

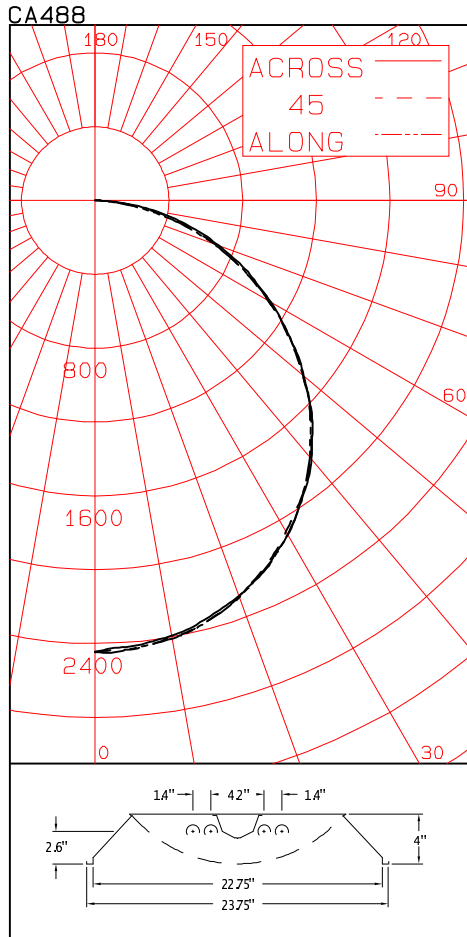


LIGHTING SCIENCES CANADA LTD.

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 A488
 COMPUTED BY LSC PROGRAM **TEST-LITE**

PIONEER 2'x4' RECESSED TROFFER LUMINAIRE CAT. NO. TBRL 24-448-EL
 WITH WHITE PAINTED INTERIOR AND OPAL LENS
 FOUR F32T8/TL841 32W T8 FLUORESCENT LAMPS. LUMEN RATING = 2950 LMS.
 ONE GE PROLINE 120V 3 OR 4-LAMP ELECTRONIC BALLAST NO. GE-432-120-N



CANDLEPOWER SUMMARY

OUTPUT LUMENS

ANGLE	ALONG	22.5	45	67.5	ACROSS	
0	2445	2445	2445	2445	2445	
5	2434	2444	2438	2419	2423	235
10	2409	2408	2400	2395	2394	
15	2359	2360	2356	2345	2343	663
20	2288	2288	2281	2272	2280	
25	2201	2186	2186	2186	2195	1007
30	2088	2076	2073	2085	2094	
35	1958	1951	1957	1960	1965	1223
40	1813	1812	1818	1824	1826	
45	1658	1643	1649	1658	1666	1272
50	1471	1462	1470	1469	1479	
55	1291	1280	1278	1280	1286	1145
60	1088	1074	1083	1091	1103	
65	888	874	882	900	912	880
70	677	680	691	709	712	
75	471	468	497	513	522	523
80	274	280	310	323	336	
85	100	110	123	143	145	144
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LAMP	%LUMINAIRE
0-30	1905	16.15	26.86
0-40	3128	26.51	44.11
0-60	5546	47.00	78.19
0-90	7093	60.11	100.00
40-90	3964	33.60	55.89
60-90	1546	13.11	21.81
90-180	0	.00	.00
0-180	7093	60.11	100.00

** EFFICIENCY = 60.1% **

LUMINANCE SUMMARY-CD. / SQ. M.

PAINT REFLECTANCE = .81 S/MH = 1.3
 SC = 1.3

ANGLE	ALONG	45	ACROSS
45	3346	3340	3374
55	3211	3190	3211
65	2998	2987	3092
75	2597	2743	2887
85	1643	2011	2383

CERTIFIED BY:

