

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: P243436

Luminaire Tested: **S123RDR-H775D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243436
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-H775D840-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2844.9 lumens
Efficiency: N/A
Efficacy: 120.5 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

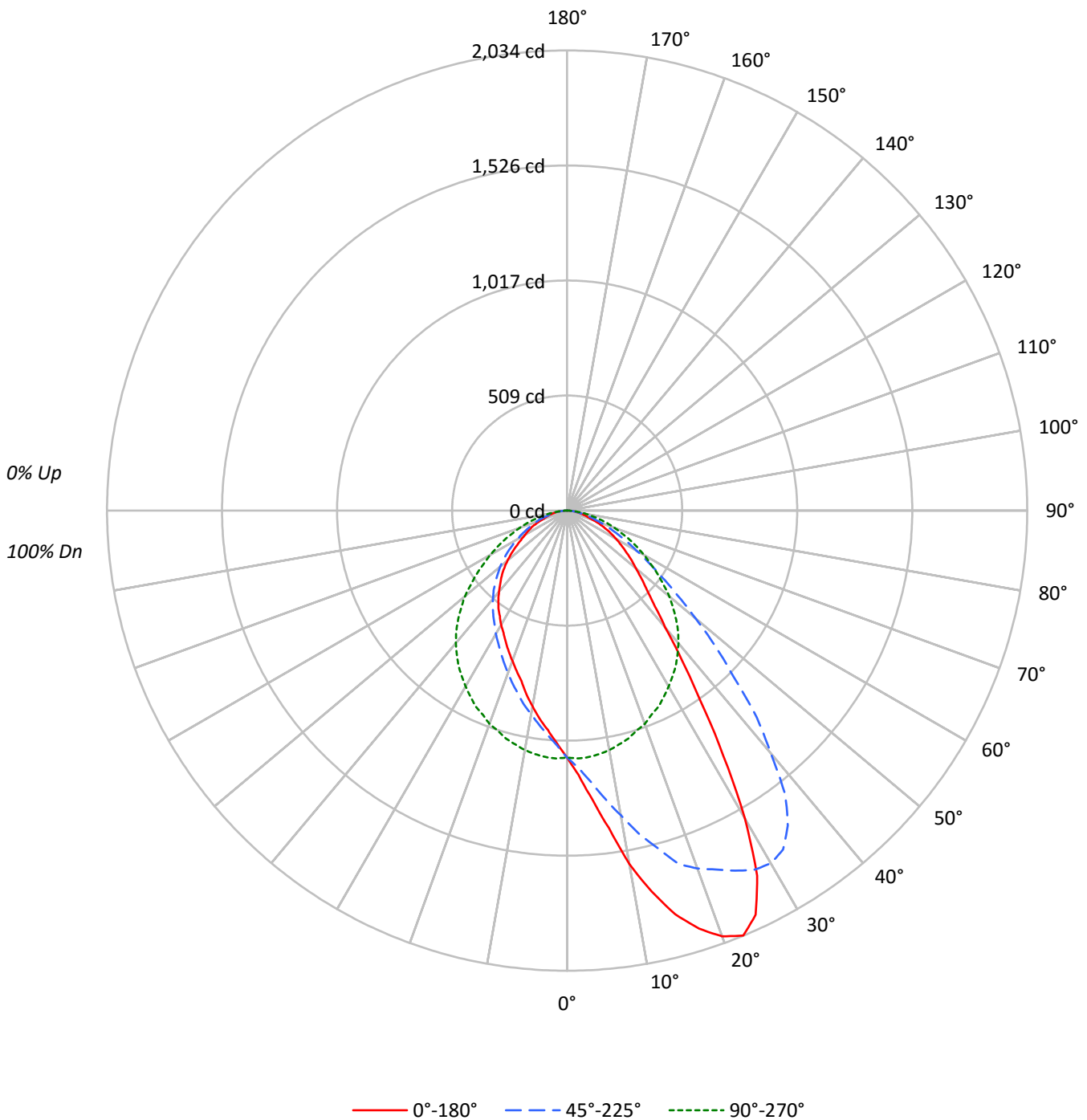
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13234	13234	13234
5°	15602	13308	11851
10°	19531	13230	10815
15°	23179	13097	9797
20°	25832	12940	9121
25°	26367	12780	8588
30°	21973	12563	8168
35°	15179	12390	7826
40°	10666	12106	7415
45°	8566	11677	7015
50°	7467	11122	6489
55°	6695	10292	5778
60°	6058	9508	5234
65°	5300	8762	4896
70°	4278	7885	4143
75°	3709	6866	4060
80°	3420	5857	4083
85°	3018	4715	3546



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.1	3.8
10°-20°	337.2	11.9
20°-30°	540.3	19.0
30°-40°	586.5	20.6
40°-50°	502.5	17.7
50°-60°	380.9	13.4
60°-70°	243.4	8.6
70°-80°	116.4	4.1
80°-90°	30.6	1.1
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°	984.6	34.6
0°-40°	1571.1	55.2
0°-60°	2454.5	86.3
0°-90°	2844.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2844.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1092	1092	1092	1092	1092	
5°	1282	1204	1094	994	974	132
15°	1847	1544	1044	838	781	524
25°	1972	1756	956	694	642	875
35°	1026	1700	837	568	529	659
45°	500	1041	681	450	409	395
55°	317	510	487	322	273	286
65°	185	246	306	195	171	184
75°	79	96	147	92	87	86
85°	22	23	34	27	26	25
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°	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8
2.5°	1170.1	1171.5	1169.1	1168.7	1168.2	1160.7	1158.3	1154.5	1141.3	1138.0	1135.7
5°	1282.3	1278.5	1282.8	1274.7	1265.8	1260.6	1252.1	1233.3	1216.8	1203.6	1195.1
7.5°	1415.2	1416.6	1412.4	1404.9	1386.9	1379.4	1356.3	1333.7	1312.0	1284.6	1264.4
10°	1586.8	1575.5	1577.9	1554.3	1535.4	1512.8	1481.2	1444.9	1406.7	1368.1	1339.3
12.5°	1723.5	1731.6	1725.9	1714.6	1678.3	1656.1	1627.4	1574.6	1514.2	1462.4	1418.5
15°	1847.1	1836.2	1837.6	1810.3	1797.1	1776.8	1729.2	1676.9	1637.7	1543.9	1492.1
