

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: P331716-940

Luminaire Tested: **SA2XXRDIP-C865D530U940-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331716-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXRDIP-C865D530U940-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 530 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

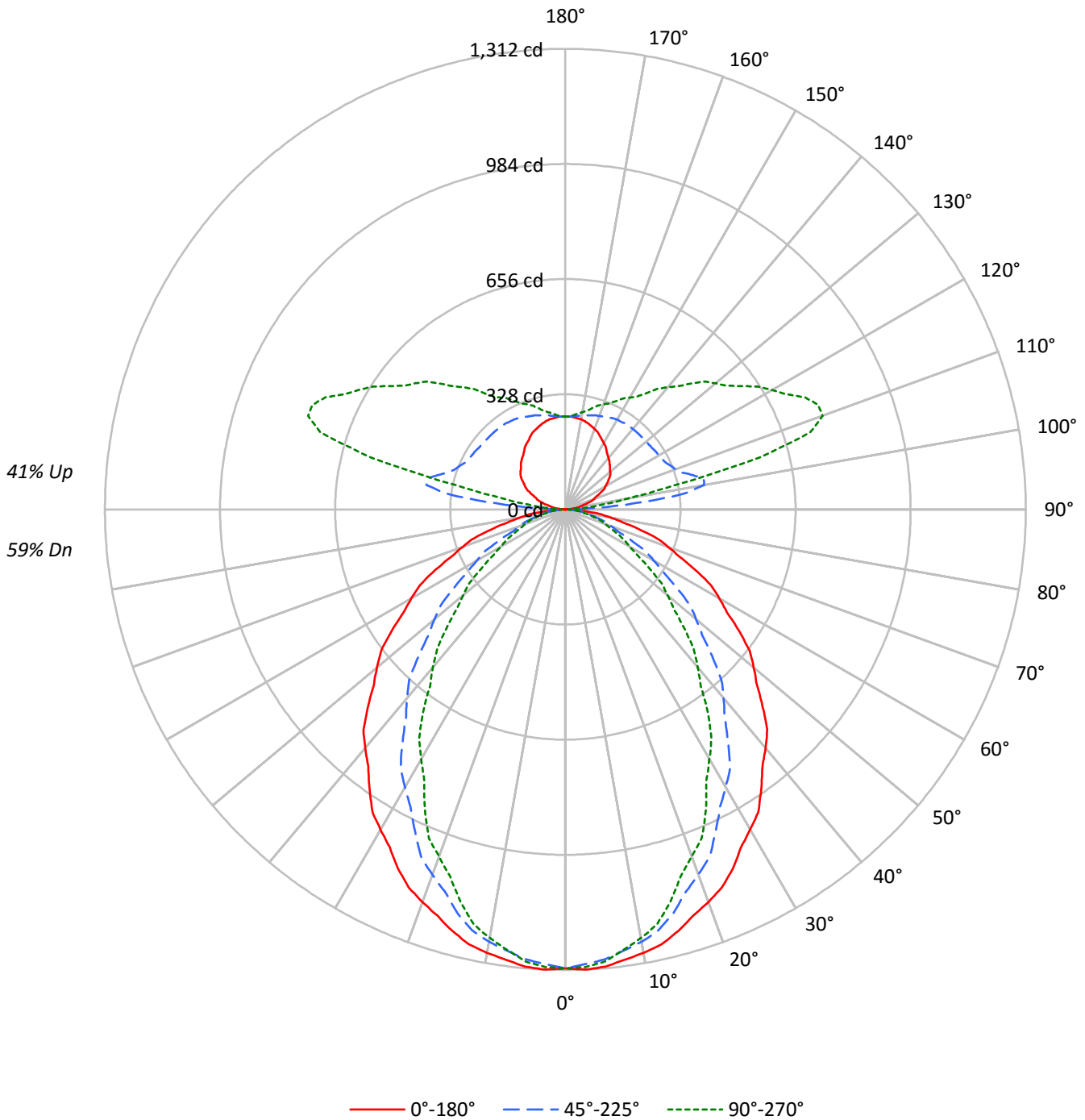
Lumens per Lamp: N/A  
Luminaire Lumens: 4531.7 lumens  
Efficiency: N/A  
Efficacy: 92.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 48.8  
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	0
RCR																		
0	109	109	109	109	102	102	102	102	89	89	89	76	76	76	65	65	65	59
1	100	96	93	89	94	90	87	84	79	76	74	68	66	65	58	57	56	51
2	92	85	79	74	86	79	74	70	69	66	62	60	57	55	52	50	48	44
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41	38
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36	33
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	35	32	29
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28	26
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25	23
8	57	45	37	32	53	42	35	31	38	32	28	33	29	25	29	26	23	21
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21	19
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19	17

