

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: P333102-930

Luminaire Tested: **S124RDIW-S1195D770U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333102-930
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-S1195D770U930-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6101.3 lumens
Efficiency: N/A
Efficacy: 102.0 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: Semi-Direct

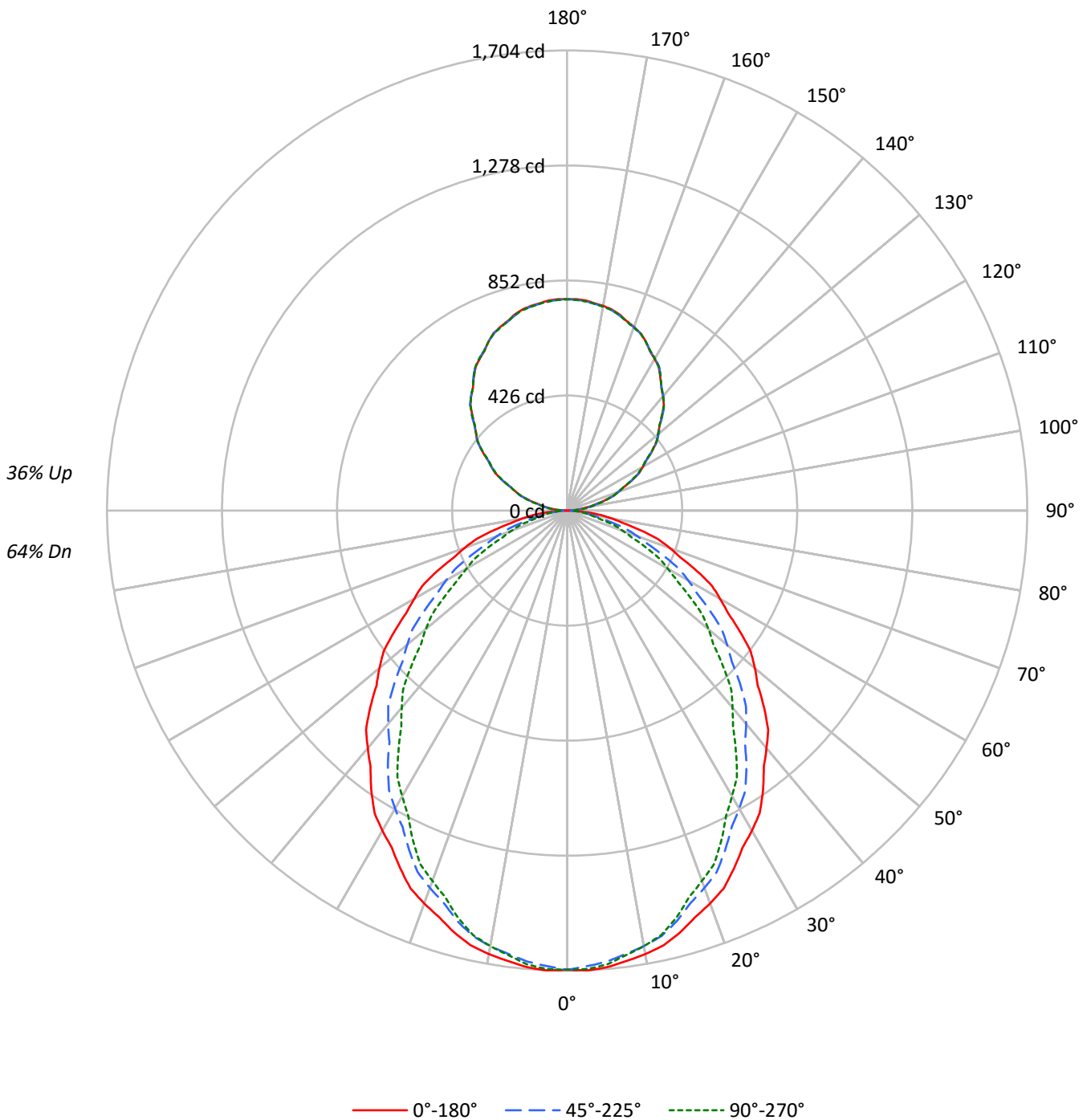
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69	64
1	101	97	93	90	95	91	88	85	81	78	76	71	69	67	62	61	59	55
2	93	85	79	74	87	80	75	70	71	67	63	63	60	57	55	53	50	47
3	85	75	68	62	79	71	64	59	63	58	54	56	52	48	49	46	43	40
4	78	67	59	53	73	63	56	51	56	51	46	50	45	42	44	40	38	34
5	71	60	52	46	67	57	49	44	51	45	40	45	40	36	40	36	33	30
6	66	54	46	40	62	51	44	38	46	40	35	41	36	32	36	32	29	27
7	61	49	41	35	57	46	39	34	42	36	31	37	32	29	33	29	26	24
8	57	44	37	31	53	42	35	30	38	32	28	34	29	26	30	26	23	21
9	53	41	33	28	50	39	32	27	35	29	25	32	27	23	28	24	21	19
10	50	37	30	25	47	36	29	24	32	27	23	29	24	21	26	22	19	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13726	13726	13726
5°	13757	13588	13674
10°	13671	13426	13426
15°	13514	13143	13046
20°	13298	12773	12538
25°	13023	12339	12026
30°	12755	11882	11384
35°	12458	11406	10738
40°	12101	10866	10043
45°	11772	10330	9334
50°	11396	9712	8584
55°	10994	9070	7769
60°	10551	8365	6936
65°	10147	7484	6117
70°	9557	6515	5193
75°	8812	5402	4223
80°	7685	4114	3873
85°	6512	3742	3492



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.7	2.6
10°-20°	445.4	7.3
20°-30°	643.1	10.5
30°-40°	729.0	11.9
40°-50°	704.0	11.5
50°-60°	585.4	9.6
60°-70°	404.2	6.6
70°-80°	204.9	3.4
80°-90°	54.9	0.9
90°-100°	51.6	0.8
100°-110°	152.9	2.5
110°-120°	259.5	4.3
120°-130°	342.1	5.6
130°-140°	384.2	6.3
140°-150°	377.6	6.2
150°-160°	317.6	5.2
160°-170°	211.3	3.5
170°-180°	74.0	1.2
0°-30°	1248.2	20.5
0°-40°	1977.3	32.4
0°-60°	3266.6	53.5
0°-90°	3930.6	64.4
90°-120°	463.9	7.6
90°-150°	1567.9	25.7
