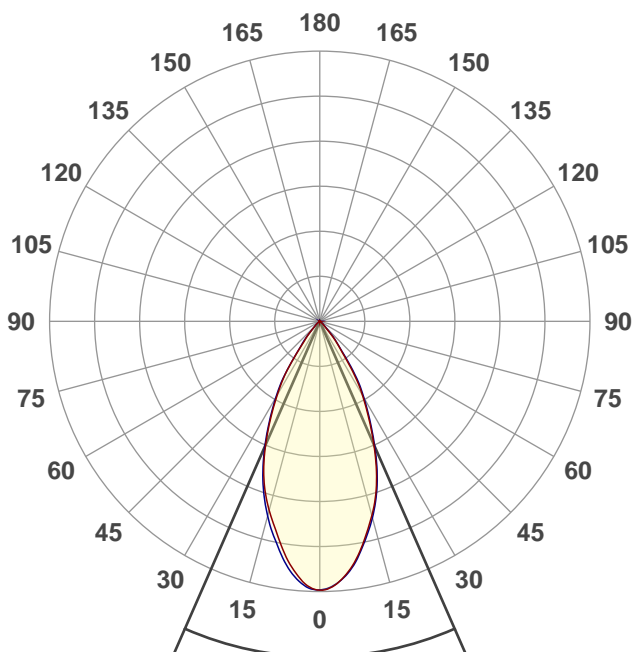
1398019

Date and time:

29/11/2019 11:52:27

Description:

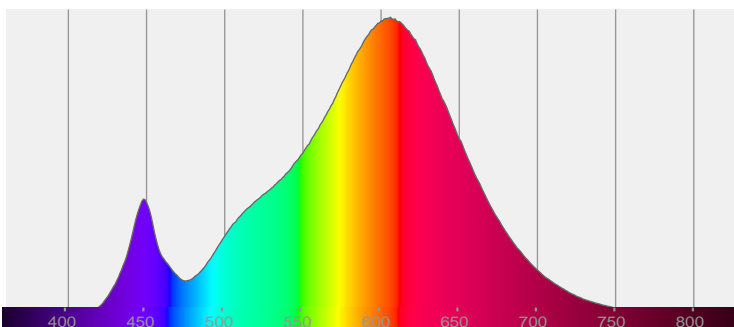
AC LED Ceiling Light



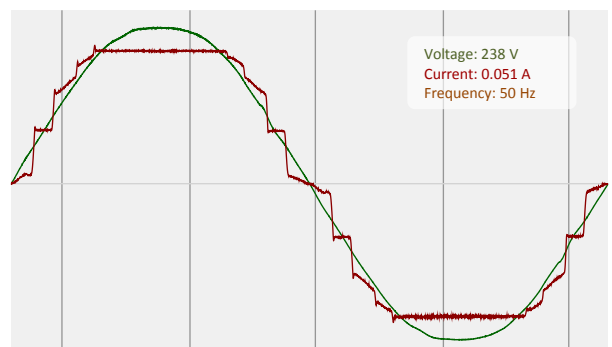
47.4°

CIE 1931
x: 0.456
y: 0.408

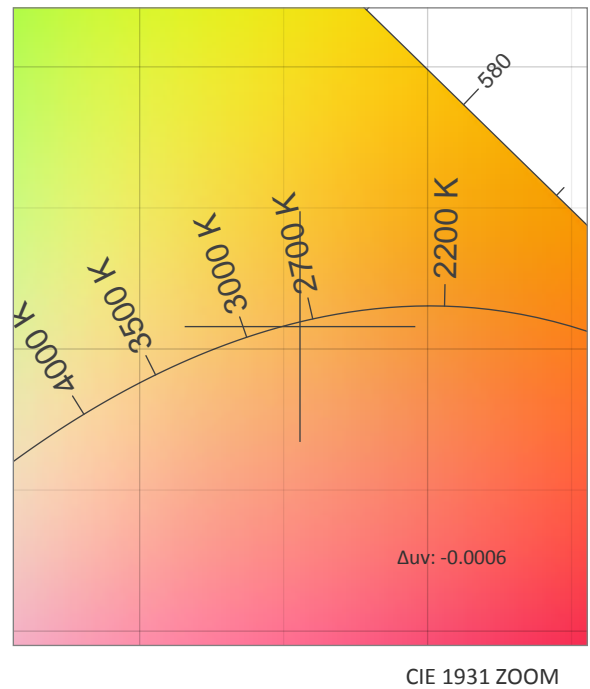
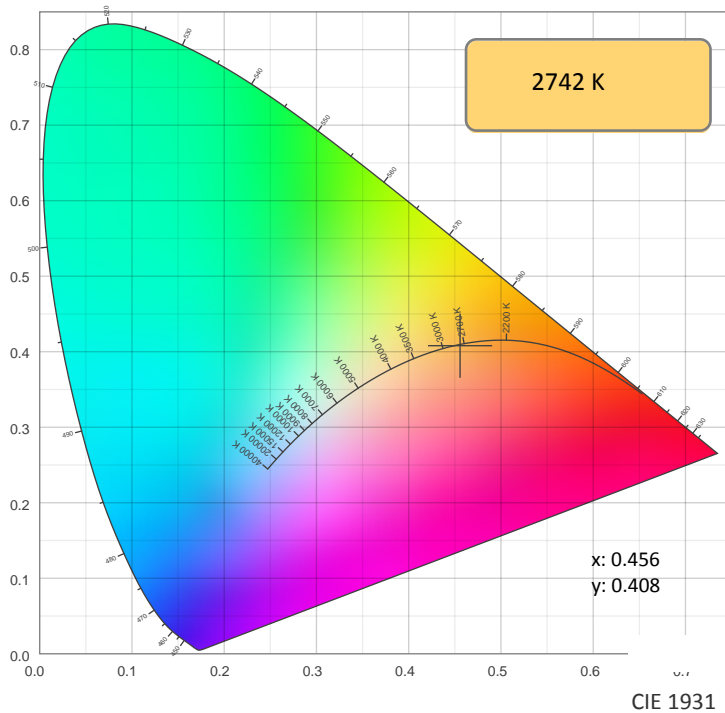
SPECTRA



