

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
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Spectrum Lighting Photometric Lab

Luminaire

CK0407PC 15L 35K XW xx SO xx MW
Nom. 4.5" Diam x 7"H Round Cylinder, Xtra Wide Beam

Test Number

SP-01446_M-15L

Test Date

11/22/2022

The results contained in this report pertain only to this IES file.

Summary of Results

Power

| | |
|-------------|-------|
| Input Watts | 9.5 W |
|-------------|-------|

Lumen Output

| | |
|---------------|------------|
| Output Lumens | 867 |
| Efficacy | 91.22 lm/W |

Luminous Dimensions

| | |
|-----------------|-------|
| 0° - 180° Size | -0.38 |
| 90° - 270° Size | -0.38 |
| Height | 0 |

Spacing Criterion

| | |
|---------------------------|------|
| Two luminaires, plane 0° | 0.92 |
| Two luminaires, plane 90° | 0.92 |
| Four luminaires | 0.89 |

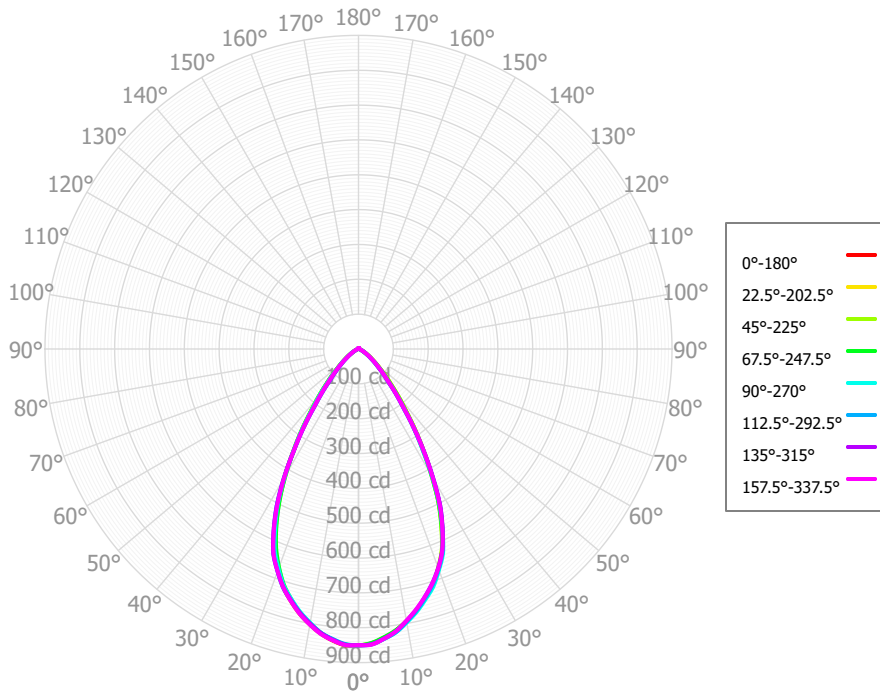
Full Beam Angle

| | |
|------------|-----|
| 0° - 180° | 60° |
| 90° - 270° | 60° |

IES File Header Contents

| Keyword | Value |
|-----------|---|
| TEST | SP-01446_M-15L |
| TESTLAB | Spectrum Lighting Photometric Lab, VLS-245-981 |
| MANUFAC | Spectrum Lighting |
| TESTDATE | 11/22/2022 |
| ISSUEDATE | 11/22/2022 |
| LUMCAT | CK0407PC 15L 35K XW xx SO xx MW |
| LUMINAIRE | Nom. 4.5" Diam x 7"H Round Cylinder, Xtra Wide Beam |
| OTHER | Solite lens, Matte White finish |
| OTHER | 60 Degree Beam Angle |
| OTHER | Reference Project SL378 |
| LAMP | N/A |
| LAMPCAT | N/A, Min. 80 CRI |
| OTHER | Total Luminaire Watts is approximate |
| OTHER | CCT Multipliers: 27K x 0.95, 30K x 0.97, 40K x 1.03 |
| OTHER | This report prepared by Spectrum Lighting |

