

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: P331401-830

Luminaire Tested: **SA2XXDIP-C865D725U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331401-830  
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-C865D725U830-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 725 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

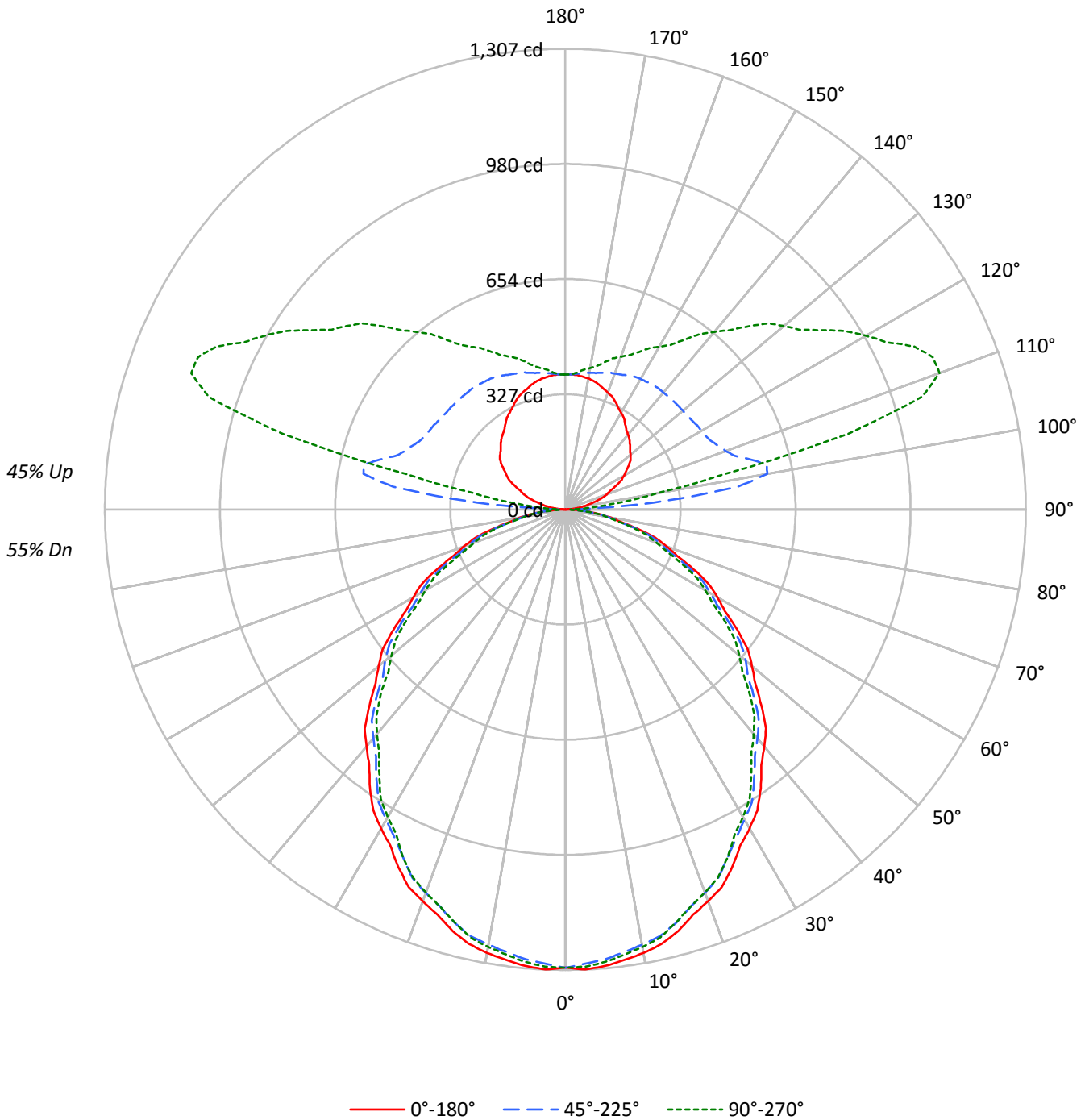
Lumens per Lamp: N/A  
Luminaire Lumens: 5978.8 lumens  
Efficiency: N/A  
Efficacy: 109.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 54.4  
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									20
RC	80									50									30									10									0									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0													
RCR	0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55									55																		
	1	99	95	91	87	92	88	85	82	76	73	71	64	63	61	54	53	52	47									47																		
	2	90	83	76	71	83	77	72	67	66	62	59	57	54	51	48	45	43	39									39																		
	3	82	73	65	59	76	68	61	56	59	54	49	50	46	43	42	39	37	33									33																		
	4	75	64	56	50	70	60	53	47	52	47	42	45	40	37	38	34	32	28									28																		
	5	69	57	49	43	64	54	46	41	47	41	36	40	36	32	34	31	28	25									25																		
	6	64	51	43	37	59	48	41	36	42	36	32	36	32	28	31	27	24	22									22																		
	7	59	47	38	33	55	44	36	31	38	32	28	33	28	25	28	25	22	19									19																		
	8	55	42	34	29	51	40	33	28	35	29	25	30	26	22	26	22	20	17									17																		
	9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18	16									16																		
	10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16	14									14																		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	21001	21001	21001
5°	21081	20778	20900
10°	20956	20566	20669
15°	20697	20301	20277
20°	20330	19900	19878
25°	19963	19408	19408
30°	19494	18957	18793
35°	19056	18413	18143
40°	18506	17873	17530
45°	17961	17335	16908
50°	17372	16777	16179
55°	16757	16124	15527
60°	16075	15345	14783
65°	15339	14571	13903
70°	14408	13638	12987
75°	13107	12558	12246
