

PHOTOMETRIC MEASUREMENT REPORT N° 31

Photometric measurement date: **13/07/2017**

Company: **SLAMP S.p.A.**

Operator: **/Tiziana Cardile**

Type of photometric measurement: **C - Gamma**

The measurements have been performed in the following laboratory ambient conditions:

Temperature: **23°C+/-2°C**

Relative humidity: **50%U.R.+/-15%U.R.**

Air turbulence: **< 0.2 m/s**

Stabilization time before measurement: **1 hour**

Regulations applied: **UNI-EN 13032-4**

Electro Magnetic Compatibility (EMC): **Shielded instrument**

Luminaire name: **Nuvm**

Eulumdat reference: **Nuvm - single module**

Size of luminaire (mm): **800 x 0 x 830**

Size of luminous area (mm): **800 x 0**

Number n of standard sets of lamps (optional): **1**

Number of lamps: **1**

Type of light source: **Led SMD 2835 - Silamp - GU10 PAR16**

Total luminous flux of the light source (lm): **1500**

Output luminous flux of the lamp (lm): **1343.3**

Colour temperature (K): **3000**

Colour rendering index: **80**

Supply current (mA): **N.A.**

Source power (W): **Not available**

Power consumption included source power (W): **8**

LED module efficacy (lm/W): **Not available**

System light efficacy (lm/W): **187.50**

Luminaire light efficacy (lm/W): **167.91**

Light Output Ratio of luminaire (LOR): **100**

Downward Flux Fraction (DFF): **50**

Upward Flux Fraction (UFF): **50.00**

Tilt during measurement (for street luminaires): **0**

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Luminous intensities

| Gamma | C0° | C5° | C10° | C15° | C20° | C25° | C30° | C35° | C40° | C45° | C50° | C55° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 |
| 5° | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.269 | 588.269 | 588.269 | 588.269 |
| 10° | 520.489 | 520.509 | 520.529 | 520.549 | 520.569 | 520.589 | 520.598 | 520.618 | 520.638 | 520.658 | 520.678 | 520.688 |
| 15° | 521.692 | 521.742 | 521.791 | 521.841 | 521.891 | 521.95 | 522 | 522.05 | 522.1 | 522.149 | 522.199 | 522.249 |
| 20° | 430.411 | 430.47 | 430.53 | 430.59 | 430.649 | 430.709 | 430.759 | 430.818 | 430.878 | 430.937 | 430.997 | 431.057 |
| 25° | 294.98 | 295.029 | 295.069 | 295.119 | 295.159 | 295.208 | 295.248 | 295.298 | 295.338 | 295.387 | 295.427 | 295.467 |
| 30° | 169.192 | 169.222 | 169.251 | 169.281 | 169.321 | 169.351 | 169.381 | 169.41 | 169.44 | 169.48 | 169.51 | 169.54 |
| 35° | 93.0709 | 93.1206 | 93.1703 | 93.22 | 93.2697 | 93.3095 | 93.3592 | 93.4089 | 93.4586 | 93.4984 | 93.5481 | 93.5978 |
| 40° | 56.5464 | 56.5961 | 56.6557 | 56.7154 | 56.7651 | 56.8247 | 56.8844 | 56.9341 | 56.9937 | 57.0434 | 57.1031 | 57.1627 |
| 45° | 43.2349 | 43.2946 | 43.3443 | 43.4039 | 43.4636 | 43.5232 | 43.5829 | 43.6425 | 43.7022 | 43.7519 | 43.8115 | 43.8712 |
| 50° | 36.7134 | 36.7233 | 36.7333 | 36.7532 | 36.7631 | 36.773 | 36.783 | 36.7929 | 36.8128 | 36.8227 | 36.8327 | 36.8426 |
| 55° | 32.1901 | 32.2298 | 32.2696 | 32.3094 | 32.3491 | 32.379 | 32.4187 | 32.4585 | 32.4983 | 32.538 | 32.5778 | 32.6076 |
| 60° | 28.2235 | 28.2831 | 28.3527 | 28.4223 | 28.4919 | 28.5515 | 28.6211 | 28.6907 | 28.7603 | 28.82 | 28.8896 | 28.9591 |
| 65° | 23.044 | 23.1136 | 23.1832 | 23.2528 | 23.3224 | 23.4019 | 23.4715 | 23.5411 | 23.6107 | 23.6803 | 23.7598 | 23.8294 |
| 70° | 19.3757 | 19.4453 | 19.5149 | 19.5845 | 19.664 | 19.7336 | 19.8032 | 19.8728 | 19.9423 | 20.0119 | 20.0815 | 20.1511 |
| 75° | 16.0652 | 16.1149 | 16.1746 | 16.2243 | 16.274 | 16.3237 | 16.3833 | 16.433 | 16.4828 | 16.5325 | 16.5921 | 16.6418 |
| 80° | 12.2577 | 12.2974 | 12.3273 | 12.367 | 12.4068 | 12.4366 | 12.4764 | 12.5162 | 12.546 | 12.5857 | 12.6156 | 12.6553 |
| 85° | 8.42032 | 8.42032 | 8.43026 | 8.43026 | 8.4402 | 8.4402 | 8.45014 | 8.45014 | 8.46009 | 8.46009 | 8.47003 | 8.47003 |
| 90° | 1.99821 | 2.01809 | 2.03798 | 2.05786 | 2.07774 | 2.08768 | 2.10757 | 2.12745 | 2.14733 | 2.16721 | 2.1871 | 2.20698 |
| 95° | 7.75425 | 7.77413 | 7.78407 | 7.79402 | 7.80396 | 7.8139 | 7.82384 | 7.83378 | 7.84372 | 7.85366 | 7.8636 | 7.88349 |
