

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: P332424-935

Luminaire Tested: **S123RDIW-S560D1320U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332424-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S560D1320U935-4F0-1E-UDD-F  
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, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6385.6 lumens  
Efficiency: N/A  
Efficacy: 118.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.23  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

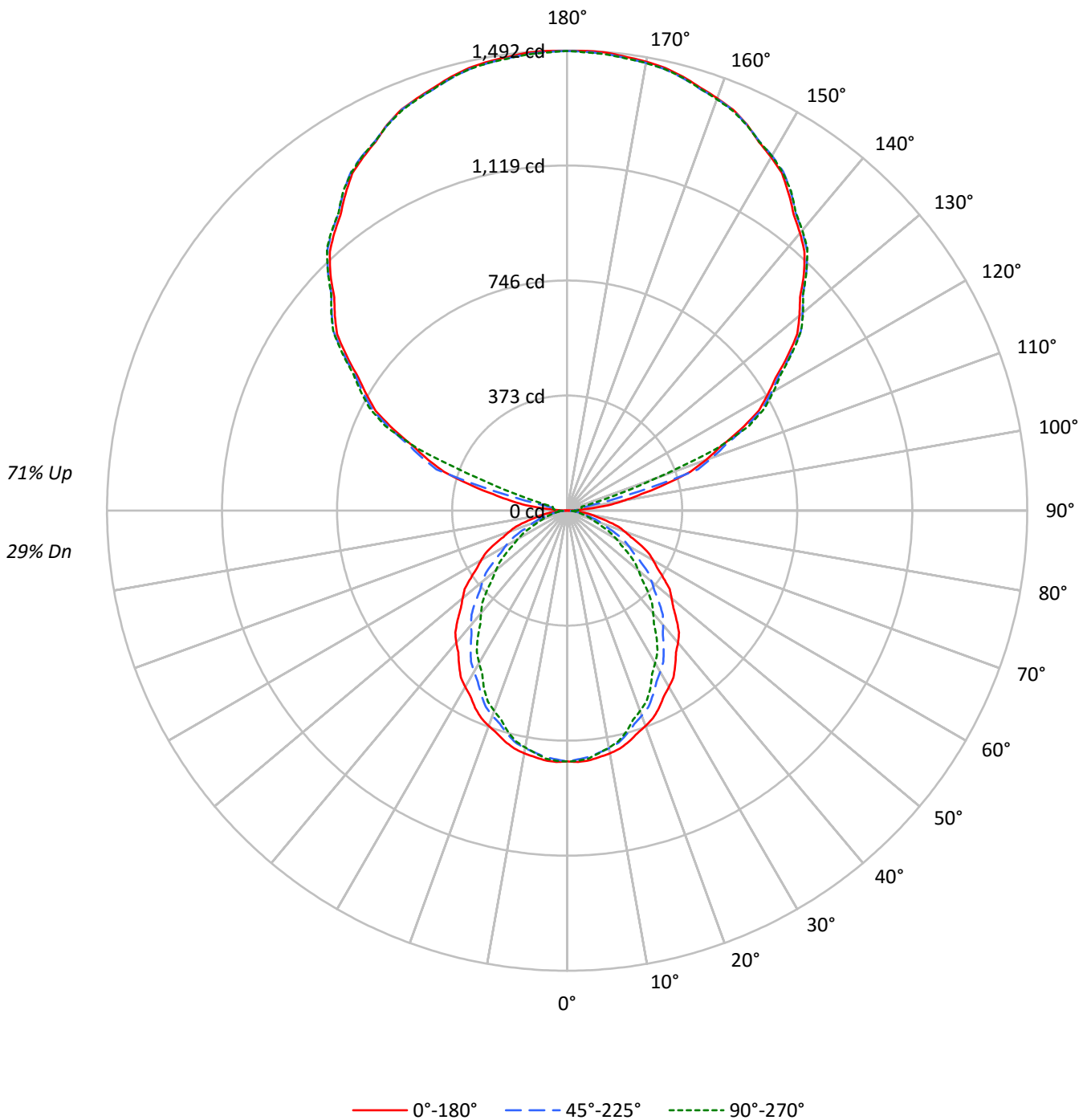
Input Watts (W): 53.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	72	72	72	53	53	53	37	37	37	29
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25
2	85	78	72	67	76	70	65	61	55	52	49	42	39	38	29	28	27	21
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	26	24	23	18
4	71	61	53	47	63	55	48	43	43	39	35	33	30	27	23	21	20	16
5	65	54	46	41	58	49	42	37	39	34	30	30	26	24	21	19	17	14
6	60	48	41	35	54	44	37	32	35	30	26	27	23	21	19	17	15	12
7	55	44	36	31	49	39	33	28	32	27	23	24	21	18	17	15	14	11
8	51	39	32	27	46	36	29	25	29	24	21	22	19	16	16	14	12	10
9	48	36	29	24	43	33	26	22	26	22	18	20	17	15	15	13	11	9
10	44	33	26	21	40	30	24	20	24	20	16	19	15	13	14	12	10	8

