

# PHOTOMETRIC TEST REPORT

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TALLINN TWIN - WITH DIFFUSER

astro

TALLINN TWIN - WITH DIFFUSER

astro

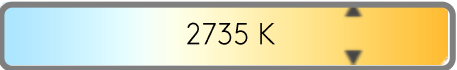
LIGHT EFFICIENCY:



LIGHT QUALITY:



COLOR TEMPERATURE:



OUTPUT: 1413 lm  
PEAK: 4042 cd  
POWER: 19.7 W  
PF: 0.97



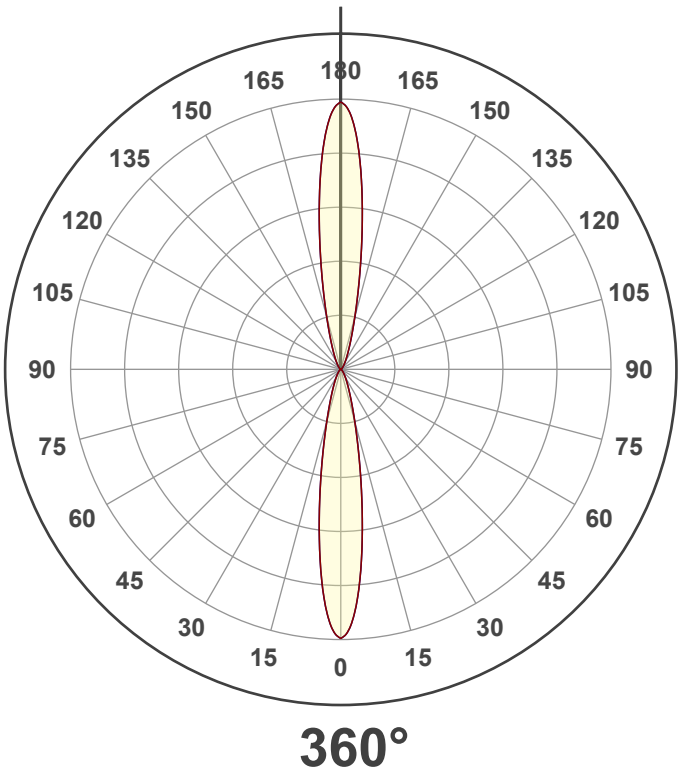
Tracking number: [n/a](#)

Product name:  
Tallinn Twin - with diffuser

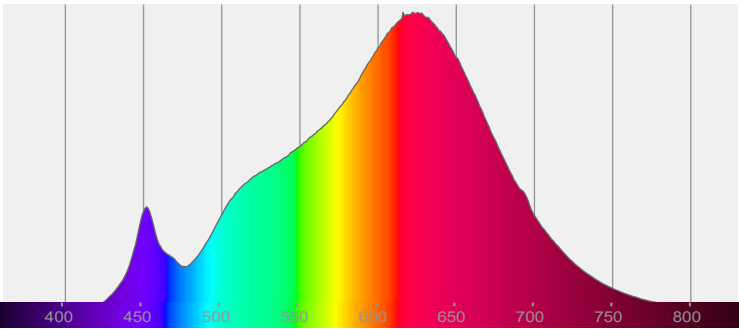
Item number:  
1516002

Date and time:  
11/12/2025 14:08:55

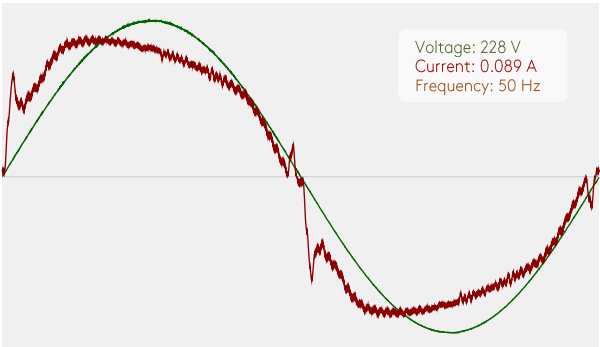
Description:  
Outddor IP65 LED Wall Up & Downlight  
Without Diffusers Fitted



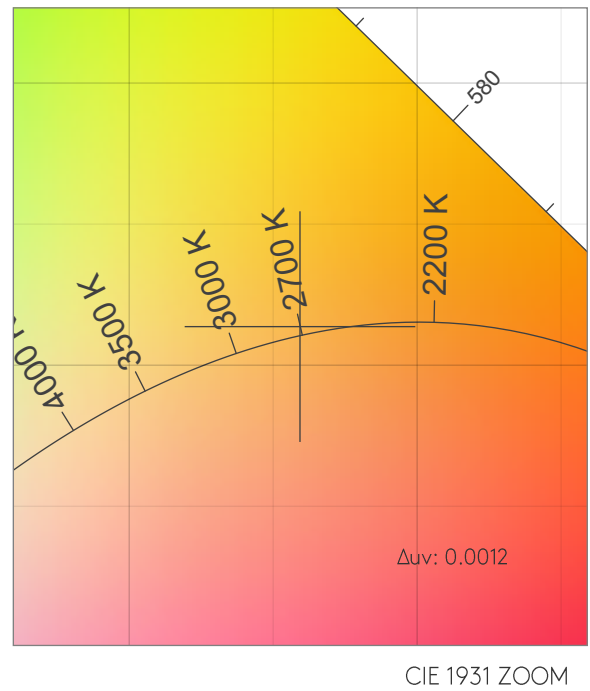
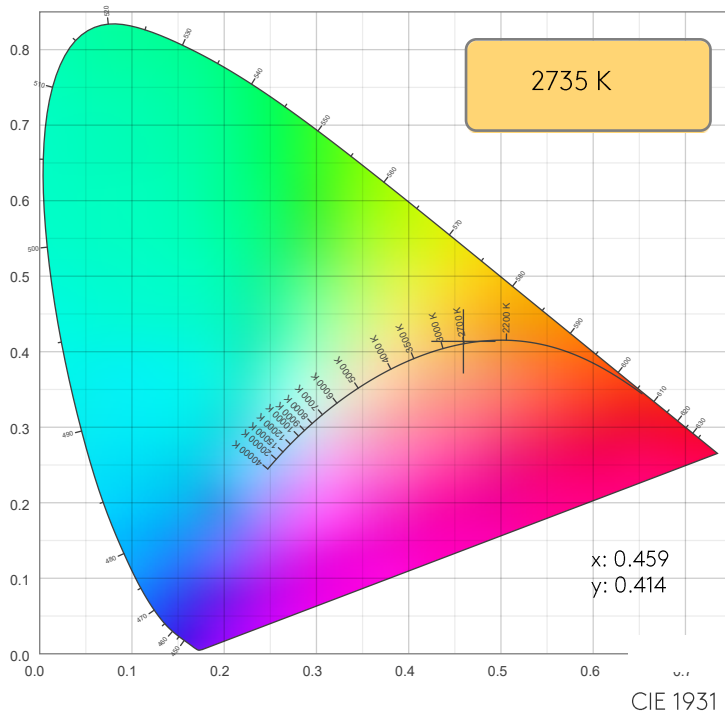
SPECTRA



