

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: P332178-935

Luminaire Tested: **S123DIW-S775D1535U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332178-935  
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-S775D1535U935-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8016.6 lumens  
Efficiency: N/A  
Efficacy: 117.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

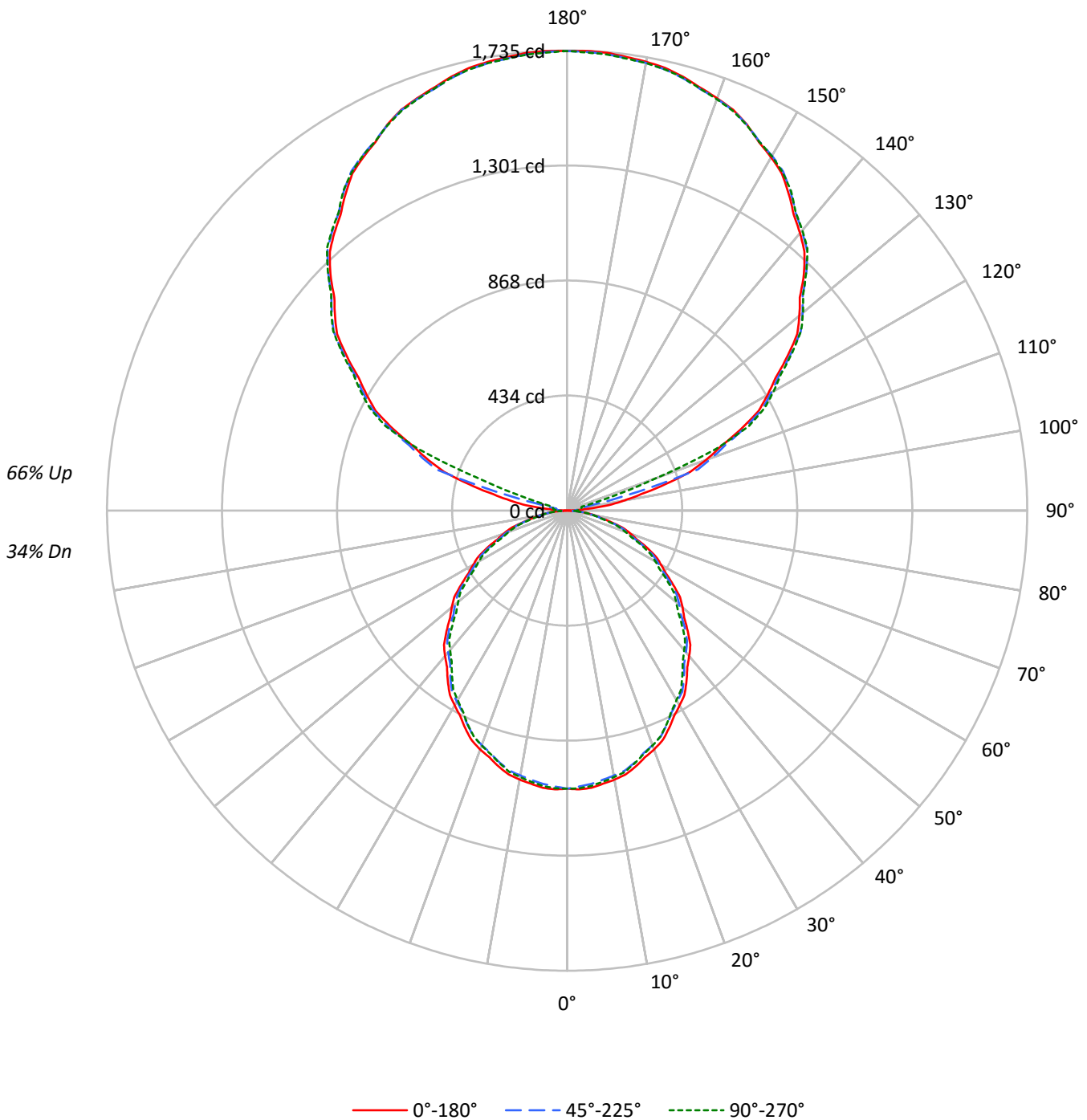
Input Watts (W): 68.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	42	42	42	34
1	94	90	86	83	85	81	78	75	65	63	61	50	49	48	37	36	35	29
2	86	78	72	67	77	71	66	62	57	53	50	44	42	40	32	31	29	24
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	27	25	20
4	71	61	53	47	64	55	49	43	45	40	36	35	31	29	25	23	21	17
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	21	19	15
6	60	48	41	35	54	44	37	32	36	31	27	28	24	22	21	18	16	13
7	56	44	36	30	50	40	33	28	32	27	24	25	22	19	19	16	15	12
8	51	39	32	27	46	36	29	25	29	24	21	23	20	17	17	15	13	10
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	14	12	9
10	45	33	26	21	40	30	24	20	25	20	17	20	16	14	15	12	11	9

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	11286	11286	11286
5°	11339	11182	11261
10°	11262	11086	11154
15°	11131	10961	10981
20°	10977	10781	10791
25°	10772	10568	10546
30°	10544	10331	10253
35°	10307	10081	9950
40°	10058	9805	9653
45°	9785	9552	9319
50°	9512	9239	8982
55°	9154	8916	8646
60°	8792	8540	8269
65°	8474	8130	7875
70°	8003	7660	7320
75°	7311	7049	6750
80°	6595	6316	6261
85°	5780	5570	5348



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.8	1.2
10°-20°	278.9	3.5
20°-30°	411.9	5.1
30°-40°	481.2	6.0
40°-50°	483.8	6.0
50°-60°	425.0	5.3
60°-70°	316.6	3.9
70°-80°	180.4	2.2
80°-90°	56.6	0.7
90°-100°	63.0	0.8
100°-110°	300.2	3.7
110°-120°	721.1	9.0
120°-130°	918.3	11.5
130°-140°	981.1	12.2
140°-150°	917.5	11.4
150°-160°	740.1	9.2
160°-170°	477.6	6.0
170°-180°	164.6	2.1
0°-30°	789.6	9.8
0°-40°	1270.8	15.9
0°-60°	2179.5	27.2
0°-90°	2733.1	34.1
90°-120°	1084.3	13.5
90°-150°	3901.2	48.7
90°-180°	5283.0	65.9
