

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: P331415-840

Luminaire Tested: **SA2XXDIP-C865D1080U840-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331415-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXDIP-C865D1080U840-4F0-1E-UDD-D1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

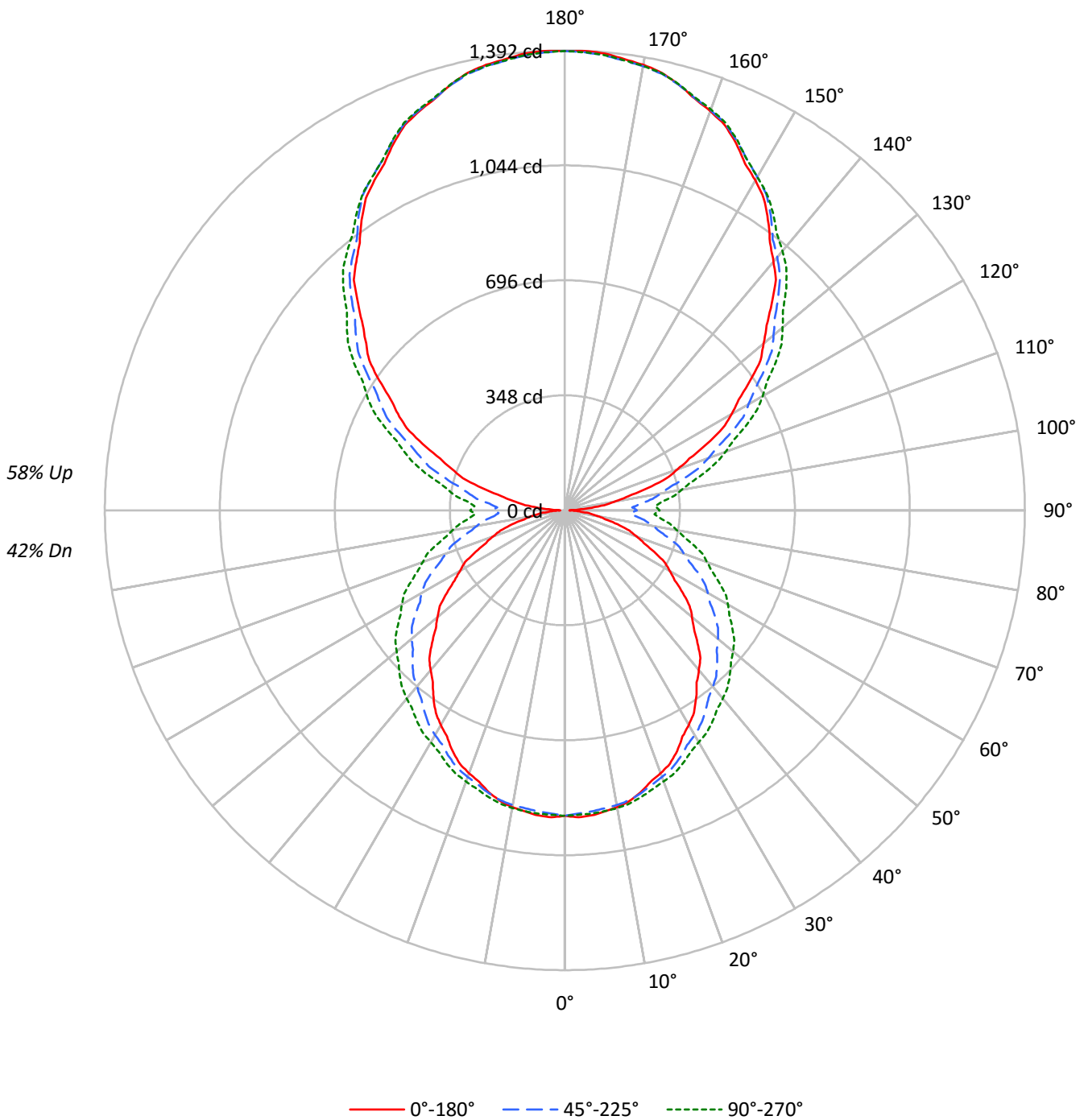
Lumens per Lamp: N/A
Luminaire Lumens: 7419.9 lumens
Efficiency: N/A
Efficacy: 113.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: General Diffuse

Input Watts (W): 65.4
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	50	30	10	0	
RCR																						
0	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42				
1	95	90	86	82	86	82	78	75	67	65	62	54	52	50	41	40	39	33				
2	86	78	71	66	78	71	65	60	58	54	50	46	43	41	36	34	32	27				
3	78	68	60	54	71	62	55	50	51	46	42	41	37	34	31	29	26	22				
4	71	60	52	45	64	55	47	42	45	40	35	36	32	29	28	25	22	18				
5	65	53	45	38	59	49	41	36	40	34	30	32	28	25	25	22	19	16				
6	60	47	39	33	54	43	36	31	36	30	26	29	25	21	22	19	17	14				
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	20	17	15	12				
8	51	39	31	25	46	35	28	24	29	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°	14928	14928	14928
5°	15002	14370	14315
10°	14907	13945	13789
15°	14701	13496	13236
20°	14442	13015	12701
25°	14187	12551	12216
30°	13824	12074	11729
35°	13459	11611	11386
40°	13075	11219	11044
45°	12709	10869	10750
50°	12316	10551	10462
55°	11908	10209	10166
60°	11404	9856	9857
65°	10880	9439	9485
70°	10292	8992	9089
75°	9539	8554	8722
80°	8357	8107	8349
85°	7227	7720	8061



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.6	1.2
10°-20°	251.2	3.4
20°-30°	380.7	5.1
30°-40°	463.7	6.2
40°-50°	498.9	6.7
50°-60°	484.5	6.5
60°-70°	423.0	5.7
70°-80°	325.7	4.4
80°-90°	224.1	3.0
90°-100°	238.6	3.2
100°-110°	383.5	5.2
110°-120°	540.2	7.3
120°-130°	655.5	8.8
130°-140°	707.2	9.5
140°-150°	679.7	9.2
150°-160°	567.6	7.7
160°-170°	376.5	5.1
170°-180°	131.6	1.8
0°-30°	719.6	9.7
0°-40°	1183.3	15.9
0°-60°	2166.6	29.2
0°-90°	3139.4	42.3
90°-120°	1162.4	15.7
90°-150°	3204.8	43.2
90°-180°	4280.0	57.7
0°-180°	7419.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	927	923	915	923	922	88
15°	884	887	887	898	898	249
25°	804	814	826	841	846	369
35°	693	716	741	769	780	433
45°	568	605	651	691	706	438
55°	436	485	553	600	619	389
65°	298	364	442	495	514	295
75°	165	240	326	381	401	174
85°	48	132	217	271	292	52
90°	14	107	218	267	286	12