POWER

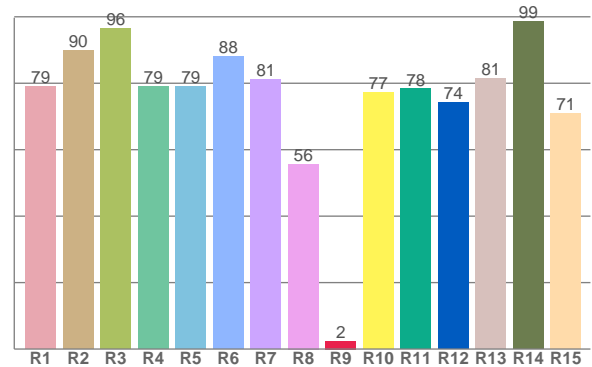
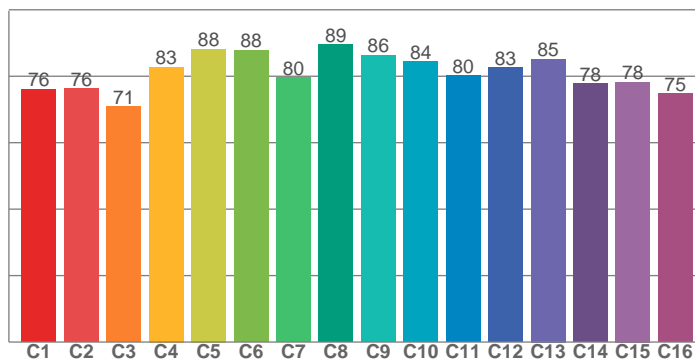


COLOR DETAILS



TM30: 81.2

CRI: 81.1 (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 |
|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|
| 79.0 | 89.8 | 96.5 | 79.1 | 79.1 | 88.0 | 81.2 | 55.7 | 2.4 | 77.3 | 78.3 | 74.2 | 81.4 | 98.6 | 70.8 |

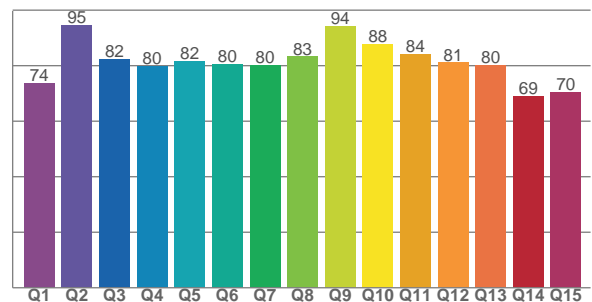
TM30 C values, 16 binned values out of total of 99 C values

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 76.1 | 76.3 | 70.8 | 82.8 | 88.2 | 87.9 | 79.6 | 89.4 | 86.4 | 84.3 | 80.3 | 82.5 | 85.2 | 77.9 | 78.3 | 74.8 |

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 73.6 | 94.6 | 82.5 | 80.0 | 81.6 | 80.5 | 80.1 | 83.3 | 94.3 | 87.7 | 84.2 | 81.1 | 80.3 | 69.1 | 70.4 |

