

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: P331459-830

Luminaire Tested: **SA2XXDIP-C1005D1080U830-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331459-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C1005D1080U830-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

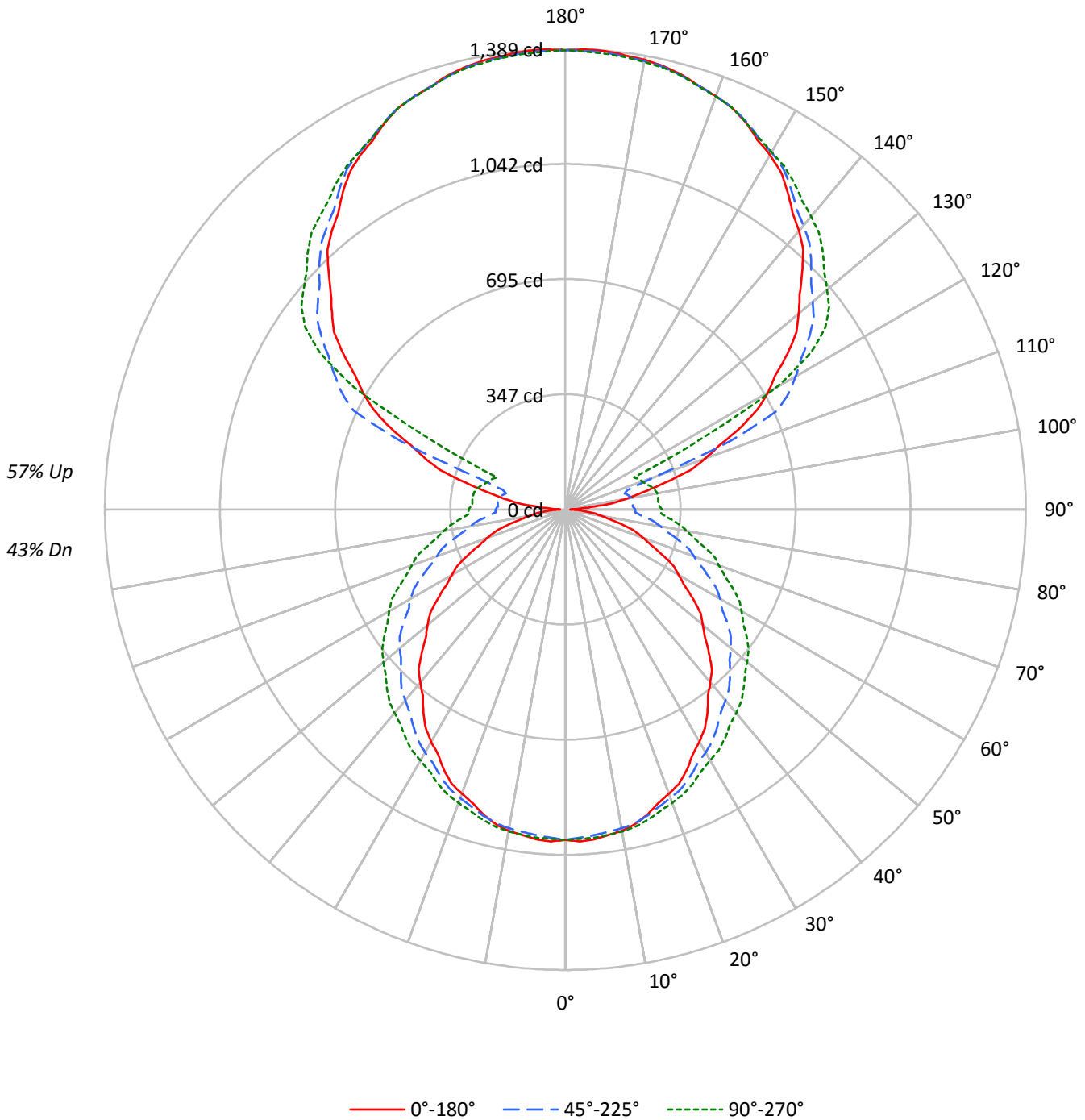
Lumens per Lamp: N/A  
Luminaire Lumens: 7863.8 lumens  
Efficiency: N/A  
Efficacy: 109.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

