

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: P331904-840

Luminaire Tested: **S123DIP-S340D1195U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331904-840  
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: S123DIP-S340D1195U840-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6271.9 lumens  
Efficiency: N/A  
Efficacy: 148.6 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

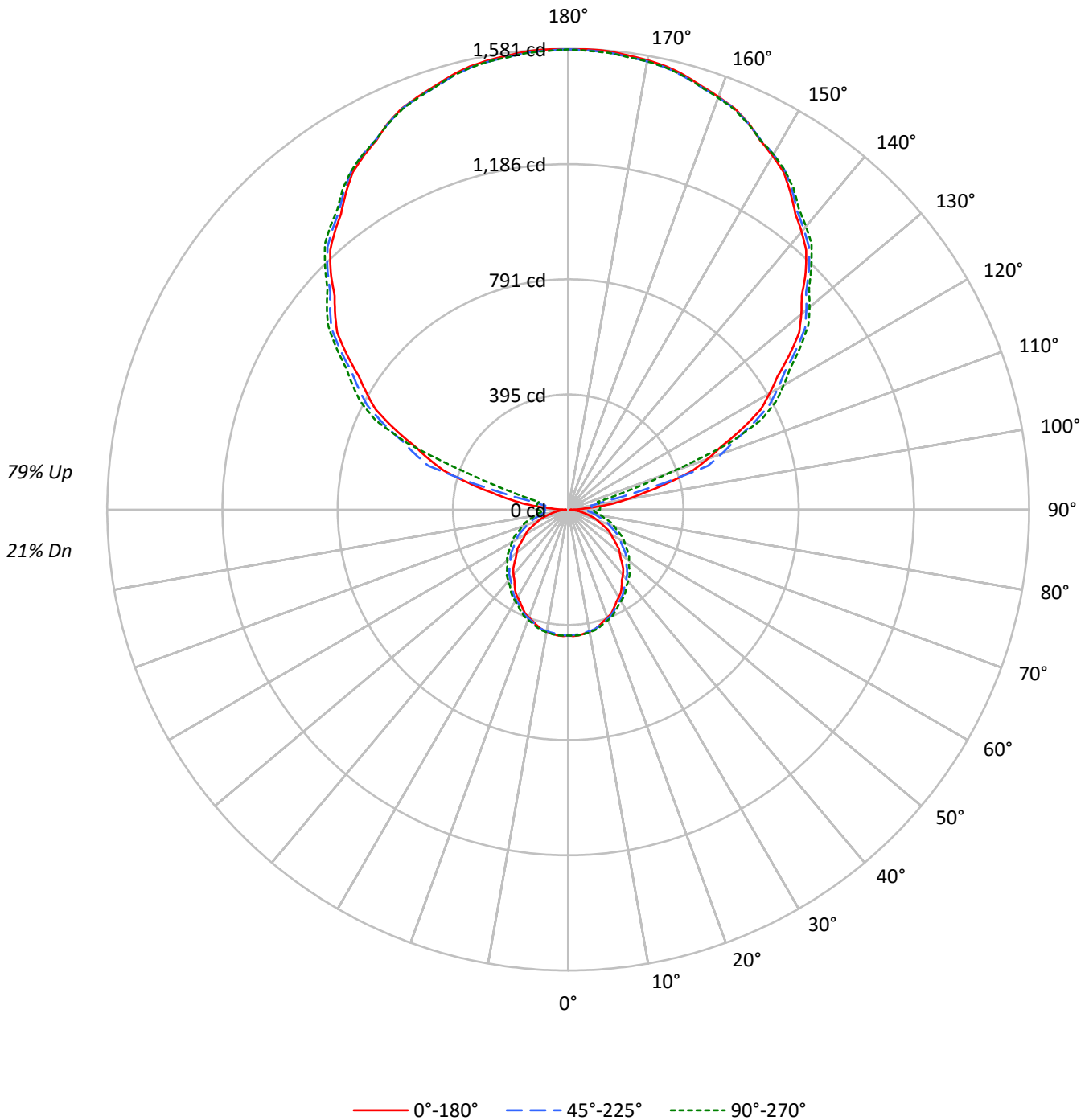
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331904-840

