

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: P331710-935

Luminaire Tested: **SA2XXRDIP-C865D330U935-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331710-935  
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-C865D330U935-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

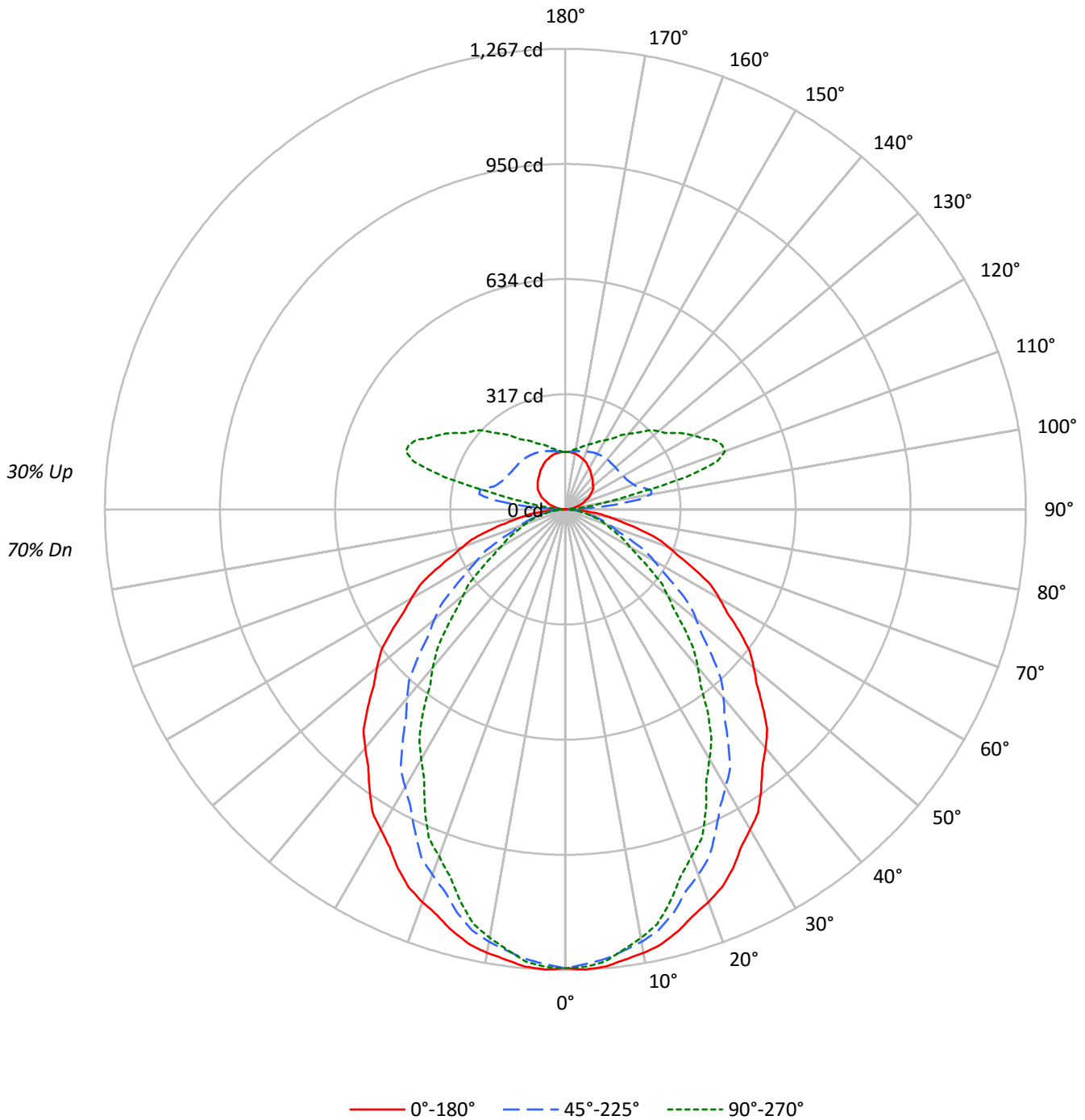
Lumens per Lamp: N/A  
Luminaire Lumens: 3698.8 lumens  
Efficiency: N/A  
Efficacy: 85.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 43.5  
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: P331710-935  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331710-935