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

	0°	45°	90°
0°	8753	8753	8753
5°	8787	8666	8715
10°	8737	8557	8528
15°	8643	8357	8269
20°	8514	8107	7918
25°	8381	7826	7574
30°	8206	7501	7091
35°	8025	7176	6646
40°	7859	6794	6097
45°	7640	6416	5602
50°	7400	5987	5047
55°	7156	5495	4530
60°	6928	4969	3961
65°	6635	4401	3393
70°	6266	3695	2738
75°	5731	2907	2578
80°	5114	2579	2368
85°	4323	2272	2112



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.4	1.2
10°-20°	212.5	3.3
20°-30°	305.9	4.8
30°-40°	344.6	5.4
40°-50°	329.7	5.2
50°-60°	270.0	4.2
60°-70°	182.2	2.9
70°-80°	91.6	1.4
80°-90°	28.4	0.4
90°-100°	54.2	0.8
100°-110°	258.2	4.0
110°-120°	620.2	9.7
120°-130°	789.8	12.4
130°-140°	843.9	13.2
140°-150°	789.1	12.4
150°-160°	636.5	10.0
160°-170°	410.8	6.4
170°-180°	141.6	2.2
0°-30°	594.8	9.3
0°-40°	939.4	14.7
0°-60°	1539.1	24.1
0°-90°	1841.3	28.8
90°-120°	932.6	14.6
90°-150°	3355.4	52.5
90°-180°	4544.0	71.2
0°-180°	6385.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	813	813	813	813	813	
5°	813	810	802	808	807	77
15°	776	768	750	747	742	218
25°	706	688	659	645	638	324
35°	611	586	546	519	506	382
45°	502	471	422	385	368	387
55°	381	348	293	256	241	342
65°	260	223	173	142	133	258
75°	138	106	70	64	62	147
85°	35	21	18	17	17	39
90°	1	12	27	31	33	5
95°	68	25	34	42	42	83
105°	330	336	242	58	49	350
115°	619	626	636	646	651	611
125°	872	881	886	888	890	779
135°	1086	1093	1097	1100	1097	836
145°	1253	1261	1263	1265	1265	784
155°	1380	1378	1379	1384	1378	636
165°	1456	1453	1451	1459	1452	411
175°	1490	1485	1486	1493	1485	142
180°	1490	1490	1490	1490	1490	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
2.5°	815.9	815.4	814.9	814.4	814.0	813.0	811.7	810.2	808.8	807.4	808.7
5°	813.2	812.5	811.8	811.1	810.3	809.1	807.3	805.6	803.7	802.0	803.3
7.5°	805.7	804.9	804.1	803.3	802.5	801.0	798.7	796.4	794.1	791.9	792.6
10°	799.4	798.3	797.3	796.3	795.3	793.4	790.8	788.2	785.5	782.9	783.0
12.5°	790.4	789.3	788.1	787.0	785.8	783.7	780.4	777.2	774.0	770.8	770.7
15°	775.6	774.0	772.4	770.8	769.2	766.3	762.2	758.1	754.0	749.9	749.2
17.5°	757.0	755.2	753.3	751.4	749.5	746.0	740.7	735.6	730.3	725.1	723.6
20°	743.3	741.0	738.7	736.2	733.9	730.0	724.4	718.8	713.3	707.7	705.8
22.5°	728.0	725.3	722.6	719.9	717.2	712.9	707.0	701.0	695.2	689.2	686.8
25°	705.7	702.1	698.4	694.7	691.0	685.9	679.1	672.4	665.6	658.9	655.8
