

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: P243446

Luminaire Tested: **S123RDR-H775D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243446
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-H775D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2425.5 lumens
Efficiency: N/A
Efficacy: 102.8 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

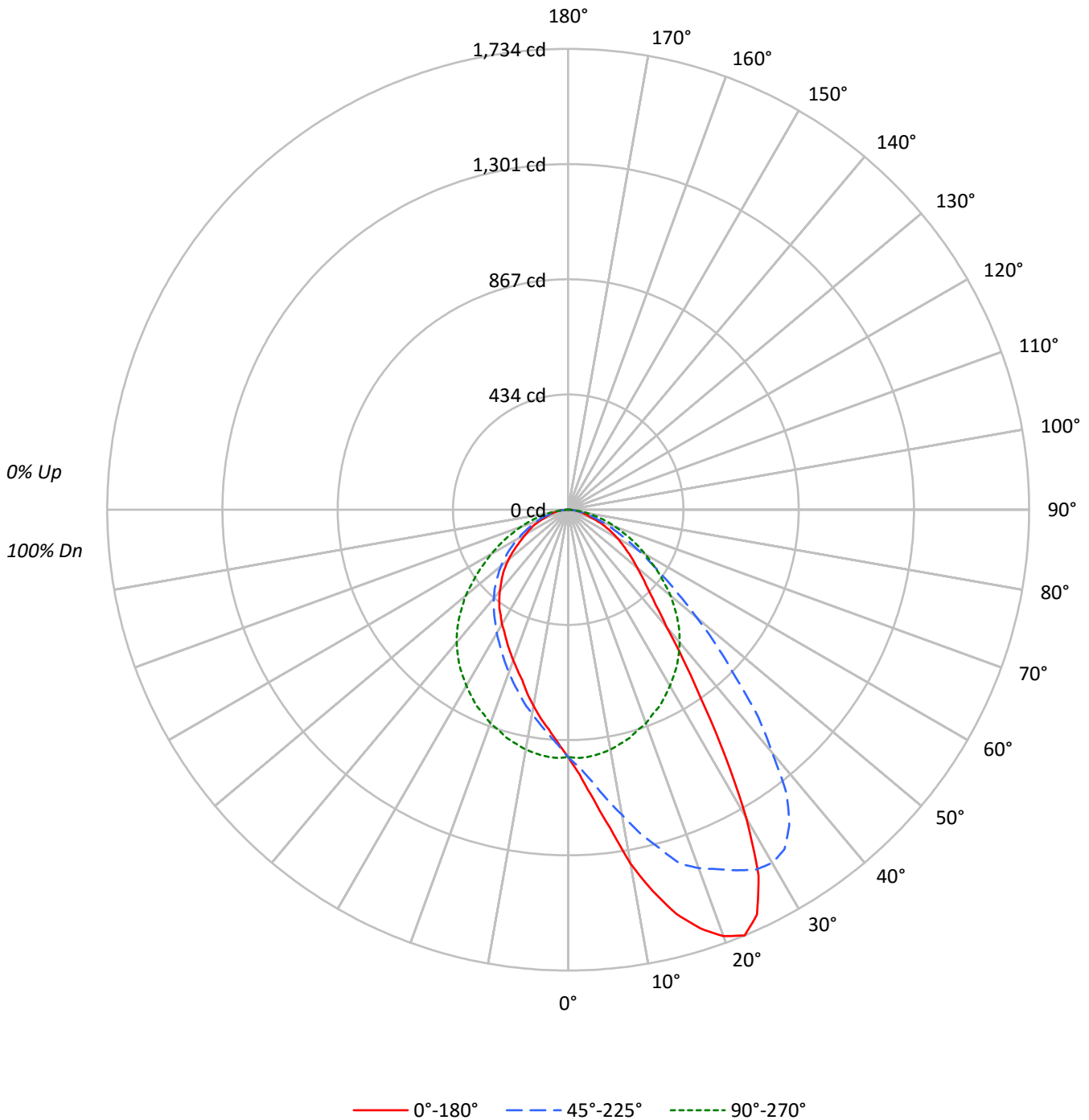
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11284	11284	11284
5°	13303	11346	10104
10°	16652	11279	9221
15°	19762	11167	8352
20°	22024	11033	7777
25°	22481	10896	7321
30°	18733	10711	6965
35°	12942	10562	6674
40°	9095	10321	6321
45°	7304	9956	5981
50°	6366	9481	5533
55°	5708	8774	4926
60°	5164	8107	4463
65°	4520	7471	4173
70°	3647	6723	3533
75°	3161	5854	3466
80°	2918	4991	3476
85°	2573	4019	3018



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	91.3	3.8
10°-20°	287.5	11.9
20°-30°	460.6	19.0
30°-40°	500.1	20.6
40°-50°	428.4	17.7
50°-60°	324.8	13.4
60°-70°	207.5	8.6
70°-80°	99.2	4.1
80°-90°	26.0	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°	839.4	34.6
0°-40°	1339.5	55.2
0°-60°	2092.7	86.3
0°-90°	2425.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2425.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	931	931	931	931	931	
5°	1093	1026	932	848	830	112
15°	1575	1316	890	715	666	446
25°	1681	1497	815	592	547	746
35°	875	1450	714	485	451	562
45°	426	888	581	383	349	337
55°	270	435	415	274	233	244
65°	158	209	260	166	146	157
75°	68	82	125	79	74	73
85°	18	19	29	23	22	21
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°	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9
2.5°	997.6	998.8	996.8	996.4	996.0	989.6	987.6	984.3	973.1	970.3	968.3
5°	1093.3	1090.0	1093.7	1086.8	1079.2	1074.8	1067.5	1051.5	1037.4	1026.1	1018.9
7.5°	1206.6	1207.8	1204.2	1197.8	1182.5	1176.1	1156.4	1137.1	1118.6	1095.3	1078.0
10°	1352.9	1343.3	1345.3	1325.2	1309.1	1289.8	1262.9	1231.9	1199.4	1166.4	1141.9
12.5°	1469.5	1476.3	1471.5	1461.8	1430.9	1412.0	1387.5	1342.5	1291.0	1246.8	1209.4
15°	1574.8	1565.5	1566.7	1543.4	1532.2	1514.9	1474.3	1429.7	1396.3	1316.3	1272.1
