

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: P332845-927

Luminaire Tested: **S124DIW-S1195D770U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332845-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1195D770U927-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6485.3 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

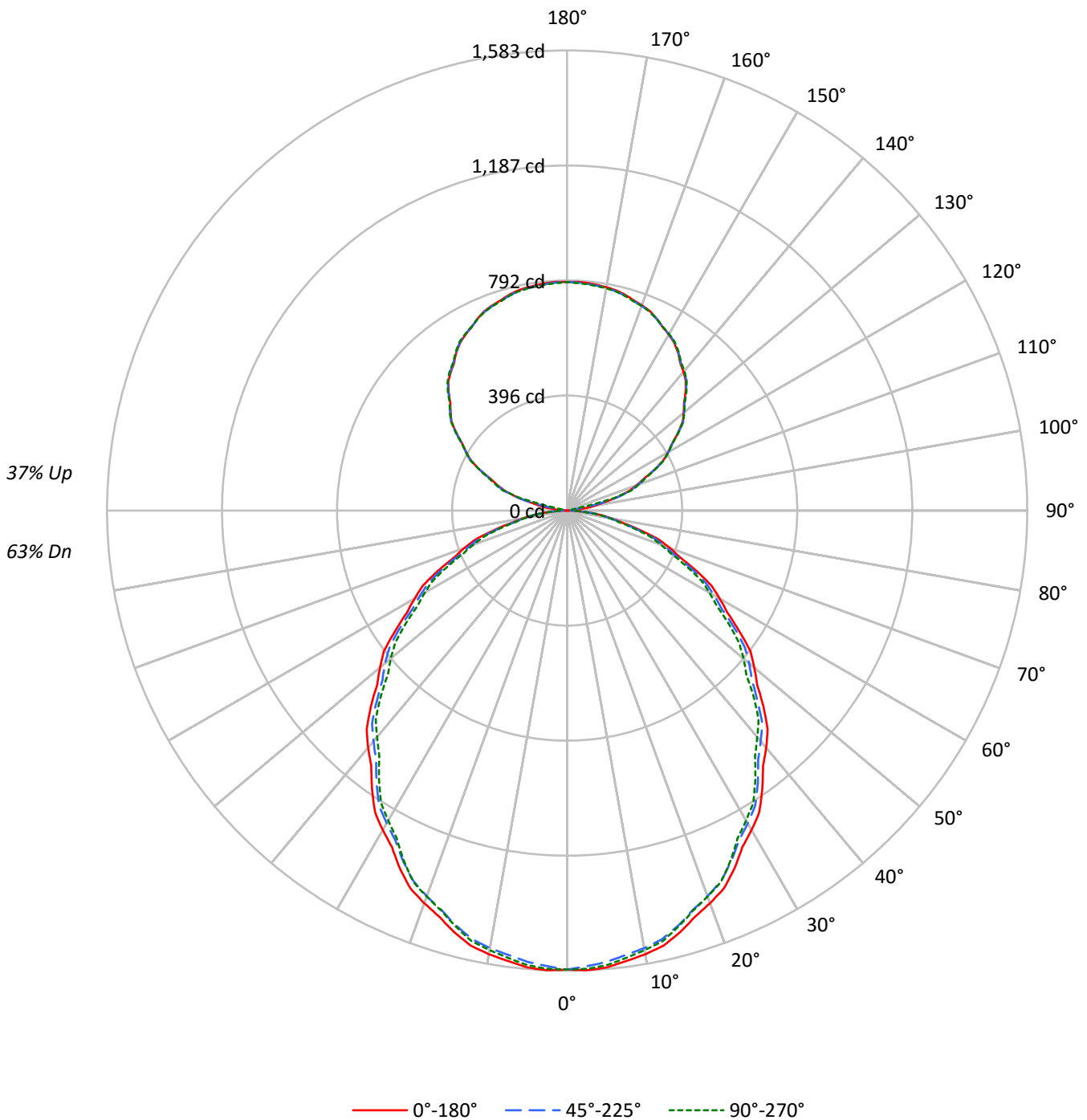
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68	63
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57	53
2	92	84	78	72	86	79	73	69	69	65	61	61	57	55	53	50	48	44
3	84	74	66	60	78	69	63	57	61	56	52	54	50	46	47	43	41	37
4	76	65	57	51	71	62	54	49	54	49	44	48	43	40	42	38	35	32
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31	28
6	65	52	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27	24
7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24	22
8	56	43	35	30	52	41	34	29	36	30	26	32	27	24	29	25	22	19
9	52	39	32	27	49	37	30	26	34	28	24	30	25	22	26	22	20	17
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12745	12745	12745
5°	12783	12630	12721
10°	12703	12527	12588
15°	12549	12349	12380
20°	12345	12128	12138
25°	12113	11875	11843
30°	11828	11580	11473
35°	11532	11269	11121
40°	11225	10918	10718
45°	10904	10572	10369
50°	10550	10262	9946
55°	10166	9864	9543
60°	9783	9415	9131
65°	9352	8990	8627
70°	8868	8419	8091
75°	8125	7735	7536
80°	7234	6936	6760
85°	6326	6095	5974



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	148.7	2.3
10°-20°	418.9	6.5
20°-30°	616.5	9.5
30°-40°	716.7	11.1
40°-50°	716.8	11.1
50°-60°	627.0	9.7
60°-70°	465.6	7.2
70°-80°	264.5	4.1
80°-90°	78.6	1.2
90°-100°	26.9	0.4
100°-110°	171.5	2.6
110°-120°	328.0	5.1
120°-130°	416.3	6.4
130°-140°	445.5	6.9
140°-150°	416.6	6.4
150°-160°	335.9	5.2
160°-170°	216.7	3.3
170°-180°	74.7	1.2
0°-30°	1184.1	18.3
0°-40°	1900.8	29.3
0°-60°	3244.6	50.0
0°-90°	4053.4	62.5
90°-120°	526.3	8.1
90°-150°	1804.7	27.8
90°-180°	2432.0	37.5
0°-180°	6485.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1579	1579	1579	1579	1579	
5°	1577	1572	1558	1571	1570	150
15°	1502	1496	1478	1484	1481	423
25°	1360	1350	1333	1334	1330	625
35°	1170	1161	1144	1135	1128	731
45°	955	946	926	913	908	736
55°	722	718	701	686	678	647
65°	490	483	471	458	452	485
75°	260	254	248	243	242	277
85°	68	68	66	66	64	75
90°	2	8	13	16	18	5
95°	32	14	13	16	17	42
105°	177	180	184	187	168	185
115°	330	332	332	333	333	325
