



IES ROAD REPORT

PHOTOMETRIC FILENAME : HPG-20L-FT-40K8.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] LED-12230
[TESTLAB] LSI INDUSTRIES, INC.
[ISSUE DATE] 10/22/2021
[TEST DATE] 09/24/20
[MANUFACTURER] LSI INDUSTRIES, INC.
[LUMEN CATEGORY] HPG-20L-FT-40K8
[OTHER] TEST PROCEDURE: IESNA LM-79-08
[ABSOLUTE] NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
[OTHER] SCALED FROM ORIGINAL TEST DATA
[SEARCH_SOURCE TYPE] LED
[SEARCH_APPLICATION] Outdoor
[SEARCH_COLOR TEMP] 4000

CHARACTERISTICS

| | |
|---|------------------------------|
| IES Classification | Type III |
| Longitudinal Classification | Short |
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 21290 |
| Downward Total Efficiency | N.A. (absolute) |
| Total Luminaire Efficiency | N.A. (absolute) |
| Luminaire Efficacy Rating (LER) | 126 |
| Total Luminaire Watts | 169 |
| Ballast Factor | 1.00 |
| Upward Waste Light Ratio | 0.00 |
| Maximum Candela | 10151 |
| Maximum Candela Angle | 45H 65V |
| Maximum Candela (<90 Degrees Vertical) | 10151 |
| Maximum Candela Angle (<90 Degrees Vertical) | 45H 65V |
| Maximum Candela At 90 Degrees Vertical | 0 (0.0% Luminaire Lumens) |
| Maximum Candela from 80 to <90 Degrees Vertical | 1285 (6.0% Luminaire Lumens) |
| Cutoff Classification (deprecated) | N.A. (absolute) |



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LUMINAIRE CLASSIFICATION SYSTEM (LCS)

| | Lumens | % Lamp | % Luminaire |
|-------------------------------|----------|--------|-------------|
| FL - Front-Low (0-30) | 1959.6 | N.A. | 9.2 |
| FM - Front-Medium (30-60) | 6466.1 | N.A. | 30.4 |
| FH - Front-High (60-80) | 4476.7 | N.A. | 21.0 |
| FVH - Front-Very High (80-90) | 136.5 | N.A. | 0.6 |
| BL - Back-Low (0-30) | 2052.0 | N.A. | 9.6 |
| BM - Back-Medium (30-60) | 4581.8 | N.A. | 21.5 |
| BH - Back-High (60-80) | 1532.0 | N.A. | 7.2 |
| BVH - Back-Very High (80-90) | 85.5 | N.A. | 0.4 |
| UL - Uplight-Low (90-100) | 0.0 | N.A. | 0.0 |
| UH - Uplight-High (100-180) | 0.0 | N.A. | 0.0 |
| Total | 21290.2 | N.A. | 100.0 |
| BUG Rating | B3-U0-G3 | | |