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### Luminous Intensity Polar Plot





TEST NUMBER: P331904-840

CATALOG NUMBER: S123DIP-S340D1195U840-4F0-1E-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	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21
1	91	87	83	79	80	77	73	71	58	56	54	41	40	39	25	25	24	17
2	83	75	69	64	73	67	62	57	51	47	44	36	34	32	22	21	20	14
3	75	66	59	53	66	58	52	48	44	40	37	31	29	27	19	18	17	12
4	69	58	50	45	60	52	45	40	39	35	31	28	25	23	17	16	14	10
5	63	51	44	38	55	46	39	34	35	30	27	25	22	19	15	14	12	8
6	58	46	38	33	51	41	34	29	31	27	23	22	19	17	14	12	11	7
7	53	41	34	28	47	37	30	25	28	24	20	20	17	15	13	11	9	6
8	49	37	30	25	43	33	27	22	26	21	18	18	15	13	12	10	8	6
9	46	34	27	22	40	30	24	20	23	19	16	17	14	12	11	9	8	5
10	42	31	24	19	37	28	22	17	21	17	14	15	12	10	10	8	7	5

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

	0°	45°	90°
0°	4649	4649	4649
5°	4664	4533	4534
10°	4622	4428	4406
15°	4562	4309	4265
20°	4477	4174	4110
25°	4372	4019	3947
30°	4265	3879	3780
35°	4143	3731	3649
40°	4030	3595	3508
45°	3902	3466	3395
50°	3776	3338	3272
55°	3636	3207	3158
60°	3499	3074	3045
65°	3360	2931	2907
70°	3149	2772	2766
75°	2886	2590	2626
80°	2583	2410	2462
85°	2294	2286	2367



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.9	0.7
10°-20°	116.7	1.9
20°-30°	174.6	2.8
30°-40°	208.5	3.3
40°-50°	218.1	3.5
50°-60°	204.7	3.3
60°-70°	171.0	2.7
70°-80°	122.3	2.0
80°-90°	77.4	1.2
90°-100°	103.2	1.6
100°-110°	307.3	4.9
110°-120°	679.8	10.8
120°-130°	849.8	13.5
130°-140°	900.1	14.4
140°-150°	837.5	13.4
150°-160°	674.6	10.8
160°-170°	435.4	6.9
170°-180°	150.0	2.4
0°-30°	332.3	5.3
0°-40°	540.8	8.6
0°-60°	963.6	15.4
0°-90°	1334.3	21.3
90°-120°	1090.2	17.4
90°-150°	3677.6	58.6
90°-180°	4938.0	78.7
0°-180°	6271.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	431	429	432	432	41
15°	412	413	413	417	417	116
25°	372	376	378	384	384	171
35°	320	327	334	340	342	200
45°	262	273	285	293	297	202
55°	200	215	232	244	248	179
65°	138	156	177	191	196	136
75°	75	97	120	135	142	80
85°	23	47	72	87	92	24
90°	7	42	81	101	109	8
95°	77	51	83	105	110	93
105°	353	372	292	109	104	374
115°	658	672	698	721	730	650
125°	926	936	954	966	972	827
135°	1152	1159	1168	1180	1179	886
145°	1329	1336	1339	1345	1347	831
155°	1463	1461	1462	1467	1461	674
165°	1543	1539	1538	1547	1539	436
175°	1579	1574	1574	1582	1573	150
180°	1579	1579	1579	1579	1579	



