

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: P331419-930

Luminaire Tested: **SA2XXDIP-C865D1080U930-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331419-930
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: SA2XXDIP-C865D1080U930-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

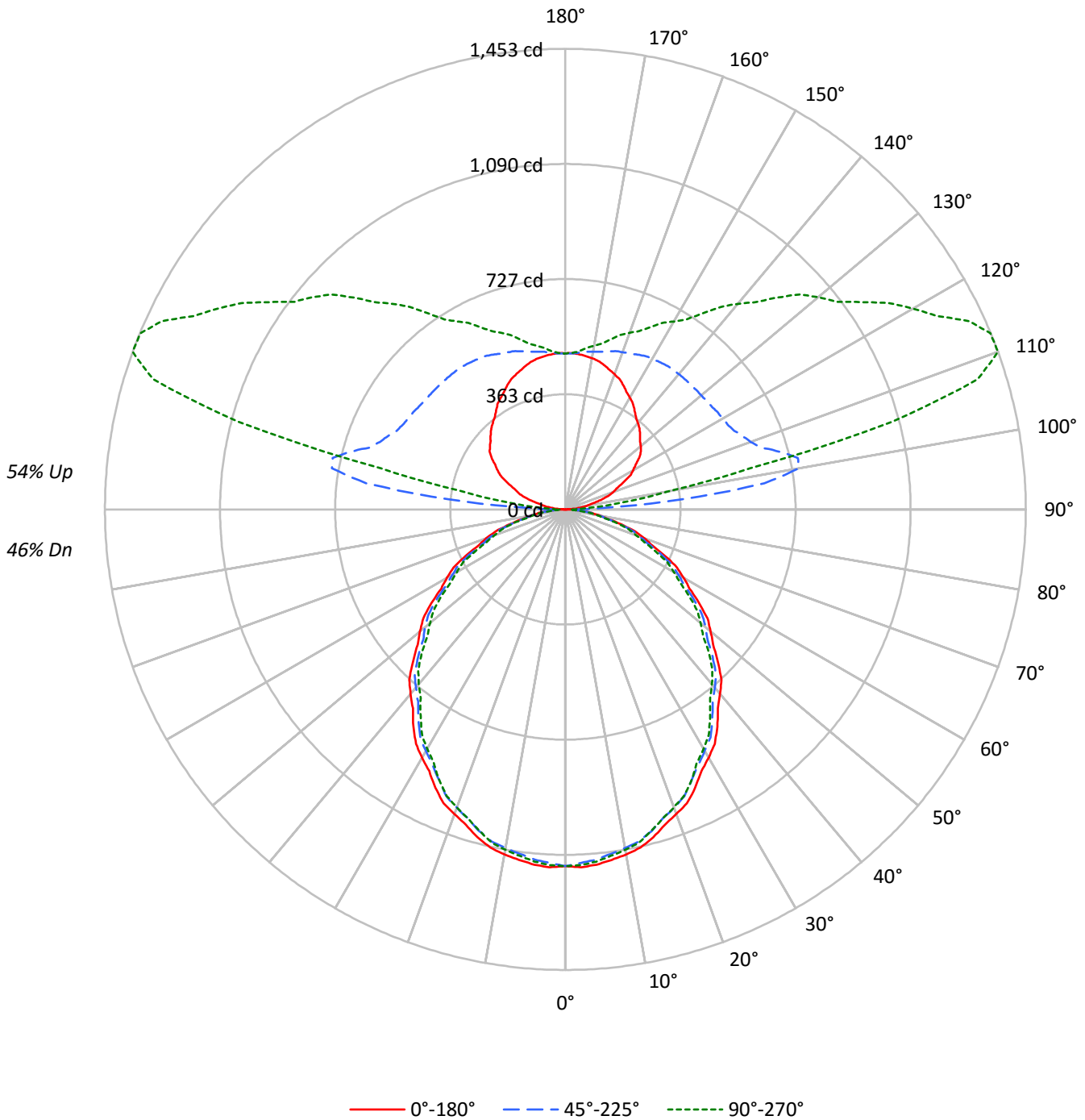
Lumens per Lamp: N/A
Luminaire Lumens: 6294.0 lumens
Efficiency: N/A
Efficacy: 96.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

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	0
RCR																		
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	46
1	97	92	89	85	89	85	82	79	71	68	66	58	56	55	46	45	44	38
2	88	81	75	69	81	74	69	65	62	58	55	51	48	46	40	39	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	33	31	27
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27	23
5	67	56	48	42	62	52	44	39	43	38	34	36	32	29	29	26	24	20
6	62	50	42	36	57	46	39	34	39	34	30	32	28	25	26	23	21	18
7	57	45	37	32	53	42	35	30	35	30	26	30	25	22	24	21	18	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17	14
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15	13
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18166	18166	18166
5°	18235	17973	18078
10°	18126	17790	17879
15°	17904	17560	17541
20°	17584	17213	17194
25°	17268	16787	16787
30°	16861	16397	16257
35°	16484	15928	15693
40°	16008	15460	15163
45°	15536	14995	14625
50°	15028	14511	13996
55°	14494	13948	13430
60°	13905	13275	12788
65°	13268	12607	12027
70°	12463	11797	11235
75°	11335	10861	10593
80°	10060	9754	9252
85°	8225	7818	7003



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.8	1.7
10°-20°	297.7	4.7
20°-30°	437.6	7.0
30°-40°	508.3	8.1
40°-50°	507.7	8.1
50°-60°	442.8	7.0
60°-70°	327.4	5.2
70°-80°	185.4	2.9
80°-90°	54.3	0.9
90°-100°	196.9	3.1
100°-110°	668.2	10.6
110°-120°	709.9	11.3
120°-130°	584.4	9.3
130°-140°	469.3	7.5
140°-150°	354.6	5.6
150°-160°	249.2	4.0
160°-170°	146.7	2.3
170°-180°	47.8	0.8
0°-30°	841.1	13.4
0°-40°	1349.3	21.4
0°-60°	2299.8	36.5
0°-90°	2866.9	45.5
90°-120°	1575.1	25.0
90°-150°	2983.4	47.4
90°-180°	3427.0	54.4
0°-180°	6294.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1125	1125	1125	1125	1125	
5°	1125	1120	1109	1117	1115	107
15°	1071	1064	1050	1054	1049	301
25°	969	960	942	944	942	446
35°	836	825	808	802	796	522
45°	680	672	657	645	640	525
55°	515	508	496	483	477	460
65°	347	341	330	320	315	343
75°	182	179	174	168	170	194
