

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: P243421

Luminaire Tested: **S123RDR-H775D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243421  
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-H775D927-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2231.7 lumens  
Efficiency: N/A  
Efficacy: 94.6 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

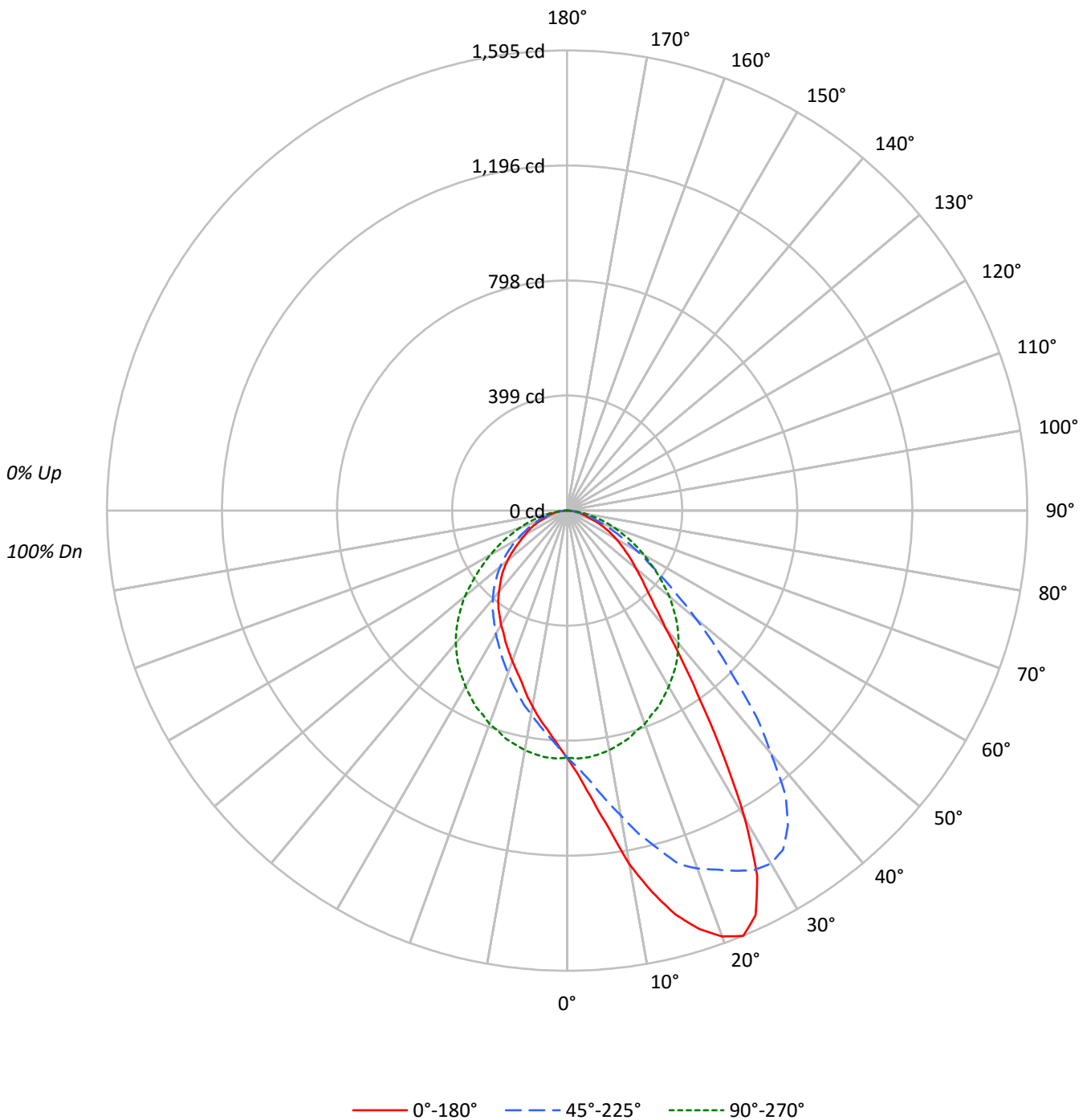
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P243421