TEST NUMBER: P331904-840

CATALOG NUMBER: S123DIP-S340D1195U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	433.8	433.6	433.3	433.1	432.8	432.4	431.7	431.0	430.4	429.7	430.4
5°	432.4	432.2	432.0	431.8	431.6	431.2	430.5	429.9	429.3	428.7	429.5
7.5°	428.2	428.3	428.3	428.3	428.4	428.1	427.5	426.9	426.3	425.7	426.7
10°	424.4	424.6	424.9	425.1	425.3	425.2	424.5	424.0	423.5	423.0	424.0
12.5°	419.9	420.2	420.5	420.8	421.1	421.0	420.7	420.3	420.0	419.6	420.6
15°	411.7	412.0	412.3	412.6	412.9	413.1	412.9	412.8	412.7	412.6	413.7
17.5°	401.4	402.0	402.6	403.2	403.8	404.1	404.1	404.0	404.0	404.0	405.0
20°	393.8	394.5	395.1	395.8	396.4	396.8	397.0	397.2	397.4	397.6	398.6
22.5°	386.0	386.6	387.2	387.8	388.5	388.9	389.2	389.5	389.8	390.1	391.3
25°	371.7	372.7	373.9	374.9	375.9	376.6	376.9	377.2	377.5	377.9	379.2
27.5°	357.4	358.6	359.8	361.0	362.2	363.1	363.8	364.5	365.2	365.8	367.0
30°	347.3	348.6	350.0	351.3	352.7	353.8	354.7	355.5	356.3	357.2	358.4
32.5°	336.0	337.5	339.0	340.5	342.0	343.4	344.5	345.6	346.7	347.7	349.1
35°	319.9	321.6	323.4	325.0	326.7	328.2	329.5	330.9	332.2	333.7	335.2
37.5°	303.1	304.9	306.8	308.7	310.5	312.4	314.0	315.7	317.4	319.0	320.8
40°	291.8	293.7	295.5	297.4	299.2	301.2	303.4	305.5	307.5	309.6	311.4
42.5°	279.3	281.7	283.9	286.2	288.5	290.7	293.0	295.1	297.3	299.4	301.4
45°	261.7	264.2	266.6	269.1	271.7	274.2	276.8	279.4	282.1	284.7	286.7
47.5°	243.1	245.9	248.7	251.7	254.5	257.4	260.3	263.4	266.3	269.3	271.6
50°	231.1	234.0	236.9	239.8	242.8	245.8	249.0	252.4	255.6	258.8	261.3
52.5°	218.2	221.4	224.4	227.5	230.7	234.0	237.5	241.2	244.7	248.2	250.7
55°	199.5	203.0	206.4	209.8	213.3	216.9	220.7	224.5	228.2	232.0	234.8
57.5°	181.3	184.8	188.4	192.1	195.6	199.5	203.6	207.7	211.9	216.0	218.8
60°	168.4	172.2	176.0	179.8	183.5	187.5	191.9	196.1	200.4	204.7	207.6
62.5°	156.4	160.3	164.1	167.9	171.8	176.0	180.6	185.1	189.7	194.2	197.0
65°	137.8	142.0	146.0	150.1	154.2	158.5	163.1	167.7	172.3	176.9	180.1
67.5°	119.1	123.4	127.7	132.0	136.3	140.9	145.5	150.3	154.9	159.7	163.0
70°	105.8	110.4	114.8	119.4	123.8	128.7	133.6	138.7	143.7	148.7	152.1
72.5°	93.8	98.4	102.8	107.3	111.8	116.6	121.8	127.0	132.2	137.4	140.9
75°	74.8	79.8	84.6	89.6	94.5	99.6	104.8	110.0	115.2	120.5	123.9
77.5°	58.3	63.2	68.2	73.1	78.1	83.2	88.5	93.7	99.0	104.3	108.0
80°	46.6	51.7	56.9	62.0	67.1	72.4	77.8	83.2	88.7	94.1	97.7
82.5°	36.5	41.6	46.9	52.0	57.3	62.6	68.2	73.6	79.2	84.7	88.3
85°	23.0	28.3	33.5	38.8	43.9	49.4	54.9	60.4	65.9	71.5	75.0
87.5°	12.7	18.5	24.2	29.9	35.6	41.5	47.6	53.5	59.6	65.5	69.4
90°	7.3	15.0	22.7	30.5	38.2	46.5	55.1	63.9	72.6	81.3	85.9
