

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: P837831

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-4STD-20-120-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: P837831
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-LD4-4STD-20-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

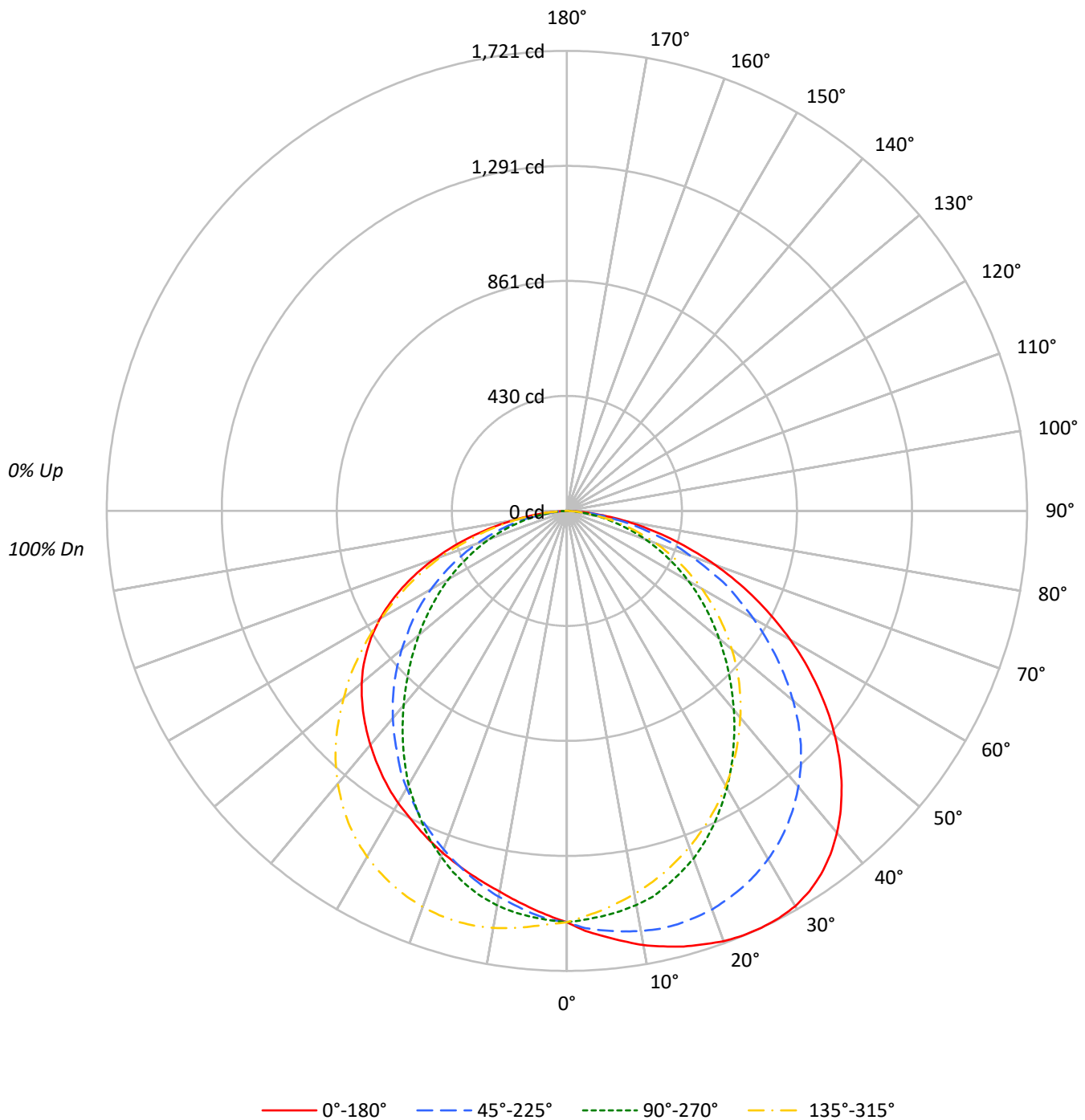
Lumens per Lamp: N/A
Luminaire Lumens: 4514.4 lumens
Efficiency: N/A
Efficacy: 67.8 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 66.6
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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86	84		
2	99	91	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70		
3	90	79	71	65	88	78	70	64	75	68	63	72	66	62	69	65	61	59		
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50		
5	76	63	54	47	74	62	53	47	59	52	46	57	51	46	56	50	45	43		
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38		
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33		
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29		
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26		
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	4141	4141	4141	4141
5°	4316	4111	4033	4118
10°	4508	4090	3951	4096
15°	4701	4038	3913	4039
20°	4906	3964	3895	3942
25°	5109	3854	3895	3814
30°	5307	3719	3921	3678
35°	5447	3567	3960	3510
40°	5520	3413	4016	3336
45°	5531	3258	4094	3176
50°	5479	3109	4194	3026
55°	5365	2970	4287	2888
60°	5196	2826	4344	2753
65°	4964	2660	4322	2599
70°	4637	2465	4168	2420
75°	4172	2198	3825	2187
80°	3538	1841	3216	1869
85°	2461	1220	2038	1254

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.1	3.2
10°-20°	423.0	9.4
20°-30°	648.3	14.4
30°-40°	788.3	17.5
40°-50°	819.5	18.2
50°-60°	740.3	16.4
60°-70°	562.8	12.5
70°-80°	313.8	7.0
80°-90°	72.2	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°	1217.5	27.0
0°-40°	2005.8	44.4
0°-60°	3565.6	79.0
0°-90°	4514.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4514.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1539	1539	1539	1539	1539	
5°	1598	1522	1493	1524	1598	154
15°	1687	1449	1404	1450	1687	478
25°	1721	1298	1312	1285	1721	795
