

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: P332428-935

Luminaire Tested: **S123RDIW-S560D1535U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332428-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S560D1535U935-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7125.4 lumens
Efficiency: N/A
Efficacy: 117.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.23
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

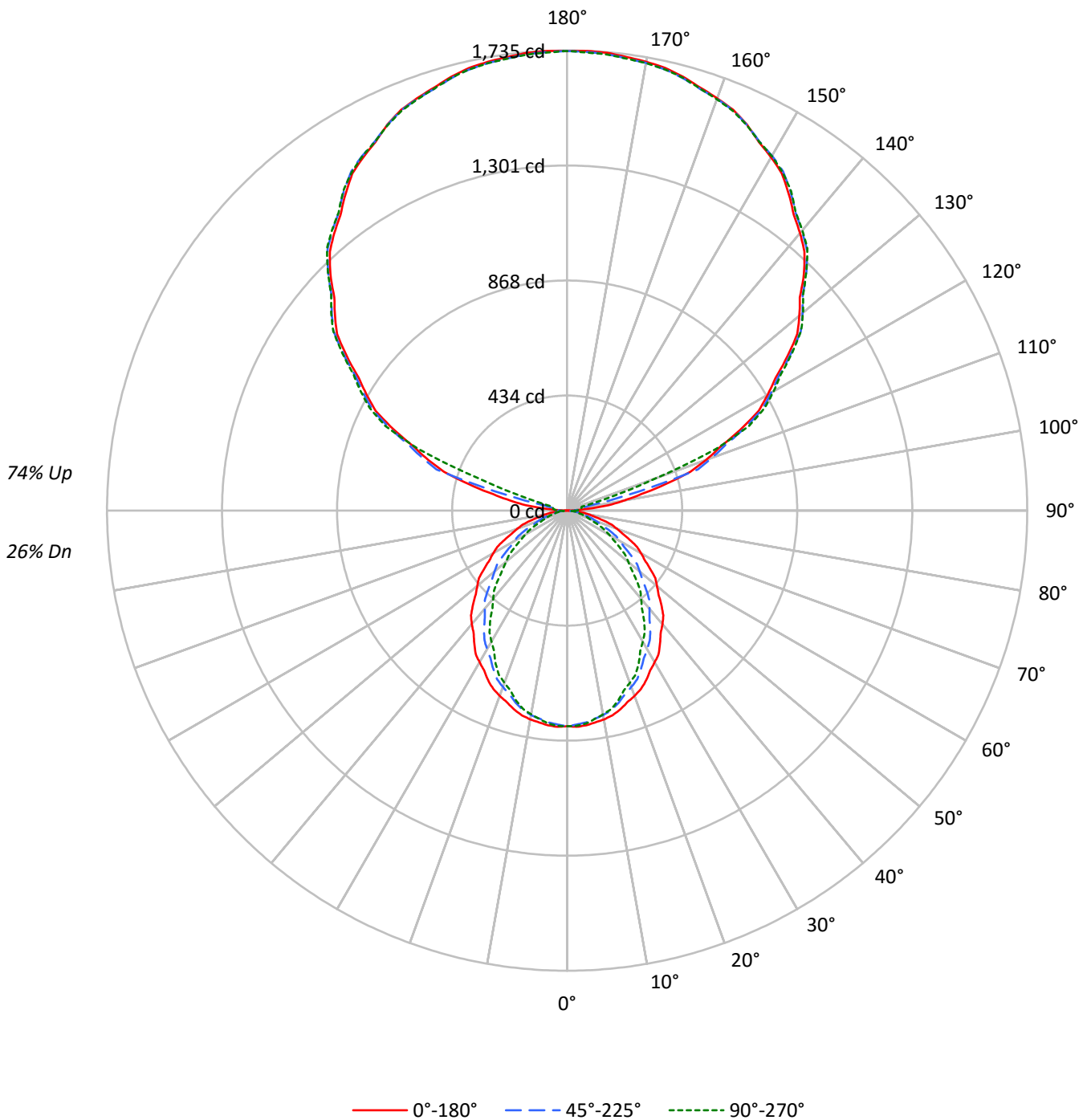
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	93	88	85	81	82	79	76	73	61	59	57	45	44	43	30	30	29	22
2	84	77	72	67	75	69	64	60	54	51	48	40	38	36	27	26	25	19
3	77	68	61	56	68	61	55	50	48	44	40	35	33	31	24	22	21	16
4	70	60	53	47	63	54	48	43	42	38	34	31	29	26	21	20	18	14
5	65	54	46	40	57	48	42	37	38	33	30	28	25	23	19	17	16	12
6	59	48	40	35	53	43	36	32	34	29	26	25	22	20	18	16	14	11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	13	10
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	15	13	11	9
9	47	36	28	24	42	32	26	22	26	21	18	19	16	14	14	12	10	8
10	44	32	26	21	39	29	23	19	23	19	16	18	15	13	13	11	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8753	8753	8753
5°	8787	8666	8715
10°	8737	8557	8528
15°	8643	8357	8269
20°	8514	8107	7918
25°	8381	7826	7574
30°	8206	7501	7091
35°	8025	7176	6646
40°	7859	6794	6097
45°	7640	6416	5602
50°	7400	5987	5047
55°	7156	5495	4530
60°	6928	4969	3961
65°	6635	4401	3393
70°	6266	3695	2738
75°	5731	2907	2578
80°	5114	2579	2368
85°	4323	2272	2112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.4	1.1
10°-20°	212.5	3.0
20°-30°	305.9	4.3
30°-40°	344.6	4.8
40°-50°	329.7	4.6
50°-60°	270.0	3.8
60°-70°	182.2	2.6
70°-80°	91.6	1.3
80°-90°	29.1	0.4
90°-100°	63.0	0.9
100°-110°	300.2	4.2
110°-120°	721.1	10.1
120°-130°	918.3	12.9
130°-140°	981.1	13.8
140°-150°	917.5	12.9
150°-160°	740.1	10.4
160°-170°	477.6	6.7
170°-180°	164.6	2.3
0°-30°	594.8	8.3
0°-40°	939.4	13.2
0°-60°	1539.1	21.6
0°-90°	1842.0	25.9
90°-120°	1084.3	15.2
90°-150°	3901.2	54.7
90°-180°	5283.0	74.1
