

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: P331419-830

Luminaire Tested: **SA2XXDIP-C865D1080U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331419-830
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-C865D1080U830-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

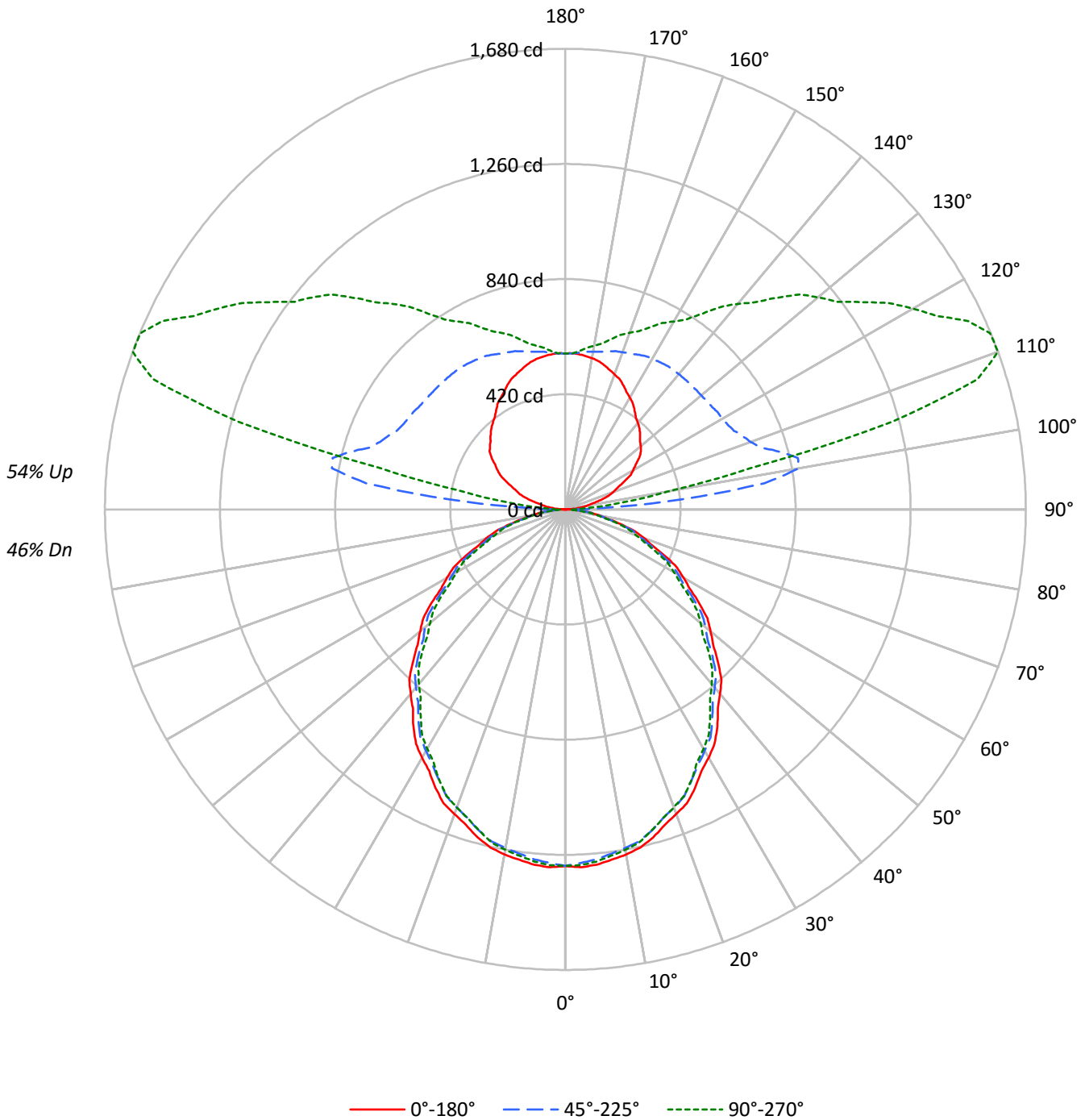
Lumens per Lamp: N/A
Luminaire Lumens: 7276.4 lumens
Efficiency: N/A
Efficacy: 111.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 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	0
RCR																		
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	46
1	97	92	89	85	89	85	82	79	71	68	66	58	56	55	46	45	44	38
2	88	81	75	69	81	74	69	65	62	58	55	51	48	46	40	39	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	33	31	27
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27	23
5	67	56	48	42	62	52	44	39	43	38	34	36	32	29	29	26	24	20
6	62	50	42	36	57	46	39	34	39	34	30	32	28	25	26	23	21	18
7	57	45	37	32	53	42	35	30	35	30	26	30	25	22	24	21	18	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17	14
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15	13
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14	12