90°-180°	2171.0	35.6
0°-180°	6101.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1700	1700	1700	1700	1700	
5°	1698	1692	1677	1689	1687	161
15°	1617	1604	1573	1570	1561	455
25°	1462	1437	1385	1364	1350	673
35°	1264	1221	1157	1114	1090	790
45°	1031	981	905	843	818	795
55°	781	727	644	579	552	698
65°	531	474	392	338	320	524
75°	282	234	173	144	135	298
85°	70	46	40	38	38	79
90°	2	8	13	17	18	6
95°	36	42	46	48	48	40
105°	141	142	144	146	148	150
115°	264	264	263	262	261	260
125°	384	384	384	382	381	342
135°	496	499	499	498	496	383
145°	602	604	605	604	603	377
155°	690	690	689	691	689	317
165°	751	749	748	751	749	212
175°	781	778	778	781	778	74
180°	782	782	782	782	782	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2
2.5°	1704.4	1703.5	1702.6	1701.6	1700.7	1699.0	1696.5	1693.9	1691.3	1688.8	1691.3
5°	1697.6	1696.5	1695.3	1694.2	1693.1	1690.7	1687.3	1683.8	1680.3	1676.8	1679.7
7.5°	1682.3	1681.1	1679.8	1678.6	1677.4	1674.5	1670.1	1665.6	1661.0	1656.5	1658.4
10°	1667.7	1666.2	1664.8	1663.4	1661.9	1658.6	1653.4	1648.2	1643.0	1637.8	1638.9
12.5°	1648.9	1647.3	1645.6	1643.9	1642.3	1638.3	1632.2	1626.1	1619.9	1613.8	1614.5
15°	1616.9	1614.3	1611.8	1609.2	1606.5	1601.6	1594.4	1587.1	1579.9	1572.6	1572.1
17.5°	1578.2	1574.3	1570.6	1566.8	1563.1	1556.9	1548.2	1539.5	1530.8	1522.2	1520.5
20°	1547.9	1544.2	1540.4	1536.7	1532.9	1526.1	1516.3	1506.4	1496.6	1486.8	1484.4
22.5°	1514.6	1510.4	1506.2	1501.9	1497.7	1490.4	1479.8	1469.3	1458.7	1448.2	1444.7
25°	1462.0	1456.8	1451.6	1446.4	1441.2	1432.6	1420.8	1408.9	1397.1	1385.2	1380.3
27.5°	1406.8	1400.3	1393.8	1387.2	1380.6	1371.1	1358.4	1345.7	1333.0	1320.4	1314.3
30°	1368.3	1361.1	1353.8	1346.5	1339.4	1328.9	1315.3	1301.7	1288.2	1274.6	1267.3
32.5°	1327.6	1319.5	1311.3	1303.2	1295.0	1283.9	1269.8	1255.8	1241.7	1227.7	1219.3
35°	1264.1	1254.8	1245.6	1236.3	1227.1	1215.2	1200.8	1186.3	1171.8	1157.4	1147.5
37.5°	1196.2	1186.6	1177.0	1167.5	1158.0	1145.2	1129.2	1113.1	1097.1	1081.1	1070.1
40°	1148.3	1138.7	1129.2	1119.7	1110.0	1097.1	1080.6	1064.0	1047.6	1031.1	1019.0
