

# PHOTOMETRIC TEST REPORT

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NARA PENDANT POLISHED  
CHROME (WITH SHADE 5)

astro

## NARA PENDANT POLISHED CHROME

astro

### LIGHT EFFICIENCY:

37 Lumen/Watt

### LIGHT QUALITY:

CRI: 93.1

### COLOR TEMPERATURE:

2920 K

OUTPUT: 279 lm

PEAK: 134 cd

POWER: 7.6 W

PF: 0.94



Tracking number: [n/a](#)

Product name:

Nara Pendant Polished Chrome (with Shade 5)

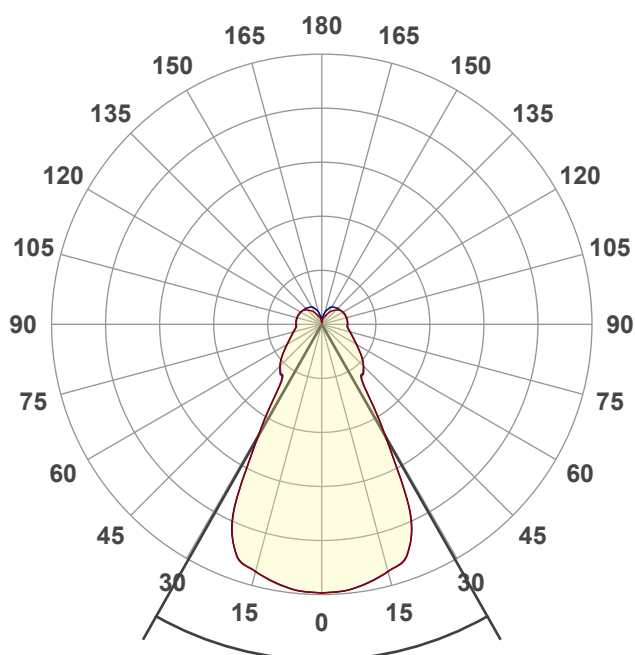
Item number:

1464xxx

Date and time:

04/04/2023 11:12:22 AM

Description:

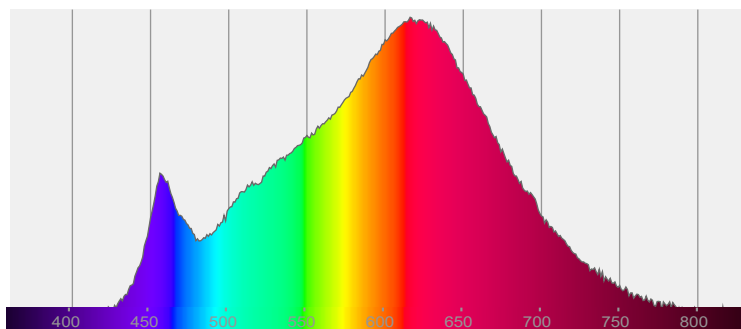


59.1°

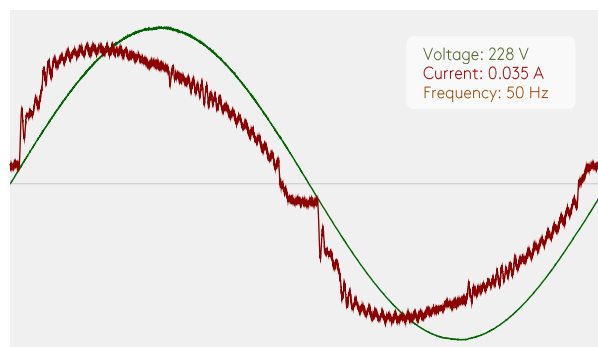


CIE 1931  
x: 0.441  
y: 0.403

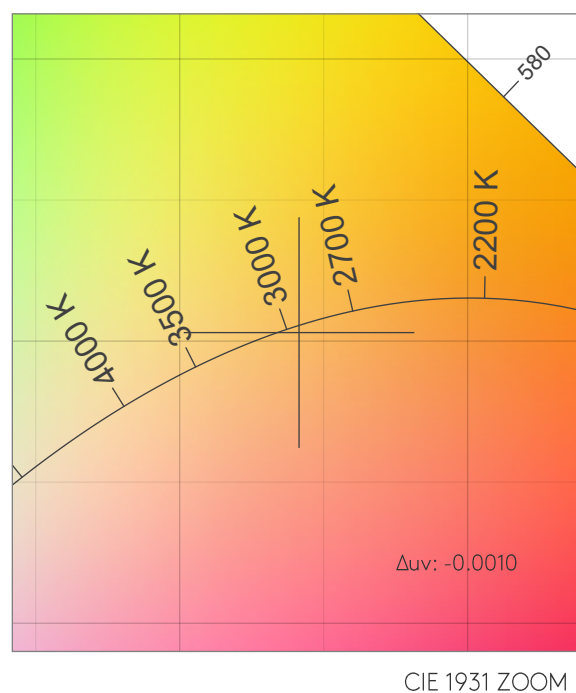
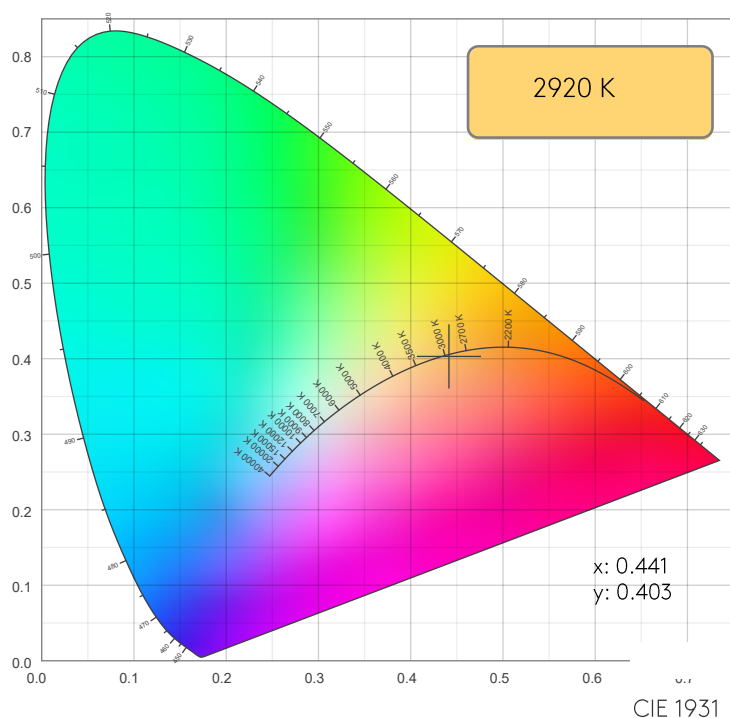
### SPECTRA



