

LUMINAIRE PHOTOMETRIC TEST REPORT

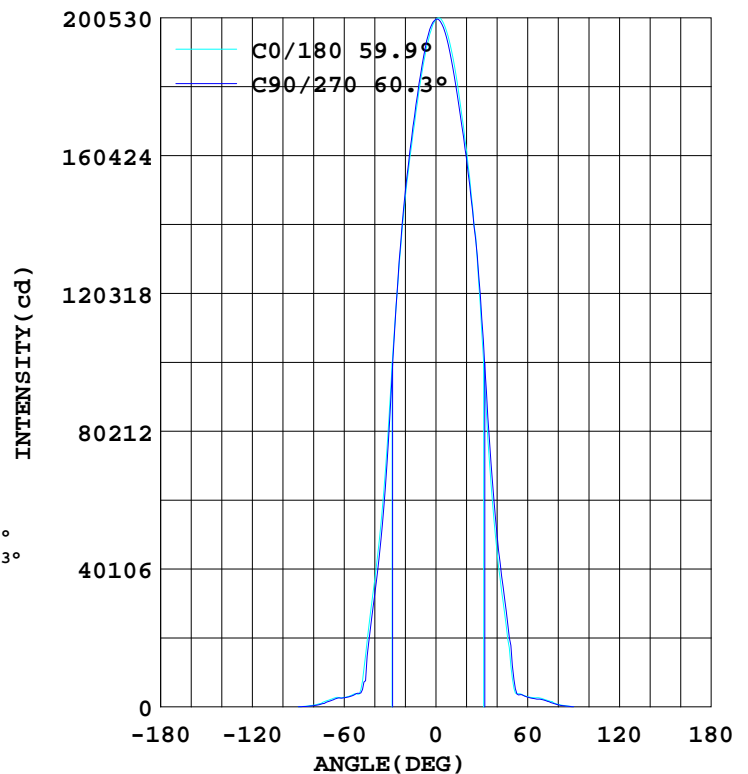
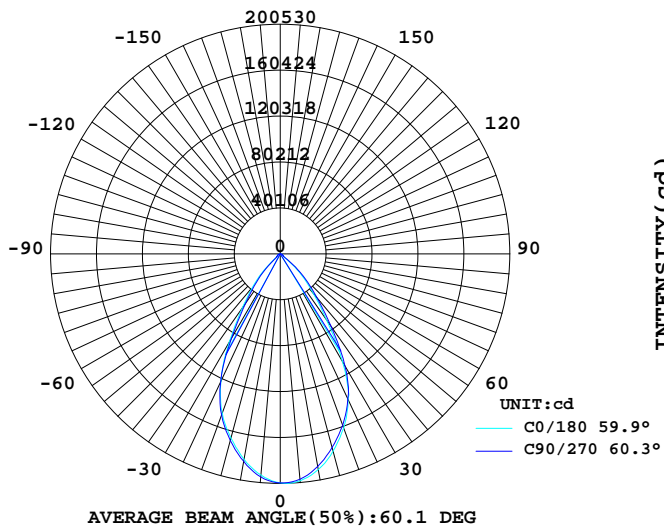
Report number:

| | | |
|---------------------------------|--------------------------|-------------|
| MANUFACTURER: ILUMEN GMBH | Address: | |
| NAME: Kroos | TYPE:IL-SL13-N120040-060 | WEIGHT: |
| SPECIFICATION:5050LED 4000K 60° | DIMENSION: | SERIAL No.: |

| | | | | | |
|------------------|----------|--------------------|----------|------------------|-------|
| DATA OF LAMP | | Imax(cd) | 200530 | S/MH(C0/180) | 0.86 |
| MODEL | | EFFICIENCY(%) | 100.0 | S/MH(C90/270) | 0.84 |
| NOMINAL POWER(W) | 1200 | TOTAL FLUX(lm) | 192000 | Voltage(V) | 230.6 |
| RATED VOLTAGE(V) | 230 | EFFICIENCY(lm/W) | 160.0 | Current(A) | 5.203 |
| NOMINAL FLUX(lm) | 192000.0 | η up(%) | 0.0 | Power(W) | 1200 |
| LAMPS QUANTITY | 1 | η down(%) | 100.0 | Power Factor(PF) | 1.000 |
| TEST VOLTAGE(V) | 230.6 | Effective Flux(lm) | 192000.2 | EEI | 0.094 |

