

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: P331381

Luminaire Tested: **SA2XXDIP-C865D330U835-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331381
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-C865D330U835-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

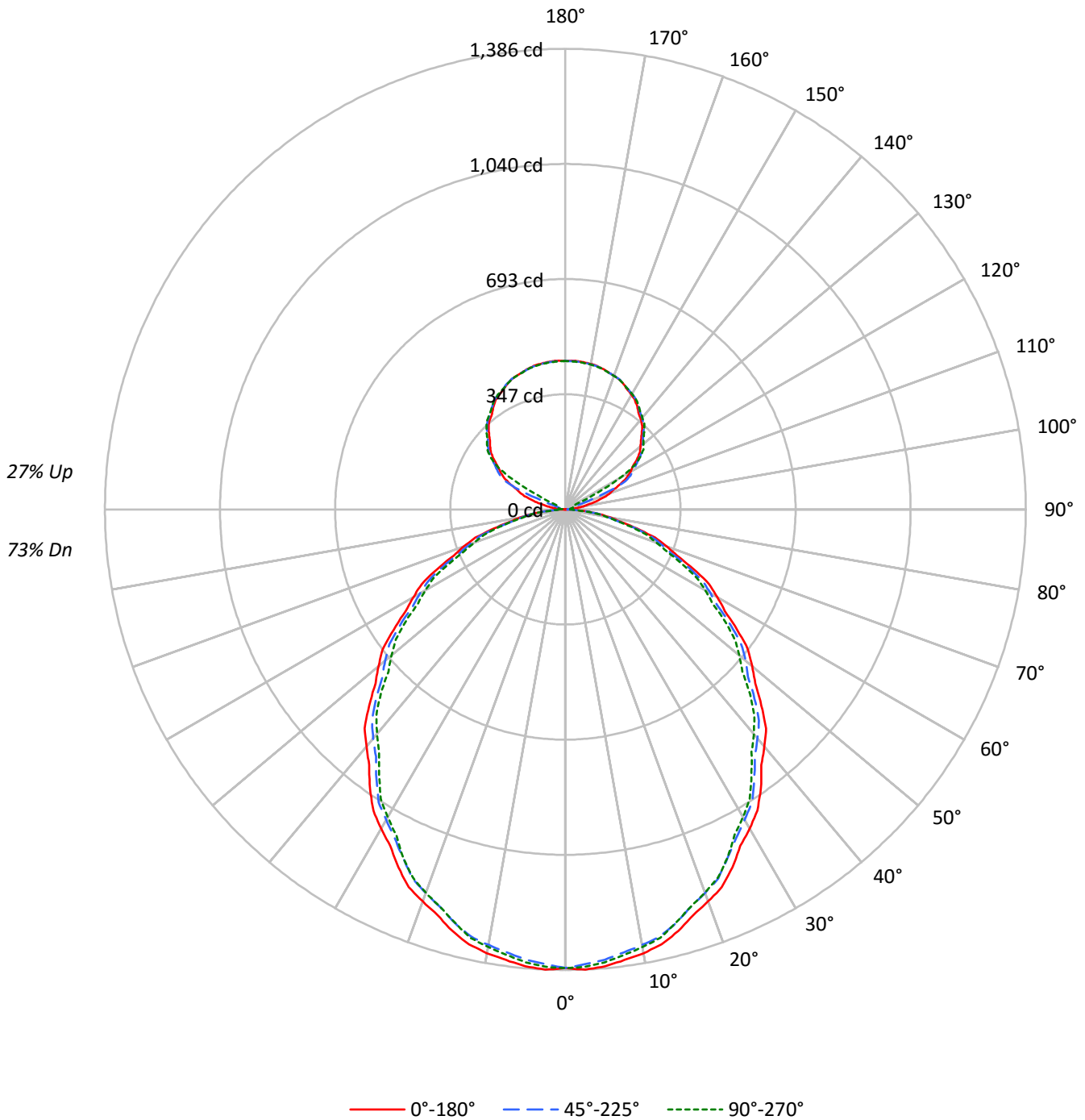
Lumens per Lamp: N/A
Luminaire Lumens: 4821.5 lumens
Efficiency: N/A
Efficacy: 110.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