17.5°	1937.6	1936.6	1935.2	1912.1	1896.1	1853.7	1805.1	1751.4	1702.3	1637.3	1572.2
20°	2002.6	2009.7	2007.8	1989.0	1960.7	1919.7	1890.4	1823.5	1742.9	1683.5	1603.8
22.5°	2033.7	2034.2	2035.2	2026.2	2007.3	1980.9	1939.5	1885.7	1814.1	1716.9	1628.3
25°	1971.5	1973.9	1986.1	1993.7	1998.9	1987.1	1965.4	1916.8	1855.1	1756.1	1664.1
27.5°	1818.8	1826.3	1840.0	1885.2	1903.6	1929.1	1938.0	1918.7	1873.0	1790.5	1685.8
30°	1569.9	1591.1	1604.3	1655.7	1727.8	1795.7	1827.7	1859.3	1855.1	1800.4	1694.3
32.5°	1285.1	1298.8	1337.0	1392.1	1449.2	1548.6	1659.9	1736.3	1779.2	1776.3	1701.4
35°	1025.8	1045.6	1078.2	1120.1	1198.8	1302.1	1428.0	1548.2	1655.7	1700.4	1673.6
37.5°	832.5	834.4	865.1	924.5	973.5	1064.5	1178.1	1326.6	1467.6	1584.5	1610.4
40°	674.1	687.3	703.4	740.6	798.6	885.8	961.2	1107.4	1253.5	1400.1	1504.8
42.5°	574.2	574.2	592.1	615.7	654.3	706.7	796.7	929.2	1060.7	1240.8	1358.7
45°	499.7	504.4	512.4	527.5	554.9	595.4	665.2	755.2	889.6	1040.9	1218.2
47.5°	446.0	445.5	452.6	461.5	482.7	513.4	554.4	627.5	726.9	890.1	1046.6
50°	396.0	397.9	403.1	410.6	424.8	446.4	472.4	527.5	611.4	740.6	904.7
52.5°	357.3	356.9	361.1	365.8	376.7	388.9	412.0	453.0	511.0	613.8	750.0
55°	316.8	318.7	323.9	326.7	335.7	343.7	363.0	386.1	432.8	510.1	634.1
57.5°	281.9	284.3	287.1	289.9	296.1	304.1	320.1	334.2	368.2	423.8	522.8
60°	249.9	248.9	252.2	256.9	260.2	267.3	276.3	290.9	314.4	354.0	426.6
62.5°	217.8	218.3	218.7	221.6	227.7	233.8	241.8	252.7	266.8	296.1	347.4
65°	184.8	185.3	186.2	189.0	195.2	198.9	207.4	216.9	228.2	245.6	281.4
67.5°	155.6	157.5	157.5	159.8	162.2	165.9	172.1	179.1	188.6	201.3	224.4
70°	120.7	120.2	122.6	127.3	129.6	136.2	140.5	145.2	153.7	161.7	181.5
72.5°	97.1	97.1	97.1	99.0	99.5	100.9	103.7	113.6	120.2	128.2	139.1
75°	79.2	79.7	79.7	80.1	80.6	82.0	83.0	85.8	87.7	96.2	102.8
77.5°	63.2	63.6	63.6	64.1	64.6	65.1	66.9	66.9	68.4	70.2	73.1
80°	49.0	48.6	48.6	49.0	49.0	50.4	50.4	51.4	51.9	52.8	54.2
82.5°	34.9	34.4	34.9	34.4	34.9	35.4	36.3	35.8	36.8	37.7	38.2
85°	21.7	22.2	22.2	23.1	22.6	22.2	22.6	22.6	22.6	22.6	23.6
87.5°	9.4	10.4	10.4	9.9	10.4	10.4	9.4	10.4	10.4	10.4	10.8