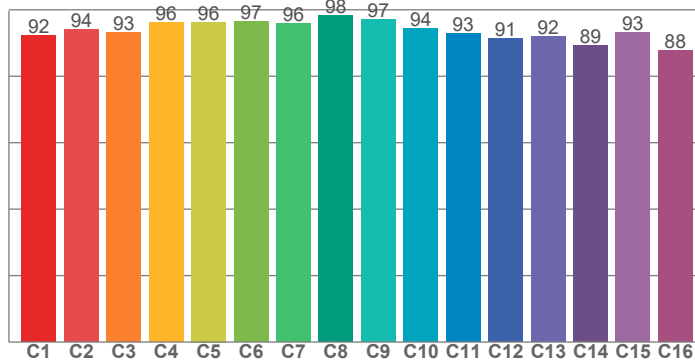
POWER



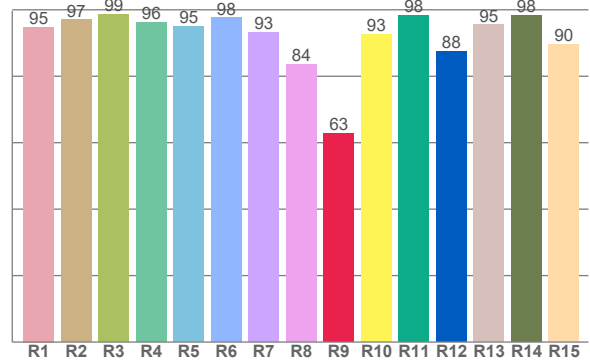
## COLOR DETAILS



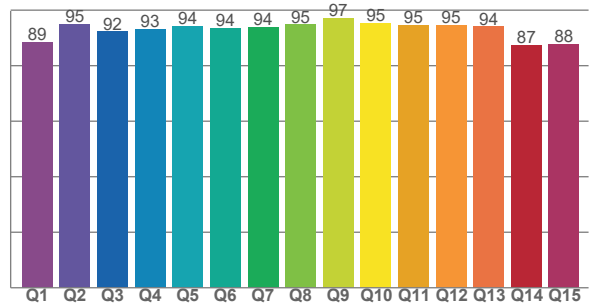
TM30: 93.8



CRI: 94.5 (R1-R8)



CQS: 92.4



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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 94.8 | 97.0 | 98.6 | 96.3 | 94.9 | 97.6 | 93.2 | 83.6 | 62.8 | 92.6 | 98.3 | 87.5 | 95.5 | 98.3 | 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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 92.2 | 94.0 | 93.1 | 96.0 | 96.3 | 96.5 | 95.8 | 98.3 | 97.0 | 94.5 | 92.9 | 91.3 | 91.9 | 89.2 | 93.2 | 87.7 |

CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 88.5 | 95.1 | 92.2 | 93.3 | 94.3 | 93.6 | 93.9 | 94.8 | 97.1 | 95.4 | 94.7 | 94.7 | 94.1 | 87.5 | 87.8 |

## 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                | $\Delta uv$                     |
| 2735 K            | 94.5                  | 62.8          | 93.8           | 99.3        | 92.4                | 0.459                     | 0.414                     | 0.261            | 0.352            | 0.0012                          |