CATALOG NUMBER: SA2XXRDIP-C865D330U935-4F0-1E-UDD-F4

**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	112	112	112	112	106	106	106	106	95	95	95	84	84	84	75	75	75	70				
1	103	99	95	92	97	94	90	87	84	82	79	75	73	72	67	66	64	60				
2	94	87	81	76	89	83	77	73	74	70	67	67	64	61	60	57	55	52				
3	87	77	70	64	82	73	67	62	66	61	57	60	56	52	54	51	48	45				
4	80	69	61	55	75	66	59	53	59	54	49	54	49	45	48	45	42	39				
5	73	62	54	48	69	59	52	46	54	48	43	49	44	40	44	40	37	34				
6	68	56	48	42	64	53	46	41	49	43	38	44	39	35	40	36	33	30				
7	63	51	43	37	60	49	41	36	44	38	34	41	35	32	37	33	30	27				
8	59	46	39	33	56	44	37	32	41	35	30	37	32	29	34	30	27	25				
9	55	43	35	30	52	41	34	29	38	32	28	35	30	26	32	27	24	22				
10	52	39	32	27	49	38	31	27	35	29	25	32	27	24	29	25	22	20				

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

	0°	45°	90°
0°	20384	20384	20384
5°	20462	20128	20238
10°	20305	19799	19630
15°	20072	19211	18658
20°	19747	18374	17452
25°	19417	17423	16283
30°	18957	16444	14783
35°	18510	15380	13466
40°	18061	14280	11944
45°	17532	13045	10565
50°	16990	11796	9211
55°	16434	10452	7910
60°	15791	9038	6568
65°	15060	7595	5979
70°	14186	6255	5500
75°	13119	5702	5128
80°	11576	5095	4677
85°	9114	4020	4020



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.2	3.2
10°-20°	324.5	8.8
20°-30°	455.6	12.3
30°-40°	496.8	13.4
40°-50°	456.8	12.4
50°-60°	358.8	9.7
60°-70°	233.9	6.3
70°-80°	120.6	3.3
80°-90°	32.7	0.9
90°-100°	63.3	1.7
100°-110°	214.7	5.8
110°-120°	228.0	6.2
120°-130°	187.7	5.1
130°-140°	150.7	4.1
140°-150°	113.9	3.1
150°-160°	80.1	2.2
160°-170°	47.1	1.3
170°-180°	15.3	0.4
0°-30°	898.3	24.3
0°-40°	1395.1	37.7
0°-60°	2210.7	59.8
0°-90°	2598.0	70.2
90°-120°	505.9	13.7
90°-150°	958.3	25.9
90°-180°	1101.0	29.8
0°-180°	3698.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1262	1262	1262	1262	1262	
5°	1262	1256	1242	1251	1249	120
15°	1201	1187	1149	1128	1116	338
25°	1090	1051	978	933	914	501
35°	939	878	780	711	683	587
45°	768	689	571	493	463	593
55°	584	493	371	305	281	521
65°	394	301	199	162	156	391
75°	210	133	91	84	82	223
85°	49	26	22	22	22	58
90°	0	4	10	10	10	3
95°	11	26	119	45	35	11
105°	37	56	225	403	343	39
115°	65	83	189	389	451	65
125°	91	108	181	315	366	81
135°	107	128	179	265	303	83
145°	122	141	178	221	242	77
155°	139	150	173	196	204	64
165°	152	156	166	176	179	43
175°	158	158	159	161	161	15
180°	158	158	158	158	158	