LUMINOUS INTENSITY DISTRIBUTION

LUMINOUS INTENSITY DISTRIBUTION



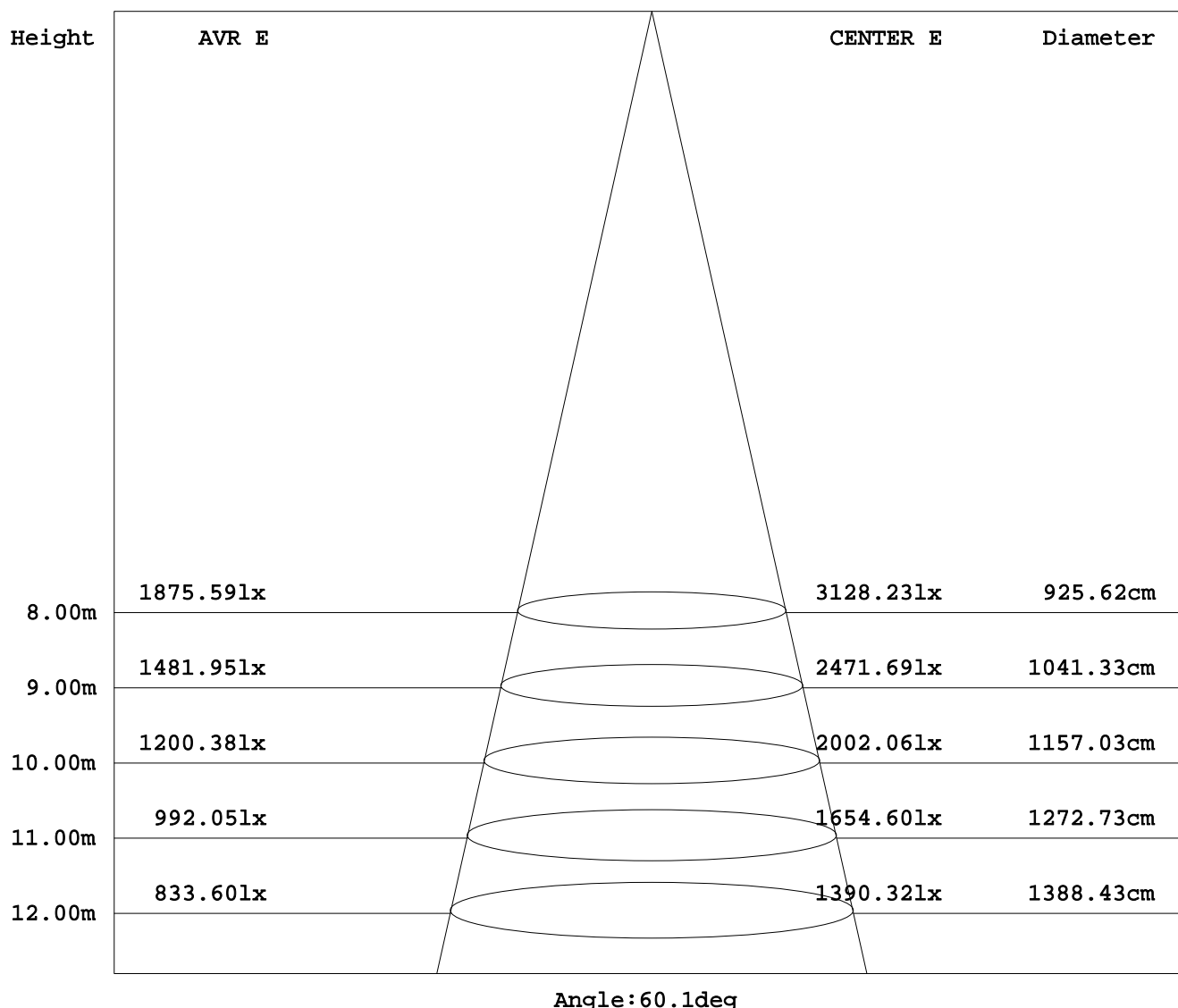
Test System:
 Temperature:25.3DEG
 Operators:
 Test Date:2025.02.20

