

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: P333086-830

Luminaire Tested: **S124RDIW-S1020D1050U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333086-830
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: S124RDIW-S1020D1050U830-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7361.2 lumens
Efficiency: N/A
Efficacy: 120.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

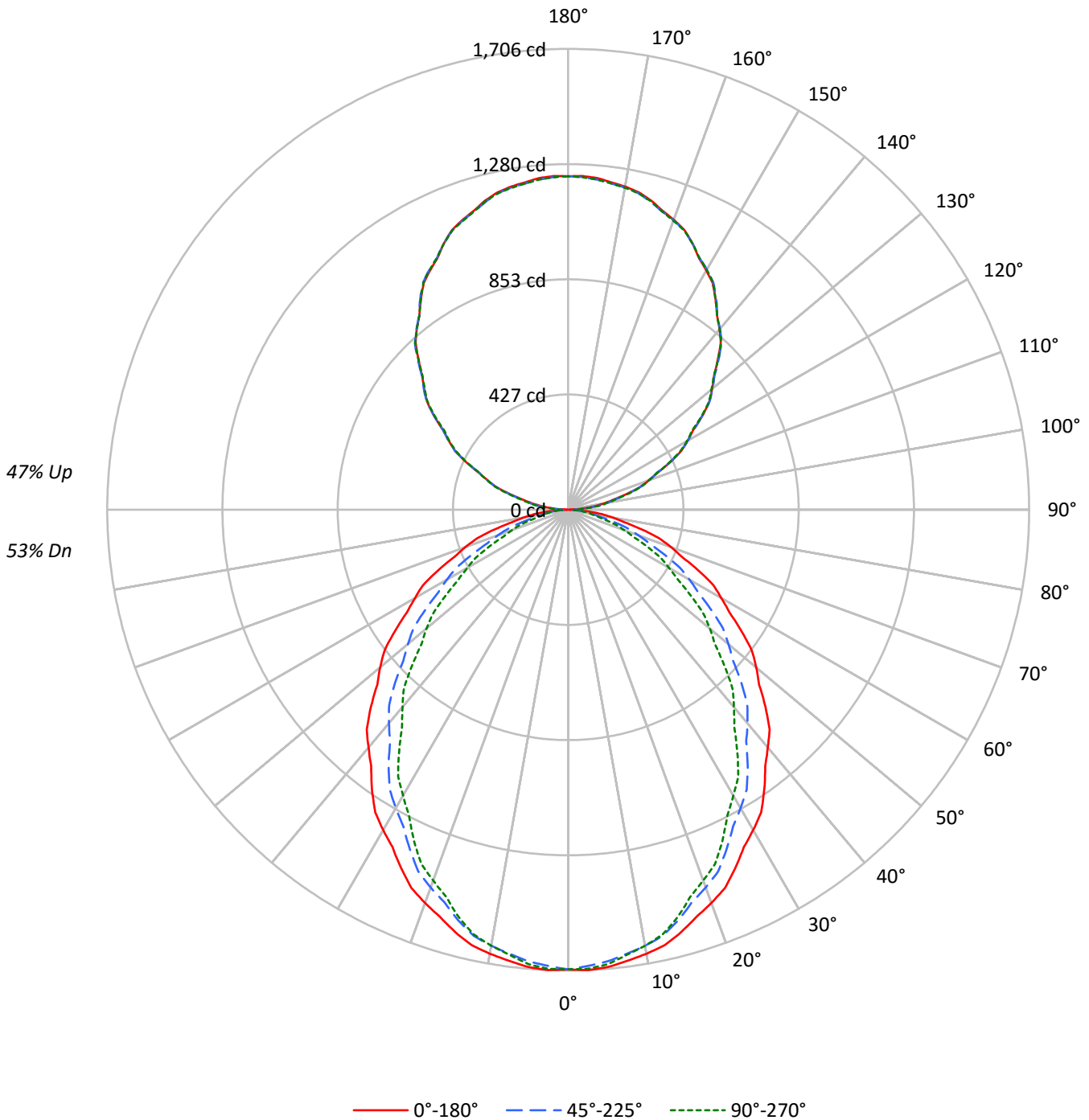
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	100	100	100	100	85	85	85	72	72	72	59	59	59	53
1	99	95	91	87	91	88	85	82	75	73	71	64	62	60	53	52	51	46
2	90	83	77	72	83	77	72	67	66	62	59	56	53	51	47	45	43	39
3	82	73	66	60	76	68	62	57	59	54	50	50	46	43	42	39	37	33
4	76	65	57	51	70	61	54	48	52	47	43	45	41	37	37	35	32	29
5	69	58	50	44	64	54	47	42	47	41	37	40	36	33	34	31	28	25
6	64	52	44	38	59	49	42	36	42	37	32	36	32	29	31	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	20
8	55	43	35	30	51	40	33	28	35	30	26	30	26	23	26	23	20	18
9	51	39	32	27	48	37	30	25	32	27	23	28	24	21	24	21	18	16
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	16	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13739	13739	13739
5°	13771	13602	13686
10°	13684	13439	13439
15°	13527	13157	13059
20°	13311	12785	12550
25°	13036	12351	12038
30°	12767	11893	11395
35°	12471	11417	10749
40°	12113	10877	10053
45°	11783	10340	9344
50°	11408	9722	8593
55°	11005	9080	7776
60°	10563	8375	6944
65°	10157	7494	6124
70°	9567	6522	5200
75°	8821	5405	4226
80°	7694	4119	3877
85°	6521	3742	3501



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.9	2.2
10°-20°	445.8	6.1
20°-30°	643.8	8.7
30°-40°	729.7	9.9
40°-50°	704.7	9.6
50°-60°	586.0	8.0
60°-70°	404.6	5.5
70°-80°	205.1	2.8
80°-90°	56.3	0.8
90°-100°	81.4	1.1
100°-110°	241.2	3.3
110°-120°	409.4	5.6
120°-130°	539.9	7.3
130°-140°	606.3	8.2
140°-150°	595.8	8.1
150°-160°	501.1	6.8
160°-170°	333.4	4.5
170°-180°	116.7	1.6
0°-30°	1249.5	17.0
0°-40°	1979.2	26.9
0°-60°	3269.8	44.4
0°-90°	3935.9	53.5
90°-120°	732.1	9.9
90°-150°	2474.1	33.6
90°-180°	3425.0	46.5
0°-180°	7361.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1702	1702	1702	1702	1702	
