

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: P332116-927

Luminaire Tested: **S123DIW-S340D1535U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332116-927  
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: S123DIW-S340D1535U927-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6004.3 lumens  
Efficiency: N/A  
Efficacy: 112.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

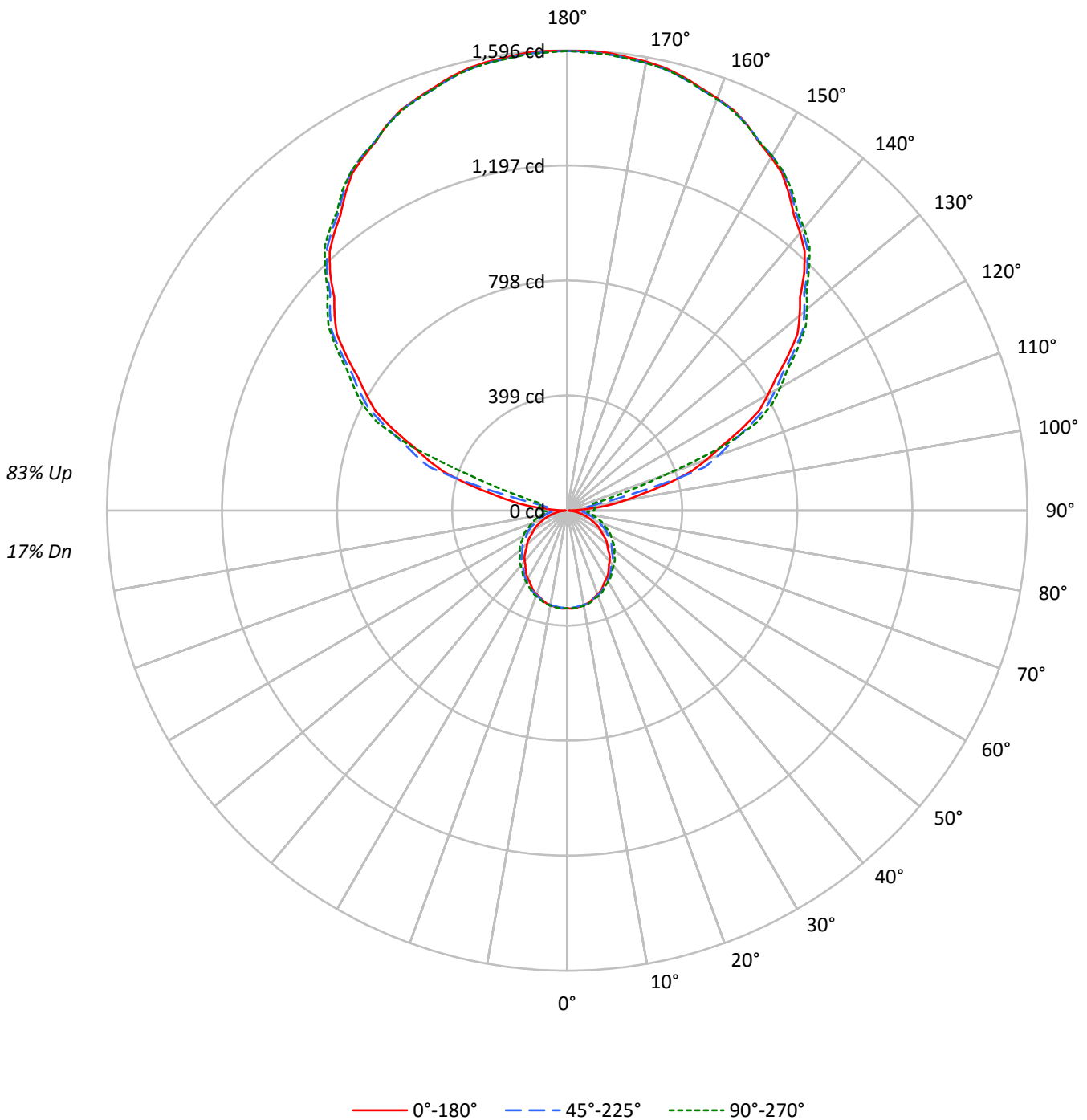
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332116-927

