

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: P332119-935

Luminaire Tested: **S123DIW-S340D1535U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332119-935  
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: S123DIW-S340D1535U935-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5798.3 lumens  
Efficiency: N/A  
Efficacy: 108.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

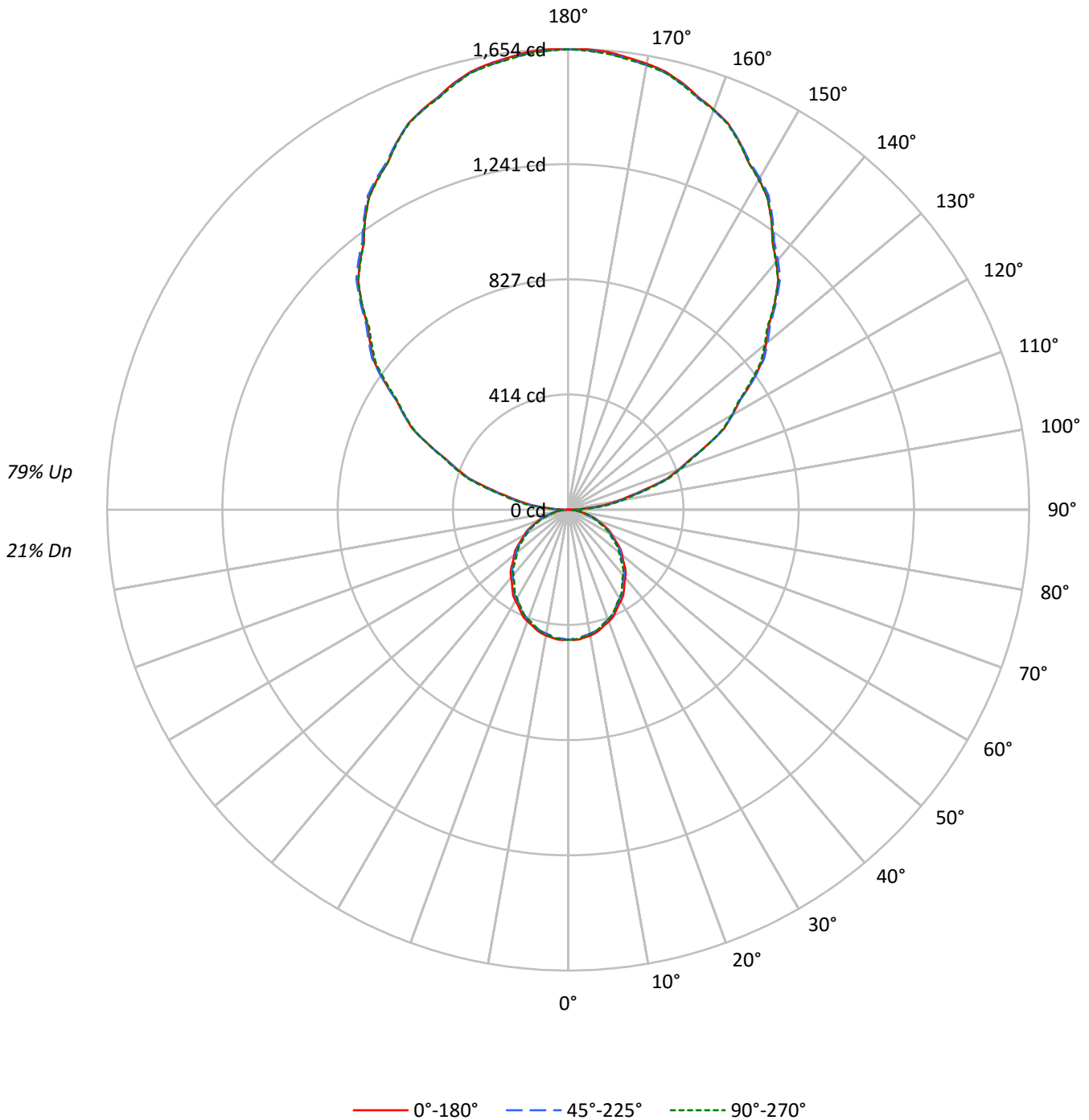
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	89	89	89	89	67	67	67	48	48	48	30	30	30	21
1	91	87	83	80	81	77	74	71	59	57	55	42	40	39	26	25	25	18
2	83	76	70	65	73	67	63	58	51	48	45	37	35	33	23	22	21	15
3	76	67	60	54	67	59	53	49	45	41	38	32	30	28	20	19	18	12
4	69	59	51	46	61	52	46	41	40	36	32	29	26	24	18	16	15	11
5	63	52	45	39	56	46	40	35	36	31	28	26	23	20	16	14	13	9
6	58	47	39	33	51	42	35	30	32	27	24	23	20	18	15	13	12	8
7	54	42	34	29	47	37	31	26	29	24	21	21	18	15	13	12	10	7
8	50	38	30	25	44	34	27	23	26	22	18	19	16	14	12	10	9	6
9	46	34	27	22	41	31	25	20	24	19	16	17	14	12	11	9	8	6
10	43	31	24	20	38	28	22	18	22	17	14	16	13	11	10	9	7	5

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

	0°	45°	90°
0°	5022	5022	5022
5°	5046	4976	5010
10°	5012	4933	4964
15°	4953	4878	4886
20°	4885	4798	4802
25°	4793	4703	4694
30°	4692	4598	4561
35°	4586	4486	4428
40°	4477	4363	4295
45°	4354	4250	4147
50°	4232	4113	3997
55°	4074	3969	3847
60°	3914	3800	3679
65°	3769	3617	3505
70°	3559	3408	3257
75°	3256	3136	3003
80°	2938	2814	2783
85°	2569	2482	2384



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.0	0.8
10°-20°	124.1	2.1
20°-30°	183.3	3.2
30°-40°	214.1	3.7
40°-50°	215.3	3.7
50°-60°	189.1	3.3
60°-70°	140.9	2.4
70°-80°	80.3	1.4
80°-90°	27.9	0.5
90°-100°	107.7	1.9
100°-110°	322.3	5.6
110°-120°	548.1	9.5
120°-130°	721.0	12.4
130°-140°	810.4	14.0
140°-150°	796.6	13.7
150°-160°	670.6	11.6
160°-170°	446.4	7.7
170°-180°	156.3	2.7
0°-30°	351.4	6.1
0°-40°	565.5	9.8
0°-60°	969.9	16.7
0°-90°	1219.0	21.0
90°-120°	978.1	16.9
90°-150°	3306.0	57.0