Input Watts (W): 71.7  
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



TEST NUMBER: P331459-830  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331459-830

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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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	50	50	50	43
1	95	90	86	82	86	82	79	75	68	65	62	54	52	51	42	41	39	34
2	86	78	71	66	78	71	65	61	59	54	51	47	44	41	36	34	32	27
3	78	68	60	54	71	62	55	50	51	46	42	41	37	34	32	29	27	22
4	71	60	52	45	65	55	48	42	45	40	35	36	32	29	28	25	23	19
5	65	53	45	39	59	49	41	36	40	35	30	32	28	25	25	22	20	16
6	60	47	39	33	54	44	36	31	36	30	26	29	25	22	23	19	17	14
7	55	43	35	29	50	39	32	27	33	27	23	26	22	19	21	17	15	12
8	51	39	31	25	47	36	29	24	30	24	20	24	20	17	19	16	13	11
9	48	35	28	22	43	32	26	21	27	22	18	22	18	15	17	14	12	10
10	44	32	25	20	40	30	23	19	25	20	16	20	16	13	16	13	11	9

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

	0°	45°	90°
0°	16091	16091	16091
5°	16172	15491	15432
10°	16069	15033	14865
15°	15848	14548	14266
20°	15567	14030	13691
25°	15292	13528	13167
30°	14902	13015	12643
35°	14508	12517	12274
40°	14092	12094	11903
45°	13700	11715	11587
50°	13277	11373	11276
55°	12834	11004	10959
60°	12292	10623	10624
65°	11728	10173	10227
70°	11096	9693	9797
75°	10286	9222	9401
80°	9006	8739	9001
85°	7780	8321	8687



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.4	1.2
10°-20°	270.8	3.4
20°-30°	410.4	5.2
30°-40°	499.9	6.4
40°-50°	537.8	6.8
50°-60°	522.2	6.6
60°-70°	456.0	5.8
70°-80°	351.0	4.5
80°-90°	239.0	3.0
90°-100°	208.5	2.7
100°-110°	287.9	3.7
110°-120°	531.1	6.8
120°-130°	791.1	10.1
130°-140°	813.2	10.3
140°-150°	742.0	9.4
150°-160°	594.0	7.6
160°-170°	382.8	4.9
170°-180°	131.8	1.7
0°-30°	775.7	9.9
0°-40°	1275.5	16.2
0°-60°	2335.5	29.7
0°-90°	3381.5	43.0
90°-120°	1027.5	13.1
90°-150°	3373.7	42.9
90°-180°	4482.0	57.0
0°-180°	7863.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	997	997	997	997	997	
5°	1000	995	987	995	994	95
15°	953	956	956	968	968	268
25°	867	877	890	906	911	398
35°	747	772	799	829	841	467
45°	612	652	702	745	761	473
55°	470	523	596	647	667	420
65°	321	392	477	534	555	318
75°	178	259	351	411	432	188
85°	52	142	234	292	315	56
90°	16	111	211	271	293	13
95°	77	115	205	263	281	89
105°	312	369	185	245	267	334
115°	582	618	705	305	228	572
125°	818	833	896	940	958	729
135°	1010	1026	1049	1088	1099	780
145°	1169	1169	1185	1200	1203	731
155°	1288	1280	1290	1296	1288	593
165°	1357	1351	1354	1360	1354	383
175°	1388	1381	1383	1389	1380	132
180°	1385	1385	1385	1385	1385	