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### Luminous Intensity Polar Plot





TEST NUMBER: P332116-927

CATALOG NUMBER: S123DIW-S340D1535U927-4F0-1E-UDD-D

**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	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17
1	90	86	82	79	79	76	72	70	56	54	52	39	38	36	22	22	21	14
2	82	75	69	64	72	66	61	57	49	46	43	34	32	30	20	19	18	11
3	74	65	58	53	65	58	52	47	43	39	36	30	27	25	17	16	15	9
4	68	58	50	44	59	51	45	40	38	34	30	26	24	21	15	14	13	8
5	62	51	43	38	54	45	39	34	34	29	26	23	21	18	14	12	11	7
6	57	46	38	32	50	40	34	29	30	26	22	21	18	16	12	11	9	6
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	11	10	8	5
8	49	37	30	24	43	33	26	22	25	20	17	17	14	12	10	9	7	5
9	45	33	26	22	40	30	24	19	23	18	15	16	13	11	9	8	7	4
10	42	30	24	19	37	27	21	17	21	16	13	14	12	10	9	7	6	4

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

	0°	45°	90°
0°	3647	3647	3647
5°	3658	3556	3557
10°	3626	3473	3456
15°	3579	3380	3345
20°	3513	3274	3224
25°	3430	3152	3096
30°	3345	3043	2966
35°	3251	2926	2863
40°	3161	2820	2752
45°	3061	2718	2664
50°	2962	2618	2566
55°	2852	2516	2478
60°	2745	2411	2388
65°	2636	2300	2280
70°	2471	2174	2170
75°	2265	2031	2059
80°	2023	1890	1932
85°	1805	1794	1856