0°-180°	7125.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	813	813	813	813	813	
5°	813	810	802	808	807	77
15°	776	768	750	747	742	218
25°	706	688	659	645	638	324
35°	611	586	546	519	506	382
45°	502	471	422	385	368	387
55°	381	348	293	256	241	342
65°	260	223	173	142	133	258
75°	138	106	70	64	62	147
85°	35	21	18	17	17	39
90°	1	14	31	36	39	5
95°	78	29	40	48	49	97
105°	384	390	282	67	57	407
115°	720	728	739	751	757	710
125°	1014	1024	1030	1032	1035	905
135°	1263	1270	1276	1279	1276	972
145°	1457	1466	1469	1471	1471	912
155°	1605	1603	1604	1610	1603	739
165°	1693	1689	1688	1697	1689	478
175°	1732	1726	1727	1735	1726	165
180°	1732	1732	1732	1732	1732	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
2.5°	815.9	815.4	814.9	814.4	814.0	813.0	811.7	810.2	808.8	807.4	808.7
5°	813.2	812.5	811.8	811.1	810.3	809.1	807.3	805.6	803.7	802.0	803.3
7.5°	805.7	804.9	804.1	803.3	802.5	801.0	798.7	796.4	794.1	791.9	792.6
10°	799.4	798.3	797.3	796.3	795.3	793.4	790.8	788.2	785.5	782.9	783.0
12.5°	790.4	789.3	788.1	787.0	785.8	783.7	780.4	777.2	774.0	770.8	770.7
15°	775.6	774.0	772.4	770.8	769.2	766.3	762.2	758.1	754.0	749.9	749.2
17.5°	757.0	755.2	753.3	751.4	749.5	746.0	740.7	735.6	730.3	725.1	723.6
20°	743.3	741.0	738.7	736.2	733.9	730.0	724.4	718.8	713.3	707.7	705.8
22.5°	728.0	725.3	722.6	719.9	717.2	712.9	707.0	701.0	695.2	689.2	686.8
25°	705.7	702.1	698.4	694.7	691.0	685.9	679.1	672.4	665.6	658.9	655.8
27.5°	678.6	674.6	670.5	666.5	662.5	656.7	649.2	641.7	634.2	626.7	622.4
30°	660.2	655.8	651.4	647.0	642.7	636.3	628.1	619.9	611.7	603.5	598.5
32.5°	641.7	636.8	631.8	626.8	621.8	615.0	606.3	597.6	588.9	580.2	574.8
35°	610.7	605.5	600.2	595.0	589.6	582.5	573.3	564.3	555.2	546.1	539.8
37.5°	579.4	573.5	567.7	561.7	555.9	548.1	538.4	528.7	519.0	509.3	502.1
40°	559.3	552.8	546.4	539.9	533.5	525.0	514.7	504.3	493.9	483.5	475.8
42.5°	536.6	530.1	523.7	517.3	510.8	502.2	491.5	480.7	469.9	459.2	450.8
45°	501.9	495.3	488.7	482.2	475.5	466.6	455.3	444.0	432.7	421.5	413.1