0°-180°	8016.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1048	1048	1048	1048	1048	
5°	1049	1045	1035	1043	1042	99
15°	999	995	984	990	985	281
25°	907	901	890	890	888	418
35°	784	779	767	762	757	490
45°	643	639	628	617	612	496
55°	488	486	475	466	461	437
65°	333	328	319	312	309	328
75°	176	172	170	165	162	188
85°	47	45	45	43	43	51
90°	1	14	31	36	39	6
95°	78	29	40	48	49	97
105°	384	390	282	67	57	407
115°	720	728	739	751	757	710
125°	1014	1024	1030	1032	1035	905
135°	1263	1270	1276	1279	1276	972
145°	1457	1466	1469	1471	1471	912
155°	1605	1603	1604	1610	1603	739
165°	1693	1689	1688	1697	1689	478
175°	1732	1726	1727	1735	1726	165
180°	1732	1732	1732	1732	1732	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5
2.5°	1052.1	1051.5	1050.9	1050.2	1049.6	1048.4	1046.5	1044.8	1043.0	1041.3	1042.8
5°	1049.4	1048.4	1047.4	1046.4	1045.3	1043.8	1041.6	1039.4	1037.2	1034.9	1037.0
7.5°	1039.1	1038.1	1037.1	1036.1	1035.1	1033.5	1031.1	1028.9	1026.6	1024.3	1026.1
10°	1030.4	1029.4	1028.5	1027.4	1026.5	1024.7	1022.0	1019.4	1016.8	1014.3	1016.1
12.5°	1018.9	1018.0	1017.3	1016.4	1015.5	1013.9	1011.5	1009.0	1006.6	1004.1	1005.5
15°	998.9	998.1	997.3	996.5	995.7	994.0	991.4	988.8	986.2	983.6	985.2
17.5°	975.6	974.6	973.5	972.5	971.5	969.7	967.1	964.4	961.8	959.2	960.4
20°	958.3	957.1	956.0	954.8	953.6	951.6	949.0	946.4	943.8	941.2	942.0
22.5°	938.8	937.6	936.4	935.2	934.0	932.1	929.5	927.0	924.4	921.7	922.4
25°	907.0	905.8	904.6	903.4	902.2	900.3	897.6	895.0	892.4	889.8	890.0
27.5°	872.9	871.7	870.6	869.4	868.2	866.3	863.4	860.7	857.8	855.0	855.1
30°	848.3	847.3	846.4	845.3	844.3	842.4	839.6	836.8	834.1	831.2	831.2
32.5°	823.8	822.5	821.1	819.8	818.6	816.8	814.6	812.4	810.3	808.1	807.0
35°	784.4	783.2	782.0	780.8	779.5	777.7	775.0	772.4	769.8	767.2	766.0
37.5°	743.9	742.4	740.9	739.3	737.9	735.8	733.1	730.5	727.8	725.2	723.8
40°	715.8	714.6	713.4	712.2	711.0	709.0	706.2	703.4	700.6	697.8	696.2
42.5°	687.7	686.3	684.9	683.6	682.3	680.2	677.3	674.5	671.8	668.9	667.4
45°	642.8	642.0	641.2	640.4	639.6	637.9	635.2	632.7	630.1	627.5	625.1
