

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: P332147

Luminaire Tested: **S123DIW-S560D1535U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332147
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-S560D1535U835-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 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: 7687.3 lumens
Efficiency: N/A
Efficacy: 126.9 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

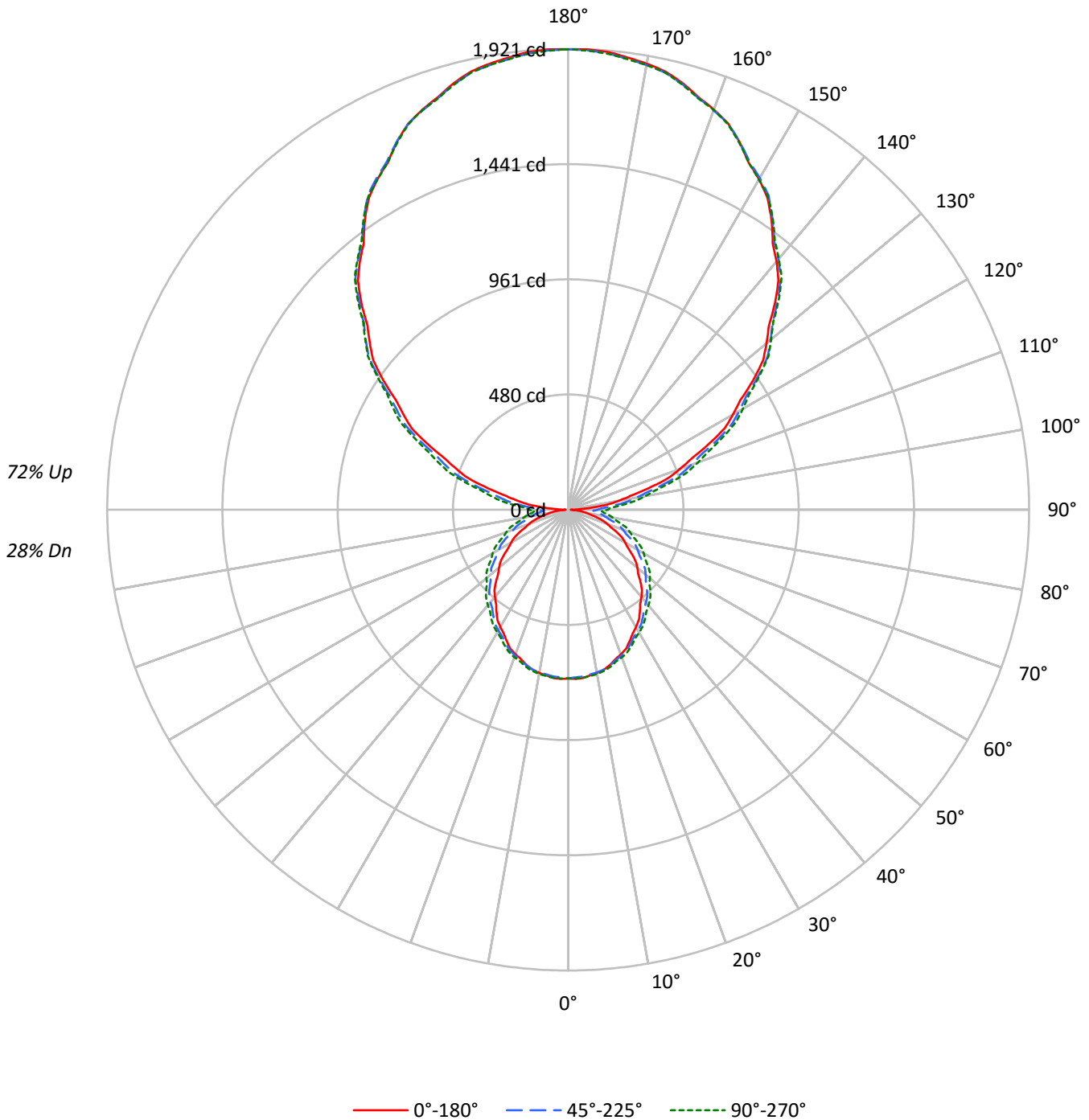
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23
2	84	76	70	65	75	68	63	59	53	50	47	40	37	35	27	25	24	18
3	76	67	60	54	68	60	54	49	47	42	39	35	32	29	24	22	20	15
4	70	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13
5	64	52	44	38	57	47	40	35	37	32	28	28	24	21	19	17	15	11
6	58	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	15	13	12	9
8	50	38	30	25	44	34	28	23	27	22	19	20	17	14	14	12	10	8
9	46	34	27	22	41	31	25	20	25	20	17	19	15	13	13	11	9	7
10	43	31	24	20	39	28	22	18	23	18	15	17	14	12	12	10	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7569	7569	7569
5°	7593	7378	7383
10°	7525	7209	7173
15°	7428	7016	6943
20°	7289	6795	6690
25°	7119	6541	6425
30°	6943	6313	6156
35°	6746	6072	5942
40°	6558	5852	5711
45°	6351	5641	5527
50°	6145	5433	5325
55°	5919	5219	5143
60°	5697	5003	4956
65°	5471	4772	4733
70°	5132	4514	4504
75°	4700	4216	4274
80°	4202	3924	4008
85°	3741	3722	3854



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.7	0.9
10°-20°	190.0	2.5
20°-30°	284.2	3.7
30°-40°	339.4	4.4
40°-50°	355.1	4.6
50°-60°	333.2	4.3
60°-70°	278.3	3.6
70°-80°	199.1	2.6
80°-90°	124.4	1.6
90°-100°	199.6	2.6
100°-110°	429.1	5.6
110°-120°	673.2	8.8
120°-130°	858.3	11.2
130°-140°	950.6	12.4
140°-150°	927.2	12.1
150°-160°	778.9	10.1
160°-170°	518.5	6.7
170°-180°	181.6	2.4
0°-30°	540.9	7.0
0°-40°	880.3	11.5
0°-60°	1568.7	20.4
0°-90°	2170.6	28.2
90°-120°	1301.8	16.9
90°-150°	4037.8	52.5
90°-180°	5517.0	71.8
0°-180°	7687.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	703	703	703	703	703	
5°	704	702	698	704	703	67
15°	670	672	672	679	679	189
25°	605	613	615	625	625	279