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	1.7
10°-20°	344.2	4.7
20°-30°	505.9	7.0
30°-40°	587.6	8.1
40°-50°	587.0	8.1
50°-60°	511.9	7.0
60°-70°	378.5	5.2
70°-80°	214.4	2.9
80°-90°	62.8	0.9
90°-100°	227.7	3.1
100°-110°	772.5	10.6
110°-120°	820.7	11.3
120°-130°	675.6	9.3
130°-140°	542.5	7.5
140°-150°	410.0	5.6
150°-160°	288.1	4.0
160°-170°	169.6	2.3
170°-180°	55.2	0.8
0°-30°	972.3	13.4
0°-40°	1559.9	21.4
0°-60°	2658.7	36.5
0°-90°	3314.4	45.5
90°-120°	1820.9	25.0
90°-150°	3449.0	47.4
90°-180°	3962.0	54.5
0°-180°	7276.4	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	15	37	36	36	5
95°	38	94	429	162	125	41
105°	134	202	811	1450	1234	142
115°	235	297	679	1401	1624	233
125°	328	389	653	1135	1317	292
135°	385	460	645	954	1092	298
145°	440	506	642	797	872	276
155°	500	540	623	705	732	230
165°	545	562	597	633	643	154
175°	568	569	574	581	579	54
180°	569	569	569	569	569	



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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	18.5	18.9	18.9	18.9	19.0	19.7	20.8	21.7	21.5	20.5
90°	1.1	4.3	8.8	10.9	13.1	16.4	21.9	29.6	36.1	37.2	36.1
92.5°	13.4	19.2	27.1	32.0	39.4	49.7	74.5	109.2	140.3	142.3	120.3
95°	38.4	42.7	53.6	63.5	81.1	107.3	157.7	252.9	379.9	429.2	375.6
97.5°	62.4	68.3	79.9	94.8	115.0	144.8	208.0	340.7	551.9	732.7	768.6
100°	84.3	87.6	97.5	115.0	136.9	167.5	225.6	359.1	595.6	865.0	1022.7
102.5°	104.4	106.9	116.7	134.2	157.0	187.7	241.3	360.1	579.0	869.4	1117.3
105°	133.6	138.0	145.6	162.0	186.2	216.8	268.2	365.7	546.4	811.3	1102.6
107.5°	165.1	168.6	176.1	191.1	215.1	245.9	295.9	380.8	530.2	749.1	1006.4
110°	186.2	190.5	197.1	211.3	234.3	266.1	314.2	393.0	526.7	719.3	946.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	205.4	209.8	217.3	230.5	252.7	285.3	331.8	406.2	527.5	700.1	904.0
115°	235.4	240.9	247.4	260.6	282.5	312.1	359.1	425.9	532.2	678.8	851.9
117.5°	266.6	270.9	277.5	289.1	310.1	340.7	384.3	447.0	540.0	668.5	819.0
120°	285.8	290.1	296.7	306.6	328.5	359.1	401.8	461.0	545.3	662.4	801.4
122.5°	304.2	307.6	314.2	325.0	346.9	378.4	418.5	473.3	551.4	658.9	786.6
125°	328.5	331.8	338.4	351.5	373.3	404.1	443.5	492.8	560.6	652.6	765.3
127.5°	347.7	352.1	361.4	375.8	396.8	428.3	466.7	510.9	570.0	648.8	745.6
130°	359.1	363.5	374.5	389.8	411.7	442.3	480.7	522.3	577.0	647.1	732.5
132.5°	369.7	374.9	386.7	402.9	425.7	456.4	492.9	533.7	584.0	646.2	722.0
135°	385.4	389.8	402.9	419.3	444.5	475.2	510.2	548.6	592.4	644.9	707.3
137.5°	400.3	405.6	418.7	436.2	461.2	489.7	524.2	560.0	599.8	644.7	697.0
140°	411.7	416.0	429.2	446.8	470.8	499.3	532.2	566.1	603.3	643.9	690.9
142.5°	423.1	426.6	438.8	456.4	479.6	506.3	538.3	571.4	606.0	643.9	684.8
145°	440.2	444.5	455.5	471.9	493.8	517.9	547.4	578.2	608.8	641.6	676.7
147.5°	458.5	461.8	472.3	487.5	505.7	527.1	554.9	581.8	609.6	637.7	668.4
150°	470.8	474.1	482.9	497.1	513.5	533.2	558.5	583.6	608.8	635.1	661.3
152.5°	483.1	484.7	493.3	505.9	521.4	539.3	561.9	584.5	607.0	630.7	655.2
155°	500.4	501.4	508.0	520.1	532.2	548.6	567.1	585.8	604.4	623.0	643.9
157.5°	514.8	515.9	521.2	531.7	541.3	555.2	570.9	585.8	599.4	615.1	633.1
160°	524.4	525.6	529.9	538.7	547.4	559.5	572.7	585.8	596.7	609.9	625.2
162.5°	534.1	533.5	537.8	544.8	552.7	562.1	573.5	584.9	594.1	605.5	618.2
165°	545.3	544.2	546.4	552.9	558.5	565.0	574.9	582.5	589.1	596.7	606.6
167.5°	554.5	553.2	555.2	559.3	563.3	567.4	574.6	581.0	584.0	589.1	595.2
170°	560.6	558.5	559.5	562.8	565.0	568.3	573.7	579.2	581.4	584.7	589.1
172.5°	564.1	562.8	562.1	565.4	566.8	569.1	572.9	576.6	577.9	579.5	583.0
175°	568.3	567.1	566.1	568.3	568.3	569.4	571.6	573.7	572.7	573.7	574.9
177.5°	570.2	568.4	567.6	569.4	569.4	569.4	570.2	572.0	570.2	569.4	570.2
180°	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4