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:

AVERAGE AND CENTER E Figure

Report number:

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| MANUFACTURER: ILUMEN GMBH | Address: | |
| NAME: Kroos | TYPE:IL-SL13-N120040-060 | WEIGHT: |
| SPECIFICATION:5050LED 4000K 60° | DIMENSION: | SERIAL No.: |



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 Operators:
 Test Date:2025.02.20

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 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:

ZONAL FLUX DIAGRAM

Report number:

| | | |
|---------------------------------|--------------------------|-------------|
| MANUFACTURER: ILUMEN GMBH | Address: | |
| NAME: Kroos | TYPE:IL-SL13-N120040-060 | WEIGHT: |
| SPECIFICATION:5050LED 4000K 60° | DIMENSION: | SERIAL No.: |

| γ | C0 | C45 | C90 | C135 | C180 | C225 | C270 | C315 | γ | zone | total |
|-------|---------------------------|-------|-------|-------|-------|-------|-------|-------|---------|---------|--------|
| 5.0 | 1939 | 1945 | 1956 | 1960 | 1990 | 1984 | 1976 | 1969 | 0- 5 | 4740 | 4740 |
| 10.0 | 1822 | 1828 | 1840 | 1854 | 1914 | 1904 | 1885 | 1874 | 5- 10 | 13696 | 18436 |
| 15.0 | 1666 | 1677 | 1687 | 1703 | 1783 | 1774 | 1750 | 1733 | 10- 15 | 21257 | 39693 |
| 20.0 | 1482 | 1487 | 1498 | 1513 | 1619 | 1614 | 1594 | 1572 | 15- 20 | 26926 | 66619 |
| 25.0 | 1226 | 1229 | 1232 | 1257 | 1401 | 1409 | 1398 | 1365 | 20- 25 | 30091 | 96710 |
| 30.0 | 892.1 | 856.3 | 854.6 | 873.1 | 1090 | 1105 | 1131 | 1084 | 25- 30 | 29230 | 125940 |
| 35.0 | 577.5 | 538.6 | 529.3 | 542.5 | 713.6 | 766.2 | 775.8 | 740.1 | 30- 35 | 23789 | 149729 |
| 40.0 | 368.4 | 333.2 | 325.8 | 335.4 | 449.5 | 486.8 | 499.0 | 480.4 | 35- 40 | 17341 | 167070 |
| 45.0 | 191.7 | 175.1 | 147.2 | 175.5 | 268.0 | 299.6 | 310.3 | 297.8 | 40- 45 | 11772 | 178842 |
| 50.0 | 38.02 | 37.80 | 39.24 | 38.55 | 83.71 | 112.6 | 120.6 | 75.66 | 45- 50 | 5737 | 184579 |
| 55.0 | 34.00 | 31.41 | 32.03 | 31.88 | 38.19 | 39.16 | 35.41 | 38.55 | 50- 55 | 1942 | 186521 |
| 60.0 | 27.59 | 24.96 | 26.65 | 25.96 | 29.51 | 30.19 | 28.30 | 29.32 | 55- 60 | 1449 | 187970 |
| 65.0 | 27.62 | 22.26 | 24.50 | 23.07 | 26.40 | 25.13 | 23.45 | 24.31 | 60- 65 | 1265 | 189234 |
| 70.0 | 19.81 | 16.76 | 16.04 | 17.60 | 23.55 | 21.64 | 20.94 | 20.88 | 65- 70 | 1131 | 190366 |
| 75.0 | 9.824 | 10.65 | 8.074 | 11.46 | 15.84 | 16.62 | 12.88 | 16.11 | 70- 75 | 852.6 | 191218 |
| 80.0 | 4.954 | 3.501 | 3.646 | 4.042 | 7.173 | 9.905 | 6.060 | 9.474 | 75- 80 | 496.4 | 191715 |
| 85.0 | 2.025 | 0.942 | 1.226 | 1.041 | 3.251 | 3.340 | 2.329 | 3.143 | 80- 85 | 213.0 | 191928 |
| 90.0 | 0.845 | 0.490 | 0.807 | 0.498 | 0.826 | 1.064 | 0.568 | 0.970 | 85- 90 | 72.52 | 192000 |
| 95.0 | | | | | | | | | 90- 95 | | |
| 100.0 | | | | | | | | | 95-100 | | |
| 105.0 | | | | | | | | | 100-105 | | |
| 110.0 | | | | | | | | | 105-110 | | |
| 115.0 | | | | | | | | | 110-115 | | |
| 120.0 | | | | | | | | | 115-120 | | |
| 125.0 | | | | | | | | | 120-125 | | |
| 130.0 | | | | | | | | | 125-130 | | |
| 135.0 | | | | | | | | | 130-135 | | |
| 140.0 | | | | | | | | | 135-140 | | |
| 145.0 | | | | | | | | | 140-145 | | |
| 150.0 | | | | | | | | | 145-150 | | |
| 155.0 | | | | | | | | | 150-155 | | |
| 160.0 | | | | | | | | | 155-160 | | |
| 165.0 | | | | | | | | | 160-165 | | |
| 170.0 | | | | | | | | | 165-170 | | |
| 175.0 | | | | | | | | | 170-175 | | |
| 180.0 | | | | | | | | | 175-180 | | |
| DEG | LUMINOUS INTENSITY:×100cd | | | | | | | | | UNIT:lm | |

