

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: P332648-840

Luminaire Tested: **SA4XXDIP-C1020D810U840-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332648-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXDIP-C1020D810U840-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

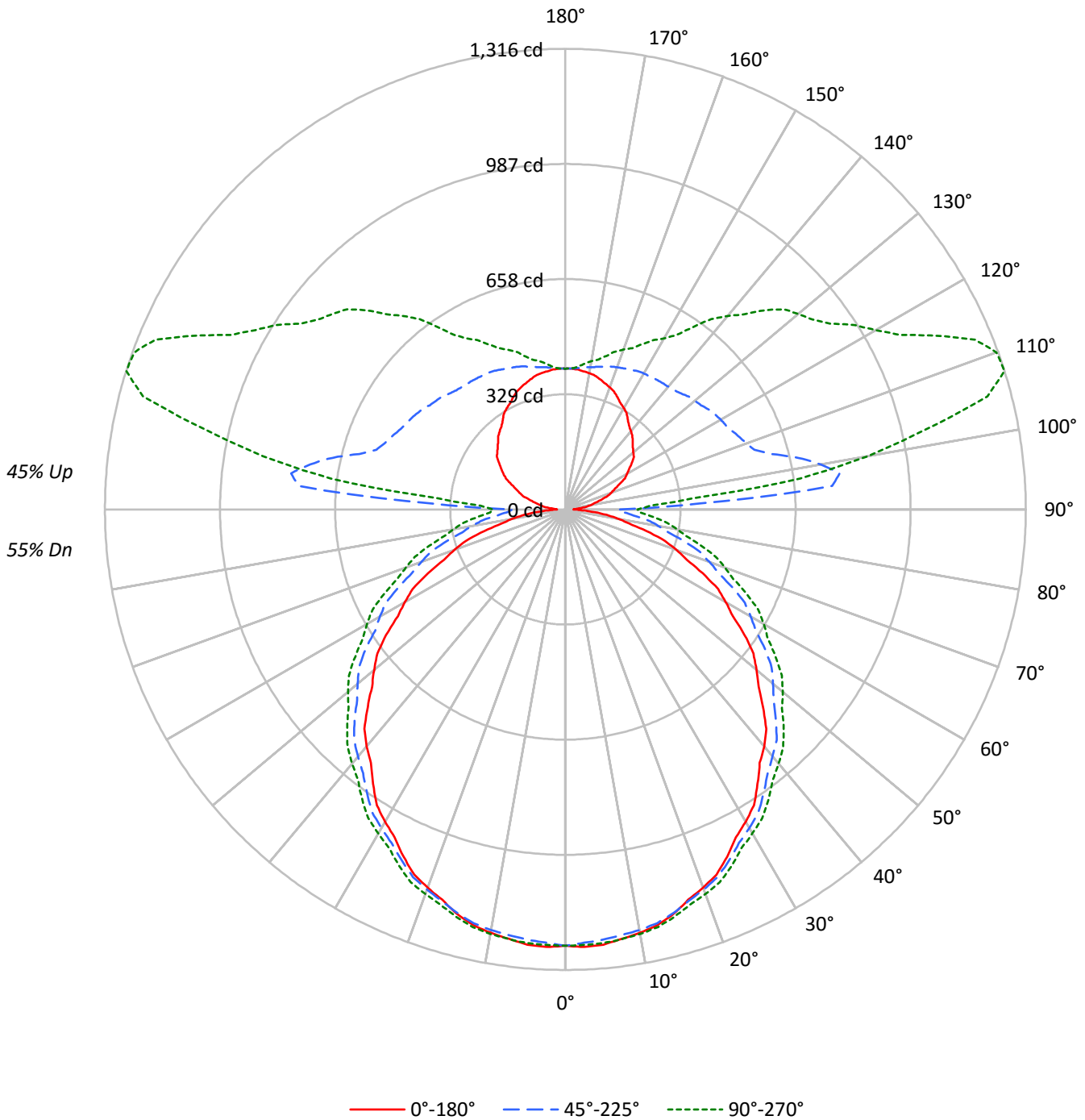
Lumens per Lamp: N/A
Luminaire Lumens: 7175.7 lumens
Efficiency: N/A
Efficacy: 131.9 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

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	
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	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	98	93	89	85	90	86	82	79	74	71	68	62	60	58	52	50	49	44
2	89	80	74	68	82	75	69	64	64	60	56	54	51	48	45	42	40	36
3	80	70	63	56	74	65	58	53	56	51	46	47	43	40	39	36	34	30
4	73	62	54	47	68	58	50	45	50	44	39	42	38	34	35	32	29	25
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	31	28	25	22
6	62	49	41	35	57	46	38	33	40	34	29	34	29	25	28	25	22	19
7	57	44	36	30	53	42	34	29	36	30	26	31	26	22	26	22	19	17
8	53	40	32	27	49	38	30	25	33	27	23	28	23	20	24	20	17	15
9	49	37	29	24	46	34	27	23	30	24	20	26	21	18	22	18	15	13
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10066	10066	10066
5°	10097	9838	9866
10°	10035	9677	9669
15°	9945	9490	9439
20°	9810	9285	9213
25°	9657	9054	8967
30°	9492	8825	8712
35°	9305	8591	8490
40°	9154	8367	8259
45°	8931	8161	8059
50°	8744	7924	7849
55°	8549	7700	7603
60°	8247	7415	7378
65°	7914	7109	7102
70°	7513	6760	6779
75°	6949	6374	6488
80°	6328	6004	6203
85°	5536	5679	6037



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.1	1.6
10°-20°	338.3	4.7
20°-30°	511.5	7.1
30°-40°	618.9	8.6
40°-50°	654.3	9.1
50°-60°	615.8	8.6
60°-70°	510.9	7.1
70°-80°	358.9	5.0
80°-90°	205.1	2.9
90°-100°	410.8	5.7
100°-110°	693.4	9.7
110°-120°	601.0	8.4
120°-130°	489.0	6.8
130°-140°	394.2	5.5
140°-150°	292.9	4.1
150°-160°	203.8	2.8
160°-170°	119.9	1.7
170°-180°	39.0	0.5
0°-30°	967.9	13.5
0°-40°	1586.8	22.1
0°-60°	2856.9	39.8
0°-90°	3931.8	54.8
90°-120°	1705.2	23.8
90°-150°	2881.2	40.2
90°-180°	3244.0	45.2
0°-180°	7175.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1247	1247	1247	1247	1247	
5°	1248	1244	1234	1245	1244	118
15°	1197	1198	1194	1206	1205	337
25°	1095	1103	1107	1122	1124	504
35°	958	974	989	1007	1012	600
45°	799	825	852	875	882	617
55°	626	656	697	724	733	557
65°	433	478	525	559	571	429
75°	240	292	350	388	402	255
85°	74	133	196	236	251	79
