

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: P331764-935

Luminaire Tested: **SA2XXRDIP-C1005D1080U935-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331764-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXRDIP-C1005D1080U935-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

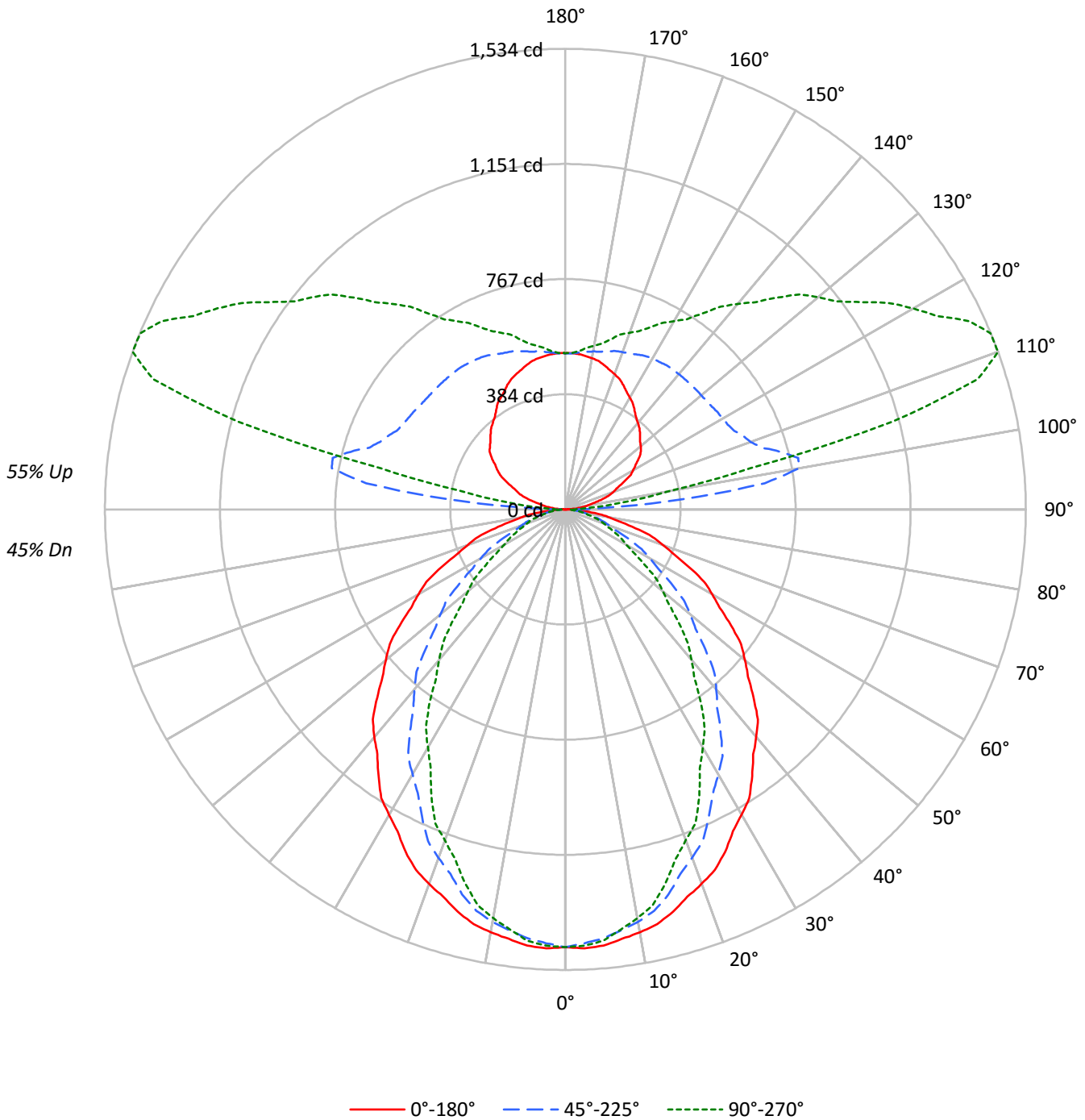
Lumens per Lamp: N/A  
Luminaire Lumens: 6622.7 lumens  
Efficiency: N/A  
Efficacy: 92.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 71.7  
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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45				45
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	45	39				39
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	41	40	38	33				33
3	81	72	65	60	74	67	60	56	56	51	48	46	43	40	37	35	33	29				29
4	75	64	57	51	68	59	53	47	50	45	41	41	38	35	33	31	29	25				25
5	69	57	50	44	63	53	46	41	45	40	36	37	34	30	30	28	25	22				22
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20				20
7	59	47	39	34	54	43	36	32	37	32	28	31	27	24	25	22	20	18				18
8	54	42	35	30	50	39	33	28	34	29	25	28	24	21	23	20	18	16				16
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17	14				14
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15	13				13

