

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P837866

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-4LO-30-120-EDD**

Issue Date: 5/21/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P837866
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-2-INS-ASY2R-LD4-4LO-30-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

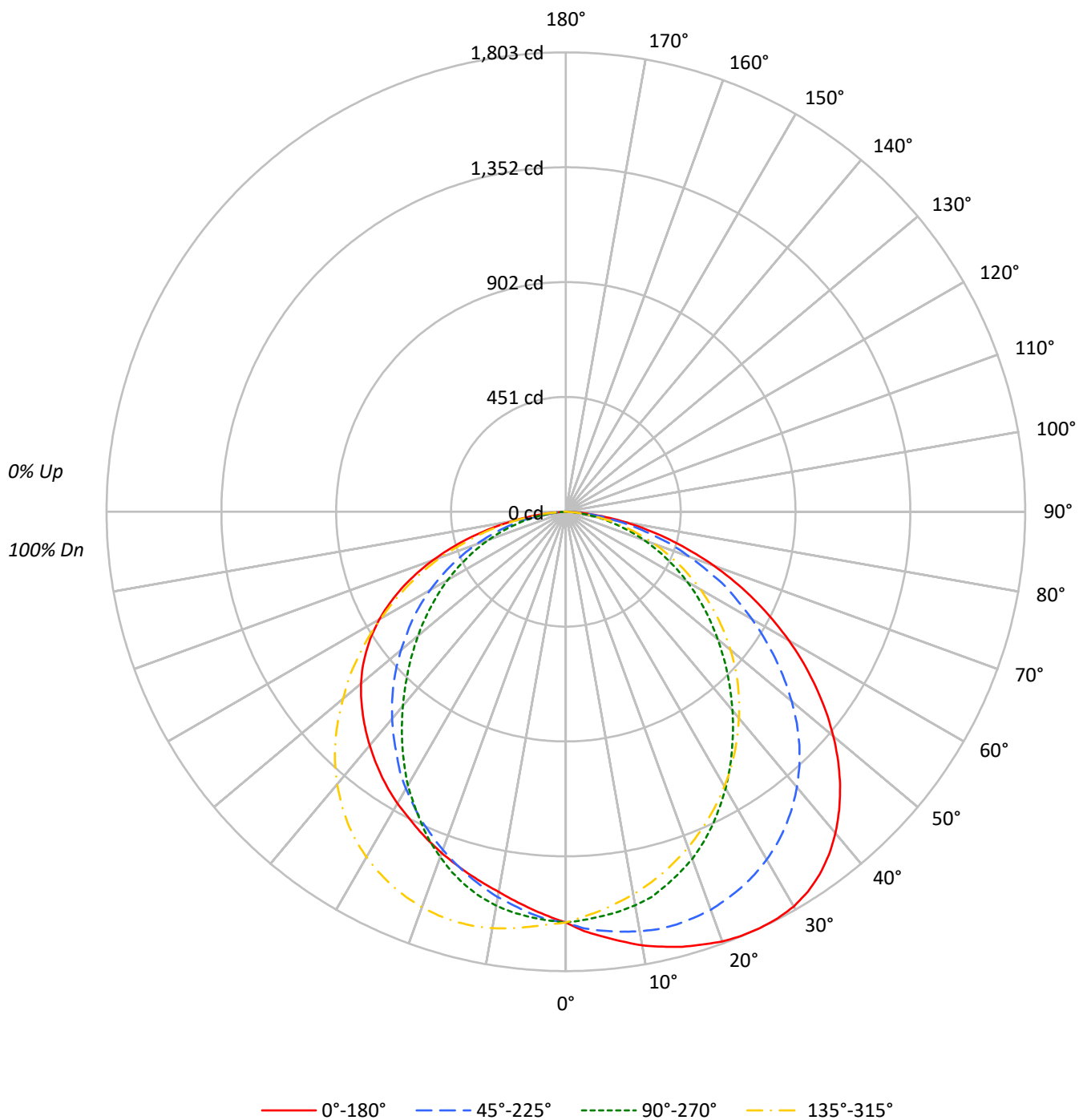
Lumens per Lamp: N/A
Luminaire Lumens: 4729.5 lumens
Efficiency: N/A
Efficacy: 101.1 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	109	104	100	96	106	102	98	94	97	94	91		94	91	89		90
2	99	91	84	78	96	89	82	77	85	80	75		82	77	73		79
3	90	79	71	65	88	78	70	64	75	68	63		72	66	62		69
4	82	70	61	55	80	69	61	54	66	59	53		64	58	53		62
5	76	63	54	47	74	62	53	47	59	52	46		57	51	46		56
6	70	56	47	41	68	55	47	41	54	46	40		52	45	40		50
7	65	51	42	36	63	50	42	36	49	41	36		47	40	35		46
8	60	47	38	32	59	46	38	32	45	37	32		43	37	32		42
9	56	43	34	29	55	42	34	29	41	34	29		40	33	28		39
10	53	39	31	26	51	39	31	26	38	31	26		37	30	26		36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	4338	4338	4338	4338
5°	4521	4307	4226	4314
10°	4722	4285	4140	4291
15°	4925	4230	4099	4231
20°	5140	4153	4081	4130
25°	5353	4037	4081	3996
30°	5559	3897	4108	3853
35°	5707	3737	4149	3677
40°	5783	3576	4207	3495
45°	5794	3413	4289	3327
50°	5740	3257	4394	3170
55°	5621	3112	4492	3026
60°	5444	2961	4552	2884
65°	5200	2787	4528	2722
70°	4858	2583	4367	2536
75°	4371	2303	4007	2292
80°	3707	1929	3367	1957
85°	2578	1278	2137	1312

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.0	3.2
10°-20°	443.2	9.4
20°-30°	679.2	14.4
30°-40°	825.9	17.5
40°-50°	858.6	18.2
50°-60°	775.5	16.4
60°-70°	589.6	12.5
70°-80°	328.7	7.0
80°-90°	75.7	1.6
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1275.5	27.0
0°-40°	2101.4	44.4
0°-60°	3735.5	79.0
0°-90°	4729.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4729.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1612	1612	1612	1612	1612	
5°	1674	1594	1564	1597	1674	161
15°	1768	1518	1471	1519	1768	501
25°	1803	1360	1374	1346	1803	833
35°	1737	1138	1263	1119	1737	1085