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.1	0.5
10°-20°	91.6	1.5
20°-30°	137.0	2.3
30°-40°	163.6	2.7
40°-50°	171.1	2.9
50°-60°	160.6	2.7
60°-70°	134.1	2.2
70°-80°	96.0	1.6
80°-90°	61.7	1.0
90°-100°	93.9	1.6
100°-110°	302.6	5.0
110°-120°	681.1	11.3
120°-130°	854.9	14.2
130°-140°	907.2	15.1
140°-150°	845.1	14.1
150°-160°	680.9	11.3
160°-170°	439.5	7.3
170°-180°	151.5	2.5
0°-30°	260.6	4.3
0°-40°	424.2	7.1
0°-60°	755.9	12.6
0°-90°	1047.7	17.4
90°-120°	1077.6	17.9
90°-150°	3684.8	61.4
90°-180°	4957.0	82.6
0°-180°	6004.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	339	339	339	339	339	
5°	339	338	336	339	339	32
15°	323	324	324	327	327	91
25°	292	295	296	301	301	134
35°	251	257	262	267	269	157
45°	205	214	223	230	233	158
55°	156	169	182	192	195	140
65°	108	123	139	149	154	107
75°	59	76	94	106	111	63
85°	18	37	56	68	72	19
90°	6	36	70	87	94	7
95°	76	46	73	92	97	92
105°	356	372	287	99	94	377
115°	664	676	699	719	728	655
125°	934	944	959	969	974	834
135°	1162	1169	1178	1188	1186	895
145°	1341	1349	1351	1356	1358	839
155°	1477	1475	1476	1481	1474	680
165°	1557	1554	1553	1561	1554	440
175°	1594	1588	1589	1597	1588	152
180°	1594	1594	1594	1594	1594	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
2.5°	340.3	340.2	339.9	339.8	339.5	339.2	338.7	338.1	337.6	337.1	337.6
5°	339.2	339.1	338.9	338.7	338.6	338.3	337.7	337.2	336.8	336.3	336.9
7.5°	335.9	336.0	336.0	336.0	336.0	335.8	335.3	334.9	334.4	333.9	334.7
10°	333.0	333.1	333.3	333.4	333.6	333.5	333.0	332.6	332.2	331.8	332.6
12.5°	329.4	329.6	329.9	330.1	330.3	330.3	330.0	329.7	329.5	329.2	329.9
15°	323.0	323.2	323.4	323.7	323.9	324.1	323.9	323.8	323.8	323.7	324.6
17.5°	314.9	315.4	315.8	316.3	316.8	317.0	317.0	317.0	317.0	317.0	317.7
20°	309.0	309.4	309.9	310.5	310.9	311.2	311.4	311.6	311.7	311.9	312.7
22.5°	302.8	303.2	303.7	304.2	304.8	305.1	305.3	305.5	305.8	306.0	307.0
25°	291.6	292.4	293.3	294.1	294.9	295.4	295.6	295.9	296.1	296.4	297.5
27.5°	280.4	281.3	282.3	283.2	284.2	284.9	285.3	285.9	286.5	286.9	287.9
30°	272.4	273.5	274.6	275.6	276.7	277.5	278.2	278.8	279.5	280.2	281.1
32.5°	263.6	264.7	265.9	267.1	268.3	269.3	270.2	271.1	272.0	272.7	273.9
35°	251.0	252.3	253.7	254.9	256.3	257.5	258.5	259.6	260.6	261.7	262.9
37.5°	237.7	239.2	240.7	242.2	243.6	245.0	246.3	247.6	249.0	250.3	251.7
40°	228.9	230.4	231.8	233.3	234.7	236.3	238.0	239.6	241.2	242.9	244.3
42.5°	219.1	220.9	222.7	224.5	226.3	228.1	229.8	231.5	233.2	234.9	236.5
45°	205.3	207.2	209.1	211.1	213.1	215.1	217.1	219.2	221.3	223.3	224.9
47.5°	190.7	192.9	195.1	197.4	199.6	201.9	204.2	206.6	208.9	211.3	213.0
50°	181.3	183.5	185.8	188.1	190.4	192.8	195.4	198.0	200.5	203.0	204.9
52.5°	171.2	173.6	176.0	178.5	180.9	183.5	186.3	189.2	191.9	194.7	196.7
55°	156.5	159.2	161.9	164.6	167.3	170.2	173.1	176.1	179.0	182.0	184.2
57.5°	142.2	145.0	147.8	150.7	153.4	156.5	159.7	163.0	166.2	169.4	171.7
60°	132.1	135.1	138.1	141.0	143.9	147.1	150.5	153.8	157.2	160.6	162.9
