

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: P331734

Luminaire Tested: **SA2XXRDIP-C865D1080U835-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331734
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-C865D1080U835-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7224.7 lumens
Efficiency: N/A
Efficacy: 110.5 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

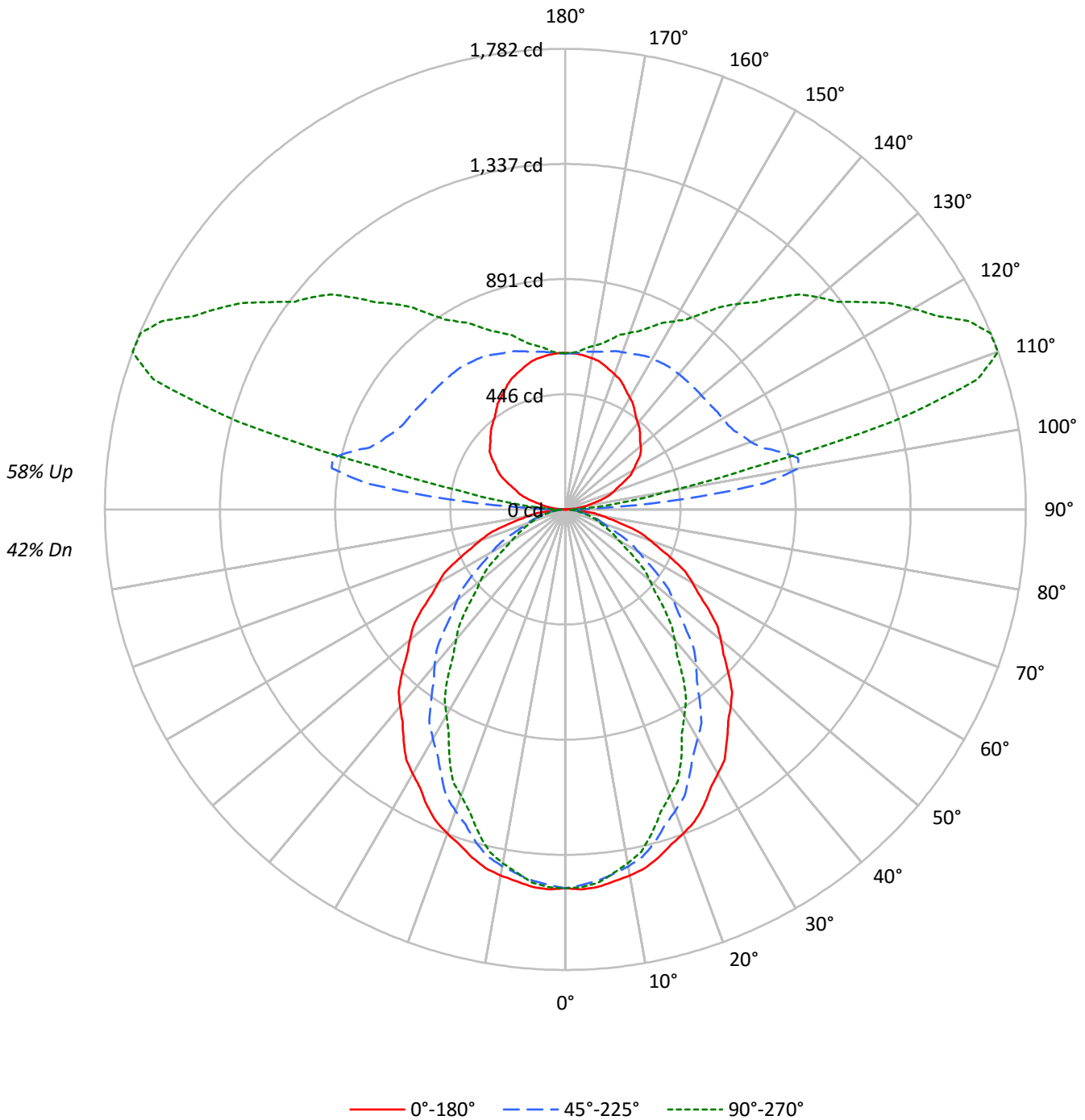
Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42				
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	44	43	42	36				
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36	31				
3	81	71	64	59	73	66	60	55	55	50	46	44	41	39	35	33	31	27				
4	74	63	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27	23				
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24	20				
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21	18				
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19	16				
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17	15				
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15	13				
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	23675	23675	23675
5°	23765	23378	23506
10°	23582	22996	22799
15°	23311	22313	21670
20°	22936	21340	20270
25°	22552	20236	18912
30°	22018	19099	17169
35°	21498	17864	15640
40°	20976	16585	13873
45°	20361	15150	12271
50°	19733	13700	10698
55°	19088	12141	9188
60°	18338	10498	7627
65°	17490	8821	6946
70°	16475	7265	6387
75°	15234	6625	5958
80°	13445	5923	5430
85°	10578	4668	4668



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.2	1.9
10°-20°	376.8	5.2
20°-30°	529.2	7.3
30°-40°	577.1	8.0
40°-50°	530.6	7.3
50°-60°	416.7	5.8
60°-70°	271.7	3.8
70°-80°	140.1	1.9
80°-90°	41.8	0.6
90°-100°	241.5	3.3
100°-110°	819.6	11.3
110°-120°	870.7	12.1
120°-130°	716.8	9.9
130°-140°	575.6	8.0
140°-150°	435.0	6.0
150°-160°	305.7	4.2
160°-170°	180.0	2.5
170°-180°	58.6	0.8
0°-30°	1043.3	14.4
0°-40°	1620.3	22.4
0°-60°	2567.6	35.5
0°-90°	3021.2	41.8
90°-120°	1931.9	26.7
90°-150°	3659.3	50.6
90°-180°	4204.0	58.2
0°-180°	7224.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1466	1466	1466	1466	1466	
5°	1466	1459	1442	1453	1450	139
15°	1395	1378	1335	1310	1296	393
25°	1266	1221	1136	1083	1062	582
35°	1091	1020	906	826	794	682
45°	892	800	664	573	537	688
55°	678	572	431	355	326	606
65°	458	350	231	188	182	454
75°	244	154	106	97	96	258
85°	57	31	25	25	25	67
90°	1	16	40	38	38	5
95°	41	100	455	172	132	43
