

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: P331414-840

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

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331414-840  
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-C865D1080U840-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

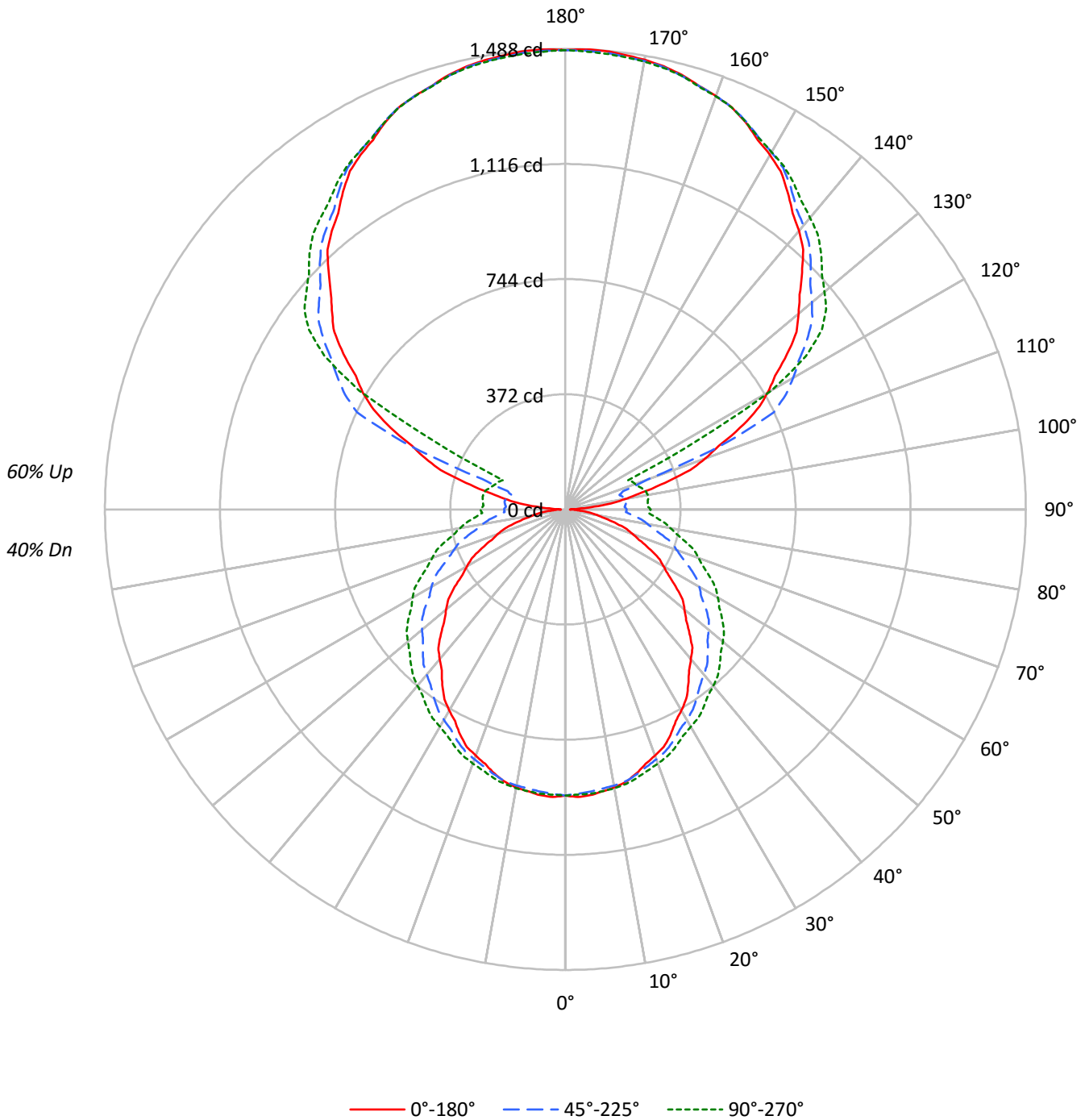
Lumens per Lamp: N/A  
Luminaire Lumens: 7879.0 lumens  
Efficiency: N/A  
Efficacy: 120.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

