

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: P331728-840

Luminaire Tested: **SA2XXRDIP-C865D925U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331728-840
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-C865D925U840-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 925 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

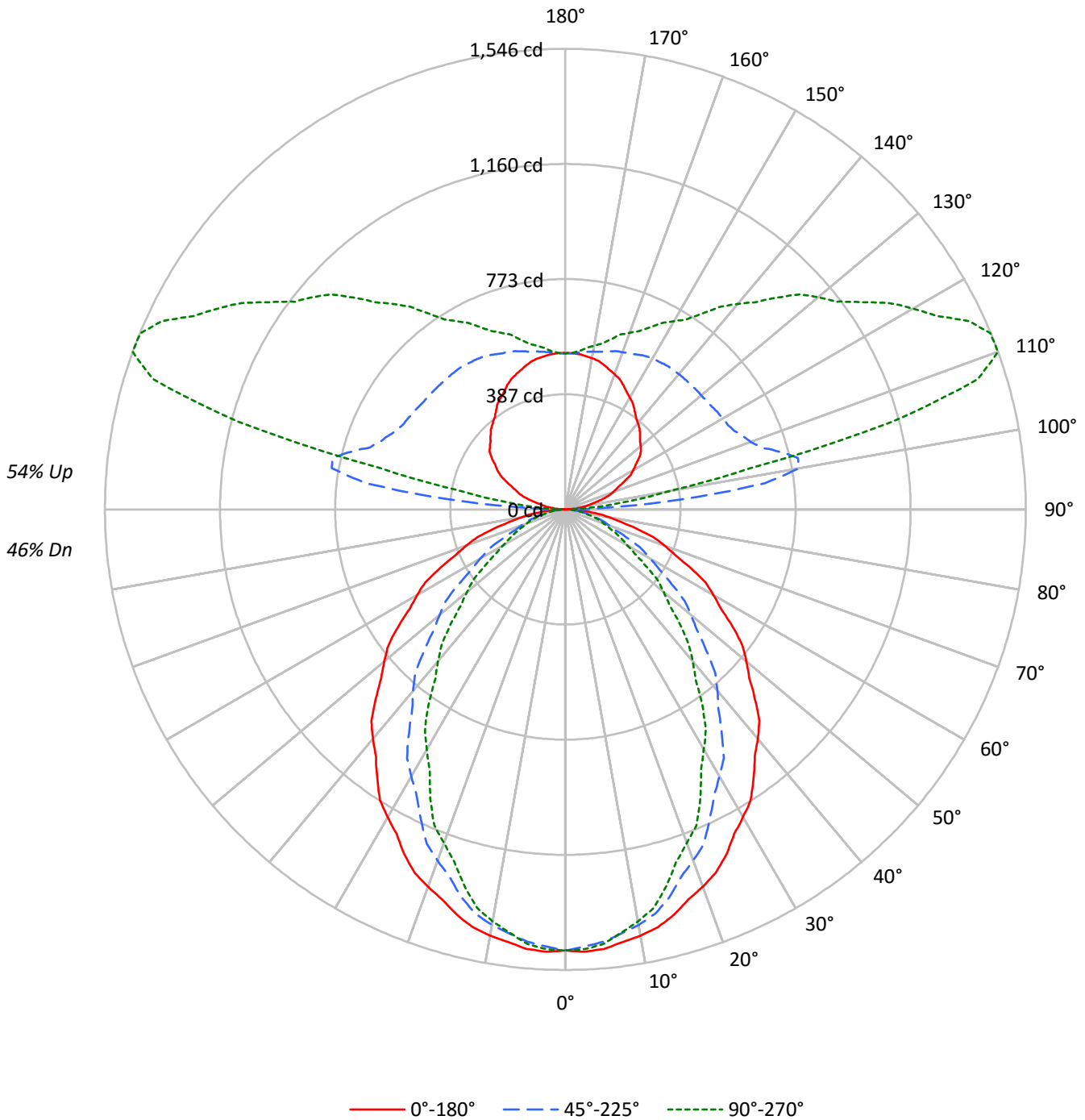
Lumens per Lamp: N/A
Luminaire Lumens: 6697.2 lumens
Efficiency: N/A
Efficacy: 110.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 60.5
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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	46				46
1	97	93	89	86	89	86	82	80	71	69	67	59	57	56	47	46	45				39	
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	42	40	38				34	
3	81	72	65	60	74	67	61	56	56	52	48	46	43	40	37	35	33				29	
4	75	64	57	51	68	59	53	48	50	45	41	42	38	35	34	31	29				25	
5	69	57	50	44	63	53	46	41	45	40	36	37	34	31	30	28	25				22	
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23				20	
7	59	47	39	34	54	43	37	32	37	32	28	31	27	24	25	23	20				18	
8	54	42	35	30	50	40	33	28	34	29	25	28	24	22	23	21	18				16	
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17				14	
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15				13	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	23909	23909	23909
5°	24000	23608	23738
10°	23815	23222	23023
15°	23542	22534	21884
20°	23163	21551	20469
25°	22775	20436	19099
30°	22236	19287	17339
35°	21711	18039	15794
40°	21182	16750	14010
45°	20562	15299	12392
50°	19926	13835	10803
55°	19277	12262	9278
60°	18519	10601	7702
65°	17662	8909	7014
70°	16636	7336	6449
75°	15384	6687	6014
80°	13575	5979	5486
85°	10689	4705	4705