27.5°	678.6	674.6	670.5	666.5	662.5	656.7	649.2	641.7	634.2	626.7	622.4
30°	660.2	655.8	651.4	647.0	642.7	636.3	628.1	619.9	611.7	603.5	598.5
32.5°	641.7	636.8	631.8	626.8	621.8	615.0	606.3	597.6	588.9	580.2	574.8
35°	610.7	605.5	600.2	595.0	589.6	582.5	573.3	564.3	555.2	546.1	539.8
37.5°	579.4	573.5	567.7	561.7	555.9	548.1	538.4	528.7	519.0	509.3	502.1
40°	559.3	552.8	546.4	539.9	533.5	525.0	514.7	504.3	493.9	483.5	475.8
42.5°	536.6	530.1	523.7	517.3	510.8	502.2	491.5	480.7	469.9	459.2	450.8
45°	501.9	495.3	488.7	482.2	475.5	466.6	455.3	444.0	432.7	421.5	413.1
47.5°	467.2	459.9	452.7	445.5	438.2	429.0	417.7	406.4	395.1	383.8	374.8
50°	441.9	435.0	428.1	421.2	414.3	404.9	393.0	381.3	369.4	357.5	348.4
52.5°	419.2	411.7	404.2	396.7	389.3	379.7	367.9	356.2	344.4	332.7	323.2
55°	381.3	374.0	366.9	359.6	352.5	342.7	330.2	317.8	305.3	292.8	284.3
57.5°	346.1	338.3	330.5	322.6	314.8	304.6	292.1	279.7	267.1	254.6	246.6
60°	321.8	313.8	305.7	297.6	289.6	279.5	267.3	255.2	243.0	230.8	222.9
62.5°	297.6	289.6	281.5	273.4	265.4	255.2	243.1	230.9	218.7	206.6	199.1
65°	260.5	252.4	244.4	236.3	228.3	218.5	207.1	195.7	184.3	172.8	165.7
67.5°	223.4	215.3	207.2	199.0	190.9	181.3	170.3	159.4	148.4	137.4	132.1
70°	199.1	191.2	183.4	175.5	167.6	158.4	148.2	137.9	127.7	117.4	112.3
72.5°	174.9	167.1	159.3	151.5	143.7	135.2	125.9	116.5	107.2	97.9	93.7
75°	137.8	130.8	123.8	116.8	109.7	102.1	94.1	86.0	78.0	69.9	68.4
77.5°	104.1	97.7	91.4	85.0	78.6	72.8	67.7	62.5	57.3	52.1	51.3
80°	82.5	76.5	70.4	64.4	58.4	53.9	50.8	47.7	44.6	41.6	41.1
82.5°	61.9	56.7	51.5	46.3	41.1	37.8	36.3	35.0	33.5	32.0	31.6
85°	35.0	31.8	28.5	25.3	22.0	20.2	19.8	19.4	18.9	18.4	18.2
87.5°	12.9	12.1	11.3	10.5	9.7	9.6	10.2	10.9	11.5	12.1	12.2
90°	1.1	3.5	6.0	8.5	10.9	13.8	17.0	20.1	23.3	26.6	27.6
92.5°	20.6	19.9	19.2	18.5	17.8	18.7	21.1	23.5	25.9	28.3	29.9
95°	67.5	57.4	47.4	37.3	27.2	23.5	26.2	28.9	31.6	34.4	36.1
97.5°	135.7	131.2	126.7	122.2	117.6	106.5	88.8	71.1	53.4	35.6	37.6
100°	187.1	192.0	196.9	201.8	206.8	190.0	151.7	113.3	74.9	36.5	38.5
102.5°	245.6	249.1	252.6	256.1	259.8	240.6	198.6	156.7	114.8	72.8	66.7
105°	329.9	332.6	335.4	338.0	340.7	331.1	308.8	286.7	264.6	242.5	198.9
107.5°	419.0	421.1	423.3	425.4	427.6	430.4	433.9	437.4	440.9	444.4	412.4
110°	478.3	480.3	482.2	484.1	486.1	488.4	491.2	493.9	496.6	499.3	491.2