80°	11632	11278	10702
85°	9503	9040	8096



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.3	2.0
10°-20°	344.2	5.8
20°-30°	505.9	8.5
30°-40°	587.6	9.8
40°-50°	587.0	9.8
50°-60°	511.9	8.6
60°-70°	378.5	6.3
70°-80°	214.4	3.6
80°-90°	61.1	1.0
90°-100°	153.2	2.6
100°-110°	519.8	8.7
110°-120°	552.3	9.2
120°-130°	454.6	7.6
130°-140°	365.1	6.1
140°-150°	275.9	4.6
150°-160°	193.9	3.2
160°-170°	114.1	1.9
170°-180°	37.1	0.6
0°-30°	972.3	16.3
0°-40°	1559.9	26.1
0°-60°	2658.7	44.5
0°-90°	3312.7	55.4
90°-120°	1225.3	20.5
90°-150°	2320.9	38.8
90°-180°	2666.0	44.6
0°-180°	5978.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1301	1301	1301	1301	1301	
5°	1301	1295	1282	1291	1290	123
15°	1238	1230	1214	1219	1213	348
25°	1121	1110	1089	1092	1089	515
35°	967	954	934	927	920	603
45°	787	777	759	746	740	607
55°	595	587	573	558	552	532
65°	402	394	381	370	364	397
75°	210	207	201	194	196	224
85°	51	50	49	45	44	59
90°	1	10	25	24	24	4
95°	26	63	289	109	84	27
105°	90	136	546	976	830	96
115°	158	200	457	943	1093	157
125°	221	262	439	764	886	196
135°	259	310	434	642	735	200
145°	296	340	432	536	586	186
155°	337	364	419	474	493	155
165°	367	378	402	426	432	103
175°	382	383	386	391	390	36
180°	383	383	383	383	383	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7
2.5°	1306.7	1305.6	1304.5	1303.4	1302.3	1300.5	1298.1	1295.6	1293.2	1290.7	1293.0
5°	1300.7	1299.6	1298.5	1297.4	1296.3	1294.2	1291.2	1288.1	1285.1	1282.0	1284.2
7.5°	1289.2	1287.5	1285.8	1284.0	1282.3	1279.9	1276.8	1273.7	1270.5	1267.4	1269.7
10°	1278.2	1276.3	1274.3	1272.3	1270.5	1267.8	1264.4	1261.1	1257.8	1254.4	1256.7
12.5°	1263.2	1261.5	1259.8	1258.0	1256.3	1253.8	1250.5	1247.1	1243.8	1240.5	1242.0
15°	1238.2	1236.5	1234.8	1233.2	1231.5	1228.9	1225.3	1221.6	1218.0	1214.5	1215.5
17.5°	1206.2	1204.5	1202.9	1201.2	1199.5	1196.8	1193.2	1189.5	1185.8	1182.1	1183.5
20°	1183.2	1181.5	1179.9	1178.2	1176.5	1173.7	1169.8	1165.9	1162.1	1158.2	1159.0
22.5°	1160.2	1157.8	1155.5	1153.1	1150.8	1147.8	1144.2	1140.5	1136.8	1133.1	1133.3
25°	1120.6	1118.4	1116.2	1114.0	1111.7	1108.2	1103.5	1098.8	1094.1	1089.4	1090.0