45°	1522	897	1127	874	1522	1172
55°	1198	663	957	645	1198	1069
65°	817	438	711	428	817	807
75°	420	222	385	220	420	447
85°	84	41	69	42	84	105
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0
2.5°	1647.7	1623.7	1624.1	1645.1	1628.9	1636.8	1614.3	1622.9	1620.3	1622.2	1603.8
5°	1673.7	1647.7	1647.4	1665.4	1647.4	1650.8	1622.2	1627.8	1619.5	1614.3	1594.3
7.5°	1701.1	1675.2	1672.6	1688.4	1664.7	1662.0	1630.4	1630.4	1615.4	1602.2	1583.4
10°	1728.2	1701.5	1698.1	1710.2	1680.8	1672.2	1633.8	1627.8	1607.9	1588.3	1568.0
12.5°	1748.5	1721.4	1718.8	1726.3	1693.2	1677.5	1633.8	1622.2	1592.8	1565.4	1549.6
15°	1767.7	1739.9	1732.7	1736.5	1698.5	1677.5	1628.6	1610.5	1572.9	1536.8	1518.4
17.5°	1781.2	1754.5	1747.4	1747.0	1701.1	1671.1	1617.3	1592.5	1547.3	1503.7	1485.3
20°	1794.8	1768.1	1759.0	1752.3	1700.4	1662.4	1600.7	1567.3	1514.6	1465.7	1450.3
22.5°	1801.5	1774.1	1764.3	1754.2	1695.5	1646.6	1580.4	1537.9	1477.8	1419.5	1406.7
25°	1802.7	1774.5	1763.9	1749.3	1685.7	1627.8	1554.1	1502.6	1435.3	1370.6	1359.7
27.5°	1799.7	1768.8	1758.3	1740.6	1671.1	1604.9	1522.9	1462.4	1390.2	1318.7	1307.1
30°	1789.1	1757.9	1747.8	1724.8	1650.4	1576.7	1488.7	1417.6	1340.2	1264.2	1254.0
32.5°	1768.1	1737.6	1729.3	1706.4	1627.8	1544.0	1448.8	1369.5	1284.9	1212.3	1197.3
35°	1737.2	1706.8	1701.5	1677.5	1596.2	1504.9	1405.2	1316.8	1226.2	1152.1	1137.5
37.5°	1697.0	1671.4	1663.5	1639.8	1559.0	1460.5	1355.2	1259.7	1166.4	1086.7	1077.7
40°	1646.2	1622.2	1616.2	1595.1	1515.8	1411.2	1301.0	1200.7	1104.8	1030.7	1017.9
42.5°	1588.3	1565.8	1562.4	1540.6	1462.4	1356.7	1242.4	1139.4	1040.5	969.0	956.2
45°	1522.5	1500.7	1500.0	1479.3	1404.1	1296.2	1180.7	1077.3	977.7	903.6	896.8
47.5°	1450.0	1430.4	1430.4	1411.2	1339.0	1229.6	1117.2	1012.6	914.5	849.1	837.0
50°	1371.0	1352.6	1346.9	1337.5	1267.2	1157.0	1050.2	949.5	852.1	789.7	778.0
52.5°	1286.8	1271.0	1274.7	1257.4	1189.4	1081.5	982.6	878.4	789.3	732.5	720.8
55°	1198.0	1175.5	1178.8	1172.4	1108.1	1003.6	906.6	819.7	727.6	674.2	663.3
57.5°	1105.9	1076.6	1088.6	1084.8	1021.7	923.9	837.0	753.2	666.3	617.1	606.5
60°	1011.5	983.3	995.7	992.3	932.9	844.2	765.2	687.4	605.4	560.7	550.1
