

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: P332224-930

Luminaire Tested: **S123DIW-S1165D1030U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332224-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1165D1030U930-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7317.9 lumens
Efficiency: N/A
Efficacy: 108.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

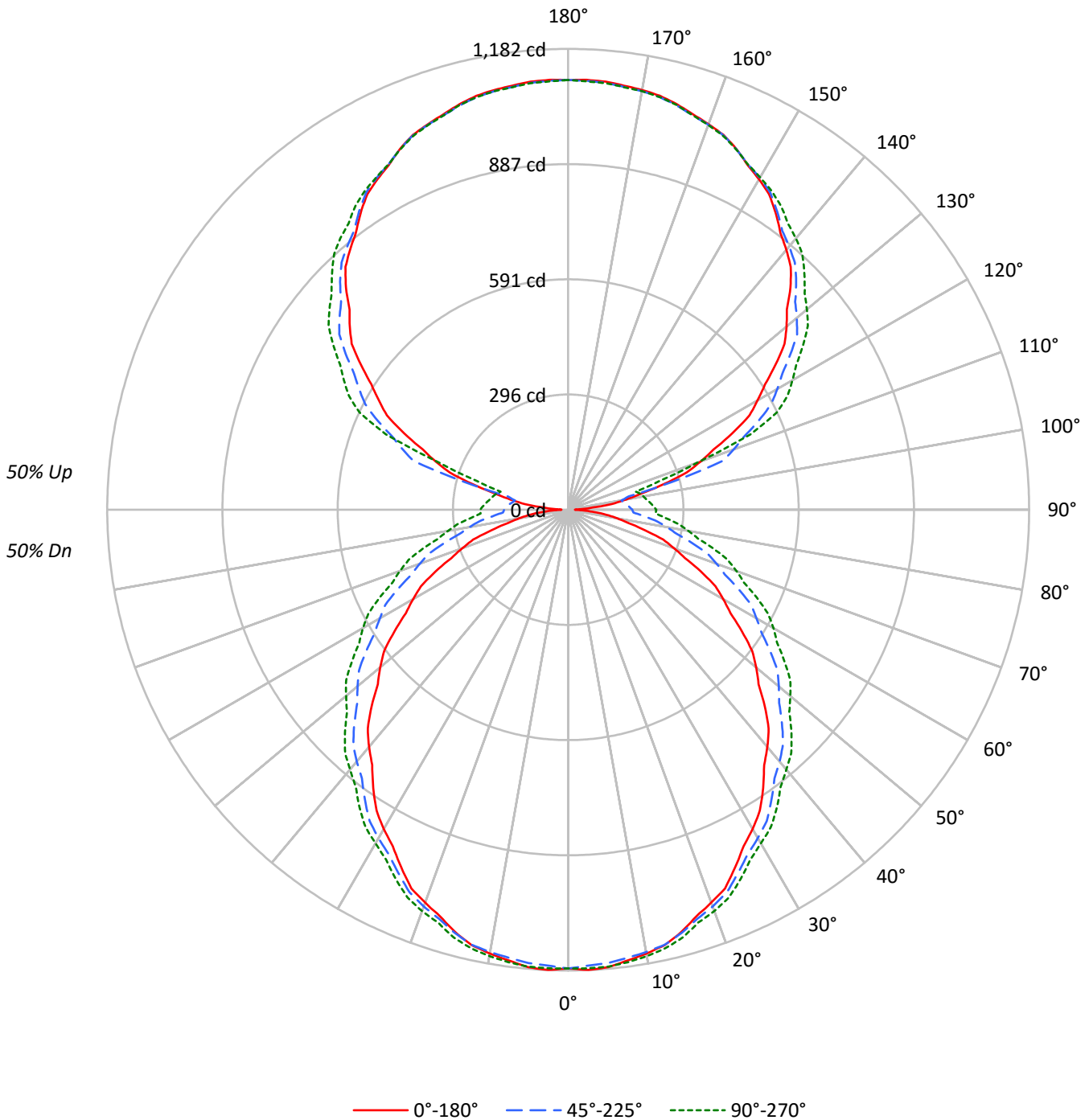
Input Watts (W): 67.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332224-930