90°-180°	4579.0	79.0
0°-180°	5798.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	467	467	467	467	467	
5°	467	465	460	464	464	44
15°	444	443	438	441	438	125
25°	404	401	396	396	395	186
35°	349	346	341	339	337	218
45°	286	284	279	275	272	221
55°	217	216	212	207	205	194
65°	148	146	142	139	138	146
75°	78	77	75	73	72	84
85°	21	20	20	19	19	23
90°	1	14	31	36	39	6
95°	77	86	96	101	101	86
105°	292	295	306	307	309	313
115°	552	555	553	554	553	546
125°	808	811	809	804	798	720
135°	1048	1055	1054	1049	1046	807
145°	1271	1274	1278	1276	1271	794
155°	1455	1456	1457	1461	1453	670
165°	1585	1582	1581	1588	1580	447
175°	1649	1644	1644	1651	1642	157
180°	1653	1653	1653	1653	1653	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6
2.5°	468.2	467.9	467.6	467.4	467.0	466.5	465.7	464.9	464.2	463.4	464.1
5°	467.0	466.5	466.1	465.6	465.2	464.5	463.5	462.5	461.5	460.5	461.4
7.5°	462.4	461.9	461.5	461.1	460.6	459.9	458.9	457.9	456.8	455.8	456.6
10°	458.6	458.1	457.6	457.2	456.8	456.0	454.8	453.7	452.5	451.3	452.1
12.5°	453.4	453.1	452.6	452.3	451.9	451.2	450.1	449.0	447.9	446.9	447.5
15°	444.5	444.2	443.8	443.4	443.1	442.3	441.2	440.0	438.9	437.7	438.4
17.5°	434.1	433.7	433.3	432.7	432.3	431.5	430.3	429.2	428.0	426.9	427.3
20°	426.5	425.9	425.4	424.8	424.3	423.4	422.3	421.1	420.0	418.9	419.2
22.5°	417.8	417.2	416.7	416.2	415.7	414.8	413.6	412.5	411.3	410.2	410.4
25°	403.6	403.0	402.5	402.0	401.5	400.6	399.4	398.3	397.1	396.0	396.1
27.5°	388.4	387.9	387.4	386.8	386.3	385.5	384.3	383.0	381.8	380.5	380.6
30°	377.5	377.0	376.6	376.2	375.7	374.9	373.7	372.4	371.2	369.9	369.9
32.5°	366.6	366.0	365.4	364.8	364.3	363.4	362.5	361.5	360.6	359.6	359.1
35°	349.0	348.5	347.9	347.4	346.9	346.0	344.9	343.7	342.6	341.4	340.9
37.5°	331.1	330.4	329.7	329.0	328.4	327.4	326.2	325.0	323.9	322.7	322.1
40°	318.6	318.0	317.5	316.9	316.4	315.5	314.3	313.0	311.8	310.5	309.8
42.5°	306.0	305.4	304.8	304.2	303.6	302.6	301.4	300.1	298.9	297.6	297.0
45°	286.0	285.7	285.3	285.0	284.6	283.9	282.7	281.5	280.3	279.2	278.2
