

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: P332116-935

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332116-935  
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: S123DIW-S340D1535U935-4F0-1E-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: 6525.9 lumens  
Efficiency: N/A  
Efficacy: 122.2 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

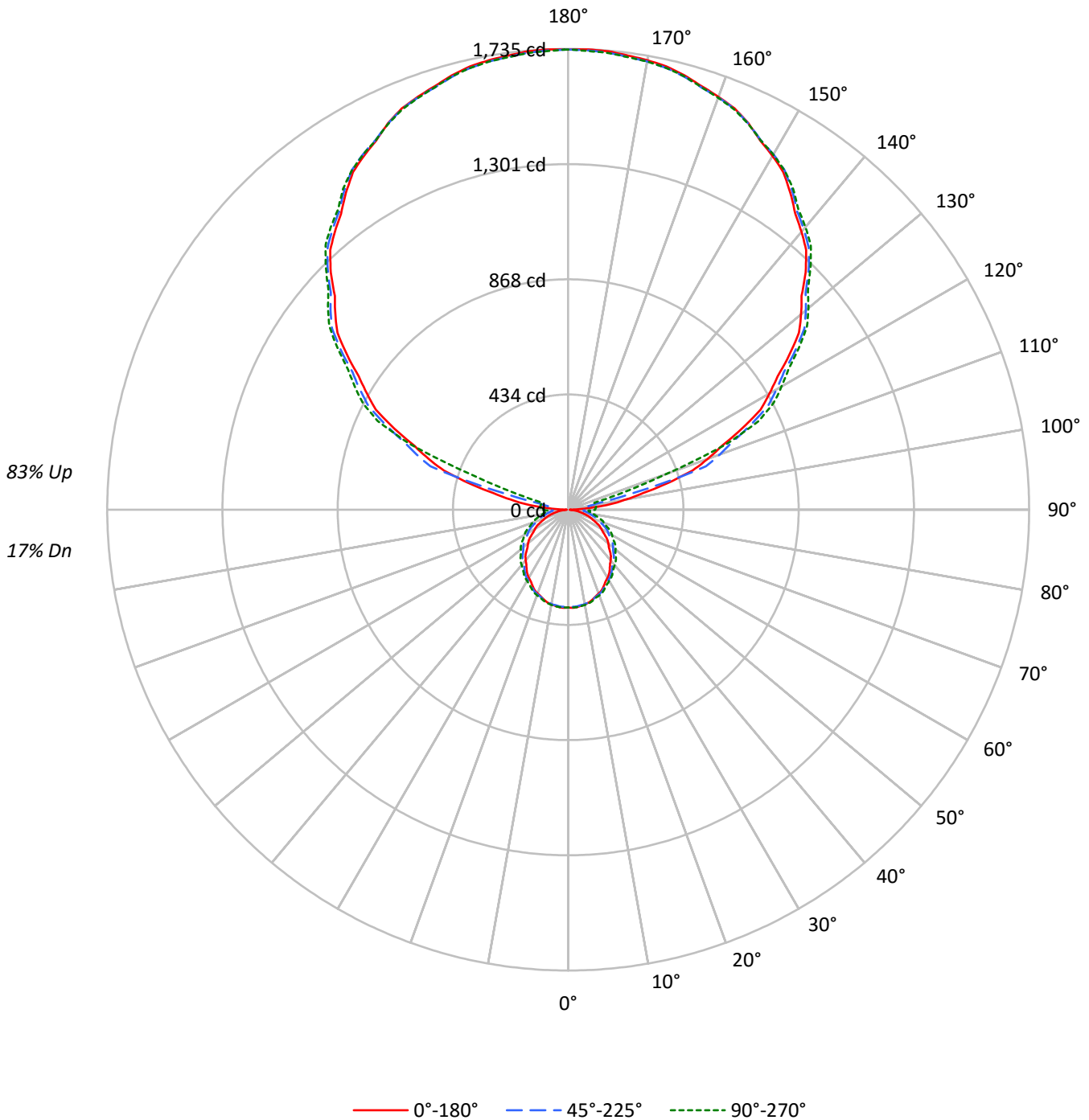
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P332116-935

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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	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°	3963	3963	3963
5°	3977	3865	3866
10°	3941	3776	3757
15°	3890	3674	3636
20°	3818	3559	3504
25°	3728	3427	3365
30°	3637	3307	3224
35°	3533	3181	3112
40°	3435	3065	2991
45°	3327	2955	2895
50°	3219	2846	2789
55°	3100	2734	2693
60°	2984	2620	2596
65°	2865	2499	2479
70°	2685	2362	2359
75°	2462	2208	2239
80°	2201	2054	2100
85°	1955	1950	2018



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.9	0.5
10°-20°	99.5	1.5
20°-30°	148.9	2.3
30°-40°	177.8	2.7
40°-50°	186.0	2.9
50°-60°	174.5	2.7
60°-70°	145.8	2.2
70°-80°	104.3	1.6
80°-90°	67.0	1.0
90°-100°	102.0	1.6
100°-110°	328.9	5.0
110°-120°	740.3	11.3
120°-130°	929.2	14.2
130°-140°	986.0	15.1
140°-150°	918.5	14.1
150°-160°	740.1	11.3
160°-170°	477.6	7.3
170°-180°	164.6	2.5
0°-30°	283.3	4.3
0°-40°	461.0	7.1
0°-60°	821.6	12.6
0°-90°	1138.7	17.4
90°-120°	1171.2	17.9
90°-150°	4004.9	61.4
90°-180°	5387.0	82.5
0°-180°	6525.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	368	368	368	368	368	
5°	369	368	366	368	368	35
15°	351	352	352	356	355	99
25°	317	321	322	327	327	146
35°	273	279	284	290	292	171
45°	223	233	243	250	254	172
55°	170	183	198	208	212	152
65°	118	133	151	162	167	116
75°	64	83	103	116	121	68
85°	20	40	61	74	79	21
90°	6	39	76	94	102	7
95°	83	50	80	100	105	100
105°	387	404	312	108	102	410
115°	722	735	760	782	791	712
125°	1016	1026	1043	1053	1059	907
135°	1264	1271	1280	1291	1290	972
145°	1458	1466	1469	1474	1476	912
155°	1605	1603	1604	1610	1603	739
165°	1693	1689	1688	1697	1689	478
175°	1732	1726	1727	1735	1726	165
180°	1732	1732	1732	1732	1732	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2
2.5°	369.9	369.7	369.5	369.3	369.0	368.7	368.1	367.5	367.0	366.4	367.0
