

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: P243451

Luminaire Tested: **S123RDR-H775D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243451
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-H775D940-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2512.0 lumens
Efficiency: N/A
Efficacy: 106.4 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

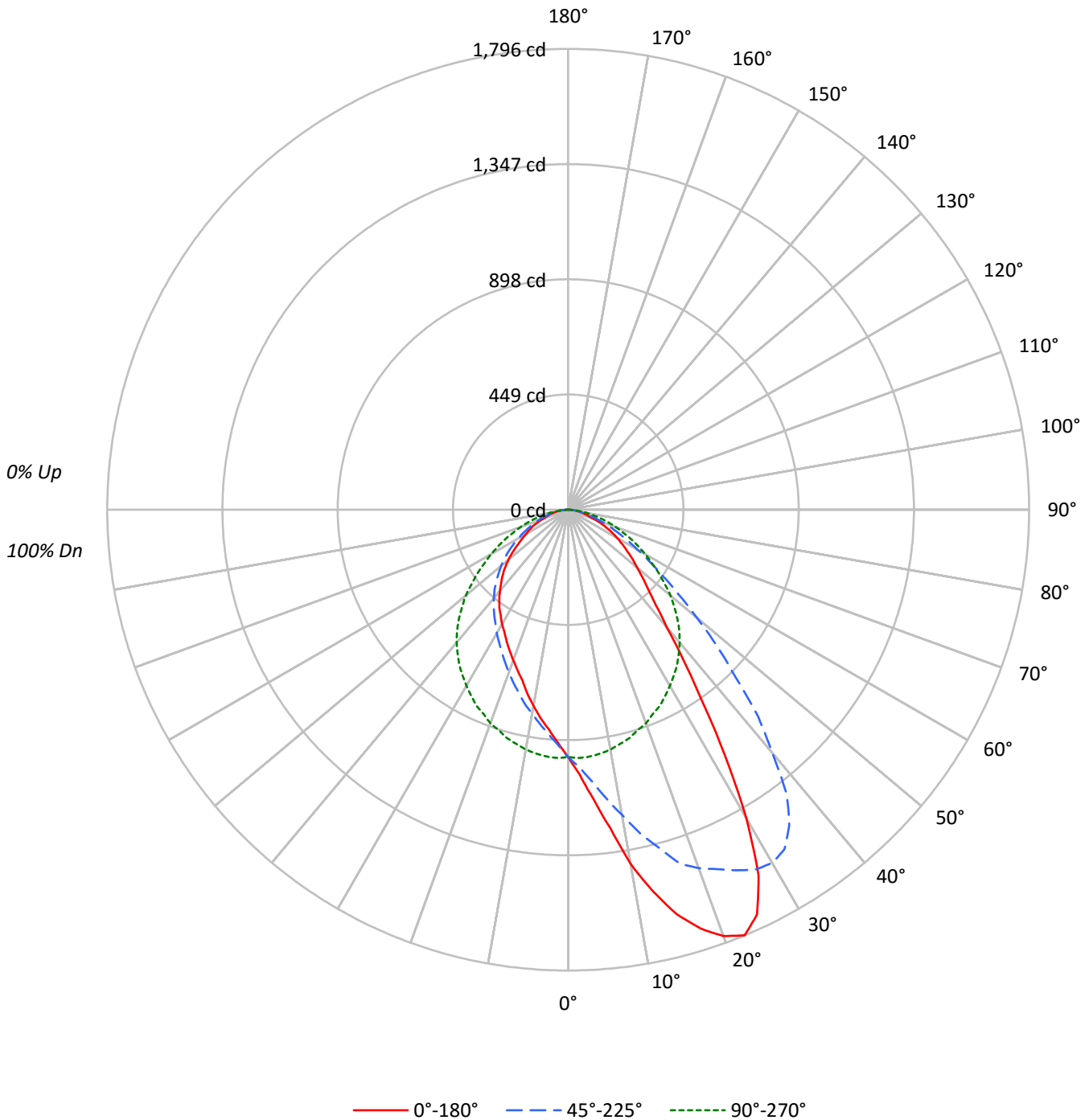
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11686	11686	11686
5°	13777	11750	10464
10°	17246	11682	9550
15°	20466	11565	8650
20°	22810	11426	8054
25°	23282	11285	7583
30°	19402	11094	7212
35°	13403	10940	6912
40°	9420	10690	6548
45°	7563	10311	6193
50°	6594	9821	5731
55°	5911	9087	5101
60°	5348	8395	4623
65°	4681	7735	4322
70°	3778	6964	3657
75°	3274	6065	3587
80°	3022	5172	3602
85°	2656	4172	3129



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.5	3.8
10°-20°	297.7	11.9
20°-30°	477.1	19.0
30°-40°	517.9	20.6
40°-50°	443.7	17.7
50°-60°	336.3	13.4
60°-70°	214.9	8.6
70°-80°	102.8	4.1
80°-90°	27.0	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°	869.4	34.6
0°-40°	1387.3	55.2
0°-60°	2167.4	86.3
0°-90°	2512.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2512.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	964	964	964	964	964	
5°	1132	1063	966	878	860	116
15°	1631	1363	922	740	689	462
25°	1741	1551	844	613	567	772
35°	906	1502	739	502	467	582
45°	441	919	602	397	361	349
55°	280	450	430	284	241	252
65°	163	217	270	172	151	162
75°	70	85	130	82	77	76
85°	19	20	30	24	22	22
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°	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1
2.5°	1033.2	1034.4	1032.4	1031.9	1031.5	1024.9	1022.8	1019.4	1007.8	1004.9	1002.8
5°	1132.3	1128.9	1132.7	1125.6	1117.7	1113.1	1105.6	1089.0	1074.4	1062.7	1055.2
7.5°	1249.6	1250.9	1247.1	1240.5	1224.7	1218.0	1197.6	1177.6	1158.5	1134.3	1116.4
10°	1401.2	1391.2	1393.3	1372.4	1355.8	1335.8	1307.9	1275.9	1242.2	1208.0	1182.6
12.5°	1521.9	1529.0	1524.0	1514.0	1481.9	1462.4	1437.0	1390.3	1337.1	1291.3	1252.6
15°	1630.9	1621.4	1622.6	1598.5	1586.8	1568.9	1526.9	1480.7	1446.1	1363.3	1317.5
