

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: P333001-935

Luminaire Tested: **SA4XXRDIP-C1195D810U935-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P333001-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
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-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

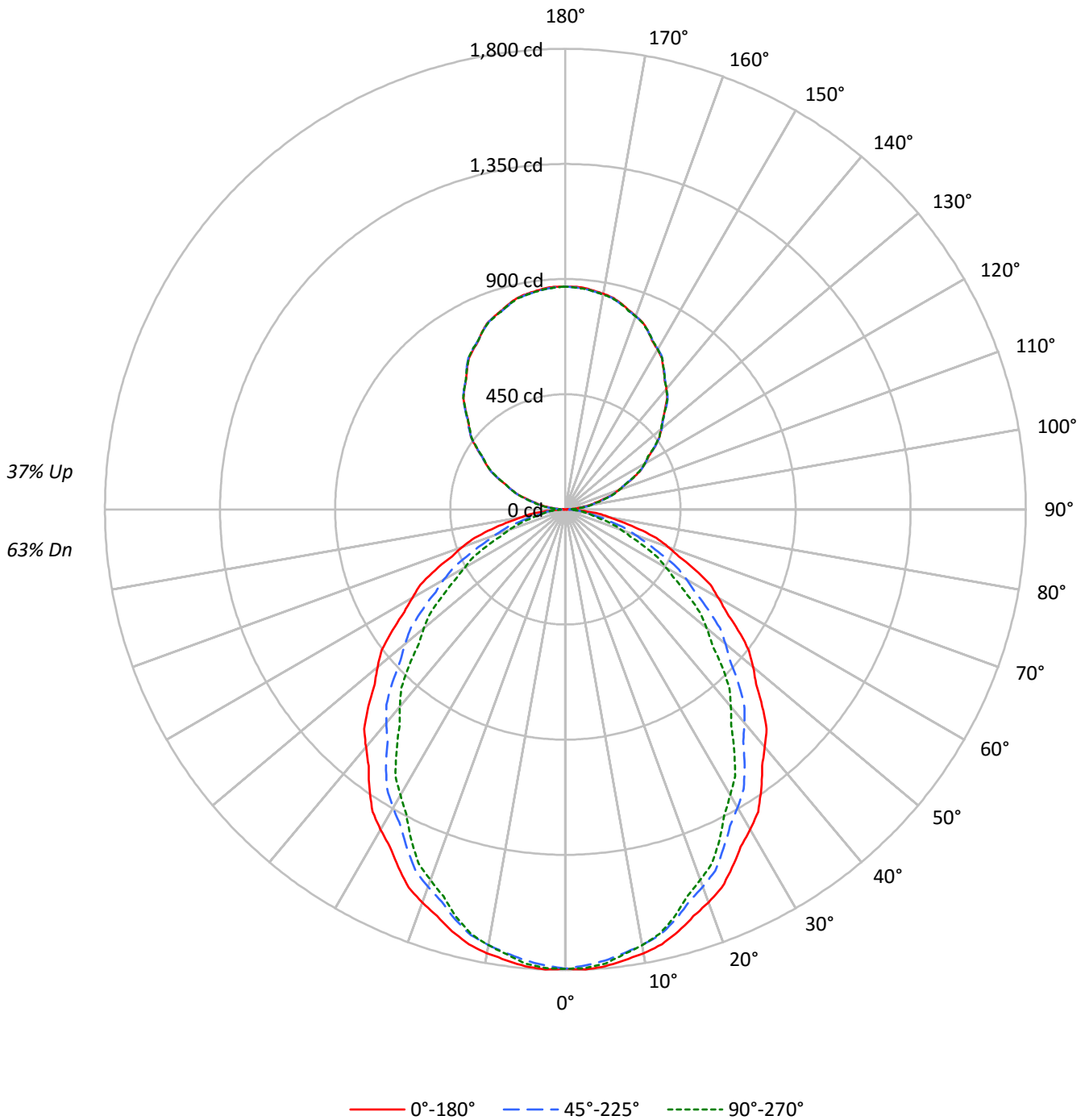
Lumens per Lamp: N/A
Luminaire Lumens: 6565.8 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 60.7
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	50	30	10	0	
RCR																						
0	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	63				
1	101	97	93	90	95	91	88	85	80	78	75	70	68	67	61	60	58	54				
2	92	85	79	74	86	80	75	70	71	66	63	62	59	56	54	52	50	46				
3	84	75	68	62	79	71	64	59	63	57	53	55	51	48	48	45	43	39				
4	77	67	59	53	72	63	56	50	56	50	46	49	45	41	43	40	37	34				
5	71	60	51	45	67	56	49	43	50	44	40	44	40	36	39	35	32	30				
6	66	54	45	40	62	51	43	38	45	39	35	40	35	32	36	32	29	26				
7	61	49	41	35	57	46	39	34	41	35	31	37	32	28	33	29	26	23				
8	57	44	36	31	53	42	35	30	38	32	28	34	29	25	30	26	23	21				
9	53	41	33	28	50	39	32	27	35	29	25	31	26	23	28	24	21	19				
10	50	37	30	25	47	36	29	24	32	26	23	29	24	21	26	22	19	17				

