

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: NEO-RAY

Report Number: P242473

Luminaire Tested: **S123DR-S775D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242473
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-S775D840-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3145.5 lumens
Efficiency: N/A
Efficacy: 119.1 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

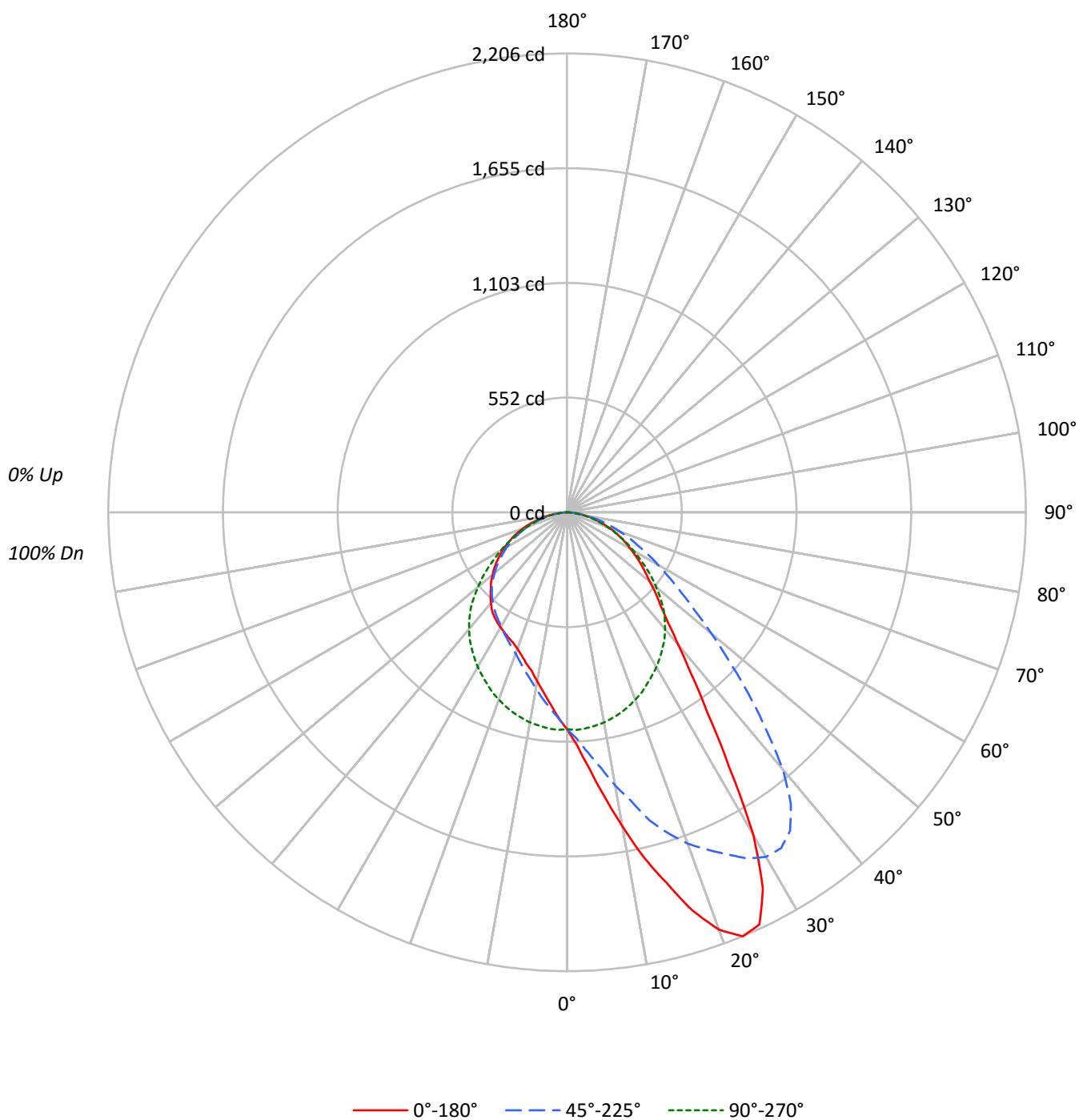
Input Watts (W): 26.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72		
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53		
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47		
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41		
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36		
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33		
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29		
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12632	12632	12632
5°	15063	12686	11243
10°	18855	12622	10154
15°	23126	12520	9453
20°	27550	12361	9001
25°	29254	12169	8901
30°	25073	12028	8946
35°	17439	11827	9040
40°	13135	11592	9011
45°	10906	11243	8897
50°	9768	10530	8816
55°	9134	9763	8707
60°	8567	8960	8618
65°	8051	8168	8341
70°	7552	7265	7946
75°	6763	6360	7283
80°	5919	5214	6275
85°	4631	3797	4214

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.5	3.3
10°-20°	329.2	10.5
20°-30°	553.9	17.6
30°-40°	626.0	19.9
40°-50°	560.7	17.8
50°-60°	452.6	14.4
60°-70°	315.4	10.0
70°-80°	165.5	5.3
80°-90°	39.7	1.3
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°	985.6	31.3
0°-40°	1611.6	51.2
0°-60°	2624.9	83.5
0°-90°	3145.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3145.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1042	1042	1042	1042	1042	
5°	1238	1160	1043	944	924	127
15°	1843	1534	998	787	753	532
25°	2187	1813	910	676	666	967
35°	1178	1869	799	597	611	761
45°	636	1232	656	511	519	502
55°	432	669	462	395	412	388
65°	281	375	285	268	291	280
75°	144	178	136	135	156	154
85°	33	38	27	27	30	40
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1
2.5°	1121.9	1120.9	1118.4	1120.4	1116.4	1110.8	1110.3	1105.3	1090.6	1089.6	1085.6
5°	1238.0	1234.0	1233.5	1233.0	1225.9	1216.3	1198.2	1196.6	1172.4	1160.3	1145.6