17.5°	1710.9	1710.0	1708.8	1688.4	1674.2	1636.8	1593.9	1546.4	1503.2	1445.7	1388.3
20°	1768.3	1774.6	1772.9	1756.2	1731.3	1695.1	1669.2	1610.1	1539.0	1486.5	1416.2
22.5°	1795.8	1796.2	1797.0	1789.1	1772.5	1749.2	1712.5	1665.1	1601.8	1516.1	1437.8
25°	1740.8	1742.9	1753.7	1760.4	1765.0	1754.6	1735.4	1692.6	1638.0	1550.6	1469.4
27.5°	1606.0	1612.6	1624.7	1664.7	1680.9	1703.4	1711.3	1694.2	1653.8	1581.0	1488.6
30°	1386.2	1404.9	1416.6	1461.9	1525.6	1585.6	1613.9	1641.8	1638.0	1589.7	1496.1
32.5°	1134.8	1146.8	1180.5	1229.2	1279.6	1367.5	1465.7	1533.1	1571.0	1568.5	1502.3
35°	905.8	923.3	952.0	989.1	1058.6	1149.7	1260.9	1367.0	1461.9	1501.5	1477.8
37.5°	735.1	736.8	763.9	816.3	859.6	939.9	1040.3	1171.4	1295.9	1399.1	1422.0
40°	595.3	606.9	621.1	654.0	705.2	782.2	848.8	977.8	1106.9	1236.3	1328.7
42.5°	507.0	507.0	522.8	543.6	577.8	624.0	703.5	820.5	936.6	1095.6	1199.7
45°	441.2	445.4	452.5	465.8	490.0	525.8	587.4	666.9	785.5	919.1	1075.6
47.5°	393.8	393.4	399.6	407.5	426.3	453.3	489.5	554.1	641.9	785.9	924.1
50°	349.7	351.3	355.9	362.6	375.1	394.2	417.1	465.8	539.9	654.0	798.8
52.5°	315.5	315.1	318.9	323.0	332.6	343.4	363.8	400.0	451.2	542.0	662.3
55°	279.7	281.4	286.0	288.5	296.4	303.5	320.5	340.9	382.1	450.4	559.9
57.5°	248.9	251.0	253.5	256.0	261.4	268.5	282.6	295.1	325.1	374.2	461.6
60°	220.6	219.8	222.7	226.9	229.8	236.0	243.9	256.8	277.7	312.6	376.7
62.5°	192.3	192.7	193.1	195.6	201.1	206.5	213.5	223.1	235.6	261.4	306.8
65°	163.2	163.6	164.4	166.9	172.3	175.7	183.2	191.5	201.5	216.9	248.5
67.5°	137.4	139.0	139.0	141.1	143.2	146.5	151.9	158.2	166.5	177.7	198.1
70°	106.6	106.1	108.2	112.4	114.5	120.3	124.0	128.2	135.7	142.8	160.3
72.5°	85.8	85.8	85.8	87.4	87.8	89.1	91.6	100.3	106.1	113.2	122.8
75°	69.9	70.3	70.3	70.8	71.2	72.4	73.3	75.8	77.4	84.9	90.7
77.5°	55.8	56.2	56.2	56.6	57.0	57.4	59.1	59.1	60.4	62.0	64.5
80°	43.3	42.9	42.9	43.3	43.3	44.5	44.5	45.4	45.8	46.6	47.9
82.5°	30.8	30.4	30.8	30.4	30.8	31.2	32.1	31.6	32.5	33.3	33.7
85°	19.1	19.6	19.6	20.4	20.0	19.6	20.0	20.0	20.0	20.0	20.8
87.5°	8.3	9.2	9.2	8.7	9.2	9.2	8.3	9.2	9.2	9.2	9.6
