

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: P332148-935

Luminaire Tested: **S123DIW-S560D1535U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332148-935
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: S123DIW-S560D1535U935-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7284.3 lumens
Efficiency: N/A
Efficacy: 120.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

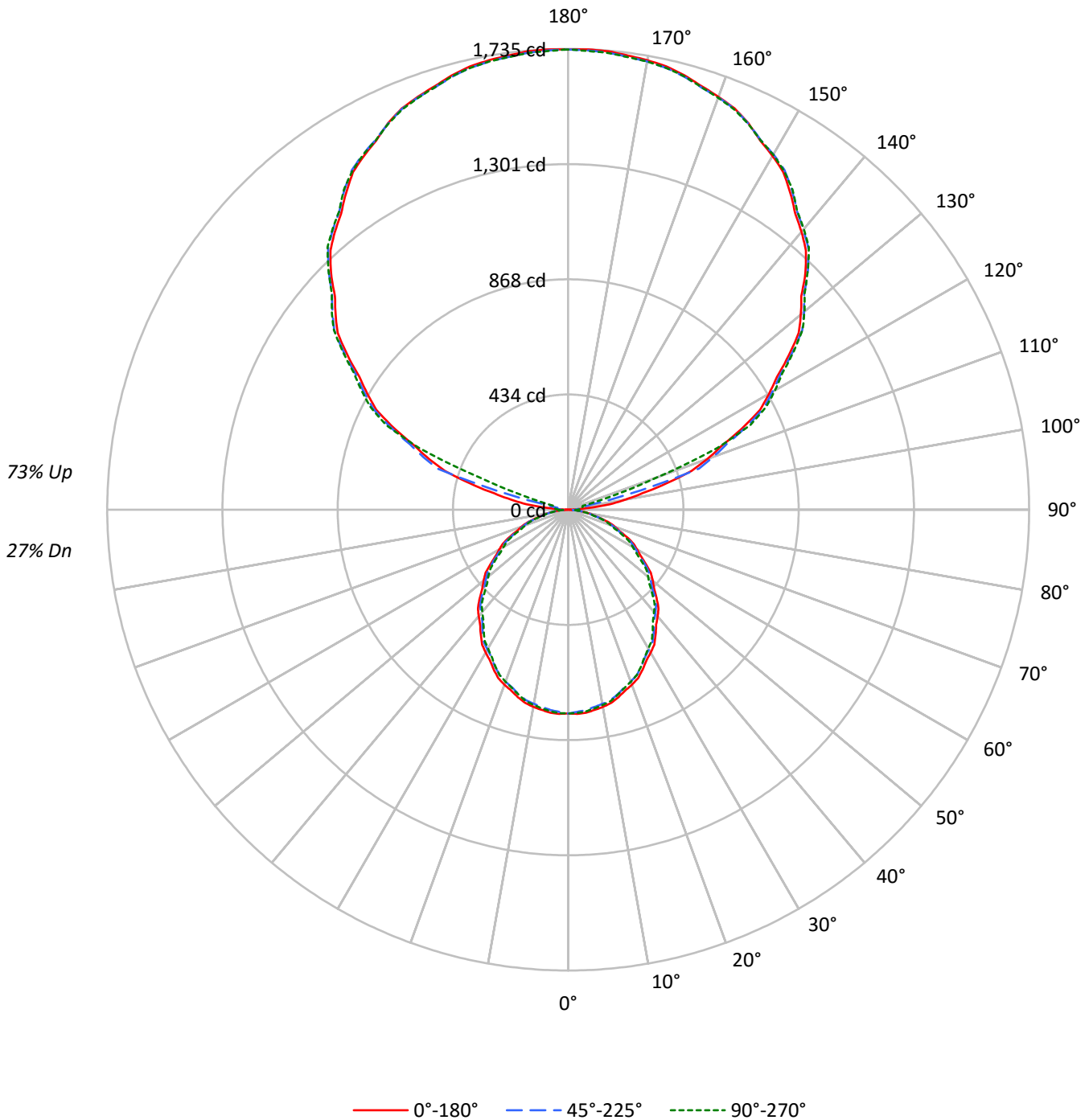
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35	27
1	93	88	85	81	83	79	76	73	62	60	58	46	45	43	31	30	30	23
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25	19
3	77	68	61	55	68	61	55	50	48	44	40	36	33	30	24	23	21	16
4	70	60	52	46	62	54	47	42	42	38	34	32	29	26	22	20	18	14
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16	12
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14	11
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12	9
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11	8
9	47	35	28	23	42	32	25	21	25	21	17	19	16	14	14	11	10	8
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8257	8257	8257
5°	8295	8182	8238
10°	8240	8110	8160
15°	8143	8018	8033
20°	8031	7887	7895
25°	7880	7732	7715
30°	7713	7558	7501
35°	7540	7376	7281
40°	7359	7173	7062
45°	7159	6987	6817
50°	6958	6759	6571
55°	6696	6523	6324
60°	6433	6247	6047
65°	6199	5947	5761
70°	5854	5605	5353
75°	5348	5157	4937
80°	4823	4624	4581
85°	4236	4076	3915



