

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: P333078-840

Luminaire Tested: **S124RDIW-S1020D470U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333078-840
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-S1020D470U840-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5856.4 lumens
Efficiency: N/A
Efficacy: 126.8 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

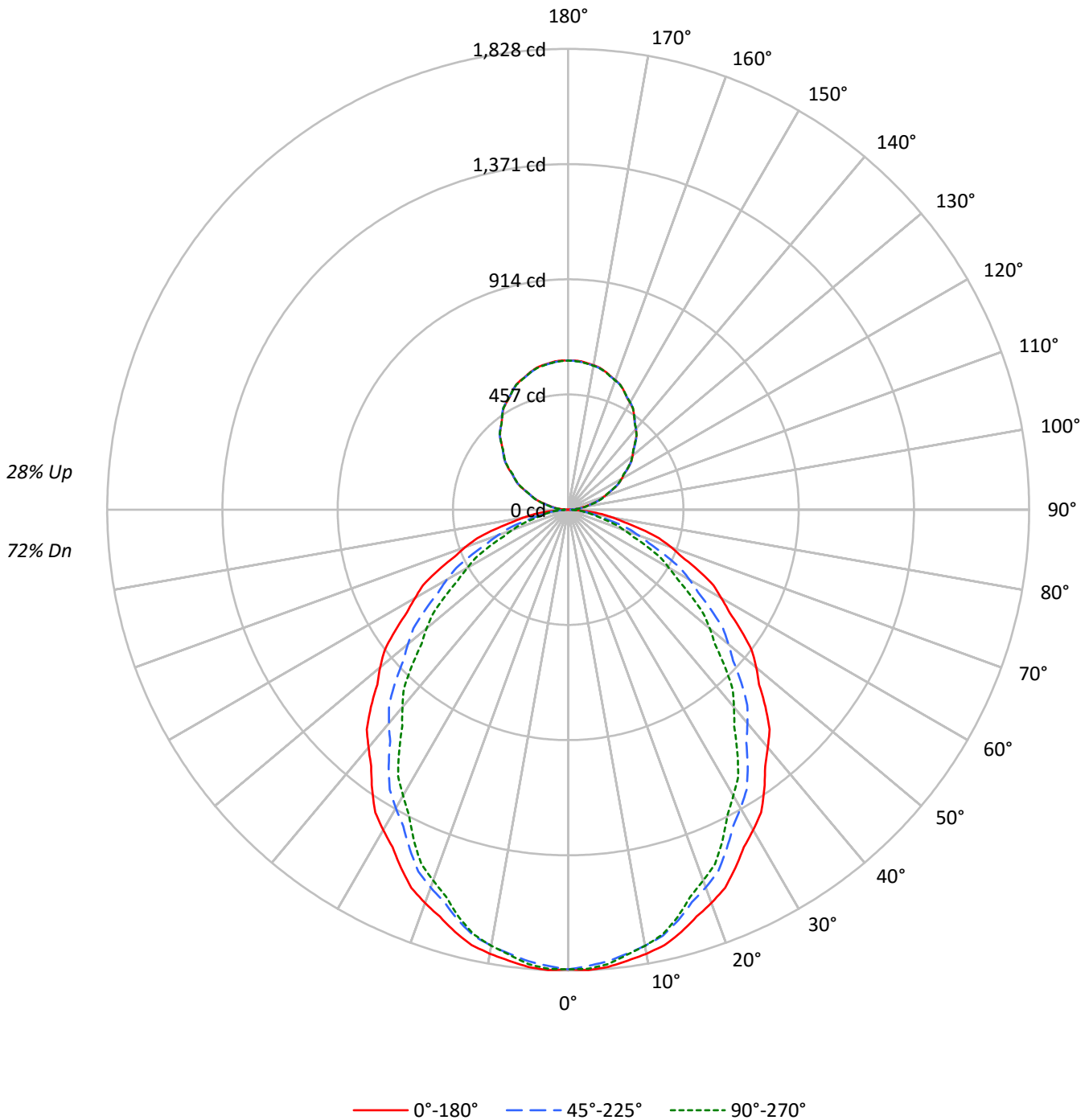
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	107	107	107	107	96	96	96		86	86	86		76	76	76	72
1	103	99	95	91	98	94	90	87	85	82	80		76	74	72		68	67	65	61
2	94	87	81	75	89	83	77	72	75	70	66		67	64	61		60	58	56	52
3	86	77	69	63	81	73	66	61	66	61	56		60	56	52		54	51	48	45
4	79	68	60	54	75	65	58	52	59	53	48		54	49	45		48	45	41	38
5	73	61	53	47	69	58	51	45	53	47	42		48	43	39		44	40	36	34
6	67	55	47	41	64	53	45	40	48	42	37		44	39	35		40	36	32	30
7	62	50	42	36	59	48	40	35	44	37	33		40	35	31		36	32	29	26
8	58	46	38	32	55	44	36	31	40	34	29		37	31	28		34	29	26	24
9	54	42	34	29	51	40	33	28	37	31	27		34	29	25		31	27	23	21
10	51	38	31	26	48	37	30	25	34	28	24		31	26	23		29	25	21	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14721	14721	14721
5°	14755	14574	14665
10°	14662	14399	14399
15°	14493	14097	13992
20°	14262	13698	13447
25°	13967	13233	12897
30°	13679	12743	12209
35°	13361	12232	11517
40°	12978	11653	10771
45°	12625	11079	10011
50°	12223	10417	9207
55°	11792	9728	8332
60°	11317	8972	7440
65°	10883	8029	6562
70°	10249	6987	5570
75°	9451	5792	4529
80°	8243	4412	4156
85°	6984	4011	3751



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.3	2.9
10°-20°	477.7	8.2
20°-30°	689.8	11.8
30°-40°	781.8	13.4
40°-50°	755.0	12.9
50°-60°	627.8	10.7
60°-70°	433.5	7.4
70°-80°	219.7	3.8
80°-90°	58.2	1.0
90°-100°	39.0	0.7
100°-110°	115.6	2.0
110°-120°	196.2	3.4
120°-130°	258.7	4.4
130°-140°	290.6	5.0
140°-150°	285.5	4.9
150°-160°	240.2	4.1
160°-170°	159.8	2.7
170°-180°	56.0	1.0
0°-30°	1338.7	22.9
0°-40°	2120.6	36.2
0°-60°	3503.4	59.8
0°-90°	4214.8	72.0
