

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: P332409

Luminaire Tested: **S123RDIW-S340D1535U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332409  
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-S340D1535U835-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6622.1 lumens  
Efficiency: N/A  
Efficacy: 124.0 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

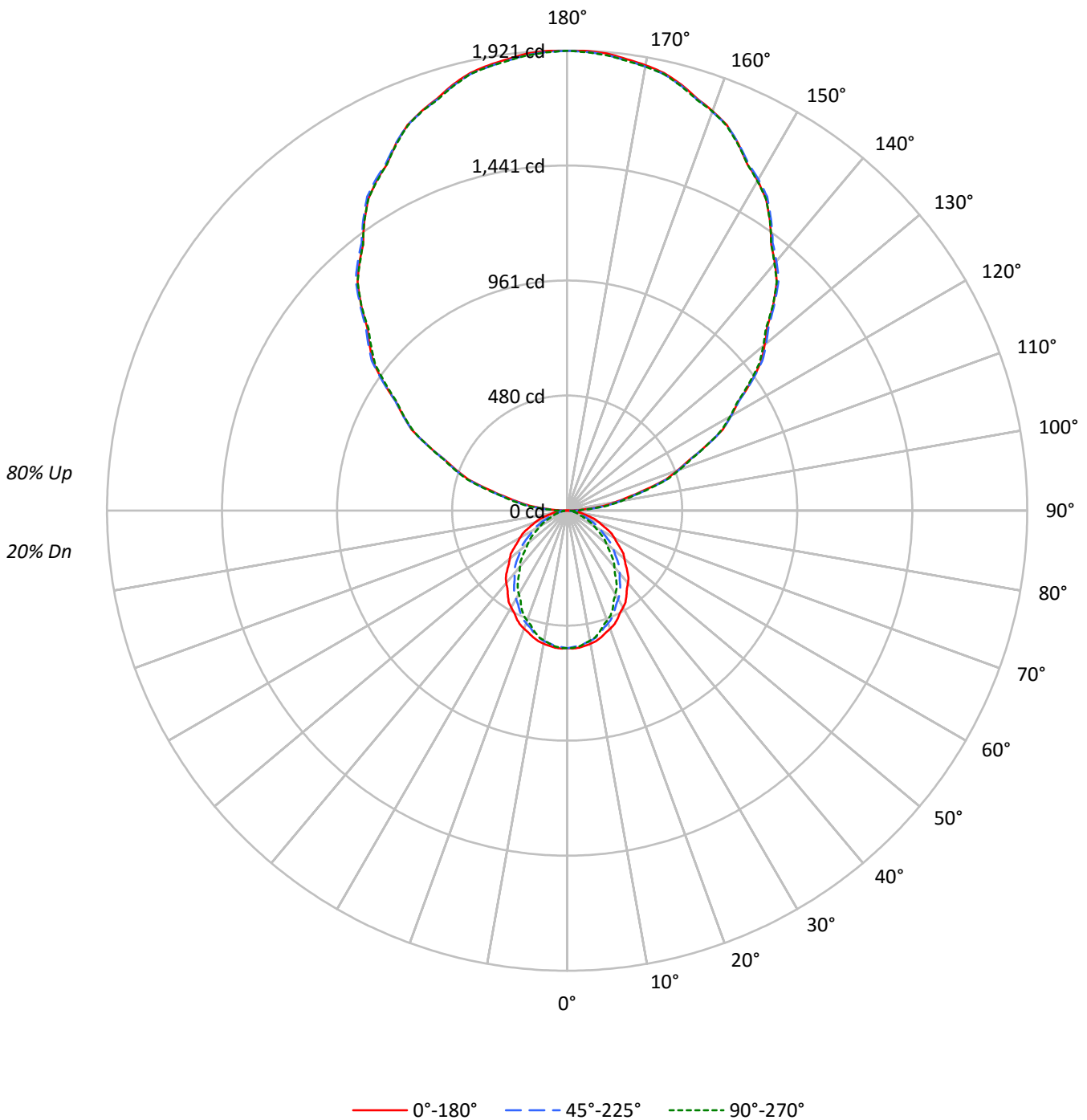
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	100	100	100	88	88	88	88	66	66	66	47	47	47	28	28	28	20
1	91	87	83	80	80	77	74	71	58	56	55	41	40	39	25	25	24	17
2	83	76	70	65	73	67	63	59	51	48	45	36	34	33	22	21	20	14
3	76	67	60	55	67	59	54	49	45	41	38	32	30	28	20	19	17	12
4	69	59	52	46	61	52	46	41	40	36	32	28	26	24	18	16	15	11
5	63	52	45	39	56	47	40	35	36	31	28	26	23	20	16	14	13	9
6	58	47	39	34	51	42	35	31	32	28	24	23	20	18	14	13	12	8
7	54	42	35	29	47	38	31	27	29	24	21	21	18	16	13	12	10	7
8	50	38	31	26	44	34	28	23	26	22	19	19	16	14	12	10	9	7
9	46	35	28	23	41	31	25	21	24	20	17	17	14	12	11	10	8	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	10	9	8	5