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.3	1.0
10°-20°	204.0	2.8
20°-30°	301.4	4.1
30°-40°	352.0	4.8
40°-50°	353.9	4.9
50°-60°	310.9	4.3
60°-70°	231.6	3.2
70°-80°	132.0	1.8
80°-90°	42.7	0.6
90°-100°	63.0	0.9
100°-110°	300.2	4.1
110°-120°	721.1	9.9
120°-130°	918.3	12.6
130°-140°	981.1	13.5
140°-150°	917.5	12.6
150°-160°	740.1	10.2
160°-170°	477.6	6.6
170°-180°	164.6	2.3
0°-30°	577.6	7.9
0°-40°	929.7	12.8
0°-60°	1594.5	21.9
0°-90°	2000.8	27.5
90°-120°	1084.3	14.9
90°-150°	3901.2	53.6
90°-180°	5283.0	72.5
0°-180°	7284.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	767	767	767	767	767	
5°	768	764	757	763	762	73
15°	731	728	720	724	721	206
25°	664	659	651	651	650	305
35°	574	570	561	557	554	359
45°	470	467	459	451	448	363
55°	357	356	348	340	337	319
65°	243	240	234	228	226	240
75°	129	126	124	121	119	138
85°	34	33	33	32	32	38
90°	1	14	31	36	39	6
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°	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1
2.5°	769.6	769.2	768.8	768.3	767.8	766.9	765.6	764.3	763.1	761.8	762.9
5°	767.7	767.0	766.2	765.5	764.7	763.6	762.0	760.3	758.8	757.2	758.6
7.5°	760.2	759.5	758.7	758.0	757.2	756.0	754.4	752.7	751.1	749.4	750.7
10°	753.9	753.1	752.4	751.7	751.0	749.6	747.7	745.8	743.9	742.0	743.3
12.5°	745.5	744.8	744.2	743.6	743.0	741.8	739.9	738.1	736.4	734.6	735.6
15°	730.7	730.2	729.6	729.0	728.4	727.2	725.3	723.4	721.4	719.5	720.7
17.5°	713.8	713.0	712.2	711.4	710.7	709.4	707.5	705.6	703.7	701.7	702.6
20°	701.1	700.3	699.3	698.4	697.6	696.2	694.3	692.4	690.4	688.5	689.1
22.5°	686.8	686.0	685.1	684.2	683.3	681.9	680.0	678.1	676.2	674.3	674.8
25°	663.5	662.6	661.8	660.9	660.0	658.6	656.7	654.8	652.9	651.0	651.1
27.5°	638.6	637.7	636.9	636.0	635.2	633.7	631.6	629.6	627.6	625.5	625.6
30°	620.6	619.9	619.1	618.5	617.7	616.3	614.2	612.2	610.2	608.1	608.1
32.5°	602.7	601.8	600.7	599.8	598.8	597.5	596.0	594.3	592.8	591.2	590.4
35°	573.8	572.9	572.0	571.2	570.3	568.9	567.0	565.1	563.2	561.3	560.4
37.5°	544.2	543.1	542.0	540.9	539.8	538.3	536.3	534.4	532.4	530.5	529.5
40°	523.7	522.8	521.9	521.1	520.1	518.7	516.6	514.6	512.6	510.5	509.3
42.5°	503.1	502.1	501.1	500.1	499.1	497.6	495.5	493.5	491.5	489.4	488.2
45°	470.3	469.7	469.1	468.5	467.9	466.7	464.8	462.9	461.0	459.0	457.3
47.5°	437.6	436.8	436.0	435.1	434.3	432.9	431.2	429.4	427.6	425.8	424.0
50°	415.5	414.7	414.1	413.3	412.6	411.3	409.3	407.4	405.5	403.6	402.0
52.5°	392.3	391.8	391.3	390.8	390.3	389.0	387.0	385.0	383.0	381.0	379.6
55°	356.8	356.6	356.5	356.4	356.2	355.2	353.3	351.4	349.5	347.6	345.9
57.5°	323.0	322.5	322.0	321.6	321.1	320.0	318.5	317.0	315.5	313.9	312.5
60°	298.8	298.6	298.5	298.3	298.2	297.2	295.5	293.7	292.0	290.2	288.9
62.5°	277.2	276.7	276.4	276.0	275.6	274.6	272.8	271.0	269.2	267.5	266.2