90°-120°	350.9	6.0
90°-150°	1185.7	20.2
90°-180°	1642.0	28.0
0°-180°	5856.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1824	1824	1824	1824	1824	
5°	1821	1814	1798	1811	1810	173
15°	1734	1720	1687	1683	1674	488
25°	1568	1541	1486	1462	1448	722
35°	1356	1310	1241	1195	1169	847
45°	1106	1052	970	904	877	852
55°	838	780	691	621	592	749
65°	570	508	420	363	344	562
75°	303	251	186	155	145	320
85°	75	49	43	41	40	85
90°	1	6	10	13	14	5
95°	28	32	35	36	36	31
105°	107	107	109	110	112	113
115°	200	199	199	198	198	197
125°	290	290	290	289	288	259
135°	375	377	378	377	375	290
145°	455	457	458	457	456	285
155°	522	522	521	523	521	240
165°	568	566	566	568	566	160
175°	591	589	588	591	588	56
180°	592	592	592	592	592	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5
2.5°	1828.0	1826.9	1825.9	1825.0	1824.0	1822.1	1819.4	1816.6	1813.9	1811.2	1813.9
5°	1820.7	1819.5	1818.3	1816.9	1815.7	1813.2	1809.6	1805.8	1802.1	1798.4	1801.5
7.5°	1804.2	1802.9	1801.6	1800.3	1799.0	1795.9	1791.1	1786.2	1781.4	1776.6	1778.6
10°	1788.6	1787.1	1785.4	1783.9	1782.4	1778.8	1773.2	1767.7	1762.0	1756.5	1757.7
12.5°	1768.5	1766.7	1764.8	1763.1	1761.3	1757.1	1750.5	1743.9	1737.4	1730.8	1731.5
15°	1734.1	1731.3	1728.6	1725.8	1722.9	1717.7	1709.9	1702.1	1694.5	1686.7	1686.1
17.5°	1692.5	1688.5	1684.5	1680.4	1676.4	1669.7	1660.4	1651.1	1641.8	1632.4	1630.7
20°	1660.1	1656.1	1652.0	1648.0	1644.0	1636.7	1626.2	1615.6	1605.1	1594.5	1592.1
22.5°	1624.4	1619.8	1615.3	1610.8	1606.3	1598.3	1587.1	1575.8	1564.5	1553.2	1549.4
25°	1568.0	1562.4	1556.8	1551.3	1545.6	1536.5	1523.8	1511.1	1498.3	1485.6	1480.4
27.5°	1508.7	1501.8	1494.8	1487.7	1480.8	1470.5	1456.8	1443.3	1429.7	1416.0	1409.6
30°	1467.4	1459.7	1452.0	1444.2	1436.4	1425.2	1410.7	1396.0	1381.5	1367.0	1359.2
32.5°	1423.9	1415.1	1406.3	1397.7	1388.9	1377.0	1361.9	1346.9	1331.7	1316.7	1307.7
35°	1355.7	1345.8	1335.8	1326.0	1316.1	1303.3	1287.8	1272.3	1256.8	1241.2	1230.7
37.5°	1282.8	1272.6	1262.4	1252.1	1241.9	1228.2	1211.0	1193.9	1176.6	1159.4	1147.6