### POWER

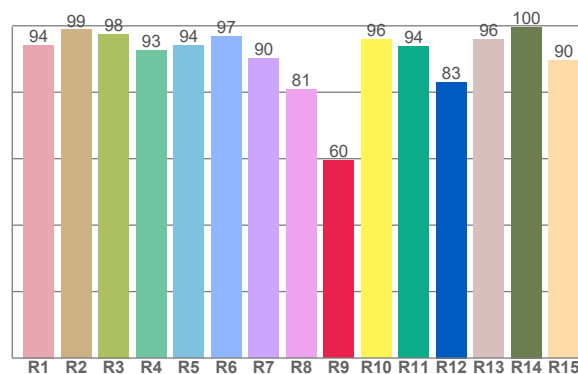
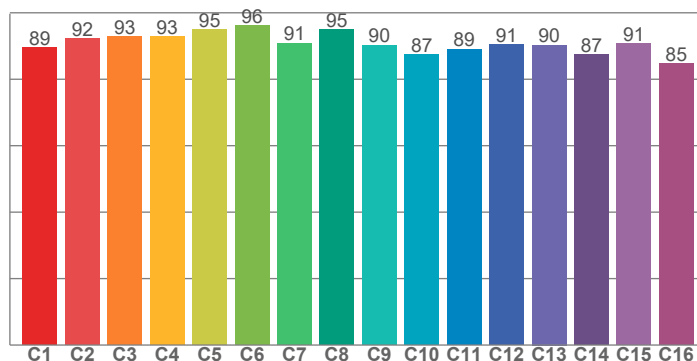


## COLOR DETAILS



TM30: 90.9

CRI: 93.1 (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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 94.2 | 98.7 | 97.5 | 92.5 | 94.0 | 96.7 | 90.2 | 80.9 | 59.6 | 95.9 | 93.8 | 83.1 | 95.8 | 99.6 | 89.6 |

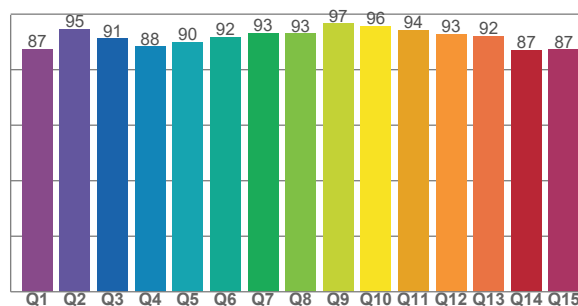
TM30 C values, 16 binned values out of total of 99 C values

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   | C9   | C10  | C11  | C12  | C13  | C14  | C15  | C16  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 89.4 | 92.2 | 92.9 | 92.8 | 95.0 | 96.2 | 90.9 | 95.0 | 90.3 | 87.3 | 89.1 | 90.5 | 90.3 | 87.4 | 90.7 | 84.8 |

CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 87.5 | 94.6 | 91.2 | 88.4 | 89.9 | 91.8 | 93.1 | 93.0 | 96.6 | 95.8 | 94.2 | 92.9 | 92.1 | 87.0 | 87.3 |