125°	464	467	466	467	468	415
135°	576	576	578	579	580	444
145°	664	666	666	667	668	415
155°	729	729	727	729	728	336
165°	769	766	766	770	765	217
175°	786	783	783	788	782	75
180°	786	786	786	786	786	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7
2.5°	1582.7	1582.1	1581.4	1580.7	1580.0	1578.4	1576.0	1573.5	1571.1	1568.6	1570.8
5°	1577.4	1576.3	1575.2	1574.1	1573.0	1570.8	1567.7	1564.6	1561.5	1558.5	1561.5
7.5°	1562.7	1561.6	1560.5	1559.3	1558.2	1556.0	1552.5	1549.1	1545.7	1542.2	1544.8
10°	1549.6	1548.5	1547.4	1546.2	1545.1	1542.7	1539.1	1535.4	1531.8	1528.1	1530.3
12.5°	1532.4	1531.3	1530.1	1529.0	1527.9	1525.3	1521.5	1517.7	1513.8	1509.9	1512.4
15°	1501.5	1500.4	1499.3	1498.2	1497.0	1494.4	1490.1	1485.9	1481.7	1477.5	1479.2
17.5°	1464.3	1462.9	1461.5	1460.2	1458.7	1456.0	1452.0	1448.0	1444.1	1440.0	1441.1
20°	1437.0	1435.6	1434.2	1432.8	1431.4	1428.5	1424.3	1420.1	1415.9	1411.7	1412.5
22.5°	1407.6	1405.8	1404.0	1402.1	1400.3	1397.2	1393.0	1388.8	1384.6	1380.3	1381.9
25°	1359.9	1357.9	1355.9	1353.9	1351.9	1349.0	1345.0	1341.2	1337.2	1333.2	1333.6
27.5°	1305.2	1303.1	1301.2	1299.1	1297.1	1294.3	1290.6	1287.0	1283.3	1279.6	1279.0
30°	1268.8	1266.5	1264.2	1262.0	1259.8	1256.8	1253.2	1249.5	1245.9	1242.2	1241.1
32.5°	1230.3	1228.3	1226.3	1224.2	1222.2	1219.2	1215.4	1211.5	1207.6	1203.7	1202.4
35°	1170.1	1168.2	1166.2	1164.2	1162.2	1159.3	1155.3	1151.4	1147.5	1143.5	1141.5
37.5°	1106.6	1104.8	1103.0	1101.2	1099.4	1096.4	1092.2	1088.0	1083.7	1079.5	1077.4
40°	1065.1	1062.9	1060.6	1058.4	1056.1	1052.9	1048.7	1044.4	1040.2	1036.0	1033.2
42.5°	1020.6	1019.2	1017.9	1016.5	1015.2	1012.2	1007.5	1002.8	998.1	993.5	990.2
45°	955.1	953.1	951.1	949.1	947.2	944.0	939.4	934.9	930.4	926.0	922.9
47.5°	886.5	885.1	883.8	882.4	881.1	878.4	874.2	870.1	865.9	861.7	858.3
50°	840.0	838.8	837.7	836.5	835.4	832.9	828.9	825.1	821.1	817.1	813.3
52.5°	794.4	793.1	791.7	790.4	789.0	786.2	782.1	777.9	773.8	769.6	766.1
55°	722.3	721.4	720.6	719.8	718.9	716.5	712.6	708.7	704.7	700.8	697.4
57.5°	653.5	652.5	651.6	650.6	649.7	647.2	643.3	639.4	635.6	631.7	628.5
60°	605.9	604.5	603.1	601.7	600.3	597.8	594.1	590.5	586.8	583.1	580.6
62.5°	559.4	558.2	557.0	555.8	554.7	552.2	548.3	544.4	540.5	536.6	534.3
65°	489.6	488.1	486.7	485.3	483.9	481.8	479.0	476.2	473.4	470.6	467.8
67.5°	419.2	418.0	416.6	415.3	414.1	412.0	409.3	406.6	403.9	401.2	398.5
70°	375.7	373.8	371.8	369.8	367.8	365.8	363.5	361.2	358.9	356.7	354.5
