

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: P332425-940

Luminaire Tested: **S123RDIW-S560D1320U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332425-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S560D1320U940-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5986.1 lumens  
Efficiency: N/A  
Efficacy: 111.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

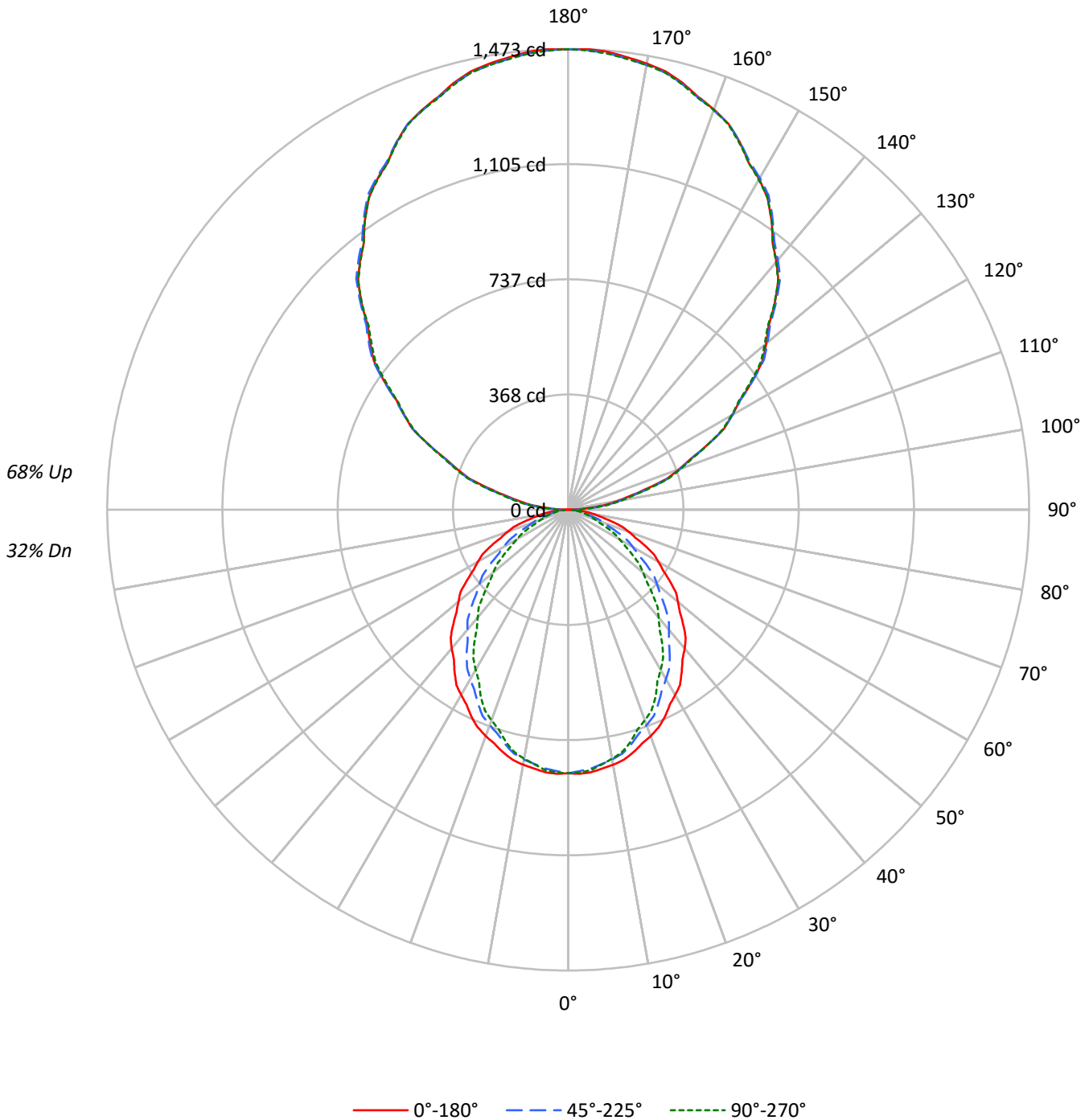
Input Watts (W): 53.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	103	103	103	103	93	93	93	93	73	73	73	56	56	56	39	39	39	32
1	94	90	86	83	84	81	78	75	64	62	60	49	48	47	35	34	34	27
2	86	79	73	68	77	71	66	62	57	53	50	43	41	39	31	30	29	23
3	78	69	62	57	70	63	57	52	50	46	42	38	36	33	28	26	25	20
4	72	61	54	48	64	55	49	44	45	40	36	34	31	29	25	23	21	17
5	66	55	47	41	59	49	43	38	40	35	31	31	28	25	23	20	19	15
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16	13
7	56	44	36	31	50	40	33	29	32	28	24	25	22	19	19	16	15	12
8	52	40	32	27	47	36	30	25	30	25	21	23	20	17	17	15	13	11
9	48	36	29	24	43	33	27	23	27	22	19	21	18	15	16	14	12	10
10	45	33	26	22	40	30	24	20	25	20	17	20	16	14	15	12	11	9