5°	368.7	368.5	368.3	368.2	368.0	367.6	367.0	366.5	366.0	365.5	366.2
7.5°	365.1	365.2	365.2	365.2	365.2	365.0	364.5	363.9	363.4	362.9	363.8
10°	361.9	362.1	362.2	362.4	362.6	362.5	362.0	361.5	361.1	360.7	361.5
12.5°	358.0	358.3	358.5	358.8	359.0	359.0	358.7	358.3	358.1	357.7	358.6
15°	351.0	351.3	351.5	351.8	352.1	352.2	352.1	352.0	351.9	351.8	352.8
17.5°	342.2	342.8	343.3	343.8	344.3	344.6	344.6	344.5	344.5	344.5	345.3
20°	335.8	336.3	336.8	337.4	337.9	338.3	338.5	338.6	338.8	339.0	339.8
22.5°	329.1	329.6	330.1	330.6	331.2	331.6	331.8	332.1	332.3	332.6	333.6
25°	316.9	317.8	318.7	319.6	320.5	321.1	321.3	321.6	321.8	322.2	323.3
27.5°	304.7	305.7	306.8	307.8	308.8	309.6	310.1	310.7	311.3	311.9	312.9
30°	296.1	297.2	298.4	299.5	300.7	301.6	302.4	303.1	303.8	304.5	305.6
32.5°	286.5	287.7	289.0	290.3	291.6	292.7	293.7	294.6	295.6	296.4	297.6
35°	272.8	274.2	275.7	277.1	278.5	279.8	280.9	282.1	283.3	284.5	285.8
37.5°	258.4	259.9	261.6	263.2	264.8	266.3	267.7	269.1	270.6	272.0	273.5
40°	248.7	250.4	251.9	253.6	255.1	256.8	258.6	260.5	262.2	264.0	265.5
42.5°	238.2	240.1	242.0	244.0	246.0	247.9	249.8	251.6	253.5	255.3	257.0
45°	223.1	225.2	227.3	229.5	231.6	233.8	236.0	238.2	240.5	242.7	244.4
47.5°	207.2	209.7	212.1	214.6	217.0	219.5	222.0	224.5	227.0	229.6	231.5
50°	197.0	199.5	202.0	204.5	207.0	209.6	212.3	215.2	217.9	220.7	222.7
52.5°	186.1	188.7	191.3	194.0	196.7	199.5	202.5	205.6	208.6	211.6	213.8
55°	170.1	173.1	176.0	178.9	181.8	184.9	188.1	191.4	194.6	197.8	200.2
57.5°	154.5	157.6	160.7	163.8	166.8	170.1	173.6	177.1	180.6	184.2	186.6
60°	143.6	146.8	150.1	153.3	156.4	159.9	163.6	167.2	170.8	174.5	177.0
62.5°	133.4	136.6	139.9	143.2	146.5	150.1	153.9	157.8	161.7	165.6	168.0
65°	117.5	121.1	124.5	127.9	131.5	135.2	139.1	143.0	146.9	150.8	153.5
67.5°	101.5	105.2	108.9	112.5	116.2	120.1	124.1	128.1	132.1	136.1	139.0
70°	90.2	94.1	97.9	101.8	105.6	109.7	113.9	118.2	122.5	126.7	129.7
72.5°	80.0	83.9	87.6	91.5	95.3	99.4	103.8	108.3	112.7	117.2	120.1
75°	63.8	68.0	72.2	76.4	80.6	84.9	89.4	93.8	98.2	102.7	105.6
77.5°	49.7	53.9	58.1	62.3	66.6	70.9	75.4	79.9	84.4	88.9	92.0
80°	39.7	44.1	48.5	52.9	57.2	61.7	66.3	70.9	75.6	80.2	83.3
82.5°	31.1	35.5	40.0	44.3	48.8	53.4	58.1	62.8	67.5	72.2	75.3
85°	19.6	24.1	28.6	33.1	37.5	42.1	46.8	51.5	56.2	61.0	64.0
87.5°	10.9	15.9	20.9	26.0	31.0	36.2	41.4	46.7	52.0	57.3	60.5