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

	0°	45°	90°
0°	6184	6184	6184
5°	6207	6122	6158
10°	6172	6045	6025
15°	6107	5904	5841
20°	6015	5727	5593
25°	5922	5529	5352
30°	5797	5299	5009
35°	5670	5070	4696
40°	5552	4799	4308
45°	5398	4532	3958
50°	5228	4228	3565
55°	5054	3883	3200
60°	4895	3511	2799
65°	4689	3110	2397
70°	4428	2609	1936
75°	4051	2054	1822
80°	3608	1822	1674
85°	3051	1606	1494



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CATALOG NUMBER: S123RDIW-S340D1535U835-4F0-1E-UDD-F1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.0	0.8
10°-20°	150.1	2.3
20°-30°	216.1	3.3
30°-40°	243.5	3.7
40°-50°	232.9	3.5
50°-60°	190.7	2.9
60°-70°	128.7	1.9
70°-80°	64.7	1.0
80°-90°	22.8	0.3
90°-100°	125.1	1.9
100°-110°	374.3	5.7
110°-120°	636.6	9.6
120°-130°	837.4	12.6
130°-140°	941.2	14.2
140°-150°	925.2	14.0
150°-160°	778.9	11.8
160°-170°	518.5	7.8
170°-180°	181.6	2.7
0°-30°	420.2	6.3
0°-40°	663.7	10.0
0°-60°	1087.3	16.4
0°-90°	1303.6	19.7
90°-120°	1136.0	17.2
90°-150°	3839.7	58.0
90°-180°	5319.0	80.3
0°-180°	6622.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	574	574	574	574	574	
5°	574	572	567	570	570	54
15°	548	542	530	527	524	154
25°	499	486	466	456	451	229
35°	432	414	386	366	357	270
45°	355	333	298	272	260	273
55°	269	246	207	181	170	241
65°	184	158	122	100	94	182
75°	97	75	49	45	44	104
85°	25	15	13	12	12	28
90°	2	17	36	42	45	7
95°	89	100	112	117	118	100
105°	339	343	356	356	359	363
115°	641	645	642	644	642	634
125°	938	942	940	933	927	836
135°	1217	1225	1224	1219	1215	937
145°	1476	1479	1484	1482	1476	922
155°	1690	1690	1692	1697	1687	778
165°	1841	1837	1837	1845	1835	519
175°	1915	1909	1909	1917	1908	182
180°	1920	1920	1920	1920	1920	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5
2.5°	576.4	576.0	575.7	575.4	575.1	574.4	573.4	572.4	571.4	570.4	571.3
5°	574.5	574.0	573.5	573.0	572.4	571.6	570.3	569.1	567.8	566.6	567.5
7.5°	569.2	568.6	568.1	567.5	567.0	565.9	564.3	562.7	561.0	559.4	559.9
10°	564.7	564.0	563.3	562.6	561.8	560.5	558.7	556.8	554.9	553.1	553.2
12.5°	558.4	557.6	556.8	556.0	555.2	553.6	551.3	549.1	546.8	544.5	544.4
15°	548.0	546.8	545.7	544.5	543.4	541.4	538.5	535.6	532.7	529.8	529.3
17.5°	534.8	533.5	532.2	530.8	529.5	527.0	523.3	519.6	516.0	512.3	511.2
20°	525.1	523.5	521.8	520.2	518.5	515.7	511.8	507.8	503.9	500.0	498.6
22.5°	514.3	512.4	510.5	508.6	506.7	503.7	499.5	495.3	491.1	486.9	485.2