90°	23	85	152	193	206	16
95°	44	147	265	376	364	44
105°	105	176	310	521	529	113
115°	171	227	328	483	573	170
125°	232	276	349	420	425	207
135°	272	324	368	375	304	211
145°	312	355	353	274	235	196
155°	353	381	341	299	220	163
165°	385	396	322	247	154	109
175°	401	402	305	211	109	38
180°	402	402	402	402	402	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1251.3	1250.6	1249.8	1249.1	1248.3	1247.0	1245.0	1243.0	1241.0	1239.0	1240.7
5°	1248.2	1247.3	1246.4	1245.5	1244.6	1242.9	1240.8	1238.6	1236.5	1234.3	1236.8
7.5°	1237.6	1237.1	1236.5	1236.0	1235.4	1234.3	1232.4	1230.6	1228.8	1227.0	1229.8
10°	1228.7	1228.4	1228.1	1227.8	1227.5	1226.5	1225.0	1223.5	1221.8	1220.3	1223.1
12.5°	1216.4	1216.4	1216.3	1216.2	1216.2	1215.6	1214.6	1213.5	1212.4	1211.3	1214.0
15°	1196.6	1196.9	1197.2	1197.5	1197.8	1197.5	1196.6	1195.7	1194.7	1193.8	1196.6
17.5°	1169.5	1170.4	1171.3	1172.3	1173.3	1173.6	1173.4	1173.3	1173.1	1172.9	1175.7
20°	1150.5	1151.4	1152.4	1153.3	1154.3	1154.9	1155.2	1155.5	1155.8	1156.1	1159.2
22.5°	1129.2	1130.4	1131.7	1132.9	1134.0	1134.9	1135.4	1136.0	1136.5	1137.1	1140.2
25°	1094.7	1096.5	1098.3	1100.2	1102.1	1103.5	1104.4	1105.4	1106.3	1107.2	1110.6
27.5°	1056.1	1058.8	1061.6	1064.3	1067.0	1069.1	1070.6	1072.0	1073.4	1074.8	1078.0
30°	1030.5	1032.9	1035.4	1037.8	1040.4	1042.7	1044.8	1047.0	1049.1	1051.4	1054.8
32.5°	1002.5	1005.5	1008.5	1011.5	1014.4	1017.1	1019.6	1022.0	1024.4	1026.8	1030.7
35°	957.9	961.6	965.2	969.0	972.7	976.1	979.3	982.3	985.4	988.6	992.9
37.5°	912.8	917.2	921.4	925.7	930.0	934.0	937.9	941.7	945.6	949.5	953.8
40°	883.8	887.9	891.9	896.0	900.0	904.1	908.5	912.8	917.2	921.5	926.1
42.5°	850.3	854.9	859.4	863.9	868.4	873.2	878.3	883.4	888.5	893.6	898.8
45°	798.6	804.6	810.4	816.4	822.2	828.1	834.0	839.9	845.8	851.7	857.0
47.5°	749.2	755.3	761.3	767.5	773.6	780.0	786.8	793.7	800.5	807.3	812.7
50°	713.5	720.3	727.1	734.0	740.7	747.6	754.5	761.2	768.1	774.9	781.1
52.5°	677.7	684.6	691.4	698.2	705.1	712.4	720.1	728.0	735.8	743.7	749.8
55°	625.5	632.1	638.5	645.1	651.6	659.4	668.8	678.1	687.4	696.7	703.0
57.5°	567.1	575.2	583.3	591.4	599.5	608.0	617.3	626.6	635.8	645.1	652.5
60°	529.2	537.2	545.3	553.4	561.5	570.6	580.9	591.1	601.3	611.6	618.6
62.5°	492.3	501.1	510.0	518.8	527.6	537.0	547.3	557.5	567.8	578.0	585.2
65°	432.8	442.7	452.7	462.6	472.5	482.8	493.3	503.9	514.4	525.0	532.7
67.5°	375.6	386.2	396.7	407.3	417.8	428.7	440.0	451.3	462.6	473.9	481.8
