



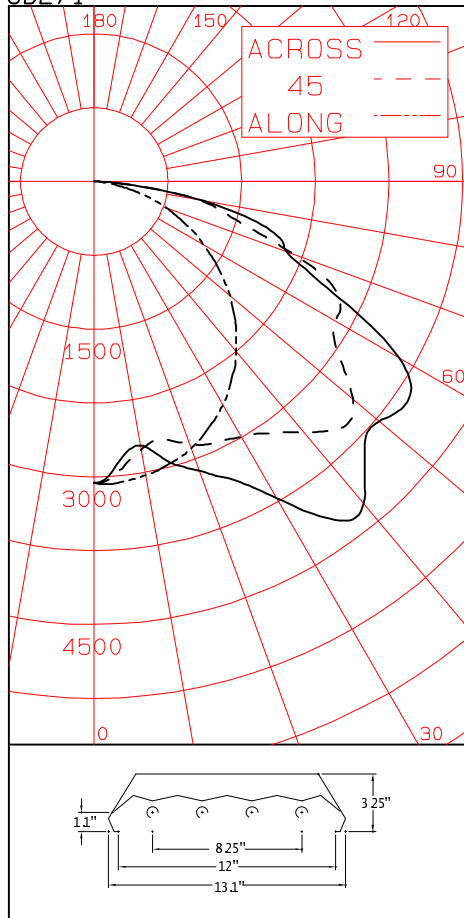
LIGHTING SCIENCES CANADA LTD.

440 Phillip St., Unit 19, Waterloo, Ontario, Canada N2L 5R9
 Tel: (519) 746-3140 Fax: (519) 746-3156 lsc@lightingsciences.ca

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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 ONE ADVANCE 120-277V 1 TO 4-LAMP ELECTRONIC BALLAST NO. ICN-4S54-90C-2LS-G

CANDLEPOWER DATA
 IN 2.5 DEGREE STEPS

| ANGLE | PLANE | | | | | | OUTPUT 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 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.