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



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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	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	73				73
1	103	98	94	91	97	94	90	87	84	82	79	76	74	72	68	67	65	61				61
2	94	86	80	74	89	82	76	71	74	69	66	67	63	60	60	57	55	51				51
3	86	76	68	62	81	72	65	60	65	60	55	59	55	51	53	50	47	44				44
4	78	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	40	37				37
5	72	60	51	45	68	57	50	44	52	46	41	47	42	38	43	39	35	32				32
6	67	54	45	39	63	52	44	38	47	41	36	43	38	33	39	35	31	29				29
7	62	49	41	35	58	47	39	34	43	36	32	39	34	30	36	31	28	25				25
8	57	44	36	31	54	43	35	30	39	33	28	36	30	27	33	28	25	23				23
9	53	41	33	28	51	39	32	27	36	30	25	33	28	24	30	26	22	20				20
10	50	38	30	25	48	36	29	24	33	27	23	31	25	22	28	24	20	19				19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	22281	22281	22281
5°	22366	22044	22174
10°	22233	21820	21930
15°	21959	21538	21514
20°	21569	21113	21089
25°	21180	20591	20591
30°	20681	20113	19939
35°	20217	19537	19249
40°	19633	18963	18598
45°	19057	18393	17938
50°	18432	17799	17166
55°	17779	17106	16473
60°	17053	16281	15684
65°	16275	15461	14751
70°	15286	14469	13780
75°	13905	13325	12994
80°	12338	11967	11353
85°	10078	9596	8596