5°	1699	1694	1678	1691	1689	161
15°	1618	1606	1574	1571	1562	456
25°	1464	1438	1387	1365	1351	674
35°	1265	1222	1158	1115	1091	790
45°	1032	982	906	844	818	795
55°	782	728	645	580	552	699
65°	532	474	392	338	321	525
75°	283	234	173	145	136	299
85°	70	46	40	38	38	79
90°	3	13	21	27	29	7
95°	57	66	73	75	75	64
105°	222	224	227	230	233	236
115°	416	416	414	413	412	410
125°	606	606	605	603	602	540
135°	782	787	788	786	783	605
145°	950	954	955	954	951	594
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°	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1706.1	1705.2	1704.2	1703.4	1702.4	1700.6	1698.1	1695.5	1693.0	1690.5	1693.0
5°	1699.3	1698.2	1697.0	1695.8	1694.7	1692.3	1688.9	1685.5	1682.0	1678.5	1681.4
7.5°	1683.9	1682.7	1681.5	1680.3	1679.0	1676.2	1671.7	1667.2	1662.6	1658.1	1660.0
10°	1669.3	1667.9	1666.4	1665.0	1663.6	1660.2	1655.0	1649.8	1644.5	1639.4	1640.5
12.5°	1650.6	1648.9	1647.2	1645.6	1643.9	1639.9	1633.8	1627.7	1621.6	1615.4	1616.1
15°	1618.5	1615.9	1613.4	1610.7	1608.1	1603.2	1595.9	1588.7	1581.5	1574.2	1573.7
17.5°	1579.7	1575.9	1572.2	1568.4	1564.6	1558.4	1549.7	1541.1	1532.4	1523.6	1522.0
20°	1549.4	1545.7	1541.9	1538.1	1534.4	1527.6	1517.8	1507.9	1498.1	1488.2	1485.9
22.5°	1516.1	1511.8	1507.6	1503.4	1499.2	1491.8	1481.3	1470.7	1460.2	1449.6	1446.1
25°	1463.5	1458.2	1453.0	1447.8	1442.6	1434.1	1422.2	1410.3	1398.5	1386.6	1381.7
27.5°	1408.2	1401.7	1395.2	1388.6	1382.1	1372.4	1359.7	1347.1	1334.4	1321.6	1315.6
30°	1369.6	1362.4	1355.2	1347.9	1340.7	1330.2	1316.6	1303.0	1289.4	1275.8	1268.6
32.5°	1329.0	1320.8	1312.6	1304.5	1296.3	1285.2	1271.1	1257.1	1242.9	1228.9	1220.5
35°	1265.4	1256.1	1246.8	1237.6	1228.3	1216.4	1201.9	1187.5	1173.0	1158.5	1148.7
37.5°	1197.3	1187.8	1178.3	1168.7	1159.1	1146.3	1130.3	1114.3	1098.2	1082.1	1071.1
40°	1149.4	1139.8	1130.3	1120.7	1111.2	1098.2	1081.7	1065.1	1048.6	1032.1	1019.9
42.5°	1103.5	1093.5	1083.5	1073.5	1063.5	1049.8	1032.6	1015.4	998.2	981.0	968.7
45°	1032.1	1021.4	1010.7	999.9	989.2	975.2	957.8	940.5	923.0	905.7	891.6
47.5°	958.4	947.3	936.2	925.2	914.1	899.6	881.5	863.4	845.3	827.3	812.6
