

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: P331750

Luminaire Tested: **SA2XXRDIP-C1005D725U835-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331750
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C1005D725U835-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 725 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

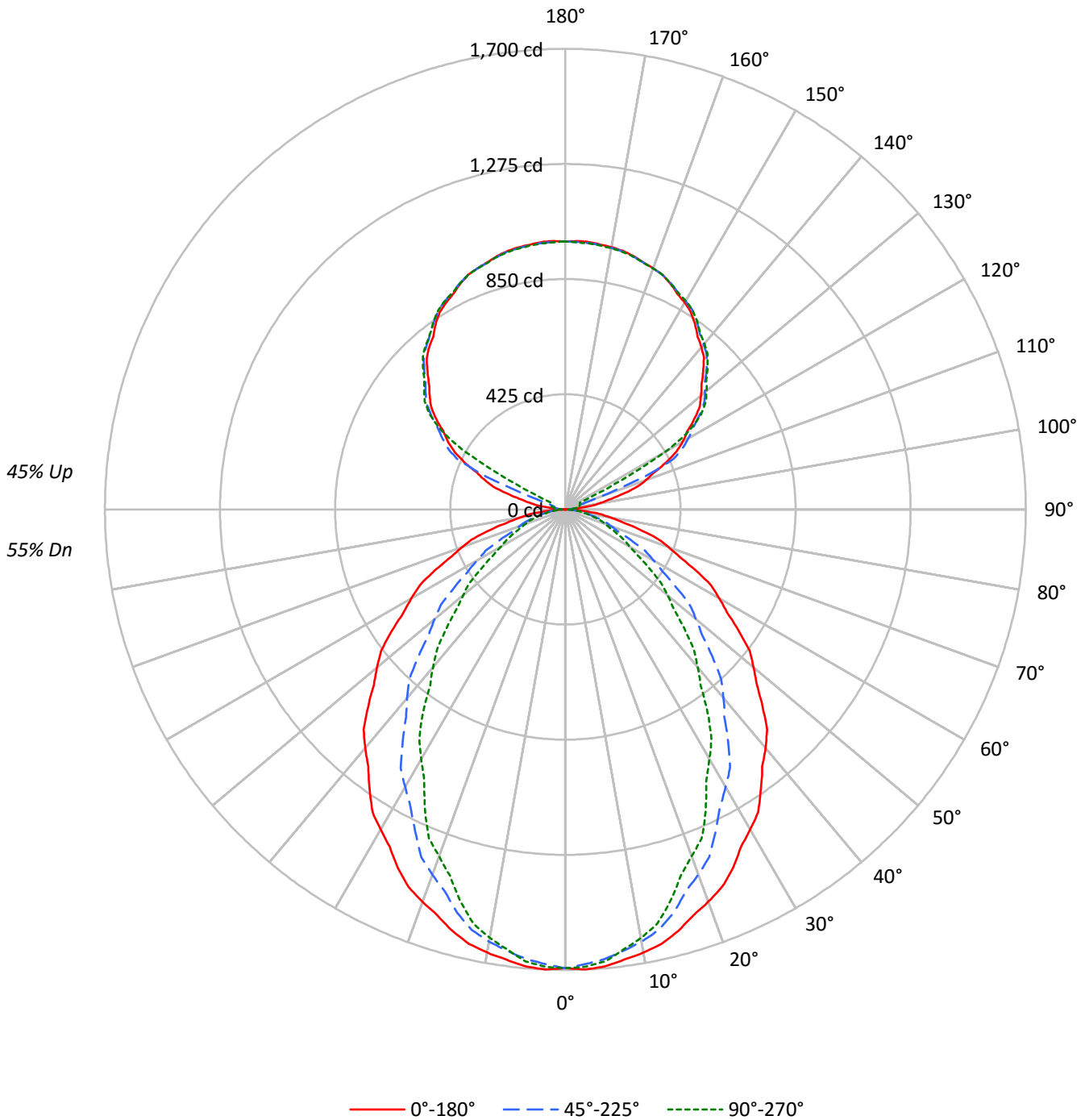
Lumens per Lamp: N/A
Luminaire Lumens: 6382.5 lumens
Efficiency: N/A
Efficacy: 105.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