TEST NUMBER: P331710-935  
 CATALOG NUMBER: SA2XXRDIP-C865D330U935-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5
2.5°	1267.0	1266.0	1265.0	1263.9	1263.0	1261.4	1259.1	1256.9	1254.6	1252.4	1254.5
5°	1262.5	1261.2	1259.9	1258.6	1257.4	1255.1	1251.8	1248.5	1245.2	1241.9	1244.1
7.5°	1249.4	1247.8	1246.3	1244.7	1243.1	1240.4	1236.6	1232.7	1228.8	1224.9	1225.6
10°	1238.5	1236.7	1234.9	1233.1	1231.3	1228.0	1222.9	1217.8	1212.7	1207.6	1206.9
12.5°	1224.8	1222.5	1220.4	1218.2	1216.0	1211.7	1205.1	1198.7	1192.1	1185.7	1184.3
15°	1200.8	1198.0	1195.2	1192.4	1189.6	1183.9	1175.3	1166.7	1158.0	1149.3	1144.5
17.5°	1171.3	1167.0	1162.8	1158.5	1154.3	1146.6	1135.5	1124.4	1113.4	1102.3	1096.6
20°	1149.3	1144.3	1139.2	1134.1	1129.0	1120.2	1107.4	1094.8	1082.1	1069.4	1063.0
22.5°	1125.6	1119.9	1114.2	1108.5	1102.9	1092.9	1078.5	1064.2	1049.9	1035.5	1027.3
25°	1089.9	1081.8	1073.7	1065.6	1057.5	1045.0	1028.2	1011.5	994.7	978.0	967.6
27.5°	1047.0	1038.1	1029.3	1020.5	1011.7	997.8	978.9	960.0	941.1	922.2	910.1
30°	1016.8	1007.2	997.6	987.9	978.3	963.3	943.0	922.6	902.3	882.0	869.1
32.5°	987.6	976.3	965.0	953.7	942.5	926.5	905.8	885.0	864.4	843.6	828.9
35°	939.1	926.2	913.3	900.3	887.3	869.7	847.3	825.0	802.7	780.3	764.3
37.5°	890.7	876.5	862.3	848.0	833.8	814.8	791.0	767.2	743.4	719.5	701.9
40°	856.9	841.6	826.4	811.1	795.9	776.0	751.4	726.8	702.1	677.5	659.4
42.5°	822.2	806.1	790.1	774.0	757.9	737.2	711.8	686.3	660.9	635.4	616.8
45°	767.8	750.7	733.7	716.7	699.7	677.9	651.3	624.6	597.9	571.3	553.2
47.5°	714.7	696.7	678.7	660.6	642.7	619.8	592.4	564.8	537.3	509.8	491.9
50°	676.4	658.3	640.3	622.2	604.2	581.3	553.4	525.4	497.5	469.6	452.0
52.5°	638.9	620.0	601.2	582.4	563.5	540.4	513.2	485.8	458.5	431.2	414.2
55°	583.8	564.0	544.2	524.4	504.6	481.0	453.6	426.1	398.7	371.3	356.1
57.5°	527.4	507.0	486.7	466.4	446.2	422.8	396.4	370.1	343.7	317.4	303.4
60°	489.0	468.6	448.4	428.1	407.8	384.5	358.3	332.2	306.1	279.9	267.0
62.5°	451.5	431.2	410.9	390.5	370.2	347.7	322.7	297.8	272.9	247.9	235.6
65°	394.2	373.6	353.0	332.4	311.9	290.2	267.3	244.5	221.6	198.8	190.2
67.5°	338.9	318.5	298.1	277.6	257.2	236.7	216.2	195.6	175.0	154.5	150.5
70°	300.5	280.7	260.9	241.1	221.3	202.6	185.1	167.6	150.1	132.5	130.0
72.5°	263.9	245.0	225.9	207.0	188.0	171.4	157.4	143.3	129.2	115.2	113.0
75°	210.3	192.4	174.7	156.9	139.1	126.0	117.3	108.7	100.0	91.4	89.6
77.5°	157.5	141.8	126.2	110.6	95.1	85.2	81.0	76.9	72.8	68.5	67.5
80°	124.5	111.6	98.7	85.7	72.8	65.0	62.4	59.9	57.3	54.8	53.8
82.5°	94.4	84.3	74.1	64.1	54.0	48.0	46.3	44.6	42.9	41.2	40.6
