

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: P332147-927

Luminaire Tested: **S123DIW-S560D1535U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332147-927  
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-S560D1535U927-4F0-1E-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: 6089.8 lumens  
Efficiency: N/A  
Efficacy: 100.5 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

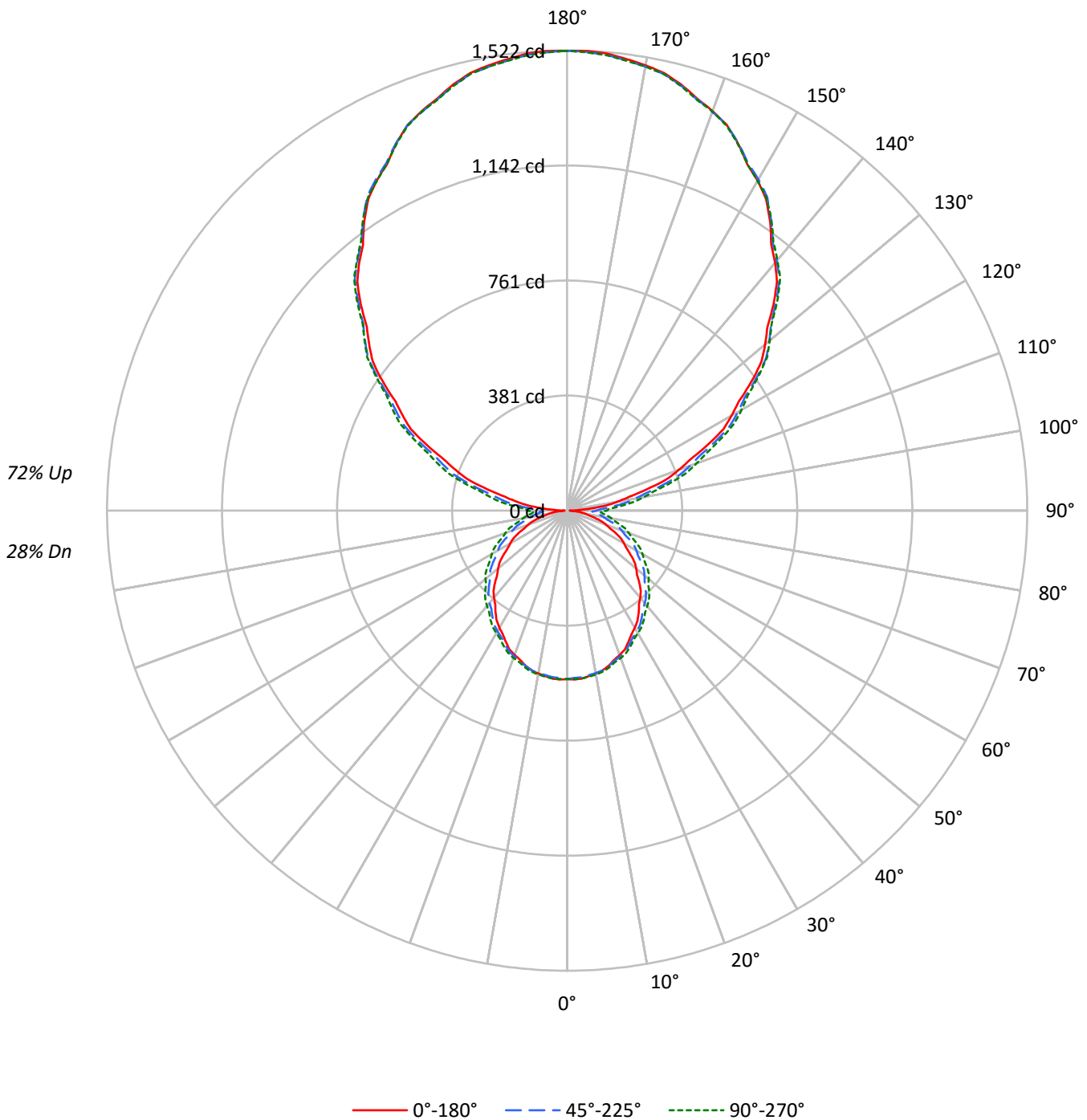
Input Watts (W): 60.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	5997	5997	5997
5°	6015	5845	5849
10°	5961	5711	5682
15°	5884	5558	5501
20°	5774	5383	5300
25°	5639	5182	5090
30°	5500	5002	4877
35°	5344	4810	4707
40°	5195	4636	4524
45°	5031	4469	4378
50°	4868	4304	4219
55°	4689	4134	4074
60°	4513	3964	3925
65°	4335	3780	3750
70°	4066	3576	3568
75°	3724	3338	3386
80°	3326	3109	3176
85°	2963	2948	3053



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.8	0.9
10°-20°	150.5	2.5
20°-30°	225.2	3.7
30°-40°	268.9	4.4
40°-50°	281.3	4.6
50°-60°	264.0	4.3
60°-70°	220.5	3.6
70°-80°	157.8	2.6
80°-90°	98.6	1.6
90°-100°	158.1	2.6
100°-110°	339.9	5.6
110°-120°	533.3	8.8
120°-130°	679.9	11.2
130°-140°	753.0	12.4
140°-150°	734.5	12.1
150°-160°	617.0	10.1
160°-170°	410.7	6.7
170°-180°	143.8	2.4
0°-30°	428.5	7.0
0°-40°	697.4	11.5
0°-60°	1242.7	20.4
0°-90°	1719.5	28.2
90°-120°	1031.3	16.9
90°-150°	3198.7	52.5
90°-180°	4370.0	71.8
0°-180°	6089.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	557	557	557	557	557	
5°	558	556	553	557	557	53
15°	531	533	532	538	538	149
25°	479	485	487	495	495	221
35°	413	422	430	439	442	258
45°	337	352	367	378	384	260
55°	257	277	299	315	320	230
65°	178	202	228	246	252	176
75°	96	125	155	175	183	103
85°	30	60	92	112	119	31
90°	9	51	97	122	131	10
95°	77	110	148	171	178	84
105°	274	292	327	344	352	293
115°	511	522	541	556	560	505
125°	745	749	764	771	771	664
135°	965	972	977	983	984	744
145°	1170	1172	1175	1179	1177	730
155°	1339	1339	1340	1344	1337	616
165°	1459	1455	1455	1461	1454	411
175°	1517	1513	1512	1519	1511	144
180°	1521	1521	1521	1521	1521	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	559.5	559.2	558.9	558.5	558.2	557.6	556.7	555.9	555.0	554.1	555.0
5°	557.7	557.4	557.1	556.9	556.6	556.0	555.2	554.4	553.7	552.8	553.9
7.5°	552.2	552.2	552.3	552.4	552.5	552.1	551.3	550.5	549.7	548.9	550.2
10°	547.4	547.6	547.9	548.2	548.4	548.3	547.6	546.9	546.2	545.6	546.9