27.5°	1075.6	1073.7	1071.6	1069.6	1067.6	1064.7	1061.0	1057.2	1053.6	1049.8	1049.0
30°	1045.6	1043.4	1041.1	1039.0	1036.7	1033.5	1029.4	1025.2	1021.0	1016.8	1016.0
32.5°	1013.6	1011.8	1010.0	1008.2	1006.4	1003.3	999.0	994.6	990.2	985.8	984.3
35°	966.8	964.0	961.2	958.5	955.6	952.1	947.6	943.2	938.7	934.2	932.6
37.5°	914.0	911.5	909.1	906.6	904.3	900.8	896.4	891.9	887.4	883.0	880.9
40°	878.0	875.8	873.5	871.3	869.1	865.7	861.3	856.9	852.4	848.0	845.5
42.5°	843.0	840.7	838.5	836.3	834.1	830.8	826.3	821.9	817.4	812.9	810.2
45°	786.6	784.8	782.8	780.9	778.9	775.8	771.7	767.5	763.4	759.2	756.1
47.5°	730.7	728.9	727.0	725.2	723.3	720.2	715.9	711.5	707.2	702.9	699.6
50°	691.6	690.2	688.9	687.5	686.1	683.4	679.6	675.6	671.8	667.9	664.0
52.5°	653.7	651.8	650.0	648.1	646.3	643.6	639.9	636.2	632.5	628.9	625.7
55°	595.3	593.7	592.0	590.3	588.6	586.2	582.9	579.5	576.2	572.8	569.5
57.5°	536.8	535.5	534.1	532.8	531.5	529.0	525.3	521.6	517.9	514.3	511.0
60°	497.8	496.6	495.6	494.5	493.3	490.9	486.9	483.1	479.2	475.2	472.2
62.5°	459.8	458.0	456.2	454.4	452.6	450.3	447.2	444.2	441.2	438.3	435.5
65°	401.5	399.8	398.1	396.4	394.8	392.6	389.8	387.0	384.3	381.4	379.0
67.5°	342.2	340.8	339.5	338.2	336.9	335.0	332.4	329.9	327.4	324.9	323.0
70°	305.2	304.1	302.9	301.8	300.8	298.9	296.4	293.9	291.4	288.9	287.0
72.5°	267.1	266.1	264.9	263.8	262.7	261.4	259.8	258.2	256.5	254.9	253.0
75°	210.1	209.5	209.0	208.5	207.9	206.9	205.6	204.2	202.7	201.3	199.7
77.5°	159.1	158.2	157.2	156.3	155.3	154.6	154.0	153.4	152.9	152.3	151.5
80°	125.1	124.8	124.5	124.2	123.9	123.6	123.0	122.4	121.9	121.3	120.5
82.5°	93.0	93.0	92.9	92.8	92.8	92.7	92.3	92.0	91.6	91.3	90.2
85°	51.3	51.0	50.7	50.4	50.1	49.9	49.6	49.3	49.0	48.8	48.0
87.5°	18.2	18.2	18.3	18.2	18.0	18.0	18.3	18.9	19.3	19.0	18.2
90°	0.8	2.9	5.9	7.4	8.9	11.0	14.7	19.9	24.3	25.1	24.3
92.5°	9.0	13.0	18.3	21.5	26.5	33.5	50.1	73.5	94.4	95.8	80.9
95°	25.8	28.7	36.1	42.7	54.5	72.2	106.1	170.2	255.7	288.8	252.7
97.5°	42.0	46.0	53.8	63.8	77.4	97.4	140.0	229.3	371.4	493.0	517.3
100°	56.7	58.9	65.6	77.4	92.1	112.7	151.7	241.7	400.8	582.0	688.2
102.5°	70.3	71.9	78.5	90.3	105.7	126.3	162.4	242.2	389.6	585.0	751.8