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

	0°	45°	90°
0°	9065	9065	9065
5°	9100	8975	9027
10°	9049	8862	8833
15°	8952	8655	8564
20°	8818	8395	8200
25°	8679	8105	7845
30°	8499	7768	7343
35°	8311	7432	6884
40°	8140	7035	6315
45°	7913	6645	5801
50°	7663	6199	5228
55°	7409	5692	4692
60°	7175	5147	4103
65°	6872	4559	3512
70°	6493	3827	2839
75°	5939	3011	2670
80°	5294	2672	2455
85°	4471	2359	2186



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.1	1.3
10°-20°	220.1	3.7
20°-30°	316.9	5.3
30°-40°	356.9	6.0
40°-50°	341.4	5.7
50°-60°	279.6	4.7
60°-70°	188.7	3.2
70°-80°	94.9	1.6
80°-90°	29.5	0.5
90°-100°	95.9	1.6
100°-110°	287.1	4.8
110°-120°	488.2	8.2
120°-130°	642.2	10.7
130°-140°	721.9	12.1
140°-150°	709.6	11.9
150°-160°	597.3	10.0
160°-170°	397.6	6.6
170°-180°	139.2	2.3
0°-30°	616.0	10.3
0°-40°	972.9	16.3
0°-60°	1594.0	26.6
0°-90°	1907.0	31.9
90°-120°	871.3	14.6
90°-150°	2944.9	49.2
90°-180°	4079.0	68.1
0°-180°	5986.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	842	842	842	842	842	
5°	842	839	831	836	835	80
15°	803	795	777	773	768	226
25°	731	713	682	668	660	336
35°	632	607	566	537	524	396
45°	520	488	436	399	381	401
55°	395	360	303	265	250	354
65°	270	231	179	147	138	267
75°	143	110	72	66	64	152
85°	36	22	19	18	18	41
90°	1	13	28	32	35	6
95°	68	76	86	90	90	77
105°	260	263	273	273	275	279
115°	492	495	493	494	493	486
125°	719	723	720	716	711	641
135°	933	940	939	935	932	719
145°	1132	1135	1138	1137	1132	707
155°	1296	1297	1298	1302	1294	597
165°	1412	1409	1409	1415	1408	398
175°	1469	1464	1464	1470	1463	139
180°	1472	1472	1472	1472	1472	



