

**LUMINAIRE:** LLHP2-50L-W-EDU  
 LLHP Led High Bay, Industrial  
 11" x 24" led with wide distribution optics  
**BALLAST:** PISE-Z-202B  
**BALLAST FACTOR:** 1.00  
**LAMP:** Led  
**FIXTURE LUMENS:** 14310  
**WATTS:** 137.70  
**MOUNTING:** Pendant  
**SHIELDING ANGLE:** 0° = 90 90° = 90  
**SPACING CRITERION:** 0° = 1.47 90° = 1.47  
**LUMINOUS OPENING IN FEET**  
 LENGTH: 0.61  
 WIDTH: 0.61  
 HEIGHT: 0.00

TEST #16.01919  
 DATE: 7/20/2016

**TOTAL LUMINAIRE EFFICIENCY = 100.0**  
**TOTAL LUMENS PER WATT = 104**

**ANSI/IESNA RP-1-2004 COMPLIANCE: NONCOMPLIANT**  
**COMPARATIVE YEARLY LIGHTING ENERGY COST PER 1000 LUMENS = \$2.31**  
**BASED ON 3000 HRS. AND \$.08 PER KWH**

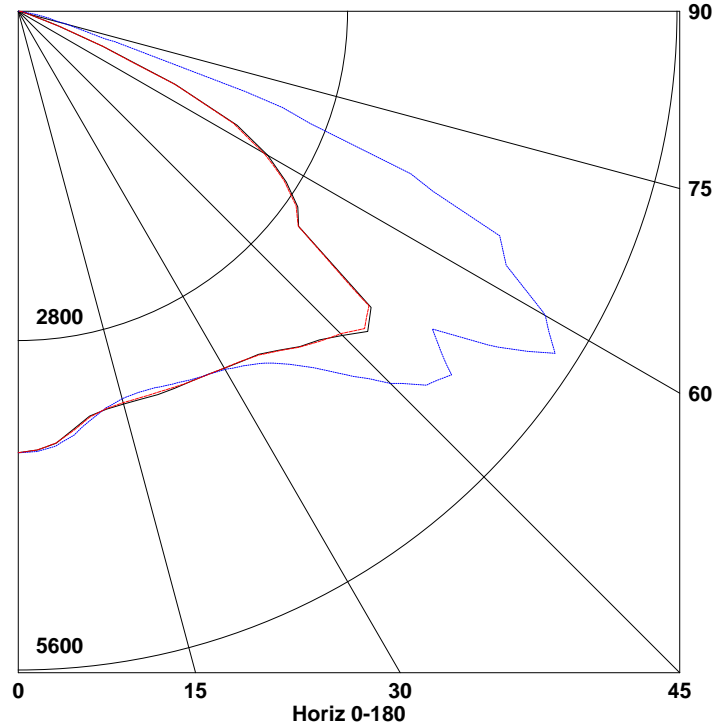
**ZONAL LUMENS**

| ZONE  | LUMENS | % LAMP | % FIXTURE |
|-------|--------|--------|-----------|
| 0-30  | 2921   | 20.4   | 20.4      |
| 0-40  | 5214   | 36.4   | 36.4      |
| 0-60  | 11716  | 81.9   | 81.9      |
| 0-90  | 14310  | 100.0  | 100.0     |
| 0-180 | 14310  | 100.0  | 100.0     |

**AVERAGE LUMINANCE**

| ANGLE | CANDELA/SQ M |        |        |        |        |        |
|-------|--------------|--------|--------|--------|--------|--------|
|       | 0.0          | 20.0   | 35.0   | 55.0   | 70.0   | 90.0   |
| 0     | 108536       | 108536 | 108536 | 108536 | 108536 | 108536 |
| 30    | 117043       | 116709 | 117009 | 117043 | 116341 | 116976 |
| 40    | 140513       | 146706 | 149803 | 149765 | 146404 | 140664 |
| 45    | 159425       | 171698 | 180575 | 179594 | 171248 | 158566 |
| 50    | 176188       | 188879 | 206520 | 204045 | 188699 | 175153 |
| 55    | 146258       | 170113 | 213486 | 211821 | 170113 | 145451 |
| 60    | 141629       | 179409 | 249761 | 246058 | 177731 | 139489 |
| 65    | 100756       | 145316 | 276395 | 271604 | 149355 | 100346 |
| 70    | 29349        | 37468  | 75614  | 79335  | 37722  | 30787  |
| 75    | 10059        | 13859  | 24924  | 25260  | 14083  | 9724   |
| 80    | 8663         | 8996   | 11162  | 11495  | 8996   | 7330   |
| 85    | 10289        | 10953  | 11949  | 11949  | 10621  | 8298   |