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°	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8
2.5°	1134.3	1132.4	1125.3	1118.7	1108.8	1104.6	1098.9	1096.5	1089.0	1078.6	1073.9
5°	1187.1	1172.9	1159.2	1142.7	1129.1	1113.0	1104.1	1093.7	1077.7	1063.1	1052.7
7.5°	1243.2	1222.4	1197.0	1169.6	1145.1	1122.0	1102.2	1085.7	1065.0	1044.7	1028.7
10°	1304.9	1269.6	1228.5	1193.7	1158.3	1124.8	1099.8	1074.9	1048.0	1022.5	1003.2
12.5°	1371.4	1321.4	1271.9	1219.6	1166.8	1128.1	1090.9	1058.8	1028.7	1001.8	978.7
15°	1440.2	1371.9	1308.7	1249.8	1176.2	1124.4	1083.3	1043.7	1006.0	973.0	950.4
17.5°	1489.2	1411.0	1331.3	1247.9	1184.7	1120.6	1069.7	1019.7	984.8	950.9	920.2
20°	1534.5	1445.9	1351.1	1273.3	1185.2	1106.9	1051.3	1003.2	954.6	918.3	892.4
22.5°	1553.8	1473.7	1378.0	1270.0	1181.9	1101.7	1030.1	975.9	932.5	892.9	858.9
25°	1557.6	1468.0	1370.0	1265.8	1169.1	1082.4	1009.8	955.6	899.0	858.0	831.6
27.5°	1574.1	1451.5	1355.4	1251.6	1153.6	1063.1	986.7	926.4	873.6	829.7	795.8
30°	1578.3	1444.5	1324.2	1225.2	1124.4	1035.7	958.4	897.6	840.1	795.3	764.7
32.5°	1580.2	1435.0	1291.7	1183.3	1087.1	1003.7	933.0	867.0	812.3	765.1	733.5
35°	1573.6	1421.8	1252.6	1135.7	1043.3	961.2	895.7	837.3	776.4	732.1	698.7
37.5°	1547.7	1401.1	1230.4	1080.0	991.9	914.6	858.9	801.4	745.3	697.2	662.8
40°	1498.7	1370.9	1188.9	1033.4	933.4	864.1	812.3	765.1	708.6	662.4	628.4
42.5°	1420.4	1329.9	1150.8	980.6	875.4	809.9	766.5	726.0	675.1	631.2	594.0
45°	1304.4	1272.4	1099.8	926.8	812.3	750.5	712.8	681.2	635.0	594.9	560.5
47.5°	1179.0	1186.1	1048.5	872.1	754.8	695.8	662.8	635.0	600.1	557.2	525.6
50°	1034.3	1073.0	976.3	817.0	697.2	639.3	606.7	589.8	557.2	521.4	491.7
52.5°	901.8	963.1	903.3	756.6	640.7	583.6	553.5	536.5	514.8	485.1	454.9
55°	764.7	842.4	799.1	691.6	583.2	525.6	500.2	487.0	469.1	446.0	418.6
57.5°	651.0	734.0	706.7	623.2	527.1	475.2	452.6	437.5	426.6	405.4	383.3
60°	539.8	616.6	605.8	544.5	471.4	421.9	404.5	392.2	383.3	367.7	346.0
62.5°	435.6	510.1	516.7	468.6	417.2	372.4	356.4	347.9	340.8	328.6	308.8
65°	345.6	411.1	424.8	388.0	360.2	326.2	310.7	305.5	300.3	286.2	271.1
67.5°	270.6	322.0	339.9	319.2	299.4	279.6	267.3	260.2	256.5	248.0	237.6
