

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: P332656-830

Luminaire Tested: **SA4XXDIP-C1020D1035U830-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332656-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXDIP-C1020D1035U830-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1035 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7345.6 lumens
Efficiency: N/A
Efficacy: 121.4 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

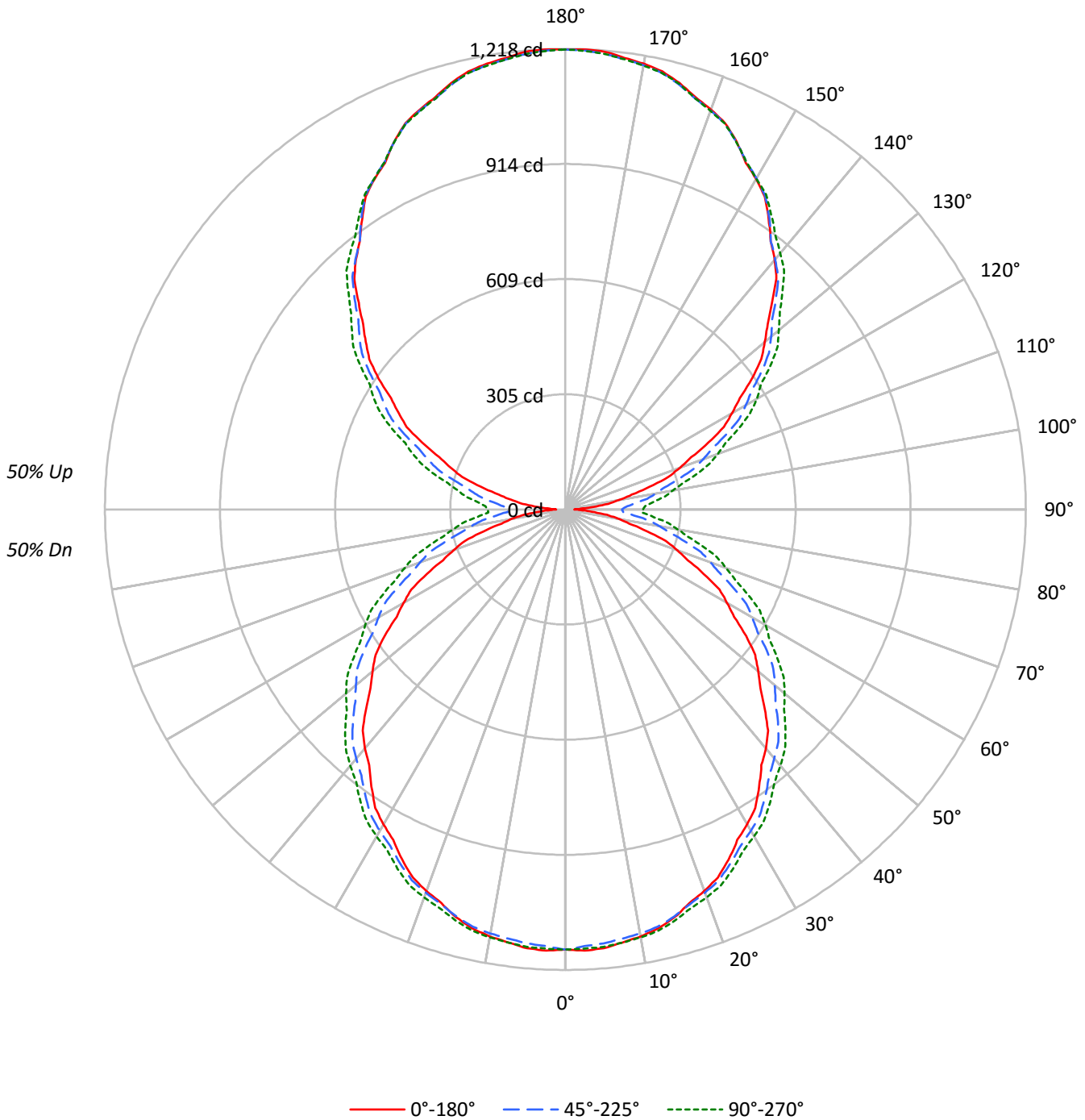
Input Watts (W): 60.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	97	92	88	84	89	85	81	78	72	69	66	59	57	56	48	47	45	40
2	88	80	73	68	80	74	68	63	62	58	54	51	48	46	42	39	37	33
3	80	70	62	56	73	64	58	52	54	49	45	45	41	38	37	34	31	27
4	73	61	53	47	67	57	50	44	48	42	38	40	36	32	32	29	27	23
5	67	55	46	40	61	51	43	37	43	37	33	36	31	28	29	26	23	20
6	61	49	40	34	56	45	38	32	39	33	28	32	28	24	26	23	20	17
7	57	44	36	30	52	41	33	28	35	29	25	29	25	21	24	20	18	15
8	52	40	32	26	48	37	30	25	32	26	22	27	22	19	22	18	16	13
9	49	36	29	24	45	34	27	22	29	23	20	24	20	17	20	17	14	12
10	46	33	26	21	42	31	24	20	27	21	18	23	18	15	19	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.2	1.5
10°-20°	315.7	4.3
20°-30°	477.4	6.5
30°-40°	577.6	7.9
40°-50°	610.7	8.3
50°-60°	574.7	7.8
60°-70°	476.8	6.5
70°-80°	334.9	4.6
80°-90°	193.0	2.6
90°-100°	192.7	2.6
100°-110°	320.9	4.4
110°-120°	459.3	6.3
120°-130°	563.4	7.7
130°-140°	611.0	8.3
140°-150°	589.8	8.0
150°-160°	493.7	6.7
160°-170°	328.5	4.5
170°-180°	115.0	1.6
0°-30°	903.4	12.3
0°-40°	1481.0	20.2
0°-60°	2666.4	36.3
0°-90°	3671.2	50.0
90°-120°	972.8	13.2
90°-150°	2737.1	37.3
90°-180°	3674.0	50.0
0°-180°	7345.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	74
90°	24	86	150	191	206	17
95°	73	125	185	221	235	76
105°	231	259	310	344	358	246
115°	418	431	470	496	506	413
125°	603	603	633	655	662	537
135°	773	779	788	806	812	598
145°	937	940	941	947	950	587
155°	1072	1072	1072	1075	1072	493
165°	1168	1165	1163	1168	1165	329
175°	1215	1210	1209	1215	1209	115
180°	1216	1216	1216	1216	1216	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	39.1	51.4	63.7	76.0	88.2	100.9	113.9	127.0	140.0	153.0	161.6
90°	23.7	37.5	51.5	65.3	79.2	93.2	107.4	121.5	135.6	149.7	159.4
92.5°	40.0	53.0	66.1	79.1	92.2	105.6	119.1	132.8	146.4	160.0	168.9
95°	73.4	84.8	96.2	107.7	119.1	131.5	144.9	158.2	171.5	184.8	193.3
97.5°	114.0	123.7	133.5	143.2	152.9	164.5	178.0	191.4	204.9	218.4	226.7
100°	146.0	154.4	162.8	171.2	179.6	190.3	203.5	216.6	229.8	243.0	251.2
102.5°	180.7	187.6	194.5	201.5	208.4	218.3	231.0	243.8	256.6	269.4	277.6
105°	230.9	237.0	242.9	248.9	255.0	263.7	275.2	286.8	298.4	309.9	317.8
107.5°	286.2	291.2	296.1	301.1	306.1	313.8	324.0	334.3	344.6	354.9	362.6