40°	1231.5	1221.2	1211.0	1200.7	1190.5	1176.6	1158.9	1141.1	1123.5	1105.8	1092.8
42.5°	1182.3	1171.6	1160.8	1150.1	1139.4	1124.8	1106.4	1087.9	1069.5	1051.1	1037.8
45°	1105.8	1094.4	1082.9	1071.4	1059.9	1044.8	1026.2	1007.6	989.0	970.4	955.2
47.5°	1026.8	1014.9	1003.1	991.3	979.4	963.8	944.4	925.0	905.6	886.4	870.6
50°	973.2	961.1	949.0	936.9	924.7	908.8	889.0	869.1	849.2	829.4	813.9
52.5°	918.5	906.6	894.7	882.9	871.0	855.0	834.6	814.3	793.9	773.6	757.8
55°	837.8	825.4	812.9	800.5	788.1	771.8	751.6	731.4	711.3	691.2	675.0
57.5°	757.9	745.0	732.1	719.1	706.3	689.8	670.0	650.2	630.3	610.5	594.1
60°	700.9	688.5	676.1	663.7	651.3	635.1	615.3	595.4	575.5	555.7	539.6
62.5°	649.5	636.6	623.7	610.8	597.9	581.3	560.9	540.6	520.2	499.9	484.9
65°	569.7	556.3	543.0	529.7	516.3	499.7	479.9	460.0	440.1	420.3	407.0
67.5°	486.8	473.9	461.2	448.4	435.6	420.0	401.5	383.1	364.7	346.3	334.8
70°	434.2	421.2	408.2	395.2	382.1	366.8	349.1	331.3	313.7	296.0	285.8
72.5°	378.4	366.6	354.8	343.1	331.2	317.0	300.3	283.6	266.9	250.2	241.5
75°	303.0	291.5	280.0	268.5	257.1	244.0	229.4	214.9	200.3	185.7	178.5
77.5°	226.5	216.7	207.0	197.2	187.5	176.7	164.9	153.2	141.4	129.6	125.4
80°	177.3	168.3	159.4	150.4	141.4	132.2	122.9	113.6	104.2	94.9	94.0
82.5°	134.9	126.6	118.4	110.1	101.9	95.0	89.8	84.4	79.1	73.7	73.0
85°	75.4	69.2	63.0	56.8	50.6	47.0	46.0	45.1	44.2	43.3	42.6
87.5°	26.0	24.2	22.4	20.7	18.9	18.0	17.9	17.8	17.8	17.7	17.6
90°	1.4	2.5	3.6	4.7	5.9	6.8	7.7	8.5	9.3	10.1	10.7
92.5°	9.8	11.1	12.3	13.6	14.9	15.9	16.5	17.0	17.6	18.1	18.5
95°	27.5	28.4	29.3	30.2	31.1	31.9	32.6	33.3	34.0	34.7	35.0
97.5°	48.0	48.7	49.4	50.2	50.9	51.7	52.5	53.3	54.1	55.0	55.3
100°	64.0	64.4	64.8	65.2	65.7	66.3	67.3	68.2	69.1	70.0	70.2
102.5°	80.9	81.1	81.2	81.4	81.6	82.1	82.9	83.7	84.5	85.4	85.6
105°	106.6	106.7	106.8	106.9	107.0	107.2	107.7	108.1	108.5	108.9	109.2
107.5°	133.6	133.7	133.9	134.0	134.1	134.2	134.3	134.3	134.4	134.4	134.7
110°	151.9	152.1	152.3	152.5	152.7	152.8	152.7	152.6	152.5	152.4	152.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	171.0	171.0	171.1	171.1	171.2	171.1	170.9	170.7	170.5	170.4	170.3