| 100° | 11.9594 | 11.9992 | 12.039 | 12.0787 | 12.1185 | 12.1583 | 12.198 | 12.2279 | 12.2676 | 12.3074 | 12.3472 | 12.3869 |
| 105° | 15.9459 | 16.0056 | 16.0752 | 16.1447 | 16.2044 | 16.274 | 16.3336 | 16.4032 | 16.4728 | 16.5325 | 16.602 | 16.6617 |
| 110° | 18.7792 | 18.7891 | 18.7991 | 18.809 | 18.819 | 18.8289 | 18.8488 | 18.8587 | 18.8687 | 18.8786 | 18.8886 | 18.8985 |
| 115° | 22.4873 | 22.5171 | 22.5569 | 22.5867 | 22.6166 | 22.6563 | 22.6862 | 22.716 | 22.7557 | 22.7856 | 22.8154 | 22.8452 |
| 120° | 27.7463 | 27.796 | 27.8457 | 27.8954 | 27.9451 | 27.9948 | 28.0445 | 28.0942 | 28.144 | 28.1937 | 28.2434 | 28.2931 |
| 125° | 31.6532 | 31.6831 | 31.7129 | 31.7427 | 31.7825 | 31.8123 | 31.8421 | 31.872 | 31.9117 | 31.9415 | 31.9714 | 32.0012 |
| 130° | 36.1169 | 36.1567 | 36.1964 | 36.2461 | 36.2859 | 36.3257 | 36.3754 | 36.4152 | 36.4549 | 36.5046 | 36.5444 | 36.5842 |
| 135° | 42.9267 | 42.9764 | 43.0162 | 43.056 | 43.0957 | 43.1355 | 43.1753 | 43.225 | 43.2647 | 43.3045 | 43.3443 | 43.384 |
| 140° | 55.4329 | 55.5025 | 55.5622 | 55.6218 | 55.6815 | 55.7511 | 55.8107 | 55.8704 | 55.93 | 55.9996 | 56.0593 | 56.1189 |
| 145° | 92.1861 | 92.2458 | 92.3054 | 92.365 | 92.4247 | 92.4843 | 92.5539 | 92.6136 | 92.6732 | 92.7329 | 92.7925 | 92.8621 |
| 150° | 168.247 | 168.327 | 168.396 | 168.476 | 168.546 | 168.625 | 168.695 | 168.774 | 168.844 | 168.913 | 168.993 | 169.063 |
| 155° | 294.532 | 294.562 | 294.592 | 294.622 | 294.652 | 294.681 | 294.711 | 294.741 | 294.771 | 294.801 | 294.821 | 294.85 |
| 160° | 429.436 | 429.496 | 429.556 | 429.605 | 429.665 | 429.725 | 429.784 | 429.844 | 429.904 | 429.963 | 430.013 | 430.073 |
| 165° | 520.917 | 520.956 | 520.996 | 521.046 | 521.086 | 521.125 | 521.175 | 521.215 | 521.255 | 521.304 | 521.344 | 521.384 |
| 170° | 520.3 | 520.36 | 520.42 | 520.489 | 520.549 | 520.618 | 520.678 | 520.748 | 520.807 | 520.867 | 520.936 | 520.996 |
| 175° | 588.18 | 588.18 | 588.19 | 588.19 | 588.19 | 588.19 | 588.2 | 588.2 | 588.2 | 588.2 | 588.21 | 588.21 |
| 180° | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 |
| Gamma | C60° | C65° | C70° | C75° | C80° | C85° | C90° | C95° | C100° | C105° | C110° | C115° |
| 0° | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 |
| 5° | 588.269 | 588.269 | 588.279 | 588.279 | 588.279 | 588.279 | 587.086 | 588.279 | 588.279 | 588.279 | 588.279 | 588.269 |
| 10° | 520.708 | 520.728 | 520.748 | 520.767 | 520.777 | 520.797 | 521.97 | 520.797 | 520.777 | 520.767 | 520.748 | 520.728 |
| 15° | 522.298 | 522.348 | 522.398 | 522.448 | 522.507 | 522.557 | 521.314 | 522.557 | 522.507 | 522.448 | 522.398 | 522.348 |
| 20° | 431.116 | 431.176 | 431.236 | 431.295 | 431.355 | 431.415 | 431.355 | 431.415 | 431.355 | 431.295 | 431.236 | 431.176 |
| 25° | 295.516 | 295.556 | 295.606 | 295.646 | 295.695 | 295.735 | 294.502 | 295.735 | 295.695 | 295.646 | 295.606 | 295.556 |
| 30° | 169.57 | 169.609 | 169.639 | 169.669 | 169.699 | 169.729 | 168.516 | 169.729 | 169.699 | 169.669 | 169.639 | 169.609 |
| 35° | 93.6475 | 93.6972 | 93.737 | 93.7867 | 93.8364 | 93.8861 | 92.6434 | 93.8861 | 93.8364 | 93.7867 | 93.737 | 93.6972 |
| 40° | 57.2124 | 57.2721 | 57.3218 | 57.3814 | 57.4411 | 57.4908 | 57.4411 | 57.4908 | 57.4411 | 57.3814 | 57.3218 | 57.2721 |
| 45° | 43.9308 | 43.9905 | 44.0501 | 44.1098 | 44.1595 | 44.2191 | 44.1595 | 44.2191 | 44.1595 | 44.1098 | 44.0501 | 43.9905 |
| 50° | 36.8526 | 36.8725 | 36.8824 | 36.8923 | 36.9023 | 36.9122 | 38.0952 | 36.9122 | 36.9023 | 36.8923 | 36.8824 | 36.8725 |
| 55° | 32.6474 | 32.6871 | 32.7269 | 32.7667 | 32.8064 | 32.8363 | 32.8064 | 32.8363 | 32.8064 | 32.7667 | 32.7269 | 32.6871 |
| 60° | 29.0287 | 29.0983 | 29.158 | 29.2276 | 29.2971 | 29.3667 | 28.1042 | 29.3667 | 29.2971 | 29.2276 | 29.158 | 29.0983 |
| 65° | 23.899 | 23.9686 | 24.0382 | 24.1078 | 24.1873 | 24.2569 | 25.3703 | 24.2569 | 24.1873 | 24.1078 | 24.0382 | 23.9686 |
| 70° | 20.2207 | 20.2903 | 20.3599 | 20.4295 | 20.4991 | 20.5686 | 19.3061 | 20.5686 | 20.4991 | 20.4295 | 20.3599 | 20.2903 |