17.5°	1652.0	1651.1	1649.9	1630.2	1616.6	1580.4	1539.0	1493.2	1451.4	1395.9	1340.5
20°	1707.4	1713.4	1711.8	1695.8	1671.6	1636.7	1611.8	1554.7	1486.0	1435.3	1367.4
22.5°	1733.9	1734.3	1735.2	1727.5	1711.4	1688.9	1653.6	1607.7	1546.6	1463.8	1388.3
25°	1680.9	1682.9	1693.4	1699.8	1704.2	1694.2	1675.7	1634.3	1581.6	1497.2	1418.8
27.5°	1550.7	1557.1	1568.8	1607.3	1623.0	1644.7	1652.4	1635.9	1596.9	1526.5	1437.3
30°	1338.4	1356.5	1367.8	1411.6	1473.1	1531.0	1558.3	1585.2	1581.6	1535.0	1444.6
32.5°	1095.7	1107.3	1139.9	1186.9	1235.5	1320.4	1415.2	1480.3	1516.9	1514.5	1450.6
35°	874.6	891.5	919.2	955.0	1022.1	1110.1	1217.5	1320.0	1411.6	1449.8	1426.9
37.5°	709.8	711.4	737.5	788.2	830.0	907.6	1004.4	1131.0	1251.2	1350.9	1373.0
40°	574.8	586.0	599.7	631.4	680.9	755.2	819.5	944.1	1068.7	1193.7	1283.0
42.5°	489.6	489.6	504.8	524.9	557.9	602.5	679.3	792.2	904.4	1057.9	1158.4
45°	426.1	430.1	436.9	449.8	473.1	507.6	567.1	643.9	758.5	887.5	1038.6
47.5°	380.2	379.8	385.9	393.5	411.6	437.7	472.7	535.0	619.8	758.9	892.3
50°	337.6	339.2	343.7	350.1	362.1	380.6	402.7	449.8	521.3	631.4	771.3
52.5°	304.7	304.3	307.9	311.9	321.1	331.6	351.3	386.3	435.7	523.3	639.5
55°	270.1	271.7	276.1	278.5	286.2	293.0	309.5	329.2	369.0	434.9	540.6
57.5°	240.4	242.4	244.8	247.2	252.4	259.2	272.9	285.0	313.9	361.3	445.7
60°	213.0	212.2	215.0	219.1	221.9	227.9	235.5	248.0	268.1	301.9	363.8
62.5°	185.7	186.1	186.5	188.9	194.1	199.4	206.2	215.4	227.5	252.4	296.2
65°	157.6	158.0	158.8	161.2	166.4	169.6	176.9	184.9	194.5	209.4	240.0
67.5°	132.6	134.2	134.2	136.3	138.3	141.5	146.7	152.7	160.8	171.6	191.3
70°	102.9	102.5	104.5	108.5	110.5	116.2	119.8	123.8	131.0	137.9	154.7
72.5°	82.8	82.8	82.8	84.4	84.8	86.0	88.4	96.9	102.5	109.3	118.6
75°	67.5	67.9	67.9	68.3	68.7	69.9	70.7	73.2	74.8	82.0	87.6
77.5°	53.9	54.3	54.3	54.7	55.1	55.5	57.1	57.1	58.3	59.9	62.3
80°	41.8	41.4	41.4	41.8	41.8	43.0	43.0	43.8	44.2	45.0	46.2
82.5°	29.7	29.3	29.7	29.3	29.7	30.1	30.9	30.5	31.4	32.2	32.6
85°	18.5	18.9	18.9	19.7	19.3	18.9	19.3	19.3	19.3	19.3	20.1