85°	44	43	42	39	38	51
90°	1	13	32	31	31	4
95°	33	81	371	140	108	35
105°	116	174	702	1254	1067	123
115°	204	257	587	1212	1405	202
125°	284	336	564	982	1139	252
135°	333	398	558	825	944	258
145°	381	438	555	689	754	239
155°	433	467	539	609	634	199
165°	472	486	516	547	556	133
175°	492	492	496	502	501	47
180°	492	492	492	492	492	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1
2.5°	1130.3	1129.4	1128.4	1127.5	1126.5	1124.9	1122.8	1120.7	1118.6	1116.5	1118.4
5°	1125.1	1124.1	1123.2	1122.3	1121.3	1119.5	1116.9	1114.2	1111.6	1108.9	1110.8
7.5°	1115.2	1113.7	1112.2	1110.7	1109.2	1107.1	1104.4	1101.7	1099.0	1096.3	1098.3
10°	1105.6	1104.0	1102.3	1100.6	1098.9	1096.7	1093.7	1090.9	1088.0	1085.1	1087.0
12.5°	1092.7	1091.2	1089.7	1088.2	1086.7	1084.5	1081.7	1078.7	1075.9	1073.0	1074.3
15°	1071.1	1069.6	1068.1	1066.7	1065.3	1063.0	1059.9	1056.7	1053.6	1050.5	1051.4
17.5°	1043.3	1041.9	1040.5	1039.0	1037.5	1035.3	1032.1	1028.9	1025.7	1022.5	1023.7
20°	1023.4	1022.0	1020.6	1019.1	1017.7	1015.3	1011.9	1008.5	1005.2	1001.8	1002.5
22.5°	1003.6	1001.5	999.5	997.4	995.5	992.9	989.7	986.5	983.3	980.2	980.3
25°	969.3	967.4	965.5	963.6	961.6	958.6	954.6	950.5	946.4	942.3	942.8
27.5°	930.4	928.7	926.9	925.2	923.5	921.0	917.8	914.5	911.3	908.1	907.4
30°	904.4	902.5	900.6	898.7	896.7	894.0	890.4	886.8	883.1	879.5	878.8
32.5°	876.8	875.2	873.7	872.1	870.6	867.9	864.1	860.3	856.6	852.7	851.4
35°	836.3	833.9	831.4	829.1	826.6	823.5	819.7	815.9	812.0	808.1	806.7
37.5°	790.6	788.5	786.4	784.2	782.2	779.2	775.3	771.5	767.6	763.8	762.0
40°	759.5	757.6	755.6	753.7	751.8	748.9	745.0	741.2	737.4	733.5	731.3
42.5°	729.2	727.2	725.3	723.4	721.5	718.6	714.8	710.9	707.0	703.2	700.8
45°	680.4	678.8	677.1	675.5	673.8	671.1	667.5	663.9	660.3	656.7	654.0
47.5°	632.0	630.5	628.8	627.3	625.7	623.0	619.2	615.5	611.7	608.0	605.2
50°	598.3	597.0	595.9	594.7	593.5	591.2	587.8	584.4	581.1	577.7	574.4
52.5°	565.4	563.8	562.2	560.6	559.1	556.7	553.5	550.3	547.1	544.0	541.2
55°	514.9	513.6	512.1	510.6	509.2	507.0	504.2	501.2	498.4	495.5	492.6
57.5°	464.3	463.2	462.0	460.9	459.7	457.5	454.4	451.2	448.0	444.8	442.1
60°	430.6	429.6	428.7	427.7	426.7	424.6	421.2	417.8	414.5	411.1	408.5
62.5°	397.7	396.2	394.6	393.1	391.5	389.5	386.9	384.3	381.6	379.1	376.7
65°	347.3	345.8	344.4	342.9	341.5	339.6	337.2	334.8	332.4	330.0	327.8
67.5°	296.0	294.8	293.7	292.5	291.4	289.8	287.6	285.4	283.2	281.0	279.4
