

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: P332117

Luminaire Tested: **S123DIW-S340D1535U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332117
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S340D1535U835-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6761.7 lumens
Efficiency: N/A
Efficacy: 126.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

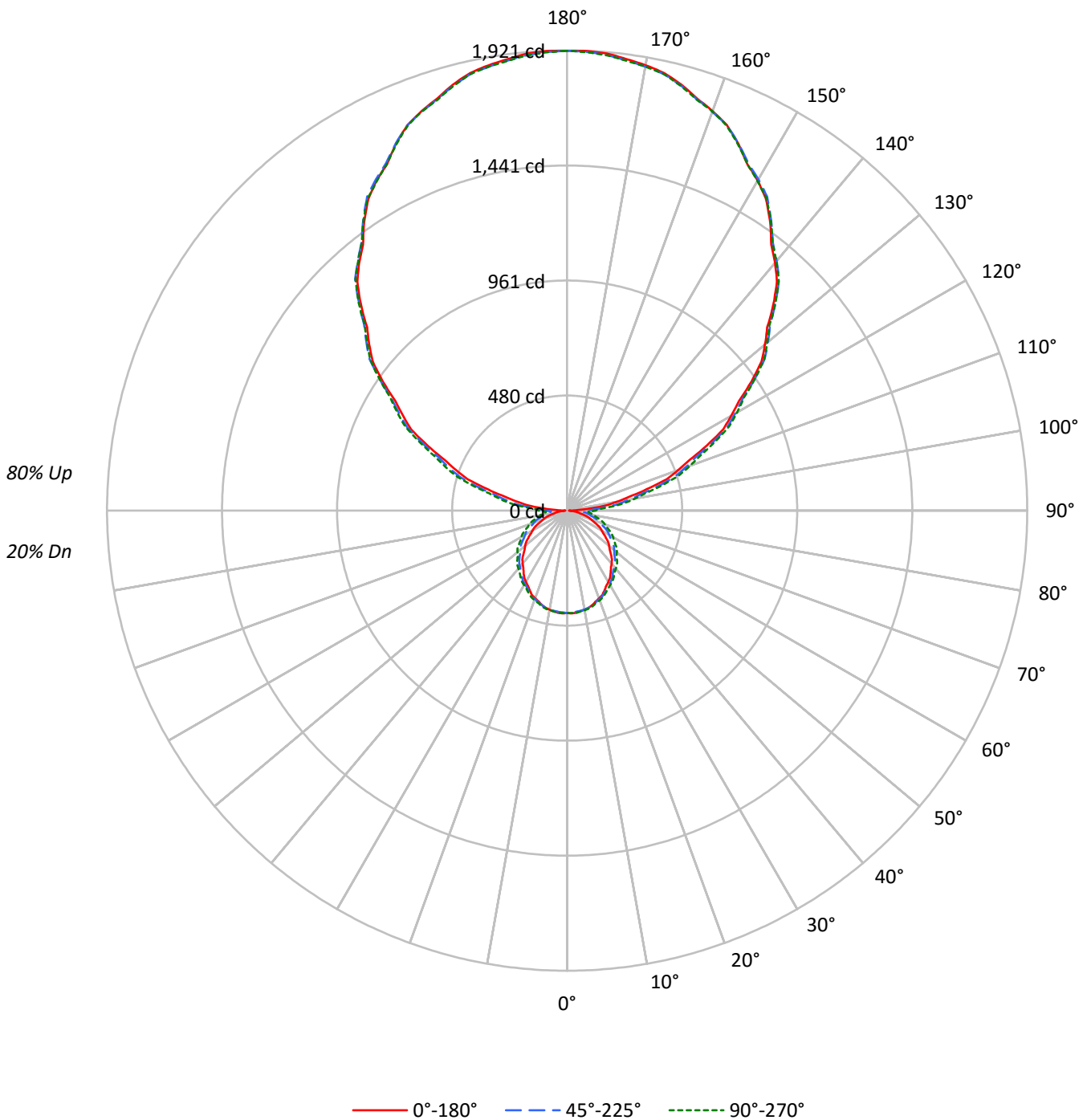
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	20					20			
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	23	23	16					16			
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13					13			
3	75	66	59	53	66	58	52	47	44	40	36	31	28	26	18	17	16	11					11			
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9					9			
5	62	51	44	38	55	45	39	34	34	30	26	24	21	19	15	13	12	8					8			
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	12	10	7					7			
7	53	41	33	28	46	37	30	25	28	23	20	20	17	14	12	10	9	6					6			
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5					5			
9	45	34	26	22	40	30	24	20	23	18	15	16	13	11	10	8	7	5					5			
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4					4			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4604	4604	4604
5°	4618	4488	4490
10°	4577	4385	4363
15°	4518	4267	4223
20°	4434	4133	4070
25°	4330	3980	3908
30°	4224	3841	3744
35°	4103	3694	3614
40°	3990	3560	3474
45°	3864	3432	3362
50°	3739	3305	3239
55°	3601	3175	3128
60°	3466	3044	3015
65°	3328	2903	2878
70°	3120	2744	2740
75°	2859	2565	2600
80°	2556	2387	2438
85°	2274	2264	2344



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	0.6
10°-20°	115.6	1.7
20°-30°	172.9	2.6
30°-40°	206.5	3.1
40°-50°	216.0	3.2
50°-60°	202.7	3.0
60°-70°	169.3	2.5
70°-80°	121.1	1.8
80°-90°	77.9	1.2
90°-100°	170.4	2.5
100°-110°	407.6	6.0
110°-120°	658.9	9.7
120°-130°	850.1	12.6
130°-140°	946.9	14.0
140°-150°	926.4	13.7
150°-160°	778.9	11.5
160°-170°	518.5	7.7
170°-180°	181.6	2.7
0°-30°	329.0	4.9
0°-40°	535.5	7.9
0°-60°	954.2	14.1
0°-90°	1322.6	19.6
90°-120°	1236.9	18.3
90°-150°	3960.2	58.6
90°-180°	5439.0	80.4
0°-180°	6761.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	428	428	428	428	428	
5°	428	427	424	428	428	41
15°	408	409	409	413	413	115
25°	368	373	374	380	380	170
35°	317	324	330	337	339	198
45°	259	270	282	290	294	200
55°	198	213	230	242	246	177
65°	136	155	175	189	194	135
75°	74	96	119	134	140	79
85°	23	46	71	86	91	24
90°	8	46	89	110	118	10
95°	94	123	158	177	183	104