85°	49.2	43.8	38.5	33.1	27.8	24.8	24.0	23.2	22.5	21.7	21.7
87.5°	14.7	13.3	11.9	10.3	8.9	8.3	8.5	9.0	9.3	9.4	9.1
90°	0.3	1.2	2.4	3.0	3.6	4.6	6.1	8.2	10.1	10.3	10.1
92.5°	3.7	5.3	7.6	8.9	10.9	13.8	20.7	30.4	39.0	39.5	33.4
95°	10.7	11.9	14.9	17.7	22.5	29.8	43.8	70.3	105.6	119.2	104.4
97.5°	17.3	18.9	22.2	26.3	31.9	40.2	57.8	94.7	153.3	203.5	213.5
100°	23.4	24.4	27.0	31.9	38.1	46.6	62.7	99.8	165.5	240.3	284.1
102.5°	29.0	29.7	32.5	37.3	43.7	52.2	67.1	100.0	160.8	241.5	310.4
105°	37.1	38.3	40.5	45.0	51.7	60.3	74.6	101.6	151.8	225.4	306.3
107.5°	45.9	46.8	48.9	53.1	59.8	68.4	82.2	105.8	147.3	208.1	279.7
110°	51.7	53.0	54.8	58.7	65.1	74.0	87.3	109.2	146.4	199.8	262.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	57.1	58.3	60.4	64.1	70.2	79.3	92.2	112.9	146.5	194.5	251.2
115°	65.4	66.9	68.8	72.4	78.5	86.7	99.8	118.3	147.8	188.6	236.7
117.5°	74.0	75.3	77.1	80.3	86.2	94.7	106.8	124.2	150.1	185.7	227.6
120°	79.4	80.6	82.5	85.2	91.3	99.8	111.7	128.1	151.5	184.1	222.7
122.5°	84.6	85.5	87.3	90.3	96.3	105.1	116.2	131.5	153.2	183.0	218.5
125°	91.3	92.2	94.0	97.6	103.8	112.3	123.2	136.9	155.8	181.3	212.7
127.5°	96.6	97.8	100.4	104.4	110.2	119.0	129.7	142.0	158.3	180.3	207.2
130°	99.8	101.0	104.0	108.3	114.4	122.9	133.5	145.1	160.3	179.8	203.5
132.5°	102.7	104.2	107.5	111.9	118.3	126.8	137.0	148.3	162.3	179.5	200.6
135°	107.1	108.3	111.9	116.5	123.6	132.0	141.8	152.4	164.6	179.2	196.5
137.5°	111.2	112.7	116.3	121.2	128.1	136.0	145.7	155.6	166.7	179.1	193.6
140°	114.4	115.6	119.2	124.2	130.8	138.7	147.8	157.3	167.6	178.9	191.9
142.5°	117.5	118.6	121.9	126.8	133.3	140.7	149.6	158.8	168.3	178.9	190.3
145°	122.3	123.6	126.6	131.1	137.2	143.9	152.1	160.7	169.1	178.2	188.0
147.5°	127.4	128.3	131.2	135.4	140.5	146.5	154.2	161.7	169.4	177.2	185.7
150°	130.8	131.7	134.1	138.1	142.7	148.2	155.2	162.1	169.1	176.4	183.7
152.5°	134.2	134.7	137.1	140.5	144.9	149.8	156.1	162.4	168.7	175.2	182.0
155°	139.1	139.3	141.1	144.5	147.8	152.4	157.6	162.7	167.9	173.1	178.9
157.5°	143.0	143.4	144.8	147.7	150.4	154.2	158.6	162.7	166.5	170.9	175.9
160°	145.7	146.0	147.2	149.6	152.1	155.5	159.1	162.7	165.8	169.4	173.7
162.5°	148.4	148.2	149.5	151.4	153.6	156.2	159.4	162.5	165.1	168.2	171.8
165°	151.5	151.2	151.8	153.6	155.2	157.0	159.7	161.9	163.7	165.8	168.5
167.5°	154.0	153.7	154.2	155.4	156.5	157.6	159.6	161.4	162.3	163.7	165.4
170°	155.8	155.2	155.5	156.4	157.0	157.9	159.4	160.9	161.5	162.5	163.7
172.5°	156.7	156.4	156.2	157.1	157.5	158.2	159.2	160.2	160.6	161.0	162.0