TEST NUMBER: P332425-940

CATALOG NUMBER: S123RDIW-S560D1320U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2
2.5°	845.0	844.5	844.0	843.5	843.0	842.0	840.6	839.1	837.7	836.2	837.6
5°	842.2	841.5	840.7	840.0	839.2	837.9	836.1	834.3	832.4	830.6	832.0
7.5°	834.5	833.7	832.8	832.0	831.2	829.6	827.2	824.8	822.4	820.1	820.8
10°	827.9	826.8	825.7	824.7	823.7	821.7	819.0	816.3	813.5	810.8	810.9
12.5°	818.6	817.4	816.2	815.0	813.9	811.6	808.2	804.9	801.6	798.3	798.2
15°	803.3	801.6	800.0	798.3	796.7	793.6	789.4	785.2	780.9	776.7	775.9
17.5°	784.0	782.1	780.2	778.2	776.2	772.6	767.1	761.8	756.3	751.0	749.4
20°	769.8	767.4	765.0	762.5	760.1	756.0	750.2	744.5	738.7	732.9	730.9
22.5°	753.9	751.2	748.4	745.6	742.8	738.3	732.2	726.0	720.0	713.8	711.3
25°	730.8	727.1	723.3	719.5	715.7	710.3	703.3	696.3	689.4	682.4	679.2
27.5°	702.8	698.7	694.5	690.3	686.1	680.1	672.3	664.6	656.8	649.1	644.6
30°	683.8	679.2	674.7	670.1	665.6	659.0	650.5	642.0	633.5	625.0	619.8
32.5°	664.6	659.5	654.3	649.2	644.0	636.9	627.9	618.9	609.9	600.9	595.3
35°	632.5	627.1	621.6	616.2	610.6	603.2	593.8	584.4	575.0	565.6	559.0
37.5°	600.0	594.0	587.9	581.8	575.7	567.7	557.6	547.6	537.5	527.4	520.0
40°	579.3	572.6	565.9	559.2	552.5	543.8	533.1	522.3	511.5	500.7	492.8
42.5°	555.7	549.0	542.4	535.7	529.1	520.1	509.0	497.8	486.7	475.5	466.9
45°	519.8	513.0	506.1	499.4	492.5	483.2	471.5	459.9	448.2	436.5	427.8
47.5°	483.8	476.4	468.9	461.4	453.9	444.3	432.6	420.9	409.2	397.5	388.2
50°	457.6	450.5	443.4	436.2	429.1	419.4	407.1	394.8	382.5	370.2	360.8
52.5°	434.2	426.4	418.7	410.9	403.2	393.2	381.0	368.9	356.7	344.6	334.7
55°	394.8	387.4	380.0	372.5	365.1	354.9	342.0	329.1	316.2	303.3	294.4
57.5°	358.5	350.4	342.2	334.1	326.0	315.5	302.6	289.6	276.6	263.7	255.4
60°	333.3	325.0	316.6	308.3	300.0	289.4	276.9	264.3	251.6	239.1	230.9
62.5°	308.2	299.9	291.5	283.1	274.8	264.3	251.7	239.2	226.5	213.9	206.3
65°	269.8	261.4	253.2	244.8	236.4	226.3	214.5	202.7	190.8	179.0	171.6
67.5°	231.4	223.0	214.5	206.1	197.7	187.8	176.4	165.1	153.7	142.3	136.8
70°	206.3	198.0	189.9	181.7	173.5	164.1	153.5	142.9	132.2	121.6	116.3
72.5°	181.1	173.1	165.0	156.9	148.8	140.0	130.4	120.6	111.0	101.4	97.0
75°	142.8	135.5	128.2	120.9	113.6	105.8	97.5	89.1	80.8	72.4	70.9
77.5°	107.8	101.2	94.6	88.0	81.4	75.4	70.1	64.7	59.3	53.9	53.1
80°	85.4	79.2	72.9	66.7	60.5	55.8	52.6	49.4	46.2	43.1	42.5
82.5°	64.1	58.7	53.3	48.0	42.5	39.1	37.6	36.2	34.7	33.2	32.7
85°	36.2	32.9	29.5	26.2	22.8	21.0	20.5	20.1	19.6	19.1	18.8
87.5°	13.4	12.5	11.7	10.9	10.1	10.0	10.6	11.3	11.9	12.7	12.8
90°	1.2	3.7	6.3	8.8	11.4	14.4	17.7	21.0	24.4	27.7	28.8
92.5°	28.0	29.7	31.5	33.3	35.0	36.8	38.7	40.6	42.5	44.4	45.2
95°	68.2	70.0	71.9	73.7	75.4	77.4	79.5	81.5	83.6	85.6	86.6
97.5°	121.2	122.5	123.9	125.2	126.5	128.0	129.5	130.9	132.4	133.9	135.1
100°	157.3	158.8	160.3	161.9	163.5	164.9	166.1	167.5	168.7	170.0	170.8
102.5°	198.9	199.8	200.8	201.7	202.6	203.9	205.6	207.3	209.0	210.7	211.5
105°	260.2	260.7	261.3	261.7	262.3	263.7	266.0	268.3	270.6	273.0	273.0
107.5°	331.4	331.8	332.1	332.4	332.7	333.3	334.2	335.2	336.1	337.0	337.9
110°	375.9	376.4	376.9	377.4	377.9	378.4	379.0	379.5	380.0	380.5	381.6