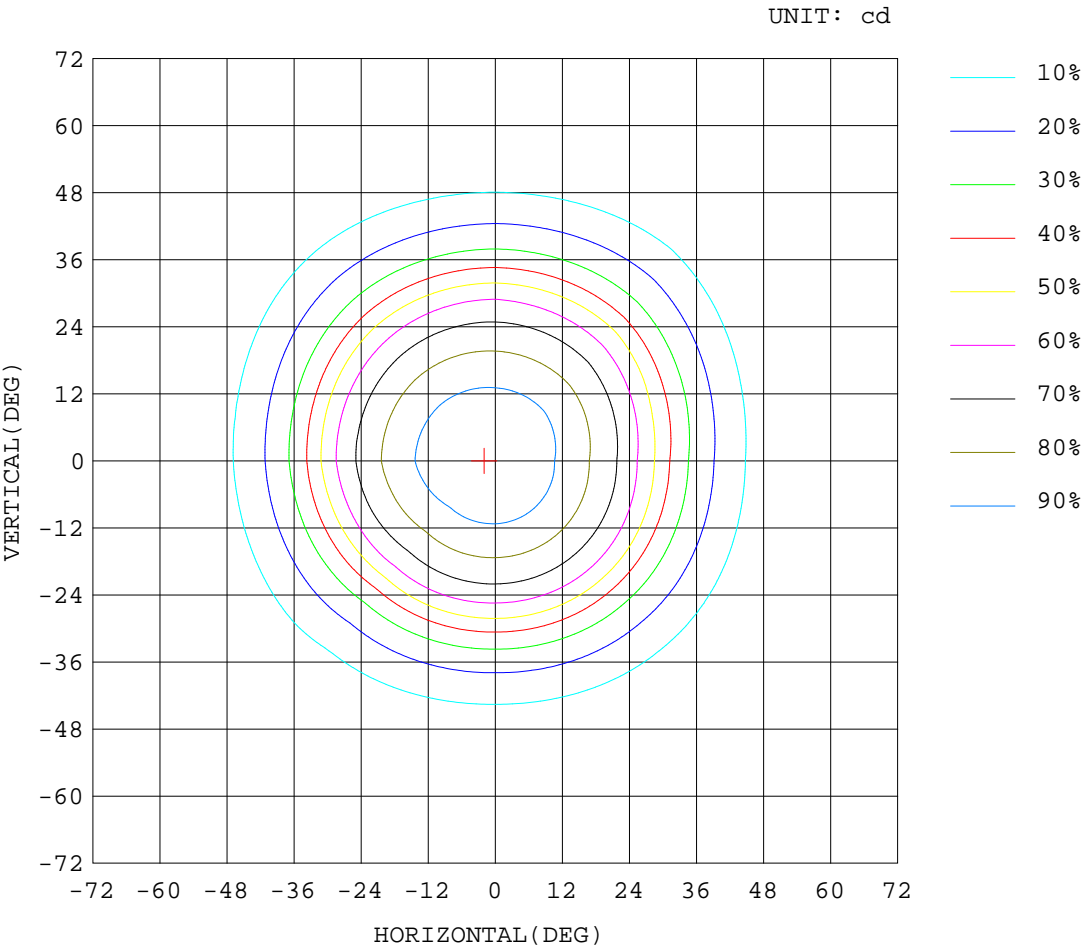
Test System:
Temperature:25.3DEG
Operators:
Test Date:2025.02.20