50°	908.3	897.0	885.7	874.4	863.1	848.2	829.7	811.2	792.6	774.1	759.6
52.5°	857.2	846.1	835.1	824.1	812.9	798.0	778.9	760.0	740.9	722.0	707.3
55°	781.9	770.3	758.7	747.2	735.6	720.4	701.5	682.7	663.9	645.1	630.0
57.5°	707.4	695.3	683.2	671.2	659.2	643.9	625.4	606.8	588.2	569.8	554.5
60°	654.2	642.6	631.0	619.4	607.8	592.8	574.3	555.7	537.2	518.7	503.6
62.5°	606.2	594.2	582.1	570.0	558.1	542.5	523.5	504.5	485.5	466.6	452.6
65°	531.7	519.2	506.8	494.4	481.9	466.4	447.9	429.3	410.8	392.3	379.8
67.5°	454.3	442.3	430.5	418.5	406.5	392.0	374.8	357.6	340.4	323.2	312.5
70°	405.3	393.1	381.0	368.8	356.7	342.3	325.8	309.2	292.8	276.3	266.7
72.5°	353.2	342.1	331.1	320.2	309.2	295.9	280.3	264.7	249.1	233.6	225.4
75°	282.8	272.1	261.4	250.6	240.0	227.7	214.1	200.6	186.9	173.3	166.6
77.5°	211.4	202.3	193.2	184.1	175.0	164.9	153.9	143.0	132.0	120.9	117.1
80°	165.5	157.1	148.7	140.3	132.0	123.4	114.7	106.0	97.3	88.6	87.8
82.5°	125.9	118.2	110.5	102.7	95.1	88.7	83.8	78.8	73.8	68.8	68.1
85°	70.4	64.6	58.8	53.0	47.2	43.8	43.0	42.1	41.3	40.4	39.8
87.5°	24.5	23.2	21.8	20.4	19.0	18.4	18.5	18.6	18.7	18.8	18.9
90°	2.8	5.2	7.5	9.9	12.2	14.2	15.9	17.6	19.3	21.0	22.2
92.5°	20.5	23.1	25.8	28.5	31.1	33.1	34.2	35.4	36.7	37.8	38.5
95°	57.3	59.2	61.1	63.1	64.9	66.6	68.1	69.6	71.1	72.6	73.2
97.5°	100.1	101.6	103.1	104.6	106.2	107.8	109.5	111.3	113.0	114.8	115.6
100°	133.7	134.5	135.3	136.2	137.0	138.5	140.3	142.2	144.2	146.1	146.5
102.5°	168.8	169.2	169.5	169.8	170.1	171.2	173.0	174.7	176.4	178.1	178.8
105°	222.4	222.7	222.9	223.1	223.3	223.9	224.7	225.6	226.4	227.2	227.9
107.5°	278.8	279.1	279.3	279.6	279.8	280.0	280.1	280.3	280.4	280.5	281.2
110°	317.0	317.4	317.8	318.3	318.7	318.8	318.8	318.4	318.2	317.9	317.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	356.8	356.8	356.9	356.9	357.0	356.9	356.6	356.2	355.8	355.4	355.3
115°	416.3	416.3	416.3	416.3	416.3	416.1	415.7	415.3	414.8	414.4	414.2
117.5°	472.5	472.6	472.8	473.0	473.2	473.1	472.8	472.5	472.2	471.8	471.2
120°	509.9	510.8	511.6	512.5	513.3	513.4	512.7	512.1	511.5	510.9	509.8
122.5°	548.8	549.2	549.5	549.9	550.2	550.3	549.9	549.6	549.3	549.0	548.3
