

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: P242585

Luminaire Tested: **S123RDR-S560D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242585  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDR-S560D935-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1798.0 lumens  
Efficiency: N/A  
Efficacy: 95.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct

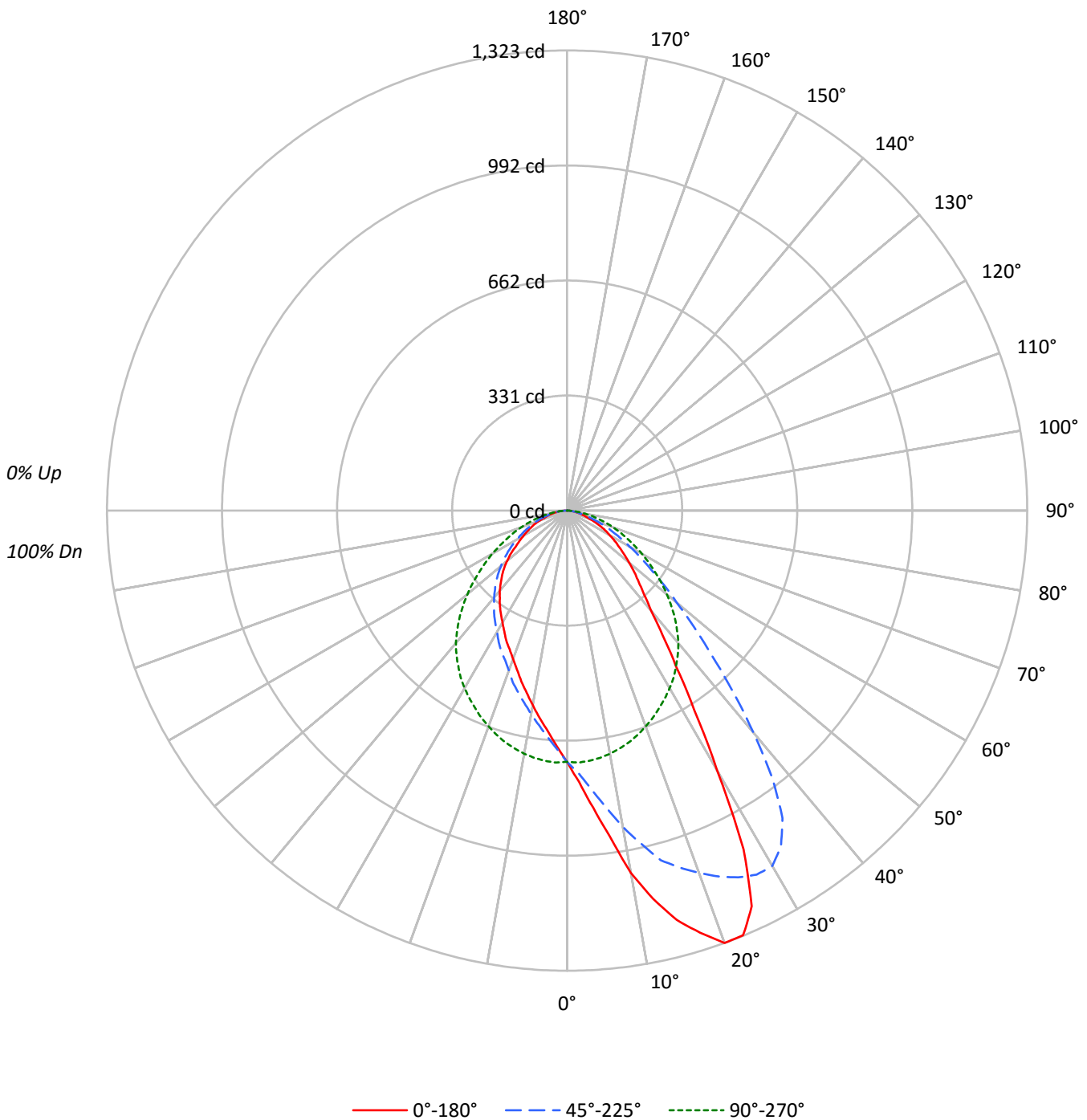
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	104	100	97	100	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	8753	8753	8753
5°	10434	8790	7741
10°	13027	8739	6994
15°	15291	8650	6377
20°	17066	8517	5854
25°	16793	8376	5532
30°	12070	8247	5201
35°	8060	8078	4985
40°	5938	7875	4764
45°	4981	7518	4546
50°	4396	7053	4243
55°	3855	6519	3827
60°	3433	6010	3508
65°	3014	5461	3264
70°	2367	4972	2981
75°	2084	4341	2721
80°	1815	3693	2673
85°	1460	2962	2837



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	70.9	3.9
10°-20°	222.0	12.3
20°-30°	349.6	19.4
30°-40°	363.6	20.2
40°-50°	311.0	17.3
50°-60°	237.1	13.2
60°-70°	151.9	8.4
70°-80°	72.8	4.0
80°-90°	19.1	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°	642.5	35.7
0°-40°	1006.1	56.0
0°-60°	1554.2	86.4
0°-90°	1798.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1798.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	722	722	722	722	722	
5°	858	804	722	652	636	88
15°	1218	1040	689	542	508	346
25°	1256	1164	626	448	414	546
35°	545	1079	546	365	337	354
45°	291	586	439	289	265	228
55°	182	292	308	208	181	165
65°	105	144	190	130	114	103
75°	44	52	93	66	58	48
85°	10	11	21	20	20	12
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°	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1
2.5°	780.8	782.1	778.0	777.4	772.8	771.6	771.6	765.1	761.0	755.8	752.7
5°	857.5	862.4	860.0	854.4	845.1	843.0	837.1	827.8	817.3	804.3	798.1
7.5°	945.3	955.5	953.6	945.0	935.1	928.9	912.5	899.2	879.1	860.9	846.7
10°	1058.4	1051.3	1045.7	1037.4	1028.4	1013.9	996.6	972.8	945.3	923.6	899.5
12.5°	1143.1	1143.4	1136.0	1127.3	1113.7	1100.1	1077.9	1047.6	1014.5	980.8	952.4