62.5°	122.7	125.7	128.7	131.7	134.8	138.1	141.6	145.2	148.8	152.3	154.6
65°	108.1	111.4	114.5	117.7	121.0	124.4	127.9	131.6	135.1	138.8	141.2
67.5°	93.4	96.8	100.2	103.5	106.9	110.5	114.2	117.9	121.5	125.2	127.9
70°	83.0	86.6	90.1	93.6	97.1	100.9	104.8	108.8	112.7	116.6	119.3
72.5°	73.6	77.2	80.6	84.2	87.7	91.5	95.5	99.7	103.7	107.8	110.5
75°	58.7	62.6	66.4	70.3	74.1	78.1	82.2	86.3	90.4	94.5	97.2
77.5°	45.7	49.6	53.5	57.4	61.2	65.3	69.4	73.5	77.6	81.8	84.7
80°	36.5	40.6	44.6	48.6	52.6	56.8	61.0	65.3	69.6	73.8	76.6
82.5°	28.6	32.6	36.8	40.8	44.9	49.1	53.5	57.8	62.1	66.5	69.2
85°	18.1	22.2	26.3	30.4	34.5	38.7	43.1	47.4	51.7	56.1	58.9
87.5°	10.1	14.7	19.3	23.9	28.5	33.3	38.1	42.9	47.8	52.7	55.7
90°	6.0	12.6	19.3	25.9	32.6	39.7	47.3	54.9	62.5	70.1	74.0
92.5°	26.5	29.4	32.3	35.2	38.1	42.9	49.6	56.2	63.0	69.6	74.1
95°	76.3	68.7	61.2	53.6	45.9	45.6	52.5	59.4	66.3	73.3	77.6
97.5°	148.9	146.9	144.9	142.9	141.0	132.5	117.3	102.3	87.1	72.0	76.6
100°	203.4	211.4	219.3	227.1	235.0	220.3	183.1	145.8	108.4	71.2	75.7
102.5°	265.7	271.9	278.0	284.2	290.3	272.8	231.7	190.5	149.4	108.3	104.1
105°	355.8	360.8	365.6	370.5	375.3	367.7	347.5	327.3	307.2	287.0	242.7
107.5°	450.7	454.6	458.6	462.6	466.6	472.1	479.2	486.3	493.4	500.5	468.5
110°	513.8	517.5	521.0	524.6	528.1	533.1	539.2	545.4	551.6	557.8	551.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	574.5	577.6	580.7	583.8	586.9	591.4	597.5	603.6	609.6	615.7	617.9
115°	663.8	666.5	669.0	671.5	674.1	678.0	683.4	688.7	694.0	699.3	703.9
117.5°	750.8	753.3	755.8	758.4	761.0	764.2	768.2	772.1	776.2	780.1	784.2
120°	804.5	807.2	810.0	812.8	815.6	818.7	822.2	825.7	829.2	832.7	836.6
122.5°	859.4	861.6	863.7	865.9	868.0	870.9	874.5	878.1	881.6	885.2	888.5
125°	934.3	936.4	938.6	940.6	942.8	945.5	949.0	952.4	955.8	959.3	961.5
127.5°	1007.3	1009.3	1011.3	1013.4	1015.4	1018.0	1021.2	1024.5	1027.7	1030.9	1033.4
130°	1052.7	1054.8	1056.9	1058.8	1060.9	1063.2	1065.9	1068.6	1071.3	1074.0	1076.6
132.5°	1096.1	1098.1	1100.3	1102.3	1104.4	1106.5	1108.7	1110.9	1113.0	1115.2	1117.7
135°	1162.5	1164.0	1165.5	1167.0	1168.5	1170.2	1172.2	1174.2	1176.2	1178.1	1180.4
137.5°	1219.3	1221.2	1223.2	1225.1	1227.0	1228.6	1229.6	1230.7	1231.8	1232.9	1235.5
140°	1256.9	1258.5	1260.0	1261.6	1263.2	1264.6	1265.6	1266.6	1267.7	1268.7	1271.0
142.5°	1292.0	1293.5	1295.0	1296.5	1298.0	1299.2	1300.1	1300.8	1301.7	1302.6	1304.5
145°	1341.0	1342.7	1344.5	1346.3	1348.1	1349.2	1349.7	1350.2	1350.8	1351.3	1352.5
147.5°	1386.8	1388.1	1389.3	1390.4	1391.6	1392.5	1393.1	1393.6	1394.1	1394.6	1395.3
150°	1415.2	1416.0	1416.8	1417.6	1418.4	1419.0	1419.6	1420.1	1420.6	1421.2	1421.7
152.5°	1440.8	1441.2	1441.5	1441.9	1442.3	1442.6	1443.0	1443.3	1443.6	1443.9	1444.9
155°	1476.8	1476.3	1475.8	1475.3	1474.7	1474.6	1474.9	1475.1	1475.4	1475.6	1476.9
157.5°	1504.8	1504.8	1504.7	1504.6	1504.6	1504.4	1504.1	1503.9	1503.6	1503.3	1504.9
160°	1521.9	1521.5	1521.3	1521.1	1520.8	1520.5	1520.3	1520.0	1519.7	1519.5	1521.1
