

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: P332851-930

Luminaire Tested: **S124DIW-S1195D1050U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332851-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIW-S1195D1050U930-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1050 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7588.9 lumens  
Efficiency: N/A  
Efficacy: 112.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse

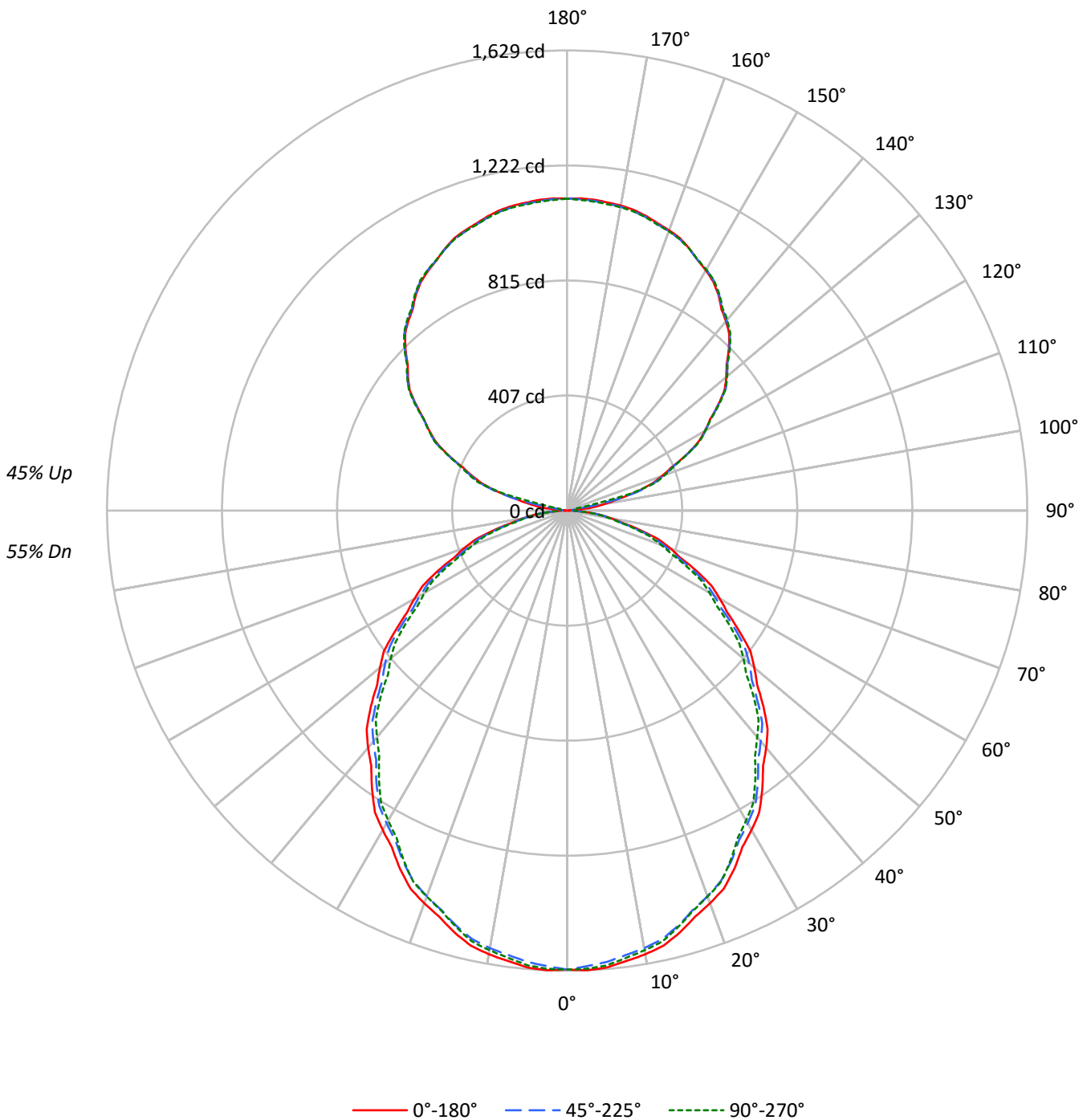
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	99	94	91	87	92	88	84	81	75	73	71	64	62	61	54	52	51	46
2	90	82	76	71	83	77	71	67	66	62	58	56	53	51	47	45	43	39
3	82	73	65	59	76	68	61	56	58	53	49	50	46	43	42	39	37	33
4	75	64	56	50	69	60	53	47	52	46	42	44	40	37	37	34	32	28
5	69	57	49	43	64	53	46	41	46	41	36	40	35	32	34	30	28	24
6	64	51	43	37	59	48	41	35	42	36	32	36	31	28	31	27	24	21
7	59	46	38	33	54	43	36	31	38	32	28	33	28	25	28	24	22	19
8	55	42	34	29	51	40	32	28	35	29	25	30	25	22	26	22	19	17
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	17	15
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	18	16	14

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

	0°	45°	90°
0°	13116	13116	13116
5°	13156	12998	13092
10°	13073	12892	12956
15°	12915	12709	12741
20°	12706	12482	12493
25°	12466	12222	12188
30°	12172	11918	11808
35°	11869	11599	11445
40°	11552	11236	11031
45°	11222	10880	10671
50°	10857	10562	10236
55°	10463	10151	9821
60°	10069	9689	9397
65°	9626	9251	8879
70°	9128	8665	8327
75°	8366	7960	7757
80°	7443	7141	6960
85°	6512	6271	6150



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.0	2.0
10°-20°	431.1	5.7
20°-30°	634.5	8.4
30°-40°	737.7	9.7
40°-50°	737.7	9.7
50°-60°	645.3	8.5
60°-70°	479.2	6.3
70°-80°	272.3	3.6
80°-90°	81.8	1.1
90°-100°	37.8	0.5
100°-110°	240.8	3.2
110°-120°	460.7	6.1
120°-130°	584.9	7.7
130°-140°	625.8	8.2
140°-150°	585.2	7.7
150°-160°	471.9	6.2
160°-170°	304.4	4.0
170°-180°	104.9	1.4
0°-30°	1218.6	16.1
0°-40°	1956.3	25.8
0°-60°	3339.3	44.0
0°-90°	4172.5	55.0
90°-120°	739.3	9.7
90°-150°	2535.2	33.4