105°	343	358	391	404	411	367
115°	643	654	667	679	682	636
125°	939	944	954	958	955	837
135°	1218	1226	1230	1232	1232	938
145°	1477	1479	1484	1486	1482	922
155°	1690	1690	1692	1697	1687	778
165°	1841	1837	1837	1845	1835	519
175°	1915	1909	1909	1917	1908	182
180°	1920	1920	1920	1920	1920	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7
2.5°	429.6	429.4	429.1	428.9	428.6	428.2	427.5	426.8	426.2	425.5	426.2
5°	428.2	428.0	427.8	427.6	427.4	427.0	426.3	425.7	425.1	424.5	425.3
7.5°	424.0	424.1	424.1	424.1	424.2	423.9	423.3	422.7	422.1	421.5	422.5
10°	420.3	420.5	420.7	420.9	421.1	421.0	420.4	419.9	419.4	418.9	419.9
12.5°	415.8	416.1	416.4	416.7	417.0	416.9	416.6	416.2	415.9	415.5	416.5
15°	407.7	408.0	408.3	408.6	408.9	409.1	408.9	408.8	408.7	408.6	409.7
17.5°	397.5	398.1	398.7	399.3	399.9	400.2	400.2	400.1	400.1	400.1	401.0
20°	390.0	390.6	391.2	391.9	392.5	392.9	393.1	393.3	393.5	393.7	394.7
22.5°	382.2	382.8	383.4	384.0	384.7	385.1	385.4	385.7	386.0	386.3	387.5
25°	368.1	369.1	370.2	371.2	372.2	372.9	373.2	373.5	373.8	374.2	375.5
27.5°	353.9	355.1	356.3	357.5	358.7	359.6	360.2	360.9	361.6	362.2	363.4
30°	343.9	345.2	346.6	347.9	349.3	350.3	351.2	352.0	352.8	353.7	354.9
32.5°	332.7	334.2	335.7	337.2	338.7	340.0	341.1	342.2	343.3	344.3	345.7
35°	316.8	318.5	320.2	321.8	323.5	325.0	326.3	327.7	329.0	330.4	331.9
37.5°	300.1	301.9	303.8	305.7	307.5	309.3	310.9	312.6	314.3	315.9	317.7
40°	288.9	290.8	292.6	294.5	296.3	298.3	300.4	302.5	304.5	306.6	308.4
42.5°	276.6	278.9	281.1	283.4	285.7	287.9	290.1	292.2	294.4	296.5	298.5
45°	259.1	261.6	264.0	266.5	269.0	271.5	274.1	276.7	279.3	281.9	283.9
47.5°	240.7	243.5	246.3	249.2	252.0	254.9	257.8	260.8	263.7	266.7	268.9
50°	228.8	231.7	234.6	237.5	240.4	243.4	246.6	249.9	253.1	256.3	258.7
52.5°	216.1	219.2	222.2	225.3	228.4	231.7	235.2	238.8	242.3	245.8	248.3
55°	197.6	201.0	204.4	207.8	211.2	214.8	218.5	222.3	226.0	229.7	232.5
57.5°	179.5	183.0	186.6	190.2	193.7	197.6	201.6	205.7	209.8	213.9	216.7
60°	166.8	170.5	174.3	178.0	181.7	185.7	190.0	194.2	198.4	202.7	205.6
62.5°	154.9	158.7	162.5	166.3	170.1	174.3	178.8	183.3	187.8	192.3	195.1
65°	136.5	140.6	144.6	148.6	152.7	157.0	161.5	166.1	170.6	175.2	178.3
67.5°	117.9	122.2	126.5	130.7	135.0	139.5	144.1	148.8	153.4	158.1	161.4
70°	104.8	109.3	113.7	118.2	122.6	127.4	132.3	137.3	142.3	147.2	150.6
72.5°	92.9	97.4	101.8	106.3	110.7	115.5	120.6	125.8	130.9	136.1	139.5
75°	74.1	79.0	83.8	88.7	93.6	98.6	103.8	108.9	114.1	119.3	122.7