47.5°	467.2	459.9	452.7	445.5	438.2	429.0	417.7	406.4	395.1	383.8	374.8
50°	441.9	435.0	428.1	421.2	414.3	404.9	393.0	381.3	369.4	357.5	348.4
52.5°	419.2	411.7	404.2	396.7	389.3	379.7	367.9	356.2	344.4	332.7	323.2
55°	381.3	374.0	366.9	359.6	352.5	342.7	330.2	317.8	305.3	292.8	284.3
57.5°	346.1	338.3	330.5	322.6	314.8	304.6	292.1	279.7	267.1	254.6	246.6
60°	321.8	313.8	305.7	297.6	289.6	279.5	267.3	255.2	243.0	230.8	222.9
62.5°	297.6	289.6	281.5	273.4	265.4	255.2	243.1	230.9	218.7	206.6	199.1
65°	260.5	252.4	244.4	236.3	228.3	218.5	207.1	195.7	184.3	172.8	165.7
67.5°	223.4	215.3	207.2	199.0	190.9	181.3	170.3	159.4	148.4	137.4	132.1
70°	199.1	191.2	183.4	175.5	167.6	158.4	148.2	137.9	127.7	117.4	112.3
72.5°	174.9	167.1	159.3	151.5	143.7	135.2	125.9	116.5	107.2	97.9	93.7
75°	137.8	130.8	123.8	116.8	109.7	102.1	94.1	86.0	78.0	69.9	68.4
77.5°	104.1	97.7	91.4	85.0	78.6	72.8	67.7	62.5	57.3	52.1	51.3
80°	82.5	76.5	70.4	64.4	58.4	53.9	50.8	47.7	44.6	41.6	41.1
82.5°	61.9	56.7	51.5	46.3	41.1	37.8	36.3	35.0	33.5	32.0	31.6
85°	35.0	31.8	28.5	25.3	22.0	20.2	19.8	19.4	18.9	18.4	18.2
87.5°	12.9	12.2	11.5	10.8	10.1	10.1	10.8	11.5	12.3	13.0	13.2
90°	1.3	4.1	7.0	9.9	12.7	16.0	19.7	23.4	27.2	30.9	32.0
92.5°	23.9	23.2	22.3	21.5	20.8	21.7	24.5	27.4	30.1	33.0	34.8
95°	78.5	66.8	55.1	43.3	31.6	27.3	30.5	33.6	36.8	39.9	41.9
97.5°	157.8	152.6	147.3	142.0	136.7	123.8	103.2	82.7	62.1	41.4	43.7
100°	217.6	223.3	228.9	234.7	240.4	220.9	176.3	131.7	87.1	42.4	44.8
102.5°	285.5	289.6	293.8	297.8	302.0	279.7	230.9	182.2	133.5	84.7	77.6
105°	383.6	386.8	389.9	393.0	396.1	384.9	359.1	333.4	307.6	281.9	231.3
107.5°	487.1	489.6	492.1	494.6	497.1	500.4	504.5	508.6	512.6	516.7	479.6
110°	556.0	558.4	560.6	562.9	565.2	567.9	571.1	574.2	577.4	580.5	571.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	622.0	624.1	626.1	628.2	630.2	632.8	635.9	639.1	642.2	645.4	645.6
115°	719.5	721.3	723.0	724.7	726.4	728.6	731.2	733.7	736.2	738.8	741.7
117.5°	814.0	816.1	818.2	820.4	822.5	824.2	825.5	826.8	828.1	829.5	831.7