70°	336.5	347.1	357.6	368.1	378.7	389.9	401.6	413.4	425.3	437.1	445.5
72.5°	298.5	309.3	320.1	330.9	341.7	353.4	365.9	378.4	391.0	403.5	411.6
75°	240.1	251.7	263.1	274.6	286.1	298.3	311.3	324.4	337.4	350.4	359.1
77.5°	185.7	197.8	210.1	222.2	234.4	247.2	260.9	274.6	288.2	301.8	310.6
80°	152.2	164.6	177.0	189.5	201.9	214.9	228.5	242.2	255.8	269.4	278.8
82.5°	118.7	131.6	144.5	157.4	170.3	183.6	197.2	210.9	224.6	238.2	247.7
85°	74.0	87.1	100.1	113.1	126.1	139.7	153.6	167.5	181.5	195.5	204.8
87.5°	41.5	54.4	67.6	80.4	93.2	106.3	120.9	134.5	148.3	162.3	171.2
90°	23.1	37.2	51.9	65.1	78.3	91.2	109.3	122.6	137.5	152.5	160.7
92.5°	30.2	45.5	64.1	84.9	107.6	136.2	189.8	264.4	337.4	382.0	348.9
95°	44.2	56.9	74.9	95.4	124.6	169.3	250.7	392.9	594.4	765.1	791.5
97.5°	63.2	72.0	87.7	105.9	131.0	169.5	235.0	354.6	554.7	790.6	952.3
100°	75.3	83.4	97.0	114.6	137.6	173.0	231.7	333.1	506.2	740.9	951.5
102.5°	88.0	96.3	108.4	124.2	145.7	179.2	233.2	323.5	472.4	681.7	898.3
105°	104.9	113.5	123.7	139.4	159.8	191.6	241.0	317.9	440.0	610.2	803.4
107.5°	126.4	133.1	142.2	157.3	176.0	206.6	252.2	322.8	428.1	566.6	725.8
110°	139.9	145.8	154.1	167.9	186.5	215.4	260.9	327.1	424.9	550.2	686.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	152.7	158.0	166.5	179.3	197.2	225.7	269.5	332.0	423.5	539.0	660.7
115°	171.1	176.2	184.5	195.2	213.0	240.7	282.2	339.5	422.8	527.6	633.9
117.5°	191.6	195.5	202.1	212.5	228.1	255.7	295.0	347.8	422.9	518.4	616.9
120°	204.4	206.9	213.4	223.0	237.3	264.4	303.4	353.5	423.2	512.8	606.6
122.5°	217.0	218.8	224.5	232.8	247.6	273.5	311.9	359.0	423.8	506.5	596.0
125°	232.2	235.1	239.4	247.8	262.6	288.4	324.6	368.7	426.2	498.7	580.4
127.5°	246.6	248.8	254.2	263.9	279.1	304.3	337.7	377.0	426.4	488.6	560.5
130°	253.7	256.6	262.6	274.1	288.8	314.1	345.9	381.6	426.9	482.3	548.0
132.5°	262.0	264.2	272.1	283.0	298.9	322.3	353.1	387.3	427.8	477.3	536.9
135°	272.1	275.2	283.1	296.5	313.2	334.8	362.9	393.5	428.1	468.2	519.0
137.5°	283.6	286.3	294.7	307.1	324.1	344.0	369.4	397.0	426.8	461.6	503.9
140°	291.8	293.9	302.3	315.4	331.6	350.5	374.6	400.1	427.3	457.7	495.6
142.5°	299.5	301.8	309.8	322.6	338.4	356.7	379.5	402.7	428.1	455.3	489.1
145°	311.7	313.8	321.3	332.1	346.8	364.1	384.6	405.9	428.8	453.2	480.4
147.5°	325.8	326.3	332.9	344.0	356.1	371.6	390.9	409.5	429.6	450.4	472.9
150°	334.7	335.1	341.1	350.3	361.8	376.7	394.0	411.4	429.6	448.5	468.3
152.5°	341.7	341.8	348.1	356.9	367.4	381.1	396.6	412.6	428.3	445.4	463.2