95°	72	147	229	278	294	78
105°	259	303	373	421	437	274
115°	474	498	554	592	605	469
125°	685	698	735	767	779	613
135°	885	898	913	939	948	684
145°	1072	1080	1087	1096	1099	670
155°	1226	1229	1233	1238	1235	564
165°	1334	1333	1333	1340	1335	376
175°	1388	1384	1382	1389	1383	132
180°	1390	1390	1390	1390	1390	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6
2.5°	930.0	929.3	928.6	927.9	927.2	925.9	924.2	922.6	920.9	919.3	920.5
5°	927.3	926.5	925.5	924.6	923.7	922.4	920.6	918.8	917.1	915.2	917.1
7.5°	919.0	918.4	917.8	917.3	916.7	915.6	914.2	912.9	911.5	910.2	912.3
10°	912.6	912.0	911.4	910.8	910.2	909.5	908.6	907.7	906.8	905.8	908.3
12.5°	901.8	902.0	902.1	902.2	902.3	902.0	901.4	900.7	900.1	899.4	901.8
15°	884.4	885.0	885.7	886.3	886.8	887.1	887.1	887.1	887.1	887.1	889.8
17.5°	861.9	863.1	864.4	865.7	866.9	868.0	869.0	869.9	870.9	871.8	874.6
20°	846.9	848.4	849.9	851.4	852.8	854.2	855.4	856.6	857.8	859.0	862.2
22.5°	830.8	832.5	834.2	836.0	837.7	839.4	841.1	842.7	844.4	846.1	849.4
25°	804.1	806.1	808.2	810.3	812.3	814.8	817.4	820.1	822.7	825.5	829.0
27.5°	771.8	775.3	778.6	782.0	785.5	788.7	791.8	795.1	798.2	801.3	805.9
30°	750.4	754.3	758.2	762.0	765.9	769.8	773.7	777.5	781.4	785.3	790.0
32.5°	726.8	731.1	735.5	739.9	744.3	748.7	753.3	757.9	762.4	767.0	772.5
35°	692.8	697.8	703.0	708.0	713.1	718.4	724.1	729.7	735.4	741.0	747.6
37.5°	655.8	661.7	667.5	673.3	679.1	685.7	693.1	700.4	707.7	715.1	722.4
40°	631.2	637.7	644.3	650.9	657.3	664.7	672.7	680.8	688.8	696.8	704.6
42.5°	607.5	614.1	620.7	627.2	633.8	641.7	650.9	660.1	669.3	678.6	687.0
45°	568.2	576.2	584.2	592.3	600.4	609.6	620.0	630.5	640.9	651.3	660.5
47.5°	529.3	538.1	546.8	555.6	564.3	574.8	587.0	599.3	611.5	623.7	633.3
50°	502.5	511.7	521.0	530.2	539.5	550.8	564.1	577.5	591.0	604.4	614.5
52.5°	476.8	486.5	496.2	505.9	515.6	527.6	541.7	555.7	569.9	584.0	594.3
55°	435.6	446.3	457.0	467.7	478.4	491.5	507.0	522.5	538.0	553.4	564.1
57.5°	394.8	406.9	419.0	431.0	443.1	457.1	472.8	488.7	504.4	520.2	531.8
60°	365.9	378.6	391.4	404.2	417.1	431.9	448.9	465.9	482.8	499.9	511.2
62.5°	340.1	353.4	366.7	379.9	393.2	408.4	425.4	442.3	459.3	476.3	488.3
65°	297.5	312.0	326.7	341.2	355.9	371.9	389.5	407.1	424.6	442.2	454.4
67.5°	258.3	273.6	288.8	304.1	319.3	336.0	354.0	371.9	389.9	407.9	420.2
70°	230.5	246.0	261.5	276.9	292.5	309.4	327.9	346.3	364.8	383.2	396.1
72.5°	204.8	220.8	236.7	252.7	268.6	285.9	304.7	323.4	342.0	360.7	373.3
75°	164.8	181.5	198.1	214.9	231.6	249.4	268.4	287.5	306.6	325.6	338.4