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CANDELA TABULATION

| Vert. Angles | Horizontal Angles | | | | | | | | | |
|-------------------------|--------------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | <u>0.0</u> | <u>5.0</u> | <u>15.0</u> | <u>25.0</u> | <u>35.0</u> | <u>45.0</u> | <u>47.5</u> | <u>55.0</u> | <u>65.0</u> | <u>75.0</u> |
| 0.0 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 |
| 2.5 | 4782 | 4796 | 4787 | 4792 | 4817 | 4854 | 4837 | 4840 | 4842 | 4852 |
| 5.0 | 4756 | 4777 | 4766 | 4772 | 4791 | 4833 | 4820 | 4832 | 4836 | 4849 |
| 7.5 | 4699 | 4716 | 4707 | 4723 | 4753 | 4796 | 4784 | 4794 | 4810 | 4832 |
| 10.0 | 4631 | 4650 | 4646 | 4657 | 4701 | 4754 | 4746 | 4768 | 4786 | 4821 |
| 12.5 | 4566 | 4587 | 4585 | 4605 | 4652 | 4712 | 4706 | 4738 | 4763 | 4801 |
| 15.0 | 4516 | 4535 | 4530 | 4558 | 4603 | 4671 | 4664 | 4704 | 4735 | 4787 |
| 17.5 | 4467 | 4492 | 4485 | 4509 | 4568 | 4632 | 4634 | 4677 | 4711 | 4768 |
| 20.0 | 4437 | 4467 | 4464 | 4491 | 4546 | 4612 | 4609 | 4655 | 4698 | 4752 |
| 22.5 | 4426 | 4452 | 4456 | 4490 | 4551 | 4610 | 4608 | 4648 | 4684 | 4739 |
| 25.0 | 4426 | 4446 | 4468 | 4506 | 4572 | 4628 | 4629 | 4664 | 4699 | 4740 |
| 27.5 | 4451 | 4470 | 4495 | 4537 | 4600 | 4661 | 4655 | 4688 | 4712 | 4752 |
| 30.0 | 4471 | 4499 | 4533 | 4576 | 4644 | 4692 | 4683 | 4706 | 4728 | 4773 |
| 32.5 | 4495 | 4518 | 4559 | 4620 | 4698 | 4746 | 4739 | 4745 | 4766 | 4809 |
| 35.0 | 4515 | 4535 | 4587 | 4671 | 4760 | 4812 | 4803 | 4806 | 4801 | 4821 |
| 37.5 | 4566 | 4584 | 4634 | 4742 | 4836 | 4893 | 4881 | 4864 | 4841 | 4816 |
| 40.0 | 4694 | 4711 | 4742 | 4849 | 4933 | 4993 | 4974 | 4947 | 4882 | 4819 |
| 42.5 | 4855 | 4864 | 4911 | 5009 | 5096 | 5135 | 5119 | 5076 | 4955 | 4869 |
| 45.0 | 5070 | 5082 | 5122 | 5217 | 5298 | 5341 | 5337 | 5268 | 5072 | 4943 |
| 47.5 | 5427 | 5437 | 5483 | 5549 | 5576 | 5630 | 5638 | 5538 | 5191 | 5039 |
| 50.0 | 5923 | 5950 | 5938 | 5993 | 5998 | 6030 | 6021 | 5821 | 5358 | 5164 |
| 52.5 | 6523 | 6560 | 6522 | 6572 | 6548 | 6571 | 6541 | 6207 | 5608 | 5316 |
| 55.0 | 7088 | 7130 | 7130 | 7234 | 7283 | 7287 | 7251 | 6764 | 5938 | 5457 |
| 57.5 | 7602 | 7610 | 7702 | 7863 | 8141 | 8123 | 8084 | 7507 | 6258 | 5603 |