47.5°	266.2	265.7	265.2	264.7	264.2	263.4	262.3	261.1	260.1	259.0	258.0
50°	252.7	252.3	251.8	251.4	251.0	250.1	249.0	247.9	246.7	245.6	244.5
52.5°	238.6	238.3	238.0	237.7	237.4	236.6	235.4	234.2	233.0	231.7	230.9
55°	217.1	217.0	216.9	216.8	216.7	216.0	214.9	213.7	212.6	211.5	210.4
57.5°	196.5	196.2	195.9	195.6	195.3	194.7	193.7	192.8	191.9	191.0	190.1
60°	181.8	181.7	181.6	181.5	181.4	180.8	179.7	178.7	177.6	176.5	175.7
62.5°	168.6	168.3	168.2	167.9	167.6	167.0	165.9	164.9	163.8	162.7	162.0
65°	148.0	147.6	147.1	146.7	146.3	145.6	144.7	143.8	142.9	142.0	141.3
67.5°	126.3	125.9	125.5	125.1	124.8	124.2	123.6	122.9	122.2	121.5	120.9
70°	113.1	112.6	112.1	111.5	111.0	110.5	109.9	109.3	108.8	108.3	107.7
72.5°	99.4	98.9	98.6	98.2	97.7	97.3	96.7	96.1	95.5	94.9	94.3
75°	78.3	77.8	77.5	77.1	76.8	76.5	76.2	75.9	75.7	75.4	75.0
77.5°	59.5	59.3	59.2	59.0	58.7	58.5	58.2	57.9	57.5	57.2	56.9
80°	47.4	47.1	46.8	46.6	46.2	46.1	45.9	45.7	45.5	45.4	45.2
82.5°	35.5	35.4	35.4	35.3	35.2	35.2	35.1	35.1	35.1	35.0	34.9
85°	20.8	20.7	20.5	20.3	20.1	20.1	20.1	20.1	20.1	20.1	19.9
87.5°	8.6	9.0	9.3	9.7	10.1	10.6	11.3	12.0	12.7	13.3	13.4
90°	1.3	4.2	7.1	10.0	12.8	16.2	19.9	23.7	27.4	31.2	32.3
92.5°	31.4	33.4	35.3	37.3	39.3	41.3	43.5	45.5	47.7	49.9	50.8
95°	76.6	78.6	80.7	82.7	84.7	86.9	89.1	91.4	93.8	96.1	97.2
97.5°	136.0	137.6	139.1	140.6	142.1	143.6	145.3	147.0	148.7	150.3	151.7
100°	176.6	178.3	180.0	181.8	183.5	185.1	186.5	188.0	189.4	190.9	191.7
102.5°	223.3	224.4	225.4	226.4	227.5	228.9	230.8	232.7	234.6	236.5	237.5
105°	292.1	292.7	293.3	293.9	294.5	296.0	298.6	301.2	303.8	306.4	306.4
107.5°	372.1	372.5	372.8	373.2	373.5	374.2	375.2	376.3	377.3	378.3	379.3
110°	422.0	422.6	423.1	423.7	424.3	424.8	425.4	426.0	426.5	427.1	428.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	473.9	474.2	474.6	474.9	475.3	475.5	475.6	475.7	475.9	476.0	477.3
115°	551.8	552.7	553.5	554.4	555.3	555.4	554.8	554.2	553.7	553.1	553.4
117.5°	630.3	630.8	631.4	632.0	632.5	632.4	631.7	630.9	630.2	629.5	629.4