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	2.6
10°-20°	470.4	7.2
20°-30°	679.2	10.3
30°-40°	769.9	11.7
40°-50°	743.4	11.3
50°-60°	618.2	9.4
60°-70°	426.9	6.5
70°-80°	216.4	3.3
80°-90°	58.1	0.9
90°-100°	57.4	0.9
100°-110°	170.1	2.6
110°-120°	288.6	4.4
120°-130°	380.6	5.8
130°-140°	427.4	6.5
140°-150°	420.0	6.4
150°-160°	353.3	5.4
160°-170°	235.0	3.6
170°-180°	82.3	1.3
0°-30°	1318.2	20.1
0°-40°	2088.1	31.8
0°-60°	3449.7	52.5
0°-90°	4151.1	63.2
90°-120°	516.1	7.9
90°-150°	1744.1	26.6
90°-180°	2415.0	36.8
0°-180°	6565.8	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	6
95°	40	46	51	53	53	45
105°	157	158	160	162	164	166
115°	294	293	292	291	291	289
125°	427	427	427	425	424	381
135°	551	555	555	554	552	426
145°	670	672	673	672	670	419
155°	767	767	767	769	767	353
165°	835	833	832	836	833	235
175°	869	866	865	869	865	82
180°	870	870	870	870	870	



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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°	14.4	16.3	18.2	20.1	22.0	23.3	24.1	25.0	25.8	26.7	27.2
95°	40.4	41.8	43.0	44.4	45.8	47.0	48.0	49.1	50.1	51.1	51.6
97.5°	70.5	71.6	72.7	73.8	74.8	76.0	77.2	78.4	79.6	80.9	81.5
100°	94.3	94.8	95.4	96.0	96.6	97.6	98.9	100.3	101.6	103.0	103.3
102.5°	119.0	119.2	119.5	119.8	119.9	120.7	121.9	123.1	124.4	125.6	126.1
105°	156.9	157.0	157.1	157.3	157.5	157.8	158.4	159.0	159.6	160.2	160.7
107.5°	196.6	196.7	196.9	197.1	197.3	197.4	197.5	197.6	197.7	197.8	198.2
110°	223.5	223.8	224.0	224.4	224.6	224.7	224.6	224.5	224.3	224.1	223.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	251.5	251.5	251.6	251.7	251.8	251.6	251.3	251.1	250.8	250.6	250.5
115°	293.5	293.5	293.5	293.5	293.5	293.3	293.0	292.7	292.4	292.1	292.0
117.5°	333.0	333.2	333.3	333.4	333.6	333.5	333.3	333.0	332.9	332.7	332.2
120°	359.5	360.1	360.7	361.3	361.9	361.9	361.4	361.0	360.6	360.2	359.4
122.5°	386.9	387.1	387.4	387.6	387.9	387.9	387.7	387.4	387.3	387.0	386.5
125°	427.4	427.4	427.4	427.4	427.4	427.3	427.2	427.1	426.9	426.8	426.5
127.5°	464.2	464.6	465.1	465.5	466.0	466.1	465.8	465.6	465.4	465.1	464.9
130°	490.0	490.5	490.9	491.4	491.8	492.1	492.1	492.1	492.1	492.1	491.7
132.5°	516.4	516.8	517.1	517.4	517.7	517.8	517.7	517.6	517.5	517.4	517.0
135°	551.3	552.2	553.1	554.0	554.9	555.3	555.3	555.3	555.3	555.3	555.0
137.5°	589.3	589.7	590.0	590.5	590.9	591.2	591.5	591.8	591.9	592.2	591.9
140°	614.6	614.8	615.2	615.4	615.8	615.9	615.9	615.9	615.9	615.9	615.8
142.5°	637.7	638.0	638.3	638.6	638.9	639.0	638.9	638.8	638.6	638.5	638.5
145°	669.8	670.4	671.0	671.6	672.2	672.5	672.7	672.8	673.0	673.1	673.0
147.5°	701.5	702.2	702.9	703.7	704.4	704.7	704.6	704.5	704.3	704.2	704.1
150°	720.9	721.5	722.1	722.7	723.3	723.6	723.6	723.6	723.6	723.6	723.6
152.5°	739.3	739.6	739.9	740.3	740.6	740.9	741.0	741.1	741.2	741.4	741.8
155°	767.3	767.3	767.3	767.3	767.3	767.2	767.2	767.0	766.8	766.7	767.2
157.5°	791.1	790.7	790.5	790.2	790.0	789.8	789.8	789.8	789.7	789.7	790.1
160°	805.0	804.9	804.8	804.6	804.4	804.3	804.2	804.0	803.8	803.7	804.2
162.5°	817.9	817.6	817.2	816.8	816.4	816.1	816.0	815.9	815.7	815.5	816.4
165°	835.3	834.9	834.5	834.0	833.5	833.2	832.8	832.6	832.2	832.0	832.8
167.5°	848.7	848.0	847.4	846.8	846.2	845.8	845.8	845.9	845.9	845.9	846.9
170°	856.2	855.5	854.7	853.9	853.3	852.9	853.1	853.3	853.3	853.5	854.4
172.5°	861.6	861.0	860.3	859.7	859.1	858.8	858.8	858.8	858.8	858.9	859.9
175°	869.0	868.2	867.5	866.8	866.0	865.6	865.4	865.2	865.1	865.0	866.0
177.5°	871.4	870.8	870.2	869.6	869.0	868.7	868.7	868.7	868.7	868.7	869.5
180°	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3