CATALOG NUMBER: S123RDR-H775D927-X4F0-XX-UDD-A-W

### 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°	10382	10382	10382
5°	12239	10440	9296
10°	15321	10378	8484
15°	18182	10275	7685
20°	20263	10152	7155
25°	20683	10025	6737
30°	17237	9855	6408
35°	11907	9719	6139
40°	8367	9497	5817
45°	6720	9161	5503
50°	5857	8723	5091
55°	5251	8073	4533
60°	4752	7459	4107
65°	4159	6872	3840
70°	3356	6184	3250
75°	2908	5386	3185
80°	2687	4593	3204
85°	2364	3699	2782



TEST NUMBER: P243421

CATALOG NUMBER: S123RDR-H775D927-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	84.0	3.8
10°-20°	264.5	11.9
20°-30°	423.8	19.0
30°-40°	460.1	20.6
40°-50°	394.2	17.7
50°-60°	298.8	13.4
60°-70°	190.9	8.6
70°-80°	91.3	4.1
80°-90°	24.0	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°	772.3	34.6
0°-40°	1232.4	55.2
0°-60°	1925.4	86.3
0°-90°	2231.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2231.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	856	856	856	856	856	
5°	1006	944	858	780	764	103
15°	1449	1211	819	658	612	411
25°	1546	1378	750	544	504	686
35°	805	1334	657	446	415	517
45°	392	816	534	353	321	310
55°	248	400	382	253	214	224
65°	145	193	240	153	134	144
75°	62	75	115	72	68	67
85°	17	18	27	21	20	19
90°	0	0	0	0	0	



TEST NUMBER: P243421

CATALOG NUMBER: S123RDR-H775D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5
2.5°	917.9	919.0	917.1	916.8	916.4	910.5	908.6	905.7	895.3	892.7	890.9
5°	1005.9	1002.9	1006.2	1000.0	992.9	988.9	982.2	967.4	954.5	944.1	937.5
7.5°	1110.2	1111.3	1107.9	1102.0	1088.0	1082.1	1063.9	1046.2	1029.2	1007.7	991.8
10°	1244.8	1235.9	1237.8	1219.3	1204.5	1186.7	1161.9	1133.5	1103.5	1073.2	1050.6
12.5°	1352.0	1358.3	1353.9	1345.0	1316.5	1299.1	1276.6	1235.2	1187.8	1147.1	1112.8
15°	1448.9	1440.4	1441.5	1420.1	1409.7	1393.8	1356.5	1315.4	1284.7	1211.1	1170.4
17.5°	1519.9	1519.2	1518.1	1499.9	1487.4	1454.1	1416.0	1373.8	1335.4	1284.3	1233.3
20°	1570.9	1576.5	1575.0	1560.2	1538.0	1505.9	1482.9	1430.4	1367.2	1320.6	1258.1
22.5°	1595.4	1595.7	1596.5	1589.4	1574.6	1553.9	1521.4	1479.2	1423.0	1346.8	1277.3
25°	1546.5	1548.4	1558.0	1563.9	1568.0	1558.7	1541.7	1503.6	1455.2	1377.5	1305.4
27.5°	1426.7	1432.6	1443.4	1478.9	1493.3	1513.3	1520.3	1505.1	1469.3	1404.5	1322.4
30°	1231.5	1248.1	1258.5	1298.8	1355.3	1408.6	1433.7	1458.5	1455.2	1412.3	1329.1
32.5°	1008.1	1018.8	1048.8	1092.0	1136.8	1214.8	1302.1	1362.0	1395.7	1393.4	1334.6
35°	804.7	820.2	845.8	878.7	940.4	1021.4	1120.2	1214.5	1298.8	1333.9	1312.8
37.5°	653.1	654.6	678.6	725.2	763.7	835.0	924.2	1040.6	1151.2	1242.9	1263.3
40°	528.8	539.2	551.8	581.0	626.5	694.9	754.0	868.7	983.3	1098.3	1180.4
42.5°	450.4	450.4	464.5	483.0	513.3	554.3	625.0	728.9	832.1	973.3	1065.8
45°	392.0	395.7	402.0	413.8	435.3	467.1	521.8	592.4	697.8	816.5	955.6
47.5°	349.8	349.5	355.0	362.0	378.7	402.7	434.9	492.2	570.2	698.2	821.0
50°	310.6	312.1	316.2	322.1	333.2	350.2	370.5	413.8	479.6	581.0	709.7
52.5°	280.3	279.9	283.3	287.0	295.5	305.1	323.2	355.4	400.9	481.5	588.4
55°	248.5	250.0	254.1	256.3	263.3	269.6	284.8	302.9	339.5	400.1	497.4
57.5°	221.1	223.0	225.2	227.4	232.2	238.5	251.1	262.2	288.8	332.5	410.1
60°	196.0	195.3	197.8	201.5	204.1	209.7	216.7	228.2	246.7	277.7	334.7
62.5°	170.9	171.2	171.6	173.8	178.6	183.4	189.7	198.2	209.3	232.2	272.5
65°	145.0	145.3	146.1	148.3	153.1	156.1	162.7	170.1	179.0	192.7	220.8
67.5°	122.0	123.5	123.5	125.4	127.2	130.2	135.0	140.5	147.9	157.9	176.0
70°	94.7	94.3	96.2	99.8	101.7	106.9	110.2	113.9	120.6	126.8	142.4
72.5°	76.2	76.2	76.2	77.7	78.0	79.1	81.4	89.1	94.3	100.6	109.1
75°	62.1	62.5	62.5	62.9	63.2	64.3	65.1	67.3	68.8	75.4	80.6
77.5°	49.6	49.9	49.9	50.3	50.7	51.0	52.5	52.5	53.6	55.1	57.3
80°	38.5	38.1	38.1	38.5	38.5	39.6	39.6	40.3	40.7	41.4	42.5
82.5°	27.4	27.0	27.4	27.0	27.4	27.7	28.5	28.1	28.8	29.6	30.0
85°	17.0	17.4	17.4	18.1	17.8	17.4	17.8	17.8	17.8	17.8	18.5
87.5°	7.4	8.1	8.1	7.8	8.1	8.1	7.4	8.1	8.1	8.1	8.5
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: P243421