CATALOG NUMBER: S123DIW-S1165D1030U930-4F0-1E-UDD-D

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	71	69	66	59	57	55	48	46	45	40
2	88	80	73	68	80	73	68	63	62	58	54	51	48	45	41	39	37	32
3	80	70	62	56	73	64	58	52	54	49	45	45	41	38	36	33	31	27
4	73	61	53	47	67	57	49	44	48	42	38	40	36	32	32	29	27	23
5	67	55	46	40	61	50	43	37	43	37	32	36	31	28	29	26	23	20
6	61	49	40	34	56	45	38	32	38	33	28	32	28	24	26	23	20	17
7	57	44	36	30	52	41	34	28	35	29	25	29	25	21	24	20	18	15
8	52	40	32	27	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°	12664	12664	12664
5°	12703	12344	12352
10°	12589	12060	12000
15°	12427	11738	11616
20°	12195	11369	11194
25°	11908	10944	10750
30°	11616	10563	10299
35°	11287	10159	9939
40°	10973	9792	9555
45°	10626	9438	9247
50°	10281	9090	8908
55°	9903	8734	8603
60°	9533	8371	8291
65°	9155	7984	7918
70°	8585	7551	7537
75°	7860	7053	7148
80°	7035	6564	6706
85°	6264	6229	6450



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.5	1.5
10°-20°	317.9	4.3
20°-30°	475.5	6.5
30°-40°	567.9	7.8
40°-50°	594.1	8.1
50°-60°	557.5	7.6
60°-70°	465.7	6.4
70°-80°	333.2	4.6
80°-90°	201.8	2.8
90°-100°	164.7	2.3
100°-110°	282.6	3.9
110°-120°	519.9	7.1
120°-130°	619.1	8.5
130°-140°	639.9	8.7
140°-150°	587.0	8.0
150°-160°	470.8	6.4
160°-170°	303.9	4.2
170°-180°	104.7	1.4
0°-30°	905.0	12.4
0°-40°	1472.8	20.1
0°-60°	2624.5	35.9
0°-90°	3625.1	49.5
90°-120°	967.3	13.2
90°-150°	2813.3	38.4
90°-180°	3693.0	50.5
0°-180°	7317.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1176	1176	1176	1176	1176	
5°	1178	1175	1168	1177	1176	112
15°	1121	1125	1124	1136	1136	316
25°	1012	1025	1029	1045	1046	466
35°	872	892	909	927	933	545
45°	713	743	775	799	810	549
55°	543	586	632	665	677	486
65°	376	426	482	519	533	371
75°	204	264	328	369	386	218
85°	63	127	195	237	251	66
90°	17	89	164	210	226	14
95°	64	84	152	196	210	73
105°	254	291	276	173	180	269
115°	464	486	538	576	590	458
125°	649	658	696	724	735	580
135°	806	810	827	851	856	620
145°	928	933	934	946	951	581
155°	1021	1020	1020	1024	1020	470
165°	1077	1074	1074	1079	1074	304
175°	1102	1098	1099	1104	1098	105
180°	1102	1102	1102	1102	1102	