| 60.0 | 7607 | 7680 | 7918 | 8261 | 8889 | 9074 | 9046 | 8165 | 6598 | 5765 |
| 62.5 | 7043 | 7180 | 7580 | 8161 | 9363 | 9930 | 9864 | 8724 | 6755 | 5630 |
| 65.0 | 6032 | 6115 | 6586 | 7383 | 9095 | 10151 | 10099 | 8846 | 6502 | 5080 |
| 67.5 | 4594 | 4649 | 5037 | 5868 | 7776 | 9276 | 9365 | 8407 | 5773 | 4108 |
| 70.0 | 3052 | 3129 | 3385 | 4129 | 5798 | 7527 | 7731 | 7150 | 4645 | 2961 |
| 72.5 | 1900 | 1880 | 2093 | 2590 | 3767 | 5360 | 5648 | 5511 | 3101 | 1787 |
| 75.0 | 1134 | 1159 | 1275 | 1622 | 2405 | 3384 | 3566 | 3479 | 1996 | 1093 |
| 77.5 | 743 | 758 | 848 | 1128 | 1474 | 2078 | 2185 | 2029 | 1213 | 583 |
| 80.0 | 504 | 515 | 542 | 774 | 1026 | 1233 | 1285 | 1051 | 546 | 294 |
| 82.5 | 315 | 312 | 353 | 544 | 642 | 541 | 499 | 349 | 245 | 208 |
| 85.0 | 177 | 180 | 200 | 391 | 367 | 158 | 138 | 106 | 109 | 134 |
| 87.5 | 81 | 84 | 98 | 176 | 169 | 56 | 54 | 49 | 49 | 55 |
| 90.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Vert. Angles | Horizontal Angles | | | | | | | | | |
|-------------------------|--------------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | <u>85.0</u> | <u>90.0</u> | <u>95.0</u> | <u>105.0</u> | <u>115.0</u> | <u>125.0</u> | <u>135.0</u> | <u>145.0</u> | <u>155.0</u> | <u>165.0</u> |
| 0.0 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 | 4827 |
| 2.5 | 4880 | 4894 | 4890 | 4862 | 4849 | 4850 | 4867 | 4825 | 4809 | 4807 |
| 5.0 | 4886 | 4897 | 4897 | 4875 | 4863 | 4859 | 4876 | 4847 | 4830 | 4828 |
| 7.5 | 4882 | 4899 | 4898 | 4880 | 4871 | 4875 | 4893 | 4850 | 4830 | 4819 |
| 10.0 | 4869 | 4893 | 4897 | 4882 | 4882 | 4876 | 4879 | 4850 | 4837 | 4840 |
| 12.5 | 4864 | 4883 | 4893 | 4882 | 4876 | 4868 | 4884 | 4873 | 4872 | 4879 |
| 15.0 | 4855 | 4879 | 4890 | 4878 | 4865 | 4873 | 4904 | 4895 | 4898 | 4911 |
| 17.5 | 4846 | 4875 | 4886 | 4874 | 4846 | 4866 | 4917 | 4914 | 4914 | 4929 |
| 20.0 | 4839 | 4873 | 4882 | 4857 | 4822 | 4866 | 4920 | 4922 | 4927 | 4943 |
| 22.5 | 4831 | 4867 | 4875 | 4831 | 4808 | 4862 | 4918 | 4925 | 4932 | 4957 |
| 25.0 | 4820 | 4848 | 4854 | 4785 | 4778 | 4851 | 4911 | 4916 | 4928 | 4955 |
| 27.5 | 4815 | 4830 | 4824 | 4728 | 4727 | 4812 | 4878 | 4898 | 4916 | 4937 |

