

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: P331831-840

Luminaire Tested: **S122RDIW-S865D710U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331831-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122RDIW-S865D710U840-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 710 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5911.1 lumens  
Efficiency: N/A  
Efficacy: 110.3 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

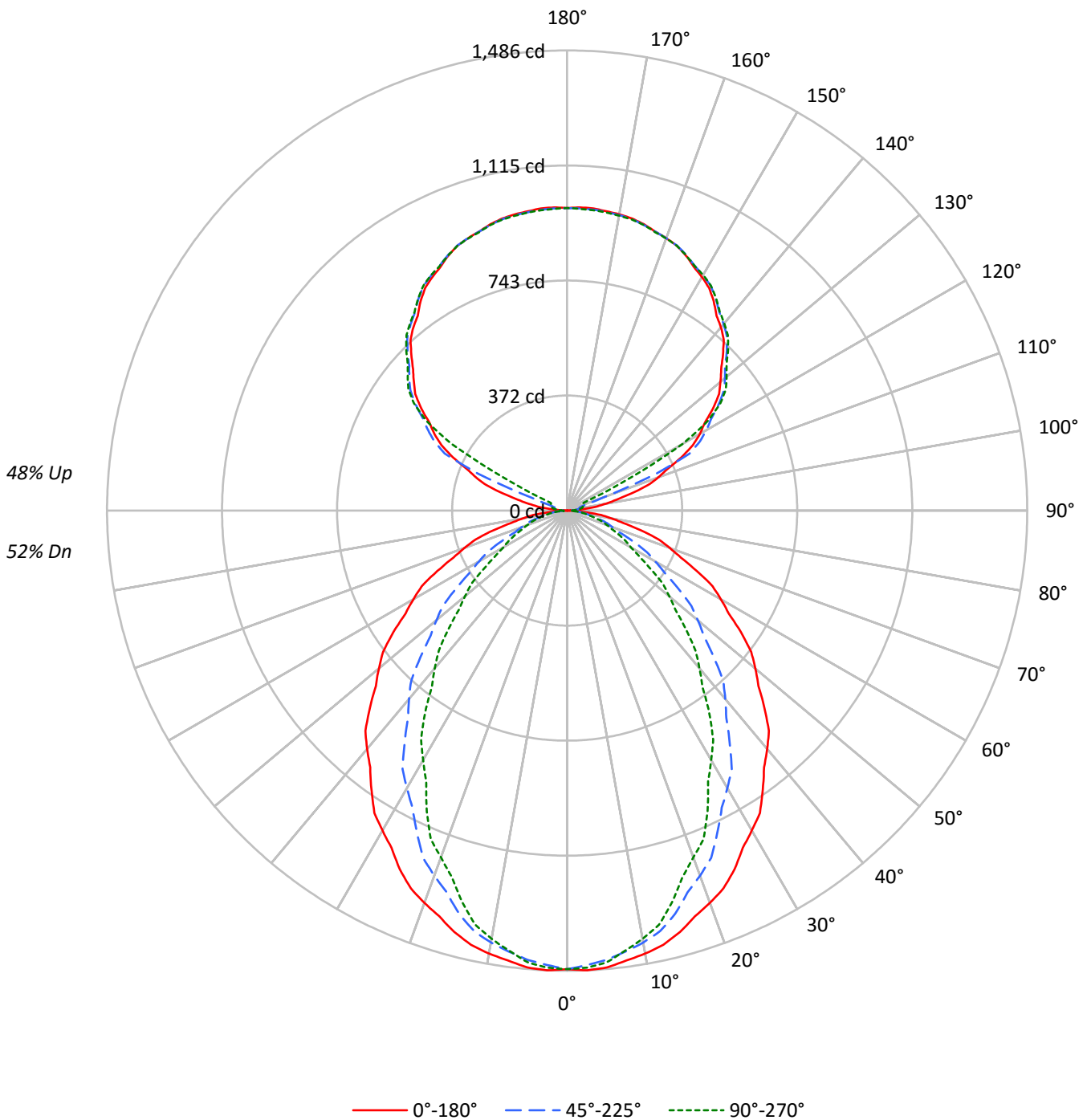
Input Watts (W): 53.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58	52
1	99	94	91	87	91	88	84	81	75	72	70	63	61	60	52	51	50	44
2	90	83	77	72	83	77	72	68	66	62	59	56	53	50	46	44	42	38
3	83	73	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37	33
4	76	65	58	52	70	61	54	49	52	47	43	45	41	38	37	34	32	29
5	70	58	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28	25
6	64	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25	22
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	23	20
8	56	43	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20	18
9	52	40	32	27	48	37	31	26	33	27	24	28	24	21	24	21	19	16
10	48	37	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17	15