62.5°	914.5	888.5	899.8	897.2	842.7	762.6	693.8	622.3	544.1	503.9	494.1
65°	816.7	791.9	802.1	800.2	749.8	688.9	620.4	555.0	482.4	447.5	437.7
67.5°	716.7	693.8	703.2	703.2	656.9	598.6	546.7	487.0	421.9	391.8	382.8
70°	617.4	596.0	604.3	603.5	564.4	517.0	472.3	418.9	360.6	335.8	328.3
72.5°	517.4	498.6	506.1	505.4	472.7	442.2	397.8	351.6	300.8	280.9	274.1
75°	420.4	402.7	409.9	409.1	382.4	353.8	324.1	285.8	242.2	228.2	221.5
77.5°	327.9	309.8	315.9	315.9	296.3	275.6	251.9	222.2	191.4	176.4	171.5
80°	239.2	230.5	227.5	227.9	214.7	201.2	189.1	160.6	138.0	127.8	124.5
82.5°	157.2	150.0	147.0	147.8	140.3	132.0	124.5	104.5	89.5	83.5	81.6
85°	83.5	78.2	75.6	77.5	76.0	71.4	67.7	54.1	44.7	42.5	41.4
87.5°	26.3	22.9	21.1	27.8	23.7	21.1	20.3	16.2	12.4	12.4	12.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0
2.5°	1609.8	1609.8	1595.1	1591.7	1590.2	1592.1	1577.4	1574.8	1595.9	1588.7	1572.5
5°	1597.0	1596.2	1575.5	1571.8	1571.8	1569.5	1553.0	1549.2	1570.3	1564.3	1546.6
7.5°	1581.2	1578.9	1554.5	1551.9	1548.1	1546.6	1528.2	1525.5	1543.6	1539.8	1523.3
10°	1562.0	1559.8	1530.8	1528.9	1524.8	1521.8	1504.5	1502.6	1521.0	1515.0	1501.8
12.5°	1536.8	1532.7	1503.0	1501.1	1497.7	1496.6	1479.7	1478.9	1499.2	1493.2	1479.3
15°	1503.7	1500.3	1467.3	1468.0	1468.4	1468.4	1454.8	1454.1	1474.0	1471.4	1456.3
17.5°	1467.3	1462.7	1431.2	1433.4	1436.0	1439.1	1428.5	1430.4	1451.5	1448.1	1434.5
20°	1425.9	1421.4	1390.5	1396.9	1402.6	1408.6	1401.8	1407.1	1426.6	1425.1	1415.0
22.5°	1379.6	1375.1	1346.5	1356.3	1365.7	1377.0	1374.0	1380.0	1400.7	1400.3	1391.3
25°	1323.2	1324.4	1299.2	1311.2	1327.0	1342.8	1343.9	1353.7	1376.6	1374.4	1366.1
27.5°	1270.6	1272.1	1245.4	1265.7	1286.8	1307.1	1312.0	1325.5	1348.8	1346.9	1339.8
30°	1215.3	1217.2	1191.3	1219.1	1244.6	1269.5	1280.0	1298.4	1322.1	1322.1	1314.6
32.5°	1157.8	1161.2	1134.1	1171.3	1201.0	1230.0	1248.4	1267.6	1294.7	1293.9	1287.5
35°	1098.7	1102.5	1077.7	1125.1	1154.8	1190.1	1213.1	1238.6	1262.7	1263.1	1258.2
37.5°	1038.6	1043.1	1020.5	1072.4	1106.3	1148.0	1177.3	1202.9	1229.6	1231.1	1226.6
40°	978.8	983.7	964.1	1014.1	1057.0	1103.6	1137.5	1167.6	1196.9	1197.6	1194.6