65°	243.4	242.6	241.9	241.2	240.5	239.4	237.9	236.4	235.0	233.5	232.3
67.5°	207.6	207.0	206.3	205.7	205.0	204.1	203.0	201.9	200.8	199.8	198.7
70°	186.0	185.1	184.3	183.4	182.4	181.6	180.7	179.9	178.9	178.1	177.0
72.5°	163.3	162.6	162.0	161.4	160.7	159.9	158.9	157.9	156.9	155.9	155.0
75°	128.6	128.0	127.4	126.8	126.3	125.8	125.3	124.8	124.4	124.0	123.3
77.5°	97.9	97.6	97.2	96.9	96.6	96.2	95.7	95.1	94.5	94.0	93.6
80°	77.8	77.4	77.0	76.5	76.0	75.7	75.4	75.1	74.8	74.6	74.4
82.5°	58.3	58.2	58.1	58.0	57.9	57.9	57.9	57.8	57.7	57.7	57.3
85°	34.3	34.0	33.8	33.4	33.1	33.0	33.0	33.0	33.0	33.0	32.7
87.5°	13.9	14.2	14.4	14.6	14.9	15.2	15.9	16.5	17.1	17.8	17.9
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°	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1
2.5°	764.1	765.3	766.5	767.0	766.9	766.7	766.6	766.5
5°	760.1	761.6	763.0	763.6	763.3	763.0	762.8	762.4
7.5°	752.0	753.3	754.7	755.2	755.0	754.8	754.7	754.5
10°	744.6	746.0	747.3	747.8	747.5	747.2	746.9	746.6
12.5°	736.5	737.5	738.5	738.8	738.7	738.5	738.3	738.1
15°	721.9	723.1	724.3	724.4	723.5	722.6	721.8	720.9
17.5°	703.4	704.2	705.1	705.2	705.0	704.6	704.3	704.0
20°	689.7	690.3	690.9	691.0	690.5	690.1	689.7	689.2
22.5°	675.3	675.7	676.2	676.1	675.6	675.0	674.5	673.9
25°	651.3	651.4	651.5	651.4	651.0	650.6	650.1	649.6
27.5°	625.8	625.9	625.9	625.8	625.2	624.7	624.1	623.5
30°	608.1	608.1	608.1	607.6	606.6	605.5	604.5	603.5
32.5°	589.6	588.8	587.9	587.2	586.7	586.2	585.6	585.0
35°	559.5	558.6	557.8	557.0	556.2	555.5	554.7	554.1
37.5°	528.4	527.4	526.3	525.6	525.1	524.6	524.2	523.7
40°	508.2	507.0	505.8	504.9	504.3	503.8	503.2	502.6
42.5°	487.1	485.9	484.7	483.8	483.2	482.7	482.1	481.5
45°	455.6	453.7	452.0	450.7	450.0	449.3	448.6	447.8
47.5°	422.3	420.6	418.9	417.7	417.1	416.4	415.8	415.1
50°	400.5	398.8	397.2	396.0	395.0	394.2	393.3	392.4
52.5°	378.2	376.9	375.5	374.3	373.4	372.6	371.7	370.8
55°	344.3	342.8	341.1	339.9	339.2	338.5	337.8	337.0
57.5°	311.1	309.6	308.2	307.0	306.2	305.4	304.5	303.7
60°	287.6	286.3	284.9	283.9	283.2	282.4	281.7	280.9
62.5°	264.8	263.6	262.3	261.3	260.8	260.4	259.8	259.3
65°	231.1	230.0	228.8	228.0	227.6	227.1	226.7	226.2
67.5°	197.7	196.7	195.6	194.8	194.2	193.6	193.0	192.3
70°	176.0	175.0	174.0	173.1	172.4	171.6	170.9	170.1
72.5°	154.1	153.2	152.3	151.6	151.3	150.8	150.5	150.1
75°	122.5	121.8	121.1	120.5	120.0	119.6	119.2	118.7
77.5°	93.1	92.6	92.0	91.8	91.8	91.8	91.8	91.8
80°	74.2	74.0	74.0	73.9	73.9	73.9	73.9	73.9
82.5°	57.1	56.8	56.6	56.4	56.3	56.1	56.1	56.0
85°	32.4	32.1	31.8	31.7	31.7	31.7	31.7	31.7
87.5°	18.0	18.1	18.3	18.3	18.4	18.6	18.7	18.8
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: P332148-935

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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)