CQS: 91.0



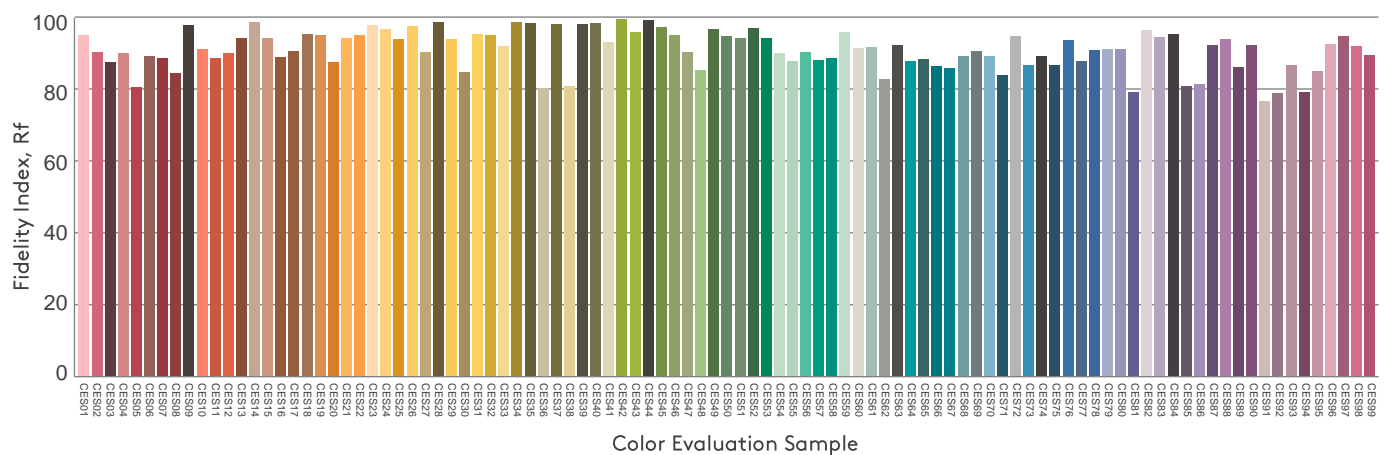
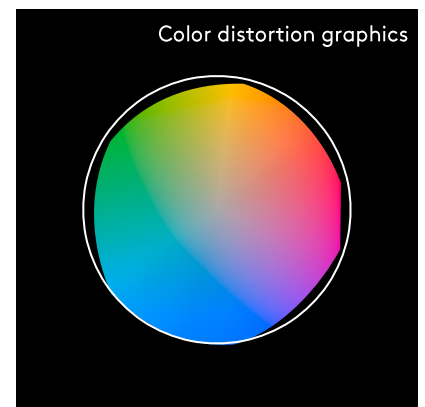
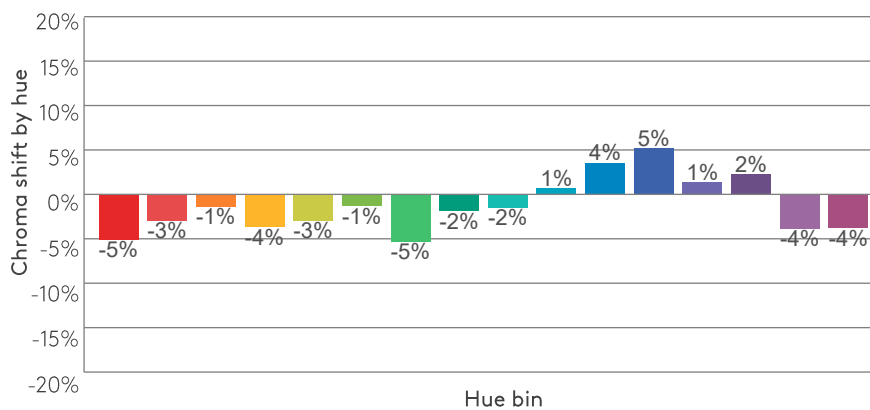
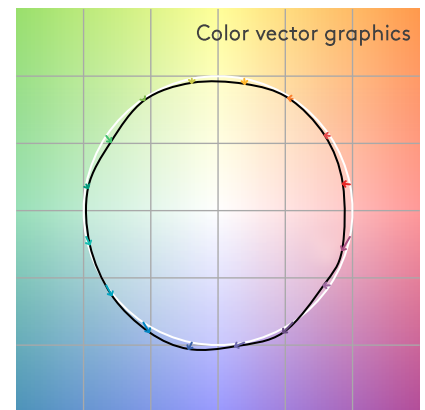
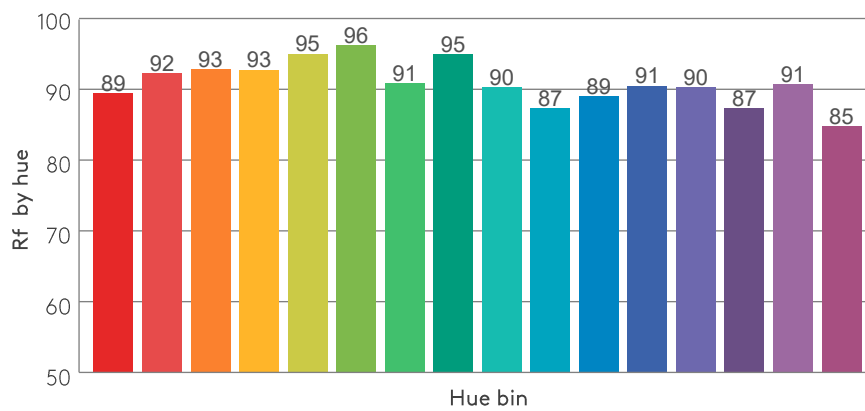
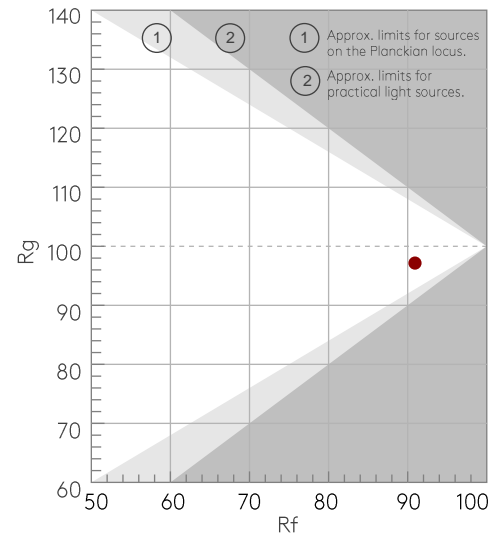
## COLOR PARAMETERS

| 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                | $\Delta uv$                     |
| 2920 K            | 93.1                  | 59.6          | 90.9           | 97.2        | 91.0                | 0.441                     | 0.403                     | 0.254            | 0.348            | -0.0010                         |