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	23541	23541	23541
5°	23631	23246	23376
10°	23451	22866	22673
15°	23181	22188	21549
20°	22807	21220	20155
25°	22425	20122	18805
30°	21895	18990	17074
35°	21378	17763	15554
40°	20858	16493	13793
45°	20247	15066	12202
50°	19623	13622	10638
55°	18978	12073	9137
60°	18235	10440	7585
65°	17391	8772	6907
70°	16386	7227	6354
75°	15147	6588	5926
80°	13371	5895	5393
85°	10504	4650	4650



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.5	2.1
10°-20°	374.7	5.7
20°-30°	526.2	7.9
30°-40°	573.8	8.7
40°-50°	527.6	8.0
50°-60°	414.4	6.3
60°-70°	270.2	4.1
70°-80°	139.3	2.1
80°-90°	40.8	0.6
90°-100°	208.0	3.1
100°-110°	705.7	10.7
110°-120°	749.7	11.3
120°-130°	617.2	9.3
130°-140°	495.6	7.5
140°-150°	374.5	5.7
150°-160°	263.2	4.0
160°-170°	154.9	2.3
170°-180°	50.4	0.8
0°-30°	1037.4	15.7
0°-40°	1611.3	24.3
0°-60°	2553.2	38.6
0°-90°	3003.5	45.4
90°-120°	1663.4	25.1
90°-150°	3150.7	47.6
90°-180°	3619.0	54.6
0°-180°	6622.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1458	1458	1458	1458	1458	
5°	1458	1451	1434	1445	1442	138
15°	1387	1371	1327	1303	1289	390
25°	1259	1214	1130	1077	1056	579
35°	1085	1015	901	821	789	678
45°	887	796	660	570	534	684
55°	674	569	429	353	325	602
65°	455	348	230	187	181	451
75°	243	153	106	97	95	257
85°	57	30	25	25	25	67
90°	1	14	34	32	33	4
95°	35	86	392	148	114	37
105°	122	184	741	1325	1127	130
115°	215	272	620	1280	1483	213
125°	300	355	596	1037	1203	266
135°	352	420	589	871	997	272
145°	402	462	586	728	796	252
155°	457	494	569	644	669	210
165°	498	513	545	578	587	140
175°	519	520	524	531	529	49
180°	520	520	520	520	520	