TEST NUMBER: P332224-930

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5
2.5°	1181.6	1181.0	1180.2	1179.6	1178.8	1177.6	1175.8	1173.9	1172.2	1170.4	1172.2
5°	1177.8	1177.2	1176.6	1176.1	1175.5	1174.4	1172.6	1170.9	1169.2	1167.5	1169.8
7.5°	1166.2	1166.4	1166.4	1166.6	1166.7	1166.0	1164.2	1162.6	1161.0	1159.3	1162.1
10°	1156.0	1156.6	1157.2	1157.7	1158.3	1157.8	1156.4	1155.0	1153.6	1152.1	1155.0
12.5°	1143.7	1144.4	1145.3	1146.1	1146.9	1146.8	1145.8	1144.8	1143.9	1142.9	1145.5
15°	1121.4	1122.3	1123.1	1124.0	1124.8	1125.1	1124.8	1124.5	1124.2	1124.0	1126.8
17.5°	1093.2	1094.9	1096.6	1098.3	1100.0	1100.8	1100.7	1100.6	1100.5	1100.3	1102.9
20°	1072.7	1074.4	1076.1	1077.8	1079.5	1080.7	1081.2	1081.8	1082.4	1083.0	1085.5
22.5°	1051.2	1052.9	1054.6	1056.3	1058.0	1059.2	1060.1	1060.9	1061.6	1062.4	1065.7
25°	1012.4	1015.3	1018.1	1021.0	1023.9	1025.6	1026.5	1027.4	1028.3	1029.1	1032.8
27.5°	973.5	976.7	980.0	983.3	986.4	989.0	990.8	992.6	994.5	996.3	999.5
30°	945.8	949.5	953.2	956.9	960.6	963.6	965.9	968.2	970.5	972.7	976.2
32.5°	915.0	919.2	923.3	927.5	931.6	935.2	938.2	941.2	944.1	947.1	950.7
35°	871.5	876.0	880.6	885.2	889.7	893.8	897.6	901.2	904.9	908.7	912.9
37.5°	825.3	830.5	835.6	840.7	845.9	850.7	855.2	859.8	864.4	868.9	873.8
40°	794.6	799.7	804.9	809.9	815.1	820.5	826.2	831.8	837.6	843.3	848.2
42.5°	760.8	767.0	773.3	779.5	785.8	791.9	797.9	803.7	809.7	815.6	820.9
45°	712.6	719.4	726.2	733.0	739.9	746.9	754.0	761.1	768.3	775.3	780.7
47.5°	662.0	669.8	677.5	685.3	693.1	701.0	709.1	717.3	725.5	733.6	739.6
50°	629.2	637.2	645.2	653.1	661.1	669.5	678.4	687.2	696.0	704.8	711.4
52.5°	594.4	602.8	611.2	619.7	628.1	637.2	646.9	656.6	666.4	676.1	683.0
55°	543.4	552.8	562.1	571.6	581.0	590.8	601.0	611.3	621.6	631.9	639.5
57.5°	493.7	503.4	513.2	523.0	532.9	543.4	554.6	565.8	577.0	588.2	596.0
60°	458.8	469.0	479.3	489.6	499.8	510.8	522.4	534.1	545.8	557.5	565.5
62.5°	426.0	436.5	446.9	457.5	467.9	479.3	491.7	504.0	516.4	528.8	536.7
65°	375.5	386.6	397.7	408.8	420.0	431.8	444.3	456.8	469.4	481.8	490.4
67.5°	324.2	336.1	347.8	359.6	371.4	383.7	396.4	409.2	421.9	434.7	444.0
70°	288.4	300.6	312.8	325.1	337.4	350.3	363.9	377.6	391.3	405.0	414.1
72.5°	255.5	267.8	280.1	292.3	304.5	317.7	331.8	345.9	360.1	374.2	383.6
75°	203.7	217.2	230.6	243.9	257.3	271.1	285.4	299.6	313.8	328.1	337.5
77.5°	158.7	172.2	185.6	199.2	212.6	226.6	240.9	255.3	269.6	284.0	293.9
80°	126.9	140.8	154.8	168.8	182.7	197.1	211.9	226.7	241.5	256.3	266.0
82.5°	99.2	113.4	127.6	141.8	155.9	170.6	185.6	200.6	215.6	230.6	240.4
85°	62.8	77.0	91.3	105.5	119.8	134.4	149.5	164.6	179.7	194.8	204.5