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



TEST NUMBER: P331414-840  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331414-840

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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	95	95	95	95	78	78	78	62	62	62	47	47	47	40				
1	94	90	85	81	85	81	78	74	66	64	61	52	50	49	39	38	37	31				
2	85	77	71	65	77	70	65	60	57	53	50	45	42	40	34	32	30	25				
3	78	68	60	54	70	62	55	50	50	45	41	40	36	33	30	27	25	21				
4	71	60	51	45	64	54	47	42	44	39	35	35	31	28	26	24	21	17				
5	65	53	45	38	58	48	41	35	39	34	30	31	27	24	24	21	18	15				
6	59	47	39	33	54	43	36	31	35	30	26	28	24	21	21	18	16	13				
7	55	42	34	29	50	39	32	27	32	26	22	25	21	18	19	16	14	11				
8	51	38	31	25	46	35	28	23	29	24	20	23	19	16	18	15	13	10				
9	47	35	27	22	43	32	25	21	26	21	18	21	17	14	16	13	11	9				
10	44	32	25	20	40	29	23	18	24	19	16	20	16	13	15	12	10	8				

**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	1.1
10°-20°	251.2	3.2
20°-30°	380.7	4.8
30°-40°	463.7	5.9
40°-50°	498.9	6.3
50°-60°	484.5	6.1
60°-70°	423.0	5.4
70°-80°	325.7	4.1
80°-90°	222.2	2.8
90°-100°	200.1	2.5
100°-110°	291.4	3.7
110°-120°	557.7	7.1
120°-130°	841.3	10.7
130°-140°	868.6	11.0
140°-150°	794.5	10.1
150°-160°	636.4	8.1
160°-170°	410.1	5.2
170°-180°	141.2	1.8
0°-30°	719.6	9.1
0°-40°	1183.3	15.0
0°-60°	2166.6	27.5
0°-90°	3137.5	39.8
90°-120°	1049.2	13.3
90°-150°	3553.7	45.1
90°-180°	4741.0	60.2
0°-180°	7879.0	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	104	198	255	276	12
95°	80	111	196	250	267	94
105°	333	388	181	237	258	356
115°	623	659	743	308	223	612
125°	876	892	953	995	1012	781
135°	1081	1099	1122	1159	1169	835
145°	1253	1253	1270	1285	1287	784
155°	1380	1371	1383	1388	1381	635
165°	1454	1448	1450	1457	1450	410
175°	1487	1480	1482	1488	1478	141
180°	1484	1484	1484	1484	1484	