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CANDELA TABULATION - (Cont.)

| | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|
| 30.0 | 4819 | 4823 | 4802 | 4666 | 4669 | 4756 | 4827 | 4855 | 4881 | 4904 |
| 32.5 | 4819 | 4808 | 4766 | 4597 | 4593 | 4682 | 4758 | 4788 | 4820 | 4854 |
| 35.0 | 4803 | 4771 | 4714 | 4510 | 4503 | 4601 | 4676 | 4706 | 4742 | 4778 |
| 37.5 | 4763 | 4719 | 4649 | 4402 | 4397 | 4494 | 4569 | 4587 | 4622 | 4669 |
| 40.0 | 4733 | 4666 | 4568 | 4294 | 4270 | 4354 | 4418 | 4435 | 4474 | 4531 |
| 42.5 | 4734 | 4639 | 4516 | 4179 | 4122 | 4191 | 4234 | 4263 | 4317 | 4418 |
| 45.0 | 4772 | 4641 | 4488 | 4068 | 3942 | 3999 | 4033 | 4056 | 4119 | 4367 |
| 47.5 | 4830 | 4668 | 4475 | 3954 | 3737 | 3778 | 3803 | 3826 | 3937 | 4350 |
| 50.0 | 4925 | 4722 | 4478 | 3839 | 3515 | 3536 | 3569 | 3619 | 3868 | 4067 |
| 52.5 | 5030 | 4784 | 4483 | 3717 | 3272 | 3270 | 3348 | 3503 | 3628 | 3685 |
| 55.0 | 5093 | 4795 | 4430 | 3552 | 3008 | 3024 | 3127 | 3141 | 3293 | 3349 |
| 57.5 | 5209 | 4872 | 4427 | 3362 | 2683 | 2751 | 2797 | 2884 | 2928 | 2988 |
| 60.0 | 5331 | 4972 | 4467 | 3280 | 2401 | 2419 | 2514 | 2601 | 2573 | 2602 |
| 62.5 | 5098 | 4684 | 4148 | 3042 | 2192 | 2080 | 2194 | 2309 | 2256 | 2240 |
| 65.0 | 4514 | 3988 | 3385 | 2513 | 1808 | 1806 | 1875 | 2046 | 1983 | 1984 |
| 67.5 | 3579 | 3156 | 2656 | 2075 | 1380 | 1490 | 1686 | 1885 | 1731 | 1745 |
| 70.0 | 2546 | 2235 | 1888 | 1756 | 1157 | 1146 | 1362 | 1376 | 1440 | 1512 |
| 72.5 | 1382 | 1236 | 1079 | 1264 | 983 | 943 | 973 | 1127 | 1168 | 1269 |
| 75.0 | 728 | 655 | 649 | 784 | 651 | 669 | 716 | 841 | 883 | 1038 |
| 77.5 | 376 | 354 | 393 | 470 | 443 | 405 | 458 | 561 | 612 | 786 |
| 80.0 | 222 | 213 | 240 | 286 | 267 | 269 | 316 | 339 | 382 | 513 |
| 82.5 | 175 | 165 | 165 | 194 | 188 | 186 | 196 | 215 | 225 | 298 |
| 85.0 | 112 | 106 | 108 | 117 | 119 | 119 | 123 | 127 | 144 | 154 |
| 87.5 | 57 | 54 | 58 | 62 | 66 | 65 | 63 | 70 | 62 | 73 |
| 90.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Vert. Horizontal Angles
Angles

