

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: P332820-830

Luminaire Tested: **S124DIW-S1020D1050U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332820-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1050U830-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7396.0 lumens
Efficiency: N/A
Efficacy: 120.8 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

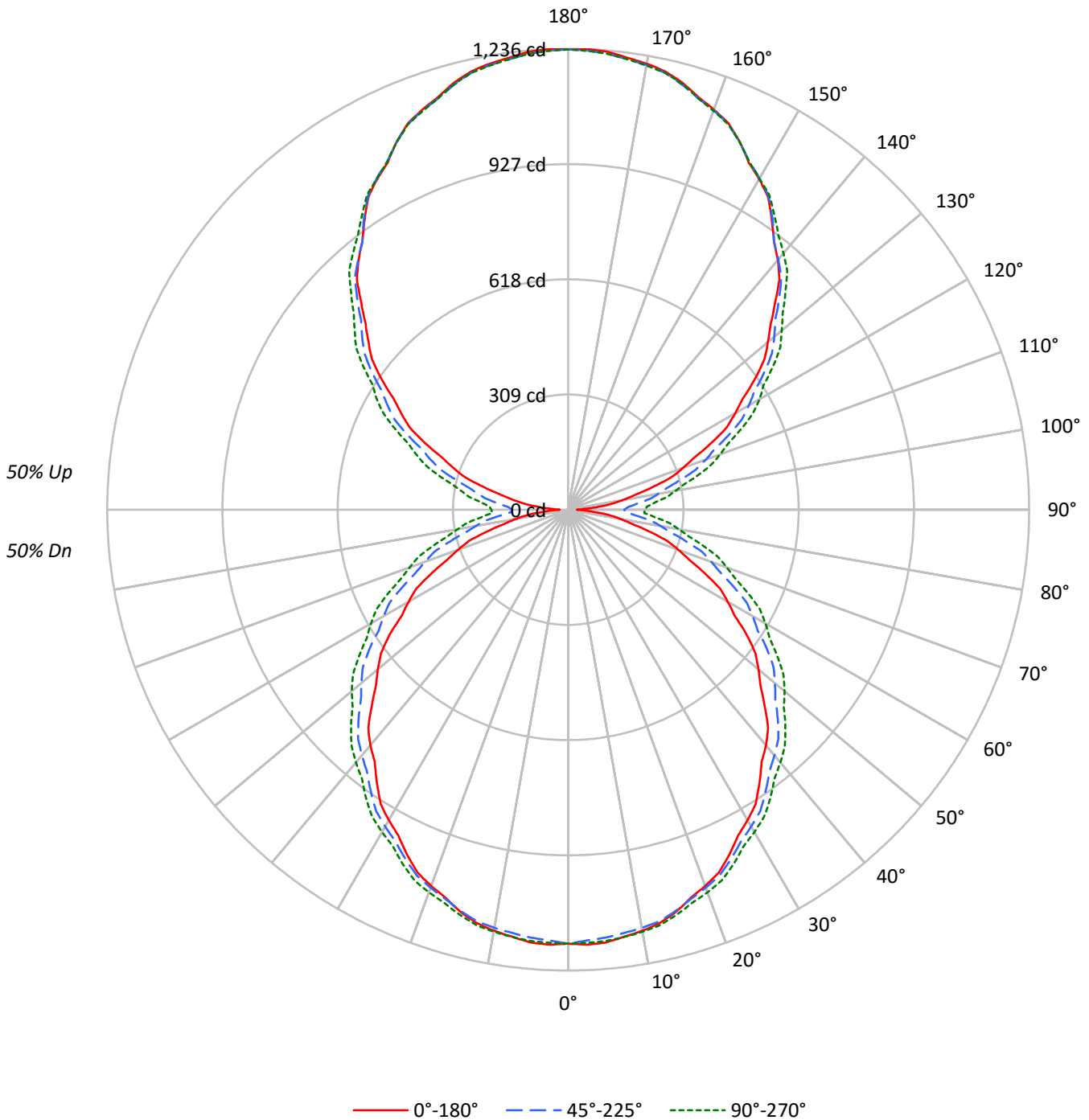
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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					50			
1	97	92	88	84	89	85	81	78	71	69	66	59	57	55	48	46	45	40					40			
2	88	80	73	68	80	74	68	63	62	58	54	51	48	45	41	39	37	32					32			
3	80	70	62	56	73	64	58	52	54	49	45	45	41	38	36	34	31	27					27			
4	73	61	53	47	67	57	49	44	48	42	38	40	36	32	32	29	27	23					23			
5	67	55	46	40	61	50	43	37	43	37	32	36	31	28	29	26	23	20					20			
6	61	49	40	34	56	45	38	32	38	33	28	32	28	24	26	23	20	17					17			
7	57	44	36	30	52	41	33	28	35	29	25	29	25	21	24	20	18	15					15			
8	52	40	32	26	48	37	30	25	32	26	22	27	22	19	22	18	16	13					13			
9	49	36	29	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12					12			
10	46	33	26	21	42	31	24	20	27	21	17	23	18	15	19	15	13	11					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	7.8
40°-50°	610.7	8.3
50°-60°	574.7	7.8
60°-70°	476.8	6.4
70°-80°	334.9	4.5
80°-90°	193.1	2.6
90°-100°	193.9	2.6
100°-110°	324.5	4.4
110°-120°	465.3	6.3
120°-130°	571.4	7.7
130°-140°	619.9	8.4
140°-150°	598.6	8.1
150°-160°	501.1	6.8
160°-170°	333.4	4.5
170°-180°	116.7	1.6
0°-30°	903.4	12.2
0°-40°	1481.0	20.0
0°-60°	2666.4	36.1
0°-90°	3671.3	49.6
90°-120°	983.6	13.3
90°-150°	2773.5	37.5
90°-180°	3725.0	50.4
0°-180°	7396.0	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	192	206	17
95°	74	126	186	223	236	77
105°	234	263	313	348	362	249
115°	424	437	476	502	512	419
125°	612	612	642	664	671	545
135°	785	791	800	818	823	607
145°	951	954	955	961	964	595
155°	1088	1088	1088	1091	1088	501
165°	1185	1182	1180	1185	1182	334
175°	1233	1228	1227	1233	1227	117
180°	1235	1235	1235	1235	1235	