35°	1658	1086	1206	1068	1658	1036
45°	1453	856	1076	834	1453	1119
55°	1144	633	914	616	1144	1021
65°	780	418	679	408	780	770
75°	401	211	368	210	401	426
85°	80	40	66	41	80	100
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°	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7
2.5°	1572.8	1549.9	1550.2	1570.3	1554.9	1562.4	1540.9	1549.1	1546.6	1548.4	1530.8
5°	1597.6	1572.8	1572.5	1589.7	1572.5	1575.7	1548.4	1553.8	1545.9	1540.9	1521.9
7.5°	1623.8	1599.0	1596.5	1611.6	1589.0	1586.5	1556.3	1556.3	1542.0	1529.4	1511.4
10°	1649.6	1624.1	1620.9	1632.4	1604.4	1596.2	1559.5	1553.8	1534.8	1516.1	1496.7
12.5°	1669.0	1643.2	1640.7	1647.8	1616.3	1601.2	1559.5	1548.4	1520.4	1494.2	1479.1
15°	1687.3	1660.8	1653.9	1657.5	1621.3	1601.2	1554.5	1537.3	1501.4	1466.9	1449.4
17.5°	1700.2	1674.8	1667.9	1667.6	1623.8	1595.1	1543.7	1520.1	1477.0	1435.4	1417.8
20°	1713.2	1687.7	1679.1	1672.6	1623.1	1586.8	1528.0	1496.0	1445.8	1399.1	1384.4
22.5°	1719.6	1693.4	1684.1	1674.4	1618.4	1571.7	1508.6	1468.0	1410.6	1355.0	1342.7
25°	1720.7	1693.8	1683.7	1669.7	1609.1	1553.8	1483.4	1434.3	1370.0	1308.3	1297.9
27.5°	1717.8	1688.4	1678.3	1661.5	1595.1	1531.9	1453.7	1395.9	1327.0	1258.8	1247.6
30°	1707.8	1678.0	1668.3	1646.4	1575.3	1505.0	1421.0	1353.2	1279.2	1206.7	1197.0
32.5°	1687.7	1658.6	1650.7	1628.8	1553.8	1473.8	1382.9	1307.2	1226.5	1157.2	1142.8
35°	1658.2	1629.2	1624.1	1601.2	1523.6	1436.4	1341.3	1257.0	1170.5	1099.8	1085.8
37.5°	1619.8	1595.4	1587.9	1565.3	1488.1	1394.1	1293.6	1202.4	1113.4	1037.3	1028.7
40°	1571.4	1548.4	1542.7	1522.6	1446.8	1347.1	1241.9	1146.1	1054.5	983.8	971.6
42.5°	1516.1	1494.6	1491.3	1470.5	1395.9	1295.0	1185.9	1087.6	993.2	925.0	912.8
45°	1453.3	1432.5	1431.8	1412.0	1340.2	1237.2	1127.0	1028.3	933.2	862.5	856.0
47.5°	1384.0	1365.4	1365.4	1347.1	1278.1	1173.7	1066.4	966.6	872.9	810.5	799.0
50°	1308.7	1291.1	1285.7	1276.7	1209.6	1104.4	1002.5	906.3	813.3	753.7	742.6
52.5°	1228.3	1213.2	1216.8	1200.3	1135.3	1032.3	937.9	838.5	753.4	699.2	688.1
55°	1143.5	1122.0	1125.2	1119.1	1057.8	958.0	865.4	782.5	694.5	643.6	633.1
57.5°	1055.6	1027.6	1039.1	1035.5	975.2	881.9	799.0	718.9	636.0	589.0	579.0