**INDOOR CANDELA PLOT**



0.0 ——— 45.0 ——— 90.0 ———

**COEFFICIENTS OF UTILIZATION (%)**

| RC | EFFECTIVE FLOOR CAVITY REFLECTANCE = 20% |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|    | 80%                                      |     |     |     | 70% |     |     |     | 50% |     |     |     | 30% |     |     |     |     |     |     |
|    | 70%                                      | 50% | 30% | 10% | 70% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 0%  |     |
| RW | 0  | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
|    | 1  | 109 | 105 | 101 | 97  | 107 | 103 | 99  | 96  | 99  | 96  | 93  | 95  | 92  | 90  | 91  | 89  | 87  | 85  |
|    | 2  | 99  | 91  | 84  | 79  | 97  | 89  | 83  | 78  | 86  | 81  | 76  | 82  | 78  | 74  | 79  | 76  | 73  | 70  |
|    | 3  | 90  | 79  | 71  | 64  | 87  | 78  | 70  | 64  | 75  | 68  | 63  | 72  | 66  | 62  | 69  | 65  | 60  | 58  |
| R  | 4  | 82  | 69  | 60  | 53  | 79  | 68  | 59  | 53  | 65  | 58  | 52  | 63  | 57  | 51  | 61  | 55  | 51  | 49  |
| C  | 5  | 74  | 61  | 52  | 45  | 72  | 60  | 51  | 45  | 58  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 43  | 41  |
| R  | 6  | 68  | 54  | 45  | 38  | 66  | 53  | 44  | 38  | 51  | 43  | 38  | 50  | 43  | 37  | 48  | 42  | 37  | 35  |
|    | 7  | 63  | 49  | 39  | 33  | 61  | 48  | 39  | 33  | 46  | 38  | 33  | 45  | 38  | 32  | 43  | 37  | 32  | 30  |
|    | 8  | 58  | 44  | 35  | 29  | 56  | 43  | 35  | 29  | 42  | 34  | 28  | 40  | 33  | 28  | 39  | 33  | 28  | 26  |
|    | 9  | 54  | 40  | 31  | 25  | 52  | 39  | 31  | 25  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 30  | 25  | 23  |
|    | 10                                       | 50  | 36  | 28  | 23  | 49  | 36  | 28  | 23  | 35  | 28  | 22  | 34  | 27  | 22  | 33  | 27  | 22  | 20  |

RCR = ROOM CAVITY RATIO RC = EFFECTIVE CEILING CAVITY REFLECTANCE RW = WALL REFLECTANCE

THE DATA IN THIS REPORT ARE BASED ON ABSOLUTE MEASUREMENTS.  
 ANSI/IESNA RP-1 COMPLIANCE IS BASED ON ABSOLUTE MEASUREMENTS.  
 THIS TEST RUN IN ACCORDANCE WITH CURRENT I.E.S.N.A. PUBLISHED PROCEDURES.