92.5°	27.6	31.4	35.3	39.3	43.1	49.0	56.8	64.6	72.4	80.2	85.3
95°	76.7	70.1	63.5	57.0	50.3	51.0	59.0	67.0	74.9	82.9	88.1
97.5°	148.5	147.3	146.2	145.1	144.0	136.5	122.6	108.8	94.8	81.0	86.1
100°	202.5	211.1	219.6	228.2	236.7	223.1	187.2	151.4	115.5	79.7	84.7
102.5°	264.1	270.8	277.6	284.4	291.1	274.7	235.0	195.3	155.6	115.8	112.4
105°	353.4	358.8	364.2	369.5	374.9	368.1	349.1	330.2	311.2	292.3	249.0
107.5°	447.2	451.6	456.1	460.5	464.8	471.1	479.1	487.1	494.9	502.9	471.9
110°	509.7	513.6	517.7	521.6	525.5	531.1	538.2	545.1	552.2	559.3	553.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	569.8	573.2	576.6	580.1	583.4	588.7	595.5	602.4	609.3	616.1	618.9
115°	658.2	661.1	663.9	666.7	669.4	674.0	680.0	686.2	692.3	698.4	703.5
117.5°	744.3	746.9	749.6	752.3	755.1	758.8	763.5	768.2	773.0	777.7	782.2
120°	797.4	800.2	803.1	806.0	808.8	812.4	816.6	820.8	825.1	829.3	833.8
122.5°	851.8	854.0	856.2	858.4	860.6	863.8	868.1	872.4	876.7	880.9	884.7
125°	925.9	928.1	930.1	932.2	934.3	937.4	941.5	945.5	949.6	953.7	956.3
127.5°	998.3	1000.2	1002.2	1004.2	1006.1	1009.1	1012.8	1016.5	1020.3	1024.1	1026.9
130°	1043.3	1045.2	1047.2	1049.2	1051.2	1053.8	1056.9	1060.1	1063.2	1066.3	1069.3
132.5°	1086.1	1088.1	1090.3	1092.3	1094.3	1096.6	1099.1	1101.7	1104.2	1106.6	1109.6
135°	1152.0	1153.4	1154.9	1156.3	1157.7	1159.6	1161.7	1164.0	1166.2	1168.3	1171.0
137.5°	1208.1	1210.0	1211.9	1213.9	1215.8	1217.3	1218.5	1219.7	1220.9	1222.1	1225.1
140°	1245.3	1246.9	1248.4	1250.0	1251.5	1252.9	1253.9	1255.1	1256.2	1257.3	1259.9
142.5°	1280.0	1281.5	1283.0	1284.4	1286.0	1287.2	1288.0	1288.8	1289.7	1290.5	1292.7
145°	1328.6	1330.3	1332.0	1333.7	1335.4	1336.7	1337.2	1337.7	1338.2	1338.7	1340.1
147.5°	1373.9	1375.1	1376.3	1377.5	1378.7	1379.6	1380.1	1380.6	1381.1	1381.6	1382.4
150°	1402.1	1402.8	1403.6	1404.4	1405.2	1405.8	1406.3	1406.8	1407.4	1408.0	1408.5
152.5°	1427.4	1427.7	1428.2	1428.5	1428.9	1429.2	1429.5	1429.9	1430.2	1430.5	1431.4
155°	1463.1	1462.6	1462.0	1461.5	1461.0	1460.9	1461.1	1461.4	1461.7	1461.9	1463.2
157.5°	1490.8	1490.7	1490.7	1490.6	1490.6	1490.4	1490.2	1489.9	1489.7	1489.3	1491.0
160°	1507.6	1507.4	1507.1	1506.9	1506.6	1506.3	1506.1	1505.8	1505.6	1505.3	1506.9
162.5°	1523.6	1523.0	1522.3	1521.6	1520.9	1520.5	1520.1	1519.9	1519.6	1519.3	1521.2
165°	1542.9	1542.1	1541.3	1540.5	1539.7	1539.2	1538.9	1538.6	1538.4	1538.1	1540.2
167.5°	1557.9	1556.8	1555.8	1554.8	1553.7	1553.2	1553.2	1553.2	1553.2	1553.2	1555.3
170°	1566.3	1565.3	1564.3	1563.2	1562.2	1561.7	1561.7	1561.7	1561.7	1561.7	1563.7