90°	6.5	13.7	20.9	28.2	35.4	43.1	51.4	59.7	67.9	76.2	80.4
92.5°	28.8	31.9	35.1	38.2	41.4	46.6	53.9	61.1	68.4	75.7	80.5
95°	82.9	74.6	66.5	58.2	49.9	49.6	57.1	64.6	72.1	79.6	84.4
97.5°	161.8	159.6	157.5	155.3	153.3	144.0	127.5	111.2	94.7	78.3	83.3
100°	221.1	229.7	238.3	246.8	255.5	239.4	199.0	158.4	117.9	77.4	82.2
102.5°	288.8	295.5	302.1	308.8	315.6	296.5	251.8	207.1	162.4	117.7	113.1
105°	386.8	392.1	397.4	402.7	407.9	399.6	377.7	355.8	333.9	311.9	263.8
107.5°	489.8	494.1	498.4	502.8	507.1	513.2	520.8	528.6	536.2	544.0	509.2
110°	558.4	562.4	566.3	570.2	574.0	579.4	586.1	592.8	599.5	606.2	599.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	624.4	627.8	631.1	634.5	637.9	642.8	649.5	656.0	662.5	669.2	671.6
115°	721.5	724.4	727.1	729.9	732.7	736.9	742.8	748.6	754.3	760.1	765.1
117.5°	816.0	818.7	821.5	824.2	827.1	830.6	834.9	839.2	843.6	847.9	852.3
120°	874.3	877.4	880.4	883.4	886.4	889.8	893.6	897.4	901.2	905.0	909.3
122.5°	934.0	936.4	938.7	941.1	943.4	946.6	950.5	954.3	958.2	962.1	965.7
125°	1015.5	1017.8	1020.1	1022.4	1024.7	1027.7	1031.4	1035.1	1038.9	1042.6	1045.0
127.5°	1094.8	1097.0	1099.2	1101.4	1103.6	1106.5	1109.9	1113.4	1117.0	1120.5	1123.2
130°	1144.2	1146.4	1148.7	1150.8	1153.1	1155.5	1158.5	1161.4	1164.3	1167.3	1170.1
132.5°	1191.3	1193.5	1195.8	1198.1	1200.3	1202.6	1205.0	1207.4	1209.7	1212.0	1214.8
135°	1263.5	1265.2	1266.8	1268.4	1270.1	1271.9	1274.0	1276.2	1278.3	1280.4	1282.9
137.5°	1325.3	1327.3	1329.5	1331.5	1333.6	1335.3	1336.4	1337.6	1338.9	1340.0	1342.8
140°	1366.1	1367.8	1369.5	1371.2	1373.0	1374.4	1375.5	1376.7	1377.8	1378.9	1381.4
142.5°	1404.2	1405.8	1407.5	1409.1	1410.7	1412.0	1413.0	1413.8	1414.8	1415.7	1417.8
145°	1457.5	1459.4	1461.3	1463.3	1465.2	1466.4	1467.0	1467.5	1468.1	1468.7	1470.0
147.5°	1507.3	1508.6	1509.9	1511.2	1512.5	1513.5	1514.1	1514.7	1515.2	1515.8	1516.6
150°	1538.2	1539.0	1539.9	1540.8	1541.6	1542.3	1542.9	1543.5	1544.0	1544.6	1545.2
152.5°	1566.0	1566.4	1566.8	1567.2	1567.6	1568.0	1568.3	1568.7	1569.0	1569.3	1570.4
155°	1605.1	1604.6	1604.0	1603.4	1602.8	1602.7	1603.0	1603.3	1603.5	1603.8	1605.2
157.5°	1635.5	1635.5	1635.4	1635.3	1635.3	1635.1	1634.8	1634.5	1634.3	1633.9	1635.6
160°	1654.1	1653.7	1653.5	1653.2	1652.9	1652.6	1652.3	1652.0	1651.7	1651.5	1653.2
162.5°	1671.5	1670.8	1670.1	1669.3	1668.5	1668.0	1667.8	1667.5	1667.2	1666.9	1668.9