TEST NUMBER: P331764-935

CATALOG NUMBER: SA2XXRDIP-C1005D1080U935-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0
2.5°	1463.4	1462.2	1460.9	1459.8	1458.6	1456.7	1454.1	1451.6	1449.1	1446.5	1448.8
5°	1458.0	1456.6	1455.1	1453.6	1452.2	1449.6	1445.7	1441.9	1438.1	1434.3	1436.9
7.5°	1443.0	1441.2	1439.4	1437.5	1435.7	1432.6	1428.1	1423.7	1419.3	1414.8	1415.6
10°	1430.4	1428.3	1426.2	1424.2	1422.1	1418.2	1412.3	1406.4	1400.6	1394.7	1393.9
12.5°	1414.5	1412.0	1409.5	1407.0	1404.5	1399.4	1391.9	1384.4	1376.9	1369.4	1367.8
15°	1386.8	1383.5	1380.4	1377.1	1373.9	1367.3	1357.4	1347.4	1337.4	1327.4	1321.9
17.5°	1352.7	1347.8	1342.9	1338.0	1333.1	1324.2	1311.4	1298.6	1285.8	1273.1	1266.4
20°	1327.4	1321.5	1315.7	1309.8	1304.0	1293.7	1279.0	1264.4	1249.7	1235.0	1227.7
22.5°	1299.9	1293.4	1286.9	1280.3	1273.7	1262.1	1245.6	1229.1	1212.5	1196.0	1186.5
25°	1258.8	1249.4	1240.0	1230.6	1221.2	1206.9	1187.6	1168.2	1148.8	1129.5	1117.5
27.5°	1209.2	1199.0	1188.8	1178.6	1168.4	1152.4	1130.6	1108.7	1086.9	1065.1	1051.1
30°	1174.4	1163.2	1152.1	1140.9	1129.8	1112.5	1089.0	1065.6	1042.2	1018.6	1003.7
32.5°	1140.6	1127.6	1114.6	1101.6	1088.5	1070.1	1046.1	1022.2	998.2	974.3	957.3
35°	1084.6	1069.7	1054.7	1039.7	1024.8	1004.4	978.6	952.9	927.0	901.2	882.8
37.5°	1028.7	1012.3	995.8	979.4	963.0	941.1	913.5	886.1	858.5	831.0	810.7
40°	989.6	972.1	954.4	936.9	919.3	896.2	867.8	839.4	810.9	782.5	761.6
42.5°	949.5	931.0	912.5	893.9	875.4	851.4	822.1	792.6	763.3	733.9	712.4
45°	886.7	867.0	847.4	827.8	808.1	782.9	752.1	721.3	690.5	659.8	638.9
47.5°	825.4	804.7	783.9	763.0	742.2	715.9	684.2	652.3	620.5	588.8	568.1
50°	781.2	760.3	739.5	718.7	697.8	671.3	639.1	606.8	574.5	542.3	522.1
52.5°	737.9	716.1	694.4	672.6	650.8	624.2	592.6	561.1	529.5	498.0	478.5
55°	674.2	651.4	628.5	605.6	582.8	555.5	523.8	492.1	460.5	428.9	411.2
57.5°	609.1	585.7	562.1	538.7	515.2	488.3	457.9	427.4	397.0	366.5	350.4
60°	564.7	541.3	517.8	494.4	470.9	444.1	413.9	383.7	353.4	323.3	308.3
62.5°	521.5	498.0	474.6	451.1	427.7	401.5	372.7	343.9	315.1	286.4	272.1
65°	455.2	431.4	407.8	384.0	360.2	335.2	308.8	282.4	256.0	229.6	219.6
67.5°	391.3	367.8	344.2	320.6	297.0	273.4	249.7	225.9	202.2	178.4	173.8
70°	347.1	324.2	301.3	278.4	255.5	234.0	213.8	193.6	173.3	153.1	150.2
72.5°	304.8	282.8	261.0	239.0	217.1	197.9	181.8	165.5	149.2	133.0	130.5
75°	242.8	222.2	201.7	181.2	160.7	145.4	135.4	125.5	115.5	105.6	103.5
77.5°	181.8	163.8	145.9	127.9	109.8	98.4	93.6	88.8	83.9	79.2	78.0
80°	143.8	128.9	113.9	98.9	84.0	75.1	72.2	69.2	66.3	63.4	62.2
82.5°	109.0	97.3	85.7	74.0	62.3	55.4	53.5	51.5	49.5	47.5	46.8
85°	56.7	50.5	44.4	38.2	32.1	28.6	27.7	26.9	25.9	25.1	25.1
87.5°	17.0	15.8	14.7	13.3	11.8	11.5	12.5	13.9	15.1	15.2	14.8
90°	1.0	4.0	8.0	10.0	12.0	15.0	20.0	27.0	33.0	34.0	33.0
92.5°	12.2	17.6	24.8	29.2	36.0	45.4	68.0	99.8	128.2	130.0	109.9
95°	35.0	39.0	49.0	58.0	74.0	98.0	144.0	231.0	347.1	392.1	343.1
97.5°	57.0	62.4	73.0	86.6	105.0	132.2	190.0	311.3	504.1	669.3	702.1
100°	77.0	80.0	89.0	105.0	125.0	153.0	206.0	328.0	544.1	790.1	934.2
102.5°	95.4	97.6	106.6	122.6	143.4	171.4	220.4	328.9	528.9	794.2	1020.6
105°	122.0	126.1	133.0	148.0	170.0	198.0	245.0	334.1	499.1	741.1	1007.2
107.5°	150.8	154.0	160.8	174.6	196.5	224.6	270.3	347.8	484.3	684.3	919.4
110°	170.0	174.0	180.0	193.0	214.0	243.1	287.1	359.0	481.1	657.1	864.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	187.6	191.7	198.5	210.6	230.8	260.6	303.1	371.1	481.9	639.6	825.8
115°	215.1	220.1	226.0	238.1	258.0	285.1	328.0	389.1	486.1	620.1	778.2
117.5°	243.5	247.5	253.5	264.1	283.3	311.3	351.0	408.3	493.3	610.7	748.1
120°	261.1	265.0	271.0	280.1	300.1	328.0	367.0	421.1	498.1	605.1	732.1
122.5°	277.8	281.0	287.1	296.9	316.8	345.7	382.3	432.3	503.7	601.9	718.5
125°	300.1	303.1	309.1	321.1	341.0	369.1	405.1	450.1	512.1	596.2	699.1
127.5°	317.6	321.7	330.1	343.3	362.5	391.2	426.3	466.7	520.7	592.7	681.1