Candela Polar Plot



Zonal Lumen Summary

| Zone | Lumens | % Fixture | Zone | Lumens | % Fixture |
|-----------------|--------|-----------|-------------------|--------|-----------|
| 0.00° - 10.00° | 79.74 | 9.20% | 90.00° - 100.00° | 1.84 | 0.21% |
| 10.00° - 20.00° | 207.85 | 23.98% | 100.00° - 110.00° | 1.83 | 0.21% |
| 20.00° - 30.00° | 255.99 | 29.54% | 100.00° - 120.00° | 3.51 | 0.41% |
| 30.00° - 40.00° | 175.20 | 20.22% | 120.00° - 130.00° | 1.55 | 0.18% |
| 40.00° - 50.00° | 82.08 | 9.47% | 130.00° - 140.00° | 1.40 | 0.16% |
| 50.00° - 60.00° | 34.75 | 4.01% | 140.00° - 150.00° | 1.15 | 0.13% |
| 60.00° - 70.00° | 13.08 | 1.51% | 150.00° - 160.00° | 0.85 | 0.10% |
| 70.00° - 80.00° | 4.77 | 0.55% | 160.00° - 170.00° | 0.54 | 0.06% |
| 80.00° - 90.00° | 2.15 | 0.25% | 170.00° - 180.00° | 0.18 | 0.02% |
| 0.00° - 90.00° | 855.61 | 98.73% | 0.00° - 180.00° | 866.63 | 100.00% |