47.5°	598.2	597.1	595.9	594.8	593.6	591.8	589.4	586.9	584.4	582.0	579.6
50°	568.0	567.0	565.9	565.0	564.0	562.1	559.6	557.0	554.3	551.7	549.6
52.5°	536.2	535.5	534.9	534.2	533.5	531.8	529.0	526.2	523.5	520.7	518.8
55°	487.8	487.5	487.3	487.2	486.9	485.5	482.9	480.4	477.7	475.1	472.9
57.5°	441.6	440.9	440.2	439.5	438.9	437.5	435.4	433.3	431.2	429.1	427.1
60°	408.4	408.2	408.0	407.8	407.6	406.3	403.9	401.5	399.1	396.7	394.9
62.5°	378.8	378.3	377.8	377.3	376.8	375.3	372.9	370.5	368.1	365.7	363.9
65°	332.7	331.7	330.6	329.7	328.6	327.2	325.1	323.1	321.2	319.2	317.5
67.5°	283.8	282.9	282.1	281.1	280.3	279.1	277.6	276.0	274.5	273.0	271.6
70°	254.3	253.0	251.8	250.6	249.4	248.2	247.0	245.8	244.6	243.4	242.0
72.5°	223.3	222.3	221.4	220.6	219.7	218.6	217.2	215.9	214.5	213.1	211.9
75°	175.8	175.0	174.2	173.4	172.6	171.9	171.3	170.7	170.0	169.5	168.5
77.5°	133.8	133.4	132.9	132.5	132.0	131.5	130.7	130.0	129.3	128.5	127.9
80°	106.4	105.8	105.2	104.6	104.0	103.5	103.1	102.7	102.3	101.9	101.7
82.5°	79.7	79.6	79.5	79.3	79.2	79.1	79.0	79.0	78.9	78.8	78.4
85°	46.8	46.5	46.1	45.7	45.3	45.1	45.1	45.1	45.1	45.1	44.7
87.5°	19.0	19.1	19.2	19.3	19.4	19.7	20.3	20.8	21.4	22.0	22.1
90°	1.3	4.1	7.0	9.9	12.7	16.0	19.7	23.4	27.2	30.9	32.0
92.5°	23.9	23.2	22.3	21.5	20.8	21.7	24.5	27.4	30.1	33.0	34.8
95°	78.5	66.8	55.1	43.3	31.6	27.3	30.5	33.6	36.8	39.9	41.9
97.5°	157.8	152.6	147.3	142.0	136.7	123.8	103.2	82.7	62.1	41.4	43.7
100°	217.6	223.3	228.9	234.7	240.4	220.9	176.3	131.7	87.1	42.4	44.8
102.5°	285.5	289.6	293.8	297.8	302.0	279.7	230.9	182.2	133.5	84.7	77.6
105°	383.6	386.8	389.9	393.0	396.1	384.9	359.1	333.4	307.6	281.9	231.3
107.5°	487.1	489.6	492.1	494.6	497.1	500.4	504.5	508.6	512.6	516.7	479.6
110°	556.0	558.4	560.6	562.9	565.2	567.9	571.1	574.2	577.4	580.5	571.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	622.0	624.1	626.1	628.2	630.2	632.8	635.9	639.1	642.2	645.4	645.6
115°	719.5	721.3	723.0	724.7	726.4	728.6	731.2	733.7	736.2	738.8	741.7
117.5°	814.0	816.1	818.2	820.4	822.5	824.2	825.5	826.8	828.1	829.5	831.7