35°	521	533	543	554	558	326
45°	426	444	463	478	484	328
55°	325	350	378	398	404	291
65°	224	255	288	310	319	222
75°	122	158	196	220	231	130
85°	38	76	116	141	150	39
90°	12	64	123	154	166	12
95°	97	138	187	216	225	107
105°	345	368	413	434	445	370
115°	645	659	683	702	708	638
125°	940	946	964	973	973	838
135°	1218	1227	1234	1241	1242	939
145°	1477	1479	1484	1488	1486	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°	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2
2.5°	706.3	705.9	705.5	705.0	704.6	703.9	702.8	701.7	700.6	699.5	700.6
5°	704.0	703.6	703.3	703.0	702.6	701.9	700.9	699.9	698.9	697.8	699.2
7.5°	697.1	697.1	697.2	697.3	697.4	696.9	695.9	694.9	693.9	692.9	694.6
10°	691.0	691.3	691.6	692.0	692.3	692.1	691.2	690.4	689.5	688.7	690.4
12.5°	683.6	684.1	684.6	685.0	685.5	685.5	684.9	684.3	683.7	683.1	684.7
15°	670.3	670.8	671.3	671.8	672.3	672.5	672.3	672.1	672.0	671.8	673.5
17.5°	653.4	654.4	655.5	656.5	657.5	658.0	657.9	657.8	657.8	657.7	659.2
20°	641.2	642.2	643.2	644.2	645.2	645.9	646.3	646.6	646.9	647.3	648.8
22.5°	628.3	629.3	630.3	631.4	632.4	633.1	633.6	634.1	634.6	635.0	637.0
25°	605.2	606.9	608.6	610.3	612.0	613.1	613.6	614.1	614.6	615.1	617.3
27.5°	581.9	583.8	585.8	587.7	589.6	591.1	592.2	593.3	594.4	595.5	597.4
30°	565.3	567.5	569.7	572.0	574.2	576.0	577.3	578.7	580.0	581.4	583.5
32.5°	546.9	549.4	551.9	554.4	556.9	559.0	560.8	562.5	564.3	566.1	568.3
35°	520.9	523.6	526.3	529.1	531.8	534.3	536.5	538.7	540.9	543.1	545.7
37.5°	493.3	496.4	499.4	502.5	505.6	508.5	511.2	513.9	516.6	519.4	522.3
40°	474.9	478.0	481.1	484.1	487.2	490.4	493.8	497.2	500.6	504.0	506.9
42.5°	454.7	458.5	462.2	465.9	469.7	473.3	476.9	480.4	484.0	487.5	490.7
45°	425.9	430.0	434.1	438.2	442.2	446.4	450.7	454.9	459.2	463.4	466.7
47.5°	395.7	400.4	405.0	409.6	414.2	419.0	423.9	428.7	433.6	438.5	442.1
50°	376.1	380.9	385.6	390.4	395.2	400.2	405.5	410.8	416.0	421.3	425.2
52.5°	355.3	360.3	365.4	370.4	375.4	380.9	386.7	392.5	398.3	404.2	408.2
55°	324.8	330.4	336.0	341.6	347.3	353.1	359.3	365.4	371.5	377.6	382.2
57.5°	295.1	300.9	306.8	312.6	318.5	324.8	331.5	338.2	344.9	351.6	356.2