7.5°	1378.4	1376.9	1372.9	1368.3	1344.6	1333.0	1315.8	1293.6	1265.3	1238.0	1220.9
10°	1531.9	1548.6	1527.9	1513.7	1500.6	1475.9	1447.1	1411.2	1375.4	1333.5	1301.7
12.5°	1696.5	1702.6	1702.6	1689.4	1667.2	1626.3	1569.8	1529.4	1497.1	1420.3	1393.1
15°	1842.9	1873.7	1854.0	1808.6	1809.6	1773.8	1707.1	1633.9	1595.0	1533.9	1450.6
17.5°	2008.5	2014.1	2008.0	1965.6	1944.9	1892.9	1832.8	1764.7	1691.5	1617.2	1530.9
20°	2135.8	2132.7	2115.1	2095.4	2052.0	2013.6	1946.4	1868.2	1767.2	1694.5	1598.0
22.5°	2206.5	2200.9	2194.9	2179.2	2144.9	2103.0	2044.4	1957.0	1862.1	1755.1	1640.0
25°	2187.3	2193.8	2194.9	2190.3	2177.7	2152.9	2105.5	2037.3	1941.4	1812.6	1696.5
27.5°	2038.8	2055.5	2076.7	2090.8	2113.6	2128.7	2113.6	2070.6	1991.9	1876.8	1733.9
30°	1791.4	1771.2	1821.2	1884.3	1927.2	2003.0	2045.4	2047.9	2008.0	1912.6	1774.3
32.5°	1448.1	1480.9	1496.1	1577.3	1683.9	1771.2	1866.2	1950.5	1970.2	1914.6	1798.0
35°	1178.5	1206.2	1246.6	1287.0	1388.0	1474.8	1623.3	1752.5	1855.6	1869.2	1795.0
37.5°	979.5	995.7	1020.4	1063.3	1132.5	1240.1	1357.7	1525.8	1667.7	1767.7	1757.6
40°	830.1	834.1	862.9	893.7	947.2	1032.0	1135.5	1280.0	1458.7	1613.7	1678.3
42.5°	718.0	728.1	736.2	765.4	805.3	863.9	958.3	1071.4	1231.5	1415.8	1557.7
45°	636.2	646.3	653.9	673.6	703.8	746.8	813.9	923.0	1047.7	1232.0	1402.1
47.5°	579.6	578.6	585.2	600.8	622.6	656.9	706.4	779.1	898.7	1052.7	1231.0
50°	518.0	526.1	528.1	539.8	555.9	579.6	619.0	678.6	772.5	903.8	1064.4
52.5°	474.6	475.6	482.2	489.8	503.4	520.6	553.4	596.8	665.5	772.5	916.9
55°	432.2	432.2	437.8	444.3	452.4	469.1	491.8	526.1	582.2	669.0	791.2
57.5°	392.8	394.8	399.9	401.4	408.5	420.1	439.8	467.0	510.0	580.1	681.1
60°	353.4	358.0	357.5	361.5	367.6	376.2	392.3	413.5	450.9	504.4	586.2
62.5°	319.1	317.6	317.6	322.6	328.7	336.8	345.9	363.5	393.8	439.8	506.4
65°	280.7	279.7	283.3	286.3	288.3	294.4	302.4	318.6	339.8	375.1	429.2
67.5°	247.4	244.4	246.9	247.9	251.4	256.5	264.6	274.7	291.8	321.6	365.1
70°	213.1	210.5	210.0	211.1	214.1	217.6	223.2	232.8	248.4	271.1	300.9
72.5°	177.7	176.2	176.2	178.7	179.7	181.8	185.3	193.9	205.5	221.2	248.4
75°	144.4	144.4	144.4	144.9	146.4	148.4	151.5	156.0	165.6	177.7	196.4
77.5°	114.1	114.6	113.6	113.1	115.6	116.6	117.1	122.2	127.7	136.8	151.5