42.5°	919.0	924.3	909.6	958.5	1007.0	1057.0	1096.9	1131.1	1161.2	1163.0	1159.7
45°	860.7	865.2	854.7	908.1	954.7	1009.3	1055.1	1093.9	1124.3	1126.9	1125.8
47.5°	802.8	807.0	797.6	846.4	900.2	958.1	1011.1	1054.0	1086.3	1089.3	1088.6
50°	746.0	749.4	739.3	790.4	843.8	905.5	960.7	1010.4	1046.5	1049.5	1049.1
52.5°	689.6	693.0	684.4	738.1	786.6	851.7	911.9	965.6	1001.4	1005.9	1006.6
55°	635.1	636.6	629.8	681.4	728.4	796.4	865.6	917.9	953.6	957.4	959.6
57.5°	580.6	581.0	575.3	624.6	669.7	739.3	811.8	866.7	900.6	904.3	907.7
60°	526.4	526.1	519.7	567.4	610.7	679.5	755.1	809.6	842.3	845.7	850.2
62.5°	472.7	471.5	465.9	509.9	550.5	618.6	694.5	747.2	778.4	780.6	786.6
65°	419.3	418.1	412.9	453.5	490.3	555.4	629.8	679.9	708.1	711.1	709.9
67.5°	366.6	364.4	360.2	396.7	430.2	490.3	561.8	609.5	632.9	635.5	642.6
70°	314.0	311.3	301.9	340.7	370.0	423.8	490.3	532.8	552.4	555.0	553.9
72.5°	262.1	259.5	249.3	285.0	309.8	356.8	416.3	451.6	468.5	470.8	470.8
75°	211.7	210.2	203.8	230.9	251.6	289.9	340.3	369.6	382.8	385.4	384.7
77.5°	163.2	162.1	155.7	179.0	195.2	223.7	264.3	287.3	297.1	300.1	306.5
80°	116.9	116.6	106.4	129.4	136.5	160.6	190.3	207.9	213.2	217.3	221.9
82.5°	74.8	75.2	65.1	84.6	87.6	103.0	121.5	132.4	136.1	139.5	142.9
85°	36.5	38.0	32.3	44.7	45.1	53.0	60.9	65.1	66.6	69.2	72.2
87.5°	9.4	10.9	6.0	12.8	11.3	14.7	16.9	18.0	17.7	19.6	20.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0
2.5°	1577.8	1589.8	1583.8	1603.4	1610.9	1598.9	1619.9	1620.3	1605.3	1622.9	1632.7
5°	1553.4	1565.8	1562.0	1582.3	1591.7	1581.2	1606.8	1611.6	1597.0	1616.9	1632.7
7.5°	1528.5	1543.2	1538.3	1559.0	1570.3	1562.0	1589.5	1597.4	1586.1	1607.9	1628.9
10°	1507.1	1519.5	1514.3	1536.1	1545.8	1539.1	1566.1	1580.8	1570.3	1597.0	1622.2
12.5°	1486.1	1496.2	1490.2	1508.2	1517.6	1509.0	1542.1	1555.6	1548.1	1575.9	1608.3
15°	1459.0	1470.3	1462.0	1478.2	1485.3	1477.8	1504.9	1528.2	1518.8	1549.2	1584.9
17.5°	1438.3	1444.7	1433.4	1446.2	1450.3	1440.2	1467.6	1490.6	1483.8	1516.9	1558.3
20°	1415.4	1420.6	1404.8	1412.0	1411.6	1398.8	1424.0	1446.6	1442.1	1478.5	1525.5