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	0
RCR																		
0	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60	55
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52	47
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45	40
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39	35
4	76	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34	30
5	70	59	51	45	65	55	48	43	48	43	38	42	37	34	35	32	30	27
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26	24
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24	21
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21	19
9	52	40	33	28	49	38	31	27	33	28	24	29	25	22	25	22	19	17
10	49	37	30	25	46	35	28	24	31	26	22	27	23	20	24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	27341	27341	27341
5°	27446	27000	27149
10°	27237	26558	26332
15°	26924	25770	25028
20°	26490	24646	23409
25°	26045	23370	21841
30°	25430	22057	19829
35°	24829	20631	18065
40°	24226	19155	16021
45°	23516	17497	14173
50°	22790	15822	12356
55°	22044	14021	10612
60°	21180	12126	8809
65°	20199	10189	8023
70°	19029	8393	7378
75°	17592	7648	6881
80°	15528	6843	6267
85°	12208	5391	5391



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.5	2.5
10°-20°	435.2	6.8
20°-30°	611.2	9.6
30°-40°	666.5	10.4
40°-50°	612.8	9.6
50°-60°	481.3	7.5
60°-70°	313.8	4.9
70°-80°	161.8	2.5
80°-90°	44.4	0.7
90°-100°	33.0	0.5
100°-110°	120.9	1.9
110°-120°	323.3	5.1
120°-130°	533.6	8.4
130°-140°	567.5	8.9
140°-150°	527.5	8.3
150°-160°	424.1	6.6
160°-170°	273.3	4.3
170°-180°	94.1	1.5
0°-30°	1204.9	18.9
0°-40°	1871.4	29.3
0°-60°	2965.4	46.5
0°-90°	3485.4	54.6
90°-120°	477.2	7.5
90°-150°	2105.7	33.0
90°-180°	2897.0	45.4
0°-180°	6382.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1693	1693	1693	1693	1693	
5°	1693	1685	1666	1679	1675	160
15°	1611	1592	1542	1513	1497	454
25°	1462	1410	1312	1251	1226	672
35°	1260	1178	1047	954	916	788
45°	1030	924	766	661	621	795
55°	783	661	498	410	377	700
65°	529	404	267	217	210	524
75°	282	178	123	112	110	298
85°	66	35	29	29	29	78
90°	1	8	14	18	19	5
95°	46	24	28	31	31	57
105°	218	227	44	51	54	232
115°	411	424	441	126	59	405
125°	582	591	604	609	612	518
135°	720	731	738	744	743	556
145°	835	835	846	851	848	522
155°	919	914	921	925	920	423
165°	969	965	966	971	966	274
175°	991	986	987	992	985	94
180°	989	989	989	989	989	