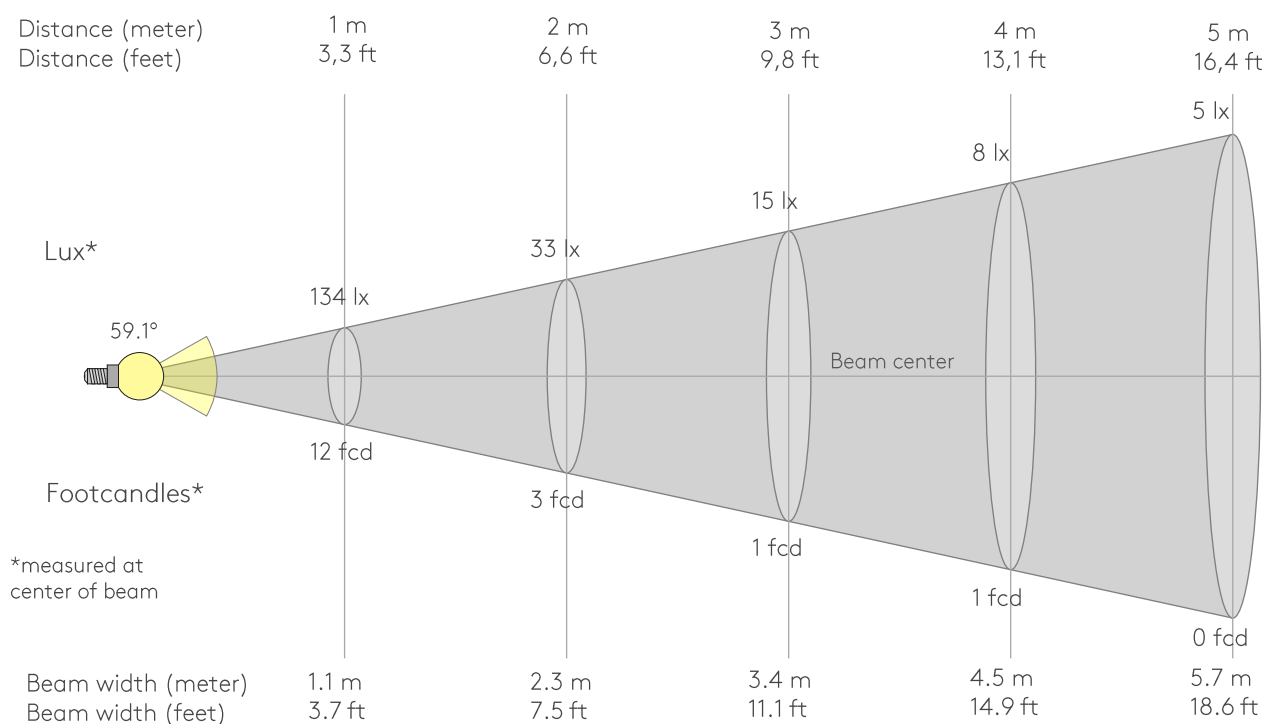
Rf 90.9  
Fidelity index Rf

Rg 97.2  
Gammut index Rg

| Hue Bin | Rf | Graphic shifts (%) |      |
|---------|----|--------------------|------|
|         |    | Chroma             | Hue  |
| 1       | 89 | -5%                | 2%   |
| 2       | 92 | -3%                | 2%   |
| 3       | 93 | -1%                | 3%   |
| 4       | 93 | -4%                | -1%  |
| 5       | 95 | -3%                | 1%   |
| 6       | 96 | -1%                | 0%   |
| 7       | 91 | -5%                | 2%   |
| 8       | 95 | -2%                | 2%   |
| 9       | 90 | -2%                | 6%   |
| 10      | 87 | 1%                 | 8%   |
| 11      | 89 | 4%                 | 8%   |
| 12      | 91 | 5%                 | -1%  |
| 13      | 90 | 1%                 | -7%  |
| 14      | 87 | 2%                 | -10% |
| 15      | 91 | -4%                | -3%  |
| 16      | 85 | -4%                | -11% |



## 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 |
| 134lx   | 33lx   | 15lx   | 8lx    | 5lx    | 4lx    | 3lx    | 2lx    | 2lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 0lx    | 0lx    | 0lx    | 0lx    |
| 12.4fcd | 3.1fcd | 1.4fcd | 0.8fcd | 0.5fcd | 0.3fcd | 0.3fcd | 0.2fcd | 0.2fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0fcd   | 0fcd   | 0fcd   | 0fcd   | 0fcd   |

Intensities in 0° c-plane

| 0°   | 5°  | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 134  | 133 | 131 | 127 | 123 | 103 | 62  | 37  | 32  | 29  | 26  | 23  | 20  | 18  | 16  | 15  | 14  | 13  | 13  | 13  |
| 100% | 99% | 98% | 95% | 92% | 77% | 47% | 27% | 24% | 22% | 20% | 17% | 15% | 13% | 12% | 11% | 10% | 10% | 10% | 10% |

Intensities in 90° c-plane

| 0°   | 5°  | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 134  | 133 | 130 | 127 | 122 | 104 | 62  | 36  | 32  | 29  | 26  | 23  | 20  | 18  | 16  | 14  | 13  | 13  | 13  | 13  |
| 100% | 99% | 98% | 95% | 92% | 78% | 46% | 27% | 24% | 22% | 20% | 17% | 15% | 13% | 12% | 11% | 10% | 9%  | 9%  | 10% |