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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	51.5	63.7	76.0	88.3	100.9	114.0	127.0	140.0	153.1	161.6
90°	23.8	37.6	51.6	65.5	79.4	93.4	107.5	121.7	135.9	150.1	159.7
92.5°	40.2	53.3	66.4	79.6	92.7	106.0	119.6	133.3	146.9	160.6	169.5
95°	74.3	85.7	97.2	108.7	120.1	132.5	145.9	159.2	172.6	186.0	194.4
97.5°	115.5	125.2	135.0	144.7	154.5	166.1	179.6	193.0	206.6	220.1	228.4
100°	148.0	156.4	164.8	173.1	181.5	192.3	205.5	218.8	232.0	245.2	253.4
102.5°	183.1	190.1	197.0	204.0	210.9	220.8	233.6	246.4	259.2	272.0	280.2
105°	234.2	240.3	246.2	252.2	258.3	267.0	278.6	290.1	301.7	313.3	321.1
107.5°	290.3	295.3	300.3	305.3	310.3	317.9	328.2	338.5	348.7	359.0	366.7
110°	327.4	331.9	336.4	340.8	345.3	352.5	362.5	372.4	382.3	392.3	398.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	366.1	369.8	373.4	377.1	380.8	387.3	396.6	405.9	415.2	424.4	430.8
115°	424.1	426.7	429.3	432.0	434.5	440.3	449.1	458.0	466.8	475.6	481.8
117.5°	480.0	481.7	483.5	485.2	486.9	492.0	500.3	508.7	517.0	525.3	530.7
120°	516.4	518.1	519.8	521.5	523.3	528.0	535.7	543.6	551.3	559.0	563.8
122.5°	555.3	555.9	556.4	556.9	557.4	561.5	569.1	576.7	584.4	592.0	597.1
125°	611.5	611.2	611.0	610.7	610.4	613.8	620.8	627.8	634.8	641.9	647.0
127.5°	663.4	663.7	664.1	664.5	664.8	667.6	672.8	678.1	683.2	688.4	693.2
130°	699.0	699.4	699.7	700.0	700.4	702.9	707.6	712.2	716.8	721.4	726.2
132.5°	736.5	736.6	736.8	737.0	737.2	739.0	742.5	746.1	749.6	753.2	757.7
135°	784.6	785.9	787.1	788.4	789.7	791.4	793.4	795.4	797.5	799.5	803.7
137.5°	838.5	838.8	839.1	839.4	839.7	840.5	841.8	843.1	844.5	845.8	849.5
140°	874.4	874.5	874.7	874.8	874.9	875.2	875.4	875.7	876.0	876.3	879.9
142.5°	906.2	906.5	906.9	907.3	907.7	907.7	907.3	907.0	906.6	906.3	909.6
145°	951.4	952.0	952.4	953.0	953.6	953.9	954.2	954.4	954.6	954.8	956.4
147.5°	996.5	997.1	997.9	998.6	999.4	999.7	999.5	999.3	999.1	998.9	999.0
150°	1024.0	1024.4	1025.0	1025.6	1026.1	1026.4	1026.4	1026.4	1026.4	1026.4	1026.4
152.5°	1048.9	1049.3	1049.8	1050.2	1050.7	1050.9	1051.1	1051.3	1051.5	1051.7	1052.2
155°	1088.5	1088.5	1088.5	1088.5	1088.5	1088.4	1088.2	1088.0	1087.8	1087.6	1088.4
157.5°	1122.1	1121.7	1121.3	1121.0	1120.6	1120.4	1120.3	1120.3	1120.2	1120.2	1120.9
160°	1142.0	1141.8	1141.5	1141.3	1141.1	1140.9	1140.7	1140.5	1140.3	1140.1	1140.7
162.5°	1160.3	1159.8	1159.2	1158.7	1158.1	1157.7	1157.5	1157.3	1157.1	1156.9	1158.0
165°	1185.0	1184.3	1183.6	1183.1	1182.4	1181.9	1181.5	1181.0	1180.6	1180.2	1181.5
167.5°	1203.8	1203.0	1202.1	1201.2	1200.3	1199.9	1200.0	1200.0	1200.0	1200.0	1201.3
170°	1214.6	1213.5	1212.4	1211.4	1210.3	1209.8	1210.1	1210.3	1210.5	1210.7	1212.0
172.5°	1222.2	1221.3	1220.4	1219.6	1218.6	1218.2	1218.2	1218.3	1218.3	1218.3	1219.8
175°	1232.7	1231.6	1230.6	1229.5	1228.4	1227.9	1227.6	1227.4	1227.2	1227.0	1228.4
177.5°	1236.1	1235.3	1234.4	1233.6	1232.8	1232.3	1232.3	1232.3	1232.3	1232.3	1233.5
180°	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6