77.5°	57.7	62.6	67.5	72.4	77.3	82.4	87.6	92.8	98.0	103.3	106.9
80°	46.1	51.2	56.3	61.4	66.4	71.7	77.0	82.4	87.8	93.2	96.7
82.5°	36.1	41.2	46.4	51.5	56.7	62.0	67.5	72.9	78.4	83.9	87.4
85°	22.8	28.0	33.2	38.4	43.5	48.9	54.4	59.8	65.3	70.8	74.3
87.5°	12.7	18.5	24.3	30.2	36.0	42.0	48.1	54.3	60.4	66.6	70.4
90°	7.6	16.0	24.4	32.8	41.3	50.3	59.9	69.6	79.2	88.8	93.7
92.5°	42.2	49.0	55.9	62.7	69.6	76.9	84.5	92.2	99.9	107.6	112.1
95°	94.1	100.5	106.9	113.2	119.6	126.7	134.5	142.2	150.0	157.7	162.3
97.5°	162.6	168.0	173.4	178.8	184.1	190.2	197.0	203.8	210.6	217.4	222.0
100°	209.3	214.6	219.9	225.2	230.6	236.5	242.9	249.3	255.8	262.2	266.2
102.5°	263.2	267.4	271.6	275.8	279.9	285.5	292.4	299.3	306.2	313.0	317.0
105°	343.0	346.2	349.3	352.5	355.6	360.9	368.4	375.9	383.4	390.8	393.7
107.5°	435.3	437.9	440.4	442.9	445.4	449.4	454.8	460.2	465.7	471.1	474.9
110°	492.9	495.4	497.9	500.5	503.0	506.7	511.5	516.3	521.1	525.9	530.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	553.2	555.1	557.1	559.0	560.9	564.0	568.1	572.2	576.3	580.4	584.6
115°	643.2	645.5	647.7	650.0	652.2	654.9	657.9	661.0	664.0	667.1	669.9
117.5°	734.2	735.6	737.1	738.5	739.9	742.0	744.6	747.2	749.9	752.5	754.9
120°	790.5	793.0	795.6	798.1	800.6	802.8	804.5	806.3	808.0	809.7	811.8
122.5°	849.6	851.4	853.1	854.9	856.6	858.7	861.0	863.4	865.8	868.2	869.6
125°	939.3	940.3	941.4	942.4	943.4	945.0	947.4	949.7	952.0	954.4	955.2
127.5°	1022.6	1024.6	1026.7	1028.7	1030.7	1032.6	1034.4	1036.1	1037.9	1039.6	1039.8
130°	1078.1	1080.6	1083.2	1085.8	1088.4	1090.2	1091.3	1092.3	1093.4	1094.5	1095.1
132.5°	1133.2	1135.9	1138.5	1141.2	1143.8	1145.6	1146.5	1147.5	1148.4	1149.3	1149.6
135°	1217.8	1219.8	1221.7	1223.6	1225.5	1226.8	1227.6	1228.4	1229.2	1230.0	1230.6
137.5°	1296.2	1297.8	1299.4	1300.9	1302.5	1304.1	1305.6	1307.1	1308.6	1310.1	1310.4
140°	1350.1	1351.8	1353.4	1355.1	1356.8	1357.9	1358.6	1359.2	1359.9	1360.5	1361.7
142.5°	1399.5	1401.1	1402.7	1404.3	1405.9	1407.0	1407.7	1408.4	1409.0	1409.7	1410.8
145°	1476.7	1477.3	1477.9	1478.4	1479.0	1479.8	1480.8	1481.8	1482.8	1483.8	1484.3
147.5°	1543.8	1545.0	1546.2	1547.5	1548.7	1549.7	1550.7	1551.6	1552.5	1553.5	1553.7
150°	1590.9	1591.6	1592.2	1592.9	1593.6	1594.2	1594.9	1595.6	1596.2	1596.9	1596.9
152.5°	1629.5	1630.4	1631.4	1632.3	1633.2	1633.9	1634.3	1634.7	1635.1	1635.5	1636.1
155°	1690.4	1690.4	1690.4	1690.4	1690.4	1690.6	1690.9	1691.2	1691.6	1691.9	1693.3