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

	0°	45°	90°
0°	21111	21111	21111
5°	21191	20846	20960
10°	21028	20505	20330
15°	20787	19896	19323
20°	20452	19029	18076
25°	20110	18045	16864
30°	19634	17031	15310
35°	19170	15930	13947
40°	18704	14790	12370
45°	18155	13511	10942
50°	17595	12215	9540
55°	17022	10826	8194
60°	16353	9361	6801
65°	15595	7866	6193
70°	14691	6477	5693
75°	13587	5908	5315
80°	11985	5281	4844
85°	9429	4168	4168



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.4	2.7
10°-20°	336.0	7.4
20°-30°	471.9	10.4
30°-40°	514.6	11.4
40°-50°	473.1	10.4
50°-60°	371.6	8.2
60°-70°	242.3	5.3
70°-80°	124.9	2.8
80°-90°	34.8	0.8
90°-100°	105.7	2.3
100°-110°	358.8	7.9
110°-120°	381.2	8.4
120°-130°	313.8	6.9
130°-140°	252.0	5.6
140°-150°	190.4	4.2
150°-160°	133.8	3.0
160°-170°	78.8	1.7
170°-180°	25.6	0.6
0°-30°	930.3	20.5
0°-40°	1444.9	31.9
0°-60°	2289.6	50.5
0°-90°	2691.6	59.4
90°-120°	845.7	18.7
90°-150°	1601.9	35.3
90°-180°	1840.0	40.6
0°-180°	4531.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1308	1308	1308	1308	1308	
5°	1308	1301	1286	1296	1293	124
15°	1244	1229	1190	1168	1156	350
25°	1129	1089	1013	966	947	519
35°	973	910	808	736	708	608
45°	795	713	592	511	479	614
55°	605	510	385	316	291	540
65°	408	312	206	168	162	405
75°	218	137	95	87	85	230
85°	51	27	22	22	22	60
90°	0	7	17	16	17	3
95°	18	44	199	75	58	19
105°	62	94	377	674	573	66
115°	109	138	315	651	754	108
125°	153	180	303	527	612	135
135°	179	214	300	443	507	138
145°	204	235	298	370	405	128
155°	232	251	289	327	340	107
165°	253	261	277	294	298	71
175°	264	264	266	270	269	25
180°	264	264	264	264	264	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5
2.5°	1312.2	1311.2	1310.1	1309.0	1308.1	1306.4	1304.0	1301.7	1299.4	1297.1	1299.2
5°	1307.5	1306.2	1304.8	1303.5	1302.3	1299.8	1296.5	1293.1	1289.6	1286.2	1288.5
7.5°	1294.0	1292.4	1290.8	1289.1	1287.5	1284.7	1280.7	1276.7	1272.6	1268.6	1269.4
10°	1282.6	1280.8	1279.0	1277.1	1275.2	1271.8	1266.5	1261.2	1256.0	1250.7	1249.9
12.5°	1268.5	1266.1	1263.9	1261.7	1259.4	1254.9	1248.1	1241.4	1234.7	1228.0	1226.5
15°	1243.6	1240.7	1237.8	1234.9	1232.0	1226.1	1217.2	1208.3	1199.3	1190.3	1185.4
17.5°	1213.1	1208.6	1204.3	1199.8	1195.4	1187.5	1176.0	1164.5	1153.1	1141.6	1135.7
20°	1190.3	1185.1	1179.8	1174.6	1169.3	1160.1	1146.9	1133.8	1120.7	1107.5	1100.9
22.5°	1165.7	1159.8	1154.0	1148.1	1142.2	1131.8	1117.0	1102.2	1087.4	1072.5	1064.0
25°	1128.8	1120.4	1112.0	1103.6	1095.2	1082.3	1064.9	1047.6	1030.2	1012.9	1002.1
27.5°	1084.3	1075.1	1066.0	1056.9	1047.8	1033.4	1013.8	994.3	974.6	955.1	942.5
30°	1053.1	1043.1	1033.1	1023.1	1013.2	997.6	976.6	955.6	934.5	913.5	900.1
32.5°	1022.8	1011.1	999.4	987.7	976.1	959.6	938.1	916.6	895.2	873.7	858.4
35°	972.6	959.2	945.8	932.4	919.0	900.7	877.5	854.4	831.3	808.2	791.6
37.5°	922.5	907.8	893.0	878.2	863.5	843.8	819.2	794.5	769.9	745.2	726.9
40°	887.4	871.6	855.9	840.1	824.3	803.7	778.2	752.7	727.2	701.7	683.0
42.5°	851.5	834.8	818.2	801.6	785.0	763.5	737.2	710.8	684.5	658.1	638.8
45°	795.1	777.5	759.9	742.3	724.7	702.0	674.5	646.8	619.2	591.7	572.9
