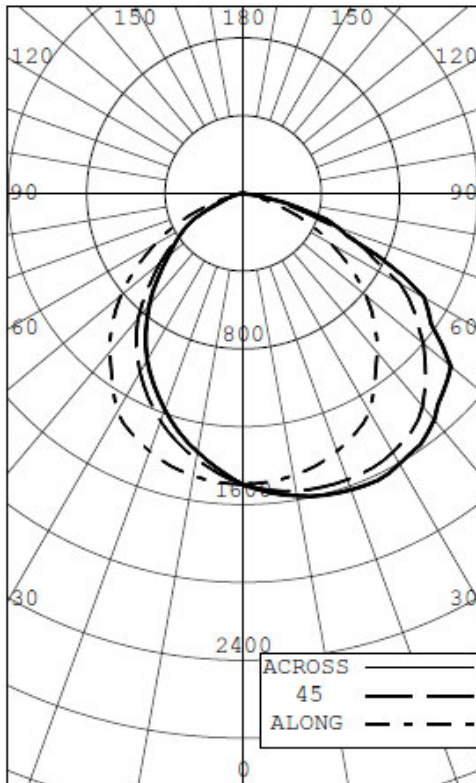




INDEPENDENT TEST LABORATORY REPORT No. 29296

PACE ILLUMINATION INC - INDOOR LUMINAIRE, CAT# ASFL-1650-L-48 X LED-120
WITH WHITE INTERIOR AND CLEAR FLAT GLASS LENS
FORTY EIGHT LEDS. LUMINAIRE OUTPUT = 3994 LMS
LUMINAIRE OPERATING AT 120 VAC AND 63.9 WATTS



ANGLE	INTENSITY (CANDLEPOWER) SUMMARY				OUTPUT LUMENS
	ALONG	BEAM SIDE		ACROSS	
0	1498	1498	1498	1498	1498
5	1490	1517	1531	1540	1545
10	1474	1524	1554	1572	1580
15	1448	1517	1564	1594	1607
20	1409	1499	1566	1605	1623
25	1360	1471	1559	1610	1629
30	1293	1429	1535	1591	1603
35	1173	1341	1496	1553	1578
40	1065	1244	1425	1502	1518
45	950	1153	1318	1420	1444
50	820	1030	1201	1351	1386
55	679	880	1068	1183	1172
60	522	725	927	1020	1068
65	379	567	691	779	763
70	221	382	482	482	517
75	98	205	247	308	317
80	21	64	102	96	104
85	1	3	2	3	2
90	0	0	0	0	0

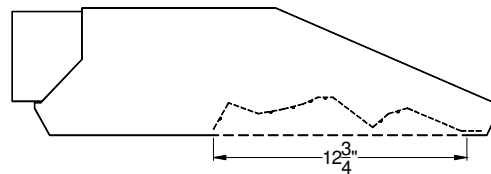
BOTH SIDES
ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	1175	29.43
0-40	1930	48.34
0-60	3369	84.37
0-90	3994	100.00
40-90	2063	51.66
60-90	624	15.63
90-180	0	0.00
0-180	3994	100.00

EFFICACY (LUMENS PER WATT): 62.5

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 13.000 INS
WIDTH: 12.750 INS



LUMINANCE SUMMARY - CD./SQ.M.
BEAM SIDE

ANGLE	ALONG	45	ACROSS
45	12563	17494	19175
55	11070	17478	19184
65	8386	15350	16941
75	3540	8927	11490
85	107	236	183

CERTIFIED BY:

Ryder Tunney

DATE:

JUL 26, 2011

PREPARED FOR:

PACE ILLUMINATION INC
OAK LAWN, IL

TESTED IN ACCORDANCE WITH IES PROCEDURES.