80°	84.8	82.3	83.3	84.8	85.8	86.3	87.9	88.9	93.4	98.0	107.5
82.5°	57.6	55.5	55.5	58.1	58.1	58.6	60.1	61.6	62.6	66.6	70.7
85°	33.3	33.3	33.8	33.8	34.3	33.8	35.3	35.8	35.8	38.4	41.4
87.5°	15.1	14.1	14.6	15.1	14.6	15.1	15.7	16.2	16.7	17.2	17.7
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1
2.5°	1082.5	1078.5	1074.5	1067.4	1061.3	1052.7	1050.2	1047.2	1038.1	1030.0	1024.0
5°	1140.1	1128.0	1110.3	1094.1	1081.0	1063.3	1053.2	1042.6	1027.5	1013.9	1002.8
7.5°	1195.1	1173.9	1149.2	1122.4	1096.7	1071.9	1052.2	1034.6	1014.9	995.7	981.0
10°	1263.3	1229.0	1190.6	1149.2	1113.8	1079.5	1050.7	1025.5	998.2	974.5	954.8
12.5°	1341.0	1286.0	1229.5	1176.9	1133.5	1082.5	1046.2	1012.3	980.5	950.7	928.0
15°	1399.1	1334.5	1271.9	1202.7	1139.1	1079.5	1038.1	997.7	961.9	932.6	904.3
17.5°	1456.7	1386.0	1306.2	1222.9	1148.2	1079.5	1023.0	979.5	935.6	900.3	873.0
20°	1504.1	1420.8	1327.4	1240.1	1155.2	1076.5	1012.9	958.3	909.9	872.0	840.2
22.5°	1545.0	1444.0	1346.6	1251.7	1154.7	1068.4	994.2	937.6	884.1	847.2	812.9
25°	1570.8	1454.1	1357.2	1247.6	1142.1	1054.3	973.5	909.9	857.3	813.9	779.1
27.5°	1595.0	1452.6	1343.1	1224.9	1127.0	1039.6	952.8	884.6	829.6	782.6	746.8
30°	1619.3	1455.2	1318.3	1201.7	1102.7	1011.8	928.0	859.4	800.8	752.8	719.5
32.5°	1634.4	1453.6	1295.6	1169.4	1064.4	986.6	901.3	829.6	769.0	722.0	690.2
35°	1638.4	1445.1	1268.8	1122.4	1022.4	944.2	873.0	799.3	736.2	692.2	655.9
37.5°	1629.9	1429.4	1239.6	1080.0	972.0	894.2	832.1	769.0	708.4	659.4	627.6
40°	1602.1	1414.3	1204.2	1034.6	919.4	845.2	794.2	732.6	673.0	627.1	597.8
42.5°	1549.1	1383.5	1165.3	984.1	864.9	790.7	744.7	695.8	640.2	597.8	568.5
45°	1456.2	1336.0	1126.5	933.6	811.4	734.6	693.2	655.9	604.9	563.0	537.7
47.5°	1337.5	1271.9	1070.4	880.6	755.3	681.1	637.7	606.9	567.0	533.2	508.4
50°	1212.8	1189.1	1013.4	826.0	699.3	627.1	585.7	558.4	531.7	497.8	475.6
52.5°	1068.9	1093.1	946.7	769.5	642.2	571.6	533.2	513.0	489.3	463.0	444.3
55°	935.6	988.6	867.9	704.9	585.7	518.0	481.2	462.0	447.9	427.2	410.5
57.5°	806.3	874.0	786.1	639.7	530.2	471.1	434.7	413.0	403.9	392.3	378.7
60°	693.7	760.4	697.3	574.1	474.1	418.6	387.3	369.6	360.5	352.9	341.8
62.5°	593.3	660.9	610.4	507.4	419.1	368.6	342.3	325.2	318.6	315.6	306.5