47.5°	740.2	721.6	702.9	684.2	665.6	641.9	613.5	585.0	556.4	528.0	509.4
50°	700.5	681.8	663.2	644.4	625.8	602.0	573.1	544.1	515.2	486.3	468.1
52.5°	661.6	642.1	622.7	603.2	583.6	559.7	531.5	503.1	474.8	446.6	429.0
55°	604.7	584.2	563.7	543.1	522.6	498.1	469.8	441.3	413.0	384.6	368.8
57.5°	546.2	525.1	504.1	483.0	462.1	437.9	410.5	383.3	356.0	328.7	314.2
60°	506.4	485.4	464.4	443.4	422.3	398.2	371.1	344.0	317.0	289.9	276.5
62.5°	467.6	446.6	425.5	404.5	383.4	360.1	334.2	308.4	282.6	256.7	244.0
65°	408.2	386.9	365.6	344.3	323.1	300.5	276.9	253.2	229.5	205.9	197.0
67.5°	351.0	329.8	308.7	287.5	266.4	245.1	223.9	202.6	181.3	160.0	155.9
70°	311.2	290.7	270.2	249.7	229.2	209.8	191.7	173.5	155.4	137.2	134.6
72.5°	273.3	253.7	234.0	214.4	194.7	177.5	163.0	148.4	133.8	119.3	117.1
75°	217.8	199.3	180.9	162.5	144.1	130.5	121.5	112.5	103.6	94.7	92.8
77.5°	163.1	146.9	130.7	114.6	98.4	88.3	83.9	79.6	75.3	71.0	69.9
80°	128.9	115.6	102.2	88.7	75.3	67.3	64.6	62.1	59.4	56.8	55.7
82.5°	97.7	87.3	76.8	66.3	55.9	49.8	48.0	46.2	44.4	42.6	42.0
85°	50.9	45.4	39.9	34.3	28.8	25.7	24.9	24.1	23.3	22.5	22.5
87.5°	15.2	13.9	12.6	11.1	9.6	9.1	9.6	10.3	11.0	11.1	10.7
90°	0.5	2.1	4.1	5.1	6.1	7.7	10.2	13.7	16.8	17.3	16.8
92.5°	6.2	8.9	12.6	14.9	18.3	23.1	34.6	50.7	65.2	66.1	55.8
95°	17.8	19.8	24.9	29.5	37.6	49.8	73.2	117.4	176.5	199.4	174.4
97.5°	29.0	31.7	37.1	44.1	53.4	67.2	96.7	158.3	256.3	340.3	357.0
100°	39.1	40.7	45.3	53.4	63.6	77.8	104.8	166.8	276.6	401.7	474.9
102.5°	48.5	49.7	54.2	62.3	72.9	87.1	112.1	167.2	268.9	403.8	518.9
105°	62.1	64.1	67.6	75.3	86.4	100.7	124.6	169.9	253.8	376.8	512.1
107.5°	76.7	78.3	81.8	88.8	99.9	114.2	137.4	176.8	246.2	347.9	467.4
110°	86.4	88.5	91.6	98.2	108.8	123.6	146.0	182.5	244.6	334.1	439.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	95.4	97.5	100.9	107.1	117.3	132.5	154.1	188.7	245.0	325.1	419.8
115°	109.3	111.9	114.9	121.0	131.2	144.9	166.8	197.8	247.2	315.3	395.7
117.5°	123.8	125.8	128.9	134.3	144.0	158.3	178.5	207.6	250.8	310.5	380.4
120°	132.7	134.7	137.8	142.4	152.6	166.8	186.6	214.1	253.2	307.6	372.3
122.5°	141.2	142.9	146.0	151.0	161.1	175.8	194.4	219.8	256.1	306.0	365.3
125°	152.6	154.1	157.1	163.3	173.4	187.6	206.0	228.8	260.4	303.1	355.4
127.5°	161.5	163.5	167.8	174.5	184.3	198.9	216.8	237.3	264.7	301.4	346.3
130°	166.8	168.8	173.9	181.0	191.2	205.5	223.3	242.5	268.0	300.5	340.2
132.5°	171.7	174.2	179.6	187.2	197.7	212.0	228.9	247.9	271.3	300.1	335.3
135°	179.0	181.0	187.2	194.7	206.4	220.7	237.0	254.8	275.1	299.5	328.5
137.5°	185.9	188.3	194.5	202.6	214.2	227.4	243.5	260.0	278.6	299.4	323.7
140°	191.2	193.2	199.4	207.5	218.6	231.9	247.2	262.9	280.2	299.0	320.9
142.5°	196.5	198.1	203.8	212.0	222.7	235.1	250.0	265.4	281.4	299.0	318.1
145°	204.5	206.4	211.5	219.2	229.3	240.5	254.2	268.5	282.8	298.0	314.2
147.5°	212.9	214.5	219.4	226.4	234.9	244.8	257.7	270.3	283.1	296.1	310.4
150°	218.6	220.2	224.3	230.9	238.5	247.6	259.3	271.1	282.8	295.0	307.2
152.5°	224.4	225.1	229.2	235.0	242.2	250.5	261.0	271.4	282.0	292.9	304.3
155°	232.4	232.9	235.9	241.6	247.2	254.8	263.4	272.1	280.7	289.4	299.0
157.5°	239.1	239.6	242.1	246.9	251.5	257.8	265.1	272.1	278.4	285.7	294.0
