

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: P333000-935

Luminaire Tested: **SA4XXRDIP-C1195D810U935-4F0-1E-UDD-F**

Issue Date: 10/7/2019

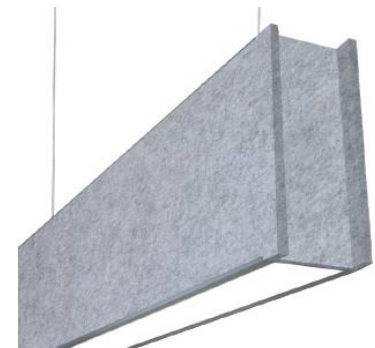
Test Information

Test Method: LM-79-08
Report Number: P333000-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXRDIP-C1195D810U935-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 810 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6935.3 lumens
Efficiency: N/A
Efficacy: 114.3 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

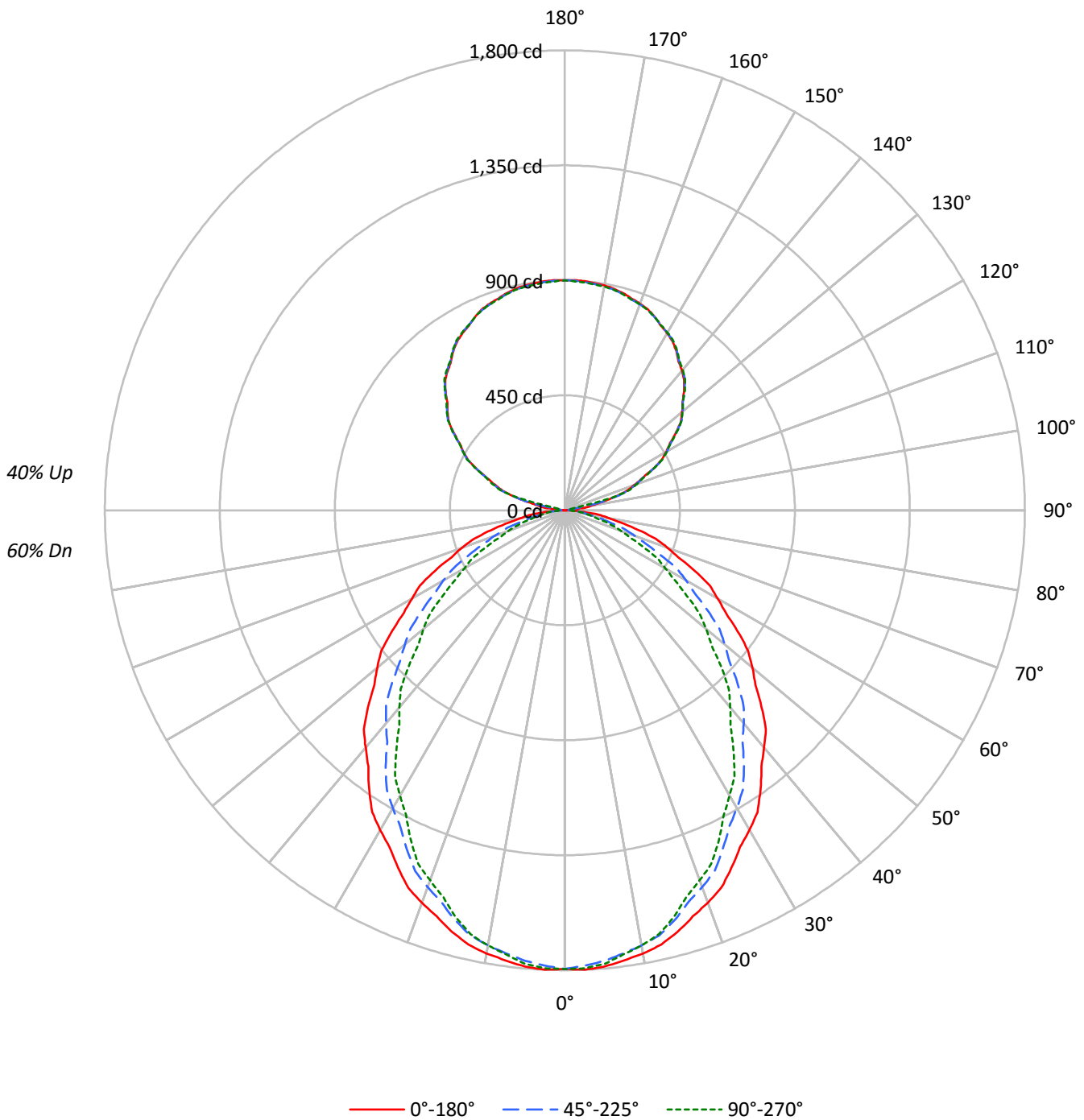
Input Watts (W): 60.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	109	109	109	109	102	102	102	102	89	89	89	76	76	76	65	65	65	60				
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56	51				
2	92	84	78	73	85	79	74	69	69	65	62	60	57	54	52	49	47	43				
3	84	74	67	61	78	70	63	58	61	56	52	53	49	46	46	43	41	37				
4	77	66	58	52	72	62	55	50	55	49	45	48	43	40	41	38	35	32				
5	71	59	51	45	66	56	48	43	49	43	39	43	38	35	37	34	31	28				
6	65	53	45	39	61	50	43	37	44	38	34	39	34	31	34	30	27	25				
7	60	48	40	35	56	45	38	33	40	34	30	36	31	27	31	27	24	22				
8	56	44	36	31	52	41	34	29	37	31	27	33	28	24	29	25	22	20				
9	52	40	33	27	49	38	31	26	34	28	24	30	25	22	26	23	20	18				
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	25	21	18	16				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14495	14495	14495
5°	14528	14350	14439
10°	14437	14178	14178
15°	14271	13881	13778
20°	14044	13489	13241
25°	13752	13030	12699
30°	13470	12547	12021
35°	13157	12046	11340
40°	12779	11475	10606
45°	12432	10909	9857
50°	12036	10257	9065
55°	11610	9578	8204
60°	11144	8835	7325
65°	10714	7904	6460
70°	10093	6878	5486
75°	9304	5705	4460
80°	8117	4347	4091
85°	6873	3946	3696



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.7	2.4
10°-20°	470.4	6.8
20°-30°	679.2	9.8
30°-40°	769.9	11.1
40°-50°	743.4	10.7
50°-60°	618.2	8.9
60°-70°	426.9	6.2
70°-80°	216.4	3.1
80°-90°	58.1	0.8
90°-100°	30.8	0.4
100°-110°	196.3	2.8
110°-120°	375.5	5.4
120°-130°	476.7	6.9