120°	679.1	680.8	682.5	684.2	686.0	686.1	684.7	683.2	681.7	680.4	680.0
122.5°	730.0	731.2	732.5	733.7	735.0	735.3	734.5	733.7	733.1	732.3	731.5
125°	807.5	808.4	809.3	810.2	811.1	811.1	810.6	810.0	809.4	808.9	807.7
127.5°	879.3	881.1	883.0	884.8	886.7	887.3	886.6	886.0	885.4	884.7	883.0
130°	927.0	929.4	931.6	933.9	936.3	936.9	936.1	935.2	934.4	933.5	932.4
132.5°	974.8	977.1	979.4	981.7	984.0	984.9	984.2	983.6	982.9	982.3	980.9
135°	1047.8	1049.5	1051.2	1052.9	1054.7	1055.4	1055.2	1054.8	1054.6	1054.3	1053.1
137.5°	1115.3	1116.7	1118.2	1119.6	1121.0	1122.1	1122.9	1123.6	1124.4	1125.2	1123.9
140°	1162.0	1163.5	1164.9	1166.3	1167.8	1168.6	1169.0	1169.2	1169.5	1169.8	1169.5
142.5°	1204.6	1206.0	1207.5	1208.9	1210.4	1211.3	1211.9	1212.4	1212.9	1213.4	1213.1
145°	1271.1	1271.7	1272.2	1272.8	1273.4	1274.1	1275.0	1275.8	1276.7	1277.6	1277.3
147.5°	1329.2	1330.2	1331.3	1332.4	1333.4	1334.3	1335.2	1335.9	1336.7	1337.6	1337.6
150°	1369.8	1370.4	1370.9	1371.5	1372.1	1372.6	1373.2	1373.8	1374.3	1374.9	1374.9
152.5°	1403.0	1403.8	1404.6	1405.4	1406.2	1406.8	1407.1	1407.5	1407.8	1408.2	1408.7
155°	1455.4	1455.4	1455.4	1455.4	1455.4	1455.6	1455.9	1456.1	1456.5	1456.7	1457.9
157.5°	1500.1	1499.8	1499.4	1499.1	1498.7	1498.7	1498.9	1499.1	1499.3	1499.6	1500.8
160°	1528.2	1527.6	1527.0	1526.4	1525.9	1525.5	1525.5	1525.5	1525.5	1525.5	1527.0
162.5°	1553.1	1552.3	1551.4	1550.7	1549.9	1549.5	1549.8	1550.1	1550.2	1550.5	1552.0
165°	1585.3	1584.4	1583.6	1582.7	1581.8	1581.4	1581.4	1581.4	1581.4	1581.4	1583.1
167.5°	1611.0	1609.8	1608.7	1607.5	1606.4	1605.9	1606.1	1606.4	1606.6	1606.8	1608.6
170°	1625.5	1624.4	1623.2	1622.0	1620.9	1620.3	1620.3	1620.3	1620.3	1620.3	1622.4
172.5°	1636.9	1635.8	1634.6	1633.5	1632.4	1631.8	1631.8	1631.8	1631.8	1631.8	1633.6
175°	1648.9	1647.8	1646.6	1645.5	1644.3	1643.7	1643.7	1643.7	1643.7	1643.7	1645.5
177.5°	1653.8	1652.9	1652.0	1651.1	1650.1	1649.7	1649.7	1649.7	1649.7	1649.7	1651.1
180°	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6
2.5°	464.8	465.5	466.2	466.6	466.5	466.4	466.3	466.2