TEST NUMBER: P331459-830

CATALOG NUMBER: SA2XXDIP-C1005D1080U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6
2.5°	1002.5	1001.7	1000.9	1000.1	999.4	998.1	996.3	994.5	992.7	990.9	992.2
5°	999.6	998.6	997.7	996.6	995.7	994.3	992.4	990.4	988.5	986.6	988.5
7.5°	990.6	990.0	989.3	988.7	988.1	987.0	985.5	984.0	982.6	981.1	983.4
10°	983.7	983.1	982.4	981.8	981.1	980.3	979.4	978.4	977.4	976.5	979.0
12.5°	972.1	972.2	972.4	972.5	972.6	972.3	971.7	970.9	970.3	969.5	972.1
15°	953.4	954.0	954.6	955.3	955.9	956.2	956.2	956.2	956.2	956.2	959.1
17.5°	929.1	930.5	931.8	933.1	934.4	935.7	936.7	937.7	938.8	939.8	942.8
20°	912.9	914.5	916.2	917.8	919.4	920.8	922.1	923.3	924.6	926.0	929.4
22.5°	895.6	897.4	899.3	901.2	903.1	904.8	906.6	908.4	910.2	912.0	915.6
25°	866.7	868.9	871.2	873.5	875.7	878.3	881.1	884.0	886.9	889.8	893.6
27.5°	832.0	835.7	839.3	843.0	846.7	850.2	853.6	857.0	860.4	863.8	868.6
30°	808.9	813.0	817.3	821.4	825.6	829.8	834.0	838.1	842.3	846.5	851.6
32.5°	783.4	788.2	792.9	797.6	802.2	807.0	812.0	816.9	821.9	826.8	832.7
35°	746.8	752.2	757.7	763.2	768.6	774.4	780.5	786.6	792.7	798.8	805.9
37.5°	706.9	713.2	719.5	725.8	732.1	739.1	747.1	755.0	762.9	770.8	778.6
40°	680.3	687.4	694.5	701.5	708.6	716.4	725.1	733.8	742.4	751.1	759.5
42.5°	655.0	661.9	669.0	676.1	683.2	691.6	701.6	711.6	721.5	731.5	740.6
45°	612.5	621.1	629.8	638.5	647.1	657.0	668.4	679.6	690.8	702.0	712.0
47.5°	570.6	580.0	589.5	598.9	608.3	619.6	632.8	645.9	659.1	672.2	682.7
50°	541.7	551.7	561.6	571.6	581.5	593.7	608.1	622.5	637.0	651.5	662.4
52.5°	514.0	524.4	534.9	545.4	555.8	568.6	583.8	599.1	614.3	629.5	640.6
55°	469.5	481.0	492.6	504.2	515.7	529.8	546.5	563.2	579.9	596.5	608.1
57.5°	425.6	438.6	451.6	464.7	477.7	492.7	509.7	526.7	543.8	560.7	573.2
60°	394.4	408.1	422.0	435.7	449.6	465.6	483.9	502.2	520.5	538.8	551.0
62.5°	366.6	380.9	395.2	409.5	423.9	440.2	458.5	476.7	495.1	513.4	526.3
65°	320.7	336.4	352.1	367.9	383.6	401.0	419.9	438.8	457.7	476.6	489.8
67.5°	278.5	294.9	311.3	327.8	344.2	362.1	381.5	401.0	420.3	439.7	453.0
70°	248.5	265.1	281.8	298.5	315.2	333.5	353.5	373.3	393.2	413.1	426.9
72.5°	220.7	237.9	255.1	272.3	289.5	308.2	328.4	348.6	368.7	388.9	402.4
75°	177.7	195.7	213.6	231.6	249.6	268.8	289.4	309.9	330.5	351.0	364.8
77.5°	136.1	154.9	173.7	192.5	211.3	231.1	252.0	272.9	293.7	314.6	328.4
80°	108.3	127.9	147.5	167.1	186.6	206.9	227.7	248.6	269.5	290.3	303.8
82.5°	85.2	104.5	123.9	143.2	162.5	182.8	203.9	225.0	246.1	267.2	280.7
85°	52.0	71.9	91.8	111.7	131.6	151.8	172.4	192.9	213.5	234.0	247.5
87.5°	28.6	48.2	67.8	87.4	107.0	127.2	148.2	169.1	189.9	210.8	224.1