87.5°	34.2	48.8	63.3	77.9	92.5	107.2	122.2	137.2	152.2	167.2	177.0
90°	17.4	33.3	49.0	64.8	80.6	96.9	113.8	130.7	147.6	164.4	174.9
92.5°	30.9	43.0	55.0	67.1	79.2	93.3	109.3	125.4	141.5	157.6	168.2
95°	64.1	67.7	71.3	75.0	78.6	88.5	104.4	120.3	136.3	152.3	162.3
97.5°	112.9	119.6	126.3	133.0	139.7	143.1	143.3	143.6	143.8	144.0	153.9
100°	149.9	162.7	175.5	188.2	201.0	199.7	184.4	169.1	153.8	138.5	148.2
102.5°	192.2	202.9	213.8	224.6	235.5	231.8	213.6	195.5	177.3	159.2	162.7
105°	254.3	263.1	272.0	280.8	289.6	292.0	287.9	283.7	279.6	275.5	251.2
107.5°	318.6	326.0	333.4	340.8	348.2	359.1	373.2	387.4	401.6	415.9	399.8
110°	361.4	368.0	374.6	381.2	387.8	397.8	411.2	424.5	438.0	451.3	452.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	403.4	408.9	414.4	420.0	425.5	434.7	447.7	460.6	473.5	486.5	493.7
115°	464.1	468.7	473.2	477.7	482.2	490.4	502.3	514.2	526.1	537.9	546.7
117.5°	524.0	527.5	530.9	534.3	537.9	544.8	555.2	565.7	576.2	586.6	594.8
120°	560.4	563.4	566.5	569.5	572.6	579.1	589.1	599.0	608.9	618.9	626.9
122.5°	598.3	600.4	602.5	604.6	606.7	612.5	622.2	631.8	641.5	651.1	658.4
125°	649.1	650.6	652.1	653.5	654.9	660.1	669.2	678.2	687.1	696.1	702.5
127.5°	699.6	700.7	701.9	703.1	704.3	708.7	716.4	724.1	731.8	739.6	745.8
130°	731.0	732.2	733.4	734.5	735.7	739.5	745.9	752.4	758.8	765.2	771.4
132.5°	760.1	761.5	763.0	764.3	765.7	769.0	774.1	779.3	784.4	789.5	795.5
135°	805.9	806.7	807.5	808.3	809.1	811.5	815.3	819.2	823.0	826.9	832.6
137.5°	845.0	846.1	847.3	848.4	849.5	851.3	853.4	855.6	857.7	859.9	865.3
140°	870.1	871.2	872.3	873.4	874.5	875.7	877.1	878.6	880.0	881.3	886.3
142.5°	894.4	895.2	896.1	897.0	897.8	898.6	899.4	900.0	900.7	901.5	905.9
145°	928.3	929.3	930.3	931.2	932.2	932.9	933.3	933.6	934.0	934.3	937.0
147.5°	959.0	959.8	960.6	961.4	962.3	962.9	963.2	963.6	963.9	964.3	965.4
150°	978.6	979.1	979.7	980.2	980.7	981.2	981.5	981.9	982.3	982.7	983.0
152.5°	996.3	996.5	996.8	997.0	997.3	997.5	997.8	997.9	998.2	998.4	999.1
155°	1021.2	1020.8	1020.4	1020.1	1019.7	1019.6	1019.8	1019.9	1020.2	1020.3	1021.2
157.5°	1040.5	1040.5	1040.4	1040.4	1040.3	1040.2	1040.1	1039.8	1039.7	1039.5	1040.6
160°	1052.3	1052.1	1051.9	1051.7	1051.6	1051.3	1051.2	1051.0	1050.8	1050.7	1051.7
162.5°	1063.4	1062.9	1062.5	1062.0	1061.5	1061.2	1061.0	1060.9	1060.6	1060.5	1061.7
165°	1076.8	1076.3	1075.8	1075.2	1074.6	1074.3	1074.1	1073.9	1073.7	1073.6	1075.1
167.5°	1087.3	1086.6	1085.9	1085.2	1084.4	1084.0	1084.0	1084.0	1084.0	1084.0	1085.5
170°	1093.2	1092.5	1091.8	1091.0	1090.3	1090.0	1090.0	1090.0	1090.0	1090.0	1091.4
172.5°	1097.1	1096.3	1095.4	1094.5	1093.6	1093.3	1093.4	1093.6	1093.7	1093.9	1095.4