70°	207.0	251.3	266.4	257.4	244.2	236.7	227.2	222.5	218.7	207.9	202.2
72.5°	155.1	185.3	204.1	201.3	198.5	193.3	187.6	186.2	180.6	173.5	168.3
75°	113.6	131.1	148.0	154.2	153.2	155.1	149.0	146.6	143.3	138.1	133.9
77.5°	81.6	91.9	103.7	111.3	115.0	115.5	115.5	114.1	111.7	108.0	104.7
80°	56.6	58.9	69.8	76.8	80.6	83.4	83.4	83.9	81.6	80.1	77.8
82.5°	39.1	40.5	42.9	48.6	53.3	56.6	57.0	56.6	55.6	55.2	51.9
85°	24.5	24.0	24.0	25.5	29.2	32.5	33.0	33.9	33.5	33.0	29.7
87.5°	10.4	10.4	10.8	10.4	11.8	12.3	13.2	15.6	15.1	12.7	11.8
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°	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8	1091.8
2.5°	1071.1	1065.0	1059.3	1053.2	1045.6	1038.6	1037.6	1036.7	1039.0	1034.3	1032.4
5°	1044.7	1032.9	1023.9	1012.6	1004.6	994.2	988.6	987.2	986.7	983.9	980.1
7.5°	1015.9	1003.2	990.5	977.7	964.5	953.7	947.6	944.3	941.4	936.7	933.0
10°	989.1	973.0	959.4	941.9	927.8	913.6	908.0	903.3	900.4	893.8	888.6
12.5°	958.9	938.6	923.5	904.7	891.9	879.7	870.7	861.8	855.2	845.3	841.0
15°	932.5	911.3	885.8	874.5	856.6	838.2	828.3	828.3	814.6	806.6	801.4
17.5°	897.1	878.7	860.8	837.7	812.3	801.4	790.1	780.2	770.8	768.4	759.0
20°	866.0	844.3	825.9	801.0	777.9	765.1	751.9	741.1	734.0	727.4	722.2
22.5°	835.4	813.7	785.4	760.9	745.3	728.4	714.2	704.8	698.7	688.8	684.0
25°	803.3	777.4	751.9	727.9	708.6	693.9	679.3	674.1	663.3	658.1	651.5
27.5°	771.3	740.1	716.1	695.4	673.7	659.5	649.6	640.2	630.8	627.9	624.2
30°	735.4	706.7	683.6	663.3	642.6	630.3	618.5	610.0	602.0	595.9	591.6
32.5°	699.6	675.6	653.4	629.8	611.0	597.8	587.9	580.3	576.6	566.2	562.4
35°	666.6	642.1	618.5	596.4	581.3	568.5	559.6	552.5	544.5	537.9	534.1
37.5°	632.7	610.5	586.5	567.6	550.6	540.3	530.4	520.9	514.8	511.0	506.3
40°	599.7	576.1	557.7	537.0	521.9	510.1	499.7	492.6	485.1	481.8	475.7
42.5°	568.5	545.9	524.7	505.8	492.2	480.9	471.0	462.9	456.8	450.7	447.4
45°	532.7	512.9	493.6	474.7	462.0	449.7	438.9	431.8	423.3	418.2	416.3
47.5°	502.5	481.8	461.1	443.6	430.4	417.2	408.3	399.8	392.7	387.5	384.7
50°	466.7	447.4	430.4	413.0	400.2	386.1	375.3	367.2	359.2	355.5	350.7
52.5°	436.1	417.2	396.5	380.9	366.3	354.0	344.1	337.5	330.5	324.8	321.5