105°	142	214	861	1539	1309	151
115°	250	315	720	1486	1723	248
125°	348	412	692	1204	1398	309
135°	409	488	684	1012	1158	316
145°	467	537	681	845	925	293
155°	531	573	661	748	777	244
165°	578	596	633	671	682	163
175°	603	604	609	616	614	57
180°	604	604	604	604	604	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3
2.5°	1471.6	1470.4	1469.2	1468.0	1466.9	1465.0	1462.4	1459.8	1457.2	1454.6	1457.0
5°	1466.3	1464.8	1463.3	1461.8	1460.4	1457.7	1453.9	1450.1	1446.2	1442.4	1445.0
7.5°	1451.1	1449.3	1447.5	1445.7	1443.8	1440.7	1436.2	1431.7	1427.2	1422.7	1423.5
10°	1438.4	1436.3	1434.3	1432.2	1430.1	1426.2	1420.3	1414.4	1408.5	1402.6	1401.7
12.5°	1422.5	1419.9	1417.4	1414.9	1412.3	1407.3	1399.7	1392.2	1384.6	1377.1	1375.5
15°	1394.6	1391.4	1388.1	1384.9	1381.6	1375.0	1365.0	1355.0	1344.9	1334.9	1329.3
17.5°	1360.4	1355.4	1350.5	1345.5	1340.6	1331.7	1318.8	1305.9	1293.1	1280.2	1273.6
20°	1334.9	1329.0	1323.1	1317.2	1311.3	1301.0	1286.2	1271.5	1256.8	1242.0	1234.6
22.5°	1307.3	1300.7	1294.1	1287.5	1280.9	1269.3	1252.6	1236.0	1219.4	1202.7	1193.2
25°	1265.9	1256.5	1247.0	1237.6	1228.2	1213.7	1194.2	1174.8	1155.3	1135.9	1123.8
27.5°	1216.0	1205.7	1195.5	1185.2	1175.0	1158.9	1136.9	1115.0	1093.0	1071.1	1057.0
30°	1181.0	1169.8	1158.6	1147.4	1136.2	1118.8	1095.2	1071.6	1048.0	1024.4	1009.4
32.5°	1147.0	1133.9	1120.8	1107.7	1094.6	1076.1	1052.0	1027.9	1003.9	979.8	962.7
35°	1090.7	1075.7	1060.7	1045.6	1030.6	1010.1	984.1	958.2	932.3	906.3	887.7
37.5°	1034.5	1018.0	1001.5	984.9	968.4	946.3	918.7	891.0	863.4	835.7	815.2
40°	995.2	977.5	959.8	942.1	924.4	901.3	872.7	844.1	815.5	786.9	765.9
42.5°	954.9	936.2	917.6	899.0	880.3	856.2	826.7	797.1	767.6	738.0	716.4
45°	891.7	871.9	852.2	832.4	812.7	787.3	756.4	725.4	694.4	663.5	642.5
47.5°	830.1	809.2	788.3	767.3	746.4	719.9	688.0	656.0	624.0	592.1	571.3
50°	785.6	764.6	743.7	722.7	701.8	675.1	642.7	610.2	577.8	545.4	525.0
52.5°	742.0	720.1	698.3	676.4	654.5	627.7	596.0	564.2	532.5	500.8	481.1
55°	678.1	655.1	632.1	609.1	586.1	558.6	526.8	494.9	463.1	431.3	413.6
57.5°	612.5	588.9	565.3	541.7	518.2	491.1	460.4	429.8	399.2	368.6	352.4
60°	567.9	544.3	520.8	497.2	473.6	446.6	416.2	385.8	355.5	325.1	310.1
62.5°	524.4	500.8	477.2	453.6	430.0	403.8	374.8	345.9	316.9	287.9	273.6
65°	457.8	433.9	410.0	386.1	362.3	337.0	310.5	284.0	257.4	230.9	220.9
67.5°	393.6	369.9	346.2	322.4	298.7	274.9	251.1	227.2	203.3	179.4	174.8
70°	349.0	326.0	303.0	280.0	257.0	235.3	215.0	194.6	174.3	153.9	151.0