TEST NUMBER: P331750

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4
2.5°	1699.6	1698.2	1696.8	1695.5	1694.1	1691.9	1688.9	1686.0	1683.0	1680.0	1682.7
5°	1693.4	1691.7	1690.0	1688.3	1686.6	1683.6	1679.1	1674.7	1670.3	1665.9	1668.9
7.5°	1676.0	1673.9	1671.8	1669.6	1667.5	1663.9	1658.7	1653.5	1648.4	1643.2	1644.1
10°	1661.3	1658.9	1656.5	1654.1	1651.7	1647.1	1640.3	1633.5	1626.7	1619.9	1618.9
12.5°	1642.9	1639.9	1637.0	1634.1	1631.2	1625.3	1616.6	1607.9	1599.2	1590.5	1588.6
15°	1610.7	1606.9	1603.2	1599.4	1595.7	1588.0	1576.5	1564.9	1553.3	1541.7	1535.3
17.5°	1571.1	1565.4	1559.7	1554.0	1548.3	1538.0	1523.1	1508.3	1493.4	1478.6	1470.9
20°	1541.7	1534.9	1528.1	1521.3	1514.5	1502.6	1485.5	1468.5	1451.5	1434.4	1425.9
22.5°	1509.8	1502.2	1494.6	1487.0	1479.3	1465.9	1446.7	1427.5	1408.3	1389.1	1378.1
25°	1462.0	1451.1	1440.2	1429.3	1418.4	1401.8	1379.3	1356.8	1334.3	1311.8	1297.9
27.5°	1404.4	1392.6	1380.7	1368.9	1357.0	1338.4	1313.1	1287.7	1262.4	1237.1	1220.8
30°	1364.0	1351.0	1338.1	1325.1	1312.2	1292.1	1264.8	1237.6	1210.4	1183.1	1165.7
32.5°	1324.7	1309.6	1294.5	1279.4	1264.2	1242.8	1215.0	1187.2	1159.4	1131.6	1111.8
35°	1259.7	1242.4	1225.0	1207.6	1190.3	1166.6	1136.6	1106.7	1076.7	1046.7	1025.3
37.5°	1194.8	1175.7	1156.6	1137.5	1118.5	1093.0	1061.0	1029.1	997.1	965.2	941.6
40°	1149.4	1129.0	1108.5	1088.1	1067.7	1040.9	1007.9	974.9	941.8	908.8	884.6
42.5°	1102.8	1081.3	1059.8	1038.2	1016.7	988.9	954.8	920.6	886.5	852.4	827.4
45°	1029.9	1007.0	984.2	961.4	938.6	909.3	873.5	837.8	802.0	766.3	742.1
47.5°	958.7	934.6	910.4	886.2	862.0	831.5	794.6	757.6	720.7	683.8	659.8
50°	907.3	883.1	858.9	834.7	810.5	779.7	742.3	704.8	667.3	629.9	606.4
52.5°	857.0	831.7	806.5	781.2	755.9	725.0	688.3	651.7	615.0	578.4	555.7
55°	783.1	756.6	730.0	703.4	676.9	645.2	608.4	571.6	534.9	498.1	477.6
57.5°	707.4	680.2	652.9	625.7	598.4	567.1	531.8	496.4	461.1	425.7	407.0
60°	655.9	628.7	601.4	574.2	546.9	515.8	480.7	445.6	410.5	375.5	358.1
62.5°	605.7	578.4	551.2	523.9	496.7	466.3	432.9	399.4	366.0	332.6	316.0
65°	528.7	501.1	473.6	446.0	418.4	389.3	358.6	328.0	297.3	266.7	255.1
67.5°	454.5	427.2	399.8	372.4	345.0	317.5	290.0	262.4	234.8	207.2	201.9
70°	403.1	376.5	349.9	323.4	296.8	271.8	248.3	224.8	201.3	177.8	174.4
72.5°	354.0	328.5	303.1	277.6	252.1	229.9	211.1	192.2	173.3	154.5	151.6
75°	282.0	258.1	234.3	210.5	186.6	168.9	157.3	145.8	134.2	122.6	120.2
77.5°	211.2	190.3	169.4	148.5	127.5	114.3	108.7	103.1	97.5	92.0	90.6
80°	167.0	149.7	132.3	114.9	97.6	87.2	83.8	80.4	77.0	73.6	72.2
82.5°	126.6	113.0	99.5	85.9	72.4	64.4	62.1	59.8	57.5	55.2	54.4
85°	65.9	58.7	51.6	44.4	37.3	33.2	32.2	31.2	30.1	29.1	29.1
87.5°	19.8	17.9	16.1	14.3	12.4	11.7	11.9	12.2	12.4	12.7	12.6
90°	0.7	2.5	4.2	6.0	7.7	9.2	10.5	11.8	13.0	14.3	15.1
92.5°	14.4	14.3	14.1	14.0	13.8	14.1	14.7	15.3	16.0	16.6	17.0
95°	46.5	41.3	36.0	30.8	25.5	23.4	24.6	25.7	26.8	27.9	28.7
97.5°	92.3	77.5	62.7	47.9	33.1	27.0	29.6	32.2	34.8	37.3	38.0
100°	126.6	104.8	83.1	61.3	39.5	30.0	32.7	35.4	38.1	40.8	42.0
102.5°	164.4	159.8	155.2	150.6	145.9	132.3	109.7	87.1	64.5	41.9	43.6
105°	217.5	222.2	227.0	231.8	236.5	217.2	173.8	130.4	87.0	43.6	45.4
107.5°	278.0	281.8	285.7	289.5	293.4	269.3	217.2	165.2	113.1	61.1	59.3
110°	316.9	320.2	323.6	326.9	330.2	308.9	263.0	217.1	171.1	125.2	109.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	353.5	356.5	359.4	362.4	365.3	361.1	349.8	338.4	327.1	315.7	257.8
115°	411.3	414.0	416.7	419.4	422.1	425.5	429.4	433.4	437.4	441.4	367.8
117.5°	463.0	466.0	469.0	472.0	475.0	477.9	480.7	483.4	486.1	488.9	471.1
120°	500.7	503.1	505.5	507.9	510.3	512.9	515.8	518.6	521.5	524.3	526.2
122.5°	532.8	535.3	537.8	540.3	542.8	545.6	548.8	551.9	555.0	558.1	559.2
125°	581.6	583.6	585.7	587.8	589.8	592.4	595.4	598.4	601.4	604.5	605.6
127.5°	625.8	628.1	630.4	632.6	634.9	637.2	639.5	641.7	644.0	646.2	647.9
130°	653.8	656.4	658.9	661.4	664.0	666.1	667.9	669.6	671.4	673.1	674.9