72.5°	329.2	327.2	325.2	323.2	321.3	319.4	317.6	315.8	314.0	312.2	310.4
75°	260.5	259.2	257.8	256.4	254.9	253.6	252.2	250.7	249.4	248.0	246.8
77.5°	195.0	194.4	193.8	193.2	192.6	191.6	190.4	189.2	188.0	186.7	186.4
80°	155.6	154.7	153.9	153.0	152.3	151.5	151.0	150.4	149.8	149.2	148.7
82.5°	117.2	116.8	116.4	116.0	115.6	115.3	115.2	115.1	114.9	114.9	114.5
85°	68.3	68.3	68.3	68.3	68.3	68.0	67.5	66.9	66.3	65.8	65.8
87.5°	26.7	26.7	26.8	26.9	26.9	26.9	26.9	26.9	26.9	26.9	27.0
90°	1.7	3.2	4.7	6.1	7.5	8.8	9.8	10.9	11.9	12.9	13.7
92.5°	7.4	7.5	7.6	7.6	7.7	8.3	9.3	10.4	11.4	12.4	13.2
95°	32.3	27.9	23.4	19.0	14.6	12.4	12.5	12.7	12.8	12.9	13.7
97.5°	68.7	71.5	74.2	77.0	79.8	73.8	59.3	44.7	30.1	15.5	15.6
100°	96.4	98.8	101.2	103.5	105.8	98.0	80.0	61.9	43.9	25.9	23.7
102.5°	127.5	129.2	130.9	132.7	134.4	134.0	131.7	129.4	127.0	124.7	100.7
105°	177.0	177.8	178.6	179.4	180.1	180.9	181.5	182.1	182.8	183.5	184.7
107.5°	223.0	223.4	223.8	224.2	224.6	225.2	226.1	227.0	227.8	228.7	229.3
110°	254.1	254.4	254.8	255.2	255.6	256.2	257.0	257.8	258.6	259.3	259.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	284.2	284.9	285.6	286.2	286.9	287.5	287.9	288.2	288.6	289.0	288.9
115°	330.5	330.9	331.3	331.6	332.0	332.2	332.0	331.9	331.8	331.6	331.9
117.5°	372.2	372.7	373.3	373.8	374.3	374.7	375.0	375.3	375.6	375.9	375.8
120°	400.4	401.0	401.5	402.0	402.5	402.7	402.6	402.5	402.3	402.2	402.5
122.5°	426.8	427.1	427.4	427.7	428.0	428.3	428.5	428.6	428.8	429.0	429.2
125°	464.5	465.1	465.6	466.1	466.6	466.8	466.5	466.3	466.0	465.7	466.1
127.5°	500.3	500.4	500.6	500.7	500.8	501.2	501.8	502.4	503.0	503.6	503.5
130°	523.3	523.5	523.6	523.7	523.9	524.1	524.5	524.9	525.3	525.7	525.9
132.5°	544.5	544.8	545.0	545.2	545.4	545.8	546.3	546.8	547.3	547.8	548.0
135°	576.2	576.2	576.0	575.8	575.8	575.9	576.5	576.9	577.5	578.1	578.3
137.5°	604.4	604.4	604.5	604.5	604.6	604.9	605.5	606.0	606.7	607.2	607.4
140°	622.7	623.0	623.2	623.5	623.8	624.0	624.3	624.6	624.8	625.1	625.4
142.5°	639.2	639.7	640.2	640.6	641.0	641.4	641.5	641.7	641.8	642.0	642.3
145°	664.5	664.9	665.3	665.7	666.1	666.2	666.2	666.2	666.2	666.2	666.4
147.5°	684.6	685.3	686.0	686.7	687.5	687.8	687.7	687.5	687.4	687.3	687.4
150°	699.2	699.7	700.2	700.8	701.2	701.5	701.3	701.2	701.1	700.9	700.9
152.5°	711.4	711.8	712.3	712.6	713.0	713.1	712.9	712.7	712.5	712.3	712.4