77.5°	126.2	143.7	161.2	178.5	196.0	214.4	233.8	253.2	272.5	291.9	304.6
80°	100.5	118.7	136.8	155.0	173.2	191.9	211.3	230.7	249.9	269.3	281.9
82.5°	79.1	96.9	114.9	132.8	150.8	169.6	189.1	208.7	228.3	247.9	260.4
85°	48.3	66.8	85.1	103.6	122.1	140.9	159.9	178.9	198.0	217.1	229.6
87.5°	26.5	44.8	63.2	81.6	100.0	119.3	139.5	159.7	179.9	200.1	212.2
90°	14.5	34.9	55.3	75.7	96.1	118.8	143.6	168.3	193.2	217.9	229.3
92.5°	33.2	51.6	70.0	88.4	106.7	125.7	145.4	165.1	184.8	204.5	216.3
95°	71.7	88.4	104.9	121.5	138.1	155.6	174.0	192.4	210.8	229.1	240.4
97.5°	120.8	135.5	150.3	165.0	179.8	196.2	214.4	232.5	250.6	268.8	279.8
100°	158.3	171.5	184.6	197.6	210.8	226.0	243.5	260.9	278.4	295.9	306.9
102.5°	196.7	208.4	220.2	231.9	243.7	258.1	275.3	292.5	309.6	326.9	337.8
105°	258.9	268.3	277.7	287.2	296.6	309.3	325.3	341.3	357.3	373.3	384.3
107.5°	323.0	330.9	339.0	347.1	355.2	366.6	381.4	396.3	411.1	425.9	436.2
110°	363.1	370.6	378.2	385.7	393.2	404.2	418.9	433.4	448.1	462.6	472.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	408.2	414.8	421.3	427.9	434.4	444.5	458.3	471.9	485.5	499.3	508.2
115°	474.5	479.4	484.2	489.1	493.9	502.8	515.6	528.6	541.4	554.3	563.0
117.5°	539.4	543.6	547.9	552.1	556.3	563.9	574.8	585.7	596.6	607.6	615.8
120°	583.5	586.7	590.1	593.3	596.6	603.2	613.0	622.8	632.7	642.5	650.8
122.5°	623.9	626.8	629.9	632.8	635.8	642.2	651.9	661.6	671.4	681.1	688.5
125°	685.4	687.7	690.0	692.5	694.8	700.3	709.0	717.8	726.6	735.3	742.6
127.5°	746.6	749.3	751.9	754.7	757.3	762.0	768.8	775.5	782.2	789.0	795.5
130°	785.1	788.2	791.3	794.4	797.5	801.8	807.6	813.3	819.1	824.8	831.4
132.5°	828.3	830.7	833.2	835.7	838.1	841.8	846.8	851.7	856.6	861.5	867.3
135°	884.6	887.5	890.4	893.2	896.2	899.3	902.8	906.3	909.8	913.3	919.3
137.5°	945.4	947.7	950.0	952.3	954.5	956.6	958.7	960.7	962.6	964.6	969.9
140°	982.0	984.0	986.1	988.2	990.2	992.2	994.1	995.9	997.8	999.8	1004.5
142.5°	1019.6	1021.6	1023.6	1025.7	1027.7	1029.3	1030.3	1031.3	1032.3	1033.3	1037.3
145°	1072.2	1074.0	1075.8	1077.6	1079.4	1081.2	1082.7	1084.3	1085.8	1087.4	1089.4
147.5°	1120.2	1122.5	1124.6	1126.8	1129.0	1130.6	1131.7	1132.8	1133.8	1134.8	1135.6
150°	1153.1	1154.7	1156.2	1157.8	1159.3	1160.6	1161.7	1162.8	1163.8	1164.9	1165.6
152.5°	1182.1	1183.8	1185.3	1186.9	1188.4	1189.8	1191.1	1192.3	1193.7	1194.9	1195.9
155°	1225.9	1226.6	1227.4	1228.2	1229.0	1229.7	1230.5	1231.3	1232.1	1232.8	1234.2