72.5°	306.5	284.5	262.4	240.4	218.3	199.1	182.8	166.4	150.1	133.8	131.3
75°	244.2	223.5	202.9	182.2	161.6	146.3	136.2	126.2	116.2	106.2	104.1
77.5°	182.9	164.7	146.6	128.5	110.4	99.0	94.1	89.3	84.5	79.6	78.4
80°	144.6	129.6	114.6	99.5	84.5	75.5	72.5	69.6	66.6	63.7	62.5
82.5°	109.6	97.9	86.1	74.4	62.7	55.8	53.8	51.8	49.8	47.8	47.1
85°	57.1	50.9	44.7	38.5	32.3	28.8	27.9	27.0	26.1	25.2	25.2
87.5°	17.2	16.0	15.1	13.6	12.2	12.0	13.1	14.8	16.2	16.4	15.9
90°	1.2	4.6	9.3	11.6	13.9	17.4	23.2	31.4	38.3	39.5	38.3
92.5°	14.2	20.4	28.8	33.9	41.8	52.7	79.0	115.9	148.9	151.0	127.6
95°	40.7	45.3	56.9	67.4	86.0	113.8	167.3	268.3	403.1	455.4	398.5
97.5°	66.2	72.5	84.8	100.6	122.0	153.6	220.7	361.5	585.5	777.4	815.5
100°	89.4	92.9	103.4	122.0	145.2	177.7	239.3	381.0	631.9	917.7	1085.0
102.5°	110.8	113.4	123.8	142.4	166.6	199.1	256.0	382.0	614.3	922.4	1185.4
105°	141.7	146.4	154.5	171.9	197.5	230.0	284.6	388.0	579.7	860.8	1169.8
107.5°	175.2	178.9	186.8	202.8	228.2	260.9	313.9	404.0	562.5	794.8	1067.8
110°	197.5	202.1	209.1	224.2	248.6	282.3	333.4	417.0	558.8	763.2	1003.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	217.9	222.6	230.5	244.6	268.1	302.7	352.0	431.0	559.7	742.8	959.1
115°	249.8	255.6	262.5	276.5	299.7	331.1	381.0	451.9	564.6	720.2	903.8
117.5°	282.8	287.4	294.4	306.7	329.0	361.5	407.7	474.2	572.9	709.3	868.9
120°	303.2	307.8	314.8	325.3	348.5	381.0	426.3	489.1	578.5	702.8	850.3
122.5°	322.7	326.4	333.4	344.8	368.0	401.5	444.0	502.1	585.0	699.1	834.5
125°	348.5	352.0	359.0	372.9	396.1	428.7	470.5	522.8	594.8	692.4	812.0
127.5°	368.9	373.6	383.4	398.7	421.0	454.4	495.1	542.0	604.8	688.4	791.1
130°	381.0	385.7	397.3	413.6	436.8	469.3	510.0	554.1	612.2	686.5	777.2
132.5°	392.2	397.8	410.3	427.5	451.7	484.2	523.0	566.2	619.6	685.6	766.0
135°	408.9	413.6	427.5	444.9	471.6	504.2	541.3	582.0	628.5	684.2	750.4
137.5°	424.7	430.3	444.2	462.8	489.3	519.5	556.2	594.1	636.4	684.0	739.5
140°	436.8	441.4	455.4	474.0	499.5	529.7	564.6	600.6	640.1	683.1	733.0
142.5°	448.9	452.6	465.6	484.2	508.8	537.2	571.1	606.2	642.9	683.1	726.5
145°	467.0	471.6	483.3	500.7	523.9	549.5	580.8	613.4	645.9	680.7	717.9
147.5°	486.5	490.0	501.1	517.2	536.5	559.2	588.7	617.3	646.8	676.6	709.1
150°	499.5	503.0	512.3	527.4	544.8	565.7	592.5	619.2	645.9	673.8	701.6
152.5°	512.5	514.2	523.4	536.7	553.2	572.2	596.2	620.1	644.0	669.1	695.1
155°	530.9	532.0	539.0	551.8	564.6	582.0	601.7	621.5	641.2	661.0	683.1