5°	462.4	463.2	464.2	464.5	464.3	464.2	463.9	463.7
7.5°	457.4	458.2	459.0	459.3	459.3	459.2	459.1	458.9
10°	453.0	453.7	454.5	454.9	454.7	454.5	454.3	454.2
12.5°	448.0	448.6	449.2	449.4	449.4	449.2	449.1	449.0
15°	439.1	439.8	440.6	440.7	440.1	439.5	439.0	438.5
17.5°	427.8	428.3	428.9	429.0	428.8	428.6	428.4	428.3
20°	419.6	419.9	420.3	420.3	420.0	419.7	419.5	419.2
22.5°	410.7	411.0	411.3	411.3	411.0	410.6	410.3	409.9
25°	396.1	396.2	396.3	396.2	396.0	395.7	395.5	395.2
27.5°	380.6	380.7	380.7	380.6	380.3	380.0	379.6	379.3
30°	369.9	369.9	369.9	369.5	368.9	368.3	367.7	367.0
32.5°	358.6	358.1	357.7	357.2	356.9	356.5	356.2	355.9
35°	340.4	339.8	339.2	338.8	338.4	337.9	337.4	337.0
37.5°	321.4	320.8	320.1	319.7	319.4	319.1	318.8	318.6
40°	309.1	308.4	307.6	307.1	306.8	306.4	306.1	305.7
42.5°	296.3	295.5	294.8	294.3	293.9	293.6	293.3	292.8
45°	277.1	276.0	274.9	274.2	273.7	273.3	272.9	272.4
47.5°	256.9	255.9	254.8	254.1	253.7	253.3	252.9	252.5
50°	243.6	242.5	241.6	240.8	240.3	239.8	239.3	238.7
52.5°	230.1	229.2	228.3	227.6	227.1	226.6	226.1	225.6
55°	209.5	208.4	207.5	206.8	206.4	205.9	205.4	205.0
57.5°	189.2	188.3	187.4	186.8	186.2	185.7	185.2	184.7
60°	175.0	174.1	173.3	172.7	172.2	171.8	171.3	170.9
62.5°	161.1	160.3	159.5	158.9	158.7	158.3	158.1	157.7
65°	140.6	139.9	139.1	138.7	138.4	138.1	137.8	137.6
67.5°	120.2	119.6	119.0	118.5	118.1	117.7	117.4	117.0
70°	107.1	106.4	105.8	105.3	104.9	104.4	103.9	103.5
72.5°	93.8	93.2	92.6	92.2	92.0	91.8	91.5	91.3
75°	74.6	74.0	73.6	73.3	73.0	72.8	72.5	72.2
77.5°	56.6	56.3	56.0	55.9	55.9	55.9	55.9	55.9
80°	45.1	45.0	44.9	44.9	44.9	44.9	44.9	44.9
82.5°	34.8	34.6	34.4	34.3	34.3	34.2	34.1	34.0
85°	19.7	19.5	19.4	19.3	19.3	19.3	19.3	19.3
87.5°	13.6	13.8	13.9	14.0	14.2	14.3	14.4	14.6
90°	33.5	34.6	35.8	36.7	37.2	37.8	38.4	38.9
92.5°	51.7	52.6	53.6	53.8	53.5	53.1	52.8	52.4
95°	98.4	99.5	100.7	101.3	101.3	101.3	101.3	101.3
97.5°	153.0	154.3	155.7	156.3	156.2	156.0	155.9	155.8
100°	192.6	193.5	194.3	195.0	195.6	196.2	196.7	197.3