60°	274.2	280.4	286.5	292.6	298.7	305.3	312.3	319.3	326.2	333.2	338.0
62.5°	254.6	260.9	267.2	273.4	279.7	286.5	293.9	301.3	308.7	316.1	320.8
65°	224.4	231.1	237.7	244.4	251.0	258.1	265.6	273.0	280.5	288.0	293.1
67.5°	193.8	200.9	207.9	214.9	222.0	229.3	237.0	244.6	252.2	259.8	265.4
70°	172.4	179.7	187.0	194.3	201.6	209.4	217.5	225.7	233.9	242.1	247.5
72.5°	152.7	160.1	167.4	174.7	182.0	189.9	198.3	206.8	215.2	223.7	229.3
75°	121.8	129.8	137.8	145.8	153.8	162.1	170.6	179.1	187.6	196.1	201.7
77.5°	94.8	102.9	111.0	119.0	127.1	135.4	144.0	152.6	161.2	169.8	175.7
80°	75.8	84.2	92.5	100.9	109.2	117.8	126.6	135.5	144.4	153.2	159.0
82.5°	59.3	67.8	76.2	84.7	93.2	101.9	110.9	119.9	128.9	137.9	143.7
85°	37.5	46.0	54.6	63.1	71.6	80.3	89.4	98.4	107.4	116.4	122.2
87.5°	20.7	29.8	39.0	48.1	57.3	66.6	76.2	85.7	95.3	104.8	110.9
90°	11.5	23.2	34.9	46.5	58.2	70.6	83.6	96.7	109.7	122.8	129.9
92.5°	45.8	55.6	65.4	75.2	85.0	95.5	106.5	117.5	128.5	139.6	146.3
95°	97.4	106.4	115.4	124.3	133.3	143.3	154.4	165.4	176.4	187.4	194.0
97.5°	165.5	173.3	181.0	188.7	196.5	205.3	215.2	225.1	235.0	244.9	251.6
100°	212.0	219.4	226.9	234.3	241.8	250.3	259.8	269.3	278.8	288.3	294.3
102.5°	265.6	271.8	277.9	284.0	290.1	298.1	308.0	317.9	327.8	337.7	343.5
105°	345.4	350.2	354.9	359.7	364.4	372.0	382.3	392.7	403.0	413.3	418.1
107.5°	437.4	441.3	445.1	449.0	452.9	458.9	467.1	475.2	483.4	491.5	497.1
110°	494.7	498.4	502.1	505.9	509.6	515.2	522.7	530.2	537.7	545.1	550.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	555.0	557.9	560.8	563.8	566.7	571.5	578.1	584.8	591.5	598.2	604.1
115°	644.7	647.8	650.8	653.9	656.9	661.2	666.6	672.1	677.5	683.0	687.4
117.5°	735.6	737.6	739.5	741.4	743.4	746.8	751.6	756.5	761.4	766.3	770.3
120°	791.7	794.6	797.4	800.3	803.2	806.6	810.5	814.5	818.4	822.3	825.9
122.5°	850.8	852.7	854.7	856.6	858.5	861.7	866.2	870.6	875.1	879.6	882.5
125°	940.2	941.2	942.3	943.3	944.3	946.9	951.2	955.4	959.7	964.0	966.2
127.5°	1023.5	1025.5	1027.4	1029.4	1031.4	1034.0	1037.4	1040.7	1044.1	1047.4	1048.9
130°	1079.0	1081.5	1084.0	1086.5	1089.0	1091.5	1093.9	1096.3	1098.7	1101.1	1103.0