TEST NUMBER: P331728-840

CATALOG NUMBER: SA2XXRDIP-C865D925U840-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.6	2.1
10°-20°	380.6	5.7
20°-30°	534.4	8.0
30°-40°	582.7	8.7
40°-50°	535.8	8.0
50°-60°	420.8	6.3
60°-70°	274.4	4.1
70°-80°	141.5	2.1
80°-90°	41.4	0.6
90°-100°	209.6	3.1
100°-110°	711.1	10.6
110°-120°	755.5	11.3
120°-130°	621.9	9.3
130°-140°	499.4	7.5
140°-150°	377.4	5.6
150°-160°	265.2	4.0
160°-170°	156.1	2.3
170°-180°	50.8	0.8
0°-30°	1053.6	15.7
0°-40°	1636.3	24.4
0°-60°	2593.0	38.7
0°-90°	3050.2	45.5
90°-120°	1676.1	25.0
90°-150°	3174.8	47.4
90°-180°	3647.0	54.5
0°-180°	6697.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1481	1481	1481	1481	1481	
5°	1481	1473	1457	1468	1465	140
15°	1408	1392	1348	1323	1309	397
25°	1278	1233	1147	1094	1072	588
35°	1102	1030	915	834	801	689
45°	900	808	670	578	543	695
55°	685	578	436	358	330	612
65°	462	353	233	190	184	458
75°	247	155	107	98	96	261
85°	58	31	25	25	25	68
90°	1	14	34	33	33	4
95°	35	87	395	149	115	37
105°	123	185	747	1335	1136	131
115°	217	274	625	1290	1495	215
125°	302	358	601	1045	1212	268
135°	355	423	594	878	1005	274
145°	405	466	591	733	802	254
155°	461	497	574	649	674	212
165°	502	517	549	583	592	141
175°	523	524	528	535	533	50
180°	524	524	524	524	524	