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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	44.7	63.0	81.3	99.6	118.5	137.8	157.3	176.7	196.2	208.5
90°	14.4	34.3	54.2	74.1	94.0	114.5	135.4	156.4	177.4	198.3	211.5
92.5°	34.0	49.9	65.7	81.5	97.4	114.9	134.2	153.5	172.9	192.2	204.4
95°	80.5	86.6	92.7	98.9	105.0	117.9	137.3	156.9	176.4	196.0	208.4
97.5°	147.8	138.1	128.4	118.7	108.9	114.5	135.5	156.6	177.6	198.6	210.6
100°	199.3	177.7	156.0	134.4	112.7	112.3	133.0	153.7	174.5	195.2	208.1
102.5°	255.0	258.1	261.3	264.5	267.6	260.3	242.6	224.9	207.1	189.5	202.7
105°	333.1	348.8	364.7	380.4	396.3	379.3	329.6	280.0	230.4	180.8	193.8
107.5°	423.6	436.3	449.0	461.6	474.3	449.1	385.8	322.4	259.2	195.9	203.3
110°	480.9	491.9	502.9	513.8	524.8	503.1	448.8	394.4	340.0	285.7	271.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	535.9	545.3	554.8	564.2	573.7	576.8	573.6	570.5	567.3	564.2	486.7
115°	622.7	630.0	637.3	644.6	652.0	665.3	684.7	704.1	723.4	742.8	641.3
117.5°	698.8	705.5	712.2	718.8	725.5	737.1	753.6	770.1	786.6	803.0	785.2
120°	755.5	760.2	765.1	769.8	774.6	785.1	801.2	817.5	833.6	849.9	861.1
122.5°	803.5	807.8	812.0	816.3	820.6	830.6	846.5	862.3	878.3	894.1	903.9
125°	875.5	878.6	881.7	884.7	887.9	896.5	910.5	924.5	938.7	952.7	962.4
127.5°	941.8	944.9	948.1	951.2	954.3	961.5	972.5	983.6	994.7	1005.7	1015.5
130°	983.9	987.4	990.9	994.4	997.9	1004.2	1013.0	1021.9	1030.8	1039.7	1049.5
132.5°	1026.8	1029.8	1032.7	1035.7	1038.6	1043.8	1051.3	1058.7	1066.1	1073.6	1082.8
135°	1081.3	1085.1	1088.9	1092.8	1096.6	1101.1	1106.2	1111.3	1116.4	1121.6	1130.1
137.5°	1137.8	1140.4	1143.0	1145.6	1148.2	1151.4	1155.2	1158.9	1162.7	1166.4	1174.2
140°	1174.7	1176.3	1177.9	1179.5	1181.1	1183.6	1186.8	1190.0	1193.3	1196.5	1203.4
142.5°	1205.6	1207.1	1208.5	1209.9	1211.3	1213.6	1216.7	1219.8	1222.9	1226.1	1231.8
145°	1252.8	1252.5	1252.3	1252.1	1251.8	1253.7	1257.8	1261.8	1266.0	1270.0	1273.4
147.5°	1295.2	1294.2	1293.3	1292.4	1291.5	1293.0	1297.1	1301.0	1305.0	1309.1	1310.5
150°	1322.6	1320.9	1319.3	1317.6	1316.0	1317.0	1320.8	1324.6	1328.5	1332.2	1333.7
152.5°	1345.7	1343.9	1342.0	1340.2	1338.4	1339.2	1342.8	1346.5	1350.1	1353.7	1355.1
155°	1379.5	1377.4	1375.2	1373.0	1370.9	1371.3	1374.1	1377.0	1379.9	1382.7	1384.1
157.5°	1405.9	1404.1	1402.3	1400.5	1398.7	1398.8	1400.8	1402.7	1404.7	1406.7	1408.4
160°	1421.4	1420.0	1418.5	1417.0	1415.6	1415.6	1417.0	1418.5	1420.0	1421.4	1422.8
162.5°	1435.1	1433.7	1432.2	1430.8	1429.4	1429.3	1430.5	1431.8	1433.0	1434.2	1435.8
165°	1453.6	1452.1	1450.7	1449.3	1447.8	1447.4	1448.1	1449.0	1449.7	1450.4	1452.0
167.5°	1467.3	1465.9	1464.4	1463.0	1461.6	1461.2	1461.9	1462.5	1463.2	1463.9	1465.5
170°	1475.0	1473.6	1472.2	1470.8	1469.4	1468.8	1469.4	1469.8	1470.3	1470.8	1472.4
172.5°	1480.2	1478.7	1477.3	1475.9	1474.5	1474.0	1474.5	1474.9	1475.4	1475.9	1477.5
175°	1486.8	1485.2	1483.5	1481.9	1480.2	1479.6	1480.1	1480.6	1481.0	1481.5	1483.2
177.5°	1487.9	1486.6	1485.2	1483.9	1482.6	1482.0	1482.2	1482.4	1482.6	1482.8	1484.1
180°	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6