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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°	170.3	179.0	187.7	193.3	196.0	198.5	201.1	203.8
90°	169.4	179.0	188.7	194.9	197.7	200.4	203.1	205.9
92.5°	178.4	187.4	196.3	202.1	204.6	207.2	209.7	212.4
95°	202.8	211.3	219.8	225.3	227.9	230.5	233.1	235.7
97.5°	236.8	245.2	253.4	258.9	261.4	263.9	266.4	268.8
100°	261.6	269.8	278.1	283.2	285.3	287.3	289.4	291.3
102.5°	288.3	296.5	304.7	310.0	312.5	314.9	317.4	319.7
105°	329.0	336.9	344.8	350.2	353.2	356.1	359.0	362.0
107.5°	374.4	382.1	389.8	394.7	396.8	398.8	400.9	402.9
110°	404.7	410.9	417.2	421.8	424.7	427.7	430.6	433.6



TEST NUMBER: P332820-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	437.2	443.5	449.9	454.2	456.7	459.1	461.6	464.0
115°	488.0	494.1	500.3	504.3	506.1	507.9	509.7	511.5
117.5°	535.9	541.2	546.5	550.1	552.0	553.9	555.8	557.7
120°	568.5	573.3	578.0	581.7	584.5	587.2	589.9	592.7
122.5°	602.2	607.3	612.3	615.5	616.8	618.1	619.4	620.8
125°	652.1	657.0	662.1	665.3	666.7	668.0	669.3	670.6
127.5°	698.0	702.9	707.7	710.9	712.5	714.1	715.7	717.4
130°	731.0	735.8	740.6	743.5	744.3	745.2	746.1	747.0
132.5°	762.3	766.9	771.4	774.4	775.8	777.1	778.5	780.0
135°	807.9	812.1	816.3	819.0	820.1	821.1	822.3	823.4
137.5°	853.2	856.9	860.5	863.1	864.7	866.3	867.9	869.4
140°	883.4	886.9	890.5	892.9	894.1	895.3	896.5	897.9
142.5°	912.8	916.1	919.4	921.5	922.7	923.9	925.0	926.2
145°	957.9	959.4	960.9	962.0	962.5	963.0	963.6	964.0
147.5°	999.1	999.1	999.2	999.6	1000.3	1001.0	1001.7	1002.5
150°	1026.4	1026.4	1026.4	1026.3	1026.1	1026.0	1025.7	1025.5
152.5°	1052.6	1053.2	1053.7	1053.7	1053.1	1052.5	1052.0	1051.5
155°	1089.3	1090.1	1091.0	1091.0	1090.1	1089.3	1088.4	1087.6
157.5°	1121.5	1122.1	1122.8	1122.8	1122.0	1121.2	1120.6	1119.8
160°	1141.3	1142.0	1142.6	1142.4	1141.3	1140.3	1139.3	1138.1
162.5°	1159.1	1160.3	1161.5	1161.5	1160.5	1159.4	1158.3	1157.3
165°	1182.7	1184.0	1185.2	1185.4	1184.6	1183.7	1182.9	1182.0
167.5°	1202.6	1203.8	1205.1	1205.1	1203.8	1202.5	1201.2	1199.9
170°	1213.2	1214.6	1215.8	1215.7	1214.3	1212.8	1211.3	1209.8
172.5°	1221.3	1222.7	1224.2	1224.1	1222.7	1221.2	1219.7	1218.1
175°	1229.9	1231.4	1232.9	1232.9	1231.4	1229.9	1228.4	1227.0
177.5°	1234.7	1235.9	1237.1	1237.0	1235.6	1234.3	1232.9	1231.5
180°	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6

(END OF REPORT)