70°	264.0	263.0	262.0	261.1	260.2	258.5	256.4	254.2	252.1	249.9	248.3
72.5°	231.1	230.2	229.2	228.2	227.2	226.1	224.7	223.3	221.8	220.5	218.8
75°	181.7	181.2	180.8	180.3	179.9	179.0	177.8	176.6	175.4	174.1	172.8
77.5°	137.6	136.8	136.0	135.2	134.4	133.7	133.2	132.7	132.2	131.8	131.0
80°	108.2	107.9	107.7	107.5	107.2	106.9	106.4	105.9	105.4	104.9	104.2
82.5°	80.5	80.5	80.4	80.3	80.3	80.1	79.8	79.6	79.2	79.0	78.0
85°	44.4	44.1	43.9	43.6	43.4	43.1	42.9	42.6	42.4	42.2	41.5
87.5°	15.7	16.0	16.3	16.3	16.3	16.5	17.0	18.0	18.8	18.6	17.8
90°	1.0	3.8	7.6	9.5	11.3	14.2	18.9	25.6	31.2	32.2	31.2
92.5°	11.6	16.6	23.5	27.6	34.1	43.0	64.4	94.5	121.4	123.1	104.0
95°	33.2	36.9	46.4	55.0	70.1	92.8	136.4	218.7	328.6	371.3	324.9
97.5°	54.0	59.1	69.1	82.0	99.5	125.2	179.9	294.7	477.4	633.8	664.9
100°	72.9	75.7	84.3	99.5	118.4	144.9	195.1	310.6	515.2	748.2	884.6
102.5°	90.3	92.5	100.9	116.1	135.8	162.3	208.7	311.4	500.8	752.0	966.5
105°	115.5	119.4	126.0	140.1	161.0	187.5	232.0	316.3	472.6	701.8	953.7
107.5°	142.8	145.9	152.3	165.3	186.1	212.7	255.9	329.4	458.6	648.0	870.6
110°	161.0	164.8	170.5	182.8	202.7	230.2	271.8	340.0	455.6	622.2	818.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	177.7	181.5	187.9	199.4	218.6	246.8	287.0	351.4	456.3	605.6	782.0
115°	203.7	208.4	214.0	225.4	244.3	269.9	310.6	368.4	460.3	587.2	736.9
117.5°	230.6	234.3	240.0	250.1	268.2	294.7	332.4	386.6	467.1	578.3	708.4
120°	247.2	250.9	256.7	265.2	284.1	310.6	347.6	398.8	471.7	573.0	693.2
122.5°	263.1	266.1	271.8	281.1	300.0	327.3	362.0	409.4	477.0	570.0	680.4
125°	284.1	287.0	292.7	304.0	322.9	349.5	383.6	426.2	484.9	564.5	662.0
127.5°	300.8	304.6	312.6	325.1	343.2	370.5	403.7	441.9	493.1	561.3	645.0
130°	310.6	314.5	323.9	337.2	356.1	382.6	415.8	451.8	499.1	559.7	633.7
132.5°	319.8	324.3	334.5	348.5	368.3	394.8	426.4	461.6	505.2	559.0	624.5
135°	333.4	337.2	348.5	362.7	384.5	411.1	441.3	474.5	512.4	557.8	611.8
137.5°	346.3	350.8	362.2	377.3	398.9	423.5	453.5	484.4	518.9	557.7	602.9
140°	356.1	359.9	371.3	386.5	407.2	431.9	460.3	489.7	521.9	556.9	597.6
142.5°	366.0	369.0	379.6	394.8	414.8	438.0	465.6	494.2	524.2	556.9	592.3
145°	380.7	384.5	394.0	408.2	427.1	448.0	473.5	500.1	526.6	555.0	585.3
147.5°	396.6	399.5	408.5	421.7	437.4	455.9	480.0	503.3	527.3	551.6	578.1
150°	407.2	410.1	417.7	430.0	444.2	461.2	483.1	504.8	526.6	549.3	572.0
152.5°	417.8	419.2	426.7	437.6	451.0	466.5	486.1	505.6	525.1	545.5	566.7