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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°	221.0	233.4	245.7	253.9	257.8	261.7	265.6	269.5
90°	224.6	237.6	250.7	259.3	263.4	267.4	271.5	275.6
92.5°	216.7	229.0	241.4	249.4	253.3	257.1	260.9	264.8
95°	221.0	233.5	246.0	253.9	257.3	260.6	264.0	267.3
97.5°	222.6	234.5	246.5	254.4	258.2	262.0	265.8	269.6
100°	221.1	234.0	246.9	255.2	259.0	262.8	266.5	270.2
102.5°	215.9	229.2	242.5	251.1	255.0	258.9	262.9	266.8
105°	206.8	219.8	232.9	241.6	245.8	250.0	254.3	258.4
107.5°	210.6	217.9	225.3	231.1	235.3	239.5	243.8	247.9
110°	257.0	242.7	228.4	223.4	227.5	231.8	236.0	240.2





TEST NUMBER: P331414-840

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	409.2	331.6	254.2	217.4	221.5	225.5	229.5	233.6
115°	539.8	438.2	336.7	279.0	265.1	251.2	237.3	223.4
117.5°	767.3	749.3	731.4	695.8	642.4	589.0	535.5	482.2
120°	872.3	883.5	894.6	885.9	856.9	828.0	799.0	770.1
122.5°	913.7	923.5	933.4	936.5	933.1	929.7	926.2	922.8
125°	972.1	981.8	991.5	998.0	1001.5	1004.9	1008.2	1011.7
127.5°	1025.4	1035.2	1045.0	1051.3	1054.1	1056.8	1059.6	1062.4
130°	1059.2	1068.9	1078.7	1084.7	1086.8	1089.0	1091.2	1093.3
132.5°	1091.9	1101.1	1110.2	1115.9	1118.0	1120.1	1122.3	1124.4
135°	1138.8	1147.5	1156.1	1161.3	1163.3	1165.2	1167.1	1169.0
137.5°	1182.0	1189.8	1197.7	1202.1	1203.4	1204.6	1205.8	1207.0
140°	1210.2	1217.2	1224.1	1227.9	1228.4	1229.0	1229.6	1230.2
142.5°	1237.6	1243.3	1249.1	1252.2	1252.5	1252.9	1253.2	1253.6
145°	1276.9	1280.3	1283.8	1285.7	1286.0	1286.3	1286.6	1286.9
147.5°	1312.0	1313.5	1314.9	1315.6	1315.2	1315.0	1314.7	1314.4
150°	1335.1	1336.6	1338.0	1338.1	1336.9	1335.7	1334.5	1333.3
152.5°	1356.6	1358.1	1359.5	1359.4	1357.8	1356.2	1354.6	1353.1
155°	1385.5	1387.0	1388.5	1388.2	1386.2	1384.4	1382.5	1380.6
157.5°	1410.0	1411.6	1413.2	1413.1	1411.3	1409.4	1407.5	1405.6
160°	1424.2	1425.6	1427.0	1426.9	1425.3	1423.6	1422.0	1420.3
162.5°	1437.4	1439.1	1440.8	1440.5	1438.5	1436.4	1434.3	1432.3
165°	1453.7	1455.3	1457.0	1457.0	1455.3	1453.7	1452.0	1450.4
167.5°	1467.2	1468.8	1470.6	1470.3	1468.1	1466.0	1463.9	1461.7
170°	1474.1	1475.7	1477.4	1477.1	1475.0	1472.9	1470.8	1468.5
172.5°	1479.3	1480.9	1482.6	1482.4	1480.2	1478.0	1475.9	1473.7
175°	1484.8	1486.5	1488.1	1487.8	1485.4	1483.0	1480.7	1478.2
177.5°	1485.4	1486.7	1488.1	1487.9	1486.2	1484.5	1482.8	1481.1
180°	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6	1483.6

(END OF REPORT)