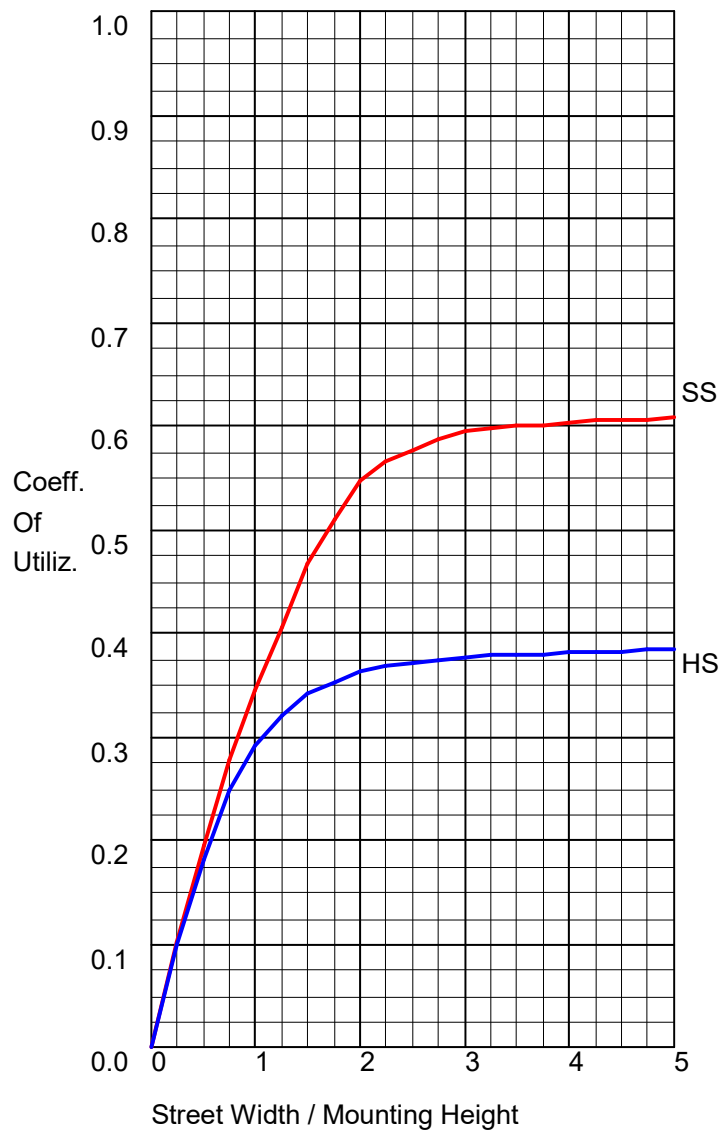
| | <u>175.0</u> | <u>180.0</u> |
|------|--------------|--------------|
| 0.0 | 4827 | 4827 |
| 2.5 | 4805 | 4785 |
| 5.0 | 4832 | 4812 |
| 7.5 | 4823 | 4806 |
| 10.0 | 4847 | 4826 |
| 12.5 | 4890 | 4871 |
| 15.0 | 4922 | 4901 |
| 17.5 | 4946 | 4924 |
| 20.0 | 4965 | 4952 |
| 22.5 | 4981 | 4965 |
| 25.0 | 4983 | 4965 |
| 27.5 | 4968 | 4957 |
| 30.0 | 4934 | 4928 |
| 32.5 | 4882 | 4867 |
| 35.0 | 4810 | 4791 |
| 37.5 | 4703 | 4691 |
| 40.0 | 4601 | 4595 |
| 42.5 | 4594 | 4616 |
| 45.0 | 4747 | 4795 |
| 47.5 | 4616 | 4626 |
| 50.0 | 4129 | 4126 |
| 52.5 | 3720 | 3721 |
| 55.0 | 3385 | 3395 |
| 57.5 | 3011 | 2997 |
| 60.0 | 2593 | 2596 |
| 62.5 | 2279 | 2293 |
| 65.0 | 2045 | 2059 |

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CANDELA TABULATION - (Cont.)

| | | |
|-------------|------|------|
| 67.5 | 1838 | 1855 |
| 70.0 | 1616 | 1622 |
| 72.5 | 1379 | 1387 |
| 75.0 | 1171 | 1193 |
| 77.5 | 935 | 947 |
| 80.0 | 682 | 717 |
| 82.5 | 451 | 473 |
| 85.0 | 244 | 251 |
| 87.5 | 110 | 115 |
| 90.0 | 0 | 0 |