CQS: 80.1



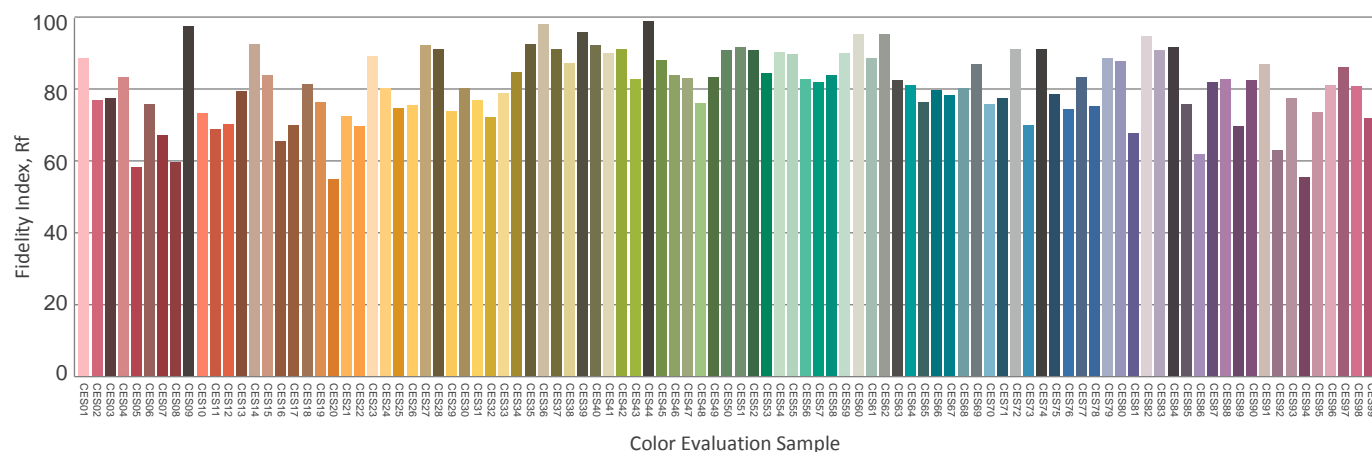
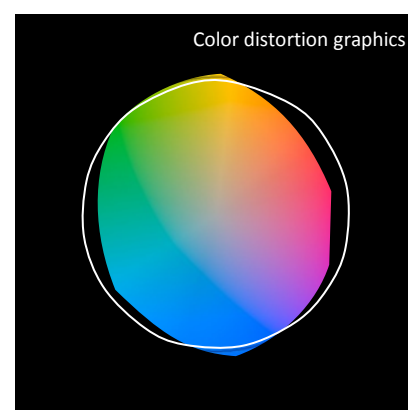
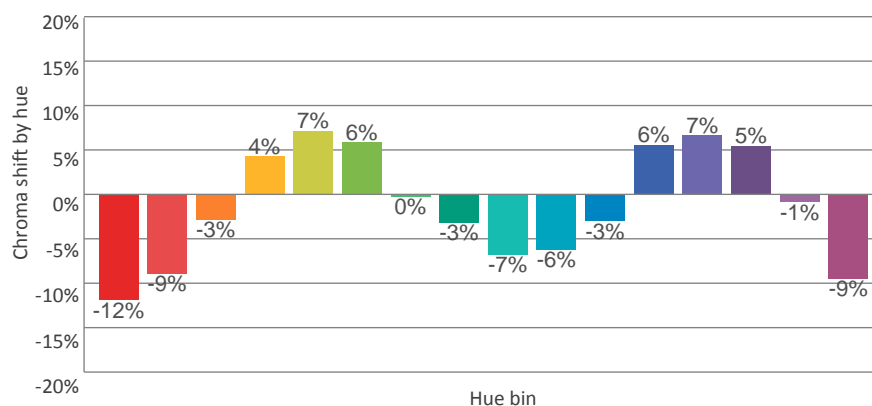
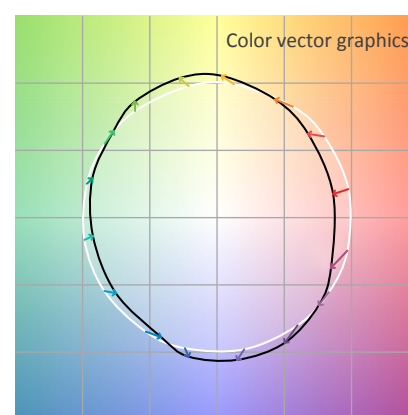
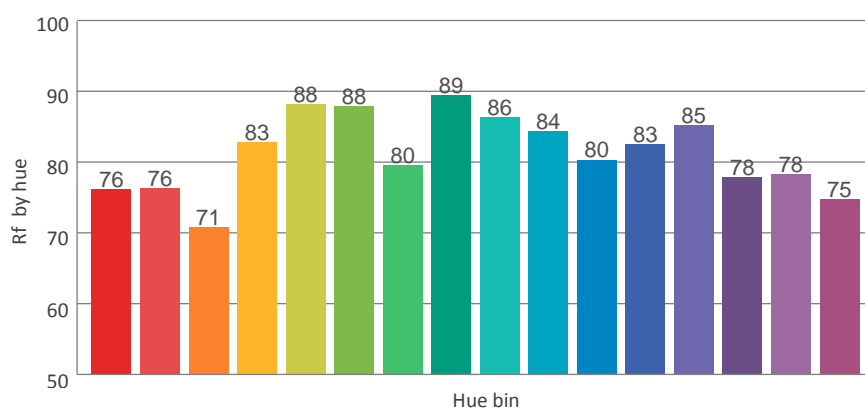
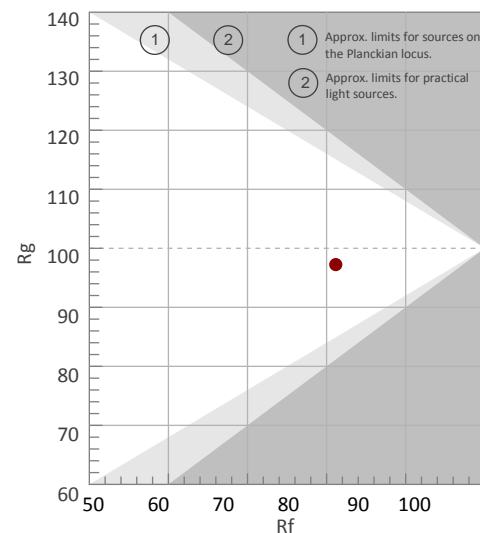
COLOR PARAMETERS

| 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 | Δuv |
| 2742 K | 81.1 | 2.4 | 81.2 | 97.2 | 80.1 | 0.456 | 0.408 | 0.261 | 0.350 | -0.0006 |