Intensities in 180° c-plane

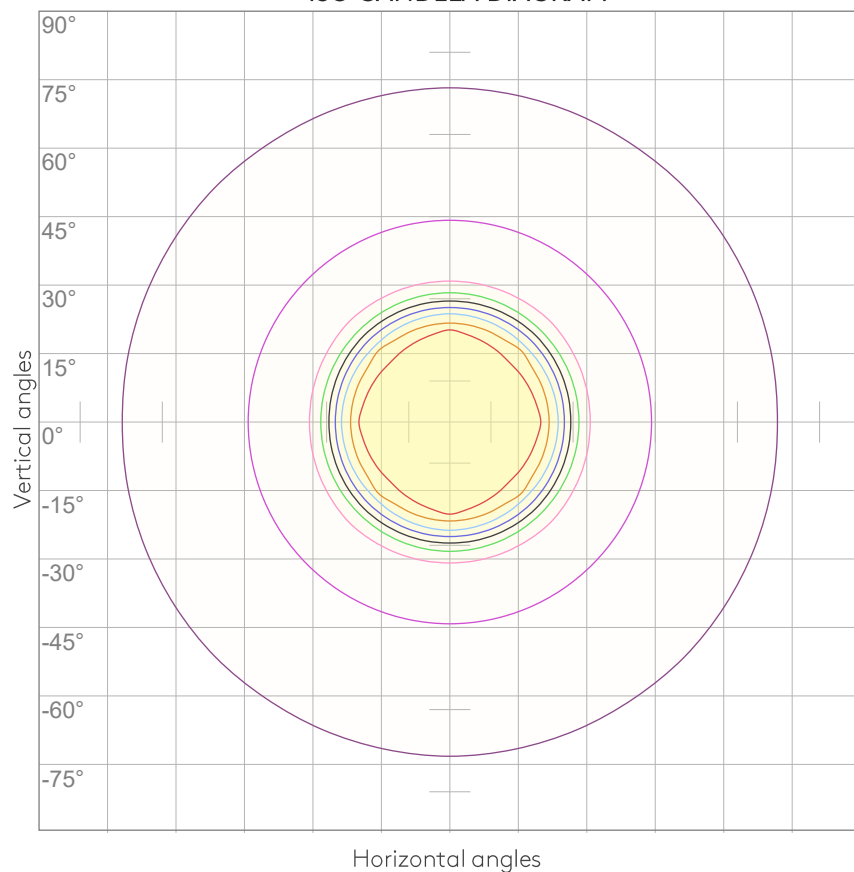
| 0°   | 5°  | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 134  | 133 | 131 | 127 | 123 | 103 | 62  | 37  | 32  | 29  | 26  | 23  | 20  | 18  | 16  | 15  | 14  | 13  | 13  | 13  |
| 100% | 99% | 98% | 95% | 92% | 77% | 47% | 27% | 24% | 22% | 20% | 17% | 15% | 13% | 12% | 11% | 10% | 10% | 10% | 10% |

Intensities in 270° c-plane

| 0°   | 5°  | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 134  | 133 | 130 | 127 | 122 | 104 | 62  | 36  | 32  | 29  | 26  | 23  | 20  | 18  | 16  | 14  | 13  | 13  | 13  | 13  |
| 100% | 99% | 98% | 95% | 92% | 78% | 46% | 27% | 24% | 22% | 20% | 17% | 15% | 13% | 12% | 11% | 10% | 9%  | 9%  | 10% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 59.1°          | 161.4°          | 340.3°            | 58.0%                        | 46.7%                       |

ISO CANDELA DIAGRAM



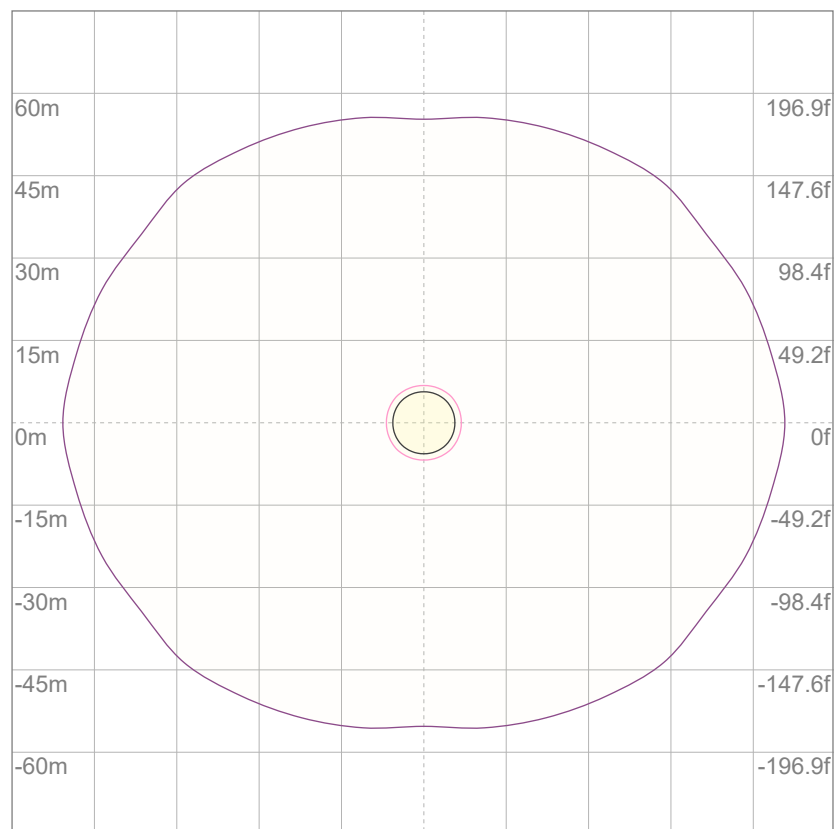
|     |        |
|-----|--------|
| 10% | 13 cd  |
| 20% | 27 cd  |
| 30% | 40 cd  |
| 40% | 54 cd  |
| 50% | 67 cd  |
| 60% | 80 cd  |
| 70% | 94 cd  |
| 80% | 107 cd |
| 90% | 120 cd |