Candela Distribution

| | 0.00° | 22.50° | 45.00° | 67.50° | 90.00° | 112.50° | 135.00° | 157.50° | 180.00° | 202.50° | 225.00° | 247.50° | 270.00° | 292.50° | 315.00° | 337.50° | 360.00° |
|---------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.00° | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 | 850.43 |
| 2.50° | 847.66 | 845.88 | 845.65 | 844.68 | 848.91 | 848.07 | 849.82 | 850.79 | 851.49 | 849.48 | 850.30 | 849.19 | 850.15 | 848.94 | 848.21 | 849.77 | 847.66 |
| 5.00° | 833.52 | 832.56 | 831.98 | 830.96 | 835.70 | 836.46 | 838.10 | 839.93 | 840.61 | 838.78 | 838.39 | 838.42 | 836.69 | 835.67 | 834.63 | 835.47 | 833.52 |
| 7.50° | 816.44 | 816.44 | 816.85 | 814.72 | 820.87 | 822.64 | 822.54 | 825.58 | 824.83 | 823.74 | 823.88 | 822.29 | 821.97 | 820.25 | 817.96 | 817.97 | 816.44 |
| 10.00° | 792.95 | 793.45 | 794.08 | 793.42 | 797.36 | 800.26 | 800.49 | 803.79 | 803.26 | 802.19 | 801.33 | 800.28 | 797.81 | 795.16 | 792.70 | 791.98 | 792.95 |
| 12.50° | 767.92 | 768.68 | 770.23 | 769.39 | 772.66 | 775.94 | 776.06 | 779.14 | 778.98 | 777.94 | 777.22 | 775.30 | 773.04 | 769.27 | 766.17 | 765.19 | 767.92 |
| 15.00° | 739.53 | 739.56 | 740.66 | 739.84 | 744.02 | 747.88 | 747.23 | 749.67 | 749.60 | 748.74 | 747.60 | 744.51 | 743.66 | 739.79 | 736.08 | 736.29 | 739.53 |
| 17.50° | 708.66 | 707.91 | 709.35 | 708.15 | 714.83 | 718.96 | 716.80 | 718.34 | 717.83 | 717.48 | 716.89 | 710.77 | 712.90 | 708.95 | 704.51 | 705.58 | 708.66 |
| 20.00° | 672.31 | 669.99 | 668.78 | 672.10 | 675.28 | 679.50 | 678.93 | 679.21 | 676.90 | 674.50 | 671.65 | 667.03 | 671.52 | 671.82 | 668.74 | 670.03 | 672.31 |
| 22.50° | 628.87 | 625.57 | 624.77 | 627.54 | 634.27 | 637.61 | 638.31 | 637.03 | 631.66 | 626.57 | 623.50 | 618.17 | 627.77 | 630.64 | 627.67 | 628.25 | 628.87 |
| 25.00° | 569.61 | 564.90 | 562.22 | 565.46 | 570.51 | 575.56 | 577.33 | 574.96 | 570.22 | 564.34 | 559.80 | 557.47 | 565.39 | 570.68 | 571.42 | 569.65 | 569.61 |
| 27.50° | 504.47 | 499.57 | 497.47 | 497.91 | 503.49 | 508.80 | 508.78 | 505.03 | 501.09 | 496.03 | 492.96 | 490.68 | 501.32 | 507.30 | 509.00 | 505.52 | 504.47 |
| 30.00° | 426.13 | 422.49 | 420.70 | 419.01 | 423.71 | 428.09 | 428.92 | 426.35 | 426.13 | 422.53 | 420.92 | 419.38 | 423.82 | 427.96 | 428.78 | 426.37 | 426.13 |
| 32.50° | 351.10 | 348.50 | 346.10 | 344.07 | 342.07 | 344.09 | 344.82 | 344.19 | 348.39 | 346.82 | 347.81 | 345.75 | 347.61 | 350.00 | 350.15 | 349.29 | 351.10 |
| 35.00° | 283.58 | 282.35 | 283.53 | 277.37 | 274.96 | 273.06 | 273.53 | 274.53 | 280.64 | 282.26 | 285.06 | 281.02 | 282.00 | 278.62 | 276.19 | 277.92 | 283.58 |
| 37.50° | 222.50 | 222.72 | 223.78 | 217.87 | 209.99 | 205.13 | 207.09 | 209.87 | 217.72 | 222.51 | 224.45 | 220.93 | 218.70 | 211.88 | 209.32 | 213.36 | 222.50 |
| 40.00° | 176.13 | 179.79 | 179.91 | 173.46 | 165.55 | 159.68 | 160.06 | 164.58 | 171.24 | 176.26 | 178.79 | 175.30 | 174.47 | 167.39 | 163.36 | 167.60 | 176.13 |
| 42.50° | 135.65 | 140.81 | 138.51 | 134.32 | 124.16 | 119.66 | 120.43 | 127.10 | 132.73 | 135.89 | 136.27 | 137.27 | 132.08 | 126.24 | 122.79 | 127.26 | 135.65 |