132.5°	1133.9	1136.5	1139.1	1141.8	1144.4	1146.8	1148.7	1150.7	1152.7	1154.7	1156.2
135°	1218.4	1220.3	1222.1	1224.0	1225.8	1227.5	1229.0	1230.6	1232.1	1233.6	1235.4
137.5°	1296.7	1298.2	1299.8	1301.3	1302.9	1304.6	1306.5	1308.4	1310.4	1312.3	1313.6
140°	1350.4	1352.1	1353.7	1355.4	1357.1	1358.3	1359.2	1360.0	1360.9	1361.7	1363.9
142.5°	1399.8	1401.4	1402.9	1404.5	1406.0	1407.1	1407.8	1408.5	1409.2	1409.9	1411.9
145°	1477.0	1477.5	1478.0	1478.5	1479.0	1479.8	1480.8	1481.8	1482.8	1483.8	1484.8
147.5°	1543.8	1545.0	1546.2	1547.5	1548.7	1549.7	1550.7	1551.6	1552.5	1553.5	1553.9
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°	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2
2.5°	701.7	702.8	703.9	704.4	704.2	704.1	704.0	703.8
5°	700.6	701.9	703.3	703.9	703.7	703.5	703.4	703.2
7.5°	696.3	698.0	699.8	700.5	700.3	700.1	699.9	699.7
10°	692.1	693.8	695.5	696.1	695.8	695.5	695.1	694.8
12.5°	686.3	687.8	689.4	690.0	689.7	689.3	689.0	688.7
15°	675.2	676.9	678.6	679.4	679.2	679.0	678.9	678.7
17.5°	660.8	662.3	663.8	664.5	664.2	664.0	663.8	663.5
20°	650.4	651.9	653.4	654.3	654.4	654.6	654.8	654.9
22.5°	638.9	640.9	642.8	643.7	643.6	643.5	643.4	643.3
25°	619.5	621.8	624.0	625.1	625.1	625.1	625.1	625.1
27.5°	599.3	601.2	603.1	604.2	604.3	604.4	604.6	604.7
30°	585.5	587.5	589.6	590.6	590.6	590.6	590.6	590.6
32.5°	570.4	572.6	574.8	576.1	576.5	576.9	577.3	577.7
35°	548.2	550.8	553.3	554.9	555.6	556.3	557.0	557.7
37.5°	525.1	528.0	530.9	532.7	533.2	533.7	534.3	534.8
40°	509.8	512.7	515.6	517.4	518.1	518.8	519.4	520.1
42.5°	493.8	497.0	500.2	502.2	503.2	504.1	505.1	506.0
45°	469.9	473.1	476.4	478.7	480.0	481.4	482.8	484.1
47.5°	445.8	449.4	453.0	455.4	456.4	457.5	458.6	459.6
50°	429.1	433.1	437.0	439.5	440.7	441.9	443.1	444.3
52.5°	412.3	416.3	420.4	423.1	424.6	426.0	427.5	429.0
55°	386.8	391.4	396.0	399.0	400.4	401.7	403.1	404.5
57.5°	360.9	365.5	370.1	373.2	374.8	376.4	378.0	379.6
60°	342.8	347.5	352.3	355.6	357.5	359.3	361.2	363.1
62.5°	325.6	330.4	335.1	338.4	340.1	341.8	343.6	345.3
65°	298.2	303.3	308.5	311.9	313.6	315.3	317.0	318.7