60°	965.5	938.6	950.4	947.2	890.5	805.8	730.4	656.1	577.9	535.2	525.1
62.5°	872.9	848.1	858.9	856.4	804.4	727.9	662.2	594.0	519.4	481.0	471.6
65°	779.6	755.9	765.6	763.8	715.7	657.6	592.2	529.8	460.5	427.1	417.8
67.5°	684.1	662.2	671.2	671.2	627.0	571.4	521.9	464.8	402.7	374.0	365.4
70°	589.4	568.9	576.8	576.1	538.8	493.5	450.8	399.8	344.2	320.5	313.3
72.5°	493.9	475.9	483.1	482.4	451.2	422.1	379.7	335.6	287.1	268.1	261.7
75°	401.3	384.4	391.2	390.5	365.0	337.8	309.4	272.8	231.1	217.9	211.4
77.5°	313.0	295.8	301.5	301.5	282.8	263.1	240.5	212.1	182.7	168.3	163.7
80°	228.3	220.0	217.2	217.5	204.9	192.0	180.5	153.3	131.7	122.0	118.8
82.5°	150.0	143.2	140.3	141.1	133.9	126.0	118.8	99.8	85.4	79.7	77.9
85°	79.7	74.7	72.1	73.9	72.5	68.2	64.6	51.7	42.7	40.6	39.5
87.5°	25.1	21.9	20.1	26.6	22.6	20.1	19.4	15.4	11.8	11.8	11.5
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°	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7
2.5°	1536.6	1536.6	1522.6	1519.3	1517.9	1519.7	1505.7	1503.2	1523.3	1516.5	1501.0
5°	1524.4	1523.6	1503.9	1500.3	1500.3	1498.2	1482.4	1478.8	1498.9	1493.1	1476.3
7.5°	1509.3	1507.1	1483.8	1481.3	1477.7	1476.3	1458.7	1456.2	1473.4	1469.8	1454.0
10°	1491.0	1488.8	1461.2	1459.4	1455.5	1452.6	1436.1	1434.3	1451.9	1446.1	1433.6
12.5°	1466.9	1463.0	1434.6	1432.8	1429.6	1428.5	1412.4	1411.7	1431.0	1425.3	1412.0
15°	1435.4	1432.1	1400.5	1401.3	1401.6	1401.6	1388.7	1388.0	1407.0	1404.5	1390.1
17.5°	1400.5	1396.2	1366.1	1368.2	1370.7	1373.6	1363.6	1365.4	1385.5	1382.2	1369.3
20°	1361.1	1356.7	1327.3	1333.4	1338.8	1344.5	1338.1	1343.1	1361.8	1360.3	1350.6
22.5°	1316.9	1312.6	1285.3	1294.7	1303.6	1314.4	1311.5	1317.3	1337.0	1336.6	1328.0
25°	1263.1	1264.1	1240.1	1251.6	1266.7	1281.7	1282.8	1292.1	1314.0	1311.9	1304.0
27.5°	1212.8	1214.3	1188.8	1208.2	1228.3	1247.6	1252.3	1265.2	1287.5	1285.7	1278.9
30°	1160.1	1161.8	1137.1	1163.6	1188.1	1211.7	1221.8	1239.4	1262.0	1262.0	1254.8
32.5°	1105.1	1108.4	1082.5	1118.1	1146.4	1174.1	1191.6	1209.9	1235.8	1235.1	1229.0
35°	1048.8	1052.4	1028.7	1073.9	1102.3	1136.0	1157.9	1182.3	1205.3	1205.6	1201.0
37.5°	991.4	995.7	974.1	1023.7	1056.0	1095.8	1123.8	1148.2	1173.7	1175.1	1170.8