55°	397.9	379.5	363.0	346.5	331.9	322.0	314.0	302.7	296.5	290.9	281.9
57.5°	364.4	347.0	329.5	313.5	299.8	288.0	278.1	270.6	262.6	258.3	252.2
60°	329.1	310.7	294.6	282.4	267.3	254.6	248.0	239.0	232.4	225.8	223.9
62.5°	294.2	277.2	261.2	248.4	234.8	224.9	216.4	212.1	205.5	200.4	198.5
65°	257.9	243.7	228.6	214.5	206.0	194.7	190.0	182.9	179.1	176.8	176.3
67.5°	222.0	209.3	195.6	184.8	176.8	169.2	163.6	160.8	157.0	154.2	151.8
70°	189.5	177.3	165.5	156.5	150.4	144.7	141.0	135.8	132.0	128.2	123.0
72.5°	157.5	147.6	137.7	130.6	124.5	121.2	116.0	108.0	104.2	103.2	102.8
75°	127.8	116.9	109.8	106.1	100.4	92.4	89.1	88.2	87.7	86.7	86.7
77.5°	98.5	91.9	87.2	79.2	76.4	75.9	73.5	73.1	72.1	72.6	72.6
80°	71.7	67.9	62.2	59.9	58.9	59.4	58.5	58.9	58.0	58.5	57.5
82.5°	47.6	44.3	45.3	43.8	43.8	44.8	44.3	42.9	42.9	42.4	42.4
85°	28.3	27.8	28.8	28.8	28.3	26.9	27.8	27.3	25.9	26.4	26.4
87.5°	12.3	12.3	12.3	11.8	12.3	11.8	11.8	11.8	10.4	10.4	10.4
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: P243436

CATALOG NUMBER: S123RDR-H775D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1091.8	1091.8	1091.8	1091.8
2.5°	1033.4	1032.4	1031.0	1029.6
5°	980.1	975.9	975.4	974.0
7.5°	930.1	928.2	924.9	928.7
10°	884.4	885.8	882.5	878.7
12.5°	836.8	834.0	828.8	831.6
15°	794.8	790.1	787.3	780.7
17.5°	751.0	747.2	747.2	743.0
20°	712.8	709.0	710.0	707.1
22.5°	680.7	677.9	673.7	674.1
25°	650.6	646.3	641.6	642.1
27.5°	617.1	613.3	612.4	609.1
30°	587.4	584.1	583.6	583.6
32.5°	558.6	557.2	554.9	553.5
35°	533.7	531.8	528.0	528.9
37.5°	502.5	500.7	500.2	499.7
40°	473.3	471.9	468.1	468.6
42.5°	444.1	441.7	439.4	438.4
45°	412.5	412.0	408.3	409.2
47.5°	382.3	381.4	379.5	377.1
50°	348.9	348.4	347.0	344.1
52.5°	316.3	314.9	312.1	309.3
55°	279.6	275.3	275.8	273.4
57.5°	249.4	247.5	243.7	242.3
60°	220.2	218.3	217.8	215.9
62.5°	195.6	193.8	192.3	192.3
65°	173.5	171.1	170.7	170.7
67.5°	149.0	146.6	146.1	145.2
70°	118.3	117.9	116.9	116.9
72.5°	101.8	101.4	101.8	99.9
75°	86.7	86.3	86.3	86.7
77.5°	72.1	72.1	71.7	71.7
80°	57.0	57.5	57.0	58.5
82.5°	42.9	42.0	42.4	41.5
85°	26.4	26.4	25.5	25.5
87.5°	10.4	10.4	10.4	10.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)