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.8	2.7
10°-20°	365.1	7.6
20°-30°	536.7	11.1
30°-40°	623.4	12.9
40°-50°	622.7	12.9
50°-60°	543.1	11.3
60°-70°	401.6	8.3
70°-80°	227.4	4.7
80°-90°	62.3	1.3
90°-100°	14.9	0.3
100°-110°	54.7	1.1
110°-120°	146.1	3.0
120°-130°	241.2	5.0
130°-140°	256.5	5.3
140°-150°	238.4	4.9
150°-160°	191.7	4.0
160°-170°	123.5	2.6
170°-180°	42.5	0.9
0°-30°	1031.6	21.4
0°-40°	1655.0	34.3
0°-60°	2820.8	58.5
0°-90°	3512.1	72.8
90°-120°	215.7	4.5
90°-150°	951.8	19.7
90°-180°	1309.0	27.1
0°-180°	4821.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1380	1380	1380	1380	1380	
5°	1380	1374	1360	1370	1368	131
15°	1314	1305	1288	1293	1287	370
25°	1189	1178	1156	1158	1156	547
35°	1026	1012	991	983	977	640
45°	835	825	806	791	786	644
55°	632	623	608	592	585	565
65°	426	418	405	393	386	421
75°	223	220	214	206	208	238
85°	54	53	52	48	46	62
90°	0	4	6	8	9	4
95°	21	11	13	14	14	26
105°	98	103	20	23	25	105
115°	186	192	200	57	26	183
125°	263	267	273	275	276	234
135°	325	330	333	336	336	251
145°	377	377	382	385	383	236
155°	416	413	416	418	416	191
165°	438	436	437	439	437	124
175°	448	446	446	448	445	43
180°	447	447	447	447	447	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1386.4	1385.2	1384.0	1382.9	1381.7	1379.8	1377.2	1374.6	1372.0	1369.4	1371.8
5°	1380.0	1378.8	1377.7	1376.5	1375.3	1373.1	1369.9	1366.6	1363.4	1360.1	1362.5
7.5°	1367.8	1366.0	1364.2	1362.3	1360.5	1357.9	1354.6	1351.3	1348.0	1344.7	1347.1
10°	1356.1	1354.1	1352.0	1349.9	1347.9	1345.1	1341.5	1338.0	1334.5	1330.9	1333.3
12.5°	1340.2	1338.4	1336.6	1334.7	1332.9	1330.2	1326.7	1323.1	1319.6	1316.1	1317.7
15°	1313.7	1311.9	1310.1	1308.4	1306.6	1303.8	1300.0	1296.1	1292.3	1288.5	1289.6
17.5°	1279.7	1277.9	1276.2	1274.4	1272.6	1269.8	1265.9	1262.0	1258.1	1254.2	1255.6
20°	1255.3	1253.5	1251.8	1250.0	1248.2	1245.3	1241.1	1237.0	1232.9	1228.8	1229.6
22.5°	1230.9	1228.4	1225.9	1223.4	1221.0	1217.8	1213.9	1210.0	1206.1	1202.2	1202.4
25°	1188.9	1186.6	1184.2	1181.9	1179.5	1175.8	1170.8	1165.8	1160.8	1155.8	1156.4
27.5°	1141.2	1139.1	1136.9	1134.8	1132.7	1129.6	1125.7	1121.7	1117.8	1113.8	1113.0
30°	1109.3	1107.0	1104.6	1102.3	1099.9	1096.5	1092.1	1087.7	1083.2	1078.8	1077.9
32.5°	1075.4	1073.5	1071.6	1069.7	1067.8	1064.5	1059.9	1055.2	1050.6	1045.9	1044.3
35°	1025.7	1022.8	1019.8	1016.9	1013.9	1010.1	1005.4	1000.7	995.9	991.2	989.5
37.5°	969.7	967.1	964.5	961.9	959.4	955.7	951.0	946.3	941.5	936.8	934.6
40°	931.5	929.2	926.8	924.4	922.1	918.5	913.8	909.1	904.4	899.7	897.0
42.5°	894.4	892.0	889.6	887.3	884.9	881.4	876.7	872.0	867.2	862.5	859.6
45°	834.6	832.6	830.5	828.5	826.4	823.1	818.7	814.3	809.9	805.5	802.2
47.5°	775.2	773.3	771.3	769.4	767.4	764.1	759.5	754.9	750.3	745.7	742.3
50°	733.8	732.3	730.9	729.4	727.9	725.1	721.0	716.8	712.7	708.6	704.5
52.5°	693.5	691.5	689.6	687.6	685.7	682.8	678.9	675.0	671.1	667.2	663.8
55°	631.6	629.9	628.1	626.3	624.5	621.9	618.4	614.8	611.3	607.7	604.2
57.5°	569.5	568.1	566.7	565.3	563.9	561.2	557.3	553.4	549.5	545.6	542.2
60°	528.1	526.9	525.8	524.6	523.4	520.8	516.6	512.5	508.4	504.2	501.0
62.5°	487.8	485.9	484.0	482.1	480.2	477.7	474.5	471.3	468.1	465.0	462.0
65°	426.0	424.2	422.4	420.6	418.9	416.5	413.6	410.6	407.7	404.7	402.1
67.5°	363.1	361.6	360.2	358.8	357.4	355.4	352.7	350.0	347.4	344.7	342.7
70°	323.8	322.6	321.4	320.2	319.1	317.1	314.5	311.8	309.2	306.5	304.5
72.5°	283.4	282.3	281.1	279.9	278.7	277.3	275.6	273.9	272.1	270.4	268.4
75°	222.9	222.3	221.7	221.2	220.6	219.5	218.1	216.6	215.1	213.6	211.9
77.5°	168.8	167.8	166.8	165.8	164.8	164.0	163.4	162.8	162.2	161.6	160.7
80°	132.7	132.4	132.1	131.8	131.5	131.1	130.5	129.9	129.3	128.7	127.8
82.5°	98.7	98.7	98.6	98.5	98.5	98.3	97.9	97.6	97.2	96.9	95.7
85°	54.4	54.1	53.8	53.5	53.2	52.9	52.6	52.3	52.0	51.8	50.9
87.5°	19.2	18.9	18.5	18.2	17.9	17.6	17.2	16.9	16.5	16.2	15.5
90°	0.3	1.1	1.9	2.7	3.5	4.2	4.7	5.3	5.9	6.5	6.8
92.5°	6.5	6.5	6.4	6.3	6.2	6.4	6.6	6.9	7.2	7.5	7.7
95°	21.0	18.6	16.3	13.9	11.5	10.6	11.1	11.6	12.1	12.6	13.0
97.5°	41.7	35.0	28.3	21.7	15.0	12.2	13.4	14.5	15.7	16.9	17.2
100°	57.2	47.4	37.5	27.7	17.9	13.5	14.8	16.0	17.2	18.4	19.0
102.5°	74.3	72.2	70.1	68.1	66.0	59.8	49.6	39.4	29.2	18.9	19.7
105°	98.3	100.4	102.6	104.8	106.9	98.2	78.6	59.0	39.3	19.7	20.5
107.5°	125.6	127.4	129.1	130.9	132.6	121.7	98.2	74.7	51.1	27.6	26.8