25°	498.6	496.0	493.4	490.8	488.2	484.5	479.8	475.0	470.2	465.5	463.3
27.5°	479.5	476.6	473.7	470.9	468.0	464.0	458.7	453.3	448.0	442.7	439.7
30°	466.4	463.3	460.2	457.1	454.0	449.5	443.7	437.9	432.1	426.3	422.8
32.5°	453.4	449.8	446.3	442.8	439.3	434.5	428.3	422.2	416.1	409.9	406.1
35°	431.5	427.7	424.0	420.3	416.6	411.5	405.1	398.6	392.2	385.8	381.4
37.5°	409.3	405.1	401.0	396.9	392.7	387.2	380.4	373.5	366.7	359.8	354.8
40°	395.1	390.6	386.0	381.5	376.9	370.9	363.6	356.2	348.9	341.5	336.2
42.5°	379.1	374.5	370.0	365.4	360.9	354.8	347.2	339.6	332.0	324.4	318.5
45°	354.6	349.9	345.3	340.6	335.9	329.6	321.7	313.7	305.7	297.7	291.8
47.5°	330.1	325.0	319.8	314.7	309.6	303.1	295.1	287.1	279.2	271.2	264.8
50°	312.2	307.3	302.5	297.6	292.7	286.1	277.7	269.3	260.9	252.5	246.1
52.5°	296.2	290.9	285.6	280.3	275.0	268.2	259.9	251.6	243.3	235.0	228.4
55°	269.3	264.2	259.2	254.1	249.0	242.1	233.3	224.5	215.7	206.9	200.9
57.5°	244.5	239.0	233.5	227.9	222.4	215.2	206.4	197.5	188.7	179.9	174.2
60°	227.4	221.7	216.0	210.3	204.6	197.5	188.9	180.3	171.7	163.1	157.5
62.5°	210.2	204.5	198.8	193.2	187.5	180.3	171.7	163.1	154.5	145.9	140.7
65°	184.1	178.4	172.7	167.0	161.3	154.4	146.3	138.2	130.2	122.1	117.0
67.5°	157.9	152.1	146.3	140.6	134.8	128.1	120.3	112.6	104.8	97.1	93.3
70°	140.7	135.1	129.5	123.9	118.4	111.9	104.7	97.4	90.2	82.9	79.3
72.5°	123.6	118.1	112.6	107.0	101.5	95.5	88.9	82.3	75.7	69.1	66.2
75°	97.4	92.4	87.4	82.5	77.5	72.2	66.5	60.8	55.1	49.4	48.4
77.5°	73.5	69.0	64.5	60.0	55.6	51.5	47.8	44.1	40.5	36.8	36.3
80°	58.2	54.0	49.8	45.5	41.3	38.1	35.9	33.7	31.5	29.4	29.0
82.5°	43.7	40.0	36.4	32.7	29.0	26.7	25.7	24.7	23.7	22.6	22.3
85°	24.7	22.4	20.1	17.9	15.6	14.3	14.0	13.7	13.4	13.0	12.8
87.5°	9.2	9.0	8.8	8.5	8.3	8.6	9.5	10.3	11.2	12.1	12.3
90°	1.5	4.9	8.2	11.6	14.9	18.8	23.1	27.5	31.8	36.2	37.5
92.5°	36.5	38.8	41.0	43.3	45.6	48.0	50.5	52.9	55.4	57.9	59.0
95°	89.0	91.3	93.7	96.0	98.4	100.9	103.5	106.2	108.9	111.6	112.9
97.5°	158.0	159.8	161.5	163.3	165.0	166.8	168.8	170.7	172.7	174.6	176.2
100°	205.1	207.1	209.1	211.1	213.1	215.0	216.6	218.3	220.0	221.7	222.7
102.5°	259.4	260.6	261.8	263.0	264.2	265.9	268.1	270.3	272.5	274.7	275.8
105°	339.3	340.0	340.6	341.3	342.0	343.8	346.8	349.8	352.9	355.9	355.9
107.5°	432.2	432.6	433.0	433.4	433.8	434.6	435.8	437.0	438.2	439.4	440.5
110°	490.1	490.8	491.4	492.1	492.8	493.4	494.1	494.8	495.4	496.1	497.5