15°	1218.5	1220.4	1215.8	1206.8	1188.9	1164.4	1132.3	1120.2	1074.5	1040.5	1006.5
17.5°	1272.3	1272.6	1271.7	1259.6	1240.2	1223.5	1193.5	1165.4	1122.1	1076.0	1030.6
20°	1323.0	1319.9	1320.5	1306.6	1293.0	1272.9	1243.9	1197.8	1163.8	1108.5	1061.2
22.5°	1321.8	1321.8	1324.6	1322.1	1313.1	1298.9	1277.6	1240.5	1194.7	1138.8	1084.1
25°	1255.6	1253.2	1267.7	1271.7	1287.5	1290.3	1283.5	1262.1	1221.0	1163.5	1097.7
27.5°	1098.0	1089.0	1119.3	1149.3	1189.2	1214.5	1240.5	1246.4	1226.9	1179.9	1111.0
30°	862.4	891.5	905.1	953.9	1008.3	1073.3	1130.1	1184.2	1197.5	1179.6	1125.5
32.5°	679.4	703.9	714.7	754.9	804.6	883.5	975.9	1058.1	1122.4	1144.0	1116.8
35°	544.7	545.0	570.9	589.5	636.5	714.7	797.5	900.1	1002.2	1079.4	1087.5
37.5°	449.5	450.7	467.4	485.9	523.6	567.5	644.5	731.1	853.8	969.1	1029.0
40°	375.3	378.0	389.8	408.0	433.4	464.6	521.5	601.8	700.1	832.1	940.0
42.5°	327.7	332.6	337.2	350.2	363.5	392.3	435.5	493.0	580.2	703.2	831.8
45°	290.6	293.0	297.7	304.2	318.4	338.8	369.7	411.4	485.6	586.1	710.7
47.5°	262.1	260.6	265.8	271.4	281.0	295.8	317.5	353.6	409.3	493.3	601.2
50°	233.1	232.8	236.2	240.2	249.1	259.3	276.4	302.0	344.0	410.8	507.6
52.5°	205.9	207.4	209.6	214.8	220.7	228.4	243.3	260.0	294.6	349.9	426.6
55°	182.4	183.3	186.7	189.5	194.1	202.5	212.1	227.5	252.2	292.4	358.9
57.5°	162.0	161.7	165.1	165.4	171.3	178.4	186.1	198.1	217.0	248.8	295.2
60°	141.6	140.6	143.4	145.6	148.4	153.9	160.1	171.9	186.1	208.0	246.4
62.5°	123.0	122.7	124.6	126.7	128.9	133.8	138.8	147.1	157.6	175.3	203.7
65°	105.1	106.0	107.0	107.9	109.1	112.2	117.2	123.3	131.1	144.0	166.0
67.5°	86.6	87.8	88.1	90.3	92.7	94.3	97.1	102.9	108.8	120.6	133.5
70°	66.8	66.5	66.8	67.7	71.1	74.5	78.5	82.5	85.9	93.7	104.2
72.5°	55.0	54.4	55.3	55.3	56.6	56.9	59.0	62.8	67.4	72.0	78.8
75°	44.5	44.5	44.5	44.5	45.7	46.4	47.3	48.2	49.8	52.2	57.8
77.5°	34.6	34.6	35.2	35.5	35.9	36.2	36.8	37.7	38.3	39.6	42.3
80°	26.0	26.3	26.0	26.3	26.3	26.9	27.2	28.1	28.4	30.0	30.9
82.5°	17.9	17.6	17.9	18.2	18.2	18.9	18.9	19.5	19.5	20.1	21.0
85°	10.5	9.9	10.5	10.2	10.8	10.2	10.5	11.1	11.1	11.4	12.7
87.5°	3.1	3.7	3.1	3.4	3.4	3.7	3.7	3.7	4.3	4.0	4.3