LIGHTING SCIENCES, INC.
 7826 E. EVANS RD.
 SCOTTSDALE, AZ, USA 85260

INDEPENDENT TEST LABORATORY REPORT No. 29296

PACE ILLUMINATION INC - INDOOR LUMINAIRE, CAT# ASFL-1650-L-48 X LED-120
 WITH WHITE INTERIOR AND CLEAR FLAT GLASS LENS
 FORTY EIGHT LEDS. LUMINAIRE OUTPUT = 3994 LMS
 LUMINAIRE OPERATING AT 120 VAC AND 63.9 WATTS

BEAM SIDE
 INTENSITY (CANDLEPOWER) DATA
 IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	67.5	45	22.5	ACROSS	AVERAGE	
0.0	1498	1498	1498	1498	1498	1498	
2.5	1494	1510	1515	1519	1522	1513	
5.0	1490	1517	1531	1540	1545	1526	74
7.5	1483	1522	1544	1558	1565	1537	
10.0	1474	1524	1554	1572	1580	1544	
12.5	1462	1523	1561	1584	1595	1549	
15.0	1448	1517	1564	1594	1607	1551	219
17.5	1430	1509	1565	1600	1615	1549	
20.0	1409	1499	1566	1605	1623	1546	
22.5	1386	1486	1563	1609	1626	1541	
25.0	1360	1471	1559	1610	1629	1533	353
27.5	1331	1452	1550	1604	1621	1520	
30.0	1293	1429	1535	1591	1603	1501	
32.5	1234	1394	1517	1571	1588	1473	
35.0	1173	1341	1496	1553	1578	1442	450
37.5	1117	1294	1469	1534	1549	1407	
40.0	1065	1244	1425	1502	1518	1365	
42.5	1010	1199	1372	1467	1474	1320	
45.0	950	1153	1318	1420	1444	1272	490
47.5	886	1098	1259	1386	1416	1223	
50.0	820	1030	1201	1351	1386	1171	
52.5	744	961	1130	1310	1281	1103	
55.0	679	880	1068	1183	1172	1014	455
57.5	596	813	1004	1078	1121	939	
60.0	522	725	927	1020	1068	867	
62.5	453	647	780	946	927	766	
65.0	379	567	691	779	763	652	320
67.5	298	478	608	606	580	533	
70.0	221	382	482	482	517	429	
72.5	157	302	352	412	451	342	
75.0	98	205	247	308	317	242	131
77.5	50	130	180	202	225	162	
80.0	21	64	102	96	104	81	
82.5	5	21	32	40	67	32	
85.0	1	3	2	3	2	2	10
87.5	0	0	0	0	0	0	
90.0	0	0	0	0	0	0	

LIGHTING SCIENCES, INC.
 7826 E. EVANS RD.
 SCOTTSDALE, AZ, USA 85260

INDEPENDENT TEST LABORATORY REPORT No. 29296

PACE ILLUMINATION INC - INDOOR LUMINAIRE, CAT# ASFL-1650-L-48 X LED-120
 WITH WHITE INTERIOR AND CLEAR FLAT GLASS LENS
 FORTY EIGHT LEDS. LUMINAIRE OUTPUT = 3994 LMS
 LUMINAIRE OPERATING AT 120 VAC AND 63.9 WATTS

BEAM SIDE
 AVERAGE LUMINANCE DATA

CD./SQ.M (FOOTLAMBERTS)

ANGLE	ALONG	67.5	45	22.5	ACROSS
0	14006 (4088)	14006 (4088)	14006 (4088)	14006 (4088)	14006 (4088)
30	13961 (4074)	15468 (4514)	16614 (4849)	17224 (5027)	17309 (5051)
40	13000 (3794)	15226 (4443)	17410 (5081)	18380 (5364)	18524 (5406)
45	12563 (3666)	15266 (4455)	17494 (5105)	18829 (5495)	19175 (5596)
50	11929 (3481)	15045 (4391)	17468 (5098)	19707 (5751)	20166 (5885)
55	11070 (3231)	14374 (4195)	17478 (5101)	19346 (5646)	19184 (5599)
60	9762 (2849)	13612 (3972)	17345 (5062)	19120 (5580)	19969 (5828)
65	8386 (2447)	12546 (3661)	15350 (4480)	17287 (5045)	16941 (4944)
70	6042 (1763)	10484 (3060)	13203 (3853)	13212 (3856)	14135 (4125)
75	3540 (1033)	7438 (2171)	8927 (2605)	11159 (3257)	11490 (3353)
80	1130 (330)	3481 (1016)	5497 (1604)	5193 (1515)	5584 (1629)
85	107 (31)	301 (87)	236 (69)	269 (78)	183 (53)