TEST NUMBER: P332409

CATALOG NUMBER: S123RDIW-S340D1535U835-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	550.4	550.8	551.2	551.6	552.0	552.3	552.4	552.5	552.7	552.8	554.4
115°	640.9	641.9	642.9	643.9	644.9	645.1	644.4	643.7	643.1	642.4	642.7
117.5°	732.0	732.6	733.3	734.0	734.6	734.5	733.7	732.8	731.9	731.1	731.0
120°	788.7	790.7	792.7	794.7	796.7	796.9	795.2	793.5	791.8	790.2	789.8
122.5°	847.8	849.2	850.7	852.2	853.7	854.0	853.1	852.2	851.4	850.5	849.6
125°	937.9	938.9	940.0	941.0	942.0	942.1	941.5	940.8	940.1	939.5	938.1
127.5°	1021.2	1023.3	1025.5	1027.6	1029.8	1030.5	1029.7	1029.0	1028.3	1027.5	1025.6
130°	1076.7	1079.4	1082.0	1084.7	1087.4	1088.2	1087.2	1086.2	1085.2	1084.2	1082.9
132.5°	1132.2	1134.8	1137.5	1140.2	1142.9	1143.9	1143.1	1142.4	1141.6	1140.9	1139.3
135°	1216.9	1218.9	1220.9	1222.9	1225.0	1225.8	1225.5	1225.1	1224.8	1224.5	1223.1
137.5°	1295.3	1297.0	1298.7	1300.4	1302.0	1303.3	1304.2	1305.0	1305.9	1306.8	1305.4
140°	1349.6	1351.3	1353.0	1354.6	1356.3	1357.3	1357.7	1358.0	1358.3	1358.7	1358.3
142.5°	1399.1	1400.7	1402.4	1404.1	1405.8	1406.9	1407.5	1408.1	1408.7	1409.3	1409.0
145°	1476.3	1477.0	1477.6	1478.3	1479.0	1479.8	1480.8	1481.8	1482.8	1483.8	1483.5
147.5°	1543.8	1545.0	1546.2	1547.5	1548.7	1549.7	1550.7	1551.6	1552.5	1553.5	1553.5
150°	1590.9	1591.6	1592.2	1592.9	1593.6	1594.2	1594.9	1595.6	1596.2	1596.9	1596.9
152.5°	1629.5	1630.4	1631.4	1632.3	1633.2	1633.9	1634.3	1634.7	1635.1	1635.5	1636.1
155°	1690.4	1690.4	1690.4	1690.4	1690.4	1690.6	1690.9	1691.2	1691.6	1691.9	1693.3
157.5°	1742.3	1741.9	1741.5	1741.1	1740.7	1740.6	1740.9	1741.1	1741.4	1741.7	1743.1
160°	1774.9	1774.2	1773.5	1772.8	1772.2	1771.8	1771.8	1771.8	1771.8	1771.8	1773.5
162.5°	1803.8	1802.9	1801.9	1801.0	1800.1	1799.7	1800.0	1800.3	1800.5	1800.8	1802.5
165°	1841.2	1840.2	1839.2	1838.2	1837.2	1836.7	1836.7	1836.7	1836.7	1836.7	1838.7
167.5°	1871.1	1869.7	1868.4	1867.0	1865.7	1865.2	1865.4	1865.7	1866.0	1866.2	1868.3
170°	1887.9	1886.6	1885.3	1883.9	1882.6	1881.9	1881.9	1881.9	1881.9	1881.9	1884.3
172.5°	1901.2	1899.9	1898.5	1897.2	1895.9	1895.2	1895.2	1895.2	1895.2	1895.2	1897.3
175°	1915.1	1913.8	1912.4	1911.1	1909.7	1909.1	1909.1	1909.1	1909.1	1909.1	1911.1
177.5°	1920.8	1919.8	1918.7	1917.6	1916.5	1916.0	1916.0	1916.0	1916.0	1916.0	1917.6
180°	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6