40°	934.3	939.0	920.3	968.0	1008.9	1053.5	1085.8	1114.5	1142.5	1143.2	1140.3
42.5°	877.2	882.2	868.2	914.9	961.2	1008.9	1047.0	1079.7	1108.4	1110.2	1106.9
45°	821.6	825.9	815.8	866.8	911.3	963.4	1007.2	1044.1	1073.2	1075.7	1074.6
47.5°	766.3	770.3	761.3	807.9	859.3	914.5	965.2	1006.1	1036.9	1039.8	1039.1
50°	712.1	715.3	705.7	754.5	805.4	864.3	917.1	964.4	998.9	1001.8	1001.4
52.5°	658.3	661.5	653.2	704.6	750.9	813.0	870.4	921.7	955.8	960.1	960.9
55°	606.2	607.7	601.2	650.4	695.2	760.2	826.3	876.1	910.2	913.8	916.0
57.5°	554.2	554.5	549.2	596.2	639.3	705.7	774.9	827.3	859.6	863.2	866.5
60°	502.5	502.1	496.0	541.6	582.9	648.6	720.7	772.8	804.0	807.2	811.5
62.5°	451.2	450.1	444.7	486.7	525.5	590.4	662.9	713.2	743.0	745.1	750.9
65°	400.2	399.1	394.1	432.9	468.0	530.1	601.2	648.9	675.9	678.7	677.7
67.5°	350.0	347.8	343.9	378.7	410.6	468.0	536.2	581.8	604.1	606.6	613.4
70°	299.7	297.2	288.2	325.2	353.2	404.5	468.0	508.6	527.3	529.8	528.7
72.5°	250.2	247.7	238.0	272.1	295.8	340.6	397.3	431.1	447.2	449.4	449.4
75°	202.1	200.6	194.5	220.4	240.1	276.7	324.8	352.8	365.4	367.9	367.2
77.5°	155.8	154.7	148.6	170.8	186.3	213.6	252.3	274.2	283.6	286.4	292.5
80°	111.6	111.3	101.6	123.5	130.3	153.3	181.6	198.5	203.5	207.5	211.8
82.5°	71.4	71.8	62.1	80.8	83.6	98.3	115.9	126.3	129.9	133.2	136.4
85°	34.8	36.3	30.9	42.7	43.1	50.6	58.1	62.1	63.5	66.0	68.9
87.5°	9.0	10.4	5.7	12.2	10.8	14.0	16.2	17.2	16.9	18.7	19.7
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°	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7
2.5°	1506.1	1517.5	1511.8	1530.5	1537.6	1526.2	1546.3	1546.6	1532.3	1549.1	1558.5
5°	1482.7	1494.6	1491.0	1510.4	1519.3	1509.3	1533.7	1538.4	1524.4	1543.4	1558.5
7.5°	1459.0	1473.0	1468.4	1488.1	1498.9	1491.0	1517.2	1524.7	1514.0	1534.8	1554.9
10°	1438.6	1450.4	1445.4	1466.2	1475.6	1469.1	1494.9	1508.9	1498.9	1524.4	1548.4
12.5°	1418.5	1428.2	1422.4	1439.7	1448.6	1440.4	1472.0	1484.9	1477.7	1504.3	1535.1
15°	1392.6	1403.4	1395.5	1410.9	1417.8	1410.6	1436.4	1458.7	1449.7	1478.8	1512.9
17.5°	1372.9	1379.0	1368.2	1380.4	1384.4	1374.7	1400.9	1422.8	1416.3	1447.9	1487.4