102.5°	238.3	239.2	240.0	240.4	240.3	240.1	240.0	240.0
105°	306.4	306.4	306.4	306.7	307.3	307.9	308.4	309.0
107.5°	380.2	381.1	382.0	382.3	381.9	381.6	381.3	380.9
110°	429.5	430.6	431.8	432.0	431.4	430.9	430.3	429.7





TEST NUMBER: P332119-935

CATALOG NUMBER: S123DIW-S340D1535U935-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	478.7	480.1	481.5	482.2	482.1	481.9	481.8	481.6
115°	553.7	554.0	554.2	554.2	554.0	553.7	553.4	553.1
117.5°	629.3	629.3	629.2	628.8	627.9	627.2	626.4	625.5
120°	679.8	679.5	679.2	678.7	678.2	677.6	677.0	676.4
122.5°	730.7	730.0	729.3	728.5	727.7	726.9	726.1	725.2
125°	806.6	805.4	804.3	803.1	801.9	800.8	799.6	798.5
127.5°	881.5	879.9	878.2	876.8	875.5	874.1	872.8	871.4
130°	931.2	930.1	928.9	927.3	925.3	923.3	921.3	919.2
132.5°	979.6	978.2	976.8	975.3	973.8	972.2	970.6	969.1
135°	1052.0	1050.8	1049.6	1048.8	1048.2	1047.6	1047.1	1046.5
137.5°	1122.7	1121.5	1120.3	1119.1	1118.0	1117.0	1115.9	1114.7
140°	1169.2	1169.0	1168.6	1167.5	1165.4	1163.5	1161.4	1159.4
142.5°	1212.9	1212.5	1212.3	1211.3	1209.8	1208.2	1206.7	1205.1
145°	1276.9	1276.7	1276.4	1275.7	1274.5	1273.4	1272.2	1271.1
147.5°	1337.6	1337.6	1337.6	1336.7	1335.0	1333.3	1331.5	1329.7
150°	1374.9	1374.9	1374.9	1374.1	1372.3	1370.6	1368.9	1367.2
152.5°	1409.1	1409.5	1410.1	1409.5	1408.0	1406.5	1405.0	1403.5
155°	1459.1	1460.2	1461.4	1460.9	1458.9	1456.9	1454.8	1452.9
157.5°	1502.0	1503.2	1504.4	1504.3	1502.6	1501.0	1499.3	1497.8
160°	1528.4	1529.9	1531.3	1531.5	1530.3	1529.1	1528.0	1526.8
162.5°	1553.3	1554.8	1556.3	1556.1	1554.2	1552.4	1550.5	1548.7
165°	1584.8	1586.6	1588.3	1588.2	1586.1	1584.2	1582.1	1580.1
167.5°	1610.4	1612.2	1613.9	1613.9	1612.2	1610.4	1608.6	1606.8
170°	1624.4	1626.4	1628.4	1628.4	1626.4	1624.4	1622.4	1620.3
172.5°	1635.3	1637.1	1638.9	1638.8	1636.8	1634.8	1632.7	1630.7
175°	1647.2	1648.9	1650.6	1650.5	1648.5	1646.4	1644.4	1642.4
177.5°	1652.4	1653.8	1655.2	1655.1	1653.5	1651.8	1650.3	1648.6
180°	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8

(END OF REPORT)