LUMINOUS LENGTH: 13.000 INS
 WIDTH: 12.750 INS

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INDEPENDENT TEST LABORATORY REPORT No. 29296

PACE ILLUMINATION INC - INDOOR LUMINAIRE, CAT# ASFL-1650-L-48 X LED-120
 WITH WHITE INTERIOR AND CLEAR FLAT GLASS LENS
 FORTY EIGHT LEDS. LUMINAIRE OUTPUT = 3994 LMS
 LUMINAIRE OPERATING AT 120 VAC AND 63.9 WATTS

OPPOSITE SIDE TO BEAM
 INTENSITY(CANDLEPOWER) DATA
 IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	112.5	135	157.5	ACROSS	AVERAGE	
0.0	1498	1498	1498	1498	1498	1498	
2.5	1494	1488	1473	1464	1462	1476	
5.0	1490	1472	1447	1431	1426	1452	69
7.5	1483	1453	1418	1396	1389	1426	
10.0	1474	1432	1388	1361	1351	1398	
12.5	1462	1410	1356	1324	1313	1369	
15.0	1448	1383	1321	1284	1272	1337	188
17.5	1430	1355	1284	1242	1228	1302	
20.0	1409	1321	1243	1197	1182	1264	
22.5	1386	1285	1201	1150	1133	1224	
25.0	1360	1247	1156	1102	1087	1182	271
27.5	1331	1205	1109	1055	1039	1138	
30.0	1293	1161	1059	1005	987	1091	
32.5	1234	1108	1009	950	931	1037	
35.0	1173	1038	956	893	873	978	305
37.5	1117	968	901	835	813	917	
40.0	1065	903	840	774	752	856	
42.5	1010	844	768	713	689	794	
45.0	950	783	692	650	622	728	280
47.5	886	719	623	584	560	662	
50.0	820	652	557	521	503	598	
52.5	744	586	494	469	456	537	
55.0	679	519	434	419	415	480	214
57.5	596	454	376	375	375	422	
60.0	522	378	320	331	336	364	
62.5	453	316	272	281	289	310	
65.0	379	257	220	223	209	249	123
67.5	298	201	180	157	129	188	
70.0	221	142	139	102	108	137	
72.5	157	101	84	81	85	96	
75.0	98	64	54	60	63	64	37
77.5	50	36	36	40	43	40	
80.0	21	16	21	24	26	21	
82.5	5	6	10	12	13	9	
85.0	1	2	3	4	4	3	3
87.5	0	0	0	0	0	0	
90.0	0	0	0	0	0	0	

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 WITH WHITE INTERIOR AND CLEAR FLAT GLASS LENS
 FORTY EIGHT LEDS. LUMINAIRE OUTPUT = 3994 LMS
 LUMINAIRE OPERATING AT 120 VAC AND 63.9 WATTS

OPPOSITE SIDE TO BEAM
 AVERAGE LUMINANCE DATA

CD./SQ.M (FOOTLAMBERTS)