175°	157.9	157.6	157.3	157.9	157.9	158.2	158.8	159.4	159.1	159.4	159.7
177.5°	158.4	157.9	157.7	158.2	158.2	158.2	158.4	158.9	158.4	158.2	158.4
180°	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5
2.5°	1256.5	1258.5	1260.5	1261.4	1260.9	1260.5	1260.2	1259.7
5°	1246.5	1248.7	1251.0	1251.8	1251.0	1250.3	1249.5	1248.7
7.5°	1226.3	1226.9	1227.6	1227.3	1226.0	1224.7	1223.3	1222.0
10°	1206.1	1205.3	1204.5	1203.4	1201.9	1200.4	1198.9	1197.3
12.5°	1182.9	1181.6	1180.2	1178.3	1175.7	1173.2	1170.6	1168.1
15°	1139.7	1134.9	1130.1	1126.4	1123.9	1121.3	1118.8	1116.2
17.5°	1090.8	1085.0	1079.3	1074.3	1069.9	1065.6	1061.2	1056.8
20°	1056.7	1050.3	1044.0	1038.0	1032.4	1026.8	1021.2	1015.7
22.5°	1019.3	1011.1	1002.9	996.7	992.6	988.3	984.2	980.1
25°	957.2	946.8	936.3	929.2	925.4	921.6	917.8	914.0
27.5°	897.9	885.8	873.7	864.6	858.6	852.5	846.4	840.4
30°	856.1	843.2	830.2	820.3	813.5	806.6	799.8	792.9
32.5°	814.1	799.3	784.5	773.9	767.5	761.0	754.6	748.1
35°	748.3	732.4	716.4	705.6	700.0	694.4	688.8	683.2
37.5°	684.3	666.7	649.1	637.1	630.7	624.2	617.9	611.5
40°	641.4	623.5	605.4	593.1	586.5	579.9	573.3	566.7
42.5°	598.2	579.5	560.9	548.4	542.0	535.6	529.2	522.8
45°	535.2	517.2	499.1	487.1	481.0	474.9	468.8	462.7
47.5°	473.9	456.0	438.1	426.4	420.9	415.3	409.7	404.2
50°	434.5	417.0	399.5	388.1	382.7	377.4	372.0	366.7
52.5°	397.4	380.5	363.5	352.7	347.7	342.8	337.9	332.9
55°	340.9	325.6	310.4	300.3	295.5	290.7	285.9	281.0
57.5°	289.5	275.5	261.6	252.5	248.5	244.4	240.3	236.3
60°	254.0	241.1	228.1	219.6	215.5	211.5	207.4	203.4
62.5°	223.3	210.9	198.5	191.1	188.7	186.3	183.8	181.4
65°	181.5	172.9	164.3	159.5	158.8	158.1	157.3	156.5
67.5°	146.5	142.6	138.6	136.2	135.4	134.6	133.8	133.0
70°	127.4	124.9	122.3	120.6	119.6	118.6	117.5	116.5
72.5°	110.9	108.7	106.6	105.3	104.6	104.0	103.4	102.8
75°	87.8	86.1	84.3	83.3	83.0	82.7	82.5	82.2
77.5°	66.6	65.5	64.5	63.8	63.4	62.9	62.6	62.2
80°	52.8	51.8	50.8	50.3	50.3	50.3	50.3	50.3
82.5°	40.0	39.3	38.7	38.4	38.4	38.4	38.4	38.4
85°	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
87.5°	8.9	8.5	8.4	8.4	8.4	8.4	8.4	8.4
90°	9.7	9.1	9.7	10.1	10.1	10.1	10.1	10.1
92.5°	26.5	22.7	20.2	18.3	18.1	17.1	17.3	16.9
95°	79.7	61.1	48.4	41.7	37.7	35.3	34.4	34.7
97.5°	186.0	152.1	119.2	97.3	82.7	75.3	70.9	68.3
100°	277.8	240.0	198.4	161.5	136.3	123.2	114.4	108.9
102.5°	337.9	329.3	298.9	259.8	232.4	210.1	199.1	191.7
105°	369.6	404.0	407.9	398.0	379.0	360.2	347.1	342.9
107.5°	346.7	398.6	430.2	444.9	447.3	446.3	443.6	438.0
110°	327.0	381.5	420.4	445.4	458.5	464.3	467.0	466.7