42.5°	1102.4	1092.4	1082.4	1072.4	1062.4	1048.8	1031.6	1014.4	997.3	980.1	967.7
45°	1031.1	1020.3	1009.7	999.0	988.3	974.2	956.9	939.6	922.2	904.8	890.6
47.5°	957.4	946.3	935.3	924.2	913.2	898.6	880.6	862.5	844.5	826.5	811.7
50°	907.4	896.1	884.8	873.6	862.3	847.3	828.8	810.3	791.8	773.3	758.9
52.5°	856.4	845.3	834.3	823.2	812.2	797.1	778.2	759.2	740.2	721.2	706.5
55°	781.1	769.6	758.0	746.4	734.8	719.7	700.8	682.1	663.2	644.4	629.4
57.5°	706.6	694.6	682.6	670.6	658.5	643.3	624.8	606.2	587.7	569.2	553.9
60°	653.5	642.0	630.4	618.8	607.2	592.2	573.7	555.2	536.6	518.1	503.1
62.5°	605.6	593.6	581.6	569.6	557.5	542.0	523.0	504.0	485.0	466.1	452.2
65°	531.2	518.7	506.3	493.8	481.4	465.9	447.4	428.9	410.4	391.8	379.4
67.5°	453.8	441.9	430.0	418.1	406.2	391.6	374.4	357.3	340.1	322.9	312.2
70°	404.9	392.7	380.6	368.4	356.3	341.9	325.5	309.0	292.5	276.0	266.4
72.5°	352.8	341.9	330.8	319.8	308.8	295.5	280.0	264.4	248.8	233.3	225.1
75°	282.5	271.8	261.1	250.4	239.7	227.6	213.9	200.3	186.8	173.2	166.5
77.5°	211.2	202.1	193.0	183.9	174.8	164.8	153.8	142.8	131.8	120.8	116.9
80°	165.3	156.9	148.5	140.1	131.8	123.3	114.5	105.9	97.2	88.5	87.6
82.5°	125.8	118.1	110.4	102.6	95.0	88.6	83.6	78.7	73.7	68.7	68.1
85°	70.3	64.5	58.7	52.9	47.1	43.9	43.0	42.1	41.3	40.4	39.8
87.5°	24.3	22.7	21.2	19.6	18.1	17.3	17.3	17.3	17.3	17.2	17.2
90°	1.8	3.3	4.8	6.3	7.7	9.0	10.1	11.2	12.2	13.3	14.1
92.5°	13.0	14.7	16.3	18.0	19.7	21.0	21.7	22.4	23.2	24.0	24.5
95°	36.3	37.5	38.7	39.9	41.2	42.2	43.1	44.1	45.1	46.0	46.4
97.5°	63.4	64.4	65.4	66.3	67.3	68.3	69.5	70.5	71.7	72.7	73.2
100°	84.7	85.3	85.8	86.3	86.8	87.7	88.9	90.2	91.4	92.6	92.9
102.5°	107.0	107.2	107.4	107.6	107.9	108.5	109.6	110.7	111.8	112.9	113.3
105°	141.0	141.1	141.3	141.4	141.5	141.9	142.4	142.9	143.5	144.0	144.4
107.5°	176.7	176.8	177.0	177.2	177.3	177.5	177.6	177.7	177.7	177.8	178.1
110°	200.9	201.1	201.5	201.7	201.9	202.0	201.9	201.8	201.6	201.5	201.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	226.1	226.1	226.2	226.2	226.2	226.2	225.9	225.7	225.4	225.2	225.2