87.5°	8.0	8.8	8.8	8.4	8.8	8.8	8.0	8.8	8.8	8.8	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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9
2.5°	967.1	965.4	959.4	953.8	945.4	941.7	936.9	934.9	928.5	919.6	915.6
5°	1012.1	1000.0	988.4	974.3	962.6	949.0	941.3	932.5	918.8	906.4	897.5
7.5°	1059.9	1042.2	1020.5	997.2	976.3	956.6	939.7	925.7	908.0	890.7	877.0
10°	1112.6	1082.4	1047.4	1017.7	987.6	959.0	937.7	916.4	893.5	871.8	855.3
12.5°	1169.2	1126.6	1084.4	1039.8	994.8	961.8	930.1	902.7	877.0	854.1	834.4
15°	1227.9	1169.6	1115.8	1065.5	1002.8	958.6	923.6	889.9	857.7	829.6	810.3
17.5°	1269.7	1203.0	1135.1	1063.9	1010.1	955.4	912.0	869.4	839.6	810.7	784.6
20°	1308.3	1232.7	1151.9	1085.6	1010.5	943.7	896.3	855.3	813.9	783.0	760.9
22.5°	1324.8	1256.4	1174.9	1082.8	1007.6	939.3	878.2	832.0	795.0	761.3	732.3
25°	1328.0	1251.6	1168.0	1079.2	996.8	922.8	860.9	814.7	766.5	731.5	709.0
27.5°	1342.1	1237.6	1155.6	1067.1	983.5	906.4	841.2	789.8	744.8	707.4	678.5
30°	1345.7	1231.5	1129.0	1044.6	958.6	883.1	817.1	765.3	716.2	678.1	651.9
32.5°	1347.3	1223.5	1101.3	1008.9	926.9	855.7	795.4	739.2	692.5	652.3	625.4
35°	1341.7	1212.2	1067.9	968.3	889.5	819.5	763.7	713.8	662.0	624.2	595.7
37.5°	1319.6	1194.5	1049.0	920.8	845.7	779.8	732.3	683.3	635.5	594.5	565.1
40°	1277.7	1168.8	1013.7	881.0	795.8	736.7	692.5	652.3	604.1	564.7	535.8
42.5°	1211.0	1133.9	981.1	836.0	746.4	690.5	653.5	619.0	575.6	538.2	506.4
45°	1112.2	1084.8	937.7	790.2	692.5	639.9	607.7	580.8	541.4	507.2	477.9
47.5°	1005.2	1011.3	893.9	743.6	643.5	593.3	565.1	541.4	511.7	475.1	448.2
50°	881.8	914.8	832.4	696.6	594.5	545.0	517.3	502.8	475.1	444.5	419.2
52.5°	768.9	821.2	770.1	645.1	546.2	497.6	471.9	457.4	438.9	413.6	387.9
55°	651.9	718.3	681.3	589.6	497.2	448.2	426.5	415.2	399.9	380.2	356.9
57.5°	555.1	625.8	602.5	531.4	449.4	405.2	385.9	373.0	363.8	345.7	326.8
60°	460.2	525.7	516.5	464.2	401.9	359.7	344.9	334.4	326.8	313.5	295.0
62.5°	371.4	434.9	440.5	399.5	355.7	317.5	303.9	296.6	290.6	280.1	263.3
65°	294.6	350.5	362.1	330.8	307.1	278.1	264.9	260.5	256.0	244.0	231.1
67.5°	230.7	274.5	289.8	272.1	255.2	238.3	227.9	221.9	218.7	211.4	202.6