155°	728.6	728.7	728.8	729.0	729.1	729.0	728.6	728.2	727.8	727.4	727.9
157.5°	743.1	743.0	742.9	742.8	742.8	742.4	742.0	741.6	741.1	740.7	741.3
160°	751.5	751.1	750.8	750.4	750.0	749.6	749.6	749.4	749.2	749.2	750.0
162.5°	759.0	758.5	758.0	757.6	757.0	756.7	756.6	756.5	756.3	756.2	757.0
165°	768.6	767.9	767.2	766.6	766.0	765.6	765.6	765.6	765.6	765.6	766.7
167.5°	776.1	775.4	774.8	774.0	773.3	773.0	772.9	772.9	772.8	772.7	773.8
170°	780.3	779.5	778.7	777.9	777.2	776.8	777.0	777.1	777.2	777.4	778.4
172.5°	783.2	782.4	781.6	780.8	780.0	779.7	779.8	779.9	780.1	780.2	781.3
175°	786.2	785.4	784.7	783.9	783.1	782.8	782.8	783.0	783.2	783.2	784.4
177.5°	787.6	786.9	786.2	785.4	784.7	784.4	784.7	784.8	785.1	785.2	786.1
180°	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7	1578.7
2.5°	1573.0	1575.3	1577.6	1578.6	1578.3	1578.1	1577.9	1577.6
5°	1564.6	1567.7	1570.8	1572.1	1571.5	1571.0	1570.4	1569.8
7.5°	1547.2	1549.7	1552.1	1553.2	1552.9	1552.5	1552.2	1551.9
10°	1532.6	1534.9	1537.1	1537.9	1537.4	1536.8	1536.2	1535.6
12.5°	1514.8	1517.3	1519.8	1520.6	1519.8	1519.0	1518.2	1517.4
15°	1480.8	1482.6	1484.2	1484.6	1483.8	1483.0	1482.1	1481.3
17.5°	1442.2	1443.3	1444.3	1444.5	1444.0	1443.4	1442.9	1442.3
20°	1413.4	1414.2	1415.1	1415.2	1414.7	1414.1	1413.6	1412.9
22.5°	1383.4	1384.9	1386.4	1386.6	1385.7	1384.7	1383.6	1382.6
25°	1333.9	1334.1	1334.4	1334.0	1332.8	1331.7	1330.6	1329.5
27.5°	1278.3	1277.6	1276.9	1275.9	1274.5	1273.1	1271.7	1270.3
30°	1239.9	1238.8	1237.7	1236.4	1235.0	1233.7	1232.2	1230.8
32.5°	1201.0	1199.7	1198.3	1197.0	1195.6	1194.1	1192.8	1191.4
35°	1139.6	1137.7	1135.7	1134.0	1132.6	1131.2	1129.7	1128.4
37.5°	1075.2	1073.1	1071.0	1069.0	1067.1	1065.2	1063.4	1061.5
40°	1030.4	1027.5	1024.8	1022.6	1021.3	1019.9	1018.4	1017.0
42.5°	987.0	983.7	980.5	978.3	977.4	976.4	975.5	974.5
45°	919.8	916.7	913.6	911.6	910.8	909.9	909.1	908.2
47.5°	854.8	851.3	847.8	844.9	842.8	840.7	838.5	836.4
50°	809.3	805.3	801.5	798.6	796.9	795.3	793.5	791.9
52.5°	762.6	759.1	755.7	752.9	750.8	748.6	746.5	744.3
55°	694.0	690.7	687.3	684.8	683.1	681.4	679.7	678.0
57.5°	625.3	622.1	618.9	616.5	614.9	613.2	611.6	610.0
60°	578.1	575.6	573.1	571.1	569.7	568.2	566.9	565.5
62.5°	532.0	529.7	527.4	525.5	524.1	522.7	521.3	519.9
65°	464.9	462.2	459.3	457.2	455.8	454.4	453.0	451.6
67.5°	395.9	393.2	390.5	388.9	388.5	388.1	387.7	387.3
70°	352.2	350.0	347.7	346.2	345.3	344.5	343.6	342.8