155°	432.8	433.7	439.4	449.9	460.3	474.5	490.6	506.7	522.8	538.9	556.9
157.5°	445.3	446.3	450.9	459.9	468.2	480.2	493.8	506.7	518.4	532.1	547.6
160°	453.6	454.6	458.4	465.9	473.5	484.0	495.4	506.7	516.2	527.6	540.8
162.5°	462.0	461.5	465.2	471.2	478.1	486.2	496.1	506.0	513.9	523.7	534.8
165°	471.7	470.8	472.6	478.3	483.1	488.7	497.3	503.9	509.6	516.2	524.7
167.5°	479.6	478.5	480.2	483.8	487.2	490.8	497.0	502.6	505.2	509.6	514.9
170°	484.9	483.1	484.0	486.8	488.7	491.5	496.3	501.0	502.9	505.7	509.6
172.5°	488.0	486.8	486.2	489.1	490.2	492.3	495.5	498.7	499.9	501.2	504.3
175°	491.5	490.6	489.7	491.5	491.5	492.5	494.4	496.3	495.4	496.3	497.3
177.5°	493.3	491.7	491.0	492.5	492.5	492.5	493.3	494.8	493.3	492.5	493.3
180°	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1
2.5°	1120.3	1122.3	1124.1	1124.9	1124.5	1124.1	1123.8	1123.4
5°	1112.7	1114.7	1116.6	1117.3	1116.9	1116.4	1115.9	1115.4
7.5°	1100.2	1102.1	1104.1	1104.7	1104.2	1103.7	1103.2	1102.6
10°	1088.9	1090.9	1092.8	1093.4	1092.7	1091.9	1091.2	1090.5
12.5°	1075.7	1077.0	1078.4	1078.8	1078.2	1077.7	1077.2	1076.7
15°	1052.4	1053.4	1054.3	1054.2	1053.0	1051.8	1050.6	1049.4
17.5°	1024.7	1025.9	1027.0	1027.0	1025.8	1024.7	1023.5	1022.4
20°	1003.2	1004.0	1004.7	1004.5	1003.6	1002.7	1001.7	1000.7
22.5°	980.5	980.6	980.7	980.6	979.9	979.3	978.8	978.2
25°	943.3	943.7	944.2	944.2	943.7	943.3	942.8	942.3
27.5°	906.7	906.0	905.2	904.3	903.1	902.0	900.8	899.7
30°	878.1	877.4	876.7	875.8	874.9	873.9	872.9	872.0
32.5°	850.1	848.8	847.5	846.4	845.5	844.5	843.5	842.5
35°	805.3	803.8	802.4	801.0	799.9	798.7	797.4	796.2
37.5°	760.3	758.5	756.7	755.2	754.1	752.9	751.8	750.6
40°	729.2	727.0	724.9	723.3	722.4	721.4	720.4	719.4
42.5°	698.5	696.1	693.8	691.9	690.6	689.3	687.9	686.6
45°	651.4	648.7	646.1	644.3	643.4	642.4	641.4	640.5
47.5°	602.4	599.7	596.9	594.8	593.4	592.0	590.6	589.2
50°	571.0	567.6	564.3	562.0	560.8	559.5	558.4	557.2
52.5°	538.3	535.6	532.8	530.6	529.0	527.4	525.9	524.2
55°	489.8	486.8	484.0	481.9	480.7	479.5	478.3	477.1
57.5°	439.2	436.3	433.5	431.6	430.7	429.8	428.9	428.0
60°	405.9	403.2	400.6	398.8	398.1	397.4	396.6	396.0
62.5°	374.1	371.7	369.2	367.6	366.6	365.7	364.8	363.9
65°	325.6	323.5	321.3	319.6	318.5	317.2	316.0	314.8
67.5°	277.7	276.0	274.3	273.0	272.1	271.1	270.1	269.1
70°	246.5	244.8	243.2	241.8	240.9	239.9	239.0	238.0
72.5°	217.1	215.4	213.8	212.5	211.7	211.0	210.2	209.5
75°	171.3	169.8	168.4	168.0	168.4	168.9	169.3	169.8