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| | | | | | | | | | | | | |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 75° | 16.6915 | 16.7412 | 16.8009 | 16.8506 | 16.9003 | 16.95 | 16.9003 | 16.95 | 16.9003 | 16.8506 | 16.8009 | 16.7412 |
| 80° | 12.6951 | 12.7249 | 12.7647 | 12.8045 | 12.8343 | 12.874 | 11.6513 | 12.874 | 12.8343 | 12.8045 | 12.7647 | 12.7249 |
| 85° | 8.47003 | 8.47997 | 8.47997 | 8.48991 | 8.48991 | 8.49985 | 7.30689 | 8.49985 | 8.48991 | 8.48991 | 8.47997 | 8.47997 |
| 90° | 2.22686 | 2.2368 | 2.25669 | 2.27657 | 2.29645 | 2.31633 | 1.10349 | 2.31633 | 2.29645 | 2.27657 | 2.25669 | 2.2368 |
| 95° | 7.89343 | 7.90337 | 7.91331 | 7.92325 | 7.93319 | 7.94314 | 6.74023 | 7.94314 | 7.93319 | 7.92325 | 7.91331 | 7.90337 |
| 100° | 12.4267 | 12.4664 | 12.5062 | 12.546 | 12.5857 | 12.6255 | 11.3928 | 12.6255 | 12.5857 | 12.546 | 12.5062 | 12.4664 |
| 105° | 16.7313 | 16.8009 | 16.8605 | 16.9301 | 16.9898 | 17.0593 | 15.8067 | 17.0593 | 16.9898 | 16.9301 | 16.8605 | 16.8009 |
| 110° | 18.9184 | 18.9283 | 18.9383 | 18.9482 | 18.9581 | 18.9681 | 17.7652 | 18.9681 | 18.9581 | 18.9482 | 18.9383 | 18.9283 |
| 115° | 22.885 | 22.9148 | 22.9446 | 22.9844 | 23.0142 | 23.044 | 24.2072 | 23.044 | 23.0142 | 22.9844 | 22.9446 | 22.9148 |
| 120° | 28.3428 | 28.3925 | 28.4422 | 28.4919 | 28.5416 | 28.5913 | 27.3586 | 28.5913 | 28.5416 | 28.4919 | 28.4422 | 28.3925 |
| 125° | 32.031 | 32.0708 | 32.1006 | 32.1304 | 32.1603 | 32.2 | 33.3532 | 32.2 | 32.1603 | 32.1304 | 32.1006 | 32.0708 |
| 130° | 36.6339 | 36.6736 | 36.7134 | 36.7631 | 36.8029 | 36.8526 | 36.8029 | 36.8526 | 36.8029 | 36.7631 | 36.7134 | 36.6736 |
| 135° | 43.4238 | 43.4735 | 43.5133 | 43.553 | 43.5928 | 43.6326 | 44.7858 | 43.6326 | 43.5928 | 43.553 | 43.5133 | 43.4735 |
| 140° | 56.1785 | 56.2481 | 56.3078 | 56.3674 | 56.4271 | 56.4967 | 57.62 | 56.4967 | 56.4271 | 56.3674 | 56.3078 | 56.2481 |
| 145° | 92.9218 | 92.9814 | 93.0411 | 93.1007 | 93.1604 | 93.2299 | 94.3533 | 93.2299 | 93.1604 | 93.1007 | 93.0411 | 92.9814 |
| 150° | 169.142 | 169.212 | 169.291 | 169.361 | 169.44 | 169.51 | 168.247 | 169.51 | 169.44 | 169.361 | 169.291 | 169.212 |
| 155° | 294.88 | 294.91 | 294.94 | 294.97 | 295 | 295.029 | 293.807 | 295.029 | 295 | 294.97 | 294.94 | 294.91 |
| 160° | 430.132 | 430.192 | 430.252 | 430.311 | 430.371 | 430.421 | 429.178 | 430.421 | 430.371 | 430.311 | 430.252 | 430.192 |
| 165° | 521.434 | 521.473 | 521.513 | 521.563 | 521.603 | 521.642 | 521.603 | 521.642 | 521.603 | 521.563 | 521.513 | 521.473 |
| 170° | 521.066 | 521.125 | 521.195 | 521.255 | 521.324 | 521.384 | 522.507 | 521.384 | 521.324 | 521.255 | 521.195 | 521.125 |
| 175° | 588.21 | 588.22 | 588.22 | 588.22 | 588.22 | 588.229 | 588.22 | 588.229 | 588.22 | 588.22 | 588.22 | 588.22 |
| 180° | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 |
| Gamma | C120° | C125° | C130° | C135° | C140° | C145° | C150° | C155° | C160° | C165° | C170° | C175° |
| 0° | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 |
| 5° | 588.269 | 588.269 | 588.269 | 588.269 | 588.269 | 588.269 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 |
| 10° | 520.708 | 520.688 | 520.678 | 520.658 | 520.638 | 520.618 | 520.598 | 520.589 | 520.569 | 520.549 | 520.529 | 520.509 |
| 15° | 522.298 | 522.249 | 522.199 | 522.149 | 522.1 | 522.05 | 522 | 521.95 | 521.891 | 521.841 | 521.791 | 521.742 |
| 20° | 431.116 | 431.057 | 430.997 | 430.937 | 430.878 | 430.818 | 430.759 | 430.709 | 430.649 | 430.59 | 430.53 | 430.47 |