Conditions:

Number of c-planes: 8

Candela at center: 134 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

|     |                |
|-----|----------------|
| 3%  | 40.1m lx       |
| 5%  | 66.9m lx       |
| 10% | 0.134 lx       |
| 30% | 0.401 lx       |
| 50% | {LUX_10M50} lx |

Conditions:

Number of c-planes: 8

Lux at center: 1.34 lx

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

## UGR

## GLARE EVALUATION ACCORDING TO UGR

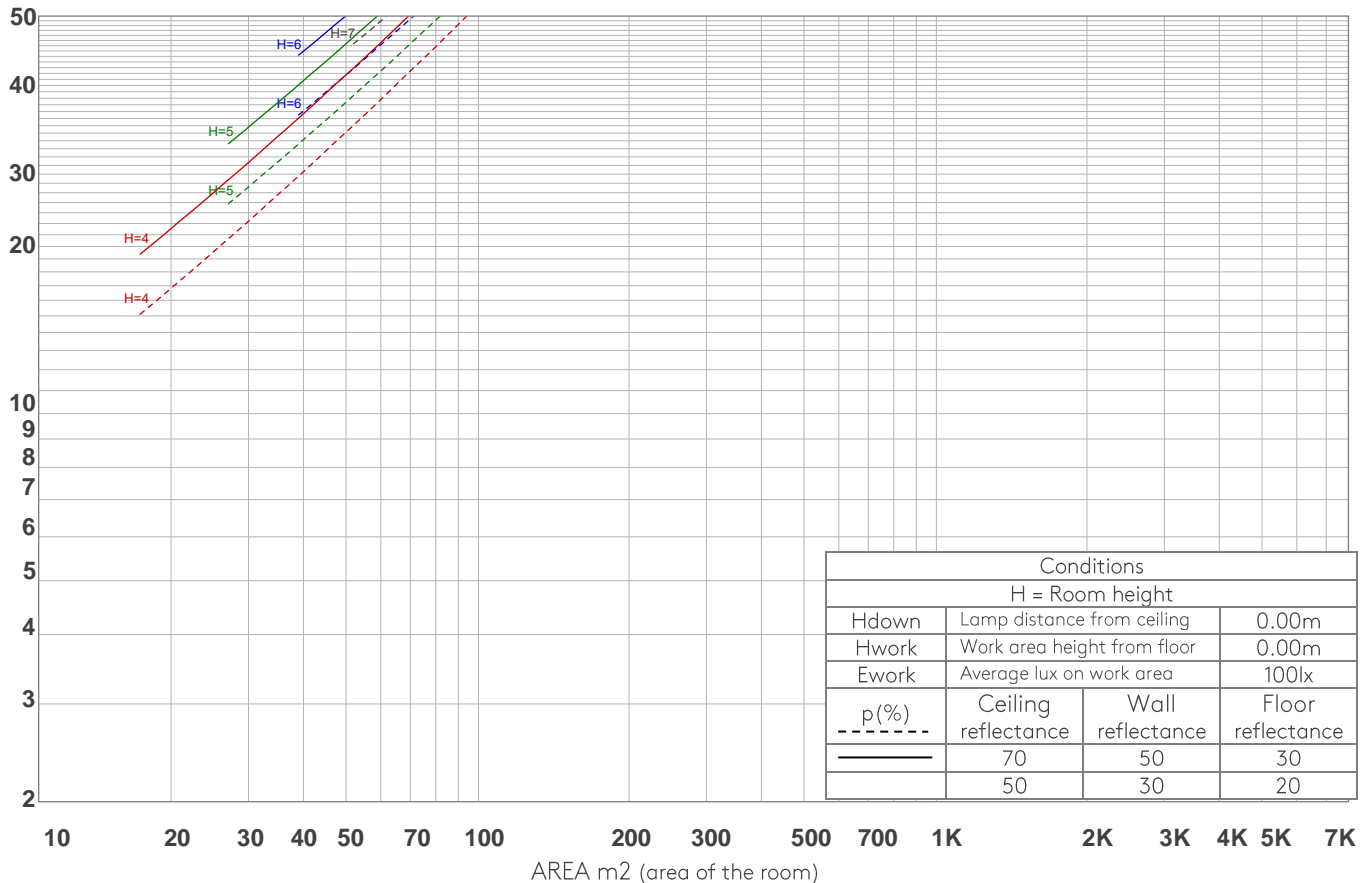
|   |     |  |      |      |      |      |   |      |      |      |      |
|---|-----|--|------|------|------|------|---|------|------|------|------|
| p Ceiling   |     | 70   | 70   | 50   | 50   | 30   | 70                                      | 70   | 50   | 50   | 30   |
| p Walls   |     | 50   | 30   | 50   | 30   | 30   | 50                                      | 30   | 50   | 30   | 30   |
| p Floor   |     | 20   | 20   | 20   | 20   | 20   | 20                                      | 20   | 20   | 20   | 20   |
| Room size<br>X      Y   |     | Viewing direction at right angles to lamp axis |      |      |      |      | Viewing direction parallel to lamp axis |      |      |      |      |
| 2H  | 2H  | 9.2  | 10.1 | 9.8  | 10.7 | 11.4 | 9.2                                     | 10.1 | 9.8  | 10.7 | 11.4 |
|   | 3H  | 10.6   | 11.5 | 11.3 | 12.1 | 12.8 | 10.6                                    | 11.5 | 11.3 | 12.1 | 12.8 |
|   | 4H  | 11.3   | 12.2 | 12.0 | 12.8 | 13.5 | 11.3                                    | 12.1 | 12.0 | 12.8 | 13.5 |
|   | 6H  | 12.1   | 12.9 | 12.8 | 13.6 | 14.3 | 12.1                                    | 12.8 | 12.7 | 13.5 | 14.3 |
|   | 8H  | 12.5   | 13.3 | 13.2 | 13.9 | 14.7 | 12.4                                    | 13.2 | 13.1 | 13.8 | 14.6 |
|   | 12H | 12.8   | 13.7 | 13.5 | 14.3 | 15.1 | 12.8                                    | 13.6 | 13.4 | 14.2 | 15.0 |
| 4H  | 2H  | 9.7  | 10.5 | 10.4 | 11.2 | 11.9 | 9.7                                     | 10.5 | 10.4 | 11.2 | 11.9 |
|   | 3H  | 11.4   | 12.2 | 12.1 | 12.8 | 13.6 | 11.3                                    | 12.2 | 12.0 | 12.8 | 13.6 |
|   | 4H  | 12.2   | 13.2 | 13.0 | 13.7 | 14.5 | 12.2                                    | 13.1 | 12.9 | 13.6 | 14.5 |
|   | 6H  | 13.1   | 13.8 | 13.9 | 14.5 | 15.3 | 13.1                                    | 13.8 | 13.9 | 14.4 | 15.2 |
|   | 8H  | 13.6   | 14.2 | 14.4 | 14.9 | 15.7 | 13.5                                    | 14.1 | 14.3 | 14.8 | 15.6 |
|   | 12H | 14.1   | 14.5 | 14.8 | 15.3 | 16.2 | 14.0                                    | 14.5 | 14.8 | 15.2 | 16.1 |
| 8H  | 4H  | 12.6   | 13.1 | 13.3 | 13.9 | 14.6 | 12.5                                    | 13.1 | 13.3 | 13.8 | 14.6 |
|   | 6H  | 13.7   | 14.1 | 14.5 | 15.0 | 15.8 | 13.7                                    | 14.1 | 14.4 | 14.9 | 15.8 |
|   | 8H  | 14.3   | 14.7 | 15.1 | 15.5 | 16.5 | 14.3                                    | 14.6 | 15.1 | 15.5 | 16.4 |
|   | 12H | 14.9   | 15.3 | 15.8 | 16.1 | 17.0 | 14.9                                    | 15.2 | 15.7 | 16.0 | 17.0 |
| 12H   | 4H  | 12.6   | 13.1 | 13.4 | 13.8 | 14.7 | 12.6                                    | 13.0 | 13.3 | 13.8 | 14.6 |
|   | 6H  | 13.8   | 14.2 | 14.7 | 15.1 | 16.0 | 13.8                                    | 14.2 | 14.6 | 15.0 | 16.0 |
|   | 8H  | 14.5   | 14.9 | 15.4 | 15.7 | 16.6 | 14.5                                    | 14.8 | 15.3 | 15.6 | 16.5 |
| Variation of the observer position for the luminaire distance S |     |  |      |      |      |      |   |      |      |      |      |
| S = 1.0H  |     | 0.1 / -0.1                                     |      |      |      |      | 0.1 / -0.1                              |      |      |      |      |
| S = 1.5H  |     | 0.2 / -0.2                                     |      |      |      |      | 0.2 / -0.2                              |      |      |      |      |
| S = 2.0H  |     | 0.2 / -0.3                                     |      |      |      |      | 0.3 / -0.4                              |      |      |      |      |
| Standard table  |     | n/a  |      |      |      |      | n/a                                     |      |      |      |      |
| Correction summand  |     | n/a  |      |      |      |      | n/a                                     |      |      |      |      |
| Corrected glare indices referring to 279 lm total luminous flux |     |  |      |      |      |      |   |      |      |      |      |