TEST NUMBER: P332409

CATALOG NUMBER: S123RDIW-S340D1535U835-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5
2.5°	572.2	573.1	574.1	574.4	574.3	574.1	573.9	573.8
5°	568.5	569.4	570.3	570.7	570.5	570.3	570.1	569.9
7.5°	560.5	561.0	561.5	561.6	561.2	560.9	560.5	560.2
10°	553.3	553.4	553.5	553.3	552.8	552.3	551.7	551.2
12.5°	544.4	544.3	544.3	543.9	543.3	542.7	542.1	541.5
15°	528.7	528.2	527.7	527.1	526.4	525.6	524.9	524.2
17.5°	510.1	509.0	507.9	506.8	505.7	504.6	503.6	502.5
20°	497.3	495.9	494.6	493.3	492.0	490.8	489.6	488.3
22.5°	483.6	481.9	480.2	478.8	477.6	476.5	475.3	474.2
25°	461.1	459.0	456.8	455.1	454.0	452.9	451.7	450.6
27.5°	436.7	433.7	430.7	428.3	426.5	424.8	423.1	421.3
30°	419.3	415.8	412.3	409.7	408.0	406.4	404.7	403.0
32.5°	402.2	398.4	394.5	391.7	390.0	388.3	386.5	384.8
35°	376.9	372.4	368.0	364.8	363.0	361.1	359.2	357.4
37.5°	349.7	344.6	339.6	335.9	333.6	331.3	329.0	326.7
40°	330.8	325.4	320.0	316.1	313.7	311.4	309.0	306.6
42.5°	312.6	306.8	300.9	296.9	294.7	292.6	290.5	288.3
45°	285.9	280.0	274.1	269.9	267.5	265.0	262.5	260.0
47.5°	258.3	251.9	245.5	241.2	239.0	236.8	234.5	232.3
50°	239.7	233.3	226.9	222.5	220.1	217.7	215.3	212.9
52.5°	221.7	215.0	208.4	204.0	201.8	199.7	197.6	195.4
55°	194.9	188.9	182.9	178.8	176.8	174.7	172.6	170.5
57.5°	168.5	162.8	157.2	153.4	151.7	149.9	148.2	146.4
60°	151.9	146.3	140.7	137.0	135.3	133.5	131.8	130.0
62.5°	135.4	130.2	124.9	121.3	119.5	117.7	115.8	114.0
65°	111.9	106.9	101.8	98.7	97.5	96.4	95.3	94.1
67.5°	89.5	85.7	81.9	79.4	78.2	77.0	75.8	74.6
70°	75.7	72.1	68.4	66.1	64.9	63.8	62.6	61.5
72.5°	63.2	60.3	57.3	55.6	55.1	54.6	54.2	53.7
75°	47.3	46.3	45.2	44.6	44.4	44.2	44.0	43.8
77.5°	35.7	35.1	34.6	34.2	34.0	33.8	33.6	33.4
80°	28.7	28.4	28.1	27.9	27.6	27.4	27.2	27.0
82.5°	22.0	21.7	21.4	21.2	21.2	21.1	21.1	21.1
85°	12.6	12.4	12.2	12.1	12.1	12.1	12.1	12.1
87.5°	12.5	12.6	12.8	12.9	13.0	13.0	13.1	13.1
90°	38.9	40.2	41.6	42.6	43.2	43.9	44.6	45.2
92.5°	60.0	61.1	62.2	62.5	62.1	61.7	61.3	60.9
95°	114.3	115.6	116.9	117.6	117.6	117.6	117.6	117.6
97.5°	177.7	179.2	180.8	181.5	181.4	181.2	181.1	181.0
100°	223.7	224.7	225.7	226.5	227.2	227.9	228.5	229.2
102.5°	276.8	277.8	278.8	279.2	279.1	278.9	278.8	278.7
105°	355.9	355.9	355.9	356.2	356.9	357.6	358.2	358.9
107.5°	441.6	442.6	443.7	444.0	443.6	443.2	442.8	442.4
110°	498.8	500.1	501.5	501.8	501.1	500.5	499.8	499.1