90°	15.5	36.5	57.6	78.6	99.7	121.4	143.7	166.1	188.4	210.8	224.7
92.5°	33.6	50.6	67.8	84.8	102.0	120.8	141.6	162.2	182.9	203.5	216.7
95°	76.7	84.5	92.2	99.9	107.6	122.0	142.7	163.5	184.4	205.2	218.5
97.5°	139.4	132.1	124.8	117.5	110.2	117.6	139.7	161.8	183.9	206.0	218.8
100°	187.5	168.8	150.2	131.6	112.9	114.5	136.3	158.1	179.8	201.5	215.2
102.5°	239.2	243.6	248.0	252.4	256.7	251.8	237.7	223.5	209.2	195.1	209.1
105°	311.8	327.8	343.8	359.8	375.8	361.7	317.6	273.5	229.4	185.3	199.1
107.5°	396.3	409.2	422.0	434.8	447.6	425.6	368.7	311.8	254.9	197.9	206.2
110°	449.7	460.7	471.8	483.0	494.0	475.2	426.7	378.1	329.4	280.8	268.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	501.0	510.5	520.0	529.5	539.0	543.4	542.4	541.5	540.5	539.6	468.6
115°	581.9	589.2	596.5	603.9	611.1	624.8	644.9	664.9	684.9	704.9	611.4
117.5°	652.8	659.3	665.9	672.4	679.0	690.8	708.0	725.2	742.3	759.6	744.1
120°	705.7	710.3	714.9	719.5	724.2	734.9	751.8	768.6	785.5	802.3	814.0
122.5°	750.6	754.6	758.7	762.7	766.8	776.9	793.4	809.8	826.2	842.7	853.0
125°	817.5	820.4	823.3	826.1	829.1	837.7	852.2	866.8	881.3	895.8	906.0
127.5°	879.4	882.3	885.1	888.1	891.0	898.1	909.6	921.0	932.5	943.9	954.1
130°	918.7	921.9	925.2	928.4	931.6	937.8	947.1	956.2	965.4	974.6	984.8
132.5°	958.8	961.5	964.2	966.9	969.6	974.8	982.4	990.0	997.7	1005.4	1014.9
135°	1009.5	1013.0	1016.5	1020.1	1023.7	1028.0	1033.3	1038.5	1043.7	1049.0	1057.9
137.5°	1062.2	1064.5	1067.0	1069.4	1071.9	1074.9	1078.6	1082.2	1085.9	1089.7	1097.7
140°	1096.6	1098.1	1099.5	1101.0	1102.4	1104.8	1107.8	1110.9	1114.0	1117.1	1124.2
142.5°	1125.5	1126.7	1128.0	1129.3	1130.6	1132.7	1135.6	1138.6	1141.5	1144.4	1150.4
145°	1169.3	1169.0	1168.8	1168.7	1168.4	1170.2	1173.9	1177.7	1181.6	1185.3	1188.8
147.5°	1208.8	1208.0	1207.1	1206.3	1205.4	1206.8	1210.6	1214.3	1218.0	1221.8	1223.2
150°	1234.4	1232.8	1231.3	1229.7	1228.2	1229.2	1232.8	1236.3	1239.9	1243.4	1244.8
152.5°	1256.0	1254.3	1252.5	1250.8	1249.2	1249.9	1253.3	1256.7	1260.1	1263.5	1264.8
155°	1287.5	1285.5	1283.6	1281.5	1279.5	1279.9	1282.5	1285.2	1287.9	1290.5	1291.8
157.5°	1312.2	1310.5	1308.8	1307.1	1305.4	1305.5	1307.4	1309.2	1311.1	1313.0	1314.5
160°	1326.6	1325.3	1323.9	1322.6	1321.3	1321.3	1322.6	1323.9	1325.3	1326.6	1327.9
162.5°	1339.4	1338.1	1336.7	1335.4	1334.1	1334.0	1335.1	1336.3	1337.5	1338.6	1340.1
165°	1356.7	1355.3	1354.0	1352.6	1351.3	1350.9	1351.6	1352.4	1353.0	1353.7	1355.2
167.5°	1369.5	1368.2	1366.8	1365.5	1364.1	1363.8	1364.4	1365.0	1365.6	1366.3	1367.8
170°	1376.7	1375.4	1374.0	1372.7	1371.4	1370.9	1371.4	1371.8	1372.2	1372.7	1374.2
172.5°	1381.5	1380.2	1378.8	1377.5	1376.2	1375.7	1376.2	1376.6	1377.1	1377.5	1379.0