130°	328.0	332.1	342.1	356.1	376.1	404.1	439.1	477.1	527.1	591.1	669.2
132.5°	337.7	342.5	353.3	368.1	388.9	416.9	450.3	487.5	533.5	590.3	659.5
135°	352.1	356.1	368.1	383.1	406.0	434.1	466.1	501.1	541.1	589.1	646.1
137.5°	365.7	370.5	382.5	398.5	421.3	447.3	478.9	511.5	547.9	588.9	636.7
140°	376.1	380.0	392.1	408.1	430.1	456.1	486.1	517.1	551.1	588.1	631.1
142.5°	386.5	389.7	400.9	416.9	438.1	462.5	491.7	521.9	553.5	588.1	625.5
145°	402.1	406.0	416.1	431.1	451.1	473.1	500.1	528.1	556.1	586.1	618.1
147.5°	418.9	421.9	431.4	445.3	461.9	481.5	506.9	531.5	556.9	582.6	610.5
150°	430.1	433.1	441.1	454.1	469.1	487.1	510.1	533.1	556.1	580.1	604.1
152.5°	441.3	442.7	450.6	462.1	476.3	492.7	513.3	533.9	554.5	576.1	598.5
155°	457.1	458.1	464.1	475.1	486.1	501.1	518.1	535.1	552.1	569.1	588.1
157.5°	470.3	471.3	476.1	485.7	494.5	507.1	521.5	535.1	547.5	561.9	578.3
160°	479.1	480.1	484.1	492.1	500.1	511.1	523.1	535.1	545.1	557.2	571.1
162.5°	487.9	487.3	491.3	497.7	504.9	513.5	523.9	534.3	542.7	553.1	564.7
165°	498.1	497.1	499.1	505.1	510.1	516.1	525.1	532.1	538.1	545.1	554.1
167.5°	506.5	505.3	507.1	510.9	514.5	518.3	524.9	530.7	533.5	538.1	543.7
170°	512.1	510.1	511.1	514.1	516.1	519.1	524.1	529.1	531.1	534.1	538.1
172.5°	515.3	514.1	513.5	516.5	517.7	519.9	523.3	526.7	527.9	529.3	532.5
175°	519.1	518.1	517.1	519.1	519.1	520.1	522.1	524.1	523.1	524.1	525.1
177.5°	520.9	519.3	518.5	520.1	520.1	520.1	520.9	522.5	520.9	520.1	520.9
180°	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0
2.5°	1451.1	1453.5	1455.9	1456.7	1456.3	1455.9	1455.3	1454.9
5°	1439.6	1442.3	1444.8	1445.7	1444.8	1444.0	1443.1	1442.3
7.5°	1416.3	1417.0	1417.8	1417.5	1415.9	1414.4	1412.9	1411.4
10°	1392.9	1392.1	1391.2	1389.9	1388.1	1386.4	1384.6	1382.9
12.5°	1366.2	1364.6	1363.0	1360.8	1357.9	1355.0	1352.0	1349.1
15°	1316.3	1310.7	1305.1	1300.9	1298.0	1295.0	1292.1	1289.2
17.5°	1259.8	1253.2	1246.6	1240.7	1235.7	1230.6	1225.5	1220.6
20°	1220.4	1213.1	1205.7	1198.9	1192.4	1185.9	1179.5	1173.0
22.5°	1177.2	1167.7	1158.2	1151.1	1146.3	1141.5	1136.7	1131.9
25°	1105.4	1093.5	1081.4	1073.2	1068.8	1064.4	1060.0	1055.6
27.5°	1037.1	1023.0	1009.0	998.5	991.5	984.6	977.6	970.6
30°	988.8	973.8	958.8	947.4	939.5	931.6	923.7	915.8
32.5°	940.2	923.2	906.0	893.8	886.4	878.9	871.4	864.0
35°	864.3	845.8	827.3	814.9	808.4	801.9	795.5	789.1
37.5°	790.3	770.0	749.6	735.7	728.4	721.0	713.6	706.2
40°	740.8	720.0	699.2	685.0	677.3	669.7	662.1	654.4
42.5°	690.9	669.3	647.8	633.4	625.9	618.5	611.2	603.8
45°	618.1	597.3	576.4	562.6	555.5	548.5	541.4	534.4
47.5°	547.3	526.7	505.9	492.4	486.0	479.7	473.2	466.8
50°	501.9	481.6	461.4	448.2	442.0	435.8	429.7	423.5
52.5°	458.9	439.4	419.9	407.3	401.6	395.9	390.2	384.5
55°	393.6	376.1	358.4	346.9	341.3	335.7	330.2	324.6
57.5°	334.3	318.1	302.0	291.6	287.0	282.2	277.6	272.9
60°	293.3	278.4	263.5	253.7	248.9	244.3	239.5	234.9
62.5°	257.9	243.6	229.4	220.8	218.0	215.2	212.3	209.6
65°	209.7	199.7	189.7	184.3	183.4	182.5	181.7	180.8
67.5°	169.3	164.7	160.1	157.3	156.4	155.5	154.5	153.6
70°	147.2	144.3	141.4	139.3	138.1	136.9	135.8	134.6
72.5°	128.1	125.6	123.1	121.6	120.9	120.2	119.4	118.7
75°	101.4	99.4	97.4	96.2	95.9	95.6	95.3	95.0
77.5°	76.8	75.7	74.5	73.6	73.2	72.8	72.2	71.8
80°	61.0	59.8	58.6	58.0	58.0	58.0	58.0	58.0
82.5°	46.1	45.4	44.7	44.3	44.3	44.3	44.3	44.3
85°	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
87.5°	14.4	13.8	13.9	13.9	13.9	13.9	13.9	13.9
90°	32.0	30.0	32.0	33.0	33.0	33.0	33.0	33.0
92.5°	87.2	74.8	66.4	60.2	59.4	56.2	57.0	55.4
95°	262.1	201.0	159.0	137.0	124.0	116.1	113.0	114.0
97.5°	611.5	500.3	392.1	319.9	272.1	247.5	232.8	224.5
100°	913.2	789.2	652.1	531.1	448.1	405.1	376.1	358.1
102.5°	1110.9	1082.8	982.6	854.4	764.1	690.8	654.5	630.2
105°	1215.2	1328.3	1341.3	1308.3	1246.2	1184.2	1141.3	1127.2
107.5°	1140.1	1310.3	1414.3	1462.7	1470.5	1467.1	1458.4	1439.9
110°	1075.2	1254.2	1382.2	1464.3	1507.3	1526.3	1535.3	1534.3