| 25° | 295.516 | 295.467 | 295.427 | 295.387 | 295.338 | 295.298 | 295.248 | 295.208 | 295.159 | 295.119 | 295.069 | 295.029 |
| 30° | 169.57 | 169.54 | 169.51 | 169.48 | 169.44 | 169.41 | 169.381 | 169.351 | 169.321 | 169.281 | 169.251 | 169.222 |
| 35° | 93.6475 | 93.5978 | 93.5481 | 93.4984 | 93.4586 | 93.4089 | 93.3592 | 93.3095 | 93.2697 | 93.22 | 93.1703 | 93.1206 |
| 40° | 57.2124 | 57.1627 | 57.1031 | 57.0434 | 56.9937 | 56.9341 | 56.8844 | 56.8247 | 56.7651 | 56.7154 | 56.6557 | 56.5961 |
| 45° | 43.9308 | 43.8712 | 43.8115 | 43.7519 | 43.7022 | 43.6425 | 43.5829 | 43.5232 | 43.4636 | 43.4039 | 43.3443 | 43.2946 |
| 50° | 36.8526 | 36.8426 | 36.8327 | 36.8227 | 36.8128 | 36.7929 | 36.783 | 36.773 | 36.7631 | 36.7532 | 36.7333 | 36.7233 |
| 55° | 32.6474 | 32.6076 | 32.5778 | 32.538 | 32.4983 | 32.4585 | 32.4187 | 32.379 | 32.3491 | 32.3094 | 32.2696 | 32.2298 |
| 60° | 29.0287 | 28.9591 | 28.8896 | 28.82 | 28.7603 | 28.6907 | 28.6211 | 28.5515 | 28.4919 | 28.4223 | 28.3527 | 28.2831 |
| 65° | 23.899 | 23.8294 | 23.7598 | 23.6803 | 23.6107 | 23.5411 | 23.4715 | 23.4019 | 23.3224 | 23.2528 | 23.1832 | 23.1136 |
| 70° | 20.2207 | 20.1511 | 20.0815 | 20.0119 | 19.9423 | 19.8728 | 19.8032 | 19.7336 | 19.664 | 19.5845 | 19.5149 | 19.4453 |
| 75° | 16.6915 | 16.6418 | 16.5921 | 16.5325 | 16.4828 | 16.433 | 16.3833 | 16.3237 | 16.274 | 16.2243 | 16.1746 | 16.1149 |
| 80° | 12.6951 | 12.6553 | 12.6156 | 12.5857 | 12.546 | 12.5162 | 12.4764 | 12.4366 | 12.4068 | 12.367 | 12.3273 | 12.2974 |
| 85° | 8.47003 | 8.47003 | 8.47003 | 8.46009 | 8.46009 | 8.45014 | 8.45014 | 8.4402 | 8.4402 | 8.43026 | 8.43026 | 8.42032 |
| 90° | 2.22686 | 2.20698 | 2.1871 | 2.16721 | 2.14733 | 2.12745 | 2.10757 | 2.08768 | 2.07774 | 2.05786 | 2.03798 | 2.01809 |
| 95° | 7.89343 | 7.88349 | 7.8636 | 7.85366 | 7.84372 | 7.83378 | 7.82384 | 7.8139 | 7.80396 | 7.79402 | 7.78407 | 7.77413 |
| 100° | 12.4267 | 12.3869 | 12.3472 | 12.3074 | 12.2676 | 12.2279 | 12.198 | 12.1583 | 12.1185 | 12.0787 | 12.039 | 11.9992 |
| 105° | 16.7313 | 16.6617 | 16.602 | 16.5325 | 16.4728 | 16.4032 | 16.3336 | 16.274 | 16.2044 | 16.1447 | 16.0752 | 16.0056 |
| 110° | 18.9184 | 18.8985 | 18.8886 | 18.8786 | 18.8687 | 18.8587 | 18.8488 | 18.8289 | 18.819 | 18.809 | 18.7991 | 18.7891 |
| 115° | 22.885 | 22.8452 | 22.8154 | 22.7856 | 22.7557 | 22.716 | 22.6862 | 22.6563 | 22.6166 | 22.5867 | 22.5569 | 22.5171 |
| 120° | 28.3428 | 28.2931 | 28.2434 | 28.1937 | 28.144 | 28.0942 | 28.0445 | 27.9948 | 27.9451 | 27.8954 | 27.8457 | 27.796 |
| 125° | 32.031 | 32.0012 | 31.9714 | 31.9415 | 31.9117 | 31.872 | 31.8421 | 31.8123 | 31.7825 | 31.7427 | 31.7129 | 31.6831 |
| 130° | 36.6339 | 36.5842 | 36.5444 | 36.5046 | 36.4549 | 36.4152 | 36.3754 | 36.3257 | 36.2859 | 36.2461 | 36.1964 | 36.1567 |
| 135° | 43.4238 | 43.384 | 43.3443 | 43.3045 | 43.2647 | 43.225 | 43.1753 | 43.1355 | 43.0957 | 43.056 | 43.0162 | 42.9764 |
| 140° | 56.1785 | 56.1189 | 56.0593 | 55.9996 | 55.93 | 55.8704 | 55.8107 | 55.7511 | 55.6815 | 55.6218 | 55.5622 | 55.5025 |
| 145° | 92.9218 | 92.8621 | 92.7925 | 92.7329 | 92.6732 | 92.6136 | 92.5539 | 92.4843 | 92.4247 | 92.365 | 92.3054 | 92.2458 |
| 150° | 169.142 | 169.063 | 168.993 | 168.913 | 168.844 | 168.774 | 168.695 | 168.625 | 168.546 | 168.476 | 168.396 | 168.327 |
| 155° | 294.88 | 294.85 | 294.821 | 294.801 | 294.771 | 294.741 | 294.711 | 294.681 | 294.652 | 294.622 | 294.592 | 294.562 |
| 160° | 430.132 | 430.073 | 430.013 | 429.963 | 429.904 | 429.844 | 429.784 | 429.725 | 429.665 | 429.605 | 429.556 | 429.496 |