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°	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1
2.5°	751.5	750.5	746.2	741.3	734.8	730.4	727.0	725.2	719.6	712.8	708.2
5°	791.6	782.4	772.5	760.4	749.3	737.9	730.8	722.4	712.2	700.8	692.7
7.5°	831.5	815.4	797.8	779.6	761.0	744.7	729.5	717.2	701.7	685.9	675.1
10°	878.8	852.2	824.7	796.6	770.9	746.8	728.3	710.0	690.6	671.7	657.5
12.5°	921.8	884.7	851.9	815.8	781.1	751.2	722.4	700.1	675.7	655.3	638.6
15°	956.7	920.9	882.5	830.0	786.4	749.9	717.5	689.3	660.9	636.2	620.4
17.5°	993.2	938.8	888.4	847.6	790.7	746.5	708.5	675.7	644.8	619.5	599.7
20°	1014.2	962.0	906.0	850.1	794.4	743.4	697.4	660.3	627.8	598.1	580.2
22.5°	1026.9	966.0	906.3	845.1	785.2	731.7	686.2	644.5	608.7	580.8	557.6
25°	1036.2	965.7	900.8	841.4	781.1	723.6	669.5	626.3	588.2	558.3	534.8
27.5°	1043.6	962.0	887.5	822.9	762.0	703.5	654.7	608.3	570.3	539.1	513.4
30°	1045.4	957.3	871.7	800.3	738.2	685.6	633.1	589.2	548.4	514.7	491.2
32.5°	1047.9	945.9	850.4	773.4	709.4	657.5	611.1	569.7	527.7	494.6	470.5
35°	1039.2	943.1	828.7	741.6	677.9	627.5	584.5	545.9	504.8	472.6	448.2
37.5°	1013.0	928.0	807.1	706.0	640.2	593.8	558.0	522.7	484.7	449.5	426.9
40°	968.8	903.2	781.1	674.2	604.6	556.7	525.2	497.7	461.2	428.7	404.0
42.5°	902.9	869.5	756.4	640.8	564.4	518.7	493.3	468.0	437.1	404.0	381.1
45°	819.5	824.7	720.9	604.9	528.0	481.6	456.6	438.6	410.2	383.0	359.2
47.5°	718.1	762.0	682.8	567.2	488.4	444.8	422.9	406.5	386.7	358.6	336.6
50°	619.2	689.3	635.2	529.2	451.6	408.3	386.7	374.0	357.3	336.3	315.6
52.5°	528.0	604.6	577.7	486.9	411.7	373.1	352.1	342.2	329.8	310.4	292.1
55°	445.4	521.8	514.4	444.2	371.9	336.3	320.2	308.5	299.5	284.7	269.9
57.5°	373.7	447.6	449.1	396.9	337.2	301.1	287.2	277.9	271.7	260.0	245.4
60°	306.6	373.1	386.1	349.0	299.5	268.6	255.0	247.9	243.3	234.3	223.8
62.5°	251.0	305.1	320.2	296.1	263.4	234.9	225.0	218.2	215.5	208.0	199.1
65°	200.6	247.6	261.8	247.0	228.1	204.9	196.3	190.4	187.6	183.3	176.5
67.5°	158.3	194.7	210.2	197.8	190.7	174.3	168.5	165.1	162.6	159.5	153.6
70°	121.2	146.5	162.6	159.8	154.2	146.5	142.5	140.3	137.9	135.4	130.4