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1
2.5°	1001.5	999.9	993.6	987.8	979.1	975.3	970.3	968.2	961.6	952.4	948.3
5°	1048.2	1035.7	1023.6	1009.0	997.0	982.8	974.9	965.7	951.6	938.7	929.5
7.5°	1097.7	1079.4	1056.9	1032.8	1011.1	990.7	973.2	958.7	940.4	922.5	908.3
10°	1152.2	1121.0	1084.8	1054.0	1022.8	993.2	971.2	949.1	925.4	902.9	885.8
12.5°	1210.9	1166.8	1123.1	1076.9	1030.3	996.1	963.3	934.9	908.3	884.6	864.2
15°	1271.7	1211.3	1155.6	1103.5	1038.6	992.8	956.6	921.6	888.3	859.2	839.2
17.5°	1315.0	1245.9	1175.5	1101.9	1046.1	989.5	944.5	900.4	869.6	839.6	812.6
20°	1355.0	1276.7	1193.0	1124.3	1046.5	977.4	928.3	885.8	842.9	810.9	788.0
22.5°	1372.0	1301.3	1216.8	1121.4	1043.6	972.8	909.6	861.7	823.4	788.4	758.4
25°	1375.4	1296.3	1209.7	1117.7	1032.4	955.8	891.7	843.8	793.8	757.6	734.3
27.5°	1389.9	1281.7	1196.8	1105.2	1018.6	938.7	871.3	818.0	771.4	732.6	702.7
30°	1393.7	1275.5	1169.3	1081.9	992.8	914.5	846.3	792.6	741.8	702.2	675.2
32.5°	1395.3	1267.1	1140.6	1044.8	959.9	886.2	823.8	765.5	717.2	675.6	647.7
35°	1389.5	1255.5	1106.0	1002.8	921.2	848.8	790.9	739.3	685.6	646.5	616.9
37.5°	1366.6	1237.2	1086.5	953.7	875.8	807.6	758.4	707.7	658.1	615.7	585.3
40°	1323.3	1210.5	1049.8	912.5	824.2	763.0	717.2	675.6	625.7	584.9	554.9
42.5°	1254.2	1174.3	1016.1	865.8	773.0	715.2	676.9	641.1	596.1	557.4	524.5
45°	1151.8	1123.5	971.2	818.4	717.2	662.7	629.4	601.5	560.7	525.3	494.9
47.5°	1041.1	1047.3	925.8	770.1	666.4	614.4	585.3	560.7	529.9	492.0	464.1
50°	913.3	947.4	862.1	721.4	615.7	564.5	535.7	520.8	492.0	460.4	434.2
52.5°	796.3	850.4	797.6	668.1	565.7	515.3	488.7	473.7	454.6	428.3	401.7
55°	675.2	743.9	705.6	610.7	514.9	464.1	441.7	430.0	414.2	393.8	369.6
57.5°	574.9	648.1	624.0	550.3	465.4	419.6	399.6	386.3	376.7	358.0	338.4
60°	476.6	544.5	534.9	480.8	416.3	372.6	357.2	346.3	338.4	324.7	305.5
62.5°	384.6	450.4	456.2	413.8	368.4	328.9	314.7	307.2	301.0	290.1	272.7
65°	305.1	363.0	375.1	342.6	318.0	288.1	274.3	269.7	265.2	252.7	239.4
67.5°	238.9	284.3	300.1	281.8	264.3	246.8	236.0	229.8	226.5	219.0	209.8
70°	182.7	221.9	235.2	227.3	215.6	209.0	200.6	196.5	193.1	183.6	178.6