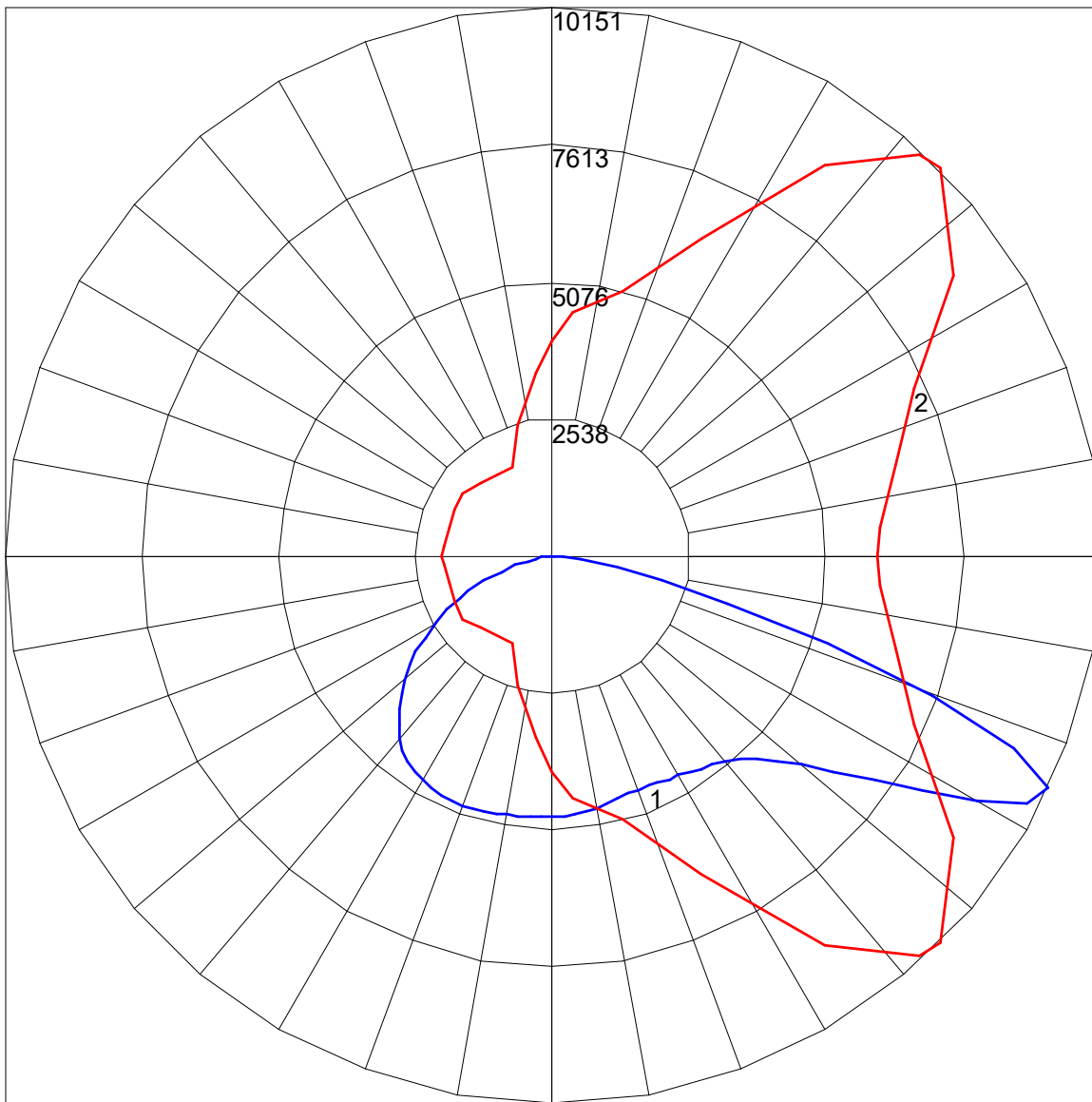
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