20°	1351.0	1356.0	1341.0	1347.8	1347.4	1335.2	1359.3	1380.8	1376.5	1411.3	1456.2
22.5°	1326.6	1329.1	1311.5	1313.0	1312.2	1292.1	1313.7	1335.6	1333.8	1369.0	1419.2
25°	1300.8	1301.1	1278.5	1277.8	1269.9	1246.2	1265.2	1290.0	1284.6	1322.6	1375.4
27.5°	1275.3	1271.7	1244.4	1237.9	1225.4	1197.0	1213.9	1236.1	1232.9	1270.2	1328.8
30°	1248.0	1243.3	1209.9	1198.1	1179.8	1147.1	1161.1	1181.9	1183.7	1216.4	1277.8
32.5°	1222.1	1210.3	1173.3	1156.1	1133.1	1095.1	1102.6	1123.8	1126.7	1159.7	1222.9
35°	1188.8	1180.9	1135.3	1105.9	1083.2	1041.6	1049.5	1064.2	1068.5	1100.8	1165.1
37.5°	1157.2	1144.6	1096.2	1060.3	1031.2	987.4	989.6	1004.6	1008.9	1041.6	1105.1
40°	1124.5	1106.6	1054.5	1012.5	979.2	933.2	930.7	946.5	949.7	981.7	1039.1
42.5°	1089.7	1068.2	1009.7	963.7	925.3	878.7	873.6	887.3	890.9	922.1	978.4
45°	1054.5	1028.7	963.7	913.5	871.5	823.7	818.7	829.1	834.5	863.9	918.1
47.5°	1017.2	987.1	916.3	860.4	816.9	769.2	763.1	773.5	777.8	806.9	858.2
50°	978.1	941.5	867.5	805.8	762.7	715.7	706.7	718.9	722.9	750.2	800.4
52.5°	935.0	894.4	815.5	750.9	707.8	662.9	652.2	664.0	668.7	695.2	741.5
55°	889.4	845.6	763.1	700.3	653.6	609.8	600.8	605.5	615.6	640.7	683.8
57.5°	838.1	794.7	707.8	643.9	599.1	557.1	549.5	553.8	563.2	587.6	626.3
60°	783.5	737.6	651.5	587.6	544.1	504.3	497.5	501.4	511.5	533.7	569.6
62.5°	729.7	678.0	593.3	529.8	490.3	453.3	451.5	450.1	459.4	481.0	512.5
65°	664.4	614.8	532.6	472.3	436.5	403.1	395.9	399.1	408.1	427.8	460.9
67.5°	594.4	549.5	470.6	414.9	383.0	353.2	347.1	348.5	357.9	375.1	403.8
70°	520.1	480.6	407.0	357.1	330.2	302.2	298.3	298.6	307.6	322.7	347.8
72.5°	442.2	406.7	342.8	300.1	277.8	257.7	254.1	249.8	258.1	271.0	292.5
75°	362.9	331.6	278.9	244.1	226.5	209.6	206.4	202.1	210.3	221.5	238.3
77.5°	282.8	257.7	216.8	189.9	176.2	163.7	160.8	156.1	164.4	172.6	185.9
80°	204.6	186.3	161.9	133.5	128.9	120.6	117.7	112.7	120.6	126.0	136.0
82.5°	132.1	119.9	105.9	86.1	85.4	79.3	77.9	72.1	79.3	82.6	90.1
85°	66.8	61.0	57.4	43.8	45.2	41.3	40.9	34.8	40.6	42.0	46.3
87.5°	19.0	20.1	17.9	10.8	13.6	12.9	12.9	9.3	12.9	12.9	14.7
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: P837831