CATALOG NUMBER: S123RDR-H775D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5
2.5°	889.8	888.3	882.7	877.6	869.8	866.5	862.0	860.2	854.3	846.1	842.4
5°	931.2	920.1	909.4	896.4	885.7	873.1	866.1	858.0	845.4	833.9	825.8
7.5°	975.2	958.9	938.9	917.5	898.3	880.1	864.6	851.7	835.4	819.5	806.9
10°	1023.6	995.9	963.7	936.4	908.6	882.4	862.8	843.2	822.1	802.1	787.0
12.5°	1075.8	1036.6	997.7	956.7	915.3	885.0	855.7	830.6	806.9	785.8	767.7
15°	1129.8	1076.1	1026.6	980.4	922.7	882.0	849.8	818.8	789.2	763.3	745.5
17.5°	1168.2	1106.8	1044.3	978.9	929.3	879.0	839.1	799.9	772.5	745.9	721.9
20°	1203.7	1134.2	1059.9	998.9	929.7	868.3	824.7	787.0	748.9	720.4	700.0
22.5°	1218.9	1156.0	1081.0	996.3	927.1	864.2	808.0	765.5	731.5	700.4	673.8
25°	1221.8	1151.6	1074.7	992.9	917.1	849.1	792.1	749.6	705.2	673.1	652.3
27.5°	1234.8	1138.6	1063.2	981.8	904.9	833.9	774.0	726.7	685.3	650.9	624.2
30°	1238.1	1133.1	1038.8	961.1	882.0	812.5	751.8	704.1	659.0	623.9	599.8
32.5°	1239.6	1125.7	1013.3	928.2	852.8	787.3	731.9	680.1	637.2	600.2	575.4
35°	1234.4	1115.3	982.6	890.9	818.4	754.0	702.6	656.8	609.1	574.3	548.1
37.5°	1214.1	1099.1	965.2	847.2	778.1	717.4	673.8	628.7	584.7	546.9	520.0
40°	1175.6	1075.4	932.7	810.6	732.2	677.9	637.2	600.2	555.8	519.6	493.0
42.5°	1114.2	1043.2	902.7	769.2	686.7	635.3	601.3	569.5	529.6	495.2	466.0
45°	1023.3	998.1	862.8	727.0	637.2	588.7	559.2	534.4	498.1	466.7	439.7
47.5°	924.9	930.4	822.5	684.1	592.1	545.8	520.0	498.1	470.8	437.1	412.3
50°	811.4	841.7	765.9	640.9	546.9	501.5	475.9	462.6	437.1	409.0	385.7
52.5°	707.4	755.5	708.6	593.5	502.6	457.8	434.2	420.8	403.8	380.5	356.9
55°	599.8	660.8	626.8	542.5	457.5	412.3	392.4	382.0	368.0	349.8	328.4
57.5°	510.7	575.8	554.3	488.9	413.4	372.8	355.0	343.2	334.7	318.0	300.7
60°	423.4	483.7	475.2	427.1	369.8	331.0	317.3	307.7	300.7	288.5	271.4
62.5°	341.7	400.1	405.3	367.6	327.3	292.1	279.6	272.9	267.4	257.8	242.2
65°	271.1	322.5	333.2	304.4	282.5	255.9	243.7	239.6	235.6	224.5	212.6
67.5°	212.3	252.6	266.6	250.4	234.8	219.3	209.7	204.1	201.2	194.5	186.4
70°	162.3	197.1	208.9	201.9	191.6	185.6	178.2	174.5	171.6	163.1	158.6
72.5°	121.7	145.3	160.1	157.9	155.7	151.6	147.2	146.1	141.6	136.1	132.0
75°	89.1	102.8	116.1	120.9	120.2	121.7	116.9	115.0	112.4	108.4	105.0
77.5°	64.0	72.1	81.4	87.3	90.2	90.6	90.6	89.5	87.6	84.7	82.1
80°	44.4	46.2	54.7	60.3	63.2	65.5	65.5	65.8	64.0	62.9	61.0
82.5°	30.7	31.8	33.7	38.1	41.8	44.4	44.7	44.4	43.6	43.3	40.7
85°	19.2	18.9	18.9	20.0	22.9	25.5	25.9	26.6	26.3	25.9	23.3
87.5°	8.1	8.1	8.5	8.1	9.2	9.6	10.4	12.2	11.8	10.0	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: P243421