72.5°	308.6	306.8	305.0	303.6	302.9	302.0	301.1	300.3
75°	245.7	244.5	243.4	242.7	242.5	242.2	241.9	241.6
77.5°	186.0	185.7	185.4	184.8	184.1	183.4	182.6	181.9
80°	148.1	147.6	147.0	146.6	146.3	146.0	145.8	145.4
82.5°	114.2	113.8	113.5	113.2	112.9	112.6	112.3	112.1
85°	65.8	65.8	65.8	65.7	65.4	65.0	64.8	64.5
87.5°	27.2	27.3	27.5	27.6	27.6	27.7	27.7	27.8
90°	14.5	15.3	16.1	16.6	16.9	17.1	17.3	17.7
92.5°	14.0	14.8	15.6	16.0	16.1	16.2	16.2	16.2
95°	14.5	15.3	16.1	16.6	16.6	16.8	17.0	17.0
97.5°	15.7	15.8	15.8	15.9	16.1	16.2	16.3	16.5
100°	21.5	19.2	17.0	15.9	16.1	16.2	16.3	16.5
102.5°	76.8	52.8	28.8	16.8	16.9	16.9	16.9	17.0
105°	185.8	187.0	188.1	186.4	181.7	177.0	172.3	167.6
107.5°	229.9	230.4	231.1	231.6	232.1	232.6	233.1	233.5
110°	259.8	260.1	260.4	260.7	261.1	261.5	261.9	262.3



TEST NUMBER: P332845-927

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	288.8	288.8	288.8	289.0	289.5	289.9	290.5	291.0
115°	332.2	332.4	332.7	332.8	332.8	332.8	332.8	332.8
117.5°	375.7	375.7	375.7	375.6	375.6	375.5	375.4	375.4
120°	402.7	403.0	403.2	403.2	403.0	402.7	402.5	402.2
122.5°	429.4	429.5	429.7	429.6	429.4	429.0	428.8	428.6
125°	466.5	466.9	467.3	467.5	467.7	467.8	467.9	468.1
127.5°	503.4	503.4	503.3	503.2	503.1	503.0	502.9	502.8
130°	525.9	526.1	526.2	526.2	526.2	526.2	526.2	526.2
132.5°	548.0	548.2	548.3	548.3	548.3	548.1	548.0	548.0
135°	578.5	578.8	579.1	579.3	579.6	579.9	580.1	580.4
137.5°	607.8	608.1	608.3	608.5	608.4	608.3	608.2	608.2
140°	625.8	626.2	626.6	626.9	627.0	627.2	627.3	627.4
142.5°	642.6	642.9	643.2	643.3	643.3	643.3	643.4	643.4
145°	666.5	666.6	666.8	666.9	667.2	667.5	667.7	668.0
147.5°	687.5	687.6	687.7	687.9	687.9	688.1	688.2	688.3
150°	700.9	700.9	700.9	701.0	701.2	701.2	701.4	701.5
152.5°	712.6	712.8	713.0	713.1	713.0	713.0	712.9	712.8
155°	728.4	729.0	729.4	729.5	729.1	728.7	728.3	728.0
157.5°	742.0	742.8	743.4	743.4	742.8	742.0	741.3	740.7
160°	750.8	751.5	752.3	752.3	751.5	750.8	750.0	749.2
162.5°	757.8	758.5	759.3	759.3	758.4	757.5	756.6	755.7
165°	767.7	768.7	769.8	769.8	768.6	767.4	766.2	765.0
167.5°	775.0	776.1	777.3	777.2	775.9	774.6	773.2	772.0
170°	779.4	780.5	781.6	781.4	780.1	778.8	777.5	776.2
172.5°	782.3	783.3	784.3	784.2	782.8	781.4	780.0	778.6
175°	785.6	786.8	788.0	787.7	786.2	784.7	783.1	781.5
177.5°	787.0	787.7	788.6	788.4	787.1	785.8	784.7	783.4
180°	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2

(END OF REPORT)