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CATALOG NUMBER: S123RDIW-S560D1320U935-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	534.9	536.7	538.5	540.3	542.0	544.2	547.0	549.7	552.4	555.1	555.3
115°	618.9	620.4	621.8	623.3	624.7	626.6	628.8	631.0	633.3	635.5	637.9
117.5°	700.2	702.0	703.8	705.6	707.4	708.9	710.0	711.2	712.3	713.4	715.4
120°	750.6	752.9	755.0	757.2	759.5	761.0	761.6	762.4	763.2	763.9	765.9
122.5°	802.0	803.8	805.6	807.4	809.3	810.6	811.6	812.5	813.5	814.4	815.8
125°	872.4	874.3	876.3	878.3	880.3	881.8	882.7	883.7	884.7	885.7	886.1
127.5°	940.6	942.5	944.5	946.5	948.5	950.0	951.2	952.4	953.6	954.8	955.5
130°	983.1	985.1	987.1	989.0	991.0	992.5	993.4	994.5	995.4	996.3	997.4
132.5°	1023.8	1025.8	1027.8	1029.8	1031.7	1033.1	1033.9	1034.7	1035.4	1036.2	1037.2
135°	1086.1	1087.5	1089.0	1090.5	1092.0	1093.2	1094.2	1095.2	1096.1	1097.2	1097.9
137.5°	1139.2	1141.1	1143.0	1144.8	1146.7	1147.9	1148.4	1149.0	1149.5	1150.0	1151.2
140°	1174.7	1176.1	1177.6	1179.1	1180.5	1181.6	1182.4	1183.1	1183.9	1184.6	1185.6
142.5°	1207.4	1208.8	1210.4	1211.9	1213.3	1214.4	1215.1	1215.9	1216.6	1217.4	1218.1
145°	1253.3	1255.0	1256.7	1258.4	1260.2	1261.2	1261.7	1262.2	1262.7	1263.2	1263.7
147.5°	1296.4	1297.5	1298.6	1299.8	1301.0	1301.7	1302.3	1302.7	1303.2	1303.7	1304.2
150°	1323.0	1323.7	1324.5	1325.2	1325.9	1326.5	1327.1	1327.5	1328.0	1328.5	1329.0
152.5°	1346.9	1347.2	1347.6	1347.9	1348.2	1348.6	1348.9	1349.2	1349.4	1349.8	1350.7
155°	1380.5	1380.1	1379.6	1379.1	1378.5	1378.5	1378.7	1379.0	1379.2	1379.4	1380.7
157.5°	1406.7	1406.6	1406.6	1406.5	1406.4	1406.4	1406.1	1405.8	1405.6	1405.3	1406.8
160°	1422.6	1422.4	1422.1	1421.9	1421.6	1421.4	1421.2	1420.9	1420.6	1420.4	1421.9
162.5°	1437.7	1437.0	1436.4	1435.7	1435.1	1434.7	1434.4	1434.2	1433.9	1433.7	1435.4
165°	1455.9	1455.1	1454.3	1453.6	1452.9	1452.4	1452.2	1451.9	1451.6	1451.4	1453.4
167.5°	1470.0	1469.0	1468.0	1467.1	1466.0	1465.6	1465.6	1465.6	1465.6	1465.6	1467.6
170°	1478.0	1477.0	1476.0	1475.1	1474.0	1473.5	1473.5	1473.5	1473.5	1473.5	1475.5
172.5°	1483.3	1482.1	1480.9	1479.7	1478.6	1478.1	1478.3	1478.5	1478.7	1478.9	1480.8
175°	1490.1	1488.9	1487.7	1486.4	1485.2	1484.7	1485.0	1485.2	1485.5	1485.7	1487.5
177.5°	1491.9	1490.9	1490.0	1489.0	1488.0	1487.6	1487.8	1488.0	1488.2	1488.4	1490.0
180°	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1