72.5°	91.5	107.0	121.8	124.3	119.9	119.9	116.5	115.9	114.7	111.6	109.4
75°	64.6	76.7	87.2	91.2	93.0	94.6	93.0	92.7	92.4	90.0	88.4
77.5°	44.8	52.5	59.7	66.8	69.2	71.4	71.7	73.0	72.0	70.5	69.9
80°	32.5	34.0	38.6	44.5	49.1	51.0	52.2	52.9	52.5	52.2	51.0
82.5°	21.3	22.6	24.1	27.8	31.5	34.9	35.5	35.2	36.2	36.5	35.5
85°	12.7	13.0	13.6	14.2	16.4	19.8	20.7	21.3	21.9	21.9	20.1
87.5°	4.9	4.6	5.3	5.3	6.2	6.5	8.3	9.9	10.2	9.0	9.0
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°	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1	722.1
2.5°	706.6	702.6	699.8	693.7	689.6	685.3	681.0	683.8	683.5	683.1	683.1
5°	685.9	678.8	672.3	664.0	658.7	652.2	647.3	646.7	647.9	643.6	641.1
7.5°	666.5	657.2	647.9	639.3	629.7	622.3	617.6	615.8	612.4	609.6	607.1
10°	645.7	634.3	625.3	613.9	603.4	594.1	588.2	584.2	582.1	579.9	575.9
12.5°	624.4	613.3	601.2	587.9	578.0	566.9	562.9	558.3	553.6	551.2	545.3
15°	603.7	589.2	577.1	563.5	552.4	541.9	535.7	526.7	525.5	522.4	516.8
17.5°	583.6	567.5	549.9	540.6	529.5	518.4	508.5	505.7	496.4	493.3	488.1
20°	558.9	544.4	531.7	518.4	500.2	489.9	482.5	478.5	471.4	467.1	464.0
22.5°	537.6	522.7	507.6	491.5	477.3	465.5	460.6	453.8	450.7	444.2	440.8
25°	517.5	501.4	483.8	467.1	456.3	447.6	438.9	433.4	427.8	425.0	418.9
27.5°	493.0	477.0	460.0	447.0	434.6	426.0	417.6	413.0	405.9	401.2	397.8
30°	473.6	453.8	439.6	428.1	411.1	403.1	397.2	391.0	386.1	381.1	377.7
32.5°	451.0	433.4	420.1	405.3	393.2	384.2	376.2	370.9	366.9	362.3	358.9
35°	427.2	412.1	398.1	383.9	374.3	365.4	356.4	351.8	347.8	343.4	340.3
37.5°	405.6	391.3	378.4	364.8	353.0	345.3	337.9	334.8	329.2	326.1	323.0
40°	385.8	371.9	357.6	344.7	332.3	326.7	320.2	315.0	310.0	307.9	304.5
42.5°	364.1	350.2	338.8	324.6	315.0	307.0	301.1	295.2	291.8	288.4	286.9
45°	342.8	330.4	318.7	304.8	295.2	288.7	281.9	276.7	273.3	271.1	267.7
47.5°	322.4	309.7	298.0	285.6	276.4	268.9	261.8	258.4	253.8	251.3	248.8
50°	299.8	288.7	276.0	264.9	255.6	248.2	242.7	238.0	234.0	230.6	229.1
52.5°	279.1	267.1	256.6	246.4	236.5	227.8	222.9	217.9	215.1	211.1	209.3
55°	255.9	244.5	235.2	225.0	215.5	208.3	202.2	197.8	194.7	190.4	187.9
