



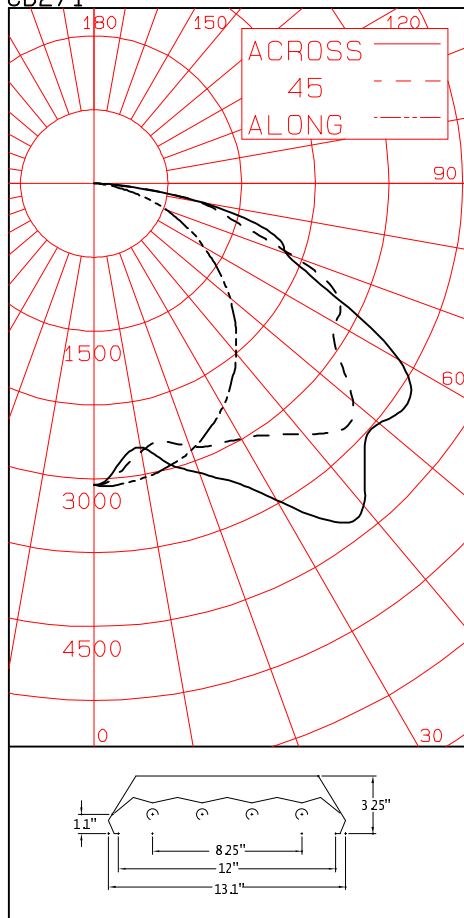
# LIGHTING SCIENCES CANADA LTD.

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CERTIFIED TEST REPORT NO. LSC D271  
 COMPUTED BY LSC PROGRAM \*\*TEST-LITE\*\*

PIONEER LIGHTING 4' HIBAY FLUORESCENT LUMINAIRE CAT. NO. HB 448-T5HO  
 WITH SPECULAR REFLECTOR  
 FOUR 54W T5 HO FLUORESCENT LAMPS. LUMEN RATING = 4450 LMS.  
 ONE ADVANCE 120-277V 1 TO 4-LAMP ELECTRONIC BALLAST NO. ICN-4S54-90C-2LS-G

CD271



### CANDLEPOWER SUMMARY

OUTPUT  
LUMENS

| ANGLE | ALONG | 22.5 | 45   | 67.5 | ACROSS |      |
|-------|-------|------|------|------|--------|------|
| 0     | 3062  | 3062 | 3062 | 3062 | 3062   |      |
| 5     | 3069  | 3036 | 2950 | 2878 | 2858   | 282  |
| 10    | 3030  | 2911 | 2765 | 2724 | 2721   |      |
| 15    | 2967  | 2733 | 2713 | 2892 | 2954   | 803  |
| 20    | 2884  | 2601 | 2841 | 3054 | 3125   |      |
| 25    | 2759  | 2484 | 2924 | 3206 | 3342   | 1357 |
| 30    | 2620  | 2460 | 2999 | 3469 | 3710   |      |
| 35    | 2445  | 2453 | 3121 | 3940 | 4183   | 2000 |
| 40    | 2244  | 2366 | 3324 | 4169 | 4271   |      |
| 45    | 2034  | 2250 | 3550 | 3916 | 3892   | 2439 |
| 50    | 1806  | 2145 | 3439 | 3603 | 3789   |      |
| 55    | 1553  | 2071 | 3025 | 3642 | 3895   | 2562 |
| 60    | 1289  | 2050 | 2833 | 3528 | 3587   |      |
| 65    | 1024  | 1912 | 2741 | 2825 | 2688   | 2282 |
| 70    | 778   | 1520 | 2170 | 2070 | 2084   |      |
| 75    | 513   | 1294 | 1483 | 1777 | 1816   | 1475 |
| 80    | 270   | 823  | 1085 | 1156 | 1127   |      |
| 85    | 79    | 360  | 389  | 348  | 339    | 411  |
| 90    | 0     | 0    | 0    | 0    | 0      |      |

### ZONAL LUMENS AND PERCENTAGES

| ZONE   | LUMENS | % LAMP | %LUMINAIRE |
|--------|--------|--------|------------|
| 0-30   | 2440   | 13.71  | 17.93      |
| 0-40   | 4441   | 24.95  | 32.63      |
| 0-60   | 9442   | 53.05  | 69.37      |
| 0-90   | 13611  | 76.47  | 100.00     |
| 40-90  | 9169   | 51.52  | 67.37      |
| 60-90  | 4168   | 23.42  | 30.63      |
| 90-180 | 0      | .00    | .00        |
| 0-180  | 13611  | 76.47  | 100.00     |

\*\* EFFICIENCY = 76.5% \*\*

LUMINANCE SUMMARY-CD. / SQ. M.