**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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.6	2.3
10°-20°	380.6	6.4
20°-30°	534.4	9.0
30°-40°	582.7	9.9
40°-50°	535.8	9.1
50°-60°	420.8	7.1
60°-70°	274.4	4.6
70°-80°	141.5	2.4
80°-90°	39.1	0.7
90°-100°	32.6	0.6
100°-110°	119.5	2.0
110°-120°	319.5	5.4
120°-130°	527.3	8.9
130°-140°	560.8	9.5
140°-150°	521.3	8.8
150°-160°	419.1	7.1
160°-170°	270.1	4.6
170°-180°	93.0	1.6
0°-30°	1053.6	17.8
0°-40°	1636.3	27.7
0°-60°	2593.0	43.9
0°-90°	3047.9	51.6
90°-120°	471.6	8.0
90°-150°	2081.0	35.2
90°-180°	2863.0	48.4
0°-180°	5911.1	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	8	14	18	19	5
95°	46	24	28	31	30	56
105°	215	224	43	51	54	230
115°	406	419	436	124	58	400
125°	575	584	597	602	604	512
135°	711	722	729	736	735	549
145°	825	825	836	841	838	516
155°	908	903	911	914	909	418
165°	957	953	955	960	955	270
175°	979	974	976	980	974	93
180°	977	977	977	977	977	



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**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°	17.3	15.8	14.1	12.6	11.0	10.4	10.6	10.9	11.1	11.4	11.3
90°	0.7	2.4	4.1	5.9	7.6	9.1	10.4	11.6	12.9	14.1	14.9
92.5°	14.2	14.1	13.9	13.8	13.6	13.9	14.5	15.1	15.8	16.4	16.8
95°	45.9	40.8	35.5	30.4	25.2	23.1	24.2	25.3	26.5	27.6	28.4
97.5°	91.2	76.5	62.0	47.4	32.7	26.8	29.3	31.8	34.3	36.9	37.6
100°	125.1	103.6	82.1	60.6	39.1	29.6	32.3	34.9	37.7	40.3	41.5
102.5°	162.5	157.9	153.3	148.8	144.2	130.8	108.5	86.1	63.7	41.4	43.0
105°	214.9	219.6	224.4	229.0	233.8	214.7	171.8	128.9	86.0	43.1	44.8
107.5°	274.7	278.5	282.4	286.1	289.9	266.1	214.7	163.3	111.8	60.4	58.6
110°	313.2	316.5	319.8	323.1	326.4	305.3	259.9	214.5	169.2	123.7	108.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	349.4	352.3	355.3	358.1	361.0	356.9	345.7	334.5	323.3	312.0	254.8
115°	406.5	409.2	411.8	414.5	417.2	420.5	424.4	428.4	432.2	436.2	363.5
117.5°	457.6	460.5	463.5	466.5	469.5	472.3	475.0	477.8	480.4	483.1	465.5
120°	494.8	497.3	499.6	501.9	504.3	506.9	509.7	512.5	515.3	518.2	520.1
122.5°	526.5	529.1	531.5	534.0	536.4	539.3	542.3	545.4	548.5	551.6	552.7
125°	574.7	576.8	578.9	580.9	582.9	585.4	588.4	591.4	594.4	597.3	598.4
127.5°	618.4	620.7	623.0	625.2	627.5	629.8	632.0	634.2	636.4	638.6	640.3
130°	646.1	648.6	651.2	653.7	656.2	658.3	660.0	661.8	663.5	665.3	667.0
132.5°	674.5	676.6	678.7	680.9	683.0	684.9	686.6	688.3	690.1	691.9	693.3
135°	711.2	713.7	716.2	718.7	721.2	723.3	724.7	726.1	727.5	728.9	730.4
137.5°	748.4	750.1	751.9	753.7	755.4	757.1	758.7	760.3	761.9	763.6	765.1
140°	772.7	774.0	775.2	776.5	777.7	779.2	780.9	782.6	784.4	786.2	787.6
142.5°	793.0	794.2	795.4	796.5	797.6	799.1	801.1	803.1	805.1	807.1	808.4
145°	825.1	824.9	824.8	824.6	824.4	825.7	828.3	831.0	833.6	836.4	837.5
147.5°	852.8	852.3	851.7	851.1	850.5	851.5	854.1	856.8	859.4	862.0	862.9
150°	871.0	869.9	868.8	867.7	866.6	867.3	869.8	872.3	874.8	877.4	878.3
152.5°	886.3	885.0	883.8	882.5	881.3	881.9	884.3	886.7	889.1	891.5	892.4
155°	908.5	907.1	905.6	904.2	902.8	903.0	904.9	906.8	908.7	910.6	911.5
157.5°	925.8	924.6	923.4	922.2	921.1	921.1	922.4	923.7	925.0	926.3	927.5
160°	936.0	935.0	934.1	933.2	932.2	932.2	933.2	934.1	935.0	936.0	937.0
162.5°	945.0	944.1	943.2	942.2	941.3	941.2	942.0	942.9	943.7	944.5	945.5
165°	957.3	956.2	955.3	954.4	953.4	953.2	953.7	954.1	954.6	955.1	956.2
167.5°	966.2	965.3	964.4	963.4	962.5	962.3	962.7	963.1	963.6	964.0	965.1
170°	971.4	970.4	969.5	968.6	967.6	967.2	967.6	968.0	968.3	968.6	969.7
172.5°	974.7	973.8	972.9	971.9	971.0	970.7	971.0	971.3	971.6	971.9	973.0
175°	979.2	978.1	976.9	975.8	974.7	974.3	974.6	975.0	975.3	975.6	976.7
177.5°	979.9	979.0	978.1	977.2	976.3	975.9	976.0	976.2	976.3	976.4	977.3
180°	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0