CATALOG NUMBER: S123RDR-H775D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5	856.5
2.5°	840.2	835.4	831.0	826.2	820.2	814.7	813.9	813.2	815.1	811.4	809.9
5°	819.5	810.3	803.2	794.3	788.1	779.9	775.5	774.4	774.0	771.8	768.8
7.5°	796.9	787.0	777.0	767.0	756.6	748.1	743.3	740.7	738.5	734.8	731.9
10°	775.9	763.3	752.6	738.9	727.8	716.7	712.3	708.6	706.3	701.2	697.1
12.5°	752.2	736.3	724.5	709.7	699.7	690.1	683.0	676.0	670.8	663.1	659.7
15°	731.5	714.8	694.9	686.0	671.9	657.5	649.8	649.8	639.0	632.7	628.7
17.5°	703.7	689.3	675.3	657.2	637.2	628.7	619.8	612.0	604.6	602.8	595.4
20°	679.3	662.3	647.9	628.3	610.2	600.2	589.8	581.3	575.8	570.6	566.5
22.5°	655.3	638.3	616.1	596.9	584.7	571.4	560.3	552.9	548.1	540.3	536.6
25°	630.2	609.8	589.8	571.0	555.8	544.4	532.9	528.8	520.3	516.3	511.1
27.5°	605.0	580.6	561.7	545.5	528.5	517.4	509.6	502.2	494.8	492.6	489.6
30°	576.9	554.3	536.2	520.3	504.0	494.4	485.2	478.5	472.2	467.4	464.1
32.5°	548.8	529.9	512.6	494.1	479.3	468.9	461.2	455.2	452.3	444.1	441.2
35°	522.9	503.7	485.2	467.8	456.0	446.0	439.0	433.4	427.1	422.0	419.0
37.5°	496.3	478.9	460.0	445.2	431.9	423.8	416.0	408.6	403.8	400.9	397.2
40°	470.4	451.9	437.5	421.2	409.4	400.1	392.0	386.5	380.5	377.9	373.1
42.5°	446.0	428.2	411.6	396.8	386.1	377.2	369.4	363.2	358.3	353.5	350.9
45°	417.9	402.4	387.2	372.4	362.4	352.8	344.3	338.7	332.1	328.0	326.5
47.5°	394.2	377.9	361.7	348.0	337.6	327.3	320.3	313.6	308.1	304.0	301.8
50°	366.1	350.9	337.6	324.0	314.0	302.9	294.4	288.1	281.8	278.8	275.1
52.5°	342.1	327.3	311.0	298.8	287.3	277.7	270.0	264.8	259.2	254.8	252.2
55°	312.1	297.7	284.8	271.8	260.3	252.6	246.3	237.4	232.6	228.2	221.1
57.5°	285.9	272.2	258.5	245.9	235.2	226.0	218.2	212.3	206.0	202.7	197.8
60°	258.1	243.7	231.1	221.5	209.7	199.7	194.5	187.5	182.3	177.1	175.7
62.5°	230.8	217.4	204.9	194.9	184.2	176.4	169.7	166.4	161.2	157.2	155.7
65°	202.3	191.2	179.4	168.3	161.6	152.7	149.0	143.5	140.5	138.7	138.3
67.5°	174.2	164.2	153.5	145.0	138.7	132.8	128.3	126.1	123.1	120.9	119.1
70°	148.7	139.0	129.8	122.8	118.0	113.5	110.6	106.5	103.5	100.6	96.5
72.5°	123.5	115.8	108.0	102.4	97.6	95.0	91.0	84.7	81.7	81.0	80.6
75°	100.2	91.7	86.2	83.2	78.8	72.5	69.9	69.2	68.8	68.0	68.0
77.5°	77.3	72.1	68.4	62.1	59.9	59.5	57.7	57.3	56.6	57.0	57.0
80°	56.2	53.3	48.8	47.0	46.2	46.6	45.9	46.2	45.5	45.9	45.1
82.5°	37.4	34.8	35.5	34.4	34.4	35.1	34.8	33.7	33.7	33.3	33.3
85°	22.2	21.8	22.6	22.6	22.2	21.1	21.8	21.4	20.3	20.7	20.7
87.5°	9.6	9.6	9.6	9.2	9.6	9.2	9.2	9.2	8.1	8.1	8.1
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: P243421