165°	1692.6	1691.8	1690.9	1690.1	1689.2	1688.7	1688.3	1688.1	1687.8	1687.5	1689.8
167.5°	1709.1	1708.0	1706.8	1705.7	1704.5	1704.0	1704.0	1704.0	1704.0	1704.0	1706.2
170°	1718.4	1717.3	1716.1	1714.9	1713.8	1713.2	1713.2	1713.2	1713.2	1713.2	1715.5
172.5°	1724.6	1723.2	1721.8	1720.5	1719.1	1718.5	1718.7	1719.0	1719.2	1719.4	1721.7
175°	1732.5	1731.1	1729.7	1728.3	1726.8	1726.2	1726.6	1726.8	1727.1	1727.4	1729.4
177.5°	1734.6	1733.5	1732.3	1731.2	1730.0	1729.6	1729.8	1730.0	1730.3	1730.5	1732.3
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2
2.5°	367.5	368.1	368.7	368.9	368.9	368.8	368.7	368.6
5°	366.9	367.6	368.3	368.7	368.6	368.4	368.3	368.2
7.5°	364.7	365.6	366.4	366.9	366.8	366.6	366.5	366.4
10°	362.5	363.3	364.2	364.5	364.4	364.2	364.0	363.9
12.5°	359.4	360.2	361.0	361.4	361.2	361.0	360.8	360.7
15°	353.6	354.5	355.4	355.8	355.7	355.6	355.5	355.4
17.5°	346.0	346.9	347.7	348.0	347.8	347.8	347.7	347.5
20°	340.6	341.4	342.2	342.7	342.8	342.9	342.9	343.0
22.5°	334.6	335.6	336.7	337.2	337.1	337.0	337.0	336.9
25°	324.4	325.6	326.7	327.4	327.4	327.4	327.4	327.4
27.5°	313.8	314.9	315.9	316.4	316.5	316.6	316.6	316.7
30°	306.6	307.7	308.8	309.3	309.3	309.3	309.3	309.3
32.5°	298.8	299.9	301.0	301.7	302.0	302.1	302.4	302.6
35°	287.1	288.4	289.8	290.7	291.0	291.4	291.7	292.1
37.5°	275.0	276.6	278.1	279.0	279.2	279.6	279.8	280.1
40°	267.0	268.5	270.0	271.0	271.3	271.7	272.1	272.4
42.5°	258.6	260.3	261.9	263.0	263.6	264.0	264.5	265.0
45°	246.1	247.8	249.5	250.7	251.4	252.1	252.9	253.6
47.5°	233.4	235.4	237.3	238.5	239.0	239.6	240.1	240.7
50°	224.7	226.8	228.9	230.2	230.8	231.4	232.0	232.7
52.5°	215.9	218.0	220.2	221.6	222.4	223.2	223.9	224.6
55°	202.6	205.0	207.4	209.0	209.7	210.4	211.1	211.8
57.5°	189.0	191.4	193.8	195.4	196.3	197.2	198.0	198.8
60°	179.5	182.0	184.5	186.2	187.2	188.2	189.2	190.2
62.5°	170.5	173.0	175.5	177.2	178.1	179.0	179.9	180.9
65°	156.2	158.9	161.5	163.3	164.2	165.1	166.0	166.9
67.5°	141.9	144.8	147.7	149.6	150.3	151.1	151.9	152.6
70°	132.5	135.3	138.2	140.1	140.9	141.8	142.8	143.6
72.5°	123.0	125.9	128.8	130.8	131.6	132.5	133.5	134.3
75°	108.6	111.5	114.5	116.5	117.5	118.6	119.7	120.8
77.5°	95.1	98.2	101.3	103.2	104.1	105.0	105.7	106.6
80°	86.3	89.4	92.4	94.3	95.2	96.1	97.0	97.9
82.5°	78.3	81.3	84.4	86.3	87.2	88.1	88.9	89.9