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-4STD-20-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7	1538.7
2.5°	1540.2	1546.3	1547.7	1547.3	1551.3	1572.8	1565.6	1572.8
5°	1543.7	1557.4	1561.0	1566.0	1572.5	1596.9	1589.0	1597.6
7.5°	1545.9	1566.4	1574.3	1583.9	1594.4	1621.6	1615.2	1623.8
10°	1545.9	1572.5	1583.9	1600.1	1614.1	1645.7	1639.6	1649.6
12.5°	1539.4	1573.5	1589.7	1612.3	1630.3	1664.3	1661.8	1669.0
15°	1526.2	1568.2	1590.4	1619.5	1641.7	1679.8	1678.7	1687.3
17.5°	1508.2	1558.8	1585.7	1622.4	1650.4	1693.1	1695.6	1700.2
20°	1485.6	1541.2	1576.4	1621.3	1656.5	1703.5	1706.7	1713.2
22.5°	1455.8	1520.1	1562.4	1616.6	1657.2	1707.8	1713.5	1719.6
25°	1420.6	1494.6	1544.1	1607.6	1653.6	1707.4	1715.3	1720.7
27.5°	1380.4	1461.6	1520.8	1593.3	1643.5	1701.7	1711.4	1717.8
30°	1333.8	1426.4	1494.2	1574.6	1629.9	1690.9	1701.3	1707.8
32.5°	1285.7	1387.6	1462.6	1550.6	1610.2	1673.7	1682.7	1687.7
35°	1233.3	1340.6	1424.6	1519.7	1584.7	1646.0	1652.9	1658.2
37.5°	1176.2	1289.6	1381.2	1484.9	1548.8	1607.6	1613.7	1619.8
40°	1117.3	1236.1	1332.3	1442.2	1506.1	1560.6	1567.1	1571.4
42.5°	1058.1	1176.9	1280.3	1391.9	1455.5	1507.9	1511.8	1516.1
45°	998.2	1115.5	1221.8	1336.3	1399.1	1448.3	1449.7	1453.3
47.5°	937.2	1052.0	1157.5	1272.8	1334.9	1379.7	1381.2	1384.0
50°	875.8	988.5	1089.0	1204.2	1264.9	1312.2	1305.8	1308.7
52.5°	815.5	921.7	1024.4	1130.3	1190.2	1232.2	1234.0	1228.3
55°	756.3	856.4	950.8	1052.7	1109.8	1142.5	1141.4	1143.5
57.5°	696.3	790.4	876.9	970.2	1025.8	1056.7	1063.1	1055.6
60°	635.3	723.6	801.1	885.5	939.3	965.2	972.7	965.5
62.5°	574.6	655.8	726.1	799.7	849.6	881.5	880.8	872.9
65°	514.0	587.6	650.4	712.8	756.3	788.2	786.8	779.6
67.5°	458.0	518.7	575.0	625.6	663.3	685.2	692.7	684.1
70°	396.3	448.7	498.2	538.8	570.0	589.7	596.9	589.4
72.5°	334.5	379.0	413.8	453.0	477.0	493.5	501.1	493.9
75°	273.5	310.1	338.5	369.0	385.8	399.8	408.5	401.3
77.5°	214.3	242.6	265.2	287.5	306.9	310.1	317.7	313.0
80°	157.9	178.4	194.9	209.6	223.6	225.0	231.1	228.3
82.5°	105.2	118.8	123.1	138.5	147.5	146.1	152.2	150.0
85°	55.6	63.9	71.4	76.1	81.1	76.5	81.8	79.7
87.5°	18.7	19.7	17.2	24.4	26.9	23.0	26.2	25.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)