65°	502.9	561.0	525.6	437.8	367.1	321.6	296.9	284.8	278.2	276.7	270.6
67.5°	424.6	469.6	442.3	376.2	318.6	277.2	255.5	244.9	239.3	238.8	233.8
70°	347.9	389.3	369.6	311.0	263.1	232.3	214.1	205.0	202.0	201.5	198.9
72.5°	288.3	314.1	299.4	253.0	218.6	191.4	179.2	169.7	166.1	167.1	165.6
75°	222.2	243.9	234.8	201.0	171.2	153.0	141.9	135.8	132.8	134.3	132.3
77.5°	169.7	184.8	175.7	150.0	130.8	117.1	108.6	104.5	101.5	101.5	100.5
80°	120.7	128.8	124.2	110.1	94.9	83.8	77.3	74.7	73.2	72.7	72.2
82.5°	77.3	83.8	78.3	69.7	60.6	55.0	52.0	48.5	47.5	48.0	47.5
85°	43.4	45.9	43.9	37.9	33.8	30.8	28.8	27.3	26.3	26.8	25.8
87.5°	18.7	19.2	17.7	15.7	14.6	13.1	13.1	12.1	11.1	11.1	10.6
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1	1042.1
2.5°	1020.4	1016.9	1011.8	1004.3	998.2	988.6	988.6	990.1	990.1	989.6	988.6
5°	993.7	986.1	977.0	966.4	955.3	944.2	942.2	938.1	935.1	933.1	930.6
7.5°	966.4	953.8	941.2	926.5	913.9	903.3	895.7	889.1	885.1	880.6	877.0
10°	938.6	922.0	906.3	890.7	873.5	859.9	851.3	845.2	840.7	836.6	834.6
12.5°	905.8	886.1	868.4	853.8	834.6	820.5	812.4	810.4	804.8	795.2	790.2
15°	874.0	856.3	835.6	812.9	803.8	786.7	777.1	772.5	769.5	762.9	760.9
17.5°	847.7	824.0	800.3	783.6	767.0	753.3	747.8	741.7	737.7	731.6	730.1
20°	814.9	794.2	773.0	754.8	737.2	722.0	717.5	713.4	709.4	706.9	704.9
22.5°	781.6	760.9	744.2	727.6	708.4	699.8	694.8	690.2	687.7	686.2	684.2
25°	750.8	732.6	712.9	697.8	682.6	676.1	673.0	670.5	668.5	666.0	665.5
27.5°	723.5	703.3	686.7	672.0	660.9	655.4	651.8	650.3	650.3	651.3	651.8
30°	692.2	674.1	660.9	648.8	638.7	633.7	633.2	633.2	635.2	635.7	636.7
32.5°	663.5	649.3	636.2	624.6	617.5	614.5	617.0	617.0	618.5	620.0	622.1
35°	635.7	622.6	612.5	602.4	595.8	597.3	598.3	599.3	601.9	604.9	606.9
37.5°	609.4	597.3	586.7	578.6	574.6	577.6	580.1	582.2	585.2	587.7	589.7
40°	580.6	572.1	562.0	554.9	555.9	557.4	559.4	562.0	564.5	566.0	568.0
42.5°	553.9	544.8	537.7	532.2	533.7	535.7	536.7	537.7	540.8	543.8	544.8
45°	526.6	519.6	512.5	509.0	510.0	511.0	512.0	513.5	516.0	518.0	518.5
47.5°	495.8	490.8	486.2	482.2	484.2	483.7	485.2	488.2	489.3	490.3	493.3
50°	466.5	462.0	456.4	455.4	455.4	455.4	455.9	460.0	460.0	462.0	464.0