12.5°	541.5	541.9	542.3	542.6	543.0	543.0	542.6	542.1	541.6	541.1	542.4
15°	531.0	531.4	531.8	532.2	532.6	532.7	532.6	532.4	532.3	532.2	533.5
17.5°	517.6	518.4	519.3	520.1	520.9	521.3	521.2	521.1	521.1	521.0	522.2
20°	507.9	508.7	509.5	510.3	511.1	511.7	512.0	512.2	512.5	512.8	514.0
22.5°	497.7	498.5	499.3	500.2	501.0	501.5	501.9	502.3	502.7	503.0	504.6
25°	479.4	480.8	482.1	483.5	484.8	485.7	486.1	486.5	486.9	487.3	489.0
27.5°	461.0	462.5	464.1	465.6	467.1	468.3	469.1	470.0	470.9	471.7	473.2
30°	447.8	449.6	451.3	453.1	454.9	456.3	457.3	458.4	459.5	460.6	462.2
32.5°	433.2	435.2	437.2	439.2	441.2	442.8	444.3	445.6	447.0	448.5	450.2
35°	412.6	414.8	416.9	419.1	421.3	423.3	425.0	426.7	428.5	430.2	432.3
37.5°	390.8	393.2	395.6	398.1	400.5	402.8	405.0	407.1	409.2	411.5	413.8
40°	376.2	378.7	381.1	383.5	386.0	388.5	391.2	393.9	396.6	399.3	401.6
42.5°	360.2	363.2	366.1	369.1	372.1	374.9	377.8	380.6	383.4	386.2	388.7
45°	337.4	340.6	343.9	347.1	350.3	353.6	357.0	360.4	363.8	367.1	369.7
47.5°	313.5	317.2	320.8	324.5	328.1	331.9	335.8	339.6	343.5	347.4	350.2
50°	297.9	301.7	305.5	309.3	313.1	317.0	321.2	325.4	329.5	333.7	336.8
52.5°	281.5	285.4	289.5	293.4	297.4	301.7	306.3	310.9	315.5	320.2	323.4
55°	257.3	261.7	266.2	270.6	275.1	279.7	284.6	289.5	294.3	299.1	302.8
57.5°	233.8	238.4	243.0	247.6	252.3	257.3	262.6	267.9	273.2	278.5	282.2
60°	217.2	222.1	227.0	231.8	236.6	241.9	247.4	252.9	258.4	264.0	267.8
62.5°	201.7	206.7	211.7	216.6	221.6	227.0	232.8	238.7	244.5	250.4	254.1
65°	177.8	183.1	188.3	193.6	198.8	204.5	210.4	216.3	222.2	228.1	232.2
67.5°	153.5	159.1	164.7	170.2	175.9	181.6	187.7	193.8	199.8	205.8	210.2
70°	136.6	142.4	148.1	153.9	159.7	165.9	172.3	178.8	185.3	191.8	196.1
72.5°	121.0	126.8	132.6	138.4	144.2	150.4	157.1	163.8	170.5	177.2	181.6
75°	96.5	102.8	109.2	115.5	121.8	128.4	135.1	141.9	148.6	155.3	159.8
77.5°	75.1	81.5	87.9	94.3	100.7	107.3	114.1	120.9	127.7	134.5	139.2
80°	60.0	66.7	73.3	79.9	86.5	93.3	100.3	107.3	114.4	121.4	126.0
82.5°	47.0	53.7	60.4	67.1	73.8	80.7	87.9	95.0	102.1	109.2	113.8
85°	29.7	36.4	43.3	50.0	56.7	63.6	70.8	78.0	85.1	92.2	96.8
87.5°	16.4	23.6	30.9	38.1	45.4	52.8	60.4	67.9	75.5	83.0	87.9
90°	9.1	18.4	27.6	36.8	46.1	55.9	66.2	76.6	86.9	97.3	102.9
92.5°	36.3	44.0	51.8	59.6	67.3	75.7	84.4	93.1	101.8	110.6	115.9
95°	77.2	84.3	91.4	98.5	105.6	113.5	122.3	131.0	139.7	148.5	153.7