TEST NUMBER: P331710-935

CATALOG NUMBER: SA2XXRDIP-C865D330U935-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	309.0	361.3	402.9	431.5	449.7	459.3	464.5	466.1
115°	286.9	333.7	373.6	404.9	426.5	440.5	448.4	451.2
117.5°	270.2	311.3	347.5	376.9	398.9	413.7	422.0	424.3
120°	261.9	299.6	331.9	359.6	380.9	395.2	404.0	407.1
122.5°	255.4	289.9	320.5	345.4	364.5	378.7	386.5	389.0
125°	245.8	277.2	303.9	326.7	344.4	355.9	363.5	366.0
127.5°	236.3	264.8	290.0	311.0	326.4	337.3	343.8	345.8
130°	230.3	256.5	280.5	300.6	315.5	325.8	331.9	334.3
132.5°	224.5	248.7	270.8	289.6	304.3	314.6	320.2	322.4
135°	216.3	236.3	256.5	273.5	286.5	296.6	302.1	303.3
137.5°	209.8	226.6	242.5	257.4	269.3	277.9	282.8	284.6
140°	205.6	220.2	234.3	247.6	257.4	265.3	269.8	271.6
142.5°	202.2	214.6	226.7	237.9	247.1	254.3	258.4	258.7
145°	197.4	207.5	216.9	225.8	233.0	238.2	241.3	242.1
147.5°	193.7	201.6	209.0	215.4	221.4	225.6	227.6	228.3
150°	191.1	197.8	204.1	209.6	214.1	217.8	219.6	220.0
152.5°	188.4	194.6	200.0	204.7	208.4	211.5	212.8	212.9
155°	184.7	189.5	194.1	197.4	200.8	202.9	204.1	203.5
157.5°	180.4	184.4	188.2	190.9	193.2	195.0	195.5	195.5
160°	177.6	181.0	184.3	186.5	188.6	190.1	190.5	190.5
162.5°	175.0	177.9	180.7	182.4	184.5	185.5	185.8	185.5
165°	171.0	173.1	175.2	176.4	177.6	178.9	178.9	178.6
167.5°	167.1	168.8	170.2	171.3	171.9	172.5	172.5	172.1
170°	165.2	166.1	167.3	167.9	168.2	169.1	168.8	168.2
172.5°	163.0	163.7	164.6	165.0	165.3	165.7	165.4	165.1
175°	160.7	160.9	161.3	161.5	161.5	161.9	161.5	160.9
177.5°	158.9	158.9	159.2	159.2	159.2	159.2	158.9	158.4
180°	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2

(END OF REPORT)