120°	872.7	875.3	877.9	880.5	883.0	884.8	885.5	886.4	887.3	888.1	890.4
122.5°	932.5	934.5	936.7	938.7	940.9	942.5	943.6	944.7	945.7	946.8	948.5
125°	1014.3	1016.6	1018.9	1021.1	1023.5	1025.2	1026.3	1027.4	1028.6	1029.8	1030.4
127.5°	1093.6	1095.9	1098.2	1100.4	1102.8	1104.6	1106.0	1107.3	1108.7	1110.1	1110.9
130°	1143.0	1145.3	1147.6	1149.9	1152.2	1153.9	1155.0	1156.2	1157.4	1158.5	1159.6
132.5°	1190.4	1192.7	1195.0	1197.2	1199.5	1201.2	1202.0	1203.0	1203.9	1204.8	1205.9
135°	1262.7	1264.5	1266.2	1267.9	1269.6	1271.0	1272.1	1273.3	1274.5	1275.6	1276.4
137.5°	1324.5	1326.7	1328.9	1331.0	1333.2	1334.6	1335.2	1335.8	1336.5	1337.1	1338.5
140°	1365.7	1367.4	1369.2	1370.9	1372.6	1373.8	1374.7	1375.5	1376.4	1377.3	1378.5
142.5°	1403.8	1405.5	1407.2	1408.9	1410.7	1412.0	1412.8	1413.7	1414.5	1415.4	1416.3
145°	1457.1	1459.1	1461.1	1463.1	1465.1	1466.4	1467.0	1467.5	1468.1	1468.7	1469.2
147.5°	1507.3	1508.6	1509.9	1511.2	1512.5	1513.5	1514.1	1514.7	1515.2	1515.8	1516.4
150°	1538.2	1539.0	1539.9	1540.8	1541.6	1542.3	1542.9	1543.5	1544.0	1544.6	1545.2
152.5°	1566.0	1566.4	1566.8	1567.2	1567.6	1568.0	1568.3	1568.7	1569.0	1569.3	1570.4
155°	1605.1	1604.6	1604.0	1603.4	1602.8	1602.7	1603.0	1603.3	1603.5	1603.8	1605.2
157.5°	1635.5	1635.5	1635.4	1635.3	1635.3	1635.1	1634.8	1634.5	1634.3	1633.9	1635.6
160°	1654.1	1653.7	1653.5	1653.2	1652.9	1652.6	1652.3	1652.0	1651.7	1651.5	1653.2
162.5°	1671.5	1670.8	1670.1	1669.3	1668.5	1668.0	1667.8	1667.5	1667.2	1666.9	1668.9
165°	1692.6	1691.8	1690.9	1690.1	1689.2	1688.7	1688.3	1688.1	1687.8	1687.5	1689.8
167.5°	1709.1	1708.0	1706.8	1705.7	1704.5	1704.0	1704.0	1704.0	1704.0	1704.0	1706.2
170°	1718.4	1717.3	1716.1	1714.9	1713.8	1713.2	1713.2	1713.2	1713.2	1713.2	1715.5
172.5°	1724.6	1723.2	1721.8	1720.5	1719.1	1718.5	1718.7	1719.0	1719.2	1719.4	1721.7
175°	1732.5	1731.1	1729.7	1728.3	1726.8	1726.2	1726.6	1726.8	1727.1	1727.4	1729.4
177.5°	1734.6	1733.5	1732.3	1731.2	1730.0	1729.6	1729.8	1730.0	1730.3	1730.5	1732.3
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5	1048.5