175°	1387.7	1386.2	1384.6	1383.1	1381.5	1380.9	1381.4	1381.9	1382.2	1382.7	1384.3
177.5°	1388.7	1387.5	1386.2	1385.0	1383.7	1383.2	1383.4	1383.6	1383.7	1383.9	1385.2
180°	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6
2.5°	993.4	994.8	996.1	996.5	995.9	995.4	994.9	994.4
5°	990.4	992.4	994.3	995.0	994.8	994.5	994.1	993.8
7.5°	985.7	988.1	990.3	991.4	991.0	990.7	990.3	990.0
10°	981.6	984.2	986.7	987.9	987.5	987.2	986.9	986.6
12.5°	974.7	977.2	979.8	980.9	980.6	980.2	980.0	979.7
15°	962.1	964.9	967.8	969.1	968.7	968.5	968.1	967.8
17.5°	945.8	948.9	951.9	953.4	953.4	953.4	953.4	953.4
20°	932.9	936.5	940.0	941.8	941.8	941.8	941.8	941.8
22.5°	919.1	922.7	926.1	928.2	928.7	929.3	929.7	930.3
25°	897.5	901.4	905.2	907.6	908.6	909.6	910.5	911.4
27.5°	873.5	878.4	883.4	886.1	886.8	887.5	888.3	888.9
30°	856.8	861.9	867.0	870.1	871.0	871.9	873.0	873.9
32.5°	838.7	844.5	850.5	854.2	856.0	857.7	859.5	861.2
35°	812.9	820.0	827.1	831.7	834.0	836.2	838.5	840.7
37.5°	786.5	794.3	802.1	807.2	809.5	812.0	814.4	816.7
40°	767.8	776.2	784.5	790.1	793.1	795.9	798.8	801.7
42.5°	749.7	758.8	768.0	773.9	776.8	779.8	782.6	785.5
45°	721.9	731.9	741.8	748.4	751.6	754.8	758.0	761.2
47.5°	693.1	703.4	713.9	720.9	724.3	727.9	731.4	735.0
50°	673.3	684.2	695.1	702.4	705.9	709.4	712.9	716.4
52.5°	651.9	663.0	674.2	681.6	685.4	689.3	693.1	696.8
55°	619.7	631.2	642.8	650.6	654.8	659.0	663.2	667.3
57.5°	585.7	598.1	610.6	618.9	623.1	627.4	631.6	635.8
60°	563.2	575.4	587.6	596.0	600.4	604.9	609.4	613.9
62.5°	539.3	552.2	565.2	573.8	578.1	582.3	586.5	590.8
65°	503.0	516.1	529.3	538.0	542.2	546.3	550.5	554.7
67.5°	466.3	479.6	492.9	501.7	506.1	510.4	514.8	519.2
70°	440.7	454.5	468.3	477.1	481.0	484.8	488.7	492.6
72.5°	415.9	429.5	443.0	452.1	456.8	461.4	466.0	470.6
75°	378.6	392.4	406.2	415.2	419.3	423.6	427.7	431.9
77.5°	342.0	355.8	369.6	378.7	383.1	387.7	392.2	396.6
80°	317.3	330.8	344.3	353.3	357.8	362.2	366.7	371.3
82.5°	294.2	307.6	321.1	330.0	334.2	338.5	342.7	346.9
85°	261.0	274.5	287.9	296.9	301.4	305.9	310.4	314.9
87.5°	237.5	250.8	264.1	272.9	277.1	281.3	285.5	289.6
90°	238.7	252.6	266.6	275.7	279.9	284.3	288.5	292.8
92.5°	229.9	243.0	256.2	264.8	268.9	273.1	277.2	281.3
95°	231.8	245.2	258.4	266.9	270.5	274.2	277.8	281.4
97.5°	231.5	244.3	257.0	265.5	269.6	273.6	277.7	281.7
100°	228.8	242.5	256.2	265.0	269.0	273.0	276.9	280.9
102.5°	222.9	236.9	250.8	259.9	264.0	268.2	272.3	276.4
105°	212.7	226.4	240.1	249.1	253.5	258.0	262.4	266.8
107.5°	214.5	222.8	231.1	237.4	241.9	246.3	250.7	255.1
110°	256.8	244.8	232.8	229.0	233.5	237.9	242.3	246.8