67.5°	271.0	276.6	282.2	285.7	287.1	288.5	290.0	291.4
70°	253.0	258.4	263.9	267.4	269.1	270.8	272.5	274.2
72.5°	234.8	240.4	246.0	249.7	251.4	253.1	254.8	256.5
75°	207.3	213.0	218.6	222.4	224.4	226.5	228.5	230.6
77.5°	181.6	187.5	193.4	197.2	198.8	200.3	201.9	203.5
80°	164.8	170.6	176.4	180.1	181.8	183.5	185.2	186.9
82.5°	149.5	155.2	161.0	164.8	166.5	168.2	169.9	171.6
85°	128.0	133.8	139.6	143.3	145.0	146.7	148.4	150.1
87.5°	116.9	123.0	129.1	133.0	134.8	136.7	138.5	140.3
90°	137.0	144.1	151.3	156.0	158.4	160.8	163.1	165.5
92.5°	153.0	159.7	166.5	170.4	171.6	172.7	173.9	175.1
95°	200.7	207.3	213.9	218.1	219.8	221.5	223.2	224.9
97.5°	258.2	264.8	271.4	275.5	277.1	278.6	280.2	281.8
100°	300.2	306.1	312.1	316.2	318.6	321.0	323.4	325.7
102.5°	349.3	355.1	360.9	364.6	366.2	367.8	369.3	370.9
105°	422.9	427.6	432.4	435.9	438.1	440.3	442.5	444.7
107.5°	502.8	508.4	514.0	517.4	518.5	519.6	520.7	521.8
110°	556.7	562.4	568.2	571.4	572.1	572.8	573.5	574.2



TEST NUMBER: P332147

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	610.0	615.9	621.8	625.4	626.7	628.1	629.5	630.8
115°	691.8	696.2	700.7	703.4	704.4	705.4	706.5	707.5
117.5°	774.3	778.2	782.2	784.4	784.8	785.2	785.6	786.0
120°	829.5	833.1	836.7	838.7	839.2	839.8	840.3	840.8
122.5°	885.4	888.3	891.2	892.8	893.1	893.3	893.6	893.8
125°	968.4	970.7	972.9	973.9	973.8	973.6	973.5	973.3
127.5°	1050.4	1051.9	1053.4	1054.0	1053.6	1053.2	1052.8	1052.4
130°	1104.9	1106.7	1108.6	1108.9	1107.6	1106.3	1105.0	1103.6
132.5°	1157.7	1159.2	1160.7	1161.1	1160.4	1159.8	1159.1	1158.5
135°	1237.1	1238.8	1240.5	1241.5	1241.7	1241.9	1242.0	1242.2
137.5°	1314.9	1316.1	1317.4	1317.9	1317.4	1317.0	1316.6	1316.2
140°	1366.2	1368.4	1370.6	1371.0	1369.5	1368.0	1366.5	1365.0
142.5°	1413.8	1415.8	1417.7	1418.2	1417.3	1416.3	1415.3	1414.4
145°	1485.9	1486.9	1487.9	1488.1	1487.5	1486.8	1486.1	1485.5
147.5°	1554.3	1554.7	1555.1	1554.6	1553.2	1551.8	1550.4	1549.0
150°	1596.9	1596.9	1596.9	1596.1	1594.4	1592.7	1591.1	1589.4
152.5°	1636.6	1637.1	1637.7	1637.1	1635.4	1633.7	1632.1	1630.4
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)