90°-180°	3416.0	45.0
0°-180°	7588.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1625	1625	1625	1625	1625	
5°	1623	1618	1604	1617	1616	154
15°	1545	1539	1521	1528	1524	435
25°	1400	1390	1372	1373	1368	644
35°	1204	1195	1177	1168	1161	753
45°	983	973	953	939	935	757
55°	743	739	721	706	698	666
65°	504	497	484	472	465	499
75°	268	262	255	250	249	285
85°	70	70	68	68	66	77
90°	2	11	18	23	25	6
95°	45	19	18	23	24	58
105°	249	254	258	263	236	260
115°	464	466	466	467	468	457
125°	653	656	654	657	658	582
135°	810	809	812	814	815	623
145°	933	936	936	937	938	583
155°	1023	1024	1022	1025	1023	472
165°	1080	1076	1076	1081	1075	305
175°	1104	1100	1100	1107	1098	105
180°	1104	1104	1104	1104	1104	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7
2.5°	1628.9	1628.2	1627.5	1626.8	1626.1	1624.5	1622.0	1619.4	1616.9	1614.4	1616.7
5°	1623.4	1622.3	1621.1	1620.0	1618.9	1616.7	1613.5	1610.3	1607.1	1603.9	1607.1
7.5°	1608.3	1607.2	1606.1	1604.8	1603.7	1601.4	1597.8	1594.3	1590.8	1587.2	1589.8
10°	1594.8	1593.7	1592.5	1591.3	1590.2	1587.7	1584.0	1580.2	1576.5	1572.7	1575.0
12.5°	1577.1	1576.0	1574.8	1573.6	1572.5	1569.9	1565.9	1562.0	1558.0	1554.0	1556.5
15°	1545.3	1544.2	1543.0	1541.9	1540.7	1538.0	1533.6	1529.3	1524.9	1520.6	1522.3
17.5°	1507.1	1505.6	1504.1	1502.8	1501.3	1498.5	1494.4	1490.3	1486.2	1482.1	1483.2
20°	1479.0	1477.5	1476.0	1474.6	1473.2	1470.2	1465.9	1461.6	1457.3	1452.9	1453.8
22.5°	1448.7	1446.8	1445.0	1443.0	1441.1	1437.9	1433.6	1429.3	1425.0	1420.6	1422.2
25°	1399.5	1397.5	1395.5	1393.4	1391.4	1388.4	1384.3	1380.3	1376.2	1372.1	1372.5
27.5°	1343.3	1341.2	1339.1	1337.0	1335.0	1332.0	1328.3	1324.5	1320.8	1317.0	1316.3
30°	1305.8	1303.5	1301.1	1298.9	1296.6	1293.5	1289.7	1286.0	1282.2	1278.5	1277.3
32.5°	1266.2	1264.1	1262.1	1260.0	1257.8	1254.8	1250.8	1246.8	1242.8	1238.8	1237.5
35°	1204.3	1202.2	1200.2	1198.2	1196.1	1193.1	1189.0	1185.0	1181.0	1176.9	1174.8
37.5°	1138.9	1137.0	1135.2	1133.3	1131.5	1128.4	1124.1	1119.7	1115.3	1111.0	1108.8
40°	1096.2	1093.9	1091.5	1089.2	1087.0	1083.6	1079.3	1074.9	1070.6	1066.2	1063.3