72.5°	137.0	163.6	180.2	177.7	175.3	170.7	165.7	164.4	159.4	153.2	148.6
75°	100.3	115.7	130.7	136.1	135.3	137.0	131.5	129.5	126.5	122.0	118.2
77.5°	72.0	81.2	91.6	98.2	101.6	102.0	102.0	100.7	98.7	95.3	92.4
80°	50.0	52.0	61.6	67.9	71.2	73.7	73.7	74.1	72.0	70.8	68.7
82.5°	34.6	35.8	37.9	42.9	47.0	50.0	50.4	50.0	49.1	48.7	45.8
85°	21.6	21.2	21.2	22.5	25.8	28.7	29.1	30.0	29.6	29.1	26.2
87.5°	9.2	9.2	9.6	9.2	10.4	10.8	11.7	13.7	13.3	11.2	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



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1	964.1
2.5°	945.8	940.4	935.4	929.9	923.3	917.0	916.2	915.4	917.5	913.3	911.6
5°	922.5	912.0	904.1	894.2	887.1	877.9	872.9	871.7	871.3	868.8	865.4
7.5°	897.1	885.8	874.6	863.3	851.7	842.1	836.7	833.8	831.3	827.1	823.8
10°	873.3	859.2	847.1	831.7	819.2	806.7	801.7	797.6	795.1	789.2	784.7
12.5°	846.7	828.8	815.5	798.8	787.6	776.8	768.9	760.9	755.1	746.4	742.6
15°	823.4	804.7	782.2	772.2	756.4	740.1	731.4	731.4	719.3	712.2	707.7
17.5°	792.2	775.9	760.1	739.7	717.2	707.7	697.7	688.9	680.6	678.5	670.2
20°	764.7	745.5	729.3	707.2	686.8	675.6	664.0	654.4	648.1	642.3	637.7
22.5°	737.6	718.5	693.5	671.9	658.1	643.1	630.7	622.3	616.9	608.2	604.0
25°	709.3	686.4	664.0	642.7	625.7	612.8	599.8	595.3	585.7	581.1	575.3
27.5°	681.0	653.5	632.3	614.0	594.9	582.4	573.6	565.3	557.0	554.5	551.1
30°	649.4	624.0	603.6	585.7	567.4	556.6	546.1	538.7	531.6	526.2	522.4
32.5°	617.7	596.5	577.0	556.1	539.5	527.8	519.1	512.4	509.1	499.9	496.6
35°	588.6	567.0	546.1	526.6	513.3	502.0	494.1	487.9	480.8	475.0	471.6
37.5°	558.6	539.1	517.8	501.2	486.2	477.0	468.3	460.0	454.6	451.2	447.1
40°	529.5	508.7	492.4	474.1	460.8	450.4	441.2	435.0	428.3	425.4	420.0
42.5°	502.0	482.0	463.3	446.7	434.6	424.6	415.9	408.8	403.4	398.0	395.0
45°	470.4	452.9	435.8	419.2	407.9	397.1	387.5	381.3	373.8	369.2	367.6
47.5°	443.7	425.4	407.1	391.7	380.1	368.4	360.5	353.0	346.8	342.2	339.7
50°	412.1	395.0	380.1	364.7	353.4	340.9	331.4	324.3	317.2	313.9	309.7
52.5°	385.1	368.4	350.1	336.3	323.4	312.6	303.9	298.1	291.8	286.8	283.9