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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°	19.7	18.6	18.4	18.1	17.9	17.7	17.4	17.2
90°	35.1	32.9	35.1	36.1	36.1	36.1	36.1	36.1
92.5°	95.5	81.9	72.7	65.9	65.0	61.5	62.4	60.7
95°	286.9	220.1	174.1	150.0	135.7	127.1	123.8	124.8
97.5°	669.4	547.7	429.2	350.2	297.8	270.9	254.9	245.7
100°	999.7	863.9	713.9	581.4	490.5	443.5	411.7	392.0
102.5°	1216.1	1185.3	1075.6	935.3	836.5	756.2	716.5	689.8
105°	1330.3	1454.1	1468.3	1432.2	1364.2	1296.4	1249.3	1234.0
107.5°	1248.0	1434.4	1548.2	1601.2	1609.8	1606.0	1596.6	1576.2
110°	1177.0	1373.0	1513.2	1603.0	1650.0	1670.8	1680.7	1679.6



TEST NUMBER: P331419-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1112.2	1300.3	1450.1	1553.0	1618.5	1653.3	1672.0	1677.8
115°	1032.6	1201.2	1344.5	1457.4	1535.1	1585.5	1613.9	1623.8
117.5°	972.5	1120.6	1250.7	1356.4	1435.7	1488.8	1518.9	1527.2
120°	942.7	1078.5	1194.6	1294.2	1370.8	1422.3	1454.1	1465.0
122.5°	919.1	1043.5	1153.4	1243.4	1312.1	1362.7	1391.0	1400.1
125°	884.7	997.5	1093.8	1175.9	1239.4	1281.1	1308.4	1317.2
127.5°	850.7	952.8	1043.7	1119.5	1174.9	1213.8	1237.5	1244.5
130°	828.9	923.0	1009.6	1081.8	1135.5	1172.7	1194.6	1203.3
132.5°	807.9	895.0	974.5	1042.4	1095.1	1132.4	1152.5	1160.4
135°	778.4	850.7	923.0	984.3	1031.4	1067.5	1087.2	1091.7
137.5°	755.1	815.5	872.9	926.3	969.2	1000.3	1017.7	1024.2
140°	740.2	792.8	843.1	891.3	926.3	954.8	971.2	977.8
142.5°	727.9	772.6	816.0	856.2	889.5	915.4	930.0	931.3
145°	710.6	746.8	780.7	812.5	838.7	857.3	868.3	871.6
147.5°	697.3	725.8	752.2	775.4	797.1	812.0	819.4	821.4
150°	687.6	711.7	734.7	754.4	770.8	784.0	790.5	791.6
152.5°	678.0	700.3	719.8	736.9	749.8	761.2	766.0	766.2
155°	664.6	682.1	698.5	710.6	722.6	730.3	734.7	732.5
157.5°	649.0	663.7	677.5	686.9	695.5	701.8	703.8	703.8
160°	639.4	651.5	663.5	671.2	678.8	684.3	685.4	685.4
162.5°	629.8	640.1	650.4	656.3	663.9	667.7	668.7	667.9
165°	615.4	623.0	630.7	635.1	639.4	643.9	643.9	642.7
167.5°	601.5	607.5	612.7	616.7	618.6	621.0	620.9	619.5
170°	594.6	597.9	602.2	604.4	605.5	608.8	607.7	605.5
172.5°	586.6	589.1	592.6	593.9	595.0	596.5	595.4	594.1
175°	578.2	579.2	580.3	581.4	581.4	582.5	581.4	579.2
177.5°	572.0	572.0	572.9	572.9	572.9	572.9	572.0	570.2
180°	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4

(END OF REPORT)