130°-140°	510.0	7.4
140°-150°	476.9	6.9
150°-160°	384.6	5.5
160°-170°	248.0	3.6
170°-180°	85.5	1.2
0°-30°	1318.2	19.0
0°-40°	2088.1	30.1
0°-60°	3449.7	49.7
0°-90°	4151.1	59.9
90°-120°	602.6	8.7
90°-150°	2066.1	29.8
90°-180°	2784.0	40.1
0°-180°	6935.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1796	1796	1796	1796	1796	
5°	1793	1787	1771	1784	1782	170
15°	1708	1694	1661	1658	1648	481
25°	1544	1517	1463	1440	1426	711
35°	1335	1290	1222	1177	1151	834
45°	1089	1036	956	890	863	839
55°	825	768	680	612	583	738
65°	561	500	414	357	338	554
75°	298	247	183	152	143	315
85°	74	48	43	40	40	84
90°	2	9	15	19	20	5
95°	37	15	15	19	20	48
105°	203	207	210	214	192	212
115°	378	380	380	381	381	372
125°	532	534	533	535	536	475
135°	660	659	662	663	664	508
145°	761	763	763	763	765	475
155°	834	835	833	835	833	384
165°	880	877	876	881	876	249
175°	900	896	897	902	895	86
180°	900	900	900	900	900	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5
2.5°	1799.9	1799.0	1798.0	1797.0	1796.0	1794.2	1791.6	1788.8	1786.1	1783.5	1786.1
5°	1792.8	1791.6	1790.4	1789.2	1788.0	1785.5	1781.8	1778.1	1774.5	1770.8	1773.8
7.5°	1776.6	1775.3	1774.0	1772.7	1771.4	1768.4	1763.7	1758.9	1754.1	1749.4	1751.4
10°	1761.2	1759.6	1758.2	1756.6	1755.1	1751.5	1746.1	1740.6	1735.1	1729.6	1730.8
12.5°	1741.4	1739.7	1737.8	1736.0	1734.3	1730.2	1723.7	1717.3	1710.7	1704.3	1705.0
15°	1707.5	1704.8	1702.1	1699.4	1696.6	1691.3	1683.8	1676.1	1668.4	1660.8	1660.2
17.5°	1666.6	1662.6	1658.6	1654.7	1650.7	1644.2	1635.0	1625.8	1616.6	1607.5	1605.8
20°	1634.7	1630.7	1626.8	1622.8	1618.9	1611.6	1601.3	1590.9	1580.5	1570.1	1567.6
22.5°	1599.5	1595.1	1590.6	1586.1	1581.7	1573.9	1562.7	1551.6	1540.5	1529.4	1525.7
25°	1543.9	1538.4	1532.9	1527.5	1522.0	1512.9	1500.5	1487.9	1475.4	1462.8	1457.7
27.5°	1485.7	1478.8	1471.9	1465.0	1458.0	1447.9	1434.5	1421.2	1407.7	1394.4	1387.9
30°	1445.0	1437.4	1429.7	1422.0	1414.5	1403.4	1389.1	1374.7	1360.4	1346.0	1338.3
32.5°	1402.1	1393.4	1384.8	1376.2	1367.6	1355.9	1341.0	1326.2	1311.3	1296.5	1287.6
35°	1335.0	1325.2	1315.4	1305.6	1295.9	1283.3	1268.1	1252.8	1237.5	1222.3	1211.9