115°	263.8	263.8	263.8	263.8	263.8	263.7	263.4	263.2	262.9	262.6	262.4
117.5°	299.4	299.5	299.6	299.7	299.9	299.8	299.6	299.5	299.2	299.1	298.6
120°	323.1	323.7	324.2	324.7	325.3	325.3	325.0	324.6	324.2	323.8	323.0
122.5°	347.8	348.1	348.2	348.5	348.7	348.7	348.5	348.3	348.1	348.0	347.5
125°	384.3	384.3	384.3	384.3	384.3	384.2	384.0	383.9	383.8	383.6	383.4
127.5°	417.3	417.7	418.1	418.5	418.9	419.0	418.7	418.6	418.3	418.2	417.8
130°	440.5	440.9	441.3	441.7	442.1	442.3	442.3	442.3	442.3	442.3	442.1
132.5°	464.2	464.6	464.8	465.1	465.5	465.5	465.4	465.3	465.2	465.0	464.8
135°	495.6	496.4	497.2	498.0	498.8	499.2	499.2	499.2	499.2	499.2	499.0
137.5°	529.7	530.1	530.4	530.8	531.2	531.5	531.7	531.9	532.1	532.4	532.0
140°	552.4	552.7	553.0	553.3	553.5	553.7	553.7	553.7	553.7	553.7	553.5
142.5°	573.2	573.6	573.8	574.1	574.4	574.5	574.3	574.2	574.1	574.0	574.0
145°	602.1	602.6	603.2	603.7	604.2	604.5	604.7	604.9	605.0	605.1	605.0
147.5°	630.6	631.3	631.9	632.6	633.2	633.5	633.4	633.2	633.2	633.1	632.9
150°	648.1	648.6	649.1	649.7	650.2	650.5	650.5	650.5	650.5	650.5	650.5
152.5°	664.6	664.9	665.2	665.5	665.9	666.0	666.1	666.3	666.3	666.4	666.8
155°	689.8	689.8	689.8	689.8	689.8	689.7	689.6	689.5	689.3	689.3	689.7
157.5°	711.1	710.9	710.6	710.4	710.1	710.0	710.0	710.0	710.0	709.9	710.3
160°	723.7	723.6	723.4	723.3	723.2	723.0	722.9	722.8	722.6	722.5	722.9
162.5°	735.3	735.0	734.6	734.3	733.9	733.7	733.5	733.4	733.3	733.1	733.9
165°	751.0	750.6	750.2	749.7	749.3	749.0	748.7	748.4	748.2	747.9	748.7
167.5°	762.9	762.4	761.8	761.2	760.7	760.3	760.4	760.4	760.4	760.5	761.3
170°	769.7	769.0	768.3	767.7	767.0	766.7	766.9	767.0	767.1	767.3	768.1
172.5°	774.5	774.0	773.4	772.8	772.3	772.0	772.0	772.1	772.1	772.1	773.1
175°	781.2	780.5	779.8	779.2	778.5	778.1	778.0	777.8	777.7	777.6	778.5
177.5°	783.3	782.9	782.3	781.8	781.2	781.0	781.0	781.0	781.0	781.0	781.7
180°	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2