162.5°	1537.9	1537.2	1536.6	1535.9	1535.2	1534.7	1534.5	1534.2	1533.9	1533.7	1535.5
165°	1557.4	1556.6	1555.8	1555.0	1554.2	1553.7	1553.4	1553.2	1552.9	1552.6	1554.7
167.5°	1572.5	1571.5	1570.4	1569.4	1568.3	1567.8	1567.8	1567.8	1567.8	1567.8	1569.9
170°	1581.0	1580.0	1578.9	1577.9	1576.8	1576.3	1576.3	1576.3	1576.3	1576.3	1578.4
172.5°	1586.7	1585.5	1584.2	1582.9	1581.7	1581.1	1581.4	1581.6	1581.8	1582.0	1584.1
175°	1594.0	1592.8	1591.4	1590.1	1588.8	1588.2	1588.6	1588.8	1589.0	1589.4	1591.2
177.5°	1595.9	1594.9	1593.9	1592.8	1591.7	1591.3	1591.6	1591.7	1592.0	1592.2	1593.9
180°	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
2.5°	338.1	338.7	339.2	339.4	339.4	339.3	339.2	339.1
5°	337.5	338.3	338.9	339.2	339.1	339.0	338.9	338.8
7.5°	335.6	336.4	337.2	337.5	337.5	337.3	337.2	337.2
10°	333.5	334.3	335.1	335.4	335.3	335.1	334.9	334.8
12.5°	330.7	331.4	332.2	332.5	332.3	332.2	332.0	331.8
15°	325.3	326.1	327.0	327.3	327.3	327.2	327.1	327.0
17.5°	318.4	319.2	319.9	320.2	320.0	320.0	319.9	319.7
20°	313.4	314.1	314.9	315.3	315.4	315.4	315.5	315.6
22.5°	307.8	308.8	309.7	310.2	310.1	310.1	310.1	310.0
25°	298.5	299.6	300.6	301.2	301.2	301.2	301.2	301.2
27.5°	288.8	289.7	290.7	291.1	291.2	291.3	291.3	291.4
30°	282.1	283.1	284.1	284.6	284.6	284.6	284.6	284.6
32.5°	274.9	275.9	276.9	277.6	277.8	278.0	278.2	278.4
35°	264.2	265.4	266.6	267.4	267.8	268.1	268.4	268.7
37.5°	253.0	254.4	255.9	256.7	256.9	257.2	257.5	257.7
40°	245.7	247.1	248.4	249.3	249.6	250.0	250.3	250.6
42.5°	238.0	239.5	241.0	242.0	242.5	242.9	243.4	243.8
45°	226.4	228.0	229.6	230.7	231.3	232.0	232.7	233.3
47.5°	214.8	216.6	218.3	219.4	219.9	220.5	220.9	221.5
50°	206.8	208.7	210.6	211.8	212.4	212.9	213.5	214.1
52.5°	198.7	200.6	202.6	203.9	204.6	205.3	206.0	206.7
55°	186.4	188.6	190.8	192.3	192.9	193.6	194.2	194.9
57.5°	173.9	176.1	178.3	179.8	180.6	181.4	182.2	182.9
60°	165.2	167.5	169.8	171.3	172.2	173.2	174.0	175.0
62.5°	156.9	159.1	161.4	163.0	163.9	164.7	165.6	166.4
65°	143.7	146.2	148.6	150.3	151.1	151.9	152.7	153.5
67.5°	130.6	133.2	135.9	137.7	138.3	139.0	139.7	140.4
70°	121.9	124.5	127.1	128.9	129.7	130.5	131.3	132.1
72.5°	113.1	115.8	118.5	120.3	121.1	121.9	122.8	123.6
75°	99.9	102.6	105.4	107.2	108.1	109.2	110.1	111.1
77.5°	87.5	90.4	93.2	95.0	95.8	96.6	97.3	98.1
80°	79.4	82.2	85.0	86.7	87.6	88.4	89.3	90.1
82.5°	72.0	74.8	77.6	79.4	80.2	81.0	81.8	82.7
85°	61.7	64.5	67.3	69.1	69.9	70.7	71.5	72.3
87.5°	58.7	61.7	64.7	66.7	67.6	68.5	69.5	70.3
90°	77.8	81.7	85.5	88.1	89.4	90.8	92.1	93.5
92.5°	78.5	82.9	87.3	90.1	91.1	92.2	93.2	94.3
95°	82.0	86.4	90.8	93.4	94.2	95.1	95.9	96.6
97.5°	81.1	85.6	90.2	93.0	94.1	95.2	96.3	97.4
100°	80.2	84.7	89.1	91.9	93.0	94.1	95.1	96.3
102.5°	99.8	95.6	91.4	90.0	91.3	92.5	93.9	95.1
105°	198.4	154.2	109.9	88.4	89.7	90.9	92.2	93.5
107.5°	436.6	404.6	372.6	339.5	305.1	270.7	236.3	201.9
110°	544.6	538.1	531.6	509.8	472.8	435.8	398.9	361.9