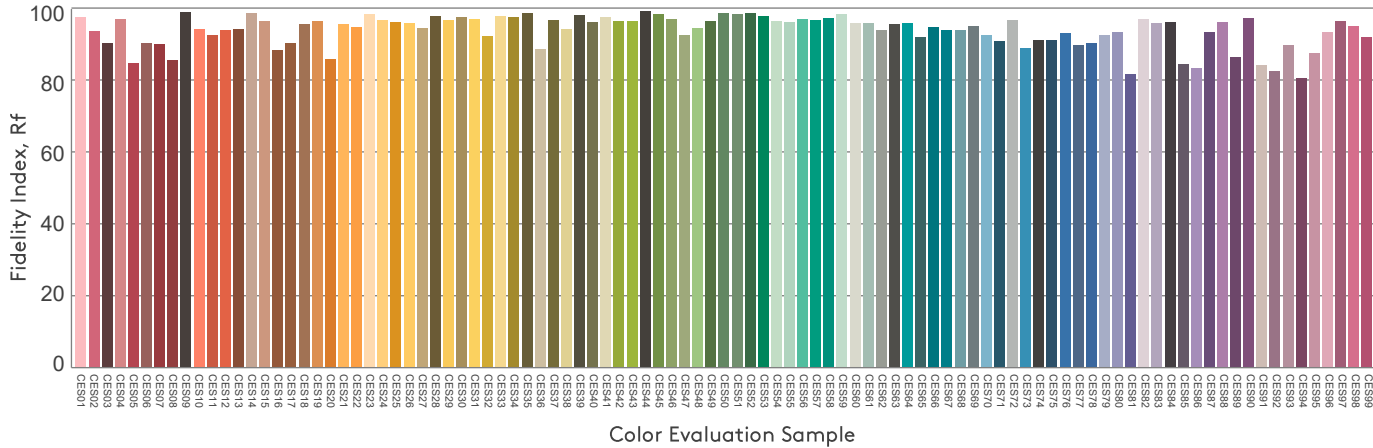
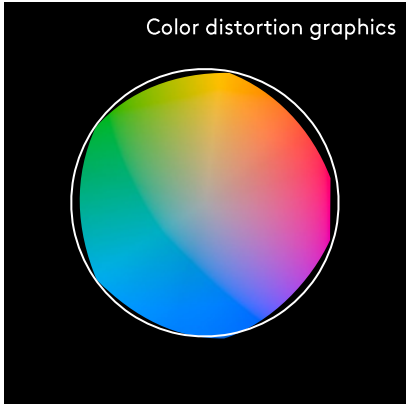
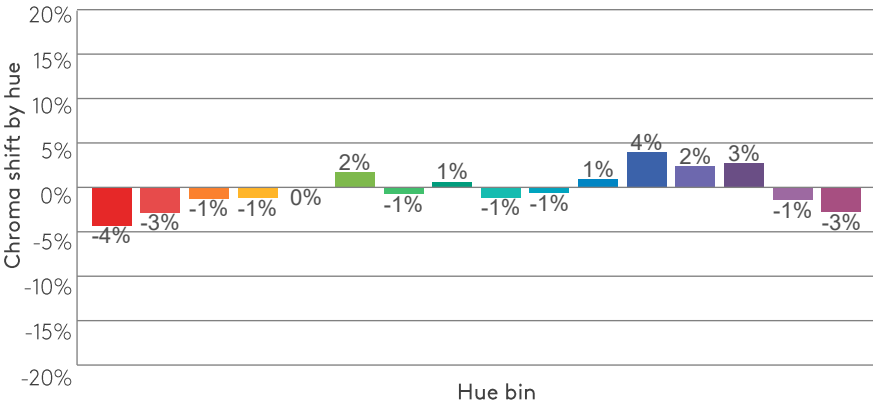
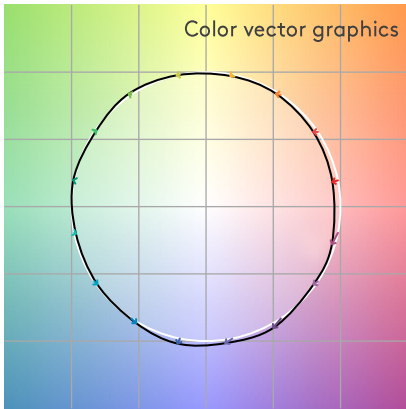
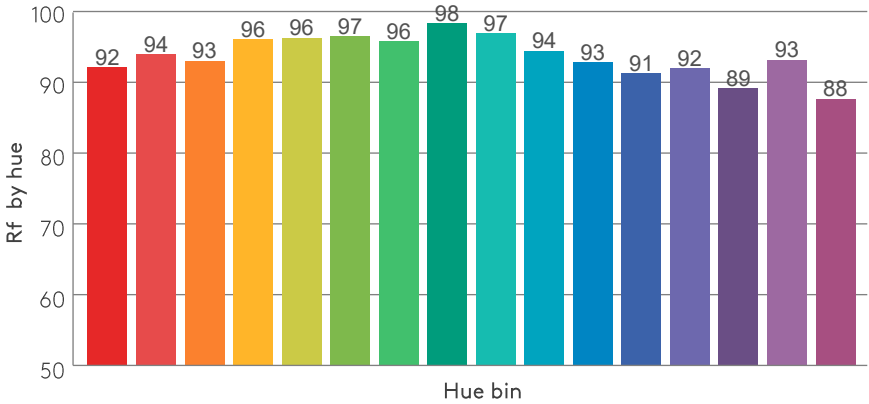
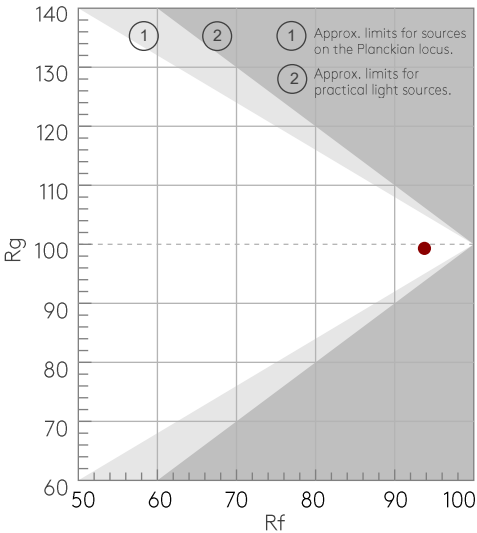
Rf 93.8