CATALOG NUMBER: S123RDR-H775D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	856.5	856.5	856.5	856.5
2.5°	810.6	809.9	808.8	807.7
5°	768.8	765.5	765.1	764.0
7.5°	729.6	728.2	725.6	728.5
10°	693.8	694.9	692.3	689.3
12.5°	656.4	654.2	650.1	652.3
15°	623.5	619.8	617.6	612.4
17.5°	589.1	586.1	586.1	582.8
20°	559.2	556.2	556.9	554.7
22.5°	534.0	531.8	528.5	528.8
25°	510.3	507.0	503.3	503.7
27.5°	484.1	481.1	480.4	477.8
30°	460.8	458.2	457.8	457.8
32.5°	438.2	437.1	435.3	434.2
35°	418.6	417.1	414.2	414.9
37.5°	394.2	392.7	392.4	392.0
40°	371.3	370.2	367.2	367.6
42.5°	348.4	346.5	344.7	343.9
45°	323.6	323.2	320.3	321.0
47.5°	299.9	299.2	297.7	295.8
50°	273.7	273.3	272.2	270.0
52.5°	248.1	247.0	244.8	242.6
55°	219.3	216.0	216.3	214.5
57.5°	195.6	194.1	191.2	190.1
60°	172.7	171.2	170.9	169.4
62.5°	153.5	152.0	150.9	150.9
65°	136.1	134.2	133.9	133.9
67.5°	116.9	115.0	114.6	113.9
70°	92.8	92.5	91.7	91.7
72.5°	79.9	79.5	79.9	78.4
75°	68.0	67.7	67.7	68.0
77.5°	56.6	56.6	56.2	56.2
80°	44.7	45.1	44.7	45.9
82.5°	33.7	32.9	33.3	32.5
85°	20.7	20.7	20.0	20.0
87.5°	8.1	8.1	8.1	8.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)