2.5°	1044.5	1046.1	1047.7	1048.4	1048.3	1048.1	1047.9	1047.8
5°	1039.0	1040.9	1043.0	1043.8	1043.4	1043.0	1042.6	1042.2
7.5°	1027.9	1029.8	1031.6	1032.3	1032.1	1031.8	1031.6	1031.4
10°	1017.9	1019.6	1021.4	1022.2	1021.7	1021.3	1021.0	1020.5
12.5°	1006.8	1008.1	1009.4	1010.0	1009.7	1009.4	1009.3	1009.0
15°	986.8	988.3	990.0	990.2	988.9	987.7	986.6	985.4
17.5°	961.5	962.6	963.7	964.1	963.6	963.2	962.8	962.3
20°	942.8	943.6	944.4	944.5	943.9	943.3	942.7	942.1
22.5°	923.0	923.7	924.3	924.2	923.5	922.7	922.0	921.2
25°	890.2	890.4	890.6	890.4	889.8	889.2	888.6	888.0
27.5°	855.3	855.5	855.7	855.3	854.6	853.9	853.1	852.3
30°	831.2	831.2	831.2	830.5	829.1	827.7	826.3	824.9
32.5°	805.9	804.8	803.7	802.7	801.9	801.2	800.4	799.7
35°	764.8	763.6	762.4	761.3	760.3	759.3	758.3	757.2
37.5°	722.3	720.8	719.5	718.4	717.7	717.1	716.4	715.8
40°	694.6	693.0	691.4	690.2	689.4	688.5	687.8	687.0
42.5°	665.7	664.1	662.5	661.3	660.6	659.7	658.9	658.1
45°	622.7	620.3	617.9	616.1	615.2	614.2	613.1	612.2
47.5°	577.3	575.0	572.6	570.9	570.1	569.2	568.3	567.4
50°	547.3	545.1	542.9	541.2	540.0	538.8	537.6	536.4
52.5°	516.9	515.1	513.2	511.7	510.5	509.3	508.1	506.9
55°	470.7	468.5	466.3	464.7	463.6	462.7	461.7	460.7
57.5°	425.2	423.3	421.3	419.7	418.5	417.4	416.2	415.1
60°	393.0	391.2	389.4	388.1	387.0	386.1	385.0	384.1
62.5°	362.1	360.2	358.4	357.2	356.5	355.9	355.2	354.5
65°	315.9	314.4	312.7	311.6	311.0	310.4	309.8	309.2
67.5°	270.2	268.8	267.3	266.2	265.4	264.6	263.7	262.9
70°	240.6	239.2	237.8	236.6	235.6	234.6	233.6	232.6
72.5°	210.6	209.4	208.2	207.2	206.7	206.2	205.7	205.2
75°	167.5	166.5	165.5	164.7	164.1	163.5	162.9	162.3
77.5°	127.2	126.5	125.8	125.5	125.5	125.5	125.5	125.5
80°	101.5	101.3	101.1	101.0	101.0	101.0	101.0	101.0
82.5°	78.1	77.7	77.3	77.1	77.0	76.8	76.6	76.5
85°	44.3	43.9	43.5	43.3	43.3	43.3	43.3	43.3
87.5°	22.2	22.2	22.3	22.4	22.6	22.6	22.7	22.9
90°	33.1	34.4	35.5	36.3	36.9	37.5	38.1	38.6
92.5°	36.6	38.5	40.3	41.3	41.7	42.0	42.4	42.7
95°	43.9	45.9	47.9	48.9	48.9	48.9	48.9	48.9
97.5°	46.1	48.3	50.6	51.9	52.2	52.4	52.8	53.0