TEST NUMBER: P331728-840

CATALOG NUMBER: SA2XXRDIP-C865D925U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1486.1	1484.9	1483.7	1482.5	1481.4	1479.5	1476.8	1474.2	1471.6	1468.9	1471.4
5°	1480.8	1479.3	1477.7	1476.2	1474.8	1472.1	1468.2	1464.4	1460.5	1456.6	1459.3
7.5°	1465.4	1463.6	1461.8	1460.0	1458.0	1454.9	1450.4	1445.8	1441.3	1436.7	1437.5
10°	1452.6	1450.5	1448.4	1446.3	1444.2	1440.3	1434.3	1428.4	1422.4	1416.4	1415.5
12.5°	1436.5	1433.9	1431.4	1428.9	1426.2	1421.2	1413.5	1405.9	1398.3	1390.7	1389.1
15°	1408.4	1405.1	1401.8	1398.6	1395.2	1388.6	1378.5	1368.4	1358.2	1348.1	1342.4
17.5°	1373.8	1368.8	1363.8	1358.8	1353.8	1344.8	1331.8	1318.8	1305.9	1292.8	1286.2
20°	1348.1	1342.1	1336.2	1330.2	1324.2	1313.8	1298.9	1284.0	1269.2	1254.3	1246.8
22.5°	1320.2	1313.5	1306.9	1300.2	1293.5	1281.8	1265.0	1248.2	1231.4	1214.6	1205.0
25°	1278.4	1268.9	1259.3	1249.8	1240.3	1225.7	1206.0	1186.4	1166.7	1147.1	1134.9
27.5°	1228.0	1217.6	1207.3	1196.9	1186.6	1170.3	1148.1	1126.0	1103.8	1081.7	1067.4
30°	1192.7	1181.3	1170.0	1158.7	1147.4	1129.8	1106.0	1082.2	1058.3	1034.5	1019.4
32.5°	1158.3	1145.1	1131.9	1118.6	1105.4	1086.7	1062.4	1038.0	1013.8	989.5	972.2
35°	1101.5	1086.3	1071.2	1055.9	1040.8	1020.1	993.8	967.7	941.5	915.2	896.5
37.5°	1044.7	1028.0	1011.4	994.6	978.0	955.6	927.8	899.8	871.9	843.9	823.2
40°	1005.0	987.1	969.3	951.4	933.5	910.2	881.3	852.4	823.5	794.7	773.5
42.5°	964.3	945.4	926.7	907.9	889.0	864.6	834.9	805.0	775.2	745.3	723.5
45°	900.5	880.5	860.6	840.6	820.7	795.1	763.9	732.6	701.3	670.0	648.8
47.5°	838.3	817.2	796.1	774.9	753.8	727.0	694.8	662.5	630.2	597.9	576.9
50°	793.3	772.1	751.0	729.8	708.7	681.8	649.0	616.2	583.5	550.8	530.2
52.5°	749.3	727.2	705.2	683.1	661.0	633.9	601.9	569.8	537.8	505.7	485.8
55°	684.8	661.6	638.3	615.1	591.9	564.1	532.0	499.8	467.7	435.6	417.7
57.5°	618.5	594.7	570.9	547.0	523.3	495.9	464.9	434.0	403.1	372.2	355.9
60°	573.5	549.7	525.9	502.1	478.3	451.0	420.3	389.6	359.0	328.3	313.2
62.5°	529.6	505.7	481.9	458.1	434.2	407.8	378.5	349.3	320.0	290.7	276.3
65°	462.3	438.2	414.0	389.9	365.9	340.3	313.6	286.8	259.9	233.2	223.1
67.5°	397.5	373.5	349.6	325.6	301.6	277.6	253.6	229.4	205.3	181.2	176.5
70°	352.4	329.2	306.0	282.8	259.5	237.6	217.1	196.5	176.0	155.4	152.5
72.5°	309.5	287.3	265.0	242.8	220.5	201.1	184.6	168.0	151.6	135.1	132.6
75°	246.6	225.7	204.9	184.0	163.2	147.7	137.5	127.4	117.3	107.2	105.1
77.5°	184.7	166.3	148.0	129.8	111.5	100.0	95.0	90.2	85.3	80.4	79.2
80°	146.0	130.9	115.7	100.5	85.3	76.2	73.2	70.3	67.3	64.3	63.1
82.5°	110.7	98.9	86.9	75.1	63.3	56.4	54.3	52.3	50.3	48.3	47.6
85°	57.7	51.4	45.1	38.9	32.6	29.1	28.2	27.3	26.4	25.4	25.4
87.5°	17.4	16.1	14.9	13.4	11.9	11.6	12.6	14.0	15.2	15.5	14.9
90°	1.0	4.0	8.1	10.1	12.1	15.1	20.2	27.2	33.2	34.2	33.2
92.5°	12.3	17.8	25.0	29.4	36.3	45.7	68.6	100.6	129.2	131.0	110.7
95°	35.2	39.3	49.4	58.5	74.6	98.8	145.1	232.8	349.7	395.1	345.7
97.5°	57.5	62.9	73.6	87.3	105.8	133.2	191.5	313.7	508.0	674.5	707.5
100°	77.6	80.6	89.7	105.8	126.0	154.2	207.6	330.6	548.3	796.2	941.4
102.5°	96.1	98.4	107.4	123.6	144.5	172.8	222.2	331.4	533.0	800.2	1028.4
105°	123.0	127.0	134.0	149.2	171.4	199.5	246.9	336.6	502.9	746.8	1014.9
107.5°	152.0	155.2	162.1	176.0	197.9	226.4	272.4	350.5	488.0	689.6	926.5
110°	171.4	175.4	181.4	194.5	215.7	244.9	289.2	361.8	484.8	662.2	870.8