157.5°	1263.1	1263.6	1264.1	1264.7	1265.3	1265.7	1266.2	1266.7	1267.1	1267.6	1269.4
160°	1285.7	1286.2	1286.7	1287.2	1287.8	1288.1	1288.4	1288.7	1288.9	1289.2	1290.7
162.5°	1306.3	1306.4	1306.5	1306.6	1306.8	1306.9	1307.2	1307.4	1307.7	1308.0	1309.7
165°	1333.7	1333.5	1333.2	1332.9	1332.7	1332.6	1332.6	1332.6	1332.6	1332.6	1334.4
167.5°	1356.8	1355.9	1355.1	1354.4	1353.6	1353.2	1353.1	1353.1	1353.0	1353.0	1354.8
170°	1369.0	1368.2	1367.4	1366.5	1365.8	1365.3	1365.0	1364.7	1364.5	1364.2	1366.0
172.5°	1377.4	1376.6	1375.8	1375.0	1374.2	1373.7	1373.5	1373.2	1372.9	1372.7	1374.5
175°	1387.8	1386.9	1386.1	1385.3	1384.6	1383.9	1383.4	1382.9	1382.4	1381.8	1383.7
177.5°	1391.9	1391.3	1390.7	1390.1	1389.5	1388.9	1388.5	1388.1	1387.7	1387.3	1388.5
180°	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6
2.5°	921.6	922.8	924.0	924.4	923.9	923.4	922.9	922.5
5°	918.8	920.6	922.4	923.1	922.8	922.5	922.2	921.9
7.5°	914.4	916.6	918.8	919.7	919.4	919.1	918.8	918.5
10°	910.6	913.0	915.4	916.5	916.1	915.8	915.5	915.2
12.5°	904.2	906.6	909.0	910.0	909.7	909.4	909.1	908.8
15°	892.4	895.1	897.9	899.0	898.7	898.4	898.1	897.9
17.5°	877.5	880.2	883.0	884.4	884.4	884.4	884.4	884.4
20°	865.6	868.8	872.0	873.7	873.7	873.7	873.7	873.7
22.5°	852.6	856.0	859.2	861.1	861.5	862.0	862.5	863.0
25°	832.6	836.2	839.8	842.0	842.8	843.7	844.7	845.6
27.5°	810.4	815.0	819.4	822.0	822.7	823.3	824.0	824.7
30°	794.8	799.5	804.4	807.2	808.0	808.9	809.8	810.7
32.5°	778.0	783.5	788.9	792.5	794.1	795.7	797.3	798.9
35°	754.2	760.7	767.3	771.5	773.7	775.8	777.8	779.9
37.5°	729.5	736.8	744.1	748.8	751.0	753.3	755.5	757.7
40°	712.3	720.0	727.8	733.0	735.7	738.3	741.0	743.8
42.5°	695.5	704.0	712.5	718.0	720.6	723.4	726.0	728.7
45°	669.7	678.9	688.2	694.3	697.3	700.2	703.3	706.2
47.5°	643.0	652.6	662.3	668.7	672.0	675.3	678.5	681.9
50°	624.6	634.7	644.9	651.6	654.8	658.1	661.4	664.7
52.5°	604.7	615.1	625.4	632.4	635.9	639.4	642.9	646.4
55°	574.9	585.6	596.3	603.6	607.4	611.4	615.2	619.0
57.5°	543.3	554.8	566.4	574.2	578.0	582.0	585.9	589.9
60°	522.5	533.8	545.1	552.8	557.0	561.2	565.3	569.6
62.5°	500.3	512.3	524.3	532.4	536.2	540.2	544.1	548.1
65°	466.7	478.9	491.1	499.1	502.9	506.9	510.7	514.5
67.5°	432.5	444.8	457.3	465.4	469.5	473.5	477.6	481.6
70°	408.9	421.6	434.4	442.6	446.3	449.8	453.4	457.0
72.5°	385.9	398.4	411.0	419.4	423.7	428.0	432.3	436.6
75°	351.2	364.1	376.9	385.2	389.1	392.9	396.8	400.7
77.5°	317.4	330.1	342.8	351.3	355.5	359.6	363.9	368.0