TEST NUMBER: P331459-830

CATALOG NUMBER: SA2XXDIP-C1005D1080U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	397.8	326.8	255.8	222.4	226.7	230.9	235.2	239.4
115°	517.9	424.5	331.0	278.1	265.5	253.1	240.5	228.1
117.5°	728.7	713.2	697.9	665.4	616.0	566.6	517.2	467.8
120°	825.7	837.4	848.9	841.5	815.0	788.4	762.0	735.5
122.5°	863.4	873.7	884.0	887.8	885.0	882.1	879.3	876.6
125°	916.2	926.4	936.7	943.6	947.2	950.6	954.2	957.8
127.5°	964.3	974.6	984.8	991.4	994.4	997.3	1000.3	1003.2
130°	994.9	1005.1	1015.2	1021.5	1023.8	1026.1	1028.5	1030.9
132.5°	1024.4	1034.0	1043.5	1049.4	1051.8	1054.1	1056.5	1058.9
135°	1066.9	1075.8	1084.8	1090.3	1092.4	1094.6	1096.7	1098.8
137.5°	1105.8	1113.9	1122.0	1126.7	1128.1	1129.6	1131.1	1132.5
140°	1131.3	1138.5	1145.7	1149.6	1150.5	1151.2	1152.1	1152.8
142.5°	1156.3	1162.2	1168.2	1171.4	1172.0	1172.5	1173.1	1173.7
145°	1192.3	1195.8	1199.3	1201.3	1201.7	1202.2	1202.7	1203.2
147.5°	1224.6	1226.1	1227.5	1228.0	1227.9	1227.8	1227.6	1227.4
150°	1246.1	1247.5	1248.8	1248.9	1247.7	1246.7	1245.6	1244.4
152.5°	1266.1	1267.5	1268.9	1268.8	1267.2	1265.8	1264.3	1262.9
155°	1293.2	1294.6	1295.9	1295.6	1293.8	1292.1	1290.3	1288.5
157.5°	1316.0	1317.5	1319.0	1318.9	1317.2	1315.4	1313.7	1311.9
160°	1329.3	1330.6	1331.9	1331.8	1330.3	1328.7	1327.2	1325.6
162.5°	1341.6	1343.1	1344.7	1344.4	1342.6	1340.7	1338.7	1336.8
165°	1356.8	1358.3	1359.9	1359.9	1358.3	1356.8	1355.2	1353.7
167.5°	1369.4	1370.9	1372.5	1372.2	1370.3	1368.3	1366.3	1364.2
170°	1375.8	1377.3	1378.9	1378.7	1376.7	1374.7	1372.7	1370.6
172.5°	1380.6	1382.1	1383.7	1383.6	1381.5	1379.5	1377.5	1375.5
175°	1385.8	1387.4	1388.9	1388.6	1386.4	1384.1	1382.0	1379.7
177.5°	1386.4	1387.6	1388.9	1388.7	1387.1	1385.5	1383.9	1382.3
180°	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7

(END OF REPORT)