155°	352.9	353.8	358.5	366.4	375.1	386.9	400.3	413.7	426.4	440.6	455.7
157.5°	364.2	364.2	368.6	374.8	382.3	391.6	403.0	413.7	424.3	435.8	447.9
160°	371.1	371.1	374.3	379.8	386.2	394.9	404.2	413.7	422.4	431.9	442.2
162.5°	377.5	376.8	379.3	384.3	389.9	396.7	405.6	413.7	420.6	428.2	437.2
165°	384.6	384.6	386.2	390.1	394.0	398.8	405.9	412.2	417.0	422.4	428.8
167.5°	391.6	390.9	391.6	394.7	396.9	400.5	405.8	410.3	413.1	416.8	421.2
170°	394.9	394.0	394.9	397.2	398.8	401.1	405.1	409.0	410.6	412.9	416.2
172.5°	398.0	397.2	397.4	399.1	400.0	401.7	404.5	407.8	408.1	409.2	411.7
175°	401.1	400.3	400.3	401.1	401.9	401.9	403.5	405.9	405.1	405.1	406.7
177.5°	402.5	401.9	401.3	401.9	401.9	401.9	402.5	403.8	402.5	402.5	403.1
180°	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1242.5	1244.3	1246.0	1246.7	1246.5	1246.2	1246.0	1245.8
5°	1239.2	1241.7	1244.3	1245.3	1245.0	1244.7	1244.4	1244.1
7.5°	1232.6	1235.4	1238.2	1239.4	1239.1	1238.8	1238.5	1238.2
10°	1225.9	1228.7	1231.5	1232.7	1232.4	1232.1	1231.8	1231.5
12.5°	1216.5	1219.0	1221.5	1222.8	1222.7	1222.6	1222.6	1222.5
15°	1199.4	1202.1	1205.0	1206.2	1205.9	1205.6	1205.3	1205.0
17.5°	1178.5	1181.4	1184.3	1185.6	1185.3	1185.1	1184.8	1184.6
20°	1162.3	1165.4	1168.5	1170.0	1170.0	1170.0	1170.0	1170.0
22.5°	1143.3	1146.4	1149.5	1151.3	1151.9	1152.3	1152.8	1153.3
25°	1114.1	1117.4	1120.8	1122.8	1123.1	1123.4	1123.7	1124.0
27.5°	1081.2	1084.3	1087.5	1089.2	1089.6	1090.0	1090.4	1090.8
30°	1058.2	1061.6	1065.0	1067.0	1067.6	1068.2	1068.9	1069.5
32.5°	1034.6	1038.5	1042.5	1044.7	1045.3	1045.9	1046.5	1047.2
35°	997.2	1001.6	1005.9	1008.6	1009.5	1010.4	1011.4	1012.3
37.5°	958.3	962.7	967.0	969.8	970.8	971.8	972.7	973.7
40°	930.8	935.4	940.2	943.1	944.3	945.5	946.8	948.1
42.5°	903.9	909.1	914.2	917.3	918.3	919.3	920.3	921.2
45°	862.2	867.6	872.8	876.3	877.8	879.3	880.9	882.4
47.5°	818.2	823.6	829.2	832.8	834.7	836.6	838.4	840.3
50°	787.3	793.6	799.7	803.8	805.7	807.5	809.3	811.2
52.5°	756.1	762.2	768.5	772.4	774.4	776.2	778.1	779.9
55°	709.1	715.4	721.5	725.6	727.4	729.3	731.1	733.1
57.5°	659.8	667.2	674.6	679.1	680.9	682.7	684.4	686.1
60°	625.8	633.0	640.1	644.9	647.4	649.8	652.4	654.8
62.5°	592.3	599.5	606.6	611.4	613.9	616.3	618.8	621.4
65°	540.5	548.3	556.0	561.2	563.6	566.1	568.6	571.1
67.5°	489.7	497.6	505.4	510.6	513.0	515.4	517.9	520.3
70°	453.7	462.1	470.5	475.8	478.0	480.2	482.3	484.5
72.5°	419.8	427.9	436.1	441.3	443.7	446.2	448.6	451.0