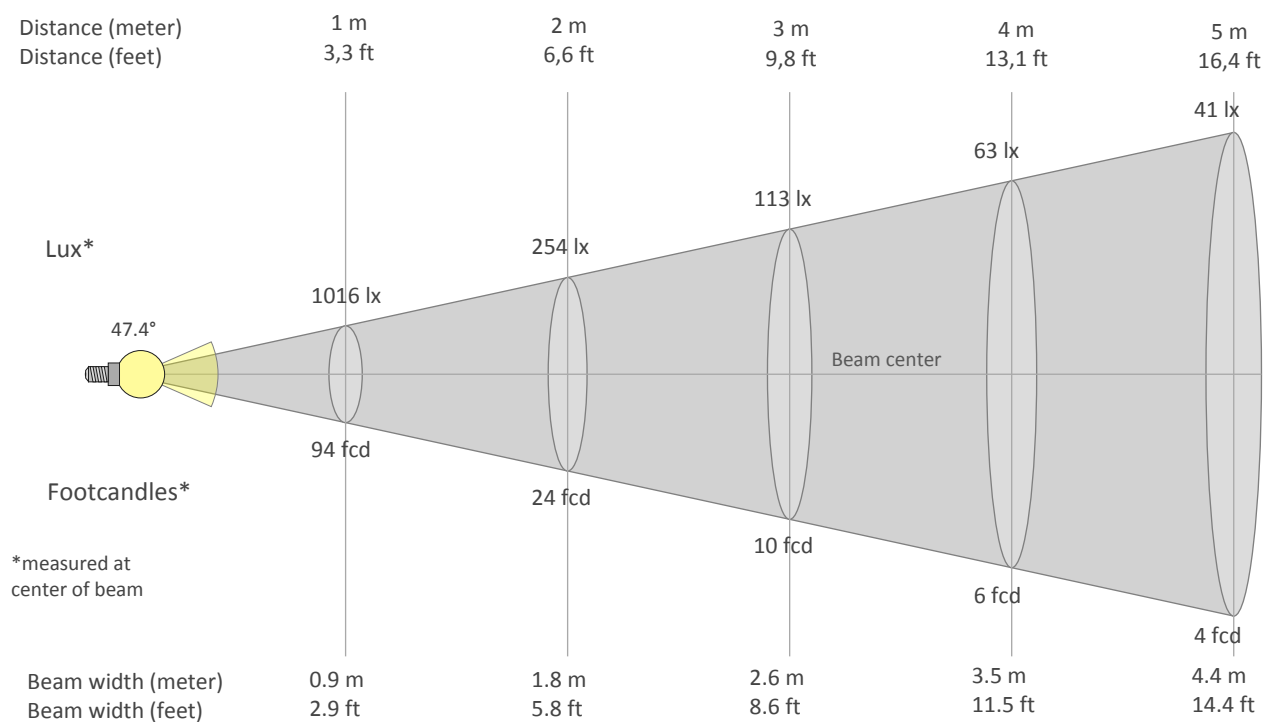
Rf 81.2
Fidelity index Rf

Rg 97.2
Gammut index Rg

| Hue Bin | Graphic shifts (%) | | |
|---------|--------------------|--------|------|
| | R _f | Chroma | Hue |
| 1 | 76 | -12% | -1% |
| 2 | 76 | -9% | 8% |
| 3 | 71 | -3% | 14% |
| 4 | 83 | 4% | 10% |
| 5 | 88 | 7% | 5% |
| 6 | 88 | 6% | -4% |
| 7 | 80 | 0% | -12% |
| 8 | 89 | -3% | -5% |
| 9 | 86 | -7% | -2% |
| 10 | 84 | -6% | 6% |
| 11 | 80 | -3% | 12% |
| 12 | 83 | 6% | 4% |
| 13 | 85 | 7% | -7% |
| 14 | 78 | 5% | -15% |
| 15 | 78 | -1% | -12% |
| 16 | 75 | -9% | -15% |



BEAM DETAILS



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 |
| 1016lx | 254lx | 113lx | 63lx | 41lx | 28lx | 21lx | 16lx | 13lx | 10lx | 8lx | 7lx | 6lx | 5lx | 5lx | 4lx | 4lx | 3lx | 3lx | 3lx |
| 94.4fcd | 23.6fcd | 10.5fcd | 5.9fcd | 3.8fcd | 2.6fcd | 1.9fcd | 1.5fcd | 1.2fcd | 0.9fcd | 0.8fcd | 0.7fcd | 0.6fcd | 0.5fcd | 0.4fcd | 0.4fcd | 0.3fcd | 0.3fcd | 0.3fcd | 0.2fcd |

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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1016 | 1010 | 991 | 962 | 925 | 881 | 833 | 785 | 738 | 686 | 628 | 565 | 500 | 437 | 378 | 323 | 269 | 205 | 143 | 110 |
| 100% | 99% | 98% | 95% | 91% | 87% | 82% | 77% | 73% | 68% | 62% | 56% | 49% | 43% | 37% | 32% | 26% | 20% | 14% | 11% |

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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1016 | 1010 | 991 | 965 | 930 | 886 | 840 | 794 | 745 | 693 | 636 | 574 | 508 | 445 | 387 | 334 | 284 | 223 | 159 | 115 |
| 100% | 99% | 98% | 95% | 92% | 87% | 83% | 78% | 73% | 68% | 63% | 56% | 50% | 44% | 38% | 33% | 28% | 22% | 16% | 11% |