80°	294.4	306.9	319.4	327.7	331.8	336.1	340.2	344.4
82.5°	273.0	285.4	297.9	306.2	310.1	314.0	317.9	321.8
85°	242.1	254.6	267.1	275.5	279.6	283.8	287.9	292.2
87.5°	224.2	236.2	248.3	256.2	260.1	264.0	267.8	271.7
90°	240.8	252.1	263.5	271.1	275.0	278.8	282.7	286.5
92.5°	228.1	239.8	251.7	259.3	263.0	266.6	270.2	273.9
95°	251.9	263.2	274.5	281.7	284.7	287.7	290.7	293.9
97.5°	290.8	301.8	312.9	320.1	323.6	327.0	330.5	334.0
100°	317.9	328.9	339.9	347.0	350.0	353.0	356.0	359.0
102.5°	348.8	359.8	370.8	377.8	380.8	383.8	386.9	389.9
105°	395.2	406.2	417.1	424.2	427.5	430.7	434.0	437.3
107.5°	446.4	456.6	466.8	472.9	474.9	477.1	479.2	481.2
110°	481.7	491.2	500.8	506.8	509.3	511.8	514.2	516.7



TEST NUMBER: P331415-840

CATALOG NUMBER: SA2XXDIP-C865D1080U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	517.1	525.9	534.8	540.7	543.4	546.0	548.8	551.5
115°	571.7	580.4	589.0	594.6	597.0	599.6	602.1	604.6
117.5°	624.0	632.2	640.4	645.6	647.8	650.1	652.4	654.6
120°	659.1	667.5	675.8	681.3	683.7	686.2	688.7	691.3
122.5°	696.0	703.5	710.9	715.8	718.0	720.2	722.5	724.7
125°	749.8	757.1	764.4	769.2	771.6	774.1	776.5	778.9
127.5°	801.9	808.3	814.8	818.9	820.7	822.4	824.3	826.1
130°	838.1	844.7	851.3	855.3	856.7	858.0	859.3	860.6
132.5°	873.0	878.8	884.5	888.3	889.8	891.3	892.9	894.4
135°	925.2	931.3	937.3	941.1	942.7	944.2	945.8	947.5
137.5°	975.2	980.5	985.7	988.9	989.9	990.8	991.8	992.8
140°	1009.3	1014.1	1018.9	1021.6	1022.3	1023.1	1023.8	1024.5
142.5°	1041.4	1045.3	1049.4	1051.7	1052.2	1052.7	1053.2	1053.7
145°	1091.5	1093.6	1095.6	1096.8	1097.3	1097.7	1098.2	1098.6
147.5°	1136.4	1137.2	1138.0	1138.3	1138.0	1137.8	1137.5	1137.2
150°	1166.4	1167.2	1168.0	1168.0	1167.2	1166.4	1165.6	1164.9
152.5°	1196.9	1197.8	1198.8	1198.8	1197.8	1196.9	1195.9	1194.9
155°	1235.5	1236.8	1238.1	1238.3	1237.6	1236.8	1236.0	1235.2
157.5°	1271.1	1272.9	1274.7	1275.0	1273.6	1272.4	1271.2	1269.9
160°	1292.3	1293.8	1295.5	1295.7	1294.6	1293.6	1292.5	1291.5
162.5°	1311.5	1313.2	1315.0	1315.2	1314.0	1312.8	1311.5	1310.3
165°	1336.3	1338.1	1339.9	1340.1	1338.9	1337.6	1336.3	1334.9
167.5°	1356.7	1358.5	1360.3	1360.5	1359.2	1357.8	1356.5	1355.1
170°	1367.9	1369.7	1371.5	1371.7	1370.1	1368.6	1367.0	1365.4
172.5°	1376.3	1378.2	1380.0	1380.1	1378.6	1377.0	1375.4	1373.8
175°	1385.5	1387.4	1389.2	1389.3	1387.8	1386.1	1384.6	1383.0
177.5°	1389.8	1391.0	1392.2	1392.2	1391.0	1389.8	1388.5	1387.3
180°	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1

(END OF REPORT)