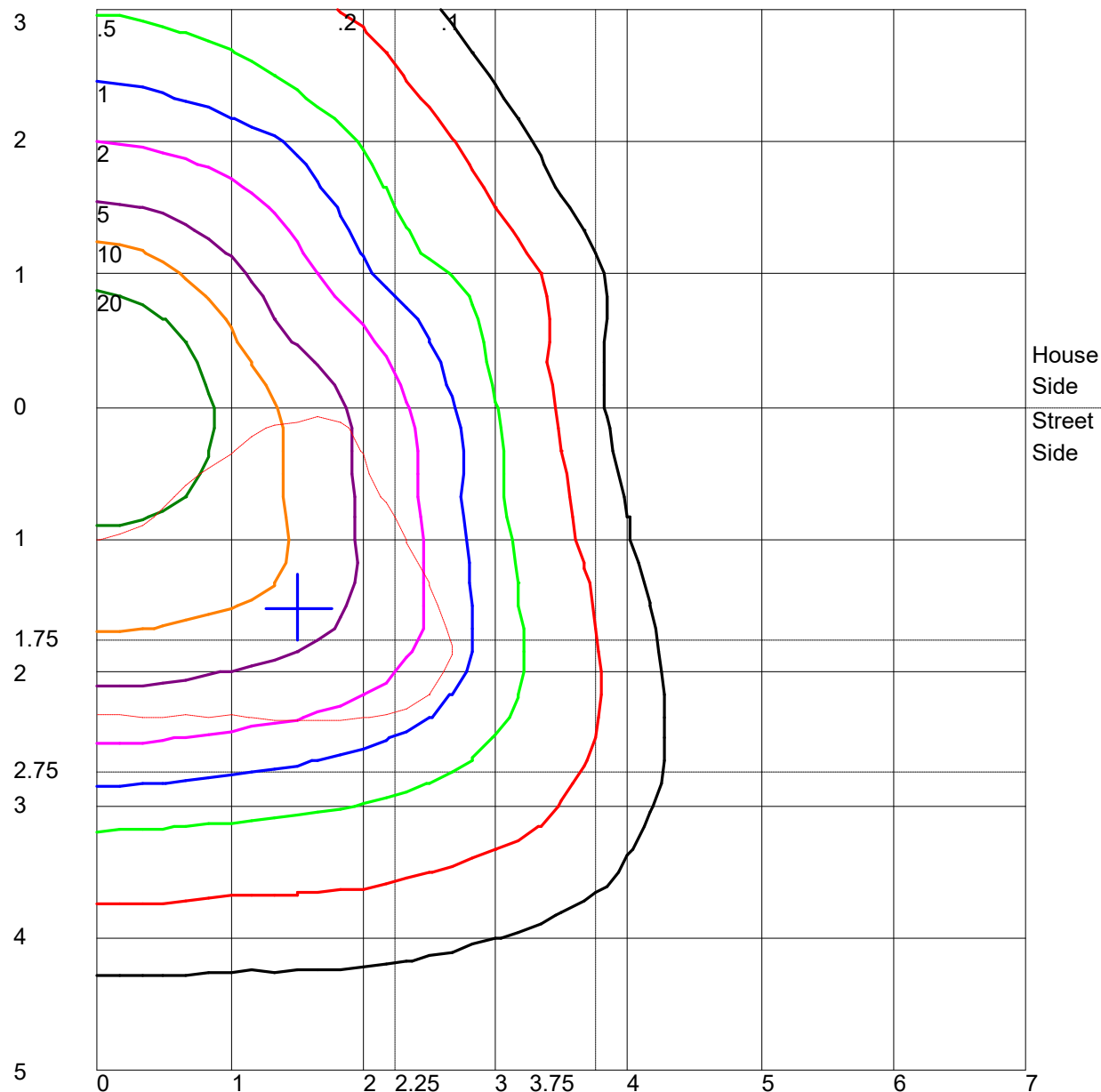
| | Lumens | Percent Of Luminaire |
|----------------------|---------|----------------------|
| Downward Street Side | 13038.9 | 61.2 |
| Downward House Side | 8251.3 | 38.8 |
| Downward Total | 21290.2 | 100.0 |
| Upward Street Side | 0.0 | 0.0 |
| Upward House Side | 0.0 | 0.0 |
| Upward Total | 0.0 | 0.0 |
| Total Flux | 21290.2 | 100.0 |