Fidelity index Rf

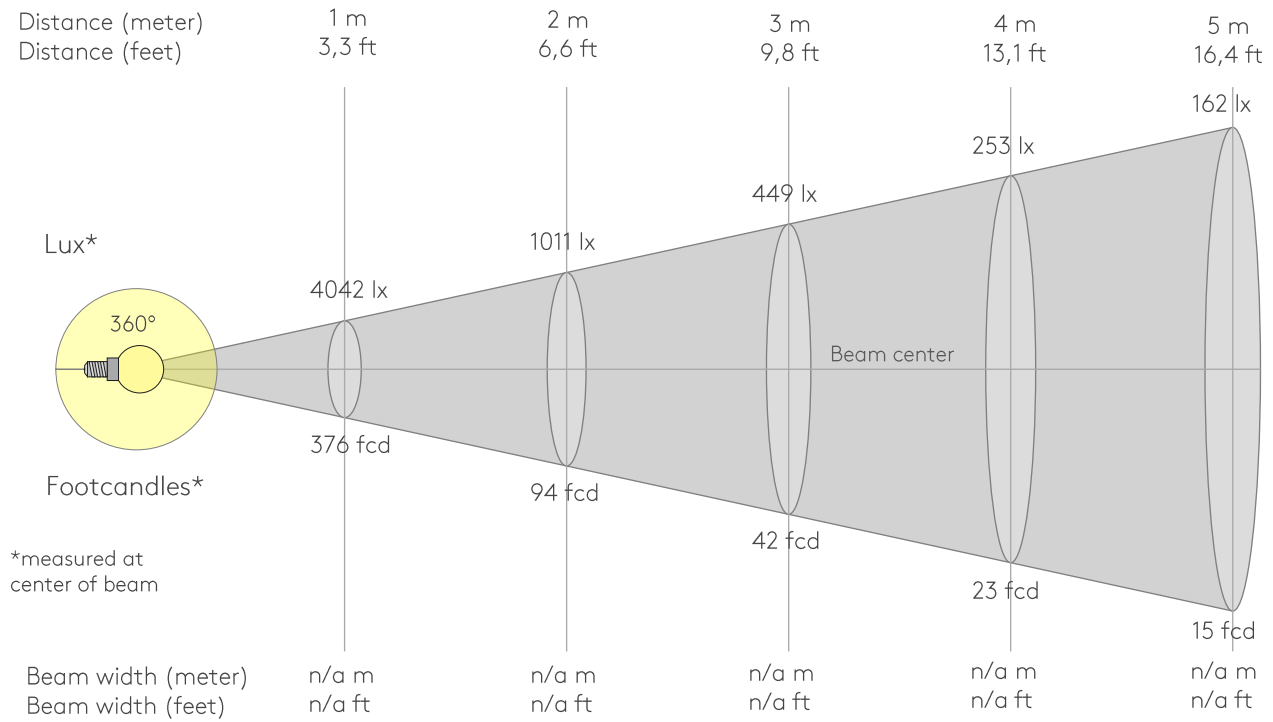
Rg 99.3

Gammut index Rg

| Hue Bin | Rf | Graphic shifts (%) |     |
|---------|----|--------------------|-----|
|         |    | Chroma             | Hue |
| 1       | 92 | -4%                | 0%  |
| 2       | 94 | -3%                | 2%  |
| 3       | 93 | -1%                | 3%  |
| 4       | 96 | -1%                | 1%  |
| 5       | 96 | 0%                 | 2%  |
| 6       | 97 | 2%                 | 1%  |
| 7       | 96 | -1%                | -2% |
| 8       | 98 | 1%                 | 0%  |
| 9       | 97 | -1%                | 1%  |
| 10      | 94 | -1%                | 3%  |
| 11      | 93 | 1%                 | 5%  |
| 12      | 91 | 4%                 | -1% |
| 13      | 92 | 2%                 | -6% |
| 14      | 89 | 3%                 | -8% |
| 15      | 93 | -1%                | -4% |
| 16      | 88 | -3%                | -9% |



## 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 |
| 4042lx   | 1011lx  | 449lx   | 253lx   | 162lx  | 112lx   | 82lx   | 63lx   | 50lx   | 40lx   | 33lx   | 28lx   | 24lx   | 21lx   | 18lx   | 16lx   | 14lx   | 12lx   | 11lx   | 10lx   |
| 375.5fcd | 93.9fcd | 41.7fcd | 23.5fcd | 15fcd  | 10.4fcd | 7.7fcd | 5.9fcd | 4.6fcd | 3.8fcd | 3.1fcd | 2.6fcd | 2.2fcd | 1.9fcd | 1.7fcd | 1.5fcd | 1.3fcd | 1.2fcd | 1fcd   | 0.9fcd |

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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 4042 | 2039 | 525 | 181 | 76  | 36  | 18  | 8   | 3   | 1   | 0   | 1   | 3    | 8    | 18   | 36   | 76   | 180  | 528  | 2042 |
| 100% | 50%  | 13% | 4%  | 2%  | 1%  | 0%  | 0%  | 0%  | 0%  | 0%  | 0%  | 0%   | 0%   | 0%   | 1%   | 2%   | 4%   | 13%  | 51%  |

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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 4042 | 2039 | 525 | 181 | 76  | 36  | 18  | 8   | 3   | 1   | 0   | 1   | 3    | 8    | 18   | 36   | 76   | 180  | 528  | 2042 |
| 100% | 50%  | 13% | 4%  | 2%  | 1%  | 0%  | 0%  | 0%  | 0%  | 0%  | 0%  | 0%   | 0%   | 0%   | 1%   | 2%   | 4%   | 13%  | 51%  |