2.5°	1693.9	1696.5	1699.0	1700.1	1699.9	1699.7	1699.4	1699.2
5°	1682.6	1685.5	1688.4	1689.5	1689.0	1688.4	1687.8	1687.3
7.5°	1660.2	1662.1	1663.9	1664.4	1663.5	1662.6	1661.6	1660.7
10°	1640.1	1641.2	1642.4	1642.4	1641.2	1640.1	1638.9	1637.8
12.5°	1615.2	1615.9	1616.6	1616.1	1614.5	1612.9	1611.3	1609.6
15°	1571.5	1570.9	1570.3	1569.0	1567.0	1565.0	1563.0	1561.0
17.5°	1518.9	1517.3	1515.6	1513.4	1510.3	1507.2	1504.1	1501.0
20°	1482.1	1479.8	1477.5	1474.5	1470.7	1467.0	1463.1	1459.4
22.5°	1441.3	1437.8	1434.4	1431.1	1428.0	1424.9	1421.9	1418.8
25°	1375.3	1370.4	1365.5	1361.6	1358.7	1355.8	1352.9	1350.1
27.5°	1308.2	1302.1	1296.1	1290.9	1286.8	1282.6	1278.5	1274.3
30°	1260.0	1252.9	1245.6	1239.7	1235.0	1230.4	1225.8	1221.2
32.5°	1210.9	1202.5	1194.1	1187.7	1183.3	1178.9	1174.5	1170.1
35°	1137.7	1127.9	1118.0	1110.5	1105.3	1100.1	1094.9	1089.6
37.5°	1059.1	1048.1	1037.1	1029.0	1023.8	1018.6	1013.4	1008.2
40°	1006.8	994.7	982.5	973.8	968.6	963.4	958.2	953.0
42.5°	955.3	942.9	930.5	921.6	916.2	910.8	905.3	899.8
45°	876.4	862.3	848.1	838.4	833.2	828.0	822.8	817.6
47.5°	797.0	782.4	767.7	757.4	751.7	746.0	740.2	734.5
50°	744.4	729.9	715.4	705.5	700.0	694.5	689.0	683.5
52.5°	691.9	677.2	662.4	652.2	646.5	640.8	635.0	629.3
55°	614.3	599.3	584.2	574.0	568.5	563.0	557.5	552.0
57.5°	538.7	523.3	508.1	498.4	494.2	490.0	485.8	481.7
60°	488.0	473.0	458.0	448.2	443.5	438.9	434.2	429.6
62.5°	438.3	424.4	410.5	401.7	398.0	394.4	390.6	386.9
65°	367.0	354.6	342.1	334.1	330.7	327.2	323.8	320.2
67.5°	301.5	290.7	280.1	272.8	269.0	265.1	261.3	257.5
70°	256.9	247.4	237.8	231.6	228.7	225.8	222.9	220.0
72.5°	217.0	208.8	200.6	195.3	192.6	190.0	187.3	184.6
75°	159.9	153.2	146.5	142.4	140.6	138.8	137.1	135.4
77.5°	113.1	109.2	105.3	103.1	102.6	102.1	101.6	101.0
80°	86.8	85.9	85.0	84.5	84.2	83.9	83.6	83.3
82.5°	67.5	66.9	66.2	65.7	65.5	65.1	64.9	64.6
85°	39.2	38.6	38.1	37.7	37.7	37.7	37.7	37.7
87.5°	17.1	17.0	17.0	17.0	17.4	17.6	17.9	18.2
90°	14.9	15.7	16.6	17.0	17.4	17.6	17.9	18.2