22.5°	1389.8	1392.4	1374.0	1375.5	1374.8	1353.7	1376.3	1399.2	1397.3	1434.2	1486.8
25°	1362.7	1363.1	1339.4	1338.7	1330.4	1305.6	1325.5	1351.4	1345.8	1385.7	1440.9
27.5°	1336.0	1332.3	1303.7	1296.9	1283.8	1254.0	1271.7	1295.0	1291.6	1330.8	1392.0
30°	1307.4	1302.6	1267.6	1255.2	1236.0	1201.8	1216.4	1238.3	1240.1	1274.4	1338.7
32.5°	1280.4	1268.0	1229.2	1211.2	1187.1	1147.3	1155.2	1177.3	1180.3	1214.9	1281.1
35°	1245.4	1237.1	1189.4	1158.5	1134.8	1091.2	1099.5	1114.9	1119.4	1153.3	1220.6
37.5°	1212.3	1199.1	1148.4	1110.8	1080.3	1034.4	1036.7	1052.5	1057.0	1091.2	1157.8
40°	1178.1	1159.3	1104.8	1060.8	1025.8	977.7	975.0	991.6	995.0	1028.4	1088.6
42.5°	1141.6	1119.1	1057.8	1009.6	969.4	920.5	915.2	929.5	933.3	966.0	1025.0
45°	1104.8	1077.7	1009.6	957.0	913.0	863.0	857.7	868.6	874.3	905.1	961.9
47.5°	1065.7	1034.1	960.0	901.3	855.8	805.8	799.4	810.3	814.8	845.3	899.1
50°	1024.7	986.3	908.9	844.2	799.1	749.8	740.4	753.2	757.3	785.9	838.5
52.5°	979.5	937.1	854.3	786.6	741.5	694.5	683.2	695.6	700.5	728.4	776.9
55°	931.8	885.9	799.4	733.6	684.7	638.9	629.5	634.4	644.9	671.2	716.3
57.5°	878.0	832.5	741.5	674.6	627.6	583.6	575.7	580.2	590.0	615.6	656.2
60°	820.9	772.7	682.5	615.6	570.1	528.3	521.2	525.3	535.8	559.2	596.8
62.5°	764.5	710.3	621.6	555.0	513.7	474.9	473.0	471.5	481.3	503.9	537.0
65°	696.0	644.1	558.0	494.9	457.2	422.3	414.8	418.1	427.5	448.2	482.8
67.5°	622.7	575.7	493.0	434.7	401.2	370.0	363.6	365.1	374.9	392.9	423.0
70°	544.9	503.5	426.4	374.1	345.9	316.6	312.5	312.9	322.3	338.0	364.4
72.5°	463.3	426.0	359.1	314.4	291.0	270.0	266.2	261.7	270.4	283.9	306.5
75°	380.2	347.4	292.2	255.7	237.3	219.6	216.2	211.7	220.4	232.0	249.7
77.5°	296.3	270.0	227.1	198.9	184.6	171.5	168.5	163.6	172.2	180.9	194.8
80°	214.3	195.2	169.6	139.9	135.0	126.3	123.3	118.1	126.3	132.0	142.5
82.5°	138.4	125.6	110.9	90.2	89.5	83.1	81.6	75.6	83.1	86.5	94.4
85°	69.9	63.9	60.2	45.9	47.4	43.2	42.9	36.5	42.5	44.0	48.5
87.5°	19.9	21.1	18.8	11.3	14.3	13.5	13.5	9.8	13.5	13.5	15.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P837866

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-4LO-30-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0	1612.0