100°	47.0	49.3	51.7	53.0	53.2	53.5	53.8	54.1
102.5°	70.5	63.5	56.3	53.0	53.6	54.1	54.6	55.1
105°	180.6	130.0	79.4	54.3	54.9	55.5	56.1	56.7
107.5°	442.4	405.3	368.2	330.5	292.4	254.2	216.0	177.9
110°	561.6	552.2	542.8	517.5	476.6	435.8	394.9	354.0





TEST NUMBER: P332178-935

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	645.8	645.9	646.1	641.9	633.2	624.6	616.0	607.3
115°	744.6	747.4	750.3	752.3	753.5	754.6	755.7	756.9
117.5°	834.1	836.3	838.6	839.9	840.1	840.3	840.6	840.8
120°	892.8	895.0	897.3	898.5	898.5	898.5	898.5	898.5
122.5°	950.0	951.7	953.3	954.2	954.4	954.6	954.8	955.1
125°	1030.9	1031.5	1032.0	1032.6	1033.2	1033.7	1034.3	1034.9
127.5°	1111.9	1112.8	1113.7	1113.9	1113.4	1112.8	1112.2	1111.6
130°	1160.7	1161.9	1163.0	1163.3	1162.8	1162.2	1161.6	1161.1
132.5°	1207.1	1208.2	1209.4	1209.5	1208.8	1208.0	1207.1	1206.3
135°	1277.3	1278.2	1279.0	1279.0	1278.2	1277.3	1276.4	1275.6
137.5°	1339.9	1341.3	1342.6	1343.0	1342.5	1341.9	1341.3	1340.7
140°	1379.6	1380.7	1381.8	1382.2	1381.6	1381.0	1380.4	1379.8
142.5°	1417.2	1418.2	1419.0	1419.1	1418.3	1417.5	1416.7	1415.9
145°	1469.8	1470.4	1470.9	1471.3	1471.3	1471.3	1471.3	1471.3
147.5°	1516.9	1517.5	1518.1	1517.7	1516.4	1515.1	1513.7	1512.4
150°	1545.8	1546.4	1546.9	1546.8	1545.9	1545.1	1544.2	1543.3
152.5°	1571.4	1572.4	1573.5	1573.3	1572.0	1570.6	1569.3	1568.1
155°	1606.7	1608.1	1609.6	1609.4	1607.7	1605.9	1604.2	1602.6
157.5°	1637.4	1639.1	1640.8	1640.5	1638.3	1636.1	1633.8	1631.6
160°	1654.9	1656.6	1658.3	1658.2	1656.1	1654.2	1652.2	1650.2
162.5°	1670.8	1672.8	1674.6	1674.7	1673.0	1671.2	1669.5	1667.7
165°	1692.0	1694.4	1696.7	1696.8	1694.8	1692.8	1690.7	1688.8
167.5°	1708.6	1710.8	1713.1	1713.1	1710.8	1708.6	1706.2	1704.0
170°	1717.8	1720.1	1722.4	1722.4	1720.1	1717.8	1715.5	1713.2
172.5°	1724.0	1726.3	1728.5	1728.5	1726.0	1723.5	1720.9	1718.4
175°	1731.4	1733.4	1735.4	1735.3	1732.9	1730.7	1728.4	1726.1
177.5°	1734.1	1735.9	1737.8	1737.6	1735.3	1733.0	1730.7	1728.5
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5

(END OF REPORT)