172.5°	1572.0	1570.7	1569.4	1568.2	1566.9	1566.4	1566.6	1566.8	1567.0	1567.2	1569.3
175°	1579.2	1577.9	1576.6	1575.3	1574.0	1573.5	1573.8	1574.0	1574.3	1574.5	1576.4
177.5°	1581.1	1580.0	1579.0	1578.0	1576.9	1576.5	1576.7	1576.9	1577.1	1577.3	1579.0
180°	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	431.0	431.7	432.4	432.6	432.6	432.5	432.4	432.3
5°	430.3	431.2	432.0	432.4	432.3	432.1	432.0	431.9
7.5°	427.8	428.8	429.8	430.3	430.2	430.0	429.9	429.8
10°	425.2	426.2	427.2	427.6	427.4	427.2	427.0	426.8
12.5°	421.5	422.5	423.4	423.8	423.6	423.4	423.2	423.0
15°	414.8	415.8	416.9	417.3	417.2	417.1	417.0	416.9
17.5°	405.9	406.9	407.8	408.2	408.0	407.9	407.8	407.6
20°	399.5	400.4	401.4	401.9	402.0	402.1	402.2	402.3
22.5°	392.4	393.6	394.9	395.5	395.4	395.3	395.3	395.2
25°	380.5	381.9	383.2	384.0	384.0	384.0	384.0	384.0
27.5°	368.1	369.3	370.5	371.1	371.2	371.3	371.3	371.4
30°	359.6	360.9	362.1	362.7	362.7	362.7	362.7	362.7
32.5°	350.4	351.7	353.0	353.9	354.2	354.4	354.7	354.9
35°	336.8	338.3	339.9	340.9	341.3	341.7	342.1	342.5
37.5°	322.6	324.4	326.2	327.2	327.5	327.9	328.2	328.5
40°	313.2	315.0	316.7	317.8	318.2	318.7	319.1	319.5
42.5°	303.4	305.3	307.2	308.5	309.1	309.6	310.2	310.8
45°	288.6	290.6	292.7	294.1	294.9	295.7	296.6	297.4
47.5°	273.8	276.1	278.3	279.7	280.3	281.0	281.7	282.4
50°	263.6	266.0	268.4	270.0	270.7	271.5	272.2	273.0
52.5°	253.3	255.7	258.2	259.9	260.8	261.8	262.6	263.5
55°	237.6	240.4	243.3	245.1	245.9	246.8	247.6	248.4
57.5°	221.7	224.5	227.3	229.2	230.2	231.3	232.3	233.2
60°	210.6	213.5	216.4	218.4	219.5	220.8	221.9	223.1
62.5°	200.0	202.9	205.8	207.8	208.9	210.0	211.1	212.2
65°	183.2	186.3	189.5	191.6	192.6	193.7	194.7	195.7
67.5°	166.4	169.9	173.3	175.5	176.3	177.2	178.1	178.9
70°	155.4	158.8	162.1	164.3	165.3	166.3	167.4	168.4
72.5°	144.2	147.6	151.1	153.4	154.4	155.4	156.5	157.5
75°	127.3	130.8	134.3	136.6	137.8	139.2	140.4	141.7
77.5°	111.6	115.2	118.9	121.1	122.1	123.1	124.0	125.0
80°	101.2	104.8	108.4	110.6	111.7	112.7	113.8	114.8
82.5°	91.8	95.3	99.0	101.2	102.3	103.3	104.3	105.4
85°	78.7	82.2	85.7	88.1	89.1	90.2	91.2	92.2
87.5°	73.1	76.9	80.6	83.1	84.2	85.4	86.5	87.7
90°	90.5	95.1	99.7	102.8	104.4	105.9	107.6	109.1
92.5°	90.5	95.6	100.8	103.9	105.2	106.5	107.8	109.1
95°	93.1	98.2	103.2	106.2	107.3	108.4	109.4	110.5
97.5°	91.4	96.5	101.8	105.0	106.3	107.7	109.0	110.3
100°	89.9	95.0	100.2	103.3	104.6	105.9	107.2	108.6
102.5°	108.9	105.3	101.8	100.8	102.3	103.8	105.3	106.8
105°	205.8	162.6	119.4	98.5	100.0	101.4	102.9	104.3
107.5°	440.9	409.8	378.8	346.4	312.5	278.6	244.8	210.9
110°	547.4	541.6	535.7	514.5	478.1	441.6	405.3	368.8