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:10.000 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

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|---------------------------------|--------------------------|-------------|
| MANUFACTURER: ILUMEN GMBH | Address: | |
| NAME: Kroos | TYPE:IL-SL13-N120040-060 | WEIGHT: |
| SPECIFICATION:5050LED 4000K 60° | DIMENSION: | SERIAL No.: |



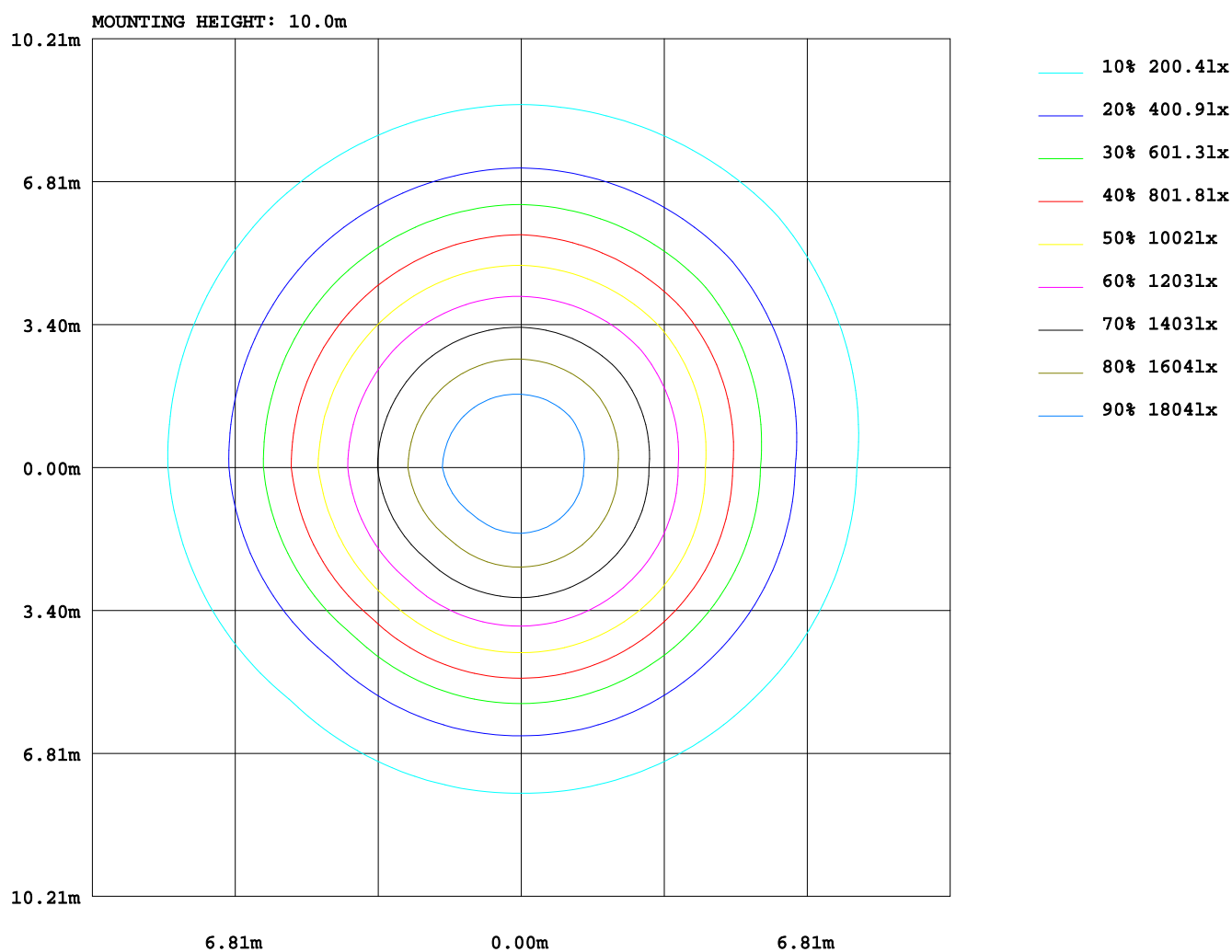
Test System:
Temperature:25.3DEG
Operators:
Test Date:2025.02.20