115°	199.5	199.5	199.5	199.5	199.5	199.4	199.2	199.0	198.8	198.6	198.5
117.5°	226.4	226.5	226.6	226.7	226.7	226.7	226.6	226.4	226.3	226.1	225.8
120°	244.4	244.8	245.2	245.6	246.0	246.0	245.7	245.4	245.1	244.8	244.3
122.5°	263.1	263.2	263.4	263.5	263.7	263.7	263.6	263.4	263.3	263.2	262.8
125°	290.5	290.5	290.5	290.5	290.5	290.5	290.4	290.3	290.2	290.1	289.9
127.5°	315.6	315.9	316.2	316.5	316.8	316.9	316.7	316.5	316.4	316.2	316.0
130°	333.2	333.5	333.8	334.1	334.4	334.5	334.5	334.5	334.5	334.5	334.3
132.5°	351.0	351.3	351.5	351.7	351.9	352.0	351.9	351.8	351.8	351.7	351.5
135°	374.8	375.4	376.0	376.6	377.2	377.5	377.5	377.5	377.5	377.5	377.3
137.5°	400.6	400.9	401.1	401.4	401.7	401.9	402.1	402.3	402.4	402.6	402.3
140°	417.8	418.0	418.2	418.4	418.6	418.7	418.7	418.7	418.7	418.7	418.6
142.5°	433.5	433.7	433.9	434.1	434.3	434.4	434.3	434.2	434.1	434.0	434.0
145°	455.3	455.8	456.2	456.6	457.0	457.2	457.3	457.4	457.5	457.6	457.5
147.5°	477.0	477.4	477.9	478.4	478.9	479.1	479.0	478.9	478.9	478.8	478.7
150°	490.1	490.5	490.9	491.3	491.7	491.9	491.9	491.9	491.9	491.9	491.9
152.5°	502.5	502.8	503.0	503.3	503.5	503.7	503.7	503.8	503.9	504.0	504.2
155°	521.7	521.7	521.7	521.7	521.7	521.6	521.5	521.4	521.3	521.2	521.6
157.5°	537.8	537.6	537.5	537.2	537.0	536.9	536.9	536.9	536.8	536.8	537.1
160°	547.3	547.2	547.1	547.0	546.9	546.8	546.7	546.6	546.5	546.4	546.7
162.5°	556.1	555.8	555.5	555.3	555.0	554.8	554.7	554.6	554.5	554.4	555.0
165°	567.8	567.5	567.2	566.9	566.6	566.4	566.2	566.0	565.8	565.6	566.2
167.5°	576.9	576.5	576.1	575.7	575.2	575.0	575.0	575.1	575.1	575.1	575.7
170°	582.1	581.6	581.1	580.6	580.1	579.9	580.0	580.1	580.2	580.3	580.9
172.5°	585.7	585.3	584.9	584.5	584.0	583.8	583.8	583.9	583.9	583.9	584.6
175°	590.8	590.3	589.8	589.3	588.8	588.4	588.3	588.2	588.1	588.0	588.8
177.5°	592.4	592.0	591.6	591.2	590.8	590.6	590.6	590.6	590.6	590.6	591.2
180°	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5