37.5°	1263.3	1253.1	1243.0	1233.0	1222.9	1209.4	1192.5	1175.5	1158.6	1141.7	1130.1
40°	1212.6	1202.6	1192.5	1182.4	1172.3	1158.6	1141.2	1123.7	1106.3	1088.9	1076.1
42.5°	1164.2	1153.7	1143.1	1132.5	1122.0	1107.6	1089.4	1071.3	1053.2	1035.0	1021.9
45°	1088.9	1077.5	1066.3	1055.0	1043.7	1028.8	1010.6	992.2	973.9	955.5	940.6
47.5°	1011.1	999.4	987.7	976.0	964.4	949.0	930.0	910.9	891.8	872.8	857.2
50°	958.3	946.3	934.4	922.6	910.6	894.8	875.3	855.7	836.2	816.7	801.4
52.5°	904.4	892.7	881.1	869.4	857.7	841.8	821.8	801.8	781.7	761.6	746.1
55°	824.9	812.7	800.5	788.2	776.0	760.0	740.1	720.3	700.4	680.5	664.7
57.5°	746.2	733.6	720.8	708.2	695.4	679.3	659.8	640.2	620.6	601.1	585.0
60°	690.2	678.0	665.7	653.5	641.3	625.4	605.9	586.3	566.7	547.2	531.3
62.5°	639.6	626.9	614.2	601.5	588.8	572.4	552.3	532.3	512.2	492.2	477.5
65°	560.9	547.8	534.7	521.5	508.4	492.1	472.5	453.0	433.4	413.8	400.7
67.5°	479.2	466.7	454.1	441.5	429.0	413.5	395.4	377.3	359.1	341.0	329.7
70°	427.6	414.7	401.9	389.1	376.3	361.1	343.7	326.3	308.9	291.4	281.4
72.5°	372.6	361.0	349.4	337.8	326.1	312.1	295.7	279.2	262.8	246.3	237.7
75°	298.3	287.1	275.7	264.4	253.1	240.3	225.9	211.5	197.3	182.9	175.8
77.5°	223.0	213.4	203.8	194.2	184.6	174.0	162.4	150.8	139.2	127.6	123.5
80°	174.6	165.7	156.9	148.0	139.1	130.2	121.0	111.8	102.6	93.5	92.6
82.5°	132.9	124.7	116.6	108.4	100.3	93.6	88.3	83.1	77.8	72.6	71.9
85°	74.2	68.1	62.0	55.9	49.8	46.3	45.4	44.4	43.6	42.6	42.0
87.5°	25.7	24.1	22.5	20.8	19.2	18.3	18.3	18.3	18.3	18.3	18.3
90°	2.0	3.7	5.3	7.0	8.6	10.0	11.2	12.4	13.6	14.8	15.7
92.5°	8.5	8.6	8.7	8.8	8.9	9.5	10.7	11.9	13.1	14.3	15.2
95°	37.0	31.9	26.9	21.8	16.7	14.2	14.4	14.6	14.6	14.8	15.7
97.5°	78.6	81.8	85.0	88.2	91.4	84.6	67.8	51.1	34.4	17.7	17.8
100°	110.4	113.1	115.8	118.5	121.1	112.2	91.5	70.9	50.3	29.6	27.0
102.5°	145.9	147.9	149.9	151.9	153.9	153.5	150.8	148.1	145.4	142.8	115.3
105°	202.6	203.5	204.4	205.3	206.2	207.1	207.8	208.5	209.3	210.0	211.4
107.5°	255.3	255.7	256.1	256.7	257.1	257.8	258.8	259.8	260.9	261.9	262.5