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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°	27.7	28.2	28.8	29.2	29.4	29.5	29.7	29.9
95°	52.1	52.5	53.0	53.2	53.2	53.2	53.2	53.2
97.5°	82.0	82.5	83.1	83.3	83.3	83.3	83.3	83.3
100°	103.6	103.9	104.2	104.4	104.4	104.4	104.4	104.4
102.5°	126.5	126.8	127.3	127.5	127.7	127.8	127.9	128.0
105°	161.1	161.5	162.0	162.5	162.9	163.3	163.8	164.3
107.5°	198.6	199.0	199.4	199.7	199.6	199.6	199.6	199.5
110°	223.5	223.3	222.9	223.0	223.5	223.9	224.4	224.8



TEST NUMBER: P333001-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	250.4	250.4	250.3	250.3	250.4	250.5	250.6	250.6
115°	291.8	291.7	291.5	291.4	291.3	291.1	290.9	290.8
117.5°	331.7	331.1	330.6	330.2	329.9	329.6	329.3	329.0
120°	358.6	357.8	357.1	356.9	357.2	357.5	357.8	358.1
122.5°	386.0	385.6	385.0	384.5	383.9	383.4	382.9	382.4
125°	426.2	425.9	425.6	425.2	425.0	424.6	424.4	424.0
127.5°	464.5	464.3	463.9	463.6	463.4	463.2	463.0	462.7
130°	491.5	491.1	490.9	490.4	489.8	489.2	488.6	488.0
132.5°	516.8	516.4	516.2	515.9	515.7	515.4	515.1	515.0
135°	554.7	554.4	554.1	553.7	553.3	552.8	552.4	552.0
137.5°	591.4	591.1	590.6	590.5	590.6	590.6	590.7	590.9
140°	615.6	615.4	615.3	615.2	615.0	614.8	614.7	614.6
142.5°	638.4	638.4	638.4	638.3	638.3	638.3	638.3	638.3
145°	672.8	672.7	672.5	672.2	671.8	671.3	670.9	670.5
147.5°	704.0	703.9	703.7	703.6	703.4	703.3	703.2	703.0
150°	723.6	723.6	723.6	723.5	723.4	723.2	723.1	722.9
152.5°	742.1	742.4	742.8	742.8	742.4	742.0	741.7	741.2
155°	767.8	768.4	769.0	769.0	768.4	767.8	767.2	766.7
157.5°	790.6	791.1	791.5	791.4	791.0	790.5	790.0	789.5
160°	804.6	805.0	805.5	805.4	804.6	803.8	803.1	802.4
162.5°	817.2	817.9	818.8	818.8	818.0	817.3	816.6	815.8
165°	833.8	834.7	835.6	835.7	835.1	834.5	833.9	833.4
167.5°	847.7	848.7	849.5	849.5	848.6	847.7	846.8	845.8
170°	855.3	856.2	857.1	857.0	856.0	855.0	853.9	852.8
172.5°	860.9	861.9	863.0	863.0	861.9	860.8	859.8	858.8
175°	867.0	868.1	869.2	869.2	868.1	867.0	866.0	865.0
177.5°	870.4	871.2	872.1	872.0	871.1	870.1	869.2	868.1
180°	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3

(END OF REPORT)