105°	89.9	92.8	98.0	109.1	125.3	145.9	180.5	246.1	367.7	545.9	742.0
107.5°	111.1	113.5	118.5	128.7	144.7	165.5	199.1	256.3	356.8	504.1	677.2
110°	125.3	128.2	132.6	142.2	157.7	179.1	211.4	264.5	354.4	484.1	636.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	138.2	141.2	146.2	155.1	170.0	192.0	223.3	273.3	355.0	471.1	608.3
115°	158.4	162.1	166.5	175.3	190.1	210.0	241.7	286.6	358.1	456.9	573.3
117.5°	179.4	182.3	186.7	194.5	208.7	229.3	258.6	300.8	363.4	449.9	551.1
120°	192.3	195.3	199.6	206.3	221.0	241.7	270.4	310.2	366.9	445.7	539.3
122.5°	204.7	207.1	211.4	218.7	233.4	254.7	281.6	318.5	371.1	443.4	529.3
125°	221.0	223.3	227.6	236.5	251.3	271.8	298.4	331.6	377.2	439.1	515.0
127.5°	234.0	237.0	243.2	252.9	267.0	288.2	314.1	343.7	383.6	436.6	501.7
130°	241.7	244.6	251.9	262.3	277.0	297.7	323.5	351.5	388.3	435.5	492.9
132.5°	248.7	252.3	260.2	271.2	286.4	307.1	331.7	359.1	393.0	434.9	485.9
135°	259.4	262.3	271.2	282.2	299.2	319.8	343.4	369.1	398.6	433.9	476.0
137.5°	269.4	272.9	281.7	293.5	310.4	329.5	352.8	376.8	403.6	433.9	469.0
140°	277.0	279.9	288.8	300.6	316.8	336.0	358.1	380.9	406.0	433.2	465.0
142.5°	284.6	287.1	295.3	307.1	322.7	340.7	362.2	384.5	407.7	433.2	460.8
145°	296.1	299.2	306.5	317.5	332.2	348.5	368.4	389.0	409.6	431.8	455.3
147.5°	308.6	310.8	317.8	328.0	340.3	354.7	373.4	391.5	410.3	429.1	449.8
150°	316.8	319.1	324.9	334.5	345.5	358.8	375.8	392.7	409.6	427.3	445.0
152.5°	325.1	326.1	332.0	340.4	350.8	363.0	378.1	393.3	408.5	424.4	440.9
155°	336.7	337.4	341.9	350.0	358.1	369.1	381.6	394.2	406.7	419.2	433.2
157.5°	346.5	347.1	350.7	357.8	364.3	373.5	384.2	394.2	403.3	414.0	426.0
160°	352.9	353.6	356.6	362.5	368.4	376.5	385.3	394.2	401.5	410.4	420.8
162.5°	359.4	358.9	361.9	366.6	371.9	378.2	386.0	393.6	399.8	407.5	415.9
165°	366.9	366.2	367.7	372.1	375.8	380.2	386.8	392.0	396.4	401.5	408.2
167.5°	373.2	372.2	373.5	376.4	379.0	381.8	386.6	391.0	393.0	396.4	400.5
170°	377.2	375.8	376.5	378.7	380.2	382.4	386.1	389.7	391.2	393.4	396.4
172.5°	379.6	378.7	378.2	380.5	381.4	383.0	385.5	388.0	388.9	389.9	392.3