125°	606.3	606.3	606.3	606.3	606.3	606.2	606.0	605.8	605.6	605.4	604.9
127.5°	658.5	659.1	659.7	660.3	661.0	661.2	660.8	660.4	660.2	659.8	659.4
130°	695.1	695.8	696.4	697.0	697.7	698.0	698.0	698.0	698.0	698.0	697.6
132.5°	732.5	733.0	733.5	734.0	734.4	734.5	734.4	734.2	734.1	733.9	733.5
135°	782.0	783.3	784.6	785.8	787.1	787.8	787.8	787.8	787.8	787.8	787.3
137.5°	835.8	836.4	837.1	837.6	838.2	838.7	839.1	839.4	839.7	840.1	839.5
140°	871.8	872.2	872.6	873.1	873.5	873.6	873.6	873.6	873.6	873.6	873.5
142.5°	904.7	905.0	905.5	905.9	906.3	906.4	906.3	906.1	906.0	905.8	905.7
145°	950.1	950.9	951.8	952.6	953.5	953.9	954.2	954.4	954.6	954.8	954.6
147.5°	995.1	996.2	997.2	998.2	999.2	999.7	999.5	999.3	999.1	998.9	998.8
150°	1022.7	1023.5	1024.4	1025.2	1026.1	1026.4	1026.4	1026.4	1026.4	1026.4	1026.4
152.5°	1048.6	1049.1	1049.6	1050.1	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°	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1695.5	1698.1	1700.6	1701.9	1701.6	1701.4	1701.1	1700.9
5°	1684.2	1687.2	1690.1	1691.2	1690.6	1690.1	1689.5	1688.9
7.5°	1661.9	1663.7	1665.6	1666.0	1665.1	1664.2	1663.2	1662.3
10°	1641.7	1642.9	1644.0	1644.0	1642.9	1641.7	1640.5	1639.4
12.5°	1616.7	1617.5	1618.2	1617.7	1616.1	1614.5	1612.9	1611.3
15°	1573.1	1572.4	1571.9	1570.6	1568.6	1566.5	1564.5	1562.5
17.5°	1520.4	1518.8	1517.2	1514.9	1511.7	1508.7	1505.6	1502.5
20°	1483.6	1481.3	1478.9	1475.9	1472.2	1468.4	1464.6	1460.8
22.5°	1442.7	1439.2	1435.8	1432.5	1429.4	1426.3	1423.2	1420.2
25°	1376.7	1371.8	1366.9	1362.9	1360.1	1357.2	1354.2	1351.4
27.5°	1309.5	1303.4	1297.3	1292.2	1288.1	1283.8	1279.7	1275.5
30°	1261.3	1254.1	1246.8	1240.9	1236.2	1231.6	1227.0	1222.4
32.5°	1212.1	1203.7	1195.3	1188.9	1184.5	1180.1	1175.7	1171.3
35°	1138.8	1129.0	1119.1	1111.6	1106.4	1101.2	1096.0	1090.7
37.5°	1060.2	1049.1	1038.1	1030.0	1024.8	1019.5	1014.4	1009.2
40°	1007.8	995.6	983.4	974.8	969.6	964.3	959.1	953.9
42.5°	956.2	943.9	931.4	922.6	917.1	911.6	906.2	900.8
45°	877.3	863.1	848.9	839.2	834.1	828.8	823.6	818.4
47.5°	797.9	783.2	768.4	758.2	752.4	746.7	740.9	735.3
50°	745.1	730.7	716.1	706.2	700.7	695.1	689.7	684.2
52.5°	692.5	677.8	663.1	652.9	647.1	641.4	635.7	630.0