POLAR GRAPH

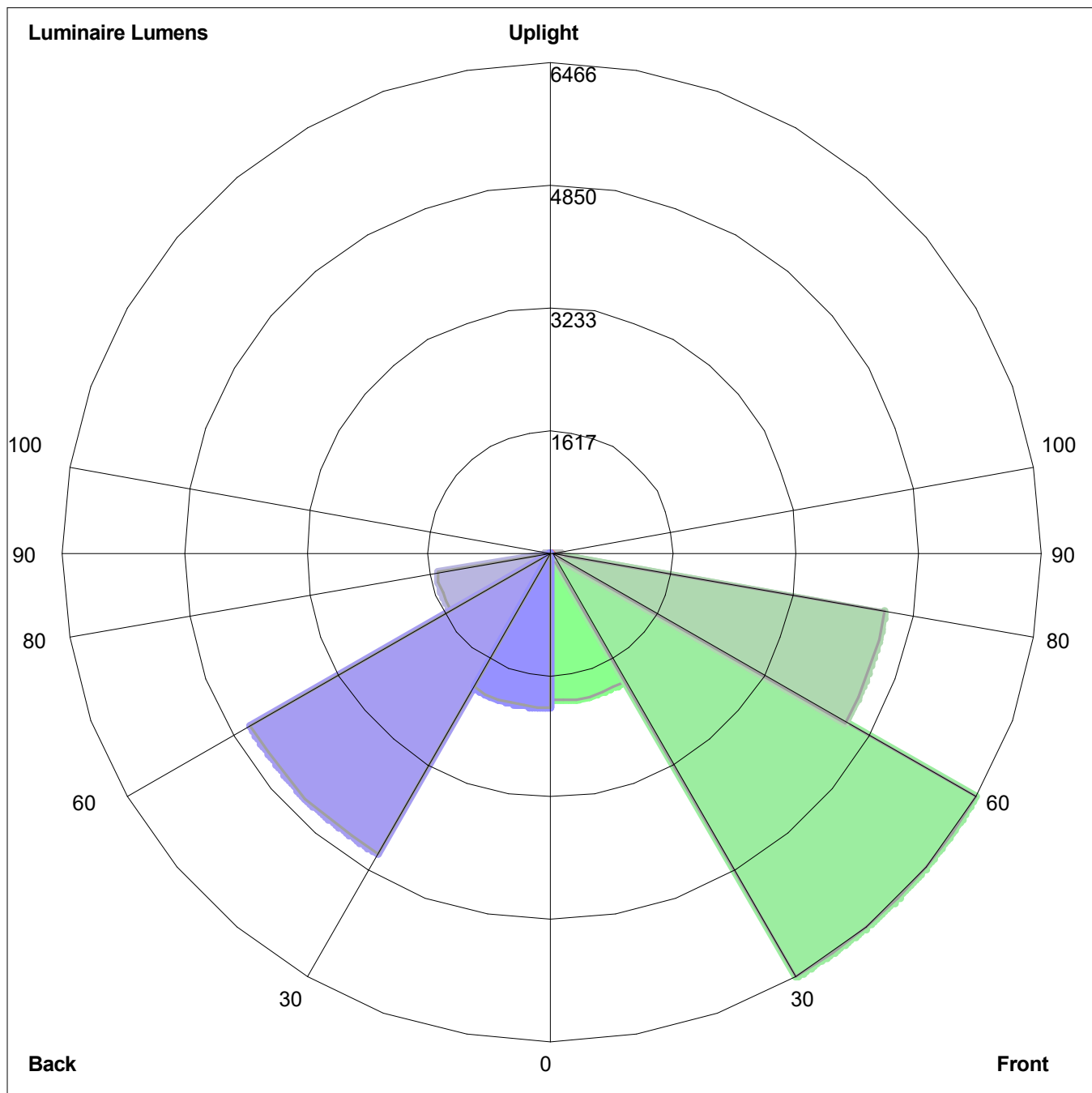


Maximum Candela = 10151 Located At Horizontal Angle = 45, Vertical Angle = 65
1 - Vertical Plane Through Horizontal Angles (45 - 225) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (65) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=1959.6, Medium=6466.1, High=4476.7, Very High=136.5
Back: Low= 2052.0, Medium=4581.8, High= 1532.0, Very High=85.5
Uplight: Low=0.0, High=0.0

BUG Rating : B3-U0-G3