2.5°	1816.6	1819.4	1822.1	1823.4	1823.1	1822.9	1822.6	1822.4
5°	1804.5	1807.7	1810.8	1812.0	1811.4	1810.8	1810.2	1809.6
7.5°	1780.6	1782.5	1784.5	1785.0	1784.0	1783.0	1782.0	1781.0
10°	1759.0	1760.2	1761.4	1761.4	1760.2	1759.0	1757.7	1756.5
12.5°	1732.2	1733.0	1733.7	1733.2	1731.5	1729.8	1728.1	1726.4
15°	1685.5	1684.8	1684.2	1682.7	1680.6	1678.4	1676.3	1674.1
17.5°	1629.0	1627.3	1625.6	1623.1	1619.7	1616.5	1613.2	1609.8
20°	1589.5	1587.1	1584.6	1581.3	1577.3	1573.3	1569.2	1565.2
22.5°	1545.7	1542.0	1538.3	1534.8	1531.5	1528.2	1524.9	1521.7
25°	1475.0	1469.8	1464.5	1460.3	1457.2	1454.1	1451.0	1447.9
27.5°	1403.0	1396.5	1390.0	1384.5	1380.1	1375.5	1371.1	1366.7
30°	1351.4	1343.6	1335.8	1329.5	1324.5	1319.6	1314.6	1309.7
32.5°	1298.7	1289.7	1280.7	1273.8	1269.1	1264.4	1259.7	1255.0
35°	1220.1	1209.6	1199.0	1191.0	1185.4	1179.8	1174.3	1168.6
37.5°	1135.9	1124.1	1112.3	1103.6	1098.0	1092.4	1086.8	1081.3
40°	1079.7	1066.7	1053.7	1044.4	1038.8	1033.2	1027.6	1022.1
42.5°	1024.5	1011.3	997.9	988.5	982.6	976.7	970.9	965.1
45°	940.0	924.7	909.6	899.2	893.6	888.0	882.4	876.9
47.5°	854.9	839.1	823.2	812.3	806.2	800.0	793.9	787.8
50°	798.3	782.8	767.3	756.6	750.7	744.8	738.9	733.1
52.5°	741.9	726.2	710.4	699.5	693.4	687.2	681.1	675.0
55°	658.8	642.8	626.6	615.6	609.7	603.8	597.9	592.0
57.5°	577.6	561.3	544.9	534.5	530.0	525.5	521.1	516.6
60°	523.4	507.3	491.2	480.6	475.6	470.7	465.7	460.8
62.5°	470.1	455.1	440.3	430.8	426.9	422.9	418.9	415.0
65°	393.5	380.2	366.9	358.4	354.7	350.9	347.2	343.5
67.5°	323.3	311.8	300.3	292.6	288.4	284.4	280.2	276.2
70°	275.5	265.3	255.1	248.3	245.3	242.2	239.0	236.0
72.5°	232.7	224.0	215.2	209.4	206.5	203.7	200.9	198.0
75°	171.5	164.3	157.1	152.7	150.8	149.0	147.0	145.2
77.5°	121.3	117.1	112.9	110.6	110.0	109.5	108.9	108.4
80°	93.1	92.2	91.2	90.6	90.3	90.0	89.7	89.4
82.5°	72.3	71.7	71.0	70.5	70.2	69.9	69.6	69.3
85°	42.0	41.4	40.8	40.5	40.5	40.5	40.5	40.5
87.5°	17.4	17.3	17.2	17.3	17.5	17.8	18.1	18.4
90°	11.3	11.9	12.5	12.9	13.1	13.3	13.5	13.7