TEST NUMBER: P331764-935

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1016.0	1187.8	1324.6	1418.7	1478.5	1510.3	1527.3	1532.7
115°	943.2	1097.3	1228.2	1331.3	1402.3	1448.3	1474.3	1483.3
117.5°	888.4	1023.6	1142.5	1239.1	1311.5	1360.0	1387.5	1395.1
120°	861.2	985.2	1091.2	1182.2	1252.2	1299.2	1328.3	1338.3
122.5°	839.6	953.2	1053.6	1135.8	1198.6	1244.8	1270.7	1279.0
125°	808.1	911.2	999.2	1074.2	1132.2	1170.3	1195.2	1203.2
127.5°	777.1	870.4	953.4	1022.6	1073.2	1108.8	1130.4	1136.9
130°	757.2	843.2	922.2	988.2	1037.2	1071.3	1091.2	1099.2
132.5°	738.0	817.6	890.2	952.2	1000.4	1034.4	1052.8	1060.0
135°	711.1	777.1	843.2	899.1	942.2	975.2	993.2	997.2
137.5°	689.7	744.9	797.4	846.2	885.4	913.8	929.6	935.6
140°	676.1	724.2	770.2	814.2	846.2	872.2	887.2	893.2
142.5°	665.0	705.8	745.4	782.1	812.5	836.2	849.5	850.8
145°	649.1	682.2	713.2	742.2	766.1	783.2	793.2	796.2
147.5°	637.0	663.0	687.2	708.3	728.1	741.8	748.6	750.4
150°	628.1	650.1	671.1	689.1	704.1	716.2	722.1	723.2
152.5°	619.3	639.7	657.5	673.1	684.9	695.3	699.7	699.9
155°	607.1	623.1	638.1	649.1	660.1	667.1	671.1	669.2
157.5°	592.9	606.3	618.9	627.5	635.3	641.1	642.9	642.9
160°	584.1	595.1	606.1	613.1	620.1	625.1	626.1	626.1
162.5°	575.3	584.7	594.1	599.5	606.5	609.9	610.9	610.1
165°	562.1	569.1	576.1	580.1	584.1	588.1	588.1	587.1
167.5°	549.5	554.9	559.7	563.4	565.1	567.3	567.1	565.9
170°	543.1	546.1	550.1	552.1	553.1	556.1	555.1	553.1
172.5°	535.9	538.1	541.3	542.5	543.5	544.9	543.9	542.7
175°	528.1	529.1	530.1	531.1	531.1	532.1	531.1	529.1
177.5°	522.5	522.5	523.3	523.3	523.3	523.3	522.5	520.9
180°	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1

(END OF REPORT)