55°	351.3	335.1	320.5	306.0	293.1	284.3	277.2	267.2	261.8	256.8	248.9
57.5°	321.8	306.4	291.0	276.8	264.7	254.3	245.6	238.9	231.9	228.1	222.7
60°	290.6	274.3	260.2	249.3	236.0	224.8	219.0	211.0	205.2	199.4	197.7
62.5°	259.8	244.8	230.6	219.4	207.3	198.6	191.1	187.3	181.5	176.9	175.3
65°	227.7	215.2	201.9	189.4	181.9	171.9	167.8	161.5	158.2	156.1	155.7
67.5°	196.1	184.8	172.8	163.2	156.1	149.4	144.4	141.9	138.6	136.1	134.0
70°	167.3	156.5	146.1	138.2	132.8	127.8	124.5	119.9	116.6	113.2	108.6
72.5°	139.0	130.3	121.6	115.3	109.9	107.0	102.4	95.3	92.0	91.2	90.7
75°	112.8	103.2	97.0	93.7	88.7	81.6	78.7	77.8	77.4	76.6	76.6
77.5°	87.0	81.2	77.0	69.9	67.4	67.0	64.9	64.5	63.7	64.1	64.1
80°	63.3	59.9	54.9	52.9	52.0	52.5	51.6	52.0	51.2	51.6	50.8
82.5°	42.0	39.1	40.0	38.7	38.7	39.5	39.1	37.9	37.9	37.5	37.5
85°	25.0	24.6	25.4	25.4	25.0	23.7	24.6	24.1	22.9	23.3	23.3
87.5°	10.8	10.8	10.8	10.4	10.8	10.4	10.4	10.4	9.2	9.2	9.2
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: P243451

CATALOG NUMBER: S123RDR-H775D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	964.1	964.1	964.1	964.1
2.5°	912.5	911.6	910.4	909.1
5°	865.4	861.7	861.3	860.0
7.5°	821.3	819.6	816.7	820.1
10°	780.9	782.2	779.3	775.9
12.5°	738.9	736.4	731.8	734.3
15°	701.8	697.7	695.2	689.3
17.5°	663.1	659.8	659.8	656.0
20°	629.4	626.1	626.9	624.4
22.5°	601.1	598.6	594.9	595.3
25°	574.5	570.7	566.5	567.0
27.5°	544.9	541.6	540.7	537.8
30°	518.7	515.8	515.3	515.3
32.5°	493.3	492.0	490.0	488.7
35°	471.2	469.6	466.2	467.1
37.5°	443.7	442.1	441.7	441.2
40°	417.9	416.7	413.4	413.8
42.5°	392.1	390.0	388.0	387.1
45°	364.2	363.8	360.5	361.3
47.5°	337.6	336.8	335.1	333.0
50°	308.0	307.6	306.4	303.9
52.5°	279.3	278.1	275.6	273.1
55°	246.8	243.1	243.5	241.4
57.5°	220.2	218.5	215.2	214.0
60°	194.4	192.7	192.3	190.7
62.5°	172.8	171.1	169.8	169.8
65°	153.2	151.1	150.7	150.7
67.5°	131.5	129.5	129.0	128.2
70°	104.5	104.1	103.2	103.2
72.5°	89.9	89.5	89.9	88.2
75°	76.6	76.2	76.2	76.6
77.5°	63.7	63.7	63.3	63.3
80°	50.4	50.8	50.4	51.6
82.5°	37.9	37.0	37.5	36.6
85°	23.3	23.3	22.5	22.5
87.5°	9.2	9.2	9.2	9.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)