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| | | | | | | | | | | | | |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 165° | 521.434 | 521.384 | 521.344 | 521.304 | 521.255 | 521.215 | 521.175 | 521.125 | 521.086 | 521.046 | 520.996 | 520.956 |
| 170° | 521.066 | 520.996 | 520.936 | 520.867 | 520.807 | 520.748 | 520.678 | 520.618 | 520.549 | 520.489 | 520.42 | 520.36 |
| 175° | 588.21 | 588.21 | 588.21 | 588.2 | 588.2 | 588.2 | 588.2 | 588.19 | 588.19 | 588.19 | 588.19 | 588.18 |
| 180° | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 |
| Gamma | C180° | C185° | C190° | C195° | C200° | C205° | C210° | C215° | C220° | C225° | C230° | C235° |
| 0° | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 |
| 5° | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.269 | 588.269 | 588.269 | 588.269 | 588.269 |
| 10° | 520.489 | 520.509 | 520.529 | 520.549 | 520.569 | 520.589 | 520.598 | 520.618 | 520.638 | 520.658 | 520.678 | 520.688 |
| 15° | 521.692 | 521.742 | 521.791 | 521.841 | 521.891 | 521.95 | 522 | 522.05 | 522.1 | 522.149 | 522.199 | 522.249 |
| 20° | 430.411 | 430.47 | 430.53 | 430.59 | 430.649 | 430.709 | 430.759 | 430.818 | 430.878 | 430.937 | 430.997 | 431.057 |
| 25° | 294.98 | 295.029 | 295.069 | 295.119 | 295.159 | 295.208 | 295.248 | 295.298 | 295.338 | 295.387 | 295.427 | 295.467 |
| 30° | 169.192 | 169.222 | 169.251 | 169.281 | 169.321 | 169.351 | 169.381 | 169.41 | 169.44 | 169.48 | 169.51 | 169.54 |
| 35° | 93.0709 | 93.1206 | 93.1703 | 93.22 | 93.2697 | 93.3095 | 93.3592 | 93.4089 | 93.4586 | 93.4984 | 93.5481 | 93.5978 |
| 40° | 56.5464 | 56.5961 | 56.6557 | 56.7154 | 56.7651 | 56.8247 | 56.8844 | 56.9341 | 56.9937 | 57.0434 | 57.1031 | 57.1627 |
| 45° | 43.2349 | 43.2946 | 43.3443 | 43.4039 | 43.4636 | 43.5232 | 43.5829 | 43.6425 | 43.7022 | 43.7519 | 43.8115 | 43.8712 |
| 50° | 36.7134 | 36.7233 | 36.7333 | 36.7532 | 36.7631 | 36.773 | 36.783 | 36.7929 | 36.8128 | 36.8227 | 36.8327 | 36.8426 |
| 55° | 32.1901 | 32.2298 | 32.2696 | 32.3094 | 32.3491 | 32.379 | 32.4187 | 32.4585 | 32.4983 | 32.538 | 32.5778 | 32.6076 |
| 60° | 28.2235 | 28.2831 | 28.3527 | 28.4223 | 28.4919 | 28.5515 | 28.6211 | 28.6907 | 28.7603 | 28.82 | 28.8896 | 28.9591 |
| 65° | 23.044 | 23.1136 | 23.1832 | 23.2528 | 23.3224 | 23.4019 | 23.4715 | 23.5411 | 23.6107 | 23.6803 | 23.7598 | 23.8294 |
| 70° | 19.3757 | 19.4453 | 19.5149 | 19.5845 | 19.664 | 19.7336 | 19.8032 | 19.8728 | 19.9423 | 20.0119 | 20.0815 | 20.1511 |
| 75° | 16.0652 | 16.1149 | 16.1746 | 16.2243 | 16.274 | 16.3237 | 16.3833 | 16.433 | 16.4828 | 16.5325 | 16.5921 | 16.6418 |
| 80° | 12.2577 | 12.2974 | 12.3273 | 12.367 | 12.4068 | 12.4366 | 12.4764 | 12.5162 | 12.546 | 12.5857 | 12.6156 | 12.6553 |
| 85° | 8.42032 | 8.42032 | 8.43026 | 8.43026 | 8.4402 | 8.4402 | 8.45014 | 8.45014 | 8.46009 | 8.46009 | 8.47003 | 8.47003 |
| 90° | 1.99821 | 2.01809 | 2.03798 | 2.05786 | 2.07774 | 2.08768 | 2.10757 | 2.12745 | 2.14733 | 2.16721 | 2.1871 | 2.20698 |
| 95° | 7.75425 | 7.77413 | 7.78407 | 7.79402 | 7.80396 | 7.8139 | 7.82384 | 7.83378 | 7.84372 | 7.85366 | 7.8636 | 7.88349 |
| 100° | 11.9594 | 11.9992 | 12.039 | 12.0787 | 12.1185 | 12.1583 | 12.198 | 12.2279 | 12.2676 | 12.3074 | 12.3472 | 12.3869 |
| 105° | 15.9459 | 16.0056 | 16.0752 | 16.1447 | 16.2044 | 16.274 | 16.3336 | 16.4032 | 16.4728 | 16.5325 | 16.602 | 16.6617 |
| 110° | 18.7792 | 18.7891 | 18.7991 | 18.809 | 18.819 | 18.8289 | 18.8488 | 18.8587 | 18.8687 | 18.8786 | 18.8886 | 18.8985 |
| 115° | 22.4873 | 22.5171 | 22.5569 | 22.5867 | 22.6166 | 22.6563 | 22.6862 | 22.716 | 22.7557 | 22.7856 | 22.8154 | 22.8452 |
| 120° | 27.7463 | 27.796 | 27.8457 | 27.8954 | 27.9451 | 27.9948 | 28.0445 | 28.0942 | 28.144 | 28.1937 | 28.2434 | 28.2931 |
| 125° | 31.6532 | 31.6831 | 31.7129 | 31.7427 | 31.7825 | 31.8123 | 31.8421 | 31.872 | 31.9117 | 31.9415 | 31.9714 | 32.0012 |
| 130° | 36.1169 | 36.1567 | 36.1964 | 36.2461 | 36.2859 | 36.3257 | 36.3754 | 36.4152 | 36.4549 | 36.5046 | 36.5444 | 36.5842 |
| 135° | 42.9267 | 42.9764 | 43.0162 | 43.056 | 43.0957 | 43.1355 | 43.1753 | 43.225 | 43.2647 | 43.3045 | 43.3443 | 43.384 |
| 140° | 55.4329 | 55.5025 | 55.5622 | 55.6218 | 55.6815 | 55.7511 | 55.8107 | 55.8704 | 55.93 | 55.9996 | 56.0593 | 56.1189 |
| 145° | 92.1861 | 92.2458 | 92.3054 | 92.365 | 92.4247 | 92.4843 | 92.5539 | 92.6136 | 92.6732 | 92.7329 | 92.7925 | 92.8621 |
| 150° | 168.247 | 168.327 | 168.396 | 168.476 | 168.546 | 168.625 | 168.695 | 168.774 | 168.844 | 168.913 | 168.993 | 169.063 |
| 155° | 294.532 | 294.562 | 294.592 | 294.622 | 294.652 | 294.681 | 294.711 | 294.741 | 294.771 | 294.801 | 294.821 | 294.85 |
| 160° | 429.436 | 429.496 | 429.556 | 429.605 | 429.665 | 429.725 | 429.784 | 429.844 | 429.904 | 429.963 | 430.013 | 430.073 |
| 165° | 520.917 | 520.956 | 520.996 | 521.046 | 521.086 | 521.125 | 521.175 | 521.215 | 521.255 | 521.304 | 521.344 | 521.384 |
| 170° | 520.3 | 520.36 | 520.42 | 520.489 | 520.549 | 520.618 | 520.678 | 520.748 | 520.807 | 520.867 | 520.936 | 520.996 |
| 175° | 588.18 | 588.18 | 588.19 | 588.19 | 588.19 | 588.19 | 588.2 | 588.2 | 588.2 | 588.2 | 588.21 | 588.21 |
| 180° | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 |
| Gamma | C240° | C245° | C250° | C255° | C260° | C265° | C270° | C275° | C280° | C285° | C290° | C295° |
| 0° | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 |
| 5° | 588.269 | 588.269 | 588.279 | 588.279 | 588.279 | 588.279 | 587.086 | 588.279 | 588.279 | 588.279 | 588.279 | 588.269 |
| 10° | 520.708 | 520.728 | 520.748 | 520.767 | 520.777 | 520.797 | 521.97 | 520.797 | 520.777 | 520.767 | 520.748 | 520.728 |
| 15° | 522.298 | 522.348 | 522.398 | 522.448 | 522.507 | 522.557 | 521.314 | 522.557 | 522.507 | 522.448 | 522.398 | 522.348 |
| 20° | 431.116 | 431.176 | 431.236 | 431.295 | 431.355 | 431.415 | 431.355 | 431.415 | 431.355 | 431.295 | 431.236 | 431.176 |
| 25° | 295.516 | 295.556 | 295.606 | 295.646 | 295.695 | 295.735 | 294.502 | 295.735 | 295.695 | 295.646 | 295.606 | 295.556 |
| 30° | 169.57 | 169.609 | 169.639 | 169.669 | 169.699 | 169.729 | 168.516 | 169.729 | 169.699 | 169.669 | 169.639 | 169.609 |
| 35° | 93.6475 | 93.6972 | 93.737 | 93.7867 | 93.8364 | 93.8861 | 92.6434 | 93.8861 | 93.8364 | 93.7867 | 93.737 | 93.6972 |
| 40° | 57.2124 | 57.2721 | 57.3218 | 57.3814 | 57.4411 | 57.4908 | 57.4411 | 57.4908 | 57.4411 | 57.3814 | 57.3218 | 57.2721 |
| 45° | 43.9308 | 43.9905 | 44.0501 | 44.1098 | 44.1595 | 44.2191 | 44.1595 | 44.2191 | 44.1595 | 44.1098 | 44.0501 | 43.9905 |
| 50° | 36.8526 | 36.8725 | 36.8824 | 36.8923 | 36.9023 | 36.9122 | 38.0952 | 36.9122 | 36.9023 | 36.8923 | 36.8824 | 36.8725 |
| 55° | 32.6474 | 32.6871 | 32.7269 | 32.7667 | 32.8064 | 32.8363 | 32.8064 | 32.8363 | 32.8064 | 32.7667 | 32.7269 | 32.6871 |
| 60° | 29.0287 | 29.0983 | 29.158 | 29.2276 | 29.2971 | 29.3667 | 28.1042 | 29.3667 | 29.2971 | 29.2276 | 29.158 | 29.0983 |