70°	176.4	214.2	227.1	219.5	208.2	201.8	193.7	189.7	186.5	177.3	172.4
72.5°	132.2	158.0	174.0	171.6	169.2	164.8	160.0	158.8	153.9	147.9	143.5
75°	96.9	111.7	126.2	131.4	130.6	132.2	127.0	125.0	122.2	117.8	114.1
77.5°	69.5	78.4	88.4	94.9	98.1	98.5	98.5	97.3	95.3	92.0	89.2
80°	48.2	50.2	59.5	65.5	68.7	71.1	71.1	71.5	69.5	68.3	66.3
82.5°	33.4	34.6	36.6	41.4	45.4	48.2	48.6	48.2	47.4	47.0	44.2
85°	20.9	20.5	20.5	21.7	24.9	27.7	28.1	28.9	28.5	28.1	25.3
87.5°	8.8	8.8	9.2	8.8	10.0	10.5	11.3	13.3	12.9	10.9	10.0
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9
2.5°	913.2	908.0	903.1	897.9	891.5	885.5	884.7	883.9	885.9	881.8	880.2
5°	890.7	880.6	873.0	863.4	856.5	847.7	842.9	841.7	841.2	838.8	835.6
7.5°	866.2	855.3	844.5	833.6	822.4	813.1	807.9	805.1	802.7	798.6	795.4
10°	843.3	829.6	817.9	803.1	791.0	778.9	774.1	770.1	767.7	762.1	757.6
12.5°	817.5	800.3	787.4	771.3	760.5	750.0	742.4	734.7	729.1	720.7	717.1
15°	795.0	776.9	755.2	745.6	730.3	714.6	706.2	706.2	694.5	687.7	683.3
17.5°	764.9	749.2	733.9	714.2	692.5	683.3	673.6	665.2	657.2	655.2	647.1
20°	738.4	719.9	704.2	682.9	663.2	652.3	641.1	631.8	625.8	620.2	615.8
22.5°	712.2	693.7	669.6	648.7	635.5	621.0	608.9	600.9	595.7	587.2	583.2
25°	684.9	662.8	641.1	620.6	604.1	591.6	579.2	574.8	565.5	561.1	555.5
27.5°	657.6	631.0	610.5	592.9	574.4	562.3	553.9	545.8	537.8	535.4	532.2
30°	627.0	602.5	582.8	565.5	547.8	537.4	527.3	520.1	513.3	508.0	504.4
32.5°	596.5	576.0	557.1	537.0	520.9	509.7	501.2	494.8	491.6	482.7	479.5
35°	568.3	547.4	527.3	508.4	495.6	484.7	477.1	471.1	464.2	458.6	455.4
37.5°	539.4	520.5	500.0	483.9	469.5	460.6	452.2	444.1	438.9	435.7	431.7
40°	511.3	491.2	475.5	457.8	444.9	434.9	426.1	420.0	413.6	410.8	405.6
42.5°	484.7	465.4	447.4	431.3	419.6	410.0	401.5	394.7	389.5	384.2	381.4
45°	454.2	437.3	420.8	404.7	393.9	383.4	374.2	368.2	360.9	356.5	354.9
47.5°	428.5	410.8	393.1	378.2	367.0	355.7	348.1	340.8	334.8	330.4	328.0
50°	397.9	381.4	367.0	352.1	341.2	329.2	319.9	313.1	306.3	303.1	299.0
52.5°	371.8	355.7	338.0	324.8	312.3	301.9	293.4	287.8	281.8	276.9	274.1