TEST NUMBER: P332116-927

CATALOG NUMBER: S123DIW-S340D1535U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	620.1	622.3	624.6	622.0	614.8	607.6	600.4	593.2
115°	708.5	713.1	717.7	720.9	722.6	724.3	726.0	727.8
117.5°	788.2	792.3	796.4	798.8	799.7	800.5	801.4	802.2
120°	840.7	844.6	848.7	850.9	851.5	852.1	852.6	853.2
122.5°	891.8	895.1	898.4	900.4	901.2	902.0	902.8	903.6
125°	963.8	966.0	968.3	969.9	971.1	972.1	973.2	974.3
127.5°	1035.9	1038.3	1040.8	1042.0	1042.1	1042.1	1042.1	1042.2
130°	1079.2	1081.8	1084.4	1085.7	1085.7	1085.7	1085.6	1085.6
132.5°	1120.2	1122.8	1125.3	1126.5	1126.3	1126.2	1126.0	1125.8
135°	1182.6	1184.9	1187.2	1188.1	1187.7	1187.3	1186.9	1186.5
137.5°	1238.0	1240.6	1243.2	1244.4	1244.3	1244.1	1244.0	1243.9
140°	1273.3	1275.5	1277.8	1278.9	1278.7	1278.7	1278.6	1278.4
142.5°	1306.5	1308.4	1310.3	1311.1	1310.8	1310.5	1310.1	1309.8
145°	1353.7	1354.9	1356.0	1356.8	1357.1	1357.4	1357.7	1358.1
147.5°	1396.1	1396.8	1397.5	1397.4	1396.5	1395.6	1394.7	1393.8
150°	1422.2	1422.8	1423.2	1423.2	1422.6	1422.0	1421.3	1420.7
152.5°	1445.8	1446.8	1447.7	1447.6	1446.4	1445.2	1444.1	1442.9
155°	1478.3	1479.6	1480.9	1480.7	1479.2	1477.6	1476.0	1474.5
157.5°	1506.5	1508.1	1509.7	1509.4	1507.4	1505.3	1503.2	1501.2
160°	1522.7	1524.2	1525.7	1525.7	1523.8	1521.9	1520.1	1518.3
162.5°	1537.2	1539.1	1540.8	1540.9	1539.3	1537.6	1536.0	1534.4
165°	1556.8	1558.9	1561.1	1561.2	1559.3	1557.5	1555.6	1553.8
167.5°	1572.0	1574.1	1576.2	1576.2	1574.1	1572.0	1569.9	1567.8
170°	1580.5	1582.6	1584.8	1584.8	1582.6	1580.5	1578.4	1576.3
172.5°	1586.2	1588.3	1590.4	1590.3	1588.0	1585.7	1583.3	1581.0
175°	1593.0	1594.8	1596.7	1596.6	1594.4	1592.4	1590.2	1588.2
177.5°	1595.5	1597.2	1598.9	1598.7	1596.6	1594.5	1592.4	1590.3
180°	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0

(END OF REPORT)