175°	1102.2	1101.3	1100.4	1099.5	1098.6	1098.2	1098.4	1098.6	1098.8	1098.9	1100.2
177.5°	1103.5	1102.8	1102.1	1101.4	1100.7	1100.3	1100.5	1100.7	1100.7	1100.9	1102.1
180°	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5
2.5°	1173.9	1175.8	1177.6	1178.4	1178.2	1177.9	1177.7	1177.5
5°	1172.1	1174.4	1176.6	1177.6	1177.4	1177.0	1176.8	1176.5
7.5°	1165.0	1167.8	1170.7	1172.0	1171.6	1171.3	1170.9	1170.6
10°	1157.8	1160.7	1163.5	1164.7	1164.1	1163.5	1162.9	1162.4
12.5°	1148.2	1150.8	1153.4	1154.4	1153.8	1153.2	1152.7	1152.1
15°	1129.6	1132.5	1135.3	1136.6	1136.4	1136.0	1135.8	1135.5
17.5°	1105.5	1108.1	1110.6	1111.7	1111.3	1110.9	1110.5	1110.1
20°	1088.0	1090.6	1093.2	1094.6	1094.9	1095.2	1095.4	1095.8
22.5°	1068.9	1072.2	1075.4	1076.9	1076.8	1076.6	1076.4	1076.3
25°	1036.5	1040.2	1043.9	1045.8	1045.8	1045.8	1045.8	1045.8
27.5°	1002.7	1005.8	1009.0	1010.7	1011.0	1011.2	1011.5	1011.7
30°	979.6	983.0	986.3	988.1	988.1	988.1	988.1	988.1
32.5°	954.4	958.1	961.6	963.8	964.5	965.2	965.9	966.5
35°	917.2	921.5	925.7	928.5	929.6	930.7	931.9	932.9
37.5°	878.6	883.5	888.3	891.1	892.1	893.0	893.9	894.8
40°	853.0	857.8	862.7	865.6	866.7	867.9	869.0	870.2
42.5°	826.2	831.5	836.8	840.2	841.8	843.4	845.0	846.6
45°	786.2	791.6	797.0	800.9	803.2	805.4	807.7	809.9
47.5°	745.8	751.9	758.0	761.9	763.6	765.4	767.2	768.9
50°	718.0	724.6	731.1	735.3	737.4	739.3	741.4	743.3
52.5°	689.7	696.5	703.3	707.9	710.4	712.8	715.3	717.7
55°	647.2	654.8	662.6	667.6	669.8	672.1	674.4	676.7
57.5°	603.7	611.5	619.2	624.4	627.1	629.8	632.5	635.1
60°	573.4	581.4	589.4	594.9	598.1	601.2	604.3	607.5
62.5°	544.7	552.7	560.7	566.1	569.0	571.9	574.9	577.7
65°	499.0	507.5	516.1	521.7	524.6	527.4	530.3	533.1
67.5°	453.4	462.8	472.1	477.9	480.4	482.7	485.1	487.5
70°	423.2	432.4	441.4	447.4	450.3	453.1	455.9	458.8
72.5°	392.9	402.3	411.6	417.7	420.5	423.4	426.2	429.1
75°	346.9	356.3	365.7	372.1	375.5	379.0	382.4	385.7
77.5°	303.8	313.7	323.7	329.9	332.6	335.2	337.8	340.4
80°	275.7	285.4	295.1	301.3	304.2	307.0	309.9	312.7
82.5°	250.1	259.8	269.4	275.7	278.5	281.4	284.2	287.1
85°	214.2	223.9	233.5	239.8	242.6	245.5	248.3	251.2
87.5°	186.9	196.7	206.5	212.9	215.8	218.7	221.7	224.6
90°	185.3	195.7	206.1	213.0	216.1	219.3	222.6	225.8
92.5°	178.8	189.5	200.1	206.8	209.6	212.5	215.3	218.2
95°	172.4	182.5	192.7	199.2	202.0	204.8	207.7	210.5
97.5°	163.9	173.8	183.8	190.3	193.3	196.3	199.3	202.4
100°	157.9	167.6	177.4	183.8	186.8	189.8	192.8	195.8
102.5°	166.2	169.7	173.3	176.7	179.9	183.0	186.2	189.3
105°	227.0	202.8	178.6	167.9	170.8	173.7	176.7	179.5
107.5°	383.8	367.9	351.9	333.0	311.3	289.5	267.7	246.0
110°	454.1	455.5	457.0	445.8	422.0	398.3	374.5	350.8