132.5°	682.4	684.6	686.8	688.9	691.1	693.0	694.8	696.5	698.3	700.0	701.5
135°	719.6	722.2	724.7	727.3	729.8	731.8	733.2	734.6	736.1	737.5	739.1
137.5°	757.3	759.0	760.8	762.6	764.4	766.1	767.7	769.3	770.9	772.6	774.1
140°	781.9	783.1	784.4	785.7	786.9	788.5	790.2	792.0	793.7	795.5	796.9
142.5°	802.5	803.6	804.8	805.9	807.0	808.6	810.6	812.6	814.6	816.6	817.9
145°	834.8	834.6	834.5	834.3	834.2	835.4	838.1	840.8	843.5	846.2	847.4
147.5°	863.0	862.4	861.8	861.2	860.6	861.6	864.3	866.9	869.6	872.3	873.1
150°	881.3	880.2	879.1	878.0	876.8	877.6	880.1	882.6	885.2	887.7	888.7
152.5°	896.7	895.5	894.3	893.0	891.8	892.4	894.8	897.2	899.6	902.0	903.0
155°	919.2	917.8	916.3	914.9	913.5	913.7	915.6	917.5	919.4	921.3	922.3
157.5°	936.8	935.6	934.4	933.2	932.0	932.0	933.4	934.7	936.0	937.4	938.5
160°	947.1	946.1	945.2	944.2	943.3	943.3	944.2	945.2	946.1	947.1	948.1
162.5°	956.3	955.3	954.4	953.4	952.4	952.4	953.2	954.0	954.9	955.7	956.8
165°	968.6	967.6	966.7	965.7	964.7	964.5	965.0	965.5	965.9	966.4	967.5
167.5°	977.7	976.8	975.8	974.9	973.9	973.6	974.1	974.5	975.0	975.4	976.5
170°	982.9	981.9	981.0	980.0	979.1	978.7	979.1	979.4	979.7	980.0	981.1
172.5°	986.3	985.3	984.4	983.4	982.5	982.2	982.5	982.8	983.1	983.4	984.6
175°	990.7	989.6	988.5	987.4	986.3	985.9	986.2	986.5	986.8	987.2	988.3
177.5°	991.5	990.6	989.7	988.8	987.9	987.5	987.6	987.8	987.9	988.0	988.9
180°	988.6	988.6	988.6	988.6	988.6	988.6	988.6	988.6	988.6	988.6	988.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4
2.5°	1685.4	1688.1	1690.9	1691.9	1691.4	1690.9	1690.3	1689.8
5°	1672.0	1675.1	1678.1	1679.1	1678.1	1677.1	1676.1	1675.1
7.5°	1644.9	1645.8	1646.7	1646.3	1644.5	1642.7	1641.0	1639.2
10°	1617.8	1616.8	1615.8	1614.3	1612.2	1610.2	1608.1	1606.1
12.5°	1586.8	1584.9	1583.1	1580.5	1577.1	1573.7	1570.3	1566.9
15°	1528.8	1522.3	1515.8	1510.9	1507.5	1504.1	1500.7	1497.3
17.5°	1463.2	1455.5	1447.8	1441.0	1435.2	1429.3	1423.4	1417.6
20°	1417.4	1408.9	1400.4	1392.4	1384.9	1377.4	1369.9	1362.4
22.5°	1367.2	1356.2	1345.2	1336.9	1331.4	1325.8	1320.2	1314.6
25°	1283.9	1270.0	1256.0	1246.5	1241.3	1236.2	1231.1	1226.0
27.5°	1204.5	1188.2	1171.9	1159.7	1151.6	1143.5	1135.4	1127.3
30°	1148.4	1131.0	1113.6	1100.4	1091.2	1082.0	1072.8	1063.6
32.5°	1092.0	1072.2	1052.3	1038.1	1029.5	1020.8	1012.1	1003.5
35°	1003.8	982.4	960.9	946.4	938.9	931.4	923.9	916.5
37.5°	917.9	894.3	870.6	854.5	846.0	837.4	828.8	820.2
40°	860.4	836.2	812.1	795.6	786.7	777.8	769.0	760.1
42.5°	802.4	777.4	752.4	735.6	727.0	718.4	709.9	701.3
45°	717.9	693.7	669.5	653.4	645.2	637.0	628.8	620.7
47.5°	635.7	611.7	587.6	571.9	564.5	557.1	549.6	542.2
50°	582.9	559.4	535.9	520.5	513.4	506.2	499.1	491.9
52.5°	533.0	510.3	487.7	473.0	466.4	459.8	453.2	446.6
55°	457.2	436.8	416.3	402.9	396.4	389.9	383.5	377.0
57.5°	388.3	369.5	350.8	338.7	333.3	327.8	322.4	316.9
60°	340.7	323.4	306.0	294.6	289.1	283.7	278.2	272.8
62.5°	299.5	282.9	266.4	256.4	253.2	249.9	246.6	243.4
65°	243.5	231.9	220.3	214.0	213.0	212.0	211.0	210.0
67.5°	196.6	191.3	185.9	182.7	181.7	180.6	179.5	178.4
70°	171.0	167.6	164.2	161.8	160.4	159.0	157.7	156.3
72.5°	148.8	145.9	143.0	141.2	140.4	139.6	138.7	137.9
75°	117.8	115.5	113.1	111.7	111.4	111.0	110.7	110.3
77.5°	89.2	87.9	86.5	85.5	85.0	84.5	83.9	83.4
80°	70.8	69.5	68.1	67.4	67.4	67.4	67.4	67.4
82.5°	53.5	52.7	51.9	51.5	51.5	51.5	51.5	51.5
85°	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
87.5°	12.4	12.3	12.2	12.2	12.3	12.3	12.4	12.4
90°	15.9	16.7	17.5	18.0	18.4	18.7	19.0	19.3
92.5°	17.4	17.8	18.2	18.6	18.7	18.9	19.1	19.3
95°	29.5	30.3	31.1	31.4	31.2	31.1	30.9	30.8
97.5°	38.6	39.2	39.9	40.3	40.5	40.7	40.9	41.1
100°	43.3	44.6	45.9	46.7	47.0	47.3	47.6	47.9
102.5°	45.2	46.9	48.5	49.6	50.0	50.5	50.9	51.4
105°	47.1	48.9	50.6	51.8	52.5	53.1	53.7	54.4
107.5°	57.5	55.7	54.0	53.4	54.0	54.7	55.3	55.9
110°	93.4	77.5	61.6	54.0	54.6	55.2	55.9	56.5