TEST NUMBER: P331728-840

CATALOG NUMBER: SA2XXRDIP-C865D925U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	189.0	193.1	200.0	212.3	232.6	262.7	305.4	374.0	485.5	644.4	832.1
115°	216.7	221.8	227.8	239.8	260.0	287.2	330.6	392.0	489.8	624.9	784.2
117.5°	245.3	249.3	255.4	266.1	285.4	313.7	353.8	411.4	497.1	615.4	753.9
120°	263.1	267.1	273.2	282.2	302.4	330.6	369.9	424.3	501.9	609.8	737.8
122.5°	280.0	283.2	289.2	299.1	319.3	348.3	385.2	435.6	507.6	606.5	724.1
125°	302.4	305.4	311.4	323.6	343.7	371.9	408.2	453.5	516.0	600.7	704.5
127.5°	320.1	324.2	332.5	345.9	365.3	394.3	429.6	470.3	524.7	597.2	686.4
130°	330.6	334.6	344.7	358.8	379.0	407.2	442.4	480.8	531.2	595.6	674.3
132.5°	340.2	345.1	356.0	370.9	391.8	420.1	453.7	491.2	537.6	594.8	664.6
135°	354.8	358.8	370.9	386.0	409.2	437.4	469.7	504.9	545.2	593.6	651.1
137.5°	368.5	373.3	385.4	401.5	424.5	450.7	482.6	515.4	552.1	593.4	641.6
140°	379.0	383.0	395.1	411.2	433.4	459.6	489.8	521.1	555.3	592.6	636.0
142.5°	389.4	392.6	403.9	420.1	441.4	466.1	495.4	525.9	557.7	592.6	630.4
145°	405.2	409.2	419.3	434.4	454.5	476.8	503.9	532.2	560.4	590.6	622.9
147.5°	422.1	425.2	434.7	448.7	465.4	485.2	510.8	535.6	561.2	587.0	615.2
150°	433.4	436.4	444.4	457.6	472.7	490.8	514.0	537.1	560.4	584.6	608.7
152.5°	444.6	446.1	454.1	465.6	480.0	496.4	517.3	538.0	558.8	580.6	603.1
155°	460.6	461.6	467.7	478.8	489.8	504.9	522.1	539.2	556.3	573.5	592.6
157.5°	473.9	474.9	479.8	489.4	498.3	511.0	525.5	539.2	551.7	566.2	582.8
160°	482.8	483.8	487.8	495.8	503.9	515.0	527.1	539.2	549.3	561.4	575.5
162.5°	491.6	491.0	495.0	501.5	508.8	517.5	528.0	538.4	546.8	557.3	569.1
165°	501.9	500.9	502.9	509.0	514.0	520.1	529.2	536.2	542.2	549.3	558.4
167.5°	510.4	509.2	511.0	514.8	518.5	522.3	529.0	534.8	537.6	542.2	547.9
170°	516.0	514.0	515.0	518.1	520.1	523.1	528.2	533.2	535.2	538.2	542.2
172.5°	519.3	518.1	517.5	520.5	521.7	523.9	527.4	530.8	532.0	533.4	536.6
175°	523.1	522.1	521.1	523.1	523.1	524.1	526.1	528.2	527.1	528.2	529.2
177.5°	524.9	523.3	522.5	524.1	524.1	524.1	524.9	526.5	524.9	524.1	524.9
180°	524.1	524.1	524.1	524.1	524.1	524.1	524.1	524.1	524.1	524.1	524.1