Intensities in 180° c-plane

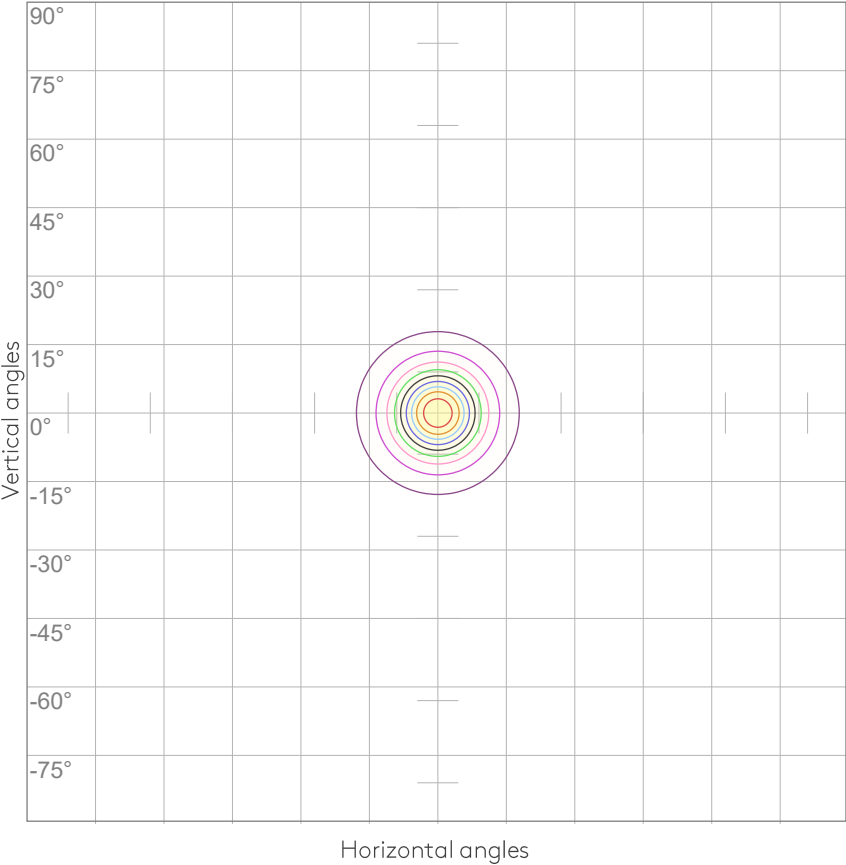
| 0°   | 9°   | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 4042 | 2039 | 525 | 181 | 76  | 36  | 18  | 8   | 3   | 1   | 0   | 1   | 3    | 8    | 18   | 36   | 76   | 180  | 528  | 2042 |
| 100% | 50%  | 13% | 4%  | 2%  | 1%  | 0%  | 0%  | 0%  | 0%  | 0%  | 0%  | 0%   | 0%   | 0%   | 1%   | 2%   | 4%   | 13%  | 51%  |

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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 4042 | 2039 | 525 | 181 | 76  | 36  | 18  | 8   | 3   | 1   | 0   | 1   | 3    | 8    | 18   | 36   | 76   | 180  | 528  | 2042 |
| 100% | 50%  | 13% | 4%  | 2%  | 1%  | 0%  | 0%  | 0%  | 0%  | 0%  | 0%  | 0%   | 0%   | 0%   | 1%   | 2%   | 4%   | 13%  | 51%  |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 360°           | 360°            | 360°              | 49.3%                        | 47.4%                       |

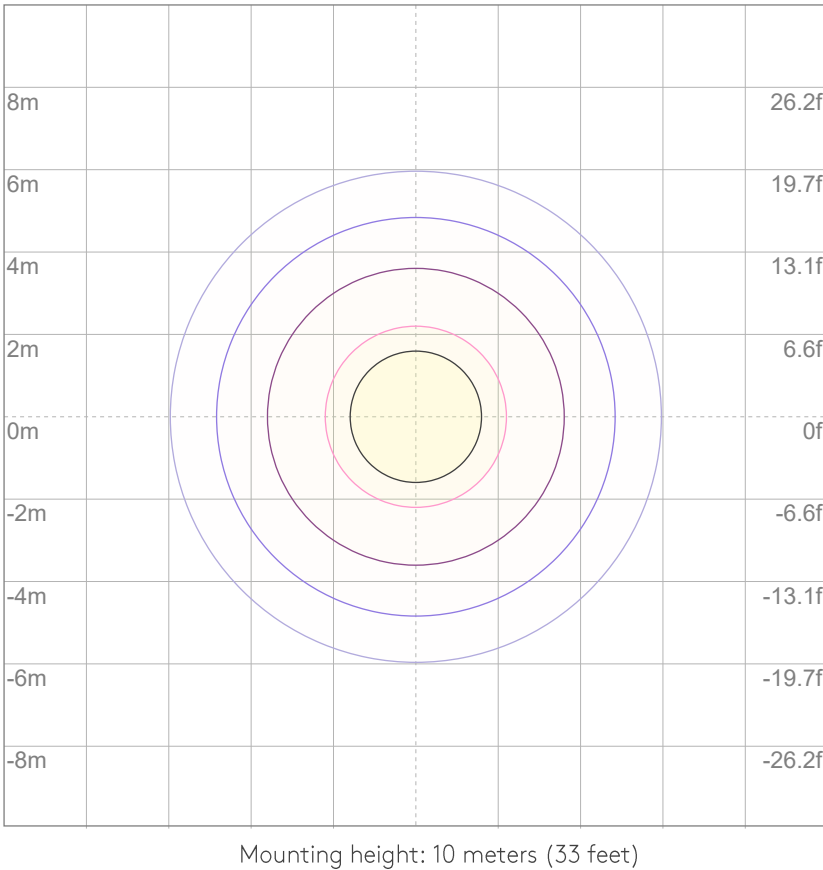
ISO CANDELA DIAGRAM



|     |         |
|-----|---------|
| 10% | 404 cd  |
| 20% | 808 cd  |
| 30% | 1213 cd |
| 40% | 1617 cd |
| 50% | 2021 cd |
| 60% | 2425 cd |
| 70% | 2830 cd |
| 80% | 3234 cd |
| 90% | 3638 cd |