77.5°	130.4	129.6	128.9	128.2	127.5	126.9	126.2	125.5
80°	103.5	102.8	102.1	101.4	100.9	100.5	100.0	99.5
82.5°	77.1	76.2	75.3	74.8	74.7	74.6	74.5	74.4
85°	40.8	40.0	39.3	38.8	38.6	38.3	38.1	37.8
87.5°	17.0	16.1	15.9	15.7	15.5	15.3	15.1	14.9
90°	30.3	28.5	30.3	31.2	31.2	31.2	31.2	31.2
92.5°	82.6	70.8	62.9	57.0	56.3	53.2	54.0	52.5
95°	248.2	190.4	150.6	129.7	117.4	109.9	107.0	107.9
97.5°	579.0	473.8	371.3	302.9	257.6	234.3	220.5	212.5
100°	864.7	747.3	617.5	502.9	424.3	383.6	356.1	339.1
102.5°	1051.9	1025.3	930.4	809.0	723.6	654.1	619.8	596.7
105°	1150.7	1257.8	1270.1	1238.8	1180.1	1121.4	1080.7	1067.4
107.5°	1079.5	1240.7	1339.2	1385.0	1392.4	1389.2	1381.0	1363.4
110°	1018.1	1187.6	1308.9	1386.6	1427.3	1445.3	1453.8	1452.9



TEST NUMBER: P331419-930

CATALOG NUMBER: SA2XXDIP-C865D1080U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	962.1	1124.8	1254.3	1343.4	1400.0	1430.1	1446.3	1451.3
115°	893.2	1039.0	1163.0	1260.6	1327.9	1371.4	1396.0	1404.6
117.5°	841.2	969.3	1081.8	1173.3	1241.9	1287.8	1313.9	1321.0
120°	815.5	932.9	1033.3	1119.5	1185.8	1230.3	1257.8	1267.2
122.5°	795.0	902.6	997.7	1075.5	1135.0	1178.8	1203.2	1211.1
125°	765.2	862.8	946.2	1017.2	1072.1	1108.2	1131.8	1139.4
127.5°	735.9	824.2	902.8	968.3	1016.3	1049.9	1070.4	1076.5
130°	717.0	798.4	873.3	935.7	982.2	1014.4	1033.3	1040.9
132.5°	698.8	774.2	842.9	901.6	947.3	979.5	996.9	1003.7
135°	673.4	735.9	798.4	851.4	892.2	923.4	940.4	944.3
137.5°	653.1	705.4	755.0	801.3	838.4	865.3	880.3	885.9
140°	640.3	685.7	729.3	770.9	801.3	825.9	840.1	845.8
142.5°	629.7	668.3	705.8	740.6	769.4	791.8	804.5	805.6
145°	614.7	646.0	675.3	702.8	725.5	741.6	751.1	753.9
147.5°	603.2	627.8	650.7	670.7	689.5	702.4	708.8	710.5
150°	594.8	615.6	635.5	652.6	666.8	678.2	683.8	684.8
152.5°	586.4	605.8	622.6	637.4	648.6	658.4	662.6	662.8
155°	574.9	590.0	604.2	614.7	625.1	631.7	635.5	633.7
157.5°	561.4	574.1	586.0	594.2	601.6	607.1	608.8	608.8
160°	553.1	563.5	574.0	580.6	587.2	591.9	592.9	592.9
162.5°	544.8	553.7	562.6	567.7	574.3	577.6	578.5	577.7
165°	532.3	538.9	545.5	549.3	553.1	556.9	556.9	556.0
167.5°	520.3	525.5	530.0	533.5	535.1	537.2	537.0	535.9
170°	514.3	517.1	520.9	522.8	523.7	526.6	525.6	523.7
172.5°	507.4	509.6	512.6	513.7	514.7	516.0	515.0	513.9
175°	500.1	501.0	502.0	502.9	502.9	503.9	502.9	501.0
177.5°	494.8	494.8	495.5	495.5	495.5	495.5	494.8	493.3
180°	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5

(END OF REPORT)