55°	339.2	323.6	309.5	295.4	283.0	274.5	267.7	258.0	252.8	248.0	240.4
57.5°	310.7	295.8	281.0	267.3	255.6	245.6	237.1	230.7	223.9	220.3	215.0
60°	280.6	264.9	251.2	240.8	227.9	217.0	211.4	203.8	198.2	192.5	190.9
62.5°	250.8	236.3	222.7	211.8	200.2	191.7	184.5	180.9	175.2	170.8	169.2
65°	219.9	207.8	194.9	182.9	175.6	166.0	162.0	156.0	152.7	150.7	150.3
67.5°	189.3	178.5	166.8	157.6	150.7	144.3	139.5	137.1	133.8	131.4	129.4
70°	161.6	151.1	141.1	133.4	128.2	123.4	120.2	115.8	112.5	109.3	104.9
72.5°	134.2	125.8	117.4	111.3	106.1	103.3	98.9	92.0	88.8	88.0	87.6
75°	108.9	99.7	93.7	90.4	85.6	78.8	76.0	75.2	74.8	74.0	74.0
77.5°	84.0	78.4	74.4	67.5	65.1	64.7	62.7	62.3	61.5	61.9	61.9
80°	61.1	57.9	53.1	51.0	50.2	50.6	49.8	50.2	49.4	49.8	49.0
82.5°	40.6	37.8	38.6	37.4	37.4	38.2	37.8	36.6	36.6	36.2	36.2
85°	24.1	23.7	24.5	24.5	24.1	22.9	23.7	23.3	22.1	22.5	22.5
87.5°	10.5	10.5	10.5	10.0	10.5	10.0	10.0	10.0	8.8	8.8	8.8
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: P243446

CATALOG NUMBER: S123RDR-H775D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	930.9	930.9	930.9	930.9
2.5°	881.0	880.2	879.0	877.8
5°	835.6	832.0	831.6	830.4
7.5°	793.0	791.4	788.6	791.8
10°	754.0	755.2	752.4	749.2
12.5°	713.4	711.0	706.6	709.0
15°	677.7	673.6	671.2	665.6
17.5°	640.3	637.1	637.1	633.4
20°	607.7	604.5	605.3	602.9
22.5°	580.4	578.0	574.4	574.8
25°	554.7	551.1	547.0	547.4
27.5°	526.1	522.9	522.1	519.3
30°	500.8	498.0	497.6	497.6
32.5°	476.3	475.1	473.1	471.9
35°	455.0	453.4	450.2	451.0
37.5°	428.5	426.9	426.5	426.1
40°	403.5	402.3	399.1	399.5
42.5°	378.6	376.6	374.6	373.8
45°	351.7	351.3	348.1	348.9
47.5°	326.0	325.2	323.6	321.5
50°	297.4	297.0	295.8	293.4
52.5°	269.7	268.5	266.1	263.7
55°	238.3	234.7	235.1	233.1
57.5°	212.6	211.0	207.8	206.6
60°	187.7	186.1	185.7	184.1
62.5°	166.8	165.2	164.0	164.0
65°	147.9	145.9	145.5	145.5
67.5°	127.0	125.0	124.6	123.8
70°	100.9	100.5	99.7	99.7
72.5°	86.8	86.4	86.8	85.2
75°	74.0	73.6	73.6	74.0
77.5°	61.5	61.5	61.1	61.1
80°	48.6	49.0	48.6	49.8
82.5°	36.6	35.8	36.2	35.4
85°	22.5	22.5	21.7	21.7
87.5°	8.8	8.8	8.8	8.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)