Intensities in 180° c-plane

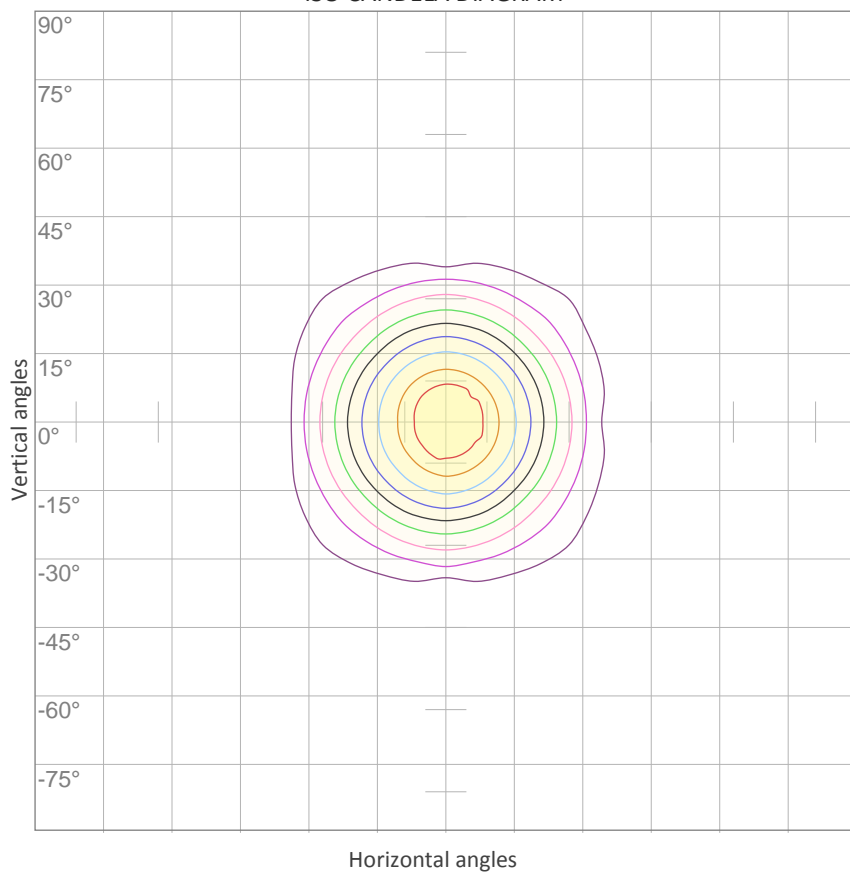
| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1016 | 1007 | 982 | 946 | 904 | 855 | 806 | 762 | 718 | 672 | 620 | 562 | 500 | 438 | 379 | 323 | 270 | 213 | 146 | 96 |
| 100% | 99% | 97% | 93% | 89% | 84% | 79% | 75% | 71% | 66% | 61% | 55% | 49% | 43% | 37% | 32% | 27% | 21% | 14% | 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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1016 | 1012 | 994 | 964 | 926 | 881 | 834 | 788 | 737 | 686 | 630 | 571 | 508 | 446 | 388 | 333 | 279 | 213 | 150 | 109 |
| 100% | 100% | 98% | 95% | 91% | 87% | 82% | 78% | 73% | 67% | 62% | 56% | 50% | 44% | 38% | 33% | 27% | 21% | 15% | 11% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 47.4° | 80.9° | 97.3° | 98.9% | 95.3% |

ISO CANDELA DIAGRAM



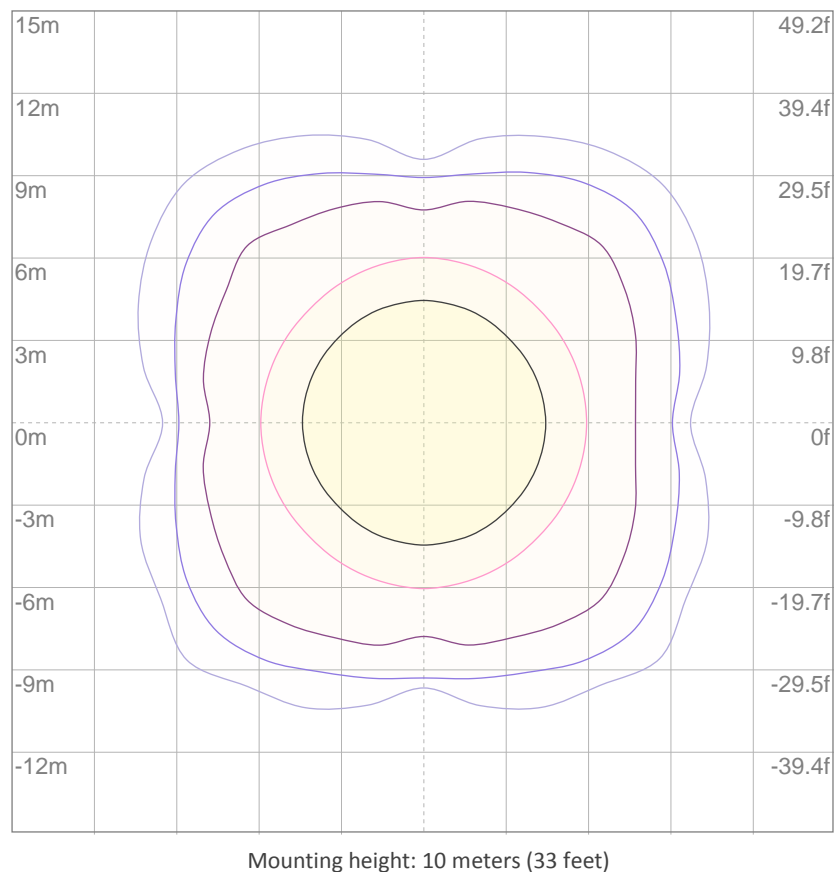
| | |
|-----|--------|
| 10% | 102 cd |
| 20% | 203 cd |
| 30% | 305 cd |
| 40% | 406 cd |
| 50% | 508 cd |
| 60% | 610 cd |
| 70% | 711 cd |
| 80% | 813 cd |
| 90% | 914 cd |