2.5°	1613.5	1619.9	1621.4	1621.0	1625.2	1647.7	1640.2	1647.7
5°	1617.3	1631.6	1635.3	1640.6	1647.4	1672.9	1664.7	1673.7
7.5°	1619.5	1641.0	1649.2	1659.4	1670.3	1698.9	1692.1	1701.1
10°	1619.5	1647.4	1659.4	1676.3	1691.0	1724.1	1717.7	1728.2
12.5°	1612.8	1648.5	1665.4	1689.1	1707.9	1743.6	1741.0	1748.5
15°	1598.9	1642.9	1666.2	1696.6	1719.9	1759.8	1758.7	1767.7
17.5°	1580.1	1633.1	1661.3	1699.6	1729.0	1773.7	1776.3	1781.2
20°	1556.4	1614.7	1651.5	1698.5	1735.4	1784.6	1788.0	1794.8
22.5°	1525.2	1592.5	1636.8	1693.6	1736.1	1789.1	1795.1	1801.5
25°	1488.3	1565.8	1617.7	1684.2	1732.4	1788.8	1797.0	1802.7
27.5°	1446.2	1531.2	1593.2	1669.2	1721.8	1782.7	1792.9	1799.7
30°	1397.3	1494.3	1565.4	1649.6	1707.5	1771.5	1782.4	1789.1
32.5°	1346.9	1453.7	1532.3	1624.4	1686.9	1753.4	1762.8	1768.1
35°	1292.0	1404.5	1492.4	1592.1	1660.2	1724.5	1731.6	1737.2
37.5°	1232.2	1351.1	1446.9	1555.6	1622.6	1684.2	1690.6	1697.0
40°	1170.6	1295.0	1395.8	1510.9	1577.8	1635.0	1641.7	1646.2
42.5°	1108.5	1233.0	1341.3	1458.2	1524.8	1579.7	1583.8	1588.3
45°	1045.7	1168.7	1280.0	1399.9	1465.7	1517.3	1518.8	1522.5
47.5°	981.8	1102.1	1212.7	1333.4	1398.4	1445.4	1446.9	1450.0
50°	917.5	1035.6	1140.9	1261.6	1325.1	1374.8	1368.0	1371.0
52.5°	854.3	965.6	1073.2	1184.1	1246.9	1290.9	1292.8	1286.8
55°	792.3	897.2	996.1	1102.9	1162.7	1196.9	1195.8	1198.0
57.5°	729.5	828.0	918.6	1016.4	1074.7	1107.0	1113.8	1105.9
60°	665.6	758.1	839.3	927.7	984.1	1011.1	1019.0	1011.5
62.5°	602.0	687.0	760.7	837.8	890.1	923.5	922.8	914.5
65°	538.5	615.6	681.4	746.8	792.3	825.8	824.2	816.7
67.5°	479.8	543.4	602.4	655.4	694.9	717.8	725.7	716.7
70°	415.1	470.0	521.9	564.4	597.1	617.8	625.3	617.4
72.5°	350.5	397.1	433.6	474.5	499.7	517.0	524.9	517.4
75°	286.5	324.9	354.6	386.6	404.2	418.9	427.9	420.4
77.5°	224.5	254.2	277.9	301.2	321.5	324.9	332.8	327.9
80°	165.5	186.9	204.2	219.6	234.3	235.8	242.2	239.2
82.5°	110.2	124.5	129.0	145.1	154.5	153.0	159.4	157.2
85°	58.3	66.9	74.8	79.7	85.0	80.1	85.7	83.5
87.5°	19.6	20.7	18.0	25.6	28.2	24.1	27.4	26.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)