92.5°	18.9	19.2	19.6	19.8	20.0	20.1	20.2	20.3
95°	35.3	35.6	36.0	36.2	36.2	36.2	36.2	36.2
97.5°	55.7	56.1	56.5	56.7	56.7	56.7	56.7	56.7
100°	70.4	70.6	70.8	70.9	70.9	70.9	70.9	70.9
102.5°	85.9	86.2	86.5	86.7	86.7	86.8	86.9	87.1
105°	109.6	109.9	110.2	110.5	110.8	111.1	111.4	111.7
107.5°	135.0	135.3	135.6	135.7	135.7	135.7	135.6	135.6
110°	152.0	151.8	151.6	151.6	151.9	152.2	152.5	152.8



TEST NUMBER: P333078-840

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	170.3	170.2	170.2	170.2	170.3	170.3	170.4	170.4
115°	198.4	198.3	198.2	198.1	198.0	197.9	197.8	197.7
117.5°	225.5	225.1	224.8	224.5	224.3	224.1	223.9	223.7
120°	243.8	243.3	242.8	242.7	242.9	243.1	243.3	243.5
122.5°	262.5	262.1	261.8	261.4	261.1	260.6	260.2	259.9
125°	289.7	289.5	289.3	289.1	288.9	288.7	288.5	288.3
127.5°	315.8	315.6	315.4	315.2	315.1	314.9	314.8	314.6
130°	334.1	333.9	333.7	333.4	333.0	332.5	332.1	331.7
132.5°	351.3	351.1	350.9	350.7	350.5	350.4	350.2	350.1
135°	377.1	376.9	376.7	376.5	376.2	375.9	375.6	375.3
137.5°	402.0	401.8	401.5	401.4	401.5	401.5	401.6	401.7
140°	418.5	418.4	418.3	418.2	418.1	418.0	417.9	417.8
142.5°	434.0	434.0	434.0	433.9	433.9	433.9	433.9	433.9
145°	457.4	457.3	457.2	457.0	456.7	456.4	456.1	455.8
147.5°	478.6	478.5	478.5	478.4	478.3	478.2	478.1	478.0
150°	491.9	491.9	491.9	491.9	491.8	491.7	491.6	491.5
152.5°	504.5	504.7	505.0	504.9	504.7	504.4	504.2	503.9
155°	522.0	522.4	522.8	522.8	522.4	522.0	521.6	521.2
157.5°	537.5	537.8	538.1	538.1	537.8	537.3	537.0	536.6
160°	547.0	547.3	547.6	547.5	547.0	546.5	545.9	545.4
162.5°	555.5	556.1	556.6	556.6	556.1	555.6	555.1	554.6
165°	566.8	567.4	568.0	568.2	567.7	567.3	566.9	566.5
167.5°	576.3	576.9	577.5	577.5	576.9	576.3	575.6	575.0
170°	581.5	582.1	582.7	582.6	581.9	581.2	580.5	579.8
172.5°	585.3	586.0	586.6	586.6	585.9	585.2	584.5	583.8
175°	589.5	590.2	590.9	590.9	590.2	589.5	588.8	588.0
177.5°	591.8	592.3	592.9	592.8	592.2	591.6	590.9	590.3
180°	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7

(END OF REPORT)