120°	872.7	875.3	877.9	880.5	883.0	884.8	885.5	886.4	887.3	888.1	890.4
122.5°	932.5	934.5	936.7	938.7	940.9	942.5	943.6	944.7	945.7	946.8	948.5
125°	1014.3	1016.6	1018.9	1021.1	1023.5	1025.2	1026.3	1027.4	1028.6	1029.8	1030.4
127.5°	1093.6	1095.9	1098.2	1100.4	1102.8	1104.6	1106.0	1107.3	1108.7	1110.1	1110.9
130°	1143.0	1145.3	1147.6	1149.9	1152.2	1153.9	1155.0	1156.2	1157.4	1158.5	1159.6
132.5°	1190.4	1192.7	1195.0	1197.2	1199.5	1201.2	1202.0	1203.0	1203.9	1204.8	1205.9
135°	1262.7	1264.5	1266.2	1267.9	1269.6	1271.0	1272.1	1273.3	1274.5	1275.6	1276.4
137.5°	1324.5	1326.7	1328.9	1331.0	1333.2	1334.6	1335.2	1335.8	1336.5	1337.1	1338.5
140°	1365.7	1367.4	1369.2	1370.9	1372.6	1373.8	1374.7	1375.5	1376.4	1377.3	1378.5
142.5°	1403.8	1405.5	1407.2	1408.9	1410.7	1412.0	1412.8	1413.7	1414.5	1415.4	1416.3
145°	1457.1	1459.1	1461.1	1463.1	1465.1	1466.4	1467.0	1467.5	1468.1	1468.7	1469.2
147.5°	1507.3	1508.6	1509.9	1511.2	1512.5	1513.5	1514.1	1514.7	1515.2	1515.8	1516.4
150°	1538.2	1539.0	1539.9	1540.8	1541.6	1542.3	1542.9	1543.5	1544.0	1544.6	1545.2
152.5°	1566.0	1566.4	1566.8	1567.2	1567.6	1568.0	1568.3	1568.7	1569.0	1569.3	1570.4
155°	1605.1	1604.6	1604.0	1603.4	1602.8	1602.7	1603.0	1603.3	1603.5	1603.8	1605.2
157.5°	1635.5	1635.5	1635.4	1635.3	1635.3	1635.1	1634.8	1634.5	1634.3	1633.9	1635.6
160°	1654.1	1653.7	1653.5	1653.2	1652.9	1652.6	1652.3	1652.0	1651.7	1651.5	1653.2
162.5°	1671.5	1670.8	1670.1	1669.3	1668.5	1668.0	1667.8	1667.5	1667.2	1666.9	1668.9
165°	1692.6	1691.8	1690.9	1690.1	1689.2	1688.7	1688.3	1688.1	1687.8	1687.5	1689.8
167.5°	1709.1	1708.0	1706.8	1705.7	1704.5	1704.0	1704.0	1704.0	1704.0	1704.0	1706.2
170°	1718.4	1717.3	1716.1	1714.9	1713.8	1713.2	1713.2	1713.2	1713.2	1713.2	1715.5
172.5°	1724.6	1723.2	1721.8	1720.5	1719.1	1718.5	1718.7	1719.0	1719.2	1719.4	1721.7
175°	1732.5	1731.1	1729.7	1728.3	1726.8	1726.2	1726.6	1726.8	1727.1	1727.4	1729.4
177.5°	1734.6	1733.5	1732.3	1731.2	1730.0	1729.6	1729.8	1730.0	1730.3	1730.5	1732.3
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