TEST NUMBER: P331728-840
 CATALOG NUMBER: SA2XXRDIP-C865D925U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1473.7	1476.1	1478.4	1479.5	1478.9	1478.4	1478.0	1477.5
5°	1462.0	1464.6	1467.3	1468.2	1467.3	1466.4	1465.5	1464.6
7.5°	1438.4	1439.1	1439.9	1439.5	1437.9	1436.4	1434.8	1433.3
10°	1414.6	1413.7	1412.8	1411.5	1409.7	1408.0	1406.1	1404.3
12.5°	1387.5	1385.8	1384.2	1382.0	1379.0	1376.0	1373.0	1370.1
15°	1336.8	1331.1	1325.4	1321.1	1318.2	1315.1	1312.2	1309.2
17.5°	1279.4	1272.6	1266.0	1260.0	1254.9	1249.8	1244.7	1239.5
20°	1239.4	1231.9	1224.5	1217.5	1210.9	1204.4	1197.8	1191.3
22.5°	1195.5	1185.9	1176.3	1169.0	1164.2	1159.2	1154.4	1149.5
25°	1122.7	1110.4	1098.2	1089.8	1085.4	1081.0	1076.5	1072.1
27.5°	1053.2	1038.9	1024.7	1014.1	1007.0	999.9	992.8	985.7
30°	1004.1	989.0	973.7	962.1	954.1	946.0	938.1	930.0
32.5°	954.8	937.5	920.2	907.7	900.2	892.6	885.0	877.5
35°	877.7	859.0	840.2	827.6	821.0	814.5	807.9	801.3
37.5°	802.6	781.9	761.3	747.2	739.7	732.2	724.7	717.2
40°	752.3	731.2	710.0	695.6	687.9	680.1	672.4	664.7
42.5°	701.7	679.7	657.9	643.2	635.7	628.2	620.7	613.2
45°	627.7	606.6	585.4	571.3	564.1	557.0	549.9	542.7
47.5°	555.8	534.8	513.8	500.1	493.6	487.1	480.6	474.1
50°	509.7	489.1	468.6	455.1	448.9	442.6	436.4	430.1
52.5°	466.1	446.3	426.4	413.6	407.8	402.0	396.3	390.5
55°	399.8	381.9	364.1	352.2	346.6	340.9	335.3	329.6
57.5°	339.5	323.2	306.8	296.2	291.4	286.6	281.9	277.1
60°	297.9	282.8	267.5	257.6	252.8	248.0	243.3	238.5
62.5°	261.9	247.4	232.9	224.2	221.4	218.5	215.6	212.8
65°	212.9	202.8	192.7	187.1	186.2	185.4	184.5	183.6
67.5°	171.9	167.2	162.6	159.8	158.9	157.8	156.9	156.0
70°	149.5	146.5	143.5	141.5	140.3	139.1	137.8	136.6
72.5°	130.1	127.5	125.0	123.5	122.7	122.0	121.3	120.6
75°	103.0	101.0	98.9	97.7	97.4	97.0	96.7	96.4
77.5°	78.1	76.9	75.6	74.8	74.3	73.8	73.4	72.9
80°	61.9	60.8	59.6	59.0	59.0	59.0	59.0	59.0
82.5°	46.9	46.0	45.3	45.0	45.0	45.0	45.0	45.0
85°	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4
87.5°	14.5	13.9	14.0	14.1	14.1	14.1	14.1	14.1
90°	32.2	30.2	32.2	33.2	33.2	33.2	33.2	33.2
92.5°	87.9	75.4	67.0	60.7	59.9	56.7	57.5	55.8
95°	264.1	202.6	160.3	138.0	125.0	116.9	113.9	114.9
97.5°	616.2	504.1	395.1	322.3	274.2	249.3	234.6	226.2
100°	920.2	795.2	657.1	535.2	451.5	408.2	379.0	360.8
102.5°	1119.3	1091.2	990.2	860.9	770.0	696.0	659.5	635.0
105°	1224.6	1338.5	1351.6	1318.3	1255.8	1193.4	1149.9	1135.9
107.5°	1148.8	1320.3	1425.1	1473.9	1481.8	1478.3	1469.7	1451.0
110°	1083.5	1263.8	1392.9	1475.5	1518.8	1538.0	1547.1	1546.1