TEST NUMBER: P332424-935

CATALOG NUMBER: S123RDIW-S560D1320U935-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
2.5°	810.0	811.3	812.6	813.1	812.9	812.6	812.4	812.2
5°	804.6	806.0	807.3	807.8	807.5	807.2	806.9	806.6
7.5°	793.3	794.0	794.8	794.9	794.4	793.9	793.4	792.9
10°	783.2	783.3	783.4	783.2	782.5	781.7	781.0	780.2
12.5°	770.6	770.5	770.4	769.9	769.0	768.2	767.4	766.5
15°	748.5	747.7	747.0	746.1	745.0	744.1	743.0	742.0
17.5°	722.0	720.5	718.8	717.4	715.8	714.3	712.7	711.3
20°	703.9	702.0	700.1	698.3	696.5	694.7	692.9	691.2
22.5°	684.5	682.1	679.8	677.7	676.1	674.4	672.8	671.1
25°	652.7	649.6	646.6	644.2	642.7	641.0	639.4	637.7
27.5°	618.1	613.9	609.6	606.2	603.7	601.3	598.8	596.3
30°	593.5	588.5	583.6	579.9	577.6	575.2	572.8	570.5
32.5°	569.4	563.9	558.4	554.5	552.1	549.6	547.1	544.7
35°	533.5	527.2	520.9	516.4	513.8	511.2	508.5	505.8
37.5°	495.0	487.8	480.7	475.5	472.3	469.0	465.7	462.4
40°	468.2	460.5	453.0	447.5	444.1	440.7	437.4	433.9
42.5°	442.6	434.2	425.9	420.2	417.2	414.1	411.1	408.1
45°	404.8	396.4	388.1	382.1	378.6	375.1	371.5	368.0
47.5°	365.7	356.6	347.5	341.4	338.3	335.1	332.0	328.8
50°	339.3	330.2	321.2	314.9	311.5	308.2	304.8	301.4
52.5°	313.8	304.4	294.9	288.7	285.7	282.7	279.7	276.6
55°	275.9	267.3	258.8	253.1	250.2	247.3	244.4	241.4
57.5°	238.5	230.5	222.5	217.2	214.7	212.2	209.7	207.2
60°	215.0	207.1	199.1	194.0	191.5	189.0	186.5	184.0
62.5°	191.7	184.3	176.8	171.8	169.2	166.5	163.9	161.4
65°	158.4	151.3	144.0	139.7	138.1	136.5	134.8	133.2
67.5°	126.7	121.3	116.0	112.4	110.7	109.0	107.3	105.6
70°	107.1	102.0	96.9	93.5	91.9	90.3	88.7	87.0
72.5°	89.5	85.3	81.1	78.7	78.0	77.3	76.6	75.9
75°	67.0	65.5	64.1	63.2	62.9	62.6	62.3	62.0
77.5°	50.5	49.8	48.9	48.4	48.1	47.8	47.5	47.2
80°	40.6	40.2	39.8	39.4	39.2	38.8	38.6	38.2
82.5°	31.2	30.7	30.3	30.0	30.0	30.0	29.9	29.8
85°	17.9	17.6	17.3	17.1	17.1	17.1	17.1	17.1
87.5°	12.3	12.4	12.5	12.5	12.5	12.5	12.5	12.5
90°	28.5	29.5	30.5	31.3	31.8	32.2	32.7	33.2
92.5°	31.5	33.1	34.6	35.6	35.9	36.2	36.4	36.8
95°	37.8	39.5	41.2	42.1	42.1	42.1	42.1	42.1
97.5°	39.6	41.6	43.5	44.6	44.9	45.1	45.4	45.6
100°	40.5	42.4	44.4	45.5	45.7	46.0	46.2	46.5
102.5°	60.6	54.5	48.5	45.6	46.1	46.5	46.9	47.4
105°	155.3	111.8	68.3	46.8	47.3	47.7	48.2	48.7
107.5°	380.6	348.6	316.7	284.3	251.5	218.6	185.8	153.0
110°	483.0	474.9	466.8	445.1	410.0	374.8	339.7	304.4