TEST NUMBER: P332425-940

CATALOG NUMBER: S123RDIW-S560D1320U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	422.1	422.4	422.8	423.0	423.4	423.6	423.7	423.7	423.9	424.0	425.3
115°	491.5	492.3	493.0	493.8	494.6	494.7	494.2	493.7	493.2	492.7	492.9
117.5°	561.4	561.9	562.4	562.9	563.5	563.4	562.7	562.0	561.3	560.7	560.6
120°	604.8	606.4	608.0	609.5	611.0	611.2	609.8	608.6	607.3	606.0	605.7
122.5°	650.2	651.3	652.5	653.6	654.7	655.0	654.2	653.6	652.9	652.3	651.6
125°	719.3	720.1	720.9	721.7	722.5	722.6	722.0	721.6	721.0	720.5	719.5
127.5°	783.2	784.9	786.5	788.1	789.8	790.3	789.8	789.2	788.6	788.1	786.6
130°	825.7	827.8	829.9	832.0	834.0	834.6	833.8	833.1	832.3	831.5	830.5
132.5°	868.3	870.4	872.4	874.5	876.6	877.3	876.7	876.2	875.6	875.0	873.8
135°	933.4	934.9	936.4	937.9	939.5	940.1	939.9	939.6	939.3	939.1	938.1
137.5°	993.5	994.7	996.0	997.3	998.6	999.6	1000.2	1000.9	1001.6	1002.3	1001.1
140°	1035.1	1036.3	1037.7	1038.9	1040.3	1041.0	1041.3	1041.5	1041.8	1042.1	1041.8
142.5°	1073.0	1074.3	1075.6	1076.9	1078.2	1079.1	1079.5	1080.0	1080.4	1080.9	1080.7
145°	1132.2	1132.7	1133.3	1133.8	1134.3	1135.0	1135.7	1136.5	1137.3	1138.0	1137.7
147.5°	1184.0	1185.0	1185.9	1186.9	1187.8	1188.6	1189.3	1190.0	1190.7	1191.4	1191.4
150°	1220.1	1220.7	1221.2	1221.6	1222.2	1222.7	1223.2	1223.7	1224.2	1224.8	1224.8
152.5°	1249.7	1250.4	1251.2	1251.9	1252.6	1253.1	1253.5	1253.7	1254.1	1254.4	1254.8
155°	1296.5	1296.5	1296.5	1296.5	1296.5	1296.6	1296.8	1297.1	1297.4	1297.6	1298.7
157.5°	1336.2	1336.0	1335.6	1335.3	1335.0	1335.0	1335.2	1335.3	1335.6	1335.8	1336.9
160°	1361.2	1360.8	1360.2	1359.7	1359.1	1358.9	1358.9	1358.9	1358.9	1358.9	1360.2
162.5°	1383.4	1382.7	1382.0	1381.3	1380.5	1380.3	1380.5	1380.7	1380.9	1381.1	1382.4
165°	1412.1	1411.3	1410.6	1409.8	1409.1	1408.6	1408.6	1408.6	1408.6	1408.6	1410.2
167.5°	1435.0	1434.0	1433.0	1431.9	1430.9	1430.5	1430.7	1430.9	1431.1	1431.3	1432.9
170°	1448.0	1447.0	1445.9	1444.9	1443.9	1443.3	1443.3	1443.3	1443.3	1443.3	1445.1
172.5°	1458.1	1457.1	1456.1	1455.1	1454.0	1453.5	1453.5	1453.5	1453.5	1453.5	1455.1
175°	1468.8	1467.8	1466.8	1465.7	1464.6	1464.2	1464.2	1464.2	1464.2	1464.2	1465.7
177.5°	1473.2	1472.4	1471.5	1470.7	1469.9	1469.5	1469.5	1469.5	1469.5	1469.5	1470.7
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3