TEST NUMBER: P331750

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	199.8	141.8	83.8	55.0	55.6	56.1	56.6	57.1
115°	294.2	220.6	147.0	104.4	93.0	81.5	70.1	58.7
117.5°	453.3	435.4	417.6	389.9	352.3	314.7	277.1	239.5
120°	528.2	530.1	532.0	522.2	500.7	479.3	457.8	436.4
122.5°	560.4	561.5	562.7	561.2	557.0	552.8	548.7	544.5
125°	606.7	607.8	608.9	609.7	610.2	610.7	611.1	611.6
127.5°	649.5	651.1	652.7	653.6	653.7	653.8	653.9	654.0
130°	676.6	678.4	680.1	680.9	680.8	680.6	680.4	680.3
132.5°	703.0	704.5	706.0	706.7	706.5	706.4	706.2	706.0
135°	740.7	742.3	743.9	744.5	744.2	743.9	743.5	743.2
137.5°	775.7	777.2	778.8	779.3	778.8	778.2	777.7	777.1
140°	798.3	799.7	801.2	801.5	800.7	799.9	799.1	798.3
142.5°	819.2	820.5	821.8	822.1	821.3	820.5	819.7	818.9
145°	848.5	849.6	850.7	850.8	850.1	849.3	848.5	847.7
147.5°	873.9	874.8	875.6	875.7	875.0	874.3	873.7	873.0
150°	889.6	890.6	891.5	891.6	890.8	890.0	889.2	888.4
152.5°	903.9	904.9	905.9	905.8	904.8	903.7	902.7	901.6
155°	923.3	924.2	925.2	925.0	923.7	922.5	921.2	919.9
157.5°	939.5	940.6	941.7	941.6	940.4	939.1	937.9	936.7
160°	949.0	950.0	950.9	950.8	949.7	948.6	947.5	946.4
162.5°	957.8	958.9	960.0	959.9	958.5	957.1	955.8	954.4
165°	968.6	969.8	970.9	970.9	969.8	968.6	967.5	966.4
167.5°	977.7	978.8	979.9	979.7	978.3	976.9	975.4	974.0
170°	982.2	983.3	984.5	984.3	982.9	981.4	980.0	978.6
172.5°	985.7	986.8	987.9	987.7	986.3	984.9	983.4	982.0
175°	989.4	990.5	991.6	991.4	989.8	988.2	986.6	985.0
177.5°	989.8	990.7	991.6	991.5	990.3	989.2	988.0	986.9
180°	988.6	988.6	988.6	988.6	988.6	988.6	988.6	988.6

(END OF REPORT)