Conditions:

Number of c-planes: 8

Candela at center: 1016 cd

ISO LUX DIAGRAM



| | |
|-----|----------------|
| 3% | 0.305 lx |
| 5% | 0.508 lx |
| 10% | 1.02 lx |
| 30% | 3.05 lx |
| 50% | {LUX_10M50} lx |

Conditions:

Number of c-planes: 8

Lux at center: 10.2 lx

Lux distribution on a surface when lamp is mounted at 10 meters from the surface.

UGR

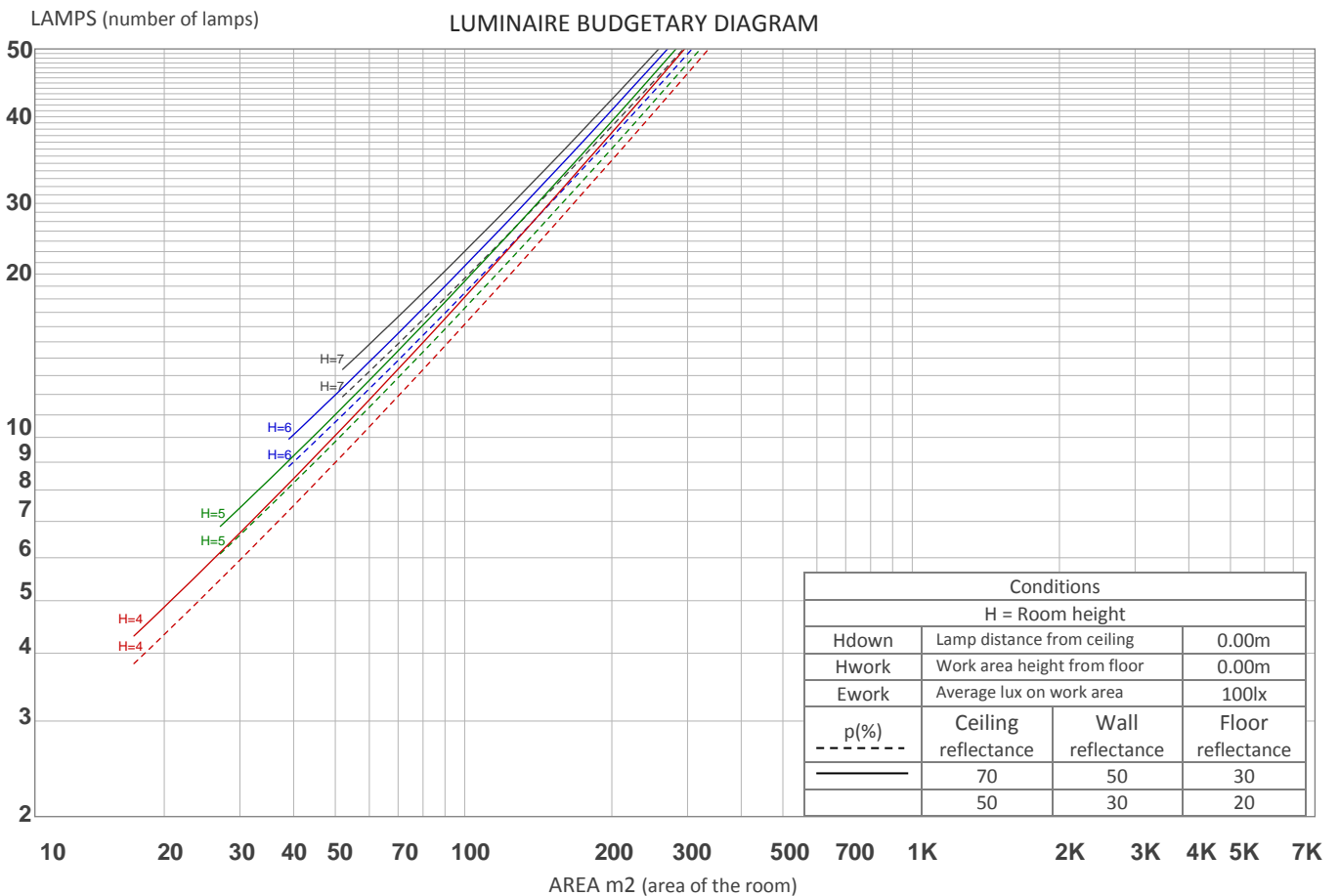
GLARE EVALUATION ACCORDING TO UGR

| | | | | | | | | | | | |
|---|-----|--|------|------|------|------|---|------|------|------|------|
| 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 | 19.9 | 20.6 | 20.2 | 20.8 | 21.0 | 20.2 | 20.9 | 20.5 | 21.1 | 21.3 |
| | 3H | 19.8 | 20.4 | 20.1 | 20.7 | 20.9 | 20.1 | 20.8 | 20.4 | 21.0 | 21.2 |
| | 4H | 19.7 | 20.3 | 20.1 | 20.6 | 20.9 | 20.1 | 20.7 | 20.4 | 20.9 | 21.2 |
| | 6H | 19.7 | 20.2 | 20.0 | 20.5 | 20.8 | 20.0 | 20.6 | 20.3 | 20.8 | 21.1 |
| | 8H | 19.7 | 20.2 | 20.0 | 20.5 | 20.8 | 20.0 | 20.5 | 20.3 | 20.8 | 21.1 |
| | 12H | 19.6 | 20.1 | 20.0 | 20.4 | 20.8 | 19.9 | 20.4 | 20.3 | 20.8 | 21.1 |
| 4H | 2H | 19.7 | 20.3 | 20.0 | 20.6 | 20.9 | 20.0 | 20.6 | 20.4 | 20.9 | 21.2 |
| | 3H | 19.6 | 20.1 | 20.0 | 20.4 | 20.8 | 19.9 | 20.4 | 20.3 | 20.7 | 21.1 |
| | 4H | 19.6 | 20.0 | 20.0 | 20.3 | 20.7 | 19.9 | 20.3 | 20.3 | 20.7 | 21.0 |
| | 6H | 19.5 | 19.9 | 19.9 | 20.3 | 20.7 | 19.8 | 20.2 | 20.2 | 20.6 | 21.0 |
| | 8H | 19.5 | 19.8 | 19.9 | 20.2 | 20.6 | 19.8 | 20.1 | 20.2 | 20.5 | 20.9 |
| | 12H | 19.5 | 19.7 | 19.9 | 20.2 | 20.6 | 19.8 | 20.1 | 20.2 | 20.5 | 20.9 |
| 8H | 4H | 19.5 | 19.8 | 19.9 | 20.2 | 20.6 | 19.8 | 20.1 | 20.2 | 20.5 | 20.9 |
| | 6H | 19.4 | 19.7 | 19.9 | 20.1 | 20.6 | 19.7 | 20.0 | 20.2 | 20.4 | 20.9 |
| | 8H | 19.4 | 19.6 | 19.9 | 20.1 | 20.5 | 19.7 | 19.9 | 20.2 | 20.4 | 20.8 |
| | 12H | 19.4 | 19.5 | 19.9 | 20.0 | 20.5 | 19.7 | 19.8 | 20.2 | 20.3 | 20.8 |
| 12H | 4H | 19.4 | 19.7 | 19.9 | 20.1 | 20.6 | 19.7 | 20.0 | 20.2 | 20.4 | 20.9 |
| | 6H | 19.4 | 19.6 | 19.9 | 20.0 | 20.5 | 19.7 | 19.9 | 20.2 | 20.3 | 20.8 |
| | 8H | 19.4 | 19.5 | 19.8 | 20.0 | 20.5 | 19.7 | 19.8 | 20.2 | 20.3 | 20.8 |