97.5°	131.1	137.3	143.4	149.5	155.7	162.6	170.5	178.3	186.2	194.0	199.3
100°	167.9	173.8	179.7	185.6	191.5	198.3	205.8	213.3	220.9	228.4	233.1
102.5°	210.4	215.3	220.1	225.0	229.8	236.1	244.0	251.8	259.7	267.5	272.1
105°	273.6	277.4	281.1	284.9	288.7	294.7	302.9	311.1	319.2	327.4	331.2
107.5°	346.5	349.6	352.6	355.7	358.8	363.5	370.0	376.4	382.9	389.4	393.8
110°	391.9	394.8	397.8	400.8	403.7	408.1	414.1	420.0	426.0	431.8	436.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	439.7	442.0	444.3	446.6	448.9	452.7	458.0	463.3	468.6	473.9	478.6
115°	510.7	513.2	515.6	518.0	520.4	523.8	528.1	532.4	536.7	541.1	544.5
117.5°	582.7	584.3	585.8	587.3	588.9	591.6	595.4	599.3	603.2	607.0	610.2
120°	627.2	629.5	631.7	634.0	636.3	639.0	642.1	645.2	648.3	651.4	654.3
122.5°	674.0	675.5	677.1	678.6	680.1	682.6	686.2	689.7	693.2	696.8	699.1
125°	744.8	745.6	746.5	747.3	748.1	750.1	753.5	756.9	760.3	763.7	765.4
127.5°	810.8	812.4	813.9	815.5	817.1	819.1	821.8	824.4	827.1	829.7	830.9
130°	854.8	856.7	858.7	860.7	862.7	864.7	866.6	868.5	870.4	872.3	873.8
132.5°	898.3	900.3	902.4	904.5	906.6	908.5	910.0	911.6	913.1	914.7	915.9
135°	965.2	966.7	968.1	969.6	971.1	972.4	973.6	974.9	976.0	977.2	978.7
137.5°	1027.2	1028.4	1029.7	1030.9	1032.1	1033.5	1035.0	1036.5	1038.1	1039.6	1040.6
140°	1069.8	1071.1	1072.4	1073.7	1075.1	1076.0	1076.7	1077.4	1078.1	1078.7	1080.5
142.5°	1108.9	1110.2	1111.4	1112.6	1113.8	1114.7	1115.2	1115.8	1116.3	1116.9	1118.5
145°	1170.1	1170.4	1170.8	1171.2	1171.6	1172.3	1173.1	1173.9	1174.6	1175.4	1176.2
147.5°	1223.0	1223.9	1224.9	1225.9	1226.9	1227.6	1228.4	1229.2	1229.9	1230.7	1231.0
150°	1260.3	1260.8	1261.3	1261.9	1262.4	1262.9	1263.5	1264.0	1264.5	1265.0	1265.0
152.5°	1290.9	1291.6	1292.4	1293.1	1293.8	1294.3	1294.7	1295.0	1295.3	1295.6	1296.1
155°	1339.1	1339.1	1339.1	1339.1	1339.1	1339.3	1339.5	1339.7	1340.1	1340.3	1341.4
157.5°	1380.2	1379.9	1379.6	1379.3	1379.0	1378.9	1379.1	1379.3	1379.5	1379.7	1380.9
160°	1406.0	1405.5	1404.9	1404.4	1403.9	1403.6	1403.6	1403.6	1403.6	1403.6	1404.9
162.5°	1428.9	1428.2	1427.4	1426.7	1426.0	1425.7	1425.9	1426.2	1426.3	1426.6	1427.9
165°	1458.6	1457.8	1457.0	1456.2	1455.4	1455.0	1455.0	1455.0	1455.0	1455.0	1456.6
167.5°	1482.3	1481.1	1480.1	1479.0	1478.0	1477.6	1477.7	1478.0	1478.2	1478.4	1480.0
170°	1495.6	1494.5	1493.5	1492.4	1491.4	1490.8	1490.8	1490.8	1490.8	1490.8	1492.7