57.5°	234.6	224.7	213.3	204.3	194.1	188.6	183.3	177.1	173.4	170.0	167.5
60°	213.0	201.2	191.7	183.3	174.7	166.9	162.3	157.6	153.6	150.2	148.1
62.5°	190.4	180.5	171.6	162.3	154.6	148.1	142.5	138.8	135.4	133.5	131.4
65°	167.2	159.2	149.9	142.5	135.1	130.1	125.8	122.4	119.9	118.4	116.5
67.5°	145.9	138.2	129.8	122.1	117.2	113.1	110.0	107.0	105.7	103.9	102.6
70°	125.2	117.2	110.0	104.5	99.5	96.8	94.9	92.7	91.5	89.0	87.8
72.5°	102.6	97.4	92.7	88.4	84.7	82.2	79.8	77.0	74.8	72.0	70.8
75°	84.4	79.1	75.1	72.0	69.6	66.2	62.8	60.0	59.0	58.1	57.8
77.5°	65.8	62.4	59.4	56.9	53.5	50.4	49.5	48.8	48.5	47.9	47.9
80°	49.1	46.1	43.9	40.8	38.9	38.9	38.9	38.3	38.6	38.6	38.6
82.5°	33.4	30.6	29.7	29.1	29.1	29.4	29.4	29.7	29.4	30.0	29.7
85°	18.9	19.2	19.8	19.5	19.8	19.8	20.4	20.1	20.4	19.8	20.4
87.5°	8.7	9.6	9.9	10.2	10.5	10.2	10.5	10.5	10.8	10.8	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





TEST NUMBER: P242585

CATALOG NUMBER: S123RDR-S560D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	722.1	722.1	722.1	722.1
2.5°	679.4	679.1	679.4	678.2
5°	640.2	639.9	638.9	636.2
7.5°	604.6	604.0	601.5	602.2
10°	573.7	574.0	570.3	568.2
12.5°	543.7	541.9	539.1	536.6
15°	518.1	515.0	507.6	508.2
17.5°	486.2	483.8	483.5	479.1
20°	459.0	457.5	458.1	453.8
22.5°	437.7	436.2	432.8	432.1
25°	417.0	414.5	412.1	413.6
27.5°	396.0	394.1	391.3	391.3
30°	376.2	374.3	373.1	371.6
32.5°	356.1	356.1	353.6	353.6
35°	339.1	337.2	336.6	336.9
37.5°	322.7	320.2	319.0	317.8
40°	304.8	302.3	301.7	301.1
42.5°	284.7	284.1	283.8	282.5
45°	266.8	266.5	264.6	265.2
47.5°	247.6	246.1	245.1	246.1
50°	227.8	227.2	224.4	225.0
52.5°	208.0	205.3	204.6	204.0
55°	185.8	183.0	181.8	181.1
57.5°	163.8	162.9	161.7	162.6
60°	145.0	145.0	145.0	144.7
62.5°	130.4	129.5	129.2	129.8
65°	115.6	115.3	114.1	113.8
67.5°	102.0	100.8	100.8	100.2
70°	86.2	85.6	83.8	84.1
72.5°	69.2	68.6	68.6	68.0
75°	57.5	57.2	56.9	58.1
77.5°	47.9	47.9	48.2	47.6
80°	38.6	38.6	38.3	38.3
82.5°	29.1	29.4	29.7	29.1
85°	20.4	20.1	20.7	20.4
87.5°	11.4	10.8	10.8	11.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)