110°	322.7	327.3	331.7	336.2	340.6	347.9	357.8	367.7	377.7	387.6	393.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	360.9	364.6	368.3	371.9	375.6	382.0	391.3	400.7	409.9	419.2	425.6
115°	418.0	420.6	423.2	425.8	428.4	434.1	443.0	451.9	460.7	469.6	475.7
117.5°	473.1	474.8	476.5	478.2	479.9	485.0	493.3	501.7	510.0	518.4	523.7
120°	508.9	510.6	512.3	514.0	515.8	520.5	528.2	536.0	543.8	551.6	556.3
122.5°	547.2	547.8	548.3	548.8	549.3	553.4	561.0	568.6	576.3	584.0	589.0
125°	602.6	602.3	602.0	601.7	601.4	604.8	611.9	618.9	625.9	632.9	638.0
127.5°	653.7	654.0	654.4	654.7	655.1	657.9	663.1	668.3	673.5	678.7	683.5
130°	688.8	689.1	689.5	689.8	690.1	692.7	697.3	701.9	706.5	711.1	716.0
132.5°	725.7	725.9	726.0	726.2	726.3	728.2	731.8	735.3	738.9	742.3	747.0
135°	773.1	774.4	775.6	776.8	778.2	779.8	781.8	783.8	785.9	787.9	792.1
137.5°	826.1	826.4	826.8	827.1	827.4	828.1	829.4	830.8	832.1	833.4	837.2
140°	861.6	861.7	861.8	862.0	862.0	862.2	862.5	862.8	863.2	863.5	867.0
142.5°	892.9	893.2	893.6	893.9	894.3	894.3	894.0	893.6	893.2	893.0	896.2
145°	937.4	937.9	938.5	939.1	939.5	939.9	940.2	940.4	940.6	940.8	942.4
147.5°	981.8	982.5	983.3	983.9	984.7	985.0	984.8	984.6	984.4	984.3	984.3
150°	1008.9	1009.5	1009.9	1010.5	1011.1	1011.3	1011.3	1011.3	1011.3	1011.3	1011.3
152.5°	1033.4	1033.9	1034.3	1034.7	1035.2	1035.5	1035.7	1035.9	1036.0	1036.1	1036.7
155°	1072.5	1072.5	1072.5	1072.5	1072.5	1072.4	1072.1	1072.0	1071.8	1071.6	1072.4
157.5°	1105.6	1105.2	1104.8	1104.5	1104.1	1103.9	1103.8	1103.8	1103.8	1103.7	1104.4
160°	1125.2	1124.9	1124.7	1124.5	1124.4	1124.2	1123.9	1123.7	1123.5	1123.3	1123.9
162.5°	1143.2	1142.7	1142.2	1141.6	1141.0	1140.7	1140.5	1140.3	1140.1	1139.8	1140.9
165°	1167.5	1166.9	1166.3	1165.6	1165.0	1164.5	1164.0	1163.7	1163.2	1162.8	1164.0
167.5°	1186.2	1185.2	1184.4	1183.6	1182.6	1182.2	1182.2	1182.3	1182.3	1182.4	1183.6
170°	1196.7	1195.6	1194.6	1193.5	1192.5	1192.0	1192.3	1192.5	1192.7	1192.9	1194.2
172.5°	1204.2	1203.3	1202.5	1201.6	1200.7	1200.2	1200.3	1200.3	1200.4	1200.4	1201.8
175°	1214.6	1213.5	1212.5	1211.4	1210.4	1209.8	1209.6	1209.3	1209.1	1208.9	1210.4
177.5°	1218.0	1217.1	1216.3	1215.4	1214.6	1214.2	1214.2	1214.2	1214.2	1214.2	1215.3
180°	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	170.2	178.9	187.6	193.2	195.9	198.5	201.1	203.7
90°	169.0	178.7	188.3	194.5	197.3	200.0	202.7	205.5
92.5°	177.9	186.8	195.7	201.4	204.0	206.6	209.2	211.7
95°	201.8	210.2	218.7	224.2	226.8	229.4	232.0	234.6
97.5°	235.1	243.4	251.8	257.1	259.7	262.1	264.7	267.1
100°	259.5	267.7	275.9	281.1	283.0	285.1	287.1	289.2
102.5°	285.7	293.9	302.1	307.4	309.8	312.3	314.6	317.1
105°	325.6	333.5	341.4	346.8	349.8	352.7	355.6	358.5
107.5°	370.2	378.0	385.7	390.6	392.6	394.6	396.7	398.7
110°	400.0	406.3	412.6	417.2	420.1	423.0	425.9	428.9