157.5°	1742.3	1741.9	1741.5	1741.1	1740.7	1740.6	1740.9	1741.1	1741.4	1741.7	1743.1
160°	1774.9	1774.2	1773.5	1772.8	1772.2	1771.8	1771.8	1771.8	1771.8	1771.8	1773.5
162.5°	1803.8	1802.9	1801.9	1801.0	1800.1	1799.7	1800.0	1800.3	1800.5	1800.8	1802.5
165°	1841.2	1840.2	1839.2	1838.2	1837.2	1836.7	1836.7	1836.7	1836.7	1836.7	1838.7
167.5°	1871.1	1869.7	1868.4	1867.0	1865.7	1865.2	1865.4	1865.7	1866.0	1866.2	1868.3
170°	1887.9	1886.6	1885.3	1883.9	1882.6	1881.9	1881.9	1881.9	1881.9	1881.9	1884.3
172.5°	1901.2	1899.9	1898.5	1897.2	1895.9	1895.2	1895.2	1895.2	1895.2	1895.2	1897.3
175°	1915.1	1913.8	1912.4	1911.1	1909.7	1909.1	1909.1	1909.1	1909.1	1909.1	1911.1
177.5°	1920.8	1919.8	1918.7	1917.6	1916.5	1916.0	1916.0	1916.0	1916.0	1916.0	1917.6
180°	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7
2.5°	426.8	427.5	428.2	428.4	428.4	428.3	428.2	428.1
5°	426.1	427.0	427.8	428.2	428.1	427.9	427.8	427.7
7.5°	423.6	424.6	425.6	426.1	426.0	425.8	425.7	425.6
10°	421.0	422.0	423.0	423.4	423.2	423.0	422.8	422.6
12.5°	417.4	418.4	419.3	419.7	419.5	419.3	419.1	418.9
15°	410.7	411.7	412.8	413.2	413.1	413.0	412.9	412.8
17.5°	401.9	402.9	403.8	404.2	404.0	403.9	403.8	403.6
20°	395.6	396.5	397.5	398.0	398.1	398.2	398.3	398.4
22.5°	388.6	389.8	391.0	391.6	391.5	391.4	391.4	391.3
25°	376.8	378.2	379.5	380.2	380.2	380.2	380.2	380.2
27.5°	364.5	365.7	366.9	367.5	367.6	367.7	367.7	367.8
30°	356.1	357.4	358.6	359.2	359.2	359.2	359.2	359.2
32.5°	347.0	348.3	349.6	350.4	350.7	350.9	351.2	351.4
35°	333.5	335.0	336.6	337.6	338.0	338.4	338.8	339.2
37.5°	319.4	321.2	323.0	324.0	324.3	324.7	325.0	325.3
40°	310.1	311.9	313.6	314.7	315.1	315.6	316.0	316.4
42.5°	300.4	302.3	304.2	305.5	306.1	306.6	307.2	307.8
45°	285.8	287.8	289.8	291.2	292.0	292.8	293.7	294.5
47.5°	271.1	273.4	275.6	277.0	277.6	278.3	278.9	279.6
50°	261.0	263.4	265.8	267.4	268.1	268.8	269.5	270.3
52.5°	250.8	253.2	255.7	257.4	258.3	259.2	260.0	260.9
55°	235.3	238.1	240.9	242.7	243.5	244.4	245.2	246.0
57.5°	219.5	222.3	225.1	227.0	228.0	229.0	230.0	230.9
60°	208.5	211.4	214.3	216.3	217.4	218.6	219.7	220.9
62.5°	198.0	200.9	203.8	205.8	206.9	207.9	209.0	210.1
65°	181.4	184.5	187.6	189.7	190.7	191.8	192.8	193.8
67.5°	164.8	168.2	171.6	173.8	174.6	175.5	176.4	177.2
70°	153.9	157.2	160.5	162.7	163.7	164.7	165.8	166.8
72.5°	142.8	146.2	149.6	151.9	152.9	153.9	155.0	156.0
75°	126.1	129.5	133.0	135.3	136.5	137.8	139.0	140.3
77.5°	110.5	114.1	117.7	119.9	120.9	121.9	122.8	123.8