## 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                   | 113  | 113 | 113 | 113 | 108 | 108 | 108 | 108 | 97 | 97 | 97 | 88 | 88 | 88 | 79 | 79 | 79 | 75 |
| 1                   | 103  | 98  | 93  | 89  | 97  | 93  | 89  | 86  | 84 | 81 | 78 | 76 | 74 | 72 | 69 | 67 | 65 | 61 |
| 2                   | 94   | 86  | 80  | 74  | 89  | 82  | 76  | 71  | 75 | 70 | 66 | 68 | 64 | 61 | 61 | 59 | 56 | 53 |
| 3                   | 87   | 77  | 69  | 63  | 82  | 74  | 67  | 61  | 67 | 62 | 57 | 61 | 57 | 53 | 56 | 52 | 49 | 46 |
| 4                   | 80   | 69  | 61  | 55  | 76  | 66  | 59  | 54  | 61 | 55 | 50 | 56 | 51 | 47 | 51 | 47 | 44 | 41 |
| 5                   | 75   | 63  | 55  | 49  | 71  | 60  | 53  | 47  | 56 | 49 | 45 | 51 | 46 | 42 | 47 | 43 | 39 | 37 |
| 6                   | 69   | 58  | 50  | 44  | 66  | 55  | 48  | 43  | 51 | 45 | 40 | 47 | 42 | 38 | 43 | 39 | 36 | 34 |
| 7                   | 65   | 53  | 45  | 40  | 62  | 51  | 44  | 39  | 47 | 41 | 37 | 44 | 39 | 35 | 40 | 36 | 33 | 31 |
| 8                   | 61   | 49  | 41  | 36  | 58  | 47  | 40  | 35  | 44 | 38 | 34 | 41 | 36 | 32 | 38 | 34 | 30 | 28 |
| 9                   | 57   | 45  | 38  | 33  | 55  | 44  | 37  | 32  | 41 | 35 | 31 | 38 | 33 | 30 | 36 | 31 | 28 | 26 |
| 10                  | 54   | 42  | 35  | 30  | 52  | 41  | 34  | 30  | 38 | 33 | 29 | 36 | 31 | 27 | 34 | 29 | 26 | 24 |