175°	382.4	381.6	380.9	382.4	382.4	383.1	384.6	386.1	385.3	386.1	386.8
177.5°	383.7	382.6	381.9	383.1	383.1	383.1	383.7	384.9	383.7	383.1	383.7
180°	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7
2.5°	1295.1	1297.4	1299.6	1300.5	1300.0	1299.6	1299.2	1298.7
5°	1286.4	1288.6	1290.9	1291.7	1291.2	1290.6	1290.1	1289.5
7.5°	1271.9	1274.1	1276.4	1277.1	1276.6	1275.9	1275.4	1274.7
10°	1258.9	1261.1	1263.4	1264.0	1263.2	1262.3	1261.5	1260.7
12.5°	1243.6	1245.1	1246.7	1247.2	1246.5	1245.9	1245.3	1244.7
15°	1216.6	1217.8	1218.9	1218.7	1217.4	1216.0	1214.6	1213.1
17.5°	1184.7	1186.0	1187.3	1187.2	1185.9	1184.6	1183.3	1181.9
20°	1159.8	1160.6	1161.5	1161.3	1160.3	1159.1	1158.0	1156.9
22.5°	1133.5	1133.6	1133.8	1133.6	1132.8	1132.2	1131.5	1130.9
25°	1090.5	1091.0	1091.6	1091.6	1091.0	1090.5	1090.0	1089.4
27.5°	1048.2	1047.4	1046.5	1045.5	1044.1	1042.7	1041.4	1040.1
30°	1015.1	1014.4	1013.5	1012.5	1011.4	1010.3	1009.2	1008.0
32.5°	982.8	981.3	979.8	978.5	977.4	976.3	975.2	974.0
35°	930.9	929.3	927.7	926.0	924.7	923.3	921.9	920.5
37.5°	878.9	876.8	874.8	873.1	871.8	870.4	869.1	867.7
40°	843.0	840.5	838.0	836.1	835.1	834.0	832.8	831.7
42.5°	807.5	804.7	802.1	799.9	798.3	796.8	795.2	793.7
45°	753.1	750.0	747.0	744.9	743.8	742.6	741.5	740.5
47.5°	696.4	693.2	690.0	687.6	686.0	684.4	682.8	681.2
50°	660.1	656.2	652.3	649.7	648.3	646.9	645.5	644.1
52.5°	622.4	619.2	616.0	613.4	611.6	609.7	607.9	606.1
55°	566.2	562.8	559.5	557.1	555.7	554.3	553.0	551.6
57.5°	507.7	504.4	501.1	499.0	497.9	496.9	495.9	494.7
60°	469.2	466.1	463.1	461.1	460.2	459.4	458.5	457.8
62.5°	432.5	429.7	426.9	425.0	423.9	422.8	421.8	420.8
65°	376.5	374.0	371.5	369.5	368.2	366.7	365.3	363.9
67.5°	321.0	319.1	317.2	315.7	314.5	313.4	312.3	311.1
70°	285.0	283.0	281.2	279.6	278.5	277.4	276.3	275.1
72.5°	251.0	249.0	247.1	245.7	244.8	243.9	243.0	242.1
75°	198.0	196.3	194.7	194.2	194.7	195.3	195.8	196.3
77.5°	150.7	149.9	149.0	148.2	147.4	146.7	145.9	145.1
80°	119.6	118.9	118.0	117.3	116.7	116.2	115.6	115.1
82.5°	89.2	88.1	87.1	86.5	86.3	86.2	86.1	86.1
85°	47.1	46.3	45.4	44.9	44.6	44.3	44.0	43.7
87.5°	17.3	16.4	16.0	15.7	15.6	15.3	15.1	14.9