80°	100.2	103.8	107.3	109.5	110.6	111.6	112.7	113.7
82.5°	90.9	94.4	98.0	100.2	101.3	102.3	103.3	104.4
85°	77.9	81.4	84.9	87.2	88.2	89.3	90.3	91.3
87.5°	74.2	78.0	81.8	84.2	85.4	86.6	87.7	88.9
90°	98.6	103.4	108.3	111.6	113.3	115.0	116.7	118.4
92.5°	116.6	121.1	125.6	128.1	128.7	129.2	129.8	130.3
95°	166.8	171.4	175.9	178.7	179.7	180.8	181.8	182.9
97.5°	226.6	231.3	235.9	238.7	239.6	240.5	241.4	242.3
100°	270.2	274.2	278.2	281.1	282.8	284.5	286.2	287.9
102.5°	320.9	324.8	328.7	331.2	332.1	333.0	333.9	334.8
105°	396.6	399.5	402.4	404.7	406.3	407.9	409.5	411.1
107.5°	478.8	482.6	486.5	488.7	489.2	489.7	490.2	490.7
110°	534.0	538.0	542.1	544.2	544.3	544.5	544.6	544.8



TEST NUMBER: P332117

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	588.8	593.1	597.3	599.8	600.5	601.3	602.1	602.9
115°	672.7	675.5	678.4	680.0	680.5	681.0	681.5	682.0
117.5°	757.3	759.7	762.1	763.2	763.1	762.9	762.8	762.7
120°	813.8	815.9	817.9	819.0	819.0	819.1	819.1	819.2
122.5°	871.0	872.5	873.9	874.5	874.3	874.1	873.9	873.7
125°	956.0	956.9	957.7	957.8	957.2	956.6	956.0	955.3
127.5°	1040.0	1040.2	1040.3	1040.0	1039.2	1038.3	1037.5	1036.6
130°	1095.7	1096.3	1097.0	1096.4	1094.7	1093.0	1091.3	1089.5
132.5°	1149.9	1150.1	1150.4	1150.0	1148.9	1147.8	1146.7	1145.6
135°	1231.1	1231.6	1232.1	1232.3	1232.2	1232.0	1231.9	1231.7
137.5°	1310.6	1310.8	1311.1	1310.8	1310.0	1309.3	1308.5	1307.8
140°	1363.0	1364.2	1365.4	1365.1	1363.3	1361.4	1359.6	1357.8
142.5°	1411.8	1412.9	1413.9	1413.8	1412.5	1411.2	1409.9	1408.6
145°	1484.8	1485.3	1485.8	1485.6	1484.6	1483.7	1482.8	1481.9
147.5°	1554.0	1554.2	1554.5	1553.8	1552.1	1550.5	1548.9	1547.2
150°	1596.9	1596.9	1596.9	1596.0	1594.2	1592.4	1590.6	1588.8
152.5°	1636.6	1637.1	1637.7	1637.1	1635.4	1633.7	1632.0	1630.3
155°	1694.6	1695.9	1697.3	1696.8	1694.4	1692.1	1689.7	1687.4
157.5°	1744.5	1745.9	1747.3	1747.1	1745.2	1743.3	1741.4	1739.6
160°	1775.2	1776.9	1778.5	1778.7	1777.4	1776.0	1774.7	1773.3
162.5°	1804.1	1805.8	1807.5	1807.3	1805.1	1803.0	1800.8	1798.7
165°	1840.7	1842.7	1844.7	1844.6	1842.2	1839.9	1837.5	1835.2
167.5°	1870.4	1872.5	1874.5	1874.5	1872.5	1870.4	1868.3	1866.2
170°	1886.6	1889.0	1891.3	1891.3	1889.0	1886.6	1884.3	1881.9
172.5°	1899.3	1901.4	1903.5	1903.4	1901.0	1898.7	1896.3	1894.0
175°	1913.1	1915.1	1917.1	1916.9	1914.6	1912.2	1909.9	1907.6
177.5°	1919.2	1920.8	1922.4	1922.3	1920.4	1918.5	1916.7	1914.8
180°	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6

(END OF REPORT)