42.5°	1050.4	1049.0	1047.6	1046.2	1044.8	1041.7	1036.9	1032.1	1027.3	1022.5	1019.1
45°	982.9	980.9	978.8	976.8	974.9	971.5	966.9	962.2	957.6	953.0	949.8
47.5°	912.3	910.9	909.5	908.2	906.8	904.0	899.7	895.4	891.1	886.9	883.3
50°	864.5	863.3	862.1	861.0	859.8	857.2	853.1	849.1	845.1	841.0	837.0
52.5°	817.6	816.2	814.8	813.4	812.0	809.2	804.9	800.6	796.4	792.1	788.5
55°	743.4	742.5	741.7	740.8	739.9	737.4	733.4	729.4	725.3	721.2	717.8
57.5°	672.5	671.6	670.6	669.6	668.6	666.1	662.1	658.1	654.1	650.1	646.9
60°	623.6	622.2	620.7	619.3	617.8	615.2	611.5	607.7	603.9	600.1	597.5
62.5°	575.7	574.5	573.2	572.0	570.9	568.3	564.3	560.3	556.3	552.3	549.9
65°	503.9	502.4	500.9	499.5	498.1	495.9	493.0	490.1	487.2	484.3	481.4
67.5°	431.5	430.2	428.8	427.5	426.2	424.0	421.3	418.5	415.7	412.9	410.2
70°	386.7	384.7	382.6	380.6	378.5	376.4	374.1	371.8	369.4	367.1	364.8
72.5°	338.8	336.7	334.7	332.6	330.7	328.7	326.9	325.0	323.2	321.3	319.4
75°	268.2	266.8	265.3	263.8	262.4	261.0	259.5	258.0	256.7	255.2	254.0
77.5°	200.7	200.1	199.5	198.9	198.2	197.2	196.0	194.7	193.5	192.2	191.8
80°	160.1	159.2	158.4	157.5	156.7	156.0	155.4	154.7	154.2	153.6	153.0
82.5°	120.6	120.2	119.8	119.4	119.0	118.7	118.5	118.5	118.3	118.2	117.9
85°	70.3	70.3	70.3	70.3	70.3	70.0	69.5	68.9	68.2	67.7	67.7
87.5°	27.6	27.7	27.9	28.1	28.3	28.4	28.5	28.5	28.5	28.6	28.9
90°	2.4	4.5	6.5	8.6	10.5	12.3	13.8	15.2	16.7	18.2	19.2
92.5°	10.4	10.5	10.6	10.8	10.8	11.7	13.1	14.6	16.1	17.5	18.6
95°	45.4	39.2	32.9	26.7	20.5	17.4	17.6	17.8	18.0	18.2	19.2
97.5°	96.4	100.4	104.3	108.2	112.0	103.8	83.2	62.8	42.3	21.8	21.9
100°	135.5	138.8	142.1	145.4	148.7	137.7	112.3	87.0	61.7	36.4	33.3
102.5°	179.1	181.5	183.9	186.4	188.7	188.3	185.1	181.7	178.4	175.1	141.5
105°	248.7	249.7	250.9	251.9	253.1	254.0	254.9	255.9	256.8	257.7	259.3
107.5°	313.2	313.8	314.3	314.9	315.4	316.3	317.6	318.9	320.1	321.3	322.1
110°	356.9	357.4	357.9	358.5	359.1	359.9	361.0	362.1	363.2	364.3	364.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	399.2	400.1	401.1	402.1	403.1	403.9	404.4	404.9	405.4	405.9	405.9