TEST NUMBER: P332425-940

CATALOG NUMBER: S123RDIW-S560D1320U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2
2.5°	838.9	840.3	841.6	842.1	841.9	841.6	841.4	841.2
5°	833.3	834.7	836.1	836.6	836.3	836.0	835.7	835.4
7.5°	821.6	822.3	823.1	823.2	822.7	822.2	821.7	821.2
10°	811.1	811.3	811.4	811.1	810.4	809.6	808.9	808.1
12.5°	798.1	798.0	797.9	797.4	796.5	795.6	794.8	793.9
15°	775.2	774.4	773.6	772.7	771.6	770.6	769.5	768.5
17.5°	747.8	746.2	744.5	743.0	741.4	739.8	738.2	736.6
20°	729.0	727.0	725.1	723.2	721.3	719.5	717.6	715.9
22.5°	708.9	706.4	704.0	701.9	700.2	698.5	696.8	695.1
25°	676.0	672.8	669.7	667.2	665.6	663.9	662.2	660.5
27.5°	640.2	635.8	631.3	627.9	625.3	622.8	620.2	617.6
30°	614.7	609.5	604.4	600.6	598.2	595.8	593.3	590.8
32.5°	589.7	584.0	578.4	574.3	571.8	569.2	566.6	564.1
35°	552.5	546.0	539.5	534.8	532.1	529.4	526.6	523.9
37.5°	512.6	505.2	497.8	492.5	489.1	485.7	482.3	478.9
40°	484.9	477.0	469.1	463.4	459.9	456.5	453.0	449.4
42.5°	458.3	449.7	441.0	435.2	432.0	428.9	425.8	422.7
45°	419.2	410.5	401.9	395.7	392.1	388.4	384.8	381.1
47.5°	378.7	369.3	359.9	353.6	350.4	347.1	343.8	340.5
50°	351.4	342.0	332.6	326.1	322.6	319.1	315.7	312.2
52.5°	325.0	315.2	305.4	299.0	295.9	292.7	289.6	286.5
55°	285.7	276.9	268.0	262.2	259.1	256.1	253.1	250.0
57.5°	247.0	238.7	230.4	225.0	222.4	219.8	217.2	214.6
60°	222.7	214.5	206.3	200.9	198.3	195.7	193.1	190.6
62.5°	198.5	190.8	183.1	177.9	175.2	172.5	169.8	167.1
65°	164.1	156.7	149.2	144.6	143.0	141.3	139.6	137.9
67.5°	131.3	125.6	120.1	116.5	114.7	112.9	111.1	109.3
70°	110.9	105.7	100.3	96.8	95.1	93.5	91.8	90.2
72.5°	92.6	88.4	84.0	81.5	80.8	80.1	79.4	78.6
75°	69.4	67.9	66.3	65.5	65.1	64.8	64.5	64.2
77.5°	52.3	51.5	50.6	50.1	49.8	49.5	49.2	48.9
80°	42.1	41.6	41.2	40.8	40.6	40.2	39.9	39.6
82.5°	32.3	31.8	31.4	31.1	31.0	31.0	30.9	30.9
85°	18.5	18.2	17.9	17.7	17.7	17.7	17.7	17.7
87.5°	12.8	12.9	13.0	13.0	13.0	13.0	12.9	12.9
90°	29.8	30.9	31.8	32.6	33.2	33.7	34.2	34.7
92.5°	46.0	46.9	47.7	48.0	47.6	47.3	47.0	46.7
95°	87.7	88.6	89.7	90.2	90.2	90.2	90.2	90.2
97.5°	136.3	137.5	138.7	139.2	139.1	139.0	138.9	138.8
100°	171.6	172.3	173.1	173.7	174.2	174.8	175.3	175.8
102.5°	212.2	213.0	213.8	214.1	214.0	213.9	213.8	213.7
105°	273.0	273.0	273.0	273.2	273.8	274.2	274.7	275.3
107.5°	338.7	339.5	340.3	340.5	340.3	339.9	339.7	339.3
110°	382.5	383.6	384.6	384.9	384.3	383.9	383.3	382.8