LAMPS (number of lamps)

## LUMINAIRE BUDGETARY DIAGRAM



## ZONAL LUMEN SUMMARY

|          |           |           |           |           |           |           |           |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0°-10°   | 10°-20°   | 20°-30°   | 30°-40°   | 40°-50°   | 50°-60°   | 60°-70°   | 70°-80°   | 80°-90°   |
| 12.6 lm  | 35.9 lm   | 45.2 lm   | 24.9 lm   | 22.6 lm   | 20.5 lm   | 17.6 lm   | 15.5 lm   | 14.1 lm   |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 14.0 lm  | 13.4 lm   | 12.3 lm   | 10.6 lm   | 8.41 lm   | 5.97 lm   | 3.42 lm   | 1.46 lm   | 0.228 lm  |

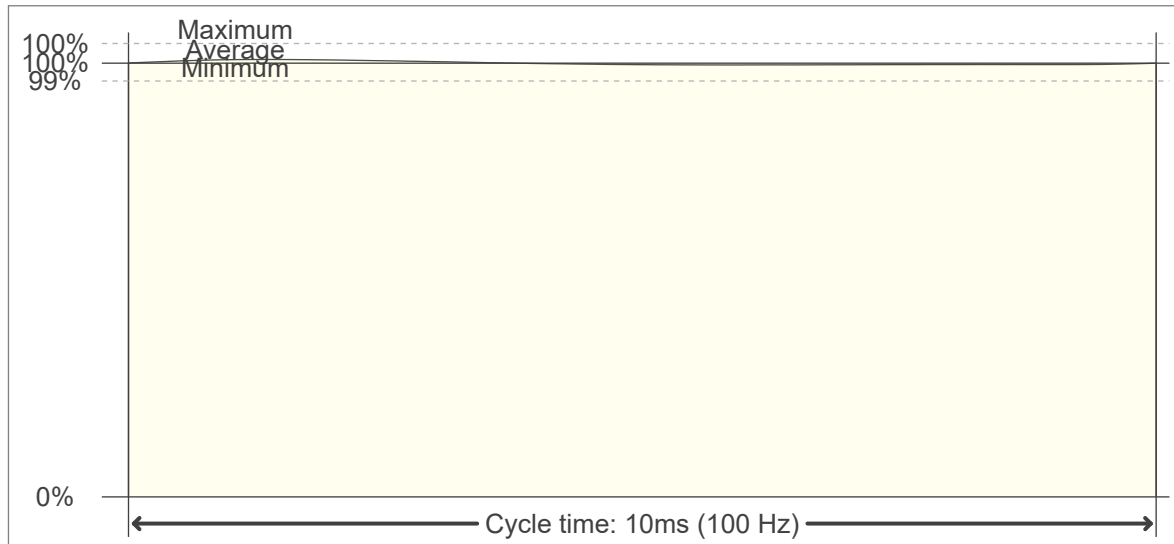


## FLICKER

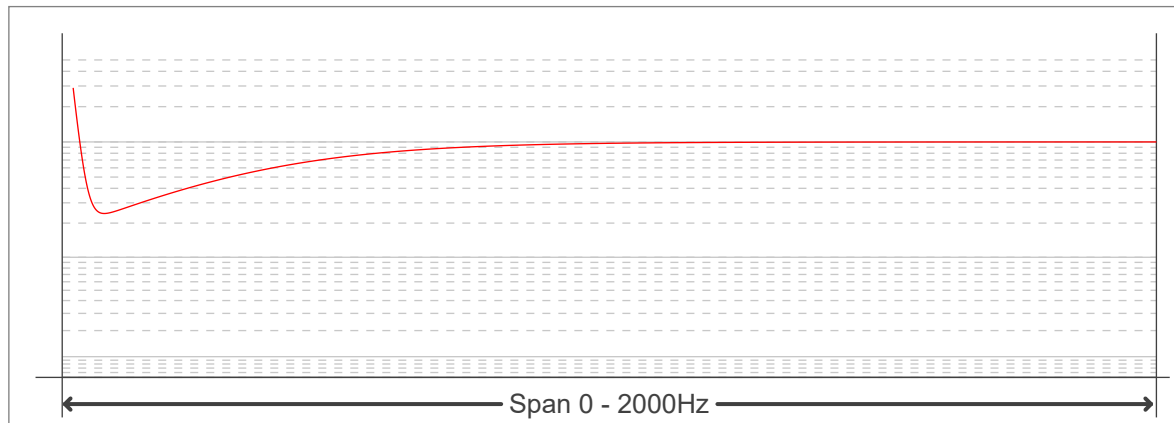
## FLICKER CURVE (COMPLETE SAMPLED)



## FLICKER FRAME (FRAME OF ONE FLICKER)



## FLICKER FFT (FREQUENCY SCOPE OF FLICKER)



## FLICKER RESULTS:

|                       |        |
|-----------------------|--------|
| Flicker frequency:    | 100 Hz |
| Flicker index:        | 0      |
| Flicker percentage:   | 0.72 % |
| SVM: (Visual flicker) | 0.02   |

## FLICKER CONDITIONS:

|              |                      |
|--------------|----------------------|
| Sample rate: | 20000 samples/second |
|--------------|----------------------|