157.5°	546.2	547.4	553.0	564.1	574.3	589.0	605.7	621.5	635.9	652.6	671.7
160°	556.4	557.6	562.2	571.5	580.8	593.6	607.6	621.5	633.1	647.1	663.3
162.5°	566.7	566.0	570.6	578.0	586.4	596.4	608.5	620.6	630.3	642.4	655.9
165°	578.5	577.4	579.7	586.6	592.5	599.4	609.9	618.0	625.0	633.1	643.6
167.5°	588.3	586.9	589.0	593.4	597.6	602.0	609.6	616.4	619.6	625.0	631.5
170°	594.8	592.5	593.6	597.1	599.4	602.9	608.7	614.5	616.8	620.3	625.0
172.5°	598.5	597.1	596.4	599.9	601.3	603.8	607.8	611.7	613.1	614.8	618.5
175°	602.9	601.7	600.6	602.9	602.9	604.1	606.4	608.7	607.6	608.7	609.9
177.5°	605.0	603.1	602.2	604.1	604.1	604.1	605.0	606.9	605.0	604.1	605.0
180°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3
2.5°	1459.3	1461.7	1464.0	1465.0	1464.5	1464.0	1463.6	1463.1
5°	1447.7	1450.3	1453.0	1453.9	1453.0	1452.1	1451.2	1450.3
7.5°	1424.3	1425.0	1425.8	1425.4	1423.9	1422.4	1420.8	1419.3
10°	1400.8	1399.9	1399.0	1397.7	1395.9	1394.2	1392.4	1390.6
12.5°	1373.9	1372.3	1370.7	1368.5	1365.5	1362.6	1359.6	1356.7
15°	1323.7	1318.1	1312.5	1308.2	1305.3	1302.3	1299.4	1296.4
17.5°	1266.9	1260.2	1253.6	1247.7	1242.6	1237.6	1232.5	1227.4
20°	1227.3	1219.9	1212.5	1205.6	1199.1	1192.6	1186.1	1179.7
22.5°	1183.8	1174.3	1164.8	1157.6	1152.8	1147.9	1143.1	1138.3
25°	1111.7	1099.6	1087.5	1079.2	1074.8	1070.4	1066.0	1061.6
27.5°	1042.9	1028.8	1014.7	1004.2	997.2	990.1	983.1	976.1
30°	994.3	979.3	964.2	952.7	944.8	936.8	928.9	920.9
32.5°	945.5	928.3	911.2	898.8	891.4	883.9	876.4	868.9
35°	869.1	850.6	832.0	819.5	813.0	806.5	800.0	793.5
37.5°	794.8	774.3	753.9	739.9	732.5	725.0	717.6	710.2
40°	745.0	724.1	703.1	688.8	681.2	673.5	665.8	658.2
42.5°	694.8	673.1	651.5	636.9	629.5	622.1	614.6	607.2
45°	621.6	600.7	579.7	565.7	558.6	551.6	544.5	537.4
47.5°	550.4	529.6	508.8	495.2	488.8	482.3	475.9	469.5
50°	504.7	484.3	464.0	450.7	444.5	438.3	432.1	425.9
52.5°	461.5	441.9	422.2	409.6	403.8	398.1	392.4	386.7
55°	395.9	378.2	360.5	348.8	343.2	337.6	332.0	326.4
57.5°	336.2	320.0	303.8	293.3	288.6	283.8	279.1	274.4
60°	295.0	280.0	264.9	255.1	250.3	245.6	240.9	236.2
62.5°	259.3	245.0	230.6	222.0	219.2	216.4	213.5	210.7
65°	210.8	200.8	190.8	185.3	184.4	183.6	182.7	181.8
67.5°	170.2	165.6	161.0	158.2	157.3	156.3	155.4	154.5
70°	148.0	145.1	142.1	140.1	138.9	137.7	136.5	135.3
72.5°	128.8	126.3	123.8	122.3	121.5	120.8	120.1	119.4
75°	102.0	100.0	97.9	96.7	96.4	96.1	95.8	95.5
77.5°	77.3	76.1	74.9	74.1	73.6	73.1	72.7	72.2