2.5°	810.0	811.3	812.6	813.1	812.9	812.6	812.4	812.2
5°	804.6	806.0	807.3	807.8	807.5	807.2	806.9	806.6
7.5°	793.3	794.0	794.8	794.9	794.4	793.9	793.4	792.9
10°	783.2	783.3	783.4	783.2	782.5	781.7	781.0	780.2
12.5°	770.6	770.5	770.4	769.9	769.0	768.2	767.4	766.5
15°	748.5	747.7	747.0	746.1	745.0	744.1	743.0	742.0
17.5°	722.0	720.5	718.8	717.4	715.8	714.3	712.7	711.3
20°	703.9	702.0	700.1	698.3	696.5	694.7	692.9	691.2
22.5°	684.5	682.1	679.8	677.7	676.1	674.4	672.8	671.1
25°	652.7	649.6	646.6	644.2	642.7	641.0	639.4	637.7
27.5°	618.1	613.9	609.6	606.2	603.7	601.3	598.8	596.3
30°	593.5	588.5	583.6	579.9	577.6	575.2	572.8	570.5
32.5°	569.4	563.9	558.4	554.5	552.1	549.6	547.1	544.7
35°	533.5	527.2	520.9	516.4	513.8	511.2	508.5	505.8
37.5°	495.0	487.8	480.7	475.5	472.3	469.0	465.7	462.4
40°	468.2	460.5	453.0	447.5	444.1	440.7	437.4	433.9
42.5°	442.6	434.2	425.9	420.2	417.2	414.1	411.1	408.1
45°	404.8	396.4	388.1	382.1	378.6	375.1	371.5	368.0
47.5°	365.7	356.6	347.5	341.4	338.3	335.1	332.0	328.8
50°	339.3	330.2	321.2	314.9	311.5	308.2	304.8	301.4
52.5°	313.8	304.4	294.9	288.7	285.7	282.7	279.7	276.6
55°	275.9	267.3	258.8	253.1	250.2	247.3	244.4	241.4
57.5°	238.5	230.5	222.5	217.2	214.7	212.2	209.7	207.2
60°	215.0	207.1	199.1	194.0	191.5	189.0	186.5	184.0
62.5°	191.7	184.3	176.8	171.8	169.2	166.5	163.9	161.4
65°	158.4	151.3	144.0	139.7	138.1	136.5	134.8	133.2
67.5°	126.7	121.3	116.0	112.4	110.7	109.0	107.3	105.6
70°	107.1	102.0	96.9	93.5	91.9	90.3	88.7	87.0
72.5°	89.5	85.3	81.1	78.7	78.0	77.3	76.6	75.9
75°	67.0	65.5	64.1	63.2	62.9	62.6	62.3	62.0
77.5°	50.5	49.8	48.9	48.4	48.1	47.8	47.5	47.2
80°	40.6	40.2	39.8	39.4	39.2	38.8	38.6	38.2
82.5°	31.2	30.7	30.3	30.0	30.0	30.0	29.9	29.8
85°	17.9	17.6	17.3	17.1	17.1	17.1	17.1	17.1
87.5°	13.3	13.3	13.5	13.5	13.5	13.5	13.5	13.5
90°	33.1	34.4	35.5	36.3	36.9	37.5	38.1	38.6
92.5°	36.6	38.5	40.3	41.3	41.7	42.0	42.4	42.7
95°	43.9	45.9	47.9	48.9	48.9	48.9	48.9	48.9
97.5°	46.1	48.3	50.6	51.9	52.2	52.4	52.8	53.0