S/MH = 1.9

SC(ALONG) = 1.3, SC(ACROSS) = 1.9

| ANGLE | ALONG | 45    | ACROSS |
|-------|-------|-------|--------|
| 45    | 8184  | 14337 | 15719  |
| 55    | 7702  | 15060 | 19395  |
| 65    | 6893  | 18515 | 18163  |
| 75    | 5634  | 16320 | 20043  |
| 85    | 2563  | 12730 | 11099  |

CERTIFIED BY:

*Charles Sisson*

DATE:

JUN 17, 2008

PREPARED FOR:

PIONEER LIGHTING  
 TORONTO, ONTARIO

TESTED ACCORDING TO IES PROCEDURES. TEST DISTANCE EXCEEDS FIVE  
 TIMES THE GREATEST LUMINOUS OPENING OF LUMINAIRE.

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CANDLEPOWER DATA  
 IN 2.5 DEGREE STEPS

| ANGLE | PLANE |      |      |      |        |         | OUTPUT<br>LUMENS |
|-------|-------|------|------|------|--------|---------|------------------|
|       | ALONG | 22.5 | 45   | 67.5 | ACROSS | AVERAGE |                  |
| .0    | 3062  | 3062 | 3062 | 3062 | 3062   | 3062    |                  |
| 2.5   | 3079  | 3070 | 3038 | 3010 | 3009   | 3040    |                  |
| 5.0   | 3069  | 3036 | 2950 | 2878 | 2858   | 2957    | 282              |
| 7.5   | 3050  | 2996 | 2839 | 2775 | 2747   | 2877    |                  |
| 10.0  | 3030  | 2911 | 2765 | 2724 | 2721   | 2819    |                  |
| 12.5  | 3005  | 2824 | 2707 | 2761 | 2814   | 2800    |                  |
| 15.0  | 2967  | 2733 | 2713 | 2892 | 2954   | 2825    | 803              |
| 17.5  | 2935  | 2670 | 2771 | 2976 | 3042   | 2851    |                  |
| 20.0  | 2884  | 2601 | 2841 | 3054 | 3125   | 2875    |                  |
| 22.5  | 2830  | 2523 | 2897 | 3113 | 3236   | 2891    |                  |
| 25.0  | 2759  | 2484 | 2924 | 3206 | 3342   | 2916    | 1357             |
| 27.5  | 2697  | 2472 | 2952 | 3327 | 3500   | 2962    |                  |
| 30.0  | 2620  | 2460 | 2999 | 3469 | 3710   | 3023    |                  |
| 32.5  | 2541  | 2473 | 3040 | 3658 | 3957   | 3105    |                  |
| 35.0  | 2445  | 2453 | 3121 | 3940 | 4183   | 3207    | 2000             |
| 37.5  | 2355  | 2412 | 3209 | 4090 | 4326   | 3263    |                  |
| 40.0  | 2244  | 2366 | 3324 | 4169 | 4271   | 3279    |                  |
| 42.5  | 2140  | 2313 | 3446 | 4102 | 4079   | 3243    |                  |
| 45.0  | 2034  | 2250 | 3550 | 3916 | 3892   | 3170    | 2439             |
| 47.5  | 1917  | 2197 | 3557 | 3726 | 3773   | 3081    |                  |
| 50.0  | 1806  | 2145 | 3439 | 3603 | 3789   | 2996    |                  |
| 52.5  | 1678  | 2105 | 3234 | 3605 | 3865   | 2929    |                  |
| 55.0  | 1553  | 2071 | 3025 | 3642 | 3895   | 2865    | 2562             |
| 57.5  | 1417  | 2060 | 2890 | 3630 | 3823   | 2800    |                  |
| 60.0  | 1289  | 2050 | 2833 | 3528 | 3587   | 2712    |                  |
| 62.5  | 1175  | 2028 | 2827 | 3269 | 3178   | 2575    |                  |
| 65.0  | 1024  | 1912 | 2741 | 2825 | 2688   | 2333    | 2282             |
| 67.5  | 901   | 1728 | 2547 | 2395 | 2328   | 2071    |                  |
| 70.0  | 778   | 1520 | 2170 | 2070 | 2084   | 1798    |                  |
| 72.5  | 648   | 1383 | 1764 | 1878 | 2007   | 1588    |                  |
| 75.0  | 513   | 1294 | 1483 | 1777 | 1816   | 1430    | 1475             |
| 77.5  | 380   | 1113 | 1297 | 1496 | 1500   | 1212    |                  |
| 80.0  | 270   | 823  | 1085 | 1156 | 1127   | 941     |                  |
| 82.5  | 172   | 567  | 749  | 731  | 698    | 620     |                  |
| 85.0  | 79    | 360  | 389  | 348  | 339    | 326     | 411              |
| 87.5  | 18    | 107  | 109  | 111  | 116    | 98      |                  |
| 90.0  | 0     | 0    | 0    | 0    | 0      | 0       |                  |