115°	464.2	464.8	465.4	465.9	466.4	466.6	466.4	466.3	466.1	465.9	466.3
117.5°	522.9	523.6	524.3	525.1	525.8	526.4	526.8	527.2	527.6	528.0	527.9
120°	562.6	563.3	564.0	564.8	565.5	565.7	565.6	565.4	565.2	565.0	565.4
122.5°	599.6	600.0	600.4	600.9	601.3	601.7	601.9	602.2	602.4	602.7	602.9
125°	652.6	653.3	654.0	654.8	655.5	655.7	655.3	654.9	654.6	654.2	654.8
127.5°	702.8	703.0	703.2	703.4	703.5	704.0	704.9	705.7	706.5	707.4	707.4
130°	735.2	735.4	735.6	735.7	735.9	736.3	736.9	737.4	737.9	738.5	738.7
132.5°	764.9	765.2	765.6	765.9	766.2	766.8	767.4	768.2	768.8	769.6	769.7
135°	809.5	809.3	809.2	808.9	808.8	809.1	809.8	810.6	811.3	812.0	812.4
137.5°	849.0	849.1	849.1	849.2	849.3	849.7	850.5	851.3	852.2	853.0	853.4
140°	874.8	875.1	875.5	875.9	876.3	876.6	877.0	877.3	877.8	878.1	878.6
142.5°	897.9	898.5	899.2	899.9	900.6	901.0	901.2	901.4	901.6	901.9	902.3
145°	933.4	934.0	934.5	935.1	935.6	935.9	935.9	935.9	935.9	935.9	936.1
147.5°	961.6	962.7	963.8	964.7	965.8	966.2	966.0	965.9	965.6	965.5	965.6
150°	982.2	982.9	983.7	984.4	985.1	985.4	985.2	985.0	984.8	984.6	984.6
152.5°	999.3	1000.0	1000.5	1001.1	1001.7	1001.8	1001.5	1001.2	1000.9	1000.5	1000.8
155°	1023.4	1023.7	1023.9	1024.0	1024.2	1024.0	1023.4	1023.0	1022.4	1021.8	1022.5
157.5°	1043.8	1043.7	1043.6	1043.4	1043.3	1043.0	1042.4	1041.7	1041.1	1040.5	1041.5
160°	1055.6	1055.2	1054.6	1054.0	1053.4	1053.1	1053.0	1052.7	1052.6	1052.4	1053.4
162.5°	1066.2	1065.6	1064.9	1064.1	1063.5	1063.0	1062.8	1062.7	1062.5	1062.3	1063.4
165°	1079.6	1078.7	1077.8	1076.8	1076.0	1075.5	1075.5	1075.5	1075.5	1075.5	1077.0
167.5°	1090.2	1089.2	1088.3	1087.4	1086.4	1085.9	1085.7	1085.7	1085.6	1085.4	1087.0
170°	1096.2	1095.0	1094.0	1092.8	1091.8	1091.3	1091.4	1091.7	1091.8	1092.0	1093.5
172.5°	1100.1	1099.0	1097.9	1096.8	1095.7	1095.3	1095.4	1095.6	1095.8	1096.0	1097.5
175°	1104.4	1103.3	1102.2	1101.1	1100.0	1099.6	1099.8	1099.9	1100.1	1100.3	1102.0
177.5°	1106.4	1105.4	1104.3	1103.3	1102.3	1102.0	1102.2	1102.5	1102.8	1103.1	1104.2
180°	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7