Conditions:  
Number of c-planes: 8  
Candela at center: 4042 cd

ISO LUX DIAGRAM



|     |                |
|-----|----------------|
| 3%  | 1.21 lx        |
| 5%  | 2.02 lx        |
| 10% | 4.04 lx        |
| 30% | 12.1 lx        |
| 50% | {LUX_10M50} lx |

Conditions:  
Number of c-planes: 8  
Lux at center: 40.4 lx

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

## UGR

## GLARE EVALUATION ACCORDING TO UGR

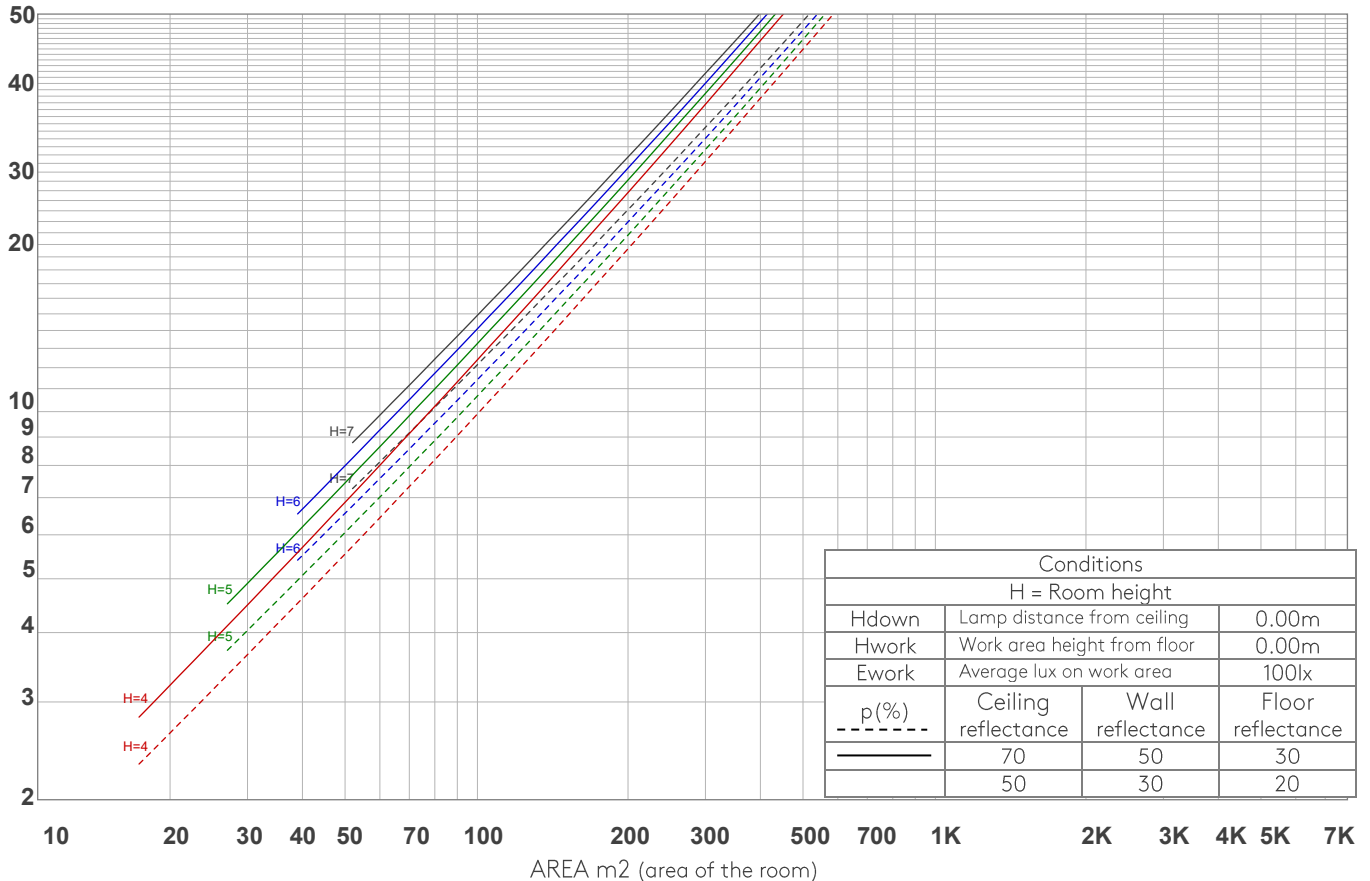
|                                                                  |     |                                                |      |      |      |      |                                         |      |      |      |      |
|------------------------------------------------------------------|-----|------------------------------------------------|------|------|------|------|-----------------------------------------|------|------|------|------|
| 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  | 11.9                                           | 12.4 | 12.7 | 13.2 | 14.3 | 11.9                                    | 12.4 | 12.7 | 13.2 | 14.3 |
|                                                                  | 3H  | 11.9                                           | 12.4 | 12.8 | 13.2 | 14.2 | 11.9                                    | 12.4 | 12.8 | 13.2 | 14.2 |
|                                                                  | 4H  | 11.8                                           | 12.3 | 12.8 | 13.2 | 14.2 | 11.8                                    | 12.3 | 12.8 | 13.2 | 14.2 |
|                                                                  | 6H  | 11.7                                           | 12.1 | 12.6 | 13.1 | 14.2 | 11.7                                    | 12.1 | 12.6 | 13.1 | 14.2 |
|                                                                  | 8H  | 11.7                                           | 12.1 | 12.6 | 13.0 | 14.1 | 11.7                                    | 12.1 | 12.6 | 13.0 | 14.1 |
|                                                                  | 12H | 11.6                                           | 12.2 | 12.5 | 13.0 | 14.0 | 11.6                                    | 12.2 | 12.5 | 13.0 | 14.0 |
| 4H                                                               | 2H  | 11.7                                           | 12.2 | 12.7 | 13.1 | 14.1 | 11.7                                    | 12.2 | 12.7 | 13.1 | 14.1 |
|                                                                  | 3H  | 11.8                                           | 12.4 | 12.8 | 13.2 | 14.3 | 11.8                                    | 12.4 | 12.8 | 13.2 | 14.3 |
|                                                                  | 4H  | 11.8                                           | 12.6 | 12.7 | 13.1 | 14.2 | 11.8                                    | 12.6 | 12.7 | 13.1 | 14.2 |
|                                                                  | 6H  | 11.6                                           | 12.1 | 12.7 | 12.9 | 14.0 | 11.6                                    | 12.1 | 12.7 | 12.9 | 14.0 |
|                                                                  | 8H  | 11.6                                           | 11.9 | 12.6 | 12.8 | 13.9 | 11.6                                    | 11.9 | 12.6 | 12.8 | 13.9 |
|                                                                  | 12H | 11.5                                           | 11.7 | 12.5 | 12.7 | 13.8 | 11.5                                    | 11.7 | 12.5 | 12.7 | 13.8 |
| 8H                                                               | 4H  | 11.6                                           | 11.9 | 12.6 | 12.8 | 13.9 | 11.6                                    | 11.9 | 12.6 | 12.8 | 13.9 |
|                                                                  | 6H  | 11.5                                           | 11.7 | 12.5 | 12.7 | 13.9 | 11.5                                    | 11.7 | 12.5 | 12.7 | 13.9 |
|                                                                  | 8H  | 11.4                                           | 11.6 | 12.5 | 12.6 | 13.8 | 11.4                                    | 11.6 | 12.5 | 12.6 | 13.8 |
|                                                                  | 12H | 11.3                                           | 11.5 | 12.4 | 12.5 | 13.7 | 11.3                                    | 11.5 | 12.4 | 12.5 | 13.7 |