APPROVED BY: \_\_\_\_\_

LUMINAIRE: LLHP2-50L-W-EDU  
LLHP Led High Bay, Industrial  
11" x 24" led with wide distribution optics

TEST #16.01919  
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**CANDELA VALUES**

| ANGLE | 0.0  | 5.0  | 10.0 | 15.0 | 20.0 | 22.5 | 25.0 | 30.0 | 35.0 | 40.0 | 45.0         | 50.0 | 55.0 | 60.0 | 65.0 | 67.5 | 70.0 |
|-------|------|------|------|------|------|------|------|------|------|------|--------------|------|------|------|------|------|------|
| 0.0   | 3752 | 3752 | 3752 | 3752 | 3752 | 3752 | 3752 | 3752 | 3752 | 3752 | 3752         | 3752 | 3752 | 3752 | 3752 | 3752 | 3752 |
| 2.5   | 3732 | 3741 | 3742 | 3732 | 3744 | 3748 | 3745 | 3738 | 3741 | 3740 | 3745         | 3735 | 3733 | 3729 | 3737 | 3737 | 3732 |
| 5.0   | 3686 | 3694 | 3696 | 3687 | 3698 | 3705 | 3704 | 3698 | 3700 | 3699 | 3706         | 3693 | 3693 | 3687 | 3693 | 3693 | 3687 |
| 7.5   | 3584 | 3595 | 3600 | 3594 | 3608 | 3618 | 3620 | 3618 | 3626 | 3626 | 3634         | 3616 | 3614 | 3606 | 3608 | 3604 | 3597 |
| 10.0  | 3494 | 3501 | 3502 | 3496 | 3508 | 3511 | 3514 | 3513 | 3519 | 3523 | 3530         | 3515 | 3520 | 3509 | 3513 | 3507 | 3501 |
| 12.5  | 3464 | 3464 | 3464 | 3455 | 3458 | 3461 | 3460 | 3448 | 3447 | 3443 | 3451         | 3438 | 3444 | 3441 | 3448 | 3448 | 3445 |
| 15.0  | 3456 | 3454 | 3453 | 3446 | 3440 | 3442 | 3439 | 3422 | 3414 | 3407 | 3410         | 3399 | 3407 | 3411 | 3421 | 3422 | 3422 |
| 17.5  | 3458 | 3457 | 3454 | 3446 | 3438 | 3437 | 3433 | 3414 | 3401 | 3394 | 3396         | 3384 | 3389 | 3399 | 3411 | 3413 | 3414 |
| 20.0  | 3467 | 3464 | 3461 | 3451 | 3444 | 3440 | 3436 | 3417 | 3405 | 3401 | 3404         | 3391 | 3394 | 3402 | 3412 | 3413 | 3415 |
| 22.5  | 3470 | 3467 | 3463 | 3452 | 3448 | 3445 | 3439 | 3427 | 3422 | 3421 | 3429         | 3415 | 3411 | 3409 | 3417 | 3418 | 3419 |
| 25.0  | 3471 | 3473 | 3466 | 3452 | 3449 | 3447 | 3443 | 3436 | 3444 | 3447 | 3457         | 3441 | 3433 | 3426 | 3429 | 3428 | 3430 |
| 27.5  | 3482 | 3487 | 3482 | 3466 | 3459 | 3461 | 3459 | 3455 | 3468 | 3474 | 3482         | 3469 | 3463 | 3455 | 3451 | 3450 | 3450 |
| 30.0  | 3504 | 3508 | 3506 | 3496 | 3494 | 3498 | 3498 | 3491 | 3503 | 3508 | 3514         | 3509 | 3504 | 3497 | 3488 | 3482 | 3483 |
| 32.5  | 3529 | 3533 | 3534 | 3538 | 3546 | 3552 | 3557 | 3558 | 3565 | 3566 | 3571         | 3566 | 3567 | 3562 | 3549 | 3540 | 3535 |
| 35.0  | 3560 | 3569 | 3579 | 3594 | 3618 | 3630 | 3639 | 3652 | 3658 | 3653 | 3650         | 3650 | 3658 | 3655 | 3637 | 3623 | 3612 |
| 37.5  | 3633 | 3641 | 3662 | 3688 | 3729 | 3753 | 3763 | 3784 | 3789 | 3783 | 3782         | 3780 | 3788 | 3788 | 3766 | 3747 | 3729 |
| 40.0  | 3721 | 3728 | 3757 | 3810 | 3885 | 3909 | 3936 | 3965 | 3967 | 3970 | 3965         | 3960 | 3966 | 3966 | 3931 | 3905 | 3877 |