52.5°	434.2	431.7	428.7	426.7	425.6	425.6	428.2	429.7	430.7	433.7	435.7
55°	402.4	399.4	396.4	394.8	393.8	394.8	398.9	399.9	402.4	403.9	405.4
57.5°	369.1	367.1	364.5	363.5	363.5	364.0	367.1	369.6	370.1	375.1	377.2
60°	336.3	332.7	330.7	330.7	329.7	334.3	333.2	338.3	339.3	342.3	345.9
62.5°	302.4	297.4	296.9	296.9	298.9	299.4	301.4	302.9	306.0	310.0	312.5
65°	265.6	263.1	266.6	266.1	265.1	268.1	268.1	270.6	273.7	277.2	282.8
67.5°	231.2	229.2	230.2	229.7	231.2	233.3	234.8	236.8	240.3	244.4	247.9
70°	196.4	197.9	195.4	197.4	198.9	199.4	200.5	203.5	207.5	210.0	214.1
72.5°	162.6	162.1	163.1	163.6	165.1	166.1	167.1	170.7	175.2	177.2	180.3
75°	130.3	129.8	131.3	131.3	133.8	134.8	135.8	137.3	141.4	144.4	146.9
77.5°	101.0	101.5	101.0	103.0	102.0	102.5	105.5	107.0	107.5	114.1	115.1
80°	71.7	72.7	73.2	73.7	74.2	73.2	76.7	78.3	78.3	81.8	84.3
82.5°	46.5	47.0	48.5	49.0	49.0	50.5	50.0	51.0	52.5	53.5	57.1
85°	25.8	27.3	27.8	27.3	27.8	26.8	28.3	28.8	29.3	29.3	29.3
87.5°	10.1	10.6	10.1	10.6	10.1	10.6	10.6	9.6	9.6	11.1	9.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P242473

CATALOG NUMBER: S123DR-S775D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1042.1	1042.1	1042.1	1042.1
2.5°	985.1	984.6	988.1	985.6
5°	927.5	929.0	924.0	924.0
7.5°	875.5	873.5	874.0	870.5
10°	828.6	825.5	824.5	825.0
12.5°	789.7	789.7	781.6	781.6
15°	760.9	751.3	750.3	753.3
17.5°	729.1	723.5	724.0	723.0
20°	704.9	701.8	701.3	697.8
22.5°	682.6	682.1	682.6	678.6
25°	665.0	667.5	665.5	665.5
27.5°	652.9	652.9	651.3	651.3
30°	638.7	638.2	639.2	639.2
32.5°	624.6	625.6	625.6	626.1
35°	609.9	610.4	612.0	610.9
37.5°	590.7	593.3	592.8	593.8
40°	568.5	570.0	569.5	569.5
42.5°	545.8	546.8	545.3	544.3
45°	520.6	519.6	521.1	519.0
47.5°	492.8	493.3	493.8	495.8
50°	465.0	468.1	468.1	467.5
52.5°	437.8	438.8	441.3	441.3
55°	409.5	410.5	411.5	412.0
57.5°	380.7	380.2	382.2	382.7
60°	349.9	349.9	353.9	355.5
62.5°	317.1	319.1	323.1	320.1
65°	285.3	289.3	288.8	290.8
67.5°	252.0	254.5	258.5	258.5
70°	218.1	220.6	222.7	224.2
72.5°	185.3	186.3	191.9	188.8
75°	150.5	154.0	157.0	155.5
77.5°	117.1	121.7	122.7	121.2
80°	87.9	87.3	90.4	89.9
82.5°	58.6	58.1	59.1	59.6
85°	31.3	32.8	30.8	30.3
87.5°	9.1	9.1	8.6	8.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)