Charles Sison

DATE:
 NOV 30, 2004

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 LUMENS
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	
.0	2445	2445	2445	2445	2445	2445	
2.5	2450	2458	2438	2433	2427	2442	
5.0	2434	2444	2438	2419	2423	2432	235
7.5	2423	2427	2423	2408	2408	2418	
10.0	2409	2408	2400	2395	2394	2401	
12.5	2390	2400	2387	2379	2374	2387	
15.0	2359	2360	2356	2345	2343	2353	663
17.5	2327	2322	2327	2311	2312	2320	
20.0	2288	2288	2281	2272	2280	2281	
22.5	2241	2241	2235	2240	2238	2239	
25.0	2201	2186	2186	2186	2195	2189	1007
27.5	2145	2133	2134	2132	2142	2136	
30.0	2088	2076	2073	2085	2094	2081	
32.5	2028	2014	2013	2026	2029	2020	
35.0	1958	1951	1957	1960	1965	1957	1223
37.5	1886	1886	1889	1911	1901	1895	
40.0	1813	1812	1818	1824	1826	1818	
42.5	1730	1724	1738	1748	1743	1736	
45.0	1658	1643	1649	1658	1666	1653	1272
47.5	1571	1565	1570	1570	1569	1569	
50.0	1471	1462	1470	1469	1479	1469	
52.5	1382	1375	1379	1385	1391	1381	
55.0	1291	1280	1278	1280	1286	1281	1145
57.5	1193	1183	1187	1193	1196	1189	
60.0	1088	1074	1083	1091	1103	1086	
62.5	992	988	981	995	1000	990	
65.0	888	874	882	900	912	889	880
67.5	783	775	791	812	813	794	
70.0	677	680	691	709	712	694	
72.5	577	571	592	607	622	592	
75.0	471	468	497	513	522	494	523
77.5	373	373	405	429	428	402	
80.0	274	280	310	323	336	304	
82.5	175	194	220	228	241	213	
85.0	100	110	123	143	145	124	144
87.5	33	34	38	44	54	40	
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	3489(1018)	3489(1018)	3489(1018)	3489(1018)	3489(1018)
30	3440(1004)	3429(1000)	3423(999)	3443(1005)	3449(1006)
40	3376(985)	3384(987)	3388(989)	3405(994)	3401(992)
45	3346(976)	3319(968)	3340(975)	3355(979)	3374(984)
50	3265(953)	3257(950)	3264(952)	3269(954)	3283(958)
55	3211(937)	3189(930)	3190(931)	3192(931)	3211(937)
60	3103(905)	3074(897)	3092(902)	3122(911)	3148(919)
65	2998(875)	2954(862)	2987(872)	3047(889)	3092(902)
70	2826(824)	2846(830)	2890(843)	2964(865)	2970(867)
75	2597(758)	2590(756)	2743(800)	2838(828)	2887(842)
80	2252(657)	2307(673)	2552(745)	2659(776)	2764(806)
85	1643(479)	1800(525)	2011(587)	2344(684)	2383(695)

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	.72	.72	.72	.72	.70	.70	.70	.70	.67	.67	.67	.64	.64	.64	.61	.61	.61	.60			
1	.66	.63	.61	.58	.64	.62	.59	.57	.59	.57	.56	.57	.55	.54	.55	.53	.52	.51			
2	.60	.55	.51	.48	.59	.54	.51	.48	.52	.49	.46	.50	.48	.45	.48	.46	.44	.43			
3	.55	.49	.44	.40	.54	.48	.44	.40	.46	.43	.39	.45	.41	.39	.43	.40	.38	.37			
4	.50	.43	.38	.34	.49	.43	.38	.34	.41	.37	.34	.40	.36	.33	.38	.35	.33	.32			
5	.46	.38	.33	.29	.45	.38	.33	.29	.36	.32	.29	.35	.31	.28	.34	.31	.28	.27			
6	.42	.34	.29	.25	.41	.34	.29	.25	.33	.28	.25	.32	.28	.25	.31	.27	.24	.23			
7	.39	.31	.26	.22	.38	.30	.25	.22	.29	.25	.22	.28	.24	.21	.28	.24	.21	.20			
8	.36	.28	.23	.19	.35	.27	.22	.19	.26	.22	.19	.26	.22	.19	.25	.21	.18	.17			
9	.33	.25	.20	.16	.32	.25	.20	.16	.24	.19	.16	.23	.19	.16	.22	.19	.16	.15			
10	.31	.23	.18	.14	.30	.22	.18	.14	.22	.17	.14	.21	.17	.14	.21	.17	.14	.13			

DETERMINED IN ACCORDANCE WITH CURRENT IES PUBLISHED PROCEDURES
 LUMINAIRE INPUT WATTS = 101.9
 LABORATORY RESULT MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST FACTORS HAVE NOT BEEN APPLIED.