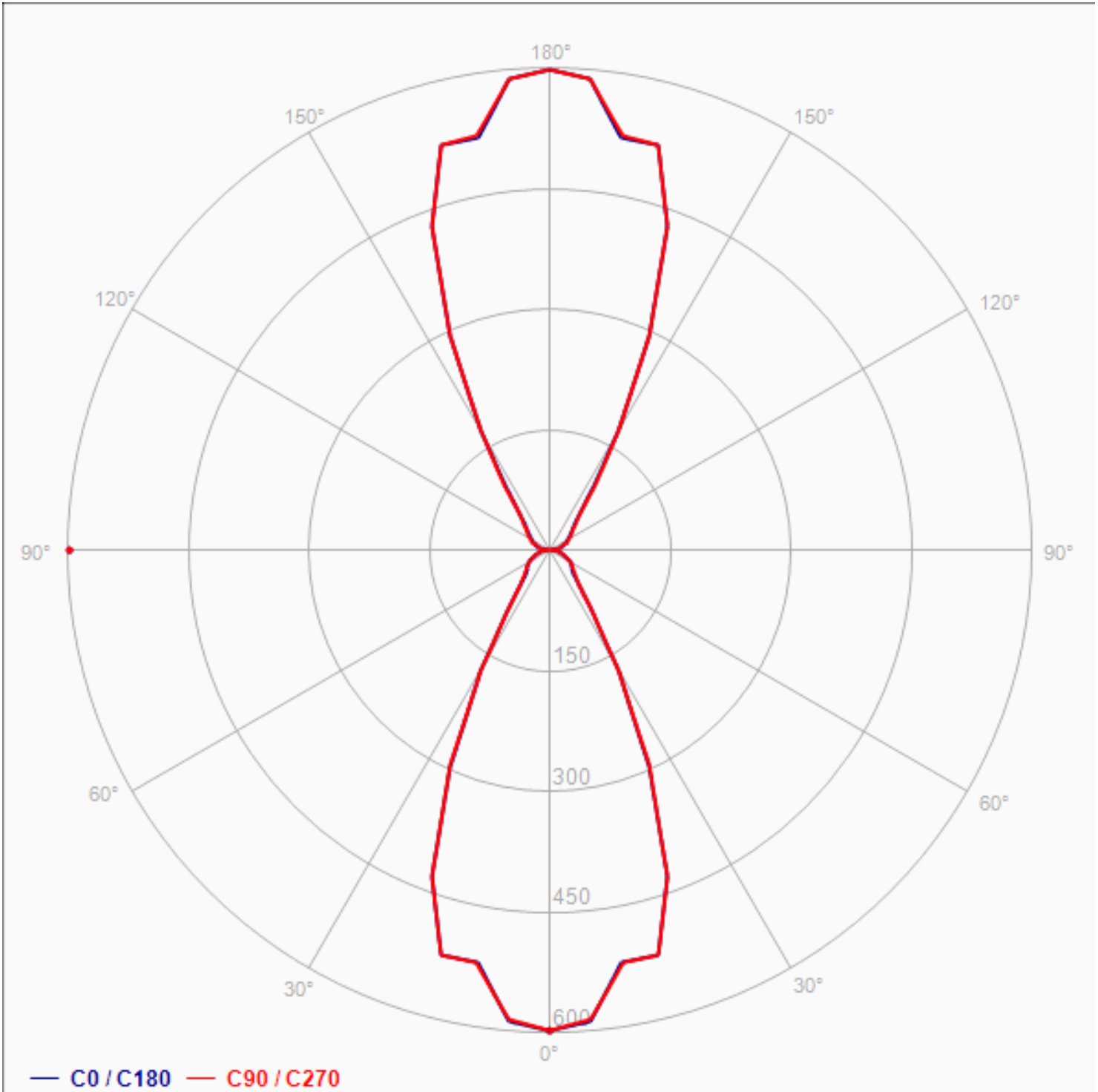
PHOTOMETRIC MEASUREMENT REPORT N° 31

| | | | | | | | | | | | | |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 65° | 23.899 | 23.9686 | 24.0382 | 24.1078 | 24.1873 | 24.2569 | 25.3703 | 24.2569 | 24.1873 | 24.1078 | 24.0382 | 23.9686 |
| 70° | 20.2207 | 20.2903 | 20.3599 | 20.4295 | 20.4991 | 20.5686 | 19.3061 | 20.5686 | 20.4991 | 20.4295 | 20.3599 | 20.2903 |
| 75° | 16.6915 | 16.7412 | 16.8009 | 16.8506 | 16.9003 | 16.95 | 16.9003 | 16.95 | 16.9003 | 16.8506 | 16.8009 | 16.7412 |
| 80° | 12.6951 | 12.7249 | 12.7647 | 12.8045 | 12.8343 | 12.874 | 11.6513 | 12.874 | 12.8343 | 12.8045 | 12.7647 | 12.7249 |
| 85° | 8.47003 | 8.47997 | 8.47997 | 8.48991 | 8.48991 | 8.49985 | 7.30689 | 8.49985 | 8.48991 | 8.48991 | 8.47997 | 8.47997 |
| 90° | 2.22686 | 2.2368 | 2.25669 | 2.27657 | 2.29645 | 2.31633 | 1.10349 | 2.31633 | 2.29645 | 2.27657 | 2.25669 | 2.2368 |
| 95° | 7.89343 | 7.90337 | 7.91331 | 7.92325 | 7.93319 | 7.94314 | 6.74023 | 7.94314 | 7.93319 | 7.92325 | 7.91331 | 7.90337 |
| 100° | 12.4267 | 12.4664 | 12.5062 | 12.546 | 12.5857 | 12.6255 | 11.3928 | 12.6255 | 12.5857 | 12.546 | 12.5062 | 12.4664 |
| 105° | 16.7313 | 16.8009 | 16.8605 | 16.9301 | 16.9898 | 17.0593 | 15.8067 | 17.0593 | 16.9898 | 16.9301 | 16.8605 | 16.8009 |
| 110° | 18.9184 | 18.9283 | 18.9383 | 18.9482 | 18.9581 | 18.9681 | 17.7652 | 18.9681 | 18.9581 | 18.9482 | 18.9383 | 18.9283 |
| 115° | 22.885 | 22.9148 | 22.9446 | 22.9844 | 23.0142 | 23.044 | 24.2072 | 23.044 | 23.0142 | 22.9844 | 22.9446 | 22.9148 |
| 120° | 28.3428 | 28.3925 | 28.4422 | 28.4919 | 28.5416 | 28.5913 | 27.3586 | 28.5913 | 28.5416 | 28.4919 | 28.4422 | 28.3925 |
| 125° | 32.031 | 32.0708 | 32.1006 | 32.1304 | 32.1603 | 32.2 | 33.3532 | 32.2 | 32.1603 | 32.1304 | 32.1006 | 32.0708 |
| 130° | 36.6339 | 36.6736 | 36.7134 | 36.7631 | 36.8029 | 36.8526 | 36.8029 | 36.8526 | 36.8029 | 36.7631 | 36.7134 | 36.6736 |
| 135° | 43.4238 | 43.4735 | 43.5133 | 43.553 | 43.5928 | 43.6326 | 44.7858 | 43.6326 | 43.5928 | 43.553 | 43.5133 | 43.4735 |
| 140° | 56.1785 | 56.2481 | 56.3078 | 56.3674 | 56.4271 | 56.4967 | 57.62 | 56.4967 | 56.4271 | 56.3674 | 56.3078 | 56.2481 |
| 145° | 92.9218 | 92.9814 | 93.0411 | 93.1007 | 93.1604 | 93.2299 | 94.3533 | 93.2299 | 93.1604 | 93.1007 | 93.0411 | 92.9814 |
| 150° | 169.142 | 169.212 | 169.291 | 169.361 | 169.44 | 169.51 | 168.247 | 169.51 | 169.44 | 169.361 | 169.291 | 169.212 |
| 155° | 294.88 | 294.91 | 294.94 | 294.97 | 295 | 295.029 | 293.807 | 295.029 | 295 | 294.97 | 294.94 | 294.91 |
| 160° | 430.132 | 430.192 | 430.252 | 430.311 | 430.371 | 430.421 | 429.178 | 430.421 | 430.371 | 430.311 | 430.252 | 430.192 |
| 165° | 521.434 | 521.473 | 521.513 | 521.563 | 521.603 | 521.642 | 521.603 | 521.642 | 521.603 | 521.563 | 521.513 | 521.473 |
| 170° | 521.066 | 521.125 | 521.195 | 521.255 | 521.324 | 521.384 | 522.507 | 521.384 | 521.324 | 521.255 | 521.195 | 521.125 |
| 175° | 588.21 | 588.22 | 588.22 | 588.22 | 588.22 | 588.229 | 588.22 | 588.229 | 588.22 | 588.22 | 588.22 | 588.22 |
| 180° | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 |
| Gamma | C300° | C305° | C310° | C315° | C320° | C325° | C330° | C335° | C340° | C345° | C350° | C355° |
| 0° | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 | 598.489 |
| 5° | 588.269 | 588.269 | 588.269 | 588.269 | 588.269 | 588.269 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 | 588.259 |
| 10° | 520.708 | 520.688 | 520.678 | 520.668 | 520.638 | 520.618 | 520.598 | 520.589 | 520.569 | 520.549 | 520.529 | 520.509 |