TEST NUMBER: P331728-840

CATALOG NUMBER: SA2XXRDIP-C865D925U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1023.8	1197.0	1334.8	1429.6	1489.9	1521.9	1539.0	1544.5
115°	950.4	1105.6	1237.7	1341.5	1413.0	1459.4	1485.6	1494.7
117.5°	895.1	1031.5	1151.1	1248.6	1321.5	1370.5	1398.2	1405.7
120°	867.8	992.8	1099.5	1191.3	1261.8	1309.2	1338.5	1348.6
122.5°	846.0	960.5	1061.7	1144.6	1207.8	1254.4	1280.4	1288.9
125°	814.4	918.2	1006.8	1082.5	1140.9	1179.2	1204.4	1212.4
127.5°	783.2	877.1	960.7	1030.5	1081.5	1117.3	1139.1	1145.6
130°	763.0	849.6	929.3	995.8	1045.2	1079.4	1099.5	1107.6
132.5°	743.6	823.8	897.0	959.5	1008.0	1042.4	1060.9	1068.1
135°	716.6	783.2	849.6	906.1	949.4	982.7	1000.8	1004.8
137.5°	695.0	750.6	803.4	852.6	892.2	920.8	936.8	942.8
140°	681.4	729.7	776.1	820.4	852.6	878.9	894.0	900.0
142.5°	670.0	711.1	751.0	788.2	818.8	842.6	856.1	857.3
145°	654.1	687.4	718.6	747.8	772.0	789.2	799.2	802.2
147.5°	641.8	668.0	692.4	713.8	733.8	747.4	754.3	756.1
150°	633.0	655.1	676.3	694.4	709.5	721.6	727.7	728.7
152.5°	624.1	644.6	662.6	678.3	690.1	700.6	705.1	705.3
155°	611.8	627.9	643.0	654.1	665.2	672.3	676.3	674.3
157.5°	597.4	611.0	623.7	632.4	640.2	646.0	647.8	647.8
160°	588.5	599.7	610.8	617.8	624.9	630.0	631.0	631.0
162.5°	579.8	589.2	598.6	604.1	611.2	614.6	615.6	614.8
165°	566.4	573.5	580.6	584.6	588.5	592.6	592.6	591.6
167.5°	553.7	559.2	564.0	567.6	569.5	571.7	571.5	570.3
170°	547.2	550.3	554.3	556.3	557.3	560.4	559.4	557.3
172.5°	540.0	542.2	545.4	546.6	547.6	549.1	548.1	546.8
175°	532.2	533.2	534.2	535.2	535.2	536.2	535.2	533.2
177.5°	526.5	526.5	527.4	527.4	527.4	527.4	526.5	524.9
180°	524.1	524.1	524.1	524.1	524.1	524.1	524.1	524.1

(END OF REPORT)