110°	290.8	291.3	291.7	292.1	292.7	293.3	294.2	295.1	296.0	296.9	297.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	325.3	326.1	326.9	327.7	328.6	329.2	329.6	329.9	330.4	330.8	330.8
115°	378.3	378.8	379.3	379.7	380.1	380.3	380.1	380.0	379.9	379.7	380.0
117.5°	426.1	426.7	427.3	427.9	428.5	429.0	429.3	429.6	430.0	430.3	430.2
120°	458.5	459.1	459.7	460.3	460.8	461.1	460.9	460.8	460.6	460.5	460.8
122.5°	488.6	489.0	489.3	489.7	490.1	490.3	490.5	490.8	490.9	491.2	491.4
125°	531.8	532.4	533.0	533.6	534.3	534.3	534.1	533.8	533.5	533.2	533.6
127.5°	572.7	572.9	573.1	573.3	573.3	573.8	574.5	575.1	575.8	576.5	576.4
130°	599.2	599.3	599.4	599.6	599.8	600.0	600.5	601.0	601.4	601.8	602.0
132.5°	623.4	623.6	624.0	624.2	624.5	624.9	625.4	626.0	626.5	627.2	627.3
135°	659.8	659.6	659.4	659.3	659.2	659.4	660.0	660.6	661.2	661.8	662.0
137.5°	691.9	692.0	692.1	692.1	692.2	692.5	693.2	693.9	694.5	695.2	695.5
140°	712.9	713.3	713.5	713.9	714.1	714.5	714.7	715.1	715.3	715.6	716.1
142.5°	731.8	732.3	732.9	733.4	733.9	734.3	734.4	734.7	734.9	735.0	735.4
145°	760.7	761.2	761.6	762.1	762.5	762.8	762.8	762.8	762.8	762.8	762.9
147.5°	783.8	784.6	785.4	786.3	787.1	787.5	787.3	787.1	787.0	786.9	787.0
150°	800.5	801.1	801.7	802.3	802.8	803.1	802.9	802.8	802.6	802.5	802.5
152.5°	814.4	814.9	815.4	815.9	816.4	816.5	816.2	816.0	815.6	815.4	815.6
155°	834.1	834.2	834.4	834.6	834.7	834.6	834.1	833.6	833.2	832.8	833.4
157.5°	850.7	850.6	850.5	850.4	850.3	850.0	849.5	849.0	848.5	848.0	848.8
160°	860.4	859.9	859.5	859.0	858.6	858.2	858.2	858.0	857.8	857.6	858.6
162.5°	869.0	868.4	867.8	867.3	866.7	866.3	866.2	866.1	865.9	865.7	866.7
165°	879.9	879.2	878.4	877.6	876.9	876.5	876.5	876.5	876.5	876.5	877.7
167.5°	888.5	887.7	886.9	886.1	885.4	884.9	884.8	884.8	884.7	884.6	885.9
170°	893.4	892.4	891.6	890.6	889.8	889.4	889.5	889.7	889.8	890.0	891.1
172.5°	896.6	895.7	894.8	893.9	893.0	892.6	892.8	892.9	893.0	893.2	894.4
175°	900.1	899.1	898.3	897.4	896.5	896.1	896.3	896.4	896.6	896.7	898.0
177.5°	901.7	900.9	900.0	899.1	898.4	898.0	898.3	898.5	898.8	899.0	899.9