TEST NUMBER: P332425-940

CATALOG NUMBER: S123RDIW-S560D1320U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	426.4	427.7	428.9	429.4	429.4	429.3	429.2	429.1
115°	493.2	493.5	493.7	493.7	493.5	493.2	492.9	492.7
117.5°	560.6	560.5	560.4	560.1	559.4	558.7	557.9	557.2
120°	605.5	605.3	605.0	604.6	604.1	603.6	603.1	602.5
122.5°	650.9	650.2	649.6	648.9	648.2	647.5	646.8	646.0
125°	718.5	717.5	716.4	715.4	714.3	713.3	712.3	711.2
127.5°	785.2	783.7	782.3	781.0	779.8	778.6	777.5	776.2
130°	829.5	828.5	827.4	826.0	824.2	822.4	820.6	818.9
132.5°	872.5	871.3	870.1	868.8	867.4	866.0	864.6	863.3
135°	937.0	936.0	935.0	934.2	933.7	933.2	932.6	932.2
137.5°	1000.1	999.0	997.9	996.9	996.0	995.0	994.0	993.0
140°	1041.5	1041.3	1041.0	1040.0	1038.2	1036.3	1034.6	1032.8
142.5°	1080.4	1080.1	1079.9	1079.1	1077.6	1076.3	1074.9	1073.5
145°	1137.5	1137.3	1137.0	1136.4	1135.3	1134.3	1133.3	1132.2
147.5°	1191.4	1191.4	1191.4	1190.7	1189.2	1187.6	1186.1	1184.5
150°	1224.8	1224.8	1224.8	1224.0	1222.4	1220.9	1219.3	1217.8
152.5°	1255.2	1255.6	1256.0	1255.5	1254.2	1252.9	1251.5	1250.2
155°	1299.7	1300.7	1301.7	1301.4	1299.6	1297.8	1295.9	1294.1
157.5°	1337.9	1339.0	1340.2	1339.9	1338.5	1337.0	1335.6	1334.2
160°	1361.5	1362.8	1364.1	1364.2	1363.2	1362.2	1361.1	1360.0
162.5°	1383.7	1385.0	1386.3	1386.1	1384.5	1382.8	1381.2	1379.5
165°	1411.8	1413.3	1414.8	1414.7	1412.9	1411.1	1409.3	1407.5
167.5°	1434.5	1436.1	1437.7	1437.7	1436.1	1434.5	1432.9	1431.3
170°	1447.0	1448.8	1450.5	1450.5	1448.8	1447.0	1445.1	1443.3
172.5°	1456.7	1458.3	1459.9	1459.8	1458.0	1456.2	1454.4	1452.6
175°	1467.2	1468.8	1470.3	1470.2	1468.4	1466.6	1464.8	1463.0
177.5°	1471.9	1473.2	1474.4	1474.4	1472.8	1471.4	1470.0	1468.6
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3

(END OF REPORT)