160°	243.6	244.1	246.1	250.2	254.2	259.8	266.0	272.1	277.1	283.3	290.3
162.5°	248.1	247.7	249.8	253.1	256.7	261.1	266.4	271.6	275.9	281.2	287.1
165°	253.2	252.7	253.8	256.8	259.3	262.4	267.0	270.5	273.6	277.1	281.7
167.5°	257.5	256.9	257.8	259.8	261.6	263.5	266.9	269.8	271.3	273.6	276.4
170°	260.4	259.3	259.8	261.4	262.4	263.9	266.4	269.0	270.0	271.5	273.6
172.5°	262.0	261.4	261.1	262.6	263.2	264.3	266.1	267.8	268.4	269.1	270.7
175°	263.9	263.4	262.9	263.9	263.9	264.4	265.5	266.4	266.0	266.4	267.0
177.5°	264.8	264.0	263.6	264.4	264.4	264.4	264.8	265.6	264.8	264.4	264.8
180°	264.4	264.4	264.4	264.4	264.4	264.4	264.4	264.4	264.4	264.4	264.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5
2.5°	1301.3	1303.4	1305.5	1306.4	1305.9	1305.5	1305.1	1304.7
5°	1290.9	1293.2	1295.7	1296.5	1295.7	1294.9	1294.1	1293.2
7.5°	1270.1	1270.7	1271.4	1271.0	1269.7	1268.4	1266.9	1265.6
10°	1249.1	1248.3	1247.5	1246.3	1244.7	1243.2	1241.6	1240.0
12.5°	1225.1	1223.7	1222.3	1220.3	1217.6	1215.0	1212.4	1209.8
15°	1180.4	1175.4	1170.4	1166.5	1164.0	1161.3	1158.7	1156.0
17.5°	1129.7	1123.7	1117.8	1112.6	1108.0	1103.6	1099.0	1094.5
20°	1094.4	1087.8	1081.2	1075.0	1069.3	1063.5	1057.7	1052.0
22.5°	1055.6	1047.1	1038.7	1032.2	1028.0	1023.6	1019.3	1015.0
25°	991.3	980.5	969.7	962.3	958.4	954.5	950.6	946.6
27.5°	930.0	917.4	904.8	895.5	889.2	882.9	876.6	870.4
30°	886.6	873.3	859.8	849.5	842.5	835.4	828.3	821.2
32.5°	843.1	827.8	812.5	801.5	794.9	788.2	781.5	774.8
35°	775.0	758.5	741.9	730.8	725.0	719.2	713.4	707.6
37.5°	708.7	690.5	672.3	659.8	653.2	646.5	639.9	633.3
40°	664.3	645.7	627.0	614.2	607.4	600.6	593.7	586.9
42.5°	619.6	600.2	580.9	567.9	561.3	554.7	548.0	541.4
45°	554.3	535.7	516.9	504.4	498.1	491.9	485.5	479.2
47.5°	490.8	472.3	453.7	441.6	435.9	430.1	424.4	418.7
50°	450.0	431.9	413.8	401.9	396.4	390.8	385.3	379.8
52.5°	411.5	394.0	376.5	365.2	360.1	355.0	349.9	344.8
55°	353.0	337.2	321.5	311.0	306.0	301.0	296.0	291.1
57.5°	299.8	285.3	270.9	261.5	257.3	253.1	248.9	244.7
60°	263.1	249.7	236.2	227.5	223.2	219.0	214.8	210.6
62.5°	231.2	218.5	205.6	198.0	195.5	193.0	190.4	187.9
65°	188.0	179.1	170.1	165.2	164.4	163.7	162.9	162.1
67.5°	151.8	147.7	143.6	141.1	140.3	139.4	138.6	137.8
70°	132.0	129.4	126.7	124.9	123.9	122.8	121.7	120.6
72.5°	114.9	112.6	110.4	109.1	108.3	107.7	107.1	106.5
75°	91.0	89.2	87.3	86.2	86.0	85.7	85.4	85.2
77.5°	68.9	67.9	66.8	66.1	65.6	65.2	64.8	64.4
80°	54.7	53.7	52.6	52.1	52.1	52.1	52.1	52.1
82.5°	41.4	40.7	40.0	39.8	39.8	39.8	39.8	39.8
85°	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
87.5°	10.4	10.0	10.0	10.0	10.0	10.0	10.0	10.0
90°	16.2	15.2	16.2	16.8	16.8	16.8	16.8	16.8
92.5°	44.3	38.1	33.8	30.6	30.2	28.6	29.0	28.2
95°	133.2	102.2	80.9	69.6	63.0	59.0	57.4	58.0
97.5°	310.9	254.4	199.4	162.6	138.3	125.8	118.4	114.1
100°	464.3	401.3	331.5	270.0	227.8	206.0	191.2	182.1
102.5°	564.8	550.5	499.6	434.4	388.5	351.2	332.8	320.4
105°	617.9	675.3	682.0	665.1	633.6	602.1	580.2	573.1
107.5°	579.6	666.2	719.1	743.7	747.6	745.9	741.5	732.1
110°	546.7	637.7	702.8	744.5	766.3	776.1	780.6	780.1