180°	900.1	900.1	900.1	900.1	900.1	900.1	900.1	900.1	900.1	900.1	900.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5
2.5°	1788.8	1791.6	1794.2	1795.4	1795.2	1794.9	1794.7	1794.5
5°	1776.9	1779.9	1783.0	1784.3	1783.6	1783.0	1782.4	1781.8
7.5°	1753.3	1755.2	1757.2	1757.6	1756.7	1755.8	1754.7	1753.8
10°	1732.0	1733.2	1734.5	1734.5	1733.2	1732.0	1730.8	1729.6
12.5°	1705.7	1706.5	1707.2	1706.7	1705.0	1703.3	1701.6	1699.9
15°	1659.6	1659.0	1658.4	1657.0	1654.8	1652.7	1650.6	1648.5
17.5°	1604.0	1602.3	1600.6	1598.2	1594.9	1591.6	1588.5	1585.2
20°	1565.2	1562.7	1560.3	1557.1	1553.2	1549.2	1545.2	1541.2
22.5°	1522.1	1518.4	1514.8	1511.3	1508.0	1504.8	1501.6	1498.3
25°	1452.4	1447.3	1442.1	1438.0	1434.9	1431.8	1428.7	1425.7
27.5°	1381.6	1375.1	1368.7	1363.3	1358.9	1354.5	1350.1	1345.7
30°	1330.7	1323.1	1315.4	1309.2	1304.2	1299.4	1294.5	1289.6
32.5°	1278.8	1269.9	1261.0	1254.3	1249.7	1245.0	1240.4	1235.7
35°	1201.4	1191.1	1180.7	1172.8	1167.3	1161.7	1156.2	1150.7
37.5°	1118.4	1106.8	1095.3	1086.7	1081.2	1075.6	1070.2	1064.7
40°	1063.2	1050.4	1037.6	1028.4	1022.9	1017.4	1011.9	1006.4
42.5°	1008.8	995.7	982.7	973.3	967.5	961.8	956.1	950.3
45°	925.6	910.6	895.6	885.4	879.9	874.4	868.9	863.4
47.5°	841.7	826.2	810.7	799.9	793.8	787.8	781.7	775.7
50°	786.1	770.9	755.5	745.0	739.3	733.4	727.6	721.8
52.5°	730.6	715.1	699.6	688.8	682.8	676.7	670.6	664.6
55°	648.8	632.9	617.0	606.1	600.4	594.5	588.8	582.9
57.5°	568.9	552.7	536.6	526.3	521.9	517.5	513.1	508.7
60°	515.4	499.6	483.6	473.3	468.4	463.5	458.6	453.7
62.5°	462.9	448.2	433.5	424.2	420.3	416.5	412.5	408.6
65°	387.5	374.4	361.3	352.8	349.2	345.5	341.9	338.2
67.5°	318.4	307.0	295.8	288.1	284.0	280.0	276.0	271.9
70°	271.3	261.2	251.2	244.6	241.5	238.5	235.4	232.4
72.5°	229.1	220.5	211.9	206.2	203.4	200.6	197.8	194.9
75°	168.8	161.8	154.7	150.3	148.5	146.6	144.8	143.0
77.5°	119.4	115.3	111.2	108.9	108.3	107.8	107.3	106.7
80°	91.7	90.7	89.8	89.2	88.9	88.6	88.3	88.0
82.5°	71.3	70.6	69.9	69.4	69.1	68.8	68.5	68.2
85°	41.4	40.8	40.2	39.9	39.9	39.9	39.9	39.9