| 42.5  | 3789 | 3803 | 3843 | 3929 | 4041 | 4076 | 4118 | 4165 | 4190 | 4203 | 4207         | 4188 | 4172 | 4159 | 4116 | 4080 | 4038 |
| 45.0  | 3897 | 3905 | 3947 | 4056 | 4197 | 4253 | 4305 | 4371 | 4414 | 4456 | 4474         | 4433 | 4390 | 4372 | 4306 | 4248 | 4186 |
| 47.5  | 4028 | 4036 | 4070 | 4170 | 4297 | 4355 | 4418 | 4521 | 4598 | 4676 | 4704         | 4657 | 4577 | 4498 | 4409 | 4349 | 4286 |
| 50.0  | 3915 | 3926 | 3958 | 4072 | 4197 | 4265 | 4324 | 4434 | 4589 | 4737 | 4807         | 4713 | 4534 | 4388 | 4290 | 4251 | 4193 |
| 52.5  | 3003 | 3017 | 3084 | 3232 | 3396 | 3459 | 3536 | 3745 | 4028 | 4324 | 4436         | 4278 | 4000 | 3724 | 3539 | 3482 | 3423 |
| 55.0  | 2900 | 2919 | 3010 | 3195 | 3373 | 3418 | 3447 | 3698 | 4233 | 4779 | 4977         | 4745 | 4200 | 3666 | 3421 | 3406 | 3373 |
| 57.5  | 2700 | 2748 | 2901 | 3153 | 3344 | 3364 | 3359 | 3803 | 4546 | 5122 | <b>5410*</b> | 5106 | 4518 | 3758 | 3344 | 3356 | 3340 |
| 60.0  | 2448 | 2480 | 2618 | 2878 | 3101 | 3161 | 3235 | 3658 | 4317 | 4917 | 5172         | 4887 | 4253 | 3599 | 3173 | 3118 | 3072 |
| 62.5  | 2096 | 2104 | 2220 | 2478 | 2699 | 2784 | 2884 | 3337 | 4040 | 4581 | 4674         | 4529 | 3952 | 3231 | 2839 | 2771 | 2700 |
| 65.0  | 1472 | 1484 | 1615 | 1884 | 2123 | 2214 | 2299 | 2982 | 4038 | 4432 | 4515         | 4412 | 3968 | 2883 | 2325 | 2260 | 2182 |
| 67.5  | 777  | 786  | 858  | 1035 | 1246 | 1251 | 1315 | 1712 | 2747 | 3536 | 3613         | 3473 | 2711 | 1778 | 1333 | 1308 | 1257 |
| 70.0  | 347  | 364  | 385  | 418  | 443  | 426  | 455  | 537  | 894  | 1719 | 2386         | 1795 | 938  | 569  | 457  | 454  | 446  |
| 72.5  | 144  | 158  | 174  | 187  | 197  | 197  | 203  | 246  | 360  | 613  | 861          | 656  | 379  | 253  | 206  | 199  | 196  |
| 75.0  | 90   | 97   | 111  | 117  | 124  | 126  | 127  | 145  | 223  | 315  | 428          | 331  | 226  | 147  | 130  | 128  | 126  |
| 77.5  | 63   | 69   | 72   | 74   | 78   | 80   | 83   | 87   | 117  | 195  | 259          | 199  | 125  | 90   | 82   | 79   | 76   |
| 80.0  | 52   | 56   | 56   | 54   | 54   | 56   | 58   | 60   | 67   | 92   | 132          | 99   | 69   | 60   | 58   | 56   | 54   |
| 82.5  | 42   | 43   | 44   | 43   | 43   | 44   | 45   | 47   | 48   | 51   | 58           | 53   | 49   | 47   | 46   | 44   | 43   |
| 85.0  | 31   | 31   | 31   | 31   | 33   | 34   | 35   | 36   | 36   | 34   | 36           | 35   | 36   | 35   | 34   | 33   | 32   |
| 87.5  | 17   | 19   | 20   | 19   | 20   | 21   | 22   | 23   | 23   | 21   | 20           | 21   | 22   | 21   | 20   | 19   | 18   |
| 90.0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0    | 0    | 0    | 0    |

\*MAXIMUM CANDELA VALUE