ANGLE	ALONG	112.5	135	157.5	ACROSS
0	14006 (4088)	14006 (4088)	14006 (4088)	14006 (4088)	14006 (4088)
30	13961 (4074)	12571 (3669)	11463 (3345)	10872 (3173)	10657 (3110)
40	13000 (3794)	11048 (3224)	10267 (2996)	9477 (2766)	9175 (2677)
45	12563 (3666)	10368 (3026)	9181 (2679)	8616 (2514)	8262 (2411)
50	11929 (3481)	9519 (2778)	8109 (2366)	7604 (2219)	7319 (2136)
55	11070 (3231)	8481 (2475)	7096 (2071)	6846 (1998)	6796 (1983)
60	9762 (2849)	7101 (2072)	5983 (1746)	6197 (1808)	6274 (1831)
65	8386 (2447)	5692 (1661)	4891 (1427)	4954 (1446)	4640 (1354)
70	6042 (1763)	3890 (1135)	3819 (1114)	2797 (816)	2950 (861)
75	3540 (1033)	2332 (680)	1938 (565)	2157 (629)	2266 (661)
80	1130 (330)	837 (244)	1151 (336)	1315 (384)	1389 (405)
85	107 (31)	183 (53)	333 (97)	430 (125)	441 (128)

LUMINOUS LENGTH: 13.000 INS
 WIDTH: 12.750 INS

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 WITH WHITE INTERIOR AND CLEAR FLAT GLASS LENS
 FORTY EIGHT LEDS. LUMINAIRE OUTPUT = 3994 LMS
 LUMINAIRE OPERATING AT 120 VAC AND 63.9 WATTS

COEFFICIENTS OF UTILIZATION

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50				30				10				0	
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																										
0	1.221	1.221	1.221	1.22	1.191	1.191	1.191	1.19	1.161	1.161	1.161	1.16	1.111	1.111	1.11	1.061	1.061	1.06	1.021	1.021	1.02	1.00				1.00
1	1.131	1.091	1.051	1.01	1.111	1.071	1.031	1.00	1.081	1.051	1.010	1.08	1.000	0.980	0.95	0.960	0.940	0.92	0.930	0.910	0.90	0.88				0.88
2	1.040	0.970	0.910	0.85	1.020	0.950	0.900	0.85	1.000	0.930	0.880	0.84	0.900	0.860	0.82	0.870	0.830	0.80	0.840	0.810	0.78	0.76				0.76
3	0.960	0.860	0.790	0.73	0.940	0.850	0.780	0.72	0.920	0.830	0.770	0.71	0.800	0.750	0.70	0.780	0.730	0.69	0.750	0.710	0.68	0.66				0.66
4	0.890	0.770	0.690	0.63	0.870	0.760	0.680	0.62	0.850	0.750	0.680	0.62	0.730	0.660	0.61	0.700	0.650	0.60	0.680	0.640	0.60	0.58				0.58
5	0.820	0.700	0.610	0.54	0.800	0.680	0.600	0.54	0.780	0.670	0.590	0.54	0.650	0.580	0.53	0.630	0.570	0.53	0.610	0.560	0.52	0.50				0.50
6	0.760	0.620	0.540	0.47	0.740	0.610	0.530	0.47	0.720	0.600	0.520	0.47	0.590	0.520	0.46	0.570	0.510	0.46	0.550	0.500	0.45	0.44				0.44
7	0.690	0.560	0.470	0.41	0.680	0.550	0.470	0.41	0.660	0.540	0.460	0.40	0.530	0.450	0.40	0.510	0.450	0.40	0.500	0.440	0.40	0.38				0.38
8	0.640	0.500	0.420	0.36	0.630	0.500	0.420	0.36	0.610	0.490	0.410	0.36	0.480	0.410	0.36	0.470	0.400	0.35	0.450	0.400	0.35	0.33				0.33
9	0.600	0.460	0.370	0.32	0.580	0.450	0.370	0.32	0.570	0.450	0.370	0.32	0.430	0.360	0.31	0.420	0.360	0.31	0.410	0.350	0.31	0.29				0.29
10	0.550	0.420	0.330	0.28	0.540	0.410	0.330	0.28	0.530	0.410	0.330	0.28	0.400	0.330	0.28	0.390	0.320	0.28	0.380	0.320	0.27	0.26				0.26

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
 BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
 LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
 THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

LUMINAIRE INPUT WATTS 63.9

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
 LUMINOUS OPENING OF LUMINAIRE.