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AVERAGE LUMINANCE DATA

| ANGLE | ALONG        | CD. / SQ. M. (FOOTLAMBERTS) |               |               | ACROSS        |
|-------|--------------|-----------------------------|---------------|---------------|---------------|
|       |              | 22.5                        | 45            | 67.5          |               |
| 0     | 8712 ( 2542) | 8712 ( 2542)                | 8712 ( 2542)  | 8712 ( 2542)  | 8712 ( 2542)  |
| 30    | 8608 ( 2512) | 8103 ( 2364)                | 9876 ( 2882)  | 11425 ( 3334) | 12188 ( 3557) |
| 40    | 8335 ( 2432) | 8811 ( 2571)                | 12356 ( 3606) | 15526 ( 4531) | 15861 ( 4629) |
| 45    | 8184 ( 2388) | 9066 ( 2646)                | 14337 ( 4184) | 15801 ( 4611) | 15719 ( 4587) |
| 50    | 7991 ( 2332) | 9531 ( 2782)                | 15225 ( 4443) | 15989 ( 4666) | 16771 ( 4894) |
| 55    | 7702 ( 2248) | 10289 ( 3003)               | 15060 ( 4395) | 18120 ( 5288) | 19395 ( 5660) |
| 60    | 7334 ( 2140) | 11703 ( 3415)               | 16138 ( 4710) | 20128 ( 5874) | 20413 ( 5957) |
| 65    | 6893 ( 2011) | 12881 ( 3759)               | 18515 ( 5403) | 19077 ( 5567) | 18163 ( 5301) |
| 70    | 6468 ( 1887) | 12690 ( 3703)               | 18100 ( 5282) | 17255 ( 5036) | 17333 ( 5058) |
| 75    | 5634 ( 1644) | 14276 ( 4166)               | 16320 ( 4763) | 19604 ( 5721) | 20043 ( 5849) |
| 80    | 4421 ( 1290) | 13535 ( 3950)               | 17839 ( 5206) | 18975 ( 5538) | 18460 ( 5387) |
| 85    | 2563 ( 748)  | 11802 ( 3444)               | 12730 ( 3715) | 11389 ( 3324) | 11099 ( 3239) |

DETERMINED IN ACCORDANCE WITH CURRENT IES PUBLISHED PROCEDURES

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COEFFICIENTS OF UTILIZATION

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

| CC<br>WALL | 80  |     |     |     | 70  |     |     |     | 50  |     |     |     | 30  |     |     |     | 10  |     |     |     | 0   |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 0   |
| RCR        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0          | .91 | .91 | .91 | .91 | .89 | .89 | .89 | .89 | .85 | .85 | .85 | .81 | .81 | .81 | .78 | .78 | .78 | .78 | .78 | .78 | .76 |
| 1          | .82 | .78 | .75 | .72 | .80 | .77 | .74 | .71 | .73 | .71 | .68 | .70 | .68 | .66 | .68 | .66 | .64 | .68 | .66 | .64 | .63 |
| 2          | .74 | .67 | .62 | .57 | .72 | .66 | .61 | .56 | .63 | .59 | .55 | .61 | .57 | .54 | .58 | .55 | .52 | .58 | .55 | .52 | .51 |
| 3          | .67 | .58 | .52 | .46 | .65 | .57 | .51 | .46 | .55 | .50 | .45 | .53 | .48 | .44 | .51 | .47 | .44 | .51 | .47 | .44 | .42 |
| 4          | .61 | .51 | .44 | .38 | .59 | .50 | .43 | .38 | .48 | .42 | .38 | .46 | .41 | .37 | .44 | .40 | .36 | .44 | .40 | .36 | .35 |
| 5          | .55 | .44 | .37 | .31 | .53 | .43 | .36 | .31 | .42 | .35 | .31 | .40 | .35 | .30 | .39 | .34 | .30 | .39 | .34 | .30 | .28 |
| 6          | .50 | .39 | .32 | .26 | .49 | .38 | .31 | .26 | .37 | .31 | .26 | .35 | .30 | .26 | .34 | .29 | .25 | .34 | .29 | .25 | .24 |
| 7          | .46 | .35 | .27 | .23 | .45 | .34 | .27 | .22 | .33 | .26 | .22 | .31 | .26 | .22 | .31 | .25 | .21 | .31 | .25 | .21 | .20 |
| 8          | .42 | .31 | .24 | .19 | .41 | .30 | .23 | .19 | .29 | .23 | .19 | .28 | .22 | .18 | .27 | .22 | .18 | .27 | .22 | .18 | .17 |
| 9          | .39 | .27 | .20 | .16 | .37 | .27 | .20 | .16 | .26 | .20 | .16 | .25 | .19 | .15 | .24 | .19 | .15 | .24 | .19 | .15 | .14 |
| 10         | .36 | .25 | .18 | .14 | .35 | .24 | .18 | .14 | .23 | .18 | .14 | .23 | .17 | .13 | .22 | .17 | .13 | .22 | .17 | .13 | .12 |

DETERMINED IN ACCORDANCE WITH CURRENT IES PUBLISHED PROCEDURES  
 LUMINAIRE INPUT WATTS = 219.0  
 LABORATORY RESULT MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.  
 BALLAST FACTORS HAVE NOT BEEN APPLIED.