TEST NUMBER: P332424-935

CATALOG NUMBER: S123RDIW-S560D1320U935-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	555.4	555.5	555.7	552.1	544.6	537.2	529.8	522.4
115°	640.4	642.8	645.3	647.0	648.0	649.0	650.0	651.0
117.5°	717.4	719.3	721.3	722.4	722.6	722.7	723.0	723.2
120°	767.8	769.8	771.8	772.7	772.7	772.7	772.7	772.7
122.5°	817.2	818.6	819.9	820.7	820.9	821.0	821.3	821.5
125°	886.7	887.2	887.6	888.1	888.6	889.2	889.6	890.1
127.5°	956.3	957.1	957.9	958.0	957.6	957.1	956.6	956.1
130°	998.3	999.4	1000.3	1000.6	1000.1	999.6	999.1	998.6
132.5°	1038.2	1039.2	1040.2	1040.3	1039.7	1039.0	1038.3	1037.6
135°	1098.6	1099.3	1100.1	1100.1	1099.3	1098.6	1097.9	1097.2
137.5°	1152.4	1153.6	1154.8	1155.1	1154.6	1154.2	1153.7	1153.1
140°	1186.5	1187.6	1188.5	1188.8	1188.3	1187.7	1187.3	1186.8
142.5°	1218.9	1219.7	1220.6	1220.6	1219.9	1219.2	1218.5	1217.8
145°	1264.2	1264.6	1265.2	1265.4	1265.4	1265.4	1265.4	1265.4
147.5°	1304.7	1305.2	1305.7	1305.4	1304.2	1303.1	1302.0	1300.8
150°	1329.5	1330.0	1330.5	1330.3	1329.6	1328.9	1328.2	1327.4
152.5°	1351.5	1352.5	1353.3	1353.2	1352.0	1350.9	1349.8	1348.7
155°	1381.9	1383.1	1384.4	1384.2	1382.8	1381.3	1379.8	1378.4
157.5°	1408.3	1409.8	1411.3	1411.0	1409.1	1407.2	1405.2	1403.3
160°	1423.3	1424.9	1426.3	1426.2	1424.4	1422.7	1421.0	1419.3
162.5°	1437.0	1438.7	1440.4	1440.5	1438.9	1437.4	1435.9	1434.3
165°	1455.3	1457.3	1459.3	1459.4	1457.7	1456.0	1454.2	1452.5
167.5°	1469.6	1471.4	1473.4	1473.4	1471.4	1469.6	1467.6	1465.6
170°	1477.5	1479.5	1481.4	1481.4	1479.5	1477.5	1475.5	1473.5
172.5°	1482.8	1484.8	1486.8	1486.6	1484.5	1482.3	1480.1	1478.0
175°	1489.2	1490.9	1492.6	1492.5	1490.6	1488.6	1486.6	1484.6
177.5°	1491.5	1493.1	1494.7	1494.5	1492.5	1490.6	1488.6	1486.6
180°	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1

(END OF REPORT)