110°	143.2	144.7	146.3	147.8	149.3	139.6	118.9	98.1	77.3	56.6	49.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	159.8	161.1	162.5	163.8	165.1	163.2	158.1	153.0	147.8	142.7	116.5
115°	185.9	187.1	188.4	189.6	190.8	192.3	194.1	195.9	197.7	199.5	166.2
117.5°	209.3	210.6	212.0	213.4	214.7	216.0	217.3	218.5	219.7	221.0	212.9
120°	226.3	227.4	228.5	229.6	230.6	231.8	233.1	234.4	235.7	237.0	237.9
122.5°	240.8	242.0	243.1	244.2	245.4	246.6	248.0	249.4	250.9	252.3	252.8
125°	262.9	263.8	264.7	265.7	266.6	267.8	269.1	270.5	271.8	273.2	273.7
127.5°	282.8	283.9	284.9	286.0	287.0	288.0	289.0	290.1	291.1	292.1	292.8
130°	295.5	296.7	297.8	299.0	300.1	301.1	301.9	302.7	303.5	304.3	305.0
132.5°	308.5	309.4	310.4	311.4	312.4	313.2	314.0	314.8	315.6	316.4	317.1
135°	325.3	326.4	327.6	328.7	329.9	330.8	331.4	332.1	332.7	333.4	334.1
137.5°	342.3	343.1	343.9	344.7	345.5	346.3	347.0	347.7	348.5	349.2	349.9
140°	353.4	354.0	354.5	355.1	355.7	356.4	357.2	358.0	358.8	359.5	360.2
142.5°	362.7	363.2	363.7	364.3	364.8	365.5	366.4	367.3	368.2	369.1	369.7
145°	377.3	377.3	377.2	377.1	377.0	377.6	378.8	380.1	381.3	382.5	383.0
147.5°	390.1	389.8	389.5	389.2	389.0	389.4	390.6	391.9	393.1	394.3	394.6
150°	398.3	397.8	397.3	396.8	396.3	396.7	397.8	399.0	400.1	401.3	401.7
152.5°	405.3	404.8	404.2	403.6	403.1	403.3	404.4	405.5	406.6	407.7	408.1
155°	415.5	414.8	414.2	413.5	412.9	413.0	413.9	414.7	415.6	416.4	416.9
157.5°	423.4	422.9	422.3	421.8	421.2	421.3	421.9	422.5	423.1	423.7	424.2
160°	428.1	427.7	427.2	426.8	426.4	426.4	426.8	427.2	427.7	428.1	428.5
162.5°	432.2	431.8	431.4	430.9	430.5	430.5	430.8	431.2	431.6	432.0	432.5
165°	437.8	437.4	436.9	436.5	436.1	436.0	436.2	436.4	436.6	436.8	437.3
167.5°	441.9	441.5	441.1	440.6	440.2	440.1	440.3	440.5	440.7	440.9	441.4
170°	444.3	443.8	443.4	443.0	442.5	442.4	442.5	442.7	442.8	443.0	443.5
172.5°	445.8	445.4	444.9	444.5	444.1	443.9	444.1	444.2	444.4	444.5	445.0
175°	447.8	447.3	446.8	446.3	445.8	445.6	445.8	445.9	446.1	446.2	446.7
177.5°	448.1	447.7	447.3	446.9	446.5	446.4	446.4	446.5	446.5	446.6	447.0
180°	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1374.1	1376.5	1378.8	1379.8	1379.3	1378.8	1378.4	1377.9
5°	1364.8	1367.2	1369.6	1370.4	1369.9	1369.3	1368.7	1368.1
7.5°	1349.4	1351.8	1354.2	1355.0	1354.4	1353.7	1353.1	1352.4
10°	1335.6	1338.0	1340.4	1341.1	1340.2	1339.3	1338.4	1337.6
12.5°	1319.4	1321.0	1322.7	1323.2	1322.5	1321.9	1321.2	1320.6
15°	1290.8	1292.0	1293.2	1293.0	1291.6	1290.1	1288.6	1287.1
17.5°	1256.9	1258.3	1259.7	1259.6	1258.2	1256.8	1255.4	1254.0
20°	1230.5	1231.4	1232.3	1232.1	1231.0	1229.8	1228.6	1227.4
22.5°	1202.6	1202.7	1202.9	1202.7	1201.9	1201.2	1200.5	1199.8
25°	1157.0	1157.5	1158.1	1158.1	1157.5	1157.0	1156.4	1155.8
27.5°	1112.1	1111.2	1110.3	1109.2	1107.7	1106.3	1104.9	1103.5
30°	1077.0	1076.2	1075.3	1074.2	1073.1	1071.9	1070.7	1069.5
32.5°	1042.7	1041.1	1039.5	1038.1	1037.0	1035.8	1034.6	1033.4
35°	987.7	985.9	984.2	982.5	981.1	979.6	978.1	976.6
37.5°	932.5	930.3	928.1	926.3	924.9	923.5	922.1	920.6
40°	894.4	891.7	889.1	887.1	886.0	884.8	883.6	882.4
42.5°	856.7	853.8	851.0	848.7	847.0	845.4	843.7	842.1
45°	799.0	795.7	792.5	790.3	789.1	787.9	786.7	785.6
47.5°	738.9	735.5	732.1	729.5	727.8	726.1	724.4	722.7
50°	700.3	696.2	692.1	689.3	687.8	686.3	684.9	683.4
52.5°	660.3	656.9	653.5	650.8	648.9	646.9	645.0	643.0
55°	600.7	597.1	593.6	591.1	589.6	588.1	586.7	585.2
57.5°	538.7	535.2	531.7	529.4	528.3	527.2	526.1	524.9
60°	497.8	494.5	491.3	489.2	488.3	487.4	486.5	485.7
62.5°	458.9	455.9	452.9	450.9	449.7	448.6	447.5	446.4
65°	399.4	396.8	394.1	392.0	390.6	389.1	387.6	386.1
67.5°	340.6	338.5	336.5	334.9	333.7	332.5	331.3	330.1
70°	302.4	300.3	298.3	296.6	295.5	294.3	293.1	291.9
72.5°	266.3	264.2	262.2	260.7	259.7	258.8	257.8	256.9
75°	210.1	208.3	206.6	206.0	206.6	207.2	207.7	208.3
77.5°	159.9	159.0	158.1	157.2	156.4	155.6	154.8	153.9
80°	126.9	126.1	125.2	124.4	123.8	123.3	122.7	122.1
82.5°	94.6	93.5	92.4	91.8	91.6	91.5	91.4	91.3
85°	50.0	49.1	48.2	47.6	47.3	47.0	46.7	46.4
87.5°	14.9	14.2	13.6	13.2	13.0	12.8	12.6	12.4
90°	7.2	7.5	7.9	8.2	8.3	8.4	8.6	8.7
92.5°	7.9	8.1	8.2	8.4	8.5	8.6	8.6	8.7
95°	13.3	13.7	14.0	14.2	14.1	14.0	14.0	13.9
97.5°	17.5	17.7	18.0	18.2	18.3	18.4	18.5	18.6
100°	19.6	20.2	20.7	21.1	21.2	21.4	21.5	21.7
102.5°	20.4	21.2	21.9	22.4	22.6	22.8	23.0	23.2
105°	21.3	22.1	22.9	23.4	23.7	24.0	24.3	24.6
107.5°	26.0	25.2	24.4	24.1	24.4	24.7	25.0	25.3
110°	42.2	35.0	27.8	24.4	24.7	25.0	25.3	25.5