| 15° | 522.298 | 522.249 | 522.199 | 522.149 | 522.1 | 522.05 | 522 | 521.95 | 521.891 | 521.841 | 521.791 | 521.742 |
| 20° | 431.116 | 431.057 | 430.997 | 430.937 | 430.878 | 430.818 | 430.759 | 430.709 | 430.649 | 430.59 | 430.53 | 430.47 |
| 25° | 295.516 | 295.467 | 295.427 | 295.387 | 295.338 | 295.298 | 295.248 | 295.208 | 295.159 | 295.119 | 295.069 | 295.029 |
| 30° | 169.57 | 169.54 | 169.51 | 169.48 | 169.44 | 169.41 | 169.381 | 169.351 | 169.321 | 169.281 | 169.251 | 169.222 |
| 35° | 93.6475 | 93.5978 | 93.5481 | 93.4984 | 93.4586 | 93.4089 | 93.3592 | 93.3095 | 93.2697 | 93.22 | 93.1703 | 93.1206 |
| 40° | 57.2124 | 57.1627 | 57.1031 | 57.0434 | 56.9937 | 56.9341 | 56.8844 | 56.8247 | 56.7651 | 56.7154 | 56.6557 | 56.5961 |
| 45° | 43.9308 | 43.8712 | 43.8115 | 43.7519 | 43.7022 | 43.6425 | 43.5829 | 43.5232 | 43.4636 | 43.4039 | 43.3443 | 43.2946 |
| 50° | 36.8526 | 36.8426 | 36.8327 | 36.8227 | 36.8128 | 36.7929 | 36.783 | 36.773 | 36.7631 | 36.7532 | 36.7333 | 36.7233 |
| 55° | 32.6474 | 32.6076 | 32.5778 | 32.538 | 32.4983 | 32.4585 | 32.4187 | 32.379 | 32.3491 | 32.3094 | 32.2696 | 32.2298 |
| 60° | 29.0287 | 28.9591 | 28.8896 | 28.82 | 28.7603 | 28.6907 | 28.6211 | 28.5515 | 28.4919 | 28.4223 | 28.3527 | 28.2831 |
| 65° | 23.899 | 23.8294 | 23.7598 | 23.6803 | 23.6107 | 23.5411 | 23.4715 | 23.4019 | 23.3224 | 23.2528 | 23.1832 | 23.1136 |
| 70° | 20.2207 | 20.1511 | 20.0815 | 20.0119 | 19.9423 | 19.8728 | 19.8032 | 19.7336 | 19.664 | 19.5845 | 19.5149 | 19.4453 |
| 75° | 16.6915 | 16.6418 | 16.5921 | 16.5325 | 16.4828 | 16.433 | 16.3833 | 16.3237 | 16.274 | 16.2243 | 16.1746 | 16.1149 |
| 80° | 12.6951 | 12.6553 | 12.6156 | 12.5857 | 12.546 | 12.5162 | 12.4764 | 12.4366 | 12.4068 | 12.367 | 12.3273 | 12.2974 |
| 85° | 8.47003 | 8.47003 | 8.47003 | 8.46009 | 8.46009 | 8.45014 | 8.45014 | 8.4402 | 8.4402 | 8.43026 | 8.43026 | 8.42032 |
| 90° | 2.22686 | 2.20698 | 2.1871 | 2.16721 | 2.14733 | 2.12745 | 2.10757 | 2.08768 | 2.07774 | 2.05786 | 2.03798 | 2.01809 |
| 95° | 7.89343 | 7.88349 | 7.8636 | 7.85366 | 7.84372 | 7.83378 | 7.82384 | 7.8139 | 7.80396 | 7.79402 | 7.78407 | 7.77413 |
| 100° | 12.4267 | 12.3869 | 12.3472 | 12.3074 | 12.2676 | 12.2279 | 12.198 | 12.1583 | 12.1185 | 12.0787 | 12.039 | 11.9992 |
| 105° | 16.7313 | 16.6617 | 16.602 | 16.5325 | 16.4728 | 16.4032 | 16.3336 | 16.274 | 16.2044 | 16.1447 | 16.0752 | 16.0056 |
| 110° | 18.9184 | 18.8985 | 18.8886 | 18.8786 | 18.8687 | 18.8587 | 18.8488 | 18.8289 | 18.819 | 18.809 | 18.7991 | 18.7891 |
| 115° | 22.885 | 22.8452 | 22.8154 | 22.7856 | 22.7557 | 22.716 | 22.6862 | 22.6563 | 22.6166 | 22.5867 | 22.5569 | 22.5171 |
| 120° | 28.3428 | 28.2931 | 28.2434 | 28.1937 | 28.144 | 28.0942 | 28.0445 | 27.9948 | 27.9451 | 27.8954 | 27.8457 | 27.796 |
| 125° | 32.031 | 32.0012 | 31.9714 | 31.9415 | 31.9117 | 31.872 | 31.8421 | 31.8123 | 31.7825 | 31.7427 | 31.7129 | 31.6831 |
| 130° | 36.6339 | 36.5842 | 36.5444 | 36.5046 | 36.4549 | 36.4152 | 36.3754 | 36.3257 | 36.2859 | 36.2461 | 36.1964 | 36.1567 |
| 135° | 43.4238 | 43.384 | 43.3443 | 43.3045 | 43.2647 | 43.225 | 43.1753 | 43.1355 | 43.0957 | 43.056 | 43.0162 | 42.9764 |
| 140° | 56.1785 | 56.1189 | 56.0593 | 55.9996 | 55.93 | 55.8704 | 55.8107 | 55.7511 | 55.6815 | 55.6218 | 55.5622 | 55.5025 |
| 145° | 92.9218 | 92.8621 | 92.7925 | 92.7329 | 92.6732 | 92.6136 | 92.5539 | 92.4843 | 92.4247 | 92.365 | 92.3054 | 92.2458 |
| 150° | 169.142 | 169.063 | 168.993 | 168.913 | 168.844 | 168.774 | 168.695 | 168.625 | 168.546 | 168.476 | 168.396 | 168.327 |