| 45.00° | 108.58 | 112.04 | 111.14 | 106.33 | 98.83 | 94.20 | 94.46 | 100.18 | 104.26 | 106.30 | 107.73 | 107.42 | 105.22 | 101.39 | 98.04 | 101.98 | 108.58 |
| 47.50° | 84.31 | 86.37 | 85.20 | 81.65 | 75.88 | 72.29 | 73.75 | 77.52 | 80.68 | 81.40 | 82.16 | 81.91 | 79.57 | 78.14 | 75.70 | 79.15 | 84.31 |
| 50.00° | 66.45 | 68.67 | 67.32 | 63.98 | 59.86 | 57.13 | 57.97 | 60.76 | 63.47 | 63.61 | 65.15 | 63.61 | 64.07 | 62.64 | 60.47 | 63.08 | 66.45 |
| 52.50° | 50.60 | 52.75 | 50.58 | 48.50 | 44.89 | 43.61 | 44.07 | 46.41 | 49.39 | 48.92 | 49.94 | 49.10 | 49.11 | 47.98 | 46.63 | 48.68 | 50.60 |
| 55.00° | 39.35 | 41.48 | 40.38 | 37.70 | 35.98 | 33.93 | 34.15 | 35.68 | 38.51 | 37.58 | 38.92 | 38.26 | 38.74 | 37.45 | 36.94 | 38.93 | 39.35 |
| 57.50° | 29.50 | 31.38 | 30.60 | 28.23 | 28.01 | 25.19 | 25.75 | 26.44 | 29.19 | 27.70 | 28.80 | 29.36 | 28.77 | 27.63 | 28.23 | 29.81 | 29.50 |
| 60.00° | 22.92 | 24.35 | 23.30 | 21.64 | 21.91 | 19.52 | 19.89 | 20.70 | 22.09 | 21.22 | 22.34 | 22.68 | 22.38 | 21.37 | 22.49 | 22.46 | 22.92 |
| 62.50° | 17.15 | 18.15 | 16.60 | 15.97 | 16.10 | 14.61 | 15.02 | 16.42 | 16.09 | 16.24 | 16.67 | 17.20 | 16.25 | 15.61 | 17.15 | 16.16 | 17.15 |
| 65.00° | 13.30 | 14.16 | 13.55 | 12.31 | 12.60 | 11.30 | 11.57 | 12.91 | 12.10 | 12.86 | 12.62 | 12.94 | 12.47 | 12.38 | 13.02 | 12.87 | 13.30 |
| 67.50° | 10.02 | 10.60 | 10.59 | 9.25 | 9.47 | 8.40 | 8.68 | 9.72 | 9.11 | 10.19 | 8.91 | 9.34 | 8.89 | 9.26 | 9.34 | 9.90 | 10.02 |
| 70.00° | 8.09 | 8.20 | 8.17 | 7.52 | 7.27 | 6.57 | 6.80 | 7.61 | 7.06 | 7.93 | 6.75 | 6.78 | 7.04 | 6.73 | 7.03 | 7.86 | 8.09 |
| 72.50° | 6.27 | 6.07 | 5.93 | 5.87 | 5.22 | 5.01 | 5.32 | 5.94 | 5.47 | 5.85 | 4.93 | 4.80 | 5.27 | 4.47 | 5.06 | 6.02 | 6.27 |
| 75.00° | 4.72 | 4.71 | 4.77 | 4.42 | 4.27 | 3.99 | 4.11 | 4.59 | 4.46 | 4.52 | 3.96 | 3.76 | 4.21 | 3.65 | 4.12 | 4.77 | 4.72 |
| 77.50° | 3.43 | 3.51 | 3.64 | 3.15 | 3.50 | 3.09 | 3.02 | 3.36 | 3.72 | 3.53 | 3.18 | 3.25 | 3.20 | 2.91 | 3.26 | 3.61 | 3.43 |
| 80.00° | 2.73 | 2.75 | 2.78 | 2.27 | 2.87 | 2.51 | 2.50 | 2.58 | 2.98 | 2.76 | 2.58 | 2.66 | 2.60 | 2.56 | 2.63 | 2.74 | 2.73 |
| 82.50° | 2.16 | 2.11 | 2.03 | 1.69 | 2.26 | 2.00 | 2.23 | 1.99 | 2.24 | 2.10 | 2.01 | 2.04 | 2.04 | 2.22 | 2.08 | 2.07 | 2.16 |
| 85.00° | 1.89 | 1.77 | 2.06 | 1.75 | 1.90 | 1.76 | 2.02 | 1.91 | 2.05 | 1.84 | 1.82 | 1.70 | 1.81 | 1.95 | 1.75 | 2.02 | 1.89 |
| 87.50° | 1.71 | 1.53 | 2.04 | 1.75 | 1.58 | 1.59 | 1.84 | 2.05 | 2.13 | 1.76 | 1.71 | 1.51 | 1.62 | 1.70 | 1.51 | 2.04 | 1.71 |
| 90.00° | 1.74 | 1.58 | 1.76 | 1.57 | 1.61 | 1.60 | 1.73 | 1.98 | 1.93 | 1.69 | 1.77 | 1.48 | 1.77 | 1.57 | 1.55 | 2.25 | 1.74 |
| 92.50° | 1.73 | 1.66 | 1.53 | 1.41 | 1.70 | 1.65 | 1.65 | 1.82 | 1.60 | 1.63 | 1.86 | 1.53 | 1.91 | 1.46 | 1.59 | 2.34 | 1.73 |
| 95.00° | 1.66 | 1.81 | 1.57 | 1.29 | 1.75 | 1.70 | 1.69 | 1.80 | 1.58 | 1.58 | 1.83 | 1.51 | 1.78 | 1.52 | 1.61 | 2.07 | 1.66 |
| 97.50° | 1.68 | 1.90 | 1.61 | 1.28 | 1.79 | 1.74 | 1.78 | 1.86 | 1.74 | 1.52 | 1.76 | 1.45 | 1.68 | 1.56 | 1.63 | 1.84 | 1.68 |
| 100.00° | 1.94 | 1.83 | 1.66 | 1.56 | 1.87 | 1.80 | 1.78 | 1.88 | 1.74 | 1.53 | 1.75 | 1.46 | 1.72 | 1.56 | 1.65 | 1.73 | 1.94 |