2.5°	1618.9	1621.3	1623.6	1624.6	1624.4	1624.2	1623.9	1623.7
5°	1610.3	1613.5	1616.7	1618.0	1617.4	1616.8	1616.2	1615.6
7.5°	1592.4	1594.9	1597.4	1598.6	1598.2	1597.8	1597.5	1597.2
10°	1577.3	1579.6	1581.9	1582.8	1582.3	1581.7	1581.0	1580.5
12.5°	1559.0	1561.5	1564.2	1565.0	1564.2	1563.3	1562.5	1561.7
15°	1524.0	1525.8	1527.5	1528.0	1527.1	1526.2	1525.3	1524.5
17.5°	1484.3	1485.4	1486.5	1486.7	1486.1	1485.6	1485.0	1484.4
20°	1454.7	1455.5	1456.4	1456.5	1456.0	1455.4	1454.8	1454.2
22.5°	1423.8	1425.3	1426.9	1427.1	1426.1	1425.1	1424.0	1422.9
25°	1372.8	1373.0	1373.4	1372.9	1371.7	1370.6	1369.5	1368.3
27.5°	1315.6	1314.9	1314.2	1313.1	1311.7	1310.3	1308.8	1307.3
30°	1276.1	1275.0	1273.8	1272.5	1271.1	1269.7	1268.2	1266.7
32.5°	1236.1	1234.7	1233.3	1231.9	1230.4	1229.0	1227.6	1226.1
35°	1172.9	1170.9	1168.8	1167.1	1165.6	1164.2	1162.7	1161.3
37.5°	1106.6	1104.4	1102.2	1100.2	1098.3	1096.3	1094.5	1092.5
40°	1060.5	1057.5	1054.7	1052.5	1051.1	1049.6	1048.1	1046.7
42.5°	1015.8	1012.4	1009.1	1006.9	1005.9	1004.9	1004.0	1003.0
45°	946.6	943.5	940.3	938.2	937.3	936.5	935.6	934.7
47.5°	879.7	876.1	872.5	869.6	867.4	865.2	863.0	860.8
50°	832.9	828.8	824.8	821.9	820.2	818.5	816.7	815.0
52.5°	784.9	781.3	777.7	774.9	772.7	770.5	768.3	766.1
55°	714.3	710.9	707.4	704.7	703.0	701.3	699.5	697.8
57.5°	643.6	640.3	637.0	634.5	632.8	631.1	629.4	627.8
60°	594.9	592.4	589.8	587.7	586.3	584.8	583.4	582.0
62.5°	547.5	545.1	542.7	540.9	539.4	537.9	536.5	535.1
65°	478.5	475.6	472.7	470.6	469.1	467.7	466.2	464.8
67.5°	407.4	404.6	401.9	400.2	399.8	399.4	399.0	398.6
70°	362.5	360.2	357.8	356.3	355.4	354.6	353.7	352.8
72.5°	317.6	315.8	313.9	312.5	311.7	310.8	309.9	309.1
75°	252.8	251.7	250.5	249.8	249.6	249.2	248.9	248.7
77.5°	191.4	191.1	190.8	190.2	189.5	188.7	187.9	187.2
80°	152.5	151.9	151.3	150.9	150.6	150.3	150.0	149.7
82.5°	117.5	117.2	116.8	116.5	116.2	115.9	115.6	115.4
85°	67.7	67.7	67.7	67.6	67.3	66.9	66.7	66.4
87.5°	29.1	29.3	29.5	29.7	29.8	29.8	29.8	29.9
90°	20.4	21.4	22.6	23.3	23.6	24.1	24.4	24.8
92.5°	19.7	20.8	21.9	22.5	22.6	22.7	22.7	22.8