TEST NUMBER: P331904-840

CATALOG NUMBER: S123DIP-S340D1195U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	621.7	624.5	627.3	625.2	618.2	611.3	604.4	597.4
115°	708.6	713.8	718.8	722.4	724.3	726.1	728.0	729.8
117.5°	786.9	791.4	796.0	798.8	799.8	800.8	801.8	802.9
120°	838.3	842.8	847.3	849.9	850.6	851.3	852.1	852.8
122.5°	888.5	892.3	896.1	898.4	899.4	900.3	901.2	902.2
125°	959.1	961.8	964.5	966.5	967.8	969.1	970.3	971.6
127.5°	1029.9	1032.8	1035.7	1037.2	1037.4	1037.6	1037.8	1037.9
130°	1072.4	1075.4	1078.4	1079.9	1080.1	1080.2	1080.3	1080.5
132.5°	1112.6	1115.5	1118.4	1119.9	1119.8	1119.8	1119.8	1119.8
135°	1173.7	1176.4	1179.0	1180.2	1179.9	1179.7	1179.4	1179.2
137.5°	1228.0	1230.9	1233.8	1235.3	1235.3	1235.3	1235.3	1235.3
140°	1262.5	1265.2	1267.7	1269.0	1269.0	1269.0	1269.0	1269.0
142.5°	1294.9	1297.2	1299.5	1300.5	1300.3	1300.0	1299.8	1299.6
145°	1341.4	1342.8	1344.1	1345.0	1345.4	1345.8	1346.3	1346.7
147.5°	1383.2	1383.9	1384.7	1384.7	1383.9	1383.1	1382.2	1381.4
150°	1409.0	1409.5	1410.0	1410.0	1409.4	1408.9	1408.3	1407.7
152.5°	1432.3	1433.3	1434.2	1434.1	1432.9	1431.8	1430.6	1429.5
155°	1464.5	1465.8	1467.1	1466.9	1465.4	1463.9	1462.3	1460.8
157.5°	1492.5	1494.0	1495.6	1495.4	1493.4	1491.3	1489.2	1487.2
160°	1508.4	1510.0	1511.6	1511.5	1509.6	1507.8	1505.9	1504.1
162.5°	1523.0	1524.7	1526.5	1526.5	1524.9	1523.3	1521.7	1520.0
165°	1542.4	1544.4	1546.5	1546.6	1544.8	1543.0	1541.2	1539.3
167.5°	1557.3	1559.4	1561.6	1561.6	1559.4	1557.3	1555.3	1553.2
170°	1565.8	1567.9	1569.9	1569.9	1567.9	1565.8	1563.7	1561.7
172.5°	1571.5	1573.5	1575.6	1575.5	1573.2	1570.9	1568.6	1566.3
175°	1578.2	1580.0	1581.9	1581.7	1579.6	1577.5	1575.5	1573.4
177.5°	1580.6	1582.4	1584.0	1583.8	1581.8	1579.6	1577.5	1575.5
180°	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2

(END OF REPORT)