TEST NUMBER: P332224-930

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	501.0	508.3	515.6	517.7	514.8	511.8	508.7	505.8
115°	555.3	563.9	572.6	578.5	581.4	584.4	587.4	590.4
117.5°	603.1	611.3	619.5	624.8	627.2	629.7	632.0	634.4
120°	634.9	642.9	650.9	655.9	657.9	659.9	661.9	663.9
122.5°	665.8	673.1	680.4	685.2	687.3	689.5	691.6	693.7
125°	708.8	715.2	721.5	725.9	728.2	730.6	733.0	735.3
127.5°	752.0	758.2	764.4	768.3	769.9	771.4	773.1	774.6
130°	777.5	783.6	789.8	793.5	794.8	796.2	797.5	798.9
132.5°	801.4	807.3	813.2	816.8	818.3	819.7	821.2	822.6
135°	838.2	843.9	849.6	852.9	853.8	854.6	855.5	856.4
137.5°	870.7	876.0	881.4	884.6	885.7	886.7	887.8	888.8
140°	891.4	896.3	901.3	904.3	905.4	906.4	907.5	908.6
142.5°	910.3	914.7	919.1	921.7	922.7	923.6	924.5	925.4
145°	939.6	942.2	944.9	946.8	947.9	949.1	950.2	951.4
147.5°	966.5	967.4	968.5	969.1	969.3	969.5	969.7	969.9
150°	983.4	983.7	984.1	984.3	984.3	984.4	984.4	984.4
152.5°	999.7	1000.4	1001.0	1000.9	1000.3	999.6	998.8	998.1
155°	1022.1	1023.0	1024.0	1023.9	1022.8	1021.7	1020.6	1019.5
157.5°	1041.7	1042.8	1043.8	1043.7	1042.3	1040.9	1039.4	1038.0
160°	1052.8	1053.9	1055.0	1054.9	1053.6	1052.4	1051.1	1049.8
162.5°	1062.9	1064.2	1065.4	1065.4	1064.4	1063.2	1062.1	1060.9
165°	1076.4	1077.9	1079.4	1079.5	1078.2	1076.9	1075.6	1074.4
167.5°	1087.0	1088.4	1089.9	1089.9	1088.4	1087.0	1085.5	1084.0
170°	1092.8	1094.3	1095.8	1095.8	1094.3	1092.8	1091.4	1090.0
172.5°	1096.8	1098.2	1099.7	1099.6	1098.0	1096.4	1094.8	1093.2
175°	1101.5	1102.8	1104.1	1104.0	1102.5	1101.1	1099.6	1098.1
177.5°	1103.3	1104.4	1105.5	1105.5	1104.0	1102.5	1101.1	1099.6
180°	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2	1102.2

(END OF REPORT)