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

| | | | | | | | | | | | | | | | | | | |
|------------|------------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RCR | pfc | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 0% |
| | pcc | 80% | 80% | 80% | 80% | 70% | 70% | 70% | 70% | 50% | 50% | 50% | 30% | 30% | 30% | 10% | 10% | 0% |
| | pw | 70% | 50% | 30% | 10% | 70% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 30% |
| | 0 | 1029 | 1029 | 1029 | 1029 | 1004 | 1004 | 1004 | 1004 | 957 | 957 | 957 | 914 | 914 | 914 | 874 | 874 | 856 |
| | 1 | 975 | 949 | 925 | 904 | 953 | 929 | 908 | 889 | 892 | 875 | 859 | 858 | 844 | 832 | 826 | 815 | 798 |
| | 2 | 921 | 875 | 837 | 804 | 901 | 859 | 824 | 794 | 829 | 800 | 775 | 801 | 777 | 757 | 775 | 756 | 740 |
| | 3 | 869 | 808 | 761 | 724 | 851 | 795 | 752 | 717 | 771 | 734 | 704 | 748 | 717 | 692 | 726 | 701 | 687 |
| | 4 | 821 | 749 | 697 | 657 | 803 | 738 | 690 | 652 | 718 | 676 | 643 | 699 | 663 | 635 | 681 | 651 | 638 |
| | 5 | 775 | 696 | 641 | 601 | 759 | 687 | 636 | 598 | 670 | 625 | 591 | 654 | 615 | 585 | 639 | 606 | 594 |
| | 6 | 733 | 649 | 593 | 553 | 718 | 641 | 589 | 550 | 627 | 580 | 546 | 613 | 572 | 541 | 601 | 565 | 554 |
| | 7 | 693 | 607 | 551 | 511 | 680 | 600 | 547 | 510 | 588 | 540 | 506 | 576 | 534 | 502 | 565 | 528 | 518 |
| | 8 | 657 | 569 | 513 | 475 | 645 | 563 | 510 | 474 | 552 | 505 | 471 | 542 | 500 | 468 | 533 | 494 | 486 |
| | 9 | 624 | 535 | 480 | 443 | 613 | 530 | 478 | 442 | 520 | 473 | 440 | 512 | 469 | 438 | 503 | 464 | 457 |
| | 10 | 593 | 504 | 450 | 415 | 583 | 499 | 448 | 414 | 491 | 444 | 412 | 484 | 441 | 410 | 476 | 437 | 430 |

Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|------------|-------------|---------------|
| 5.5 ft | 28.1 fc | 6.4 ft |
| 6.5 ft | 20.1 fc | 7.5 ft |
| 7.5 ft | 15.1 fc | 8.7 ft |
| 8.0 ft | 13.3 fc | 9.2 ft |
| 10.0 ft | 8.5 fc | 11.6 ft |
| 12.0 ft | 5.9 fc | 13.9 ft |
| 14.0 ft | 4.3 fc | 16.2 ft |
| 16.0 ft | 3.3 fc | 18.5 ft |
| 20.0 ft | 2.1 fc | 23.1 ft |
| 24.0 ft | 1.5 fc | 27.7 ft |
| 28.0 ft | 1.1 fc | 32.3 ft |