TEST NUMBER: P332409

CATALOG NUMBER: S123RDIW-S340D1535U835-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	556.0	557.6	559.2	560.0	559.9	559.7	559.6	559.4
115°	643.1	643.4	643.7	643.7	643.4	643.1	642.7	642.4
117.5°	730.9	730.9	730.8	730.3	729.3	728.4	727.5	726.5
120°	789.5	789.2	788.8	788.3	787.7	787.0	786.3	785.6
122.5°	848.7	847.9	847.0	846.1	845.2	844.2	843.3	842.3
125°	936.8	935.4	934.1	932.7	931.4	930.1	928.7	927.4
127.5°	1023.8	1021.9	1020.0	1018.3	1016.8	1015.2	1013.7	1012.1
130°	1081.5	1080.2	1078.9	1077.0	1074.7	1072.3	1070.0	1067.6
132.5°	1137.7	1136.1	1134.5	1132.8	1131.0	1129.2	1127.3	1125.5
135°	1221.8	1220.4	1219.1	1218.1	1217.4	1216.7	1216.1	1215.4
137.5°	1304.0	1302.6	1301.2	1299.8	1298.5	1297.3	1296.0	1294.7
140°	1358.0	1357.7	1357.3	1356.0	1353.6	1351.3	1348.9	1346.6
142.5°	1408.7	1408.3	1408.0	1406.9	1405.1	1403.3	1401.5	1399.7
145°	1483.1	1482.8	1482.5	1481.6	1480.3	1479.0	1477.6	1476.3
147.5°	1553.5	1553.5	1553.5	1552.5	1550.5	1548.5	1546.4	1544.4
150°	1596.9	1596.9	1596.9	1595.9	1593.9	1591.9	1589.9	1587.9
152.5°	1636.6	1637.1	1637.7	1637.1	1635.3	1633.6	1631.8	1630.1
155°	1694.6	1695.9	1697.3	1696.8	1694.4	1692.1	1689.7	1687.4
157.5°	1744.5	1745.9	1747.3	1747.1	1745.2	1743.3	1741.4	1739.6
160°	1775.2	1776.9	1778.5	1778.7	1777.4	1776.0	1774.7	1773.3
162.5°	1804.1	1805.8	1807.5	1807.3	1805.1	1803.0	1800.8	1798.7
165°	1840.7	1842.7	1844.7	1844.6	1842.2	1839.9	1837.5	1835.2
167.5°	1870.4	1872.5	1874.5	1874.5	1872.5	1870.4	1868.3	1866.2
170°	1886.6	1889.0	1891.3	1891.3	1889.0	1886.6	1884.3	1881.9
172.5°	1899.3	1901.4	1903.5	1903.4	1901.0	1898.7	1896.3	1894.0
175°	1913.1	1915.1	1917.1	1916.9	1914.6	1912.2	1909.9	1907.6
177.5°	1919.2	1920.8	1922.4	1922.3	1920.4	1918.5	1916.7	1914.8
180°	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6

(END OF REPORT)