| 12H                                                              | 4H  | 11.5                                           | 11.7 | 12.5 | 12.7 | 13.8 | 11.5                                    | 11.7 | 12.5 | 12.7 | 13.8 |
|                                                                  | 6H  | 11.4                                           | 11.6 | 12.5 | 12.6 | 13.8 | 11.4                                    | 11.6 | 12.5 | 12.6 | 13.8 |
|                                                                  | 8H  | 11.3                                           | 11.5 | 12.4 | 12.5 | 13.7 | 11.3                                    | 11.5 | 12.4 | 12.5 | 13.7 |
| Variation of the observer position for the luminaire distance S  |     |                                                |      |      |      |      |                                         |      |      |      |      |
| S = 1.0H                                                         |     | 2.0 / -1.8                                     |      |      |      |      | 2.0 / -1.8                              |      |      |      |      |
| S = 1.5H                                                         |     | 3.9 / -3.3                                     |      |      |      |      | 3.9 / -3.3                              |      |      |      |      |
| S = 2.0H                                                         |     | 5.5 / -4.9                                     |      |      |      |      | 5.5 / -4.9                              |      |      |      |      |
| Standard table                                                   |     | n/a                                            |      |      |      |      | n/a                                     |      |      |      |      |
| Correction<br>summand                                            |     | n/a                                            |      |      |      |      | n/a                                     |      |      |      |      |
| Corrected glare indices referring to 1413 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                   | 107                                                                                                      | 107 | 107 | 107 | 99 | 99 | 99 | 99 | 83 | 83 | 83 | 69 | 69 | 69 | 56 | 56 | 56 | 50 |
| 1                   | 101                                                                                                      | 97  | 95  | 92  | 93 | 90 | 88 | 86 | 77 | 76 | 74 | 65 | 64 | 63 | 54 | 53 | 53 | 48 |
| 2                   | 94                                                                                                       | 89  | 85  | 81  | 88 | 83 | 79 | 76 | 72 | 69 | 67 | 61 | 60 | 58 | 52 | 51 | 50 | 46 |
| 3                   | 89                                                                                                       | 82  | 77  | 72  | 83 | 77 | 72 | 69 | 67 | 64 | 61 | 58 | 56 | 54 | 50 | 48 | 47 | 44 |
| 4                   | 84                                                                                                       | 76  | 70  | 66  | 78 | 71 | 67 | 63 | 63 | 59 | 57 | 55 | 53 | 51 | 48 | 46 | 45 | 42 |
| 5                   | 79                                                                                                       | 71  | 65  | 60  | 74 | 67 | 62 | 58 | 59 | 56 | 53 | 53 | 50 | 48 | 46 | 44 | 43 | 40 |
| 6                   | 75                                                                                                       | 66  | 60  | 56  | 70 | 63 | 58 | 54 | 56 | 52 | 50 | 50 | 47 | 45 | 44 | 43 | 41 | 39 |
| 7                   | 72                                                                                                       | 62  | 56  | 52  | 67 | 59 | 54 | 50 | 54 | 50 | 47 | 48 | 45 | 43 | 43 | 41 | 40 | 38 |
| 8                   | 68                                                                                                       | 59  | 53  | 49  | 64 | 56 | 51 | 48 | 51 | 47 | 44 | 46 | 43 | 41 | 42 | 40 | 38 | 36 |
| 9                   | 65                                                                                                       | 56  | 50  | 46  | 61 | 53 | 48 | 45 | 49 | 45 | 42 | 44 | 42 | 40 | 40 | 38 | 37 | 35 |
| 10                  | 62                                                                                                       | 53  | 48  | 44  | 59 | 51 | 46 | 43 | 47 | 43 | 41 | 43 | 40 | 38 | 39 | 37 | 36 | 34 |