75°	367.8	376.5	385.2	390.9	393.7	396.6	399.3	402.1
77.5°	319.5	328.3	337.1	343.1	346.0	349.0	351.9	355.0
80°	288.1	297.4	306.7	312.6	315.1	317.6	320.0	322.6
82.5°	257.3	266.9	276.4	282.6	285.3	288.0	290.7	293.5
85°	214.1	223.4	232.7	238.9	242.1	245.1	248.2	251.4
87.5°	180.3	189.5	198.6	204.5	207.3	210.3	212.8	215.5
90°	170.5	180.3	190.1	195.7	199.0	202.3	204.0	206.5
92.5°	304.1	274.5	259.4	249.2	242.4	240.5	240.3	242.9
95°	723.4	609.4	511.9	440.9	405.0	383.3	371.8	364.4
97.5°	993.6	956.2	887.2	810.1	756.1	711.1	690.1	676.4
100°	1075.2	1099.3	1069.0	1015.8	949.4	903.3	881.8	877.7
102.5°	1064.7	1151.1	1170.4	1151.4	1111.7	1079.2	1056.6	1054.0
105°	992.1	1136.4	1222.3	1259.8	1263.9	1260.1	1251.5	1249.2
107.5°	893.5	1046.6	1164.4	1239.7	1280.9	1301.2	1311.3	1315.6
110°	833.7	977.4	1099.1	1190.8	1249.3	1285.0	1301.7	1311.3



TEST NUMBER: P332648-840

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	787.9	915.5	1030.7	1122.2	1188.3	1230.9	1253.2	1267.3
115°	739.4	843.3	942.6	1022.9	1087.4	1137.0	1164.4	1173.0
117.5°	710.7	797.6	876.7	945.4	1001.1	1043.4	1071.5	1078.8
120°	695.8	775.4	844.8	905.2	952.7	990.0	1012.9	1024.1
122.5°	682.6	759.7	823.4	876.8	917.1	949.0	968.6	979.5
125°	662.1	735.9	796.3	843.5	877.0	901.8	918.7	925.2
127.5°	637.2	707.8	767.7	812.7	846.6	869.1	883.8	890.7
130°	619.0	687.0	746.3	791.8	826.1	847.7	862.2	868.8
132.5°	600.9	664.8	722.6	768.0	801.5	825.7	839.6	846.2
135°	573.7	630.0	683.1	726.0	759.4	783.4	797.9	804.5
137.5°	549.8	597.7	642.9	681.6	712.7	736.0	748.0	755.3
140°	535.9	577.1	616.7	652.7	681.9	700.7	713.4	721.2
142.5°	523.9	560.2	594.1	625.3	651.1	668.5	679.6	685.3
145°	507.6	536.2	561.8	585.4	606.4	621.1	630.3	635.4
147.5°	494.0	515.6	534.8	552.8	568.4	580.8	587.8	590.3
150°	487.2	505.3	521.2	535.3	548.1	558.3	563.0	563.8
152.5°	480.3	495.8	510.4	522.1	532.8	541.2	544.0	544.8
155°	469.8	482.5	494.3	503.8	511.7	518.0	520.4	520.4
157.5°	458.6	469.2	479.2	486.8	492.7	497.5	498.9	498.9
160°	451.7	460.4	469.1	475.3	480.1	484.8	485.6	485.6
162.5°	444.7	452.1	459.0	464.6	468.1	472.8	473.6	473.0
165°	435.0	439.8	445.4	449.3	452.4	455.7	454.8	454.0
167.5°	425.8	429.4	433.8	436.2	437.8	439.8	439.7	439.0
170°	420.1	422.4	425.7	428.0	429.6	430.3	429.6	429.6
172.5°	415.1	416.8	418.7	420.4	421.3	422.1	421.3	420.1
175°	408.3	409.0	410.6	410.6	410.6	412.2	410.6	409.0
177.5°	403.8	404.5	404.5	405.1	404.5	405.1	403.8	402.5
180°	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9

(END OF REPORT)