80°	61.3	60.2	59.0	58.4	58.4	58.4	58.4	58.4
82.5°	46.4	45.6	44.9	44.6	44.6	44.6	44.6	44.6
85°	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2
87.5°	15.5	14.8	15.0	15.1	15.1	15.1	15.1	15.1
90°	37.2	34.9	37.2	38.3	38.3	38.3	38.3	38.3
92.5°	101.3	86.9	77.1	69.9	69.0	65.3	66.2	64.4
95°	304.4	233.5	184.7	159.1	144.0	134.8	131.3	132.4
97.5°	710.2	581.1	455.4	371.5	316.0	287.4	270.4	260.7
100°	1060.6	916.6	757.4	616.8	520.4	470.5	436.8	415.9
102.5°	1290.2	1257.6	1141.2	992.3	887.5	802.3	760.2	731.9
105°	1411.4	1542.7	1557.8	1519.5	1447.4	1375.4	1325.5	1309.2
107.5°	1324.1	1521.8	1642.6	1698.8	1707.9	1703.9	1693.9	1672.3
110°	1248.8	1456.7	1605.4	1700.7	1750.6	1772.7	1783.2	1782.0



TEST NUMBER: P331734

CATALOG NUMBER: SA2XXRDIP-C865D1080U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1180.0	1379.6	1538.5	1647.7	1717.2	1754.1	1773.9	1780.1
115°	1095.5	1274.4	1426.5	1546.2	1628.7	1682.1	1712.3	1722.8
117.5°	1031.8	1188.9	1326.9	1439.1	1523.2	1579.6	1611.5	1620.3
120°	1000.2	1144.2	1267.4	1373.1	1454.4	1509.0	1542.7	1554.3
122.5°	975.1	1107.1	1223.7	1319.2	1392.1	1445.8	1475.8	1485.5
125°	938.6	1058.3	1160.5	1247.6	1315.0	1359.2	1388.2	1397.5
127.5°	902.6	1010.9	1107.3	1187.7	1246.5	1287.8	1312.9	1320.4
130°	879.4	979.3	1071.1	1147.7	1204.7	1244.2	1267.4	1276.7
132.5°	857.1	949.6	1033.9	1105.9	1161.9	1201.4	1222.8	1231.1
135°	825.9	902.6	979.3	1044.3	1094.3	1132.6	1153.5	1158.2
137.5°	801.1	865.2	926.1	982.8	1028.3	1061.3	1079.7	1086.6
140°	785.3	841.1	894.5	945.6	982.8	1013.0	1030.4	1037.4
142.5°	772.3	819.7	865.7	908.4	943.7	971.2	986.7	988.1
145°	753.9	792.3	828.3	862.0	889.8	909.6	921.2	924.7
147.5°	739.8	770.0	798.1	822.7	845.7	861.5	869.4	871.5
150°	729.5	755.1	779.5	800.4	817.8	831.8	838.7	839.9
152.5°	719.3	743.0	763.7	781.8	795.5	807.6	812.7	812.9
155°	705.1	723.7	741.1	753.9	766.7	774.8	779.5	777.2
157.5°	688.6	704.2	718.8	728.8	737.9	744.6	746.7	746.7
160°	678.4	691.2	704.0	712.1	720.2	726.0	727.2	727.2
162.5°	668.2	679.1	690.0	696.3	704.4	708.4	709.5	708.6
165°	652.9	661.0	669.1	673.8	678.4	683.1	683.1	681.9
167.5°	638.2	644.5	650.1	654.3	656.3	658.9	658.7	657.3
170°	630.8	634.3	638.9	641.2	642.4	645.9	644.7	642.4
172.5°	622.4	625.0	628.7	630.1	631.3	632.9	631.7	630.3
175°	613.4	614.5	615.7	616.8	616.8	618.0	616.8	614.5
177.5°	606.9	606.9	607.8	607.8	607.8	607.8	606.9	605.0
180°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1

(END OF REPORT)