| Variation of the observer position for the luminaire distance S | | | | | | | | | | | |
| S = 1.0H | | +4.3 / -8.8 | | | | | +4.3 / -8.5 | | | | |
| S = 1.5H | | +6.9 / -10.5 | | | | | +6.9 / -10.5 | | | | |
| S = 2.0H | | +8.9 / -10.8 | | | | | +8.9 / -10.8 | | | | |
| Standard table | | BK00 | | | | | BK00 | | | | |
| Correction summand | | 1.3 | | | | | 1.6 | | | | |
| Corrected glare indices referring to 696 lm total luminous flux | | | | | | | | | | | |

UGR data could be incorrect as lamp output is not symmetrical. Goto Edit->Photometric->Corrections and select Correct asymmetry.

COEFFICIENTS OF UTILIZATION

| Ceiling reflectance | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
|---------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Wall reflectance | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| Floor reflectance | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 |
| RCR | (RCR: Room Cavity Ratio) Room Values are expressed as percentage of Lumens delivered to the task surface | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 99 |
| 1 | 113 | 111 | 108 | 106 | 111 | 109 | 106 | 104 | 104 | 103 | 101 | 101 | 99 | 98 | 97 | 96 | 95 | 93 |
| 2 | 108 | 103 | 99 | 96 | 106 | 101 | 98 | 95 | 98 | 95 | 93 | 95 | 93 | 91 | 92 | 90 | 89 | 87 |
| 3 | 103 | 96 | 92 | 88 | 101 | 95 | 91 | 87 | 92 | 89 | 86 | 90 | 87 | 84 | 88 | 85 | 83 | 81 |
| 4 | 98 | 90 | 85 | 81 | 96 | 89 | 84 | 80 | 87 | 83 | 79 | 85 | 81 | 78 | 83 | 80 | 77 | 76 |
| 5 | 93 | 85 | 79 | 75 | 91 | 84 | 79 | 75 | 82 | 77 | 74 | 80 | 76 | 73 | 79 | 75 | 73 | 71 |
| 6 | 89 | 80 | 74 | 70 | 87 | 79 | 74 | 70 | 78 | 73 | 69 | 76 | 72 | 69 | 75 | 71 | 68 | 67 |
| 7 | 84 | 75 | 70 | 65 | 83 | 75 | 69 | 65 | 73 | 68 | 65 | 72 | 68 | 65 | 71 | 67 | 64 | 63 |
| 8 | 81 | 71 | 65 | 62 | 79 | 71 | 65 | 61 | 70 | 65 | 61 | 69 | 64 | 61 | 68 | 64 | 61 | 59 |
| 9 | 77 | 68 | 62 | 58 | 76 | 67 | 62 | 58 | 66 | 61 | 58 | 65 | 61 | 57 | 64 | 60 | 57 | 56 |
| 10 | 74 | 64 | 59 | 55 | 72 | 64 | 58 | 55 | 63 | 58 | 55 | 62 | 58 | 54 | 61 | 57 | 54 | 53 |