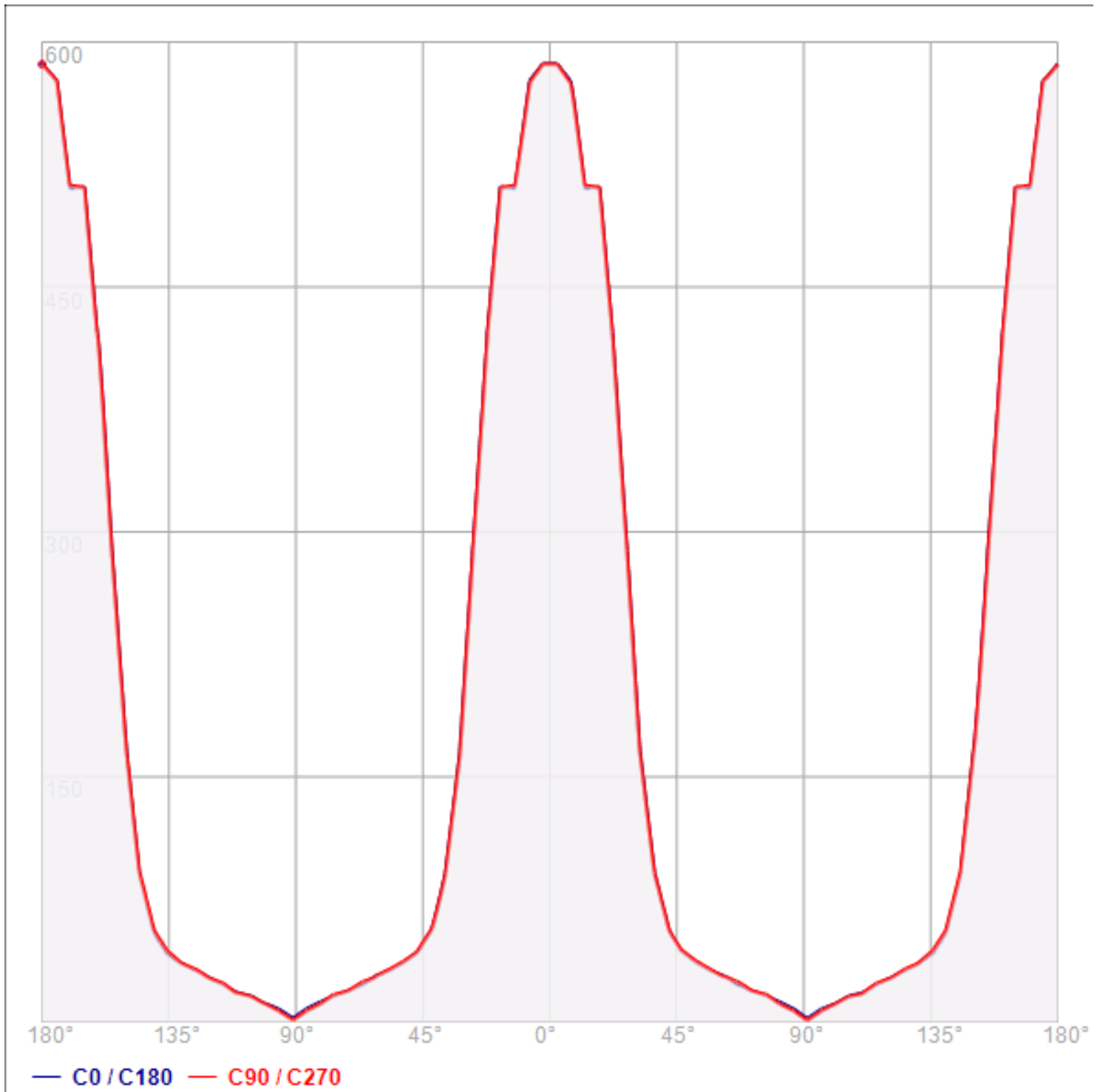
PHOTOMETRIC MEASUREMENT REPORT N° 31

| | | | | | | | | | | | | |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 155° | 294.88 | 294.85 | 294.821 | 294.801 | 294.771 | 294.741 | 294.711 | 294.681 | 294.652 | 294.622 | 294.592 | 294.562 |
| 160° | 430.132 | 430.073 | 430.013 | 429.963 | 429.904 | 429.844 | 429.784 | 429.725 | 429.665 | 429.605 | 429.556 | 429.496 |
| 165° | 521.434 | 521.384 | 521.344 | 521.304 | 521.255 | 521.215 | 521.175 | 521.125 | 521.086 | 521.046 | 520.996 | 520.956 |
| 170° | 521.066 | 520.996 | 520.936 | 520.867 | 520.807 | 520.748 | 520.678 | 520.618 | 520.549 | 520.489 | 520.42 | 520.36 |
| 175° | 588.21 | 588.21 | 588.21 | 588.2 | 588.2 | 588.2 | 588.2 | 588.19 | 588.19 | 588.19 | 588.19 | 588.18 |
| 180° | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 | 598.439 |

Photometric Polar Diagram



Photometric Cartesian Diagram



Light Emmission Photo