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:10.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

| | | |
|---------------------------------|--------------------------|-------------|
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| NAME: Kroos | TYPE:IL-SL13-N120040-060 | WEIGHT: |
| SPECIFICATION:5050LED 4000K 60° | DIMENSION: | SERIAL No.: |



Test System:
Temperature:25.3DEG
Operators:
Test Date:2025.02.20

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:10.000 m
Remarks:

Uncorrected UGR Table

Report number:

| | | | | |
|---------------------------------|--------------------------|--|-------------|--|
| MANUFACTURER: ILUMEN GMBH | Address: | | | |
| NAME: Kroos | TYPE:IL-SL13-N120040-060 | | WEIGHT: | |
| SPECIFICATION:5050LED 4000K 60° | DIMENSION: | | SERIAL No.: | |

| | | | | | | | | | | |
|-----------------|------------------|------|------|------|------|----------------|------|------|------|------|
| ceiling/cavity | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| walls | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| working plane | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | Viewed crosswise | | | | | Viewed endwise | | | | |
| x = 2H y = 2H | 22.9 | 23.9 | 23.1 | 24.1 | 24.3 | 22.5 | 23.5 | 22.7 | 23.7 | 23.9 |
| 3H | 23.0 | 24.0 | 23.3 | 24.2 | 24.4 | 22.6 | 23.5 | 22.8 | 23.7 | 23.9 |
| 4H | 23.0 | 23.9 | 23.3 | 24.2 | 24.4 | 22.6 | 23.4 | 22.8 | 23.7 | 23.9 |
| 6H | 23.0 | 23.8 | 23.3 | 24.1 | 24.3 | 22.5 | 23.3 | 22.8 | 23.6 | 23.8 |
| 8H | 23.0 | 23.8 | 23.3 | 24.0 | 24.3 | 22.5 | 23.3 | 22.8 | 23.5 | 23.8 |
| 12H | 22.9 | 23.7 | 23.3 | 24.0 | 24.3 | 22.4 | 23.2 | 22.7 | 23.5 | 23.7 |
| 4H 2H | 22.7 | 23.6 | 23.0 | 23.9 | 24.1 | 22.4 | 23.2 | 22.6 | 23.5 | 23.7 |
| 3H | 23.0 | 23.7 | 23.3 | 24.0 | 24.3 | 22.5 | 23.3 | 22.8 | 23.5 | 23.8 |
| 4H | 23.0 | 23.7 | 23.4 | 24.0 | 24.3 | 22.5 | 23.2 | 22.9 | 23.5 | 23.8 |
| 6H | 23.0 | 23.6 | 23.4 | 23.9 | 24.3 | 22.5 | 23.1 | 22.9 | 23.4 | 23.8 |
| 8H | 23.0 | 23.5 | 23.4 | 23.9 | 24.3 | 22.5 | 23.0 | 22.9 | 23.4 | 23.7 |
| 12H | 23.0 | 23.5 | 23.4 | 23.8 | 24.2 | 22.4 | 22.9 | 22.8 | 23.3 | 23.7 |
| 8H 4H | 22.9 | 23.5 | 23.3 | 23.9 | 24.2 | 22.5 | 23.0 | 22.9 | 23.4 | 23.8 |
| 6H | 23.0 | 23.4 | 23.4 | 23.8 | 24.2 | 22.4 | 22.9 | 22.9 | 23.3 | 23.7 |
| 8H | 22.9 | 23.3 | 23.4 | 23.8 | 24.2 | 22.4 | 22.8 | 22.9 | 23.2 | 23.7 |
| 12H | 22.9 | 23.3 | 23.4 | 23.7 | 24.2 | 22.4 | 22.7 | 22.9 | 23.2 | 23.6 |
| 12H 4H | 22.9 | 23.4 | 23.3 | 23.8 | 24.2 | 22.4 | 22.9 | 22.8 | 23.3 | 23.7 |
| 6H | 22.9 | 23.3 | 23.4 | 23.7 | 24.2 | 22.4 | 22.8 | 22.9 | 23.2 | 23.7 |
| 8H | 22.9 | 23.2 | 23.4 | 23.7 | 24.2 | 22.4 | 22.7 | 22.9 | 23.2 | 23.6 |