55°	614.9	599.9	584.8	574.6	569.0	563.5	558.1	552.5
57.5°	539.1	523.9	508.6	498.9	494.6	490.5	486.4	482.2
60°	488.5	473.4	458.5	448.6	443.9	439.3	434.7	430.1
62.5°	438.8	424.8	410.9	402.1	398.4	394.7	391.0	387.3
65°	367.3	354.9	342.4	334.5	331.0	327.5	324.0	320.6
67.5°	301.7	291.1	280.3	273.1	269.2	265.4	261.6	257.8
70°	257.1	247.6	238.1	231.8	228.9	226.0	223.1	220.3
72.5°	217.2	209.1	200.9	195.5	192.7	190.1	187.5	184.8
75°	160.0	153.4	146.7	142.5	140.7	139.0	137.2	135.5
77.5°	113.2	109.3	105.4	103.2	102.6	102.2	101.6	101.1
80°	86.9	86.1	85.1	84.5	84.3	84.0	83.7	83.4
82.5°	67.5	66.9	66.3	65.8	65.5	65.2	64.9	64.7
85°	39.2	38.6	38.1	37.8	37.8	37.8	37.8	37.8
87.5°	18.9	18.9	18.9	19.0	19.4	19.7	20.0	20.4
90°	23.6	24.8	26.1	27.0	27.3	27.8	28.2	28.7
92.5°	39.3	40.1	40.9	41.4	41.7	41.8	42.1	42.4
95°	73.8	74.5	75.1	75.4	75.4	75.4	75.4	75.4
97.5°	116.3	117.1	117.8	118.2	118.2	118.2	118.2	118.2
100°	146.9	147.3	147.8	148.0	148.0	148.0	148.0	148.0
102.5°	179.4	179.9	180.6	181.0	181.1	181.3	181.4	181.6
105°	228.6	229.1	229.8	230.5	231.1	231.7	232.3	233.0
107.5°	281.7	282.3	283.0	283.1	283.1	283.1	283.0	283.0
110°	317.1	316.7	316.2	316.4	317.0	317.6	318.3	319.0



TEST NUMBER: P333086-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	355.2	355.2	355.1	355.1	355.2	355.3	355.4	355.6
115°	414.0	413.8	413.6	413.3	413.1	412.9	412.7	412.5
117.5°	470.4	469.7	469.0	468.4	468.0	467.6	467.1	466.7
120°	508.7	507.7	506.6	506.2	506.7	507.1	507.6	507.9
122.5°	547.6	546.9	546.1	545.4	544.6	543.8	543.1	542.3
125°	604.5	604.1	603.7	603.2	602.9	602.4	602.0	601.5
127.5°	658.9	658.6	658.1	657.7	657.3	657.0	656.7	656.4
130°	697.1	696.7	696.3	695.7	694.8	694.0	693.1	692.3
132.5°	733.0	732.6	732.2	731.8	731.5	731.1	730.8	730.5
135°	786.9	786.5	786.1	785.5	784.9	784.2	783.6	783.0
137.5°	839.0	838.4	837.8	837.6	837.7	837.9	838.0	838.1
140°	873.3	873.1	872.8	872.6	872.4	872.2	871.9	871.8
142.5°	905.7	905.6	905.6	905.5	905.5	905.5	905.4	905.4
145°	954.4	954.2	953.9	953.6	952.9	952.3	951.7	951.0
147.5°	998.6	998.4	998.2	998.1	997.9	997.7	997.4	997.2
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)