TEST NUMBER: P331716-940

CATALOG NUMBER: SA2XXRDIP-C865D530U940-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	516.6	604.0	673.5	721.3	751.7	767.9	776.5	779.3
115°	479.6	557.9	624.5	676.9	712.9	736.4	749.6	754.1
117.5°	451.7	520.4	580.9	630.0	666.8	691.5	705.4	709.3
120°	437.8	500.9	554.8	601.1	636.7	660.6	675.3	680.4
122.5°	426.9	484.6	535.7	577.5	609.4	632.9	646.0	650.3
125°	410.9	463.2	508.0	546.2	575.7	594.9	607.7	611.8
127.5°	395.1	442.6	484.7	520.0	545.6	563.7	574.7	578.0
130°	385.0	428.7	468.9	502.4	527.4	544.7	554.8	558.8
132.5°	375.2	415.7	452.6	484.1	508.6	525.9	535.3	539.0
135°	361.6	395.1	428.7	457.2	479.0	495.8	505.0	507.0
137.5°	350.7	378.8	405.4	430.3	450.1	464.6	472.6	475.6
140°	343.8	368.2	391.6	413.9	430.3	443.4	451.0	454.1
142.5°	338.0	358.8	379.0	397.7	413.1	425.2	431.9	432.6
145°	330.0	346.8	362.6	377.4	389.5	398.1	403.2	404.7
147.5°	323.9	337.1	349.4	360.2	370.2	377.1	380.6	381.5
150°	319.3	330.6	341.3	350.4	358.0	364.1	367.1	367.7
152.5°	314.9	325.3	334.3	342.2	348.2	353.6	355.8	355.9
155°	308.7	316.8	324.4	330.0	335.6	339.2	341.3	340.2
157.5°	301.5	308.3	314.7	319.1	323.0	326.0	326.9	326.9
160°	296.9	302.6	308.2	311.7	315.3	317.8	318.3	318.3
162.5°	292.5	297.3	302.1	304.8	308.4	310.1	310.6	310.2
165°	285.8	289.4	292.9	295.0	296.9	299.0	299.0	298.5
167.5°	279.4	282.1	284.5	286.4	287.3	288.5	288.4	287.8
170°	276.2	277.7	279.7	280.7	281.2	282.8	282.2	281.2
172.5°	272.5	273.6	275.2	275.8	276.3	277.1	276.5	275.9
175°	268.5	269.0	269.6	270.0	270.0	270.5	270.0	269.0
177.5°	265.6	265.6	266.1	266.1	266.1	266.1	265.6	264.8
180°	264.4	264.4	264.4	264.4	264.4	264.4	264.4	264.4

(END OF REPORT)