LAMPS (number of lamps)

## LUMINAIRE BUDGETARY DIAGRAM



## ZONAL LUMEN SUMMARY

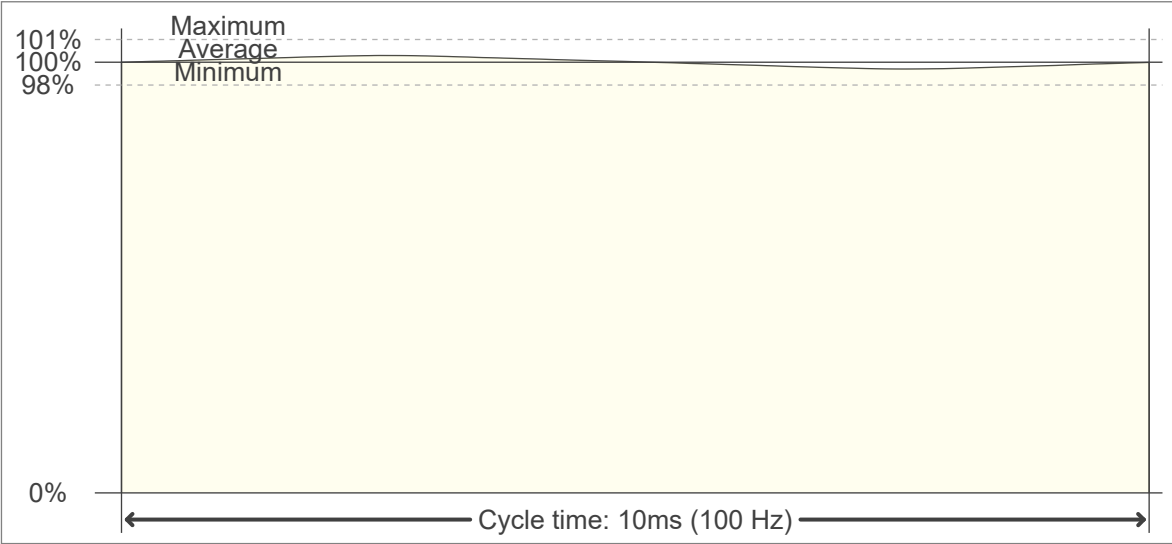
|          |           |           |           |           |           |           |           |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0°-10°   | 10°-20°   | 20°-30°   | 30°-40°   | 40°-50°   | 50°-60°   | 60°-70°   | 70°-80°   | 80°-90°   |
| 258 lm   | 236 lm    | 106 lm    | 53.3 lm   | 28.0 lm   | 15.0 lm   | 6.80 lm   | 2.05 lm   | 0.212 lm  |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 0.242 lm | 2.08 lm   | 6.83 lm   | 15.0 lm   | 28.1 lm   | 53.2 lm   | 106 lm    | 237 lm    | 258 lm    |

FLICKER

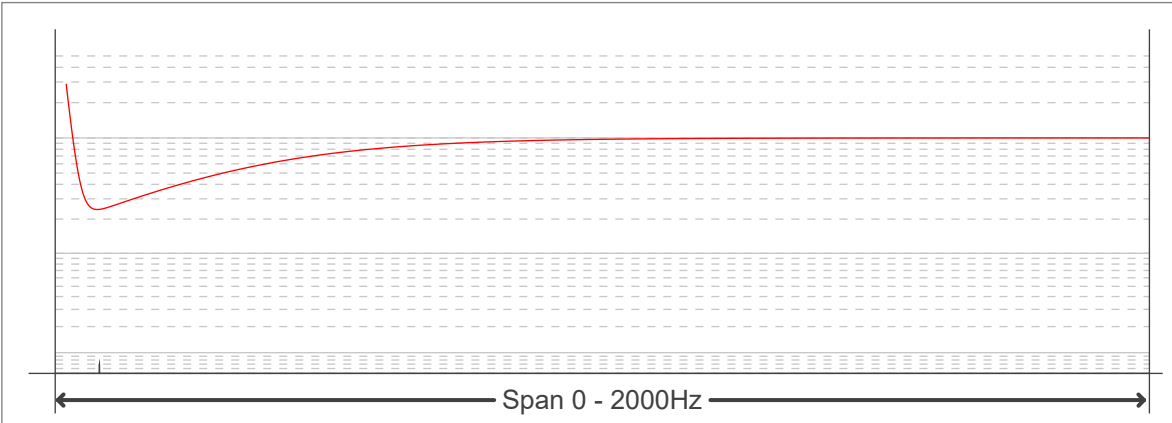
FLICKER CURVE (COMPLETE SAMPLED)



FLICKER FRAME (FRAME OF ONE FLICKER)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER)



FLICKER RESULTS:

|                       |        |
|-----------------------|--------|
| Flicker frequency:    | 100 Hz |
| Flicker index:        | 0      |
| Flicker percentage:   | 1.71 % |
| SVM: (Visual flicker) | 0.05   |

FLICKER CONDITIONS:

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