TEST NUMBER: P331381

CATALOG NUMBER: SA2XXDIP-C865D330U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	90.3	64.1	37.9	24.9	25.1	25.3	25.6	25.8
115°	133.0	99.7	66.4	47.2	42.0	36.9	31.7	26.5
117.5°	204.9	196.8	188.8	176.3	159.3	142.3	125.3	108.3
120°	238.7	239.6	240.4	236.0	226.3	216.6	206.9	197.2
122.5°	253.3	253.8	254.3	253.6	251.8	249.9	248.0	246.1
125°	274.2	274.7	275.2	275.6	275.8	276.0	276.2	276.4
127.5°	293.6	294.3	295.0	295.4	295.5	295.5	295.5	295.6
130°	305.8	306.6	307.4	307.8	307.7	307.6	307.6	307.5
132.5°	317.8	318.4	319.1	319.4	319.3	319.3	319.2	319.1
135°	334.8	335.5	336.2	336.5	336.4	336.2	336.1	335.9
137.5°	350.6	351.3	352.0	352.2	352.0	351.8	351.5	351.3
140°	360.8	361.5	362.1	362.3	361.9	361.6	361.2	360.8
142.5°	370.3	370.9	371.5	371.6	371.2	370.9	370.5	370.1
145°	383.5	384.0	384.5	384.6	384.2	383.9	383.5	383.1
147.5°	395.0	395.4	395.8	395.8	395.5	395.2	394.9	394.6
150°	402.1	402.5	403.0	403.0	402.7	402.3	401.9	401.6
152.5°	408.6	409.0	409.4	409.4	408.9	408.5	408.0	407.5
155°	417.3	417.7	418.2	418.1	417.5	417.0	416.4	415.8
157.5°	424.7	425.2	425.6	425.6	425.0	424.5	423.9	423.4
160°	429.0	429.4	429.8	429.8	429.3	428.8	428.3	427.8
162.5°	432.9	433.4	433.9	433.9	433.2	432.6	432.0	431.4
165°	437.8	438.3	438.8	438.8	438.3	437.8	437.3	436.8
167.5°	441.9	442.4	442.9	442.8	442.2	441.5	440.9	440.2
170°	444.0	444.5	445.0	444.9	444.3	443.6	443.0	442.3
172.5°	445.5	446.0	446.5	446.5	445.8	445.2	444.5	443.9
175°	447.2	447.7	448.2	448.1	447.4	446.7	445.9	445.2
177.5°	447.4	447.8	448.2	448.1	447.6	447.1	446.6	446.1
180°	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8

(END OF REPORT)