Variations with the observer position at spacings:

| | | |
|----------|---------------|---------------|
| S = 1.0H | + 2.3 / - 4.7 | + 2.2 / - 4.8 |
| 1.5H | + 4.3 / - 4.7 | + 4.3 / - 4.5 |
| 2.0H | + 5.7 / - 1.9 | + 5.1 / - 1.2 |

CIE Pub.117 Corrected 192000 lm Total Lamp Luminous Flux.(8log(F/F0) = 18.3)

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Operators:
Test Date:2025.02.20

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Humidity:65.0%
Test Distance:10.000 m
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number:

| | | |
|---|----------------------------------|--------------------|
| MANUFACTURER: ILUMEN GMBH | Address: | |
| NAME: Kroos | TYPE: IL-SL13-N120040-060 | WEIGHT: |
| SPECIFICATION: 5050LED 4000K 60° | DIMENSION: | SERIAL No.: |

UNIT: ×100cd

| C (DEG) | | | | | | | | |
|---------|------|------|------|------|------|------|------|------|
| γ (DEG) | 0 | 45 | 90 | 135 | 180 | 225 | 270 | 315 |
| 0.0 | 2001 | 2001 | 2001 | 2001 | 2001 | 2001 | 2001 | 2001 |
| 5.0 | 1939 | 1945 | 1956 | 1960 | 1990 | 1984 | 1976 | 1969 |
| 10.0 | 1822 | 1828 | 1840 | 1854 | 1914 | 1904 | 1885 | 1874 |
| 15.0 | 1666 | 1677 | 1687 | 1703 | 1783 | 1774 | 1750 | 1733 |
| 20.0 | 1482 | 1487 | 1498 | 1513 | 1619 | 1614 | 1594 | 1572 |
| 25.0 | 1226 | 1229 | 1232 | 1257 | 1401 | 1409 | 1398 | 1365 |
| 30.0 | 892 | 856 | 855 | 873 | 1090 | 1105 | 1131 | 1084 |
| 35.0 | 578 | 539 | 529 | 543 | 714 | 766 | 776 | 740 |
| 40.0 | 368 | 333 | 326 | 335 | 450 | 487 | 499 | 480 |
| 45.0 | 192 | 175 | 147 | 176 | 268 | 300 | 310 | 298 |
| 50.0 | 38.0 | 37.8 | 39.2 | 38.5 | 83.7 | 113 | 121 | 75.6 |
| 55.0 | 34.0 | 31.4 | 32.0 | 31.8 | 38.1 | 39.1 | 35.4 | 38.5 |
| 60.0 | 27.5 | 24.9 | 26.6 | 25.9 | 29.5 | 30.1 | 28.3 | 29.3 |
| 65.0 | 27.6 | 22.2 | 24.5 | 23.0 | 26.4 | 25.1 | 23.4 | 24.3 |
| 70.0 | 19.8 | 16.7 | 16.0 | 17.6 | 23.5 | 21.6 | 20.9 | 20.8 |
| 75.0 | 9.82 | 10.6 | 8.07 | 11.4 | 15.8 | 16.6 | 12.8 | 16.1 |
| 80.0 | 4.95 | 3.50 | 3.64 | 4.04 | 7.17 | 9.90 | 6.06 | 9.47 |
| 85.0 | 2.02 | 0.94 | 1.22 | 1.04 | 3.25 | 3.34 | 2.32 | 3.14 |
| 90.0 | 0.85 | 0.49 | 0.81 | 0.50 | 0.83 | 1.06 | 0.57 | 0.97 |

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