Average Luminaire Luminance [cd/m²]

| | 0.00° | 45.00° | 90.00° |
|---------------|-------|--------|--------|
| 0.00° | 80715 | 80715 | 80715 |
| 45.00° | 14574 | 14918 | 13265 |
| 55.00° | 6511 | 6681 | 5954 |
| 65.00° | 2987 | 3044 | 2830 |
| 75.00° | 1732 | 1749 | 1566 |
| 85.00° | 2062 | 2244 | 2070 |

UGR CIE 190:2010

| | | | | | | | | | | | |
|----------------------------|------------|-------------------------|------------|------------|------------|------------|-----------------------|------------|------------|------------|------------|
| Ceiling reflectance | | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| Wall reflectance | | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Plane reflectance | | 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 | | | | |
| 2H | 2H | 12.3 | 13.4 | 12.7 | 13.8 | 14.1 | 11.6 | 12.7 | 12.0 | 13.1 | 13.4 |
| | 3H | 12.7 | 13.7 | 13.1 | 14.0 | 14.4 | 12.0 | 13.0 | 12.4 | 13.3 | 13.7 |
| | 4H | 12.8 | 13.7 | 13.3 | 14.1 | 14.5 | 12.1 | 13.0 | 12.5 | 13.4 | 13.8 |
| | 6H | 12.9 | 13.7 | 13.3 | 14.1 | 14.5 | 12.1 | 13.0 | 12.6 | 13.4 | 13.8 |
| | 8H | 12.9 | 13.6 | 13.3 | 14.1 | 14.5 | 12.2 | 12.9 | 12.6 | 13.4 | 13.8 |
| | 12H | 12.9 | 13.6 | 13.4 | 14.0 | 14.5 | 12.2 | 12.9 | 12.7 | 13.3 | 13.8 |
| 4H | 2H | 12.4 | 13.3 | 12.8 | 13.6 | 14.1 | 11.7 | 12.6 | 12.1 | 13.0 | 13.4 |
| | 3H | 12.9 | 13.6 | 13.3 | 14.0 | 14.5 | 12.2 | 12.9 | 12.6 | 13.3 | 13.8 |
| | 4H | 13.0 | 13.7 | 13.5 | 14.1 | 14.6 | 12.3 | 12.9 | 12.8 | 13.4 | 13.9 |
| | 6H | 13.2 | 13.7 | 13.6 | 14.2 | 14.7 | 12.4 | 13.0 | 12.9 | 13.4 | 13.9 |
| | 8H | 13.2 | 13.7 | 13.7 | 14.2 | 14.7 | 12.5 | 13.0 | 13.0 | 13.5 | 14.0 |
| | 12H | 13.2 | 13.7 | 13.8 | 14.2 | 14.7 | 12.6 | 13.0 | 13.1 | 13.5 | 14.0 |
| 8H | 4H | 13.0 | 13.5 | 13.5 | 14.0 | 14.5 | 12.3 | 12.8 | 12.8 | 13.2 | 13.7 |
| | 6H | 13.2 | 13.6 | 13.7 | 14.1 | 14.6 | 12.4 | 12.9 | 13.0 | 13.4 | 13.9 |
| | 8H | 13.2 | 13.6 | 13.8 | 14.1 | 14.7 | 12.5 | 12.9 | 13.1 | 13.5 | 14.0 |
| | 12H | 13.4 | 13.7 | 13.9 | 14.2 | 14.8 | 12.7 | 13.0 | 13.3 | 13.6 | 14.2 |
| 12H | 4H | 13.0 | 13.4 | 13.5 | 13.9 | 14.4 | 12.2 | 12.7 | 12.7 | 13.2 | 13.7 |
| | 6H | 13.1 | 13.5 | 13.7 | 14.0 | 14.6 | 12.4 | 12.8 | 13.0 | 13.3 | 13.9 |
| | 8H | 13.2 | 13.6 | 13.8 | 14.1 | 14.7 | 12.6 | 12.9 | 13.1 | 13.4 | 14.0 |

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0