100°	47.0	49.3	51.7	53.0	53.2	53.5	53.8	54.1
102.5°	70.5	63.5	56.3	53.0	53.6	54.1	54.6	55.1
105°	180.6	130.0	79.4	54.3	54.9	55.5	56.1	56.7
107.5°	442.4	405.3	368.2	330.5	292.4	254.2	216.0	177.9
110°	561.6	552.2	542.8	517.5	476.6	435.8	394.9	354.0



TEST NUMBER: P332428-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	645.8	645.9	646.1	641.9	633.2	624.6	616.0	607.3
115°	744.6	747.4	750.3	752.3	753.5	754.6	755.7	756.9
117.5°	834.1	836.3	838.6	839.9	840.1	840.3	840.6	840.8
120°	892.8	895.0	897.3	898.5	898.5	898.5	898.5	898.5
122.5°	950.0	951.7	953.3	954.2	954.4	954.6	954.8	955.1
125°	1030.9	1031.5	1032.0	1032.6	1033.2	1033.7	1034.3	1034.9
127.5°	1111.9	1112.8	1113.7	1113.9	1113.4	1112.8	1112.2	1111.6
130°	1160.7	1161.9	1163.0	1163.3	1162.8	1162.2	1161.6	1161.1
132.5°	1207.1	1208.2	1209.4	1209.5	1208.8	1208.0	1207.1	1206.3
135°	1277.3	1278.2	1279.0	1279.0	1278.2	1277.3	1276.4	1275.6
137.5°	1339.9	1341.3	1342.6	1343.0	1342.5	1341.9	1341.3	1340.7
140°	1379.6	1380.7	1381.8	1382.2	1381.6	1381.0	1380.4	1379.8
142.5°	1417.2	1418.2	1419.0	1419.1	1418.3	1417.5	1416.7	1415.9
145°	1469.8	1470.4	1470.9	1471.3	1471.3	1471.3	1471.3	1471.3
147.5°	1516.9	1517.5	1518.1	1517.7	1516.4	1515.1	1513.7	1512.4
150°	1545.8	1546.4	1546.9	1546.8	1545.9	1545.1	1544.2	1543.3
152.5°	1571.4	1572.4	1573.5	1573.3	1572.0	1570.6	1569.3	1568.1
155°	1606.7	1608.1	1609.6	1609.4	1607.7	1605.9	1604.2	1602.6
157.5°	1637.4	1639.1	1640.8	1640.5	1638.3	1636.1	1633.8	1631.6
160°	1654.9	1656.6	1658.3	1658.2	1656.1	1654.2	1652.2	1650.2
162.5°	1670.8	1672.8	1674.6	1674.7	1673.0	1671.2	1669.5	1667.7
165°	1692.0	1694.4	1696.7	1696.8	1694.8	1692.8	1690.7	1688.8
167.5°	1708.6	1710.8	1713.1	1713.1	1710.8	1708.6	1706.2	1704.0
170°	1717.8	1720.1	1722.4	1722.4	1720.1	1717.8	1715.5	1713.2
172.5°	1724.0	1726.3	1728.5	1728.5	1726.0	1723.5	1720.9	1718.4
175°	1731.4	1733.4	1735.4	1735.3	1732.9	1730.7	1728.4	1726.1
177.5°	1734.1	1735.9	1737.8	1737.6	1735.3	1733.0	1730.7	1728.5
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5

(END OF REPORT)