92.5°	24.9	25.4	25.9	26.3	26.4	26.6	26.7	26.9
95°	46.8	47.2	47.6	47.8	47.8	47.8	47.8	47.8
97.5°	73.7	74.2	74.7	74.9	74.9	74.9	74.9	74.9
100°	93.1	93.4	93.7	93.8	93.8	93.8	93.8	93.8
102.5°	113.7	114.1	114.4	114.6	114.8	114.9	115.0	115.1
105°	144.8	145.2	145.6	146.0	146.4	146.8	147.2	147.7
107.5°	178.6	178.9	179.3	179.4	179.4	179.4	179.4	179.4
110°	201.0	200.7	200.4	200.5	200.9	201.3	201.7	202.1



TEST NUMBER: P333102-930

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	225.1	225.0	225.0	225.0	225.1	225.2	225.3	225.3
115°	262.4	262.2	262.0	262.0	261.8	261.7	261.5	261.4
117.5°	298.2	297.7	297.2	296.9	296.6	296.3	296.0	295.8
120°	322.4	321.7	321.1	320.8	321.1	321.4	321.6	321.9
122.5°	347.0	346.6	346.1	345.6	345.1	344.6	344.2	343.7
125°	383.1	382.9	382.5	382.3	382.0	381.7	381.5	381.2
127.5°	417.6	417.4	417.0	416.8	416.6	416.4	416.1	416.0
130°	441.8	441.5	441.2	440.8	440.3	439.8	439.2	438.7
132.5°	464.6	464.3	464.0	463.7	463.6	463.3	463.1	462.9
135°	498.6	498.4	498.1	497.8	497.4	497.0	496.6	496.2
137.5°	531.7	531.3	531.0	530.8	530.9	531.0	531.1	531.2
140°	553.4	553.3	553.1	553.0	552.9	552.7	552.6	552.4
142.5°	574.0	573.9	573.9	573.9	573.8	573.8	573.8	573.7
145°	604.9	604.7	604.5	604.3	603.9	603.5	603.1	602.7
147.5°	632.8	632.8	632.6	632.5	632.3	632.3	632.1	631.9
150°	650.5	650.5	650.5	650.4	650.3	650.1	650.0	649.9
152.5°	667.1	667.4	667.7	667.7	667.4	667.1	666.7	666.3
155°	690.3	690.8	691.4	691.4	690.8	690.3	689.7	689.3
157.5°	710.7	711.1	711.5	711.5	711.0	710.6	710.1	709.6
160°	723.3	723.7	724.1	724.0	723.3	722.6	721.9	721.3
162.5°	734.6	735.3	736.1	736.1	735.4	734.7	734.1	733.4
165°	749.5	750.3	751.1	751.3	750.7	750.2	749.7	749.1
167.5°	762.1	762.9	763.7	763.7	762.9	762.1	761.2	760.3
170°	768.9	769.7	770.5	770.5	769.5	768.6	767.6	766.7
172.5°	774.0	774.9	775.8	775.8	774.8	773.9	772.9	772.0
175°	779.4	780.4	781.3	781.3	780.4	779.4	778.5	777.6
177.5°	782.4	783.2	784.0	783.9	783.0	782.2	781.3	780.5
180°	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4

(END OF REPORT)