ZONAL LUMEN SUMMARY

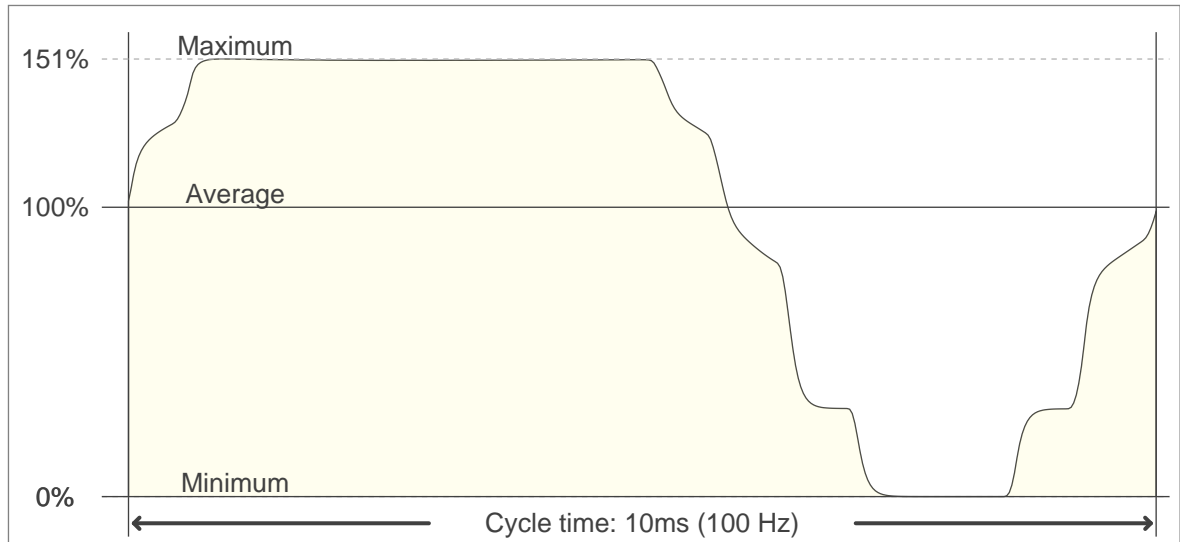
| 0°-10° | 10°-20° | 20°-30° | 30°-40° | 40°-50° | 50°-60° | 60°-70° | 70°-80° | 80°-90° |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 90.0 lm | 210 lm | 213 lm | 123 lm | 42.1 lm | 10.1 lm | 2.41 lm | 1.55 lm | 0.497 lm |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 0.136 lm | 0.178 lm | 0.284 lm | 0.460 lm | 0.610 lm | 0.682 lm | 0.603 lm | 0.396 lm | 0.136 lm |

FLICKER

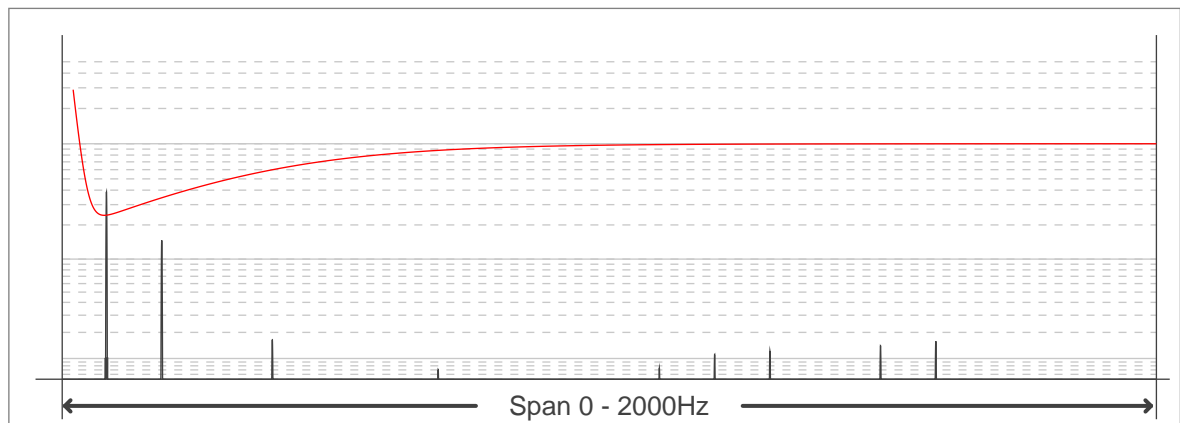
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

| | |
|-----------------------|--------|
| Flicker frequency: | 100 Hz |
| Flicker index: | 0.26 |
| Flicker percentage: | 100 % |
| SVM: (Visual flicker) | 3.01 |

FLICKER CONDITIONS:

| | |
|--------------|----------------------|
| Sample rate: | 40000 samples/second |
|--------------|----------------------|