TEST NUMBER: P332656-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	431.9	438.3	444.6	449.0	451.5	453.9	456.3	458.7
115°	481.8	488.0	494.2	498.2	500.0	501.8	503.6	505.5
117.5°	529.0	534.3	539.6	543.2	545.2	547.1	548.9	550.8
120°	561.0	565.8	570.5	574.3	577.0	579.8	582.5	585.2
122.5°	594.1	599.2	604.3	607.5	608.8	610.1	611.5	612.8
125°	643.1	648.2	653.3	656.5	657.8	659.1	660.4	661.8
127.5°	688.3	693.1	698.0	701.2	702.8	704.5	706.1	707.7
130°	720.8	725.6	730.4	733.2	734.1	735.0	735.9	736.8
132.5°	751.5	756.1	760.6	763.6	765.0	766.4	767.8	769.2
135°	796.4	800.5	804.7	807.4	808.5	809.6	810.8	811.8
137.5°	840.8	844.5	848.2	850.8	852.3	853.9	855.5	857.1
140°	870.5	874.1	877.6	880.1	881.3	882.5	883.7	885.0
142.5°	899.5	902.8	906.0	908.2	909.4	910.6	911.7	912.9
145°	943.9	945.4	946.9	947.9	948.5	949.0	949.5	950.1
147.5°	984.4	984.5	984.5	984.9	985.6	986.4	987.0	987.8
150°	1011.3	1011.3	1011.3	1011.3	1011.1	1010.8	1010.6	1010.4
152.5°	1037.2	1037.6	1038.2	1038.2	1037.6	1037.1	1036.5	1035.9
155°	1073.3	1074.0	1074.9	1074.9	1074.0	1073.3	1072.4	1071.6
157.5°	1104.9	1105.6	1106.3	1106.2	1105.5	1104.8	1104.1	1103.3
160°	1124.5	1125.2	1125.8	1125.6	1124.5	1123.5	1122.5	1121.4
162.5°	1142.1	1143.2	1144.3	1144.4	1143.4	1142.4	1141.3	1140.2
165°	1165.4	1166.6	1167.8	1168.0	1167.2	1166.4	1165.5	1164.7
167.5°	1184.9	1186.2	1187.4	1187.4	1186.1	1184.8	1183.5	1182.2
170°	1195.4	1196.7	1198.0	1197.8	1196.4	1194.9	1193.4	1191.9
172.5°	1203.2	1204.7	1206.2	1206.1	1204.7	1203.2	1201.7	1200.2
175°	1211.8	1213.3	1214.7	1214.7	1213.3	1211.8	1210.4	1208.9
177.5°	1216.5	1217.7	1218.9	1218.8	1217.5	1216.1	1214.7	1213.4
180°	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4

(END OF REPORT)