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**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°	11.2	11.2	11.1	11.1	11.1	11.2	11.2	11.3
90°	15.8	16.5	17.3	17.9	18.2	18.5	18.8	19.1
92.5°	17.3	17.7	18.1	18.4	18.5	18.7	18.9	19.1
95°	29.2	29.9	30.7	31.0	30.9	30.7	30.6	30.4
97.5°	38.2	38.8	39.4	39.8	40.0	40.2	40.4	40.6
100°	42.8	44.0	45.3	46.2	46.5	46.8	47.1	47.4
102.5°	44.7	46.4	48.0	49.0	49.5	49.9	50.3	50.8
105°	46.6	48.3	50.0	51.2	51.8	52.5	53.1	53.7
107.5°	56.9	55.1	53.3	52.8	53.4	54.0	54.6	55.2
110°	92.3	76.5	60.9	53.3	53.9	54.6	55.2	55.8





TEST NUMBER: P331831-840

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	197.4	140.2	82.8	54.4	54.9	55.4	55.9	56.5
115°	290.7	217.9	145.2	103.2	91.9	80.6	69.3	58.0
117.5°	448.0	430.3	412.7	385.4	348.2	311.0	273.9	236.7
120°	522.0	523.8	525.7	516.0	494.8	473.6	452.4	431.2
122.5°	553.8	554.9	556.1	554.6	550.5	546.3	542.3	538.2
125°	599.6	600.7	601.8	602.6	603.0	603.5	604.0	604.4
127.5°	641.9	643.5	645.1	645.9	646.0	646.1	646.2	646.3
130°	668.7	670.4	672.2	673.0	672.8	672.7	672.5	672.4
132.5°	694.8	696.3	697.7	698.4	698.2	698.1	697.9	697.8
135°	732.1	733.6	735.2	735.8	735.5	735.2	734.9	734.6
137.5°	766.6	768.1	769.7	770.2	769.6	769.1	768.6	768.0
140°	789.0	790.4	791.8	792.1	791.3	790.5	789.7	789.0
142.5°	809.6	810.9	812.2	812.4	811.7	810.9	810.1	809.3
145°	838.5	839.6	840.7	840.9	840.1	839.3	838.5	837.8
147.5°	863.7	864.5	865.4	865.5	864.7	864.1	863.4	862.7
150°	879.2	880.2	881.1	881.2	880.4	879.6	878.8	878.1
152.5°	893.3	894.3	895.2	895.2	894.1	893.1	892.1	891.0
155°	912.4	913.4	914.3	914.1	912.9	911.7	910.4	909.2
157.5°	928.6	929.6	930.7	930.6	929.4	928.2	927.0	925.6
160°	937.9	938.9	939.8	939.7	938.6	937.5	936.4	935.3
162.5°	946.6	947.7	948.8	948.7	947.3	945.9	944.5	943.2
165°	957.4	958.4	959.5	959.5	958.4	957.4	956.2	955.1
167.5°	966.2	967.3	968.4	968.3	966.8	965.4	964.0	962.6
170°	970.8	971.8	972.9	972.8	971.4	970.0	968.6	967.1
172.5°	974.1	975.2	976.3	976.1	974.7	973.3	971.9	970.5
175°	977.9	978.9	980.0	979.8	978.2	976.6	975.0	973.5
177.5°	978.3	979.1	980.0	979.9	978.8	977.5	976.4	975.3
180°	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0

(END OF REPORT)