87.5°	18.3	18.2	18.1	18.3	18.5	18.9	19.1	19.5
90°	16.6	17.5	18.4	19.0	19.3	19.6	19.9	20.2
92.5°	16.1	17.0	17.8	18.3	18.4	18.4	18.5	18.6
95°	16.6	17.5	18.4	18.9	19.1	19.2	19.4	19.5
97.5°	18.0	18.1	18.2	18.3	18.4	18.5	18.7	18.9
100°	24.5	22.0	19.5	18.3	18.4	18.5	18.7	18.9
102.5°	87.8	60.4	33.0	19.3	19.3	19.3	19.4	19.4
105°	212.8	214.0	215.4	213.4	208.0	202.6	197.3	191.8
107.5°	263.2	263.8	264.5	265.1	265.7	266.2	266.8	267.4
110°	297.5	297.8	298.1	298.4	298.9	299.4	299.8	300.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	330.7	330.6	330.5	330.8	331.4	332.0	332.5	333.1
115°	380.3	380.6	380.9	381.1	381.1	381.1	381.1	381.1
117.5°	430.2	430.2	430.1	430.0	430.0	429.9	429.8	429.8
120°	461.1	461.4	461.7	461.7	461.4	461.1	460.8	460.5
122.5°	491.5	491.7	491.9	491.8	491.5	491.2	490.9	490.6
125°	534.1	534.5	534.9	535.3	535.5	535.5	535.7	535.9
127.5°	576.4	576.3	576.2	576.1	575.9	575.8	575.8	575.6
130°	602.2	602.3	602.4	602.5	602.5	602.5	602.5	602.5
132.5°	627.5	627.6	627.8	627.8	627.7	627.5	627.4	627.3
135°	662.4	662.6	663.0	663.2	663.6	663.8	664.2	664.4
137.5°	695.8	696.1	696.5	696.5	696.5	696.4	696.3	696.2
140°	716.5	717.0	717.4	717.7	717.9	718.0	718.2	718.3
142.5°	735.6	736.0	736.3	736.5	736.5	736.6	736.6	736.6
145°	763.0	763.2	763.4	763.5	763.9	764.1	764.5	764.7
147.5°	787.1	787.2	787.3	787.5	787.6	787.7	787.9	788.1
150°	802.5	802.5	802.5	802.5	802.7	802.8	803.0	803.1
152.5°	815.9	816.1	816.3	816.4	816.3	816.2	816.1	816.1
155°	834.0	834.6	835.2	835.3	834.7	834.3	833.9	833.4
157.5°	849.5	850.3	851.1	851.1	850.3	849.5	848.8	848.0
160°	859.5	860.4	861.3	861.3	860.4	859.5	858.6	857.6
162.5°	867.5	868.4	869.4	869.3	868.2	867.2	866.3	865.2
165°	878.9	880.1	881.3	881.2	879.9	878.6	877.2	875.8
167.5°	887.3	888.6	889.8	889.8	888.3	886.7	885.3	883.8
170°	892.3	893.5	894.8	894.6	893.1	891.7	890.1	888.6
172.5°	895.6	896.8	898.0	897.8	896.2	894.6	892.9	891.3
175°	899.4	900.8	902.1	901.9	900.1	898.3	896.5	894.7
177.5°	901.0	901.9	902.8	902.6	901.1	899.7	898.3	896.8
180°	900.1	900.1	900.1	900.1	900.1	900.1	900.1	900.1

(END OF REPORT)