85°	67.1	70.1	73.1	75.1	75.9	76.9	77.7	78.6
87.5°	63.8	67.1	70.3	72.5	73.4	74.5	75.5	76.5
90°	84.6	88.8	92.9	95.7	97.2	98.7	100.1	101.6
92.5°	85.3	90.1	94.9	97.9	99.0	100.2	101.3	102.5
95°	89.1	93.9	98.7	101.5	102.4	103.3	104.2	105.0
97.5°	88.2	93.1	98.1	101.1	102.3	103.5	104.6	105.8
100°	87.1	92.0	96.9	99.9	101.1	102.3	103.4	104.6
102.5°	108.5	103.9	99.4	97.8	99.2	100.6	102.0	103.4
105°	215.7	167.6	119.4	96.1	97.5	98.8	100.2	101.6
107.5°	474.5	439.7	405.0	368.9	331.6	294.2	256.8	219.5
110°	591.9	584.8	577.7	554.1	513.8	473.6	433.5	393.3





TEST NUMBER: P332116-935

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	674.0	676.4	678.8	676.1	668.2	660.4	652.6	644.7
115°	770.1	775.1	780.1	783.5	785.4	787.2	789.1	791.0
117.5°	856.7	861.2	865.6	868.2	869.2	870.0	871.0	871.9
120°	913.7	918.0	922.4	924.8	925.5	926.1	926.7	927.3
122.5°	969.2	972.8	976.5	978.6	979.5	980.3	981.2	982.1
125°	1047.5	1049.9	1052.4	1054.2	1055.4	1056.5	1057.7	1058.9
127.5°	1125.8	1128.5	1131.2	1132.6	1132.6	1132.6	1132.6	1132.7
130°	1172.9	1175.8	1178.6	1180.0	1180.0	1180.0	1179.9	1179.9
132.5°	1217.5	1220.3	1223.1	1224.3	1224.2	1224.0	1223.8	1223.6
135°	1285.3	1287.8	1290.3	1291.3	1290.9	1290.5	1290.0	1289.6
137.5°	1345.6	1348.3	1351.2	1352.5	1352.4	1352.2	1352.1	1351.9
140°	1383.9	1386.3	1388.8	1390.0	1389.8	1389.7	1389.7	1389.5
142.5°	1420.0	1422.0	1424.2	1425.0	1424.7	1424.4	1423.9	1423.6
145°	1471.3	1472.6	1473.8	1474.6	1475.0	1475.3	1475.7	1476.1
147.5°	1517.3	1518.1	1518.9	1518.8	1517.9	1516.8	1515.9	1514.8
150°	1545.8	1546.4	1546.9	1546.9	1546.2	1545.5	1544.8	1544.1
152.5°	1571.4	1572.4	1573.5	1573.3	1572.0	1570.7	1569.5	1568.2
155°	1606.7	1608.1	1609.6	1609.4	1607.7	1605.9	1604.2	1602.6
157.5°	1637.4	1639.1	1640.8	1640.5	1638.3	1636.1	1633.8	1631.6
160°	1654.9	1656.6	1658.3	1658.2	1656.1	1654.2	1652.2	1650.2
162.5°	1670.8	1672.8	1674.6	1674.7	1673.0	1671.2	1669.5	1667.7
165°	1692.0	1694.4	1696.7	1696.8	1694.8	1692.8	1690.7	1688.8
167.5°	1708.6	1710.8	1713.1	1713.1	1710.8	1708.6	1706.2	1704.0
170°	1717.8	1720.1	1722.4	1722.4	1720.1	1717.8	1715.5	1713.2
172.5°	1724.0	1726.3	1728.5	1728.5	1726.0	1723.5	1720.9	1718.4
175°	1731.4	1733.4	1735.4	1735.3	1732.9	1730.7	1728.4	1726.1
177.5°	1734.1	1735.9	1737.8	1737.6	1735.3	1733.0	1730.7	1728.5
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5

(END OF REPORT)