95°	20.4	21.4	22.6	23.2	23.4	23.6	23.8	24.0
97.5°	22.0	22.2	22.3	22.4	22.6	22.7	22.9	23.2
100°	30.1	27.0	23.9	22.4	22.6	22.7	22.9	23.2
102.5°	107.8	74.1	40.4	23.6	23.6	23.7	23.7	23.8
105°	261.1	262.7	264.3	261.9	255.3	248.7	242.1	235.5
107.5°	322.9	323.8	324.6	325.3	326.0	326.7	327.4	328.1
110°	365.0	365.4	365.7	366.2	366.8	367.3	367.9	368.4





TEST NUMBER: P332851-930

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	405.8	405.7	405.6	405.9	406.7	407.3	408.1	408.7
115°	466.6	467.0	467.3	467.6	467.6	467.6	467.6	467.6
117.5°	527.8	527.8	527.7	527.7	527.6	527.5	527.4	527.3
120°	565.7	566.1	566.5	566.5	566.1	565.7	565.4	565.0
122.5°	603.2	603.3	603.6	603.5	603.2	602.8	602.4	602.0
125°	655.3	655.9	656.4	656.8	657.0	657.1	657.4	657.5
127.5°	707.2	707.1	706.9	706.9	706.7	706.5	706.4	706.3
130°	738.8	739.1	739.2	739.3	739.3	739.3	739.3	739.3
132.5°	769.9	770.1	770.3	770.3	770.1	770.0	769.9	769.7
135°	812.8	813.1	813.5	813.8	814.2	814.6	815.0	815.3
137.5°	853.8	854.2	854.6	854.8	854.6	854.5	854.4	854.3
140°	879.2	879.7	880.3	880.7	880.8	881.0	881.2	881.4
142.5°	902.7	903.1	903.5	903.7	903.8	903.8	903.8	903.8
145°	936.3	936.5	936.6	936.9	937.3	937.7	938.0	938.4
147.5°	965.8	965.9	966.0	966.2	966.5	966.6	966.8	966.9
150°	984.6	984.6	984.6	984.7	984.9	985.1	985.3	985.5
152.5°	1001.1	1001.4	1001.7	1001.8	1001.7	1001.5	1001.4	1001.4
155°	1023.3	1024.0	1024.7	1024.8	1024.3	1023.8	1023.2	1022.6
157.5°	1042.4	1043.3	1044.3	1044.3	1043.3	1042.4	1041.5	1040.5
160°	1054.6	1055.6	1056.8	1056.8	1055.6	1054.6	1053.4	1052.4
162.5°	1064.5	1065.6	1066.7	1066.7	1065.4	1064.1	1062.9	1061.6
165°	1078.5	1079.9	1081.4	1081.2	1079.6	1078.0	1076.4	1074.6
167.5°	1088.7	1090.3	1091.8	1091.8	1090.0	1088.1	1086.3	1084.4
170°	1094.9	1096.4	1097.9	1097.7	1095.8	1094.1	1092.2	1090.4
172.5°	1098.9	1100.4	1101.9	1101.6	1099.6	1097.6	1095.7	1093.6
175°	1103.6	1105.2	1106.9	1106.6	1104.4	1102.2	1100.0	1097.8
177.5°	1105.5	1106.6	1107.8	1107.5	1105.7	1104.0	1102.2	1100.5
180°	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4

(END OF REPORT)