90°	23.6	22.1	23.6	24.3	24.3	24.3	24.3	24.3
92.5°	64.3	55.1	48.9	44.4	43.7	41.4	42.0	40.8
95°	193.0	148.1	117.2	100.9	91.3	85.5	83.2	84.0
97.5°	450.4	368.5	288.8	235.6	200.4	182.3	171.5	165.3
100°	672.7	581.4	480.4	391.2	330.1	298.4	277.0	263.7
102.5°	818.3	797.7	723.8	629.3	562.9	508.8	482.1	464.2
105°	895.2	978.5	988.1	963.7	918.0	872.3	840.7	830.4
107.5°	839.8	965.2	1041.8	1077.5	1083.3	1080.7	1074.4	1060.6
110°	792.0	924.0	1018.2	1078.6	1110.3	1124.4	1131.0	1130.2





TEST NUMBER: P331401-830

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	748.5	875.0	975.8	1045.1	1089.1	1112.6	1125.1	1129.1
115°	694.7	808.2	904.7	980.6	1032.9	1066.9	1086.0	1092.7
117.5°	654.4	754.0	841.6	912.8	966.1	1001.9	1022.1	1027.7
120°	634.3	725.8	803.8	870.9	922.5	957.1	978.5	985.8
122.5°	618.5	702.2	776.1	836.7	883.0	917.0	936.0	942.2
125°	595.3	671.2	736.0	791.3	834.1	862.0	880.4	886.4
127.5°	572.5	641.1	702.3	753.3	790.6	816.8	832.7	837.4
130°	557.7	621.1	679.3	727.9	764.0	789.1	803.8	809.7
132.5°	543.6	602.3	655.7	701.4	737.0	762.0	775.5	780.8
135°	523.9	572.5	621.1	662.3	694.1	718.4	731.6	734.6
137.5°	508.1	548.7	587.4	623.3	652.2	673.2	684.8	689.2
140°	498.0	533.5	567.3	599.7	623.3	642.4	653.6	658.0
142.5°	489.8	519.9	549.0	576.2	598.6	616.0	625.8	626.7
145°	478.2	502.5	525.4	546.7	564.4	576.9	584.3	586.4
147.5°	469.2	488.3	506.1	521.8	536.4	546.4	551.4	552.7
150°	462.7	478.9	494.4	507.7	518.7	527.5	532.0	532.7
152.5°	456.2	471.3	484.4	495.9	504.5	512.2	515.5	515.6
155°	447.2	459.0	470.0	478.2	486.3	491.4	494.4	492.9
157.5°	436.8	446.7	455.9	462.2	468.0	472.3	473.6	473.6
160°	430.3	438.4	446.5	451.7	456.9	460.5	461.2	461.2
162.5°	423.8	430.7	437.6	441.7	446.8	449.3	450.1	449.4
165°	414.1	419.2	424.4	427.3	430.3	433.2	433.2	432.5
167.5°	404.8	408.8	412.3	415.0	416.3	417.9	417.7	416.9
170°	400.1	402.3	405.2	406.7	407.5	409.6	408.9	407.5
172.5°	394.7	396.4	398.8	399.6	400.4	401.4	400.7	399.8
175°	389.0	389.7	390.5	391.2	391.2	392.0	391.2	389.7
177.5°	384.9	384.9	385.5	385.5	385.5	385.5	384.9	383.7
180°	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1

(END OF REPORT)