172.5°	1506.1	1505.1	1504.0	1502.9	1501.9	1501.3	1501.3	1501.3	1501.3	1501.3	1503.0
175°	1517.1	1516.1	1515.0	1513.9	1512.8	1512.4	1512.4	1512.4	1512.4	1512.4	1513.9
177.5°	1521.6	1520.8	1520.0	1519.1	1518.2	1517.8	1517.8	1517.8	1517.8	1517.8	1519.1
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	555.9	556.7	557.6	558.0	557.9	557.8	557.7	557.5
5°	555.0	556.0	557.1	557.6	557.5	557.3	557.2	557.1
7.5°	551.6	552.9	554.4	554.9	554.8	554.6	554.4	554.3
10°	548.3	549.6	551.0	551.4	551.2	551.0	550.6	550.4
12.5°	543.7	544.9	546.1	546.6	546.4	546.1	545.8	545.6
15°	534.9	536.2	537.6	538.2	538.1	537.9	537.8	537.7
17.5°	523.5	524.7	525.9	526.4	526.2	526.0	525.9	525.6
20°	515.2	516.4	517.6	518.3	518.4	518.6	518.7	518.8
22.5°	506.1	507.7	509.2	509.9	509.8	509.8	509.7	509.6
25°	490.8	492.6	494.3	495.2	495.2	495.2	495.2	495.2
27.5°	474.8	476.3	477.8	478.6	478.7	478.8	479.0	479.0
30°	463.8	465.4	467.1	467.9	467.9	467.9	467.9	467.9
32.5°	451.9	453.6	455.3	456.4	456.7	457.0	457.3	457.6
35°	434.3	436.3	438.3	439.6	440.1	440.7	441.2	441.8
37.5°	416.0	418.3	420.6	422.0	422.4	422.8	423.3	423.7
40°	403.9	406.2	408.4	409.9	410.4	411.0	411.5	412.0
42.5°	391.2	393.7	396.2	397.8	398.6	399.3	400.1	400.8
45°	372.2	374.8	377.4	379.2	380.2	381.4	382.5	383.5
47.5°	353.2	356.0	358.9	360.8	361.6	362.4	363.3	364.1
50°	339.9	343.1	346.2	348.2	349.1	350.1	351.0	352.0
52.5°	326.6	329.8	333.0	335.2	336.4	337.5	338.7	339.8
55°	306.4	310.1	313.7	316.1	317.2	318.2	319.3	320.4
57.5°	285.9	289.5	293.2	295.6	296.9	298.2	299.4	300.7
60°	271.6	275.3	279.1	281.7	283.2	284.6	286.1	287.6
62.5°	257.9	261.7	265.5	268.1	269.4	270.8	272.2	273.5
65°	236.2	240.3	244.4	247.1	248.4	249.8	251.1	252.5
67.5°	214.7	219.1	223.6	226.3	227.4	228.5	229.7	230.8
70°	200.4	204.7	209.1	211.8	213.2	214.5	215.9	217.2
72.5°	186.0	190.4	194.9	197.8	199.2	200.5	201.8	203.2
75°	164.2	168.7	173.2	176.2	177.8	179.4	181.0	182.7
77.5°	143.9	148.5	153.2	156.2	157.5	158.7	159.9	161.2
80°	130.6	135.1	139.7	142.7	144.0	145.4	146.7	148.1
82.5°	118.4	122.9	127.5	130.6	131.9	133.2	134.6	135.9
85°	101.4	106.0	110.6	113.5	114.9	116.2	117.6	118.9
87.5°	92.6	97.4	102.3	105.4	106.8	108.3	109.7	111.1
90°	108.5	114.2	119.9	123.6	125.5	127.4	129.2	131.1
92.5°	121.2	126.5	131.9	135.0	135.9	136.8	137.8	138.7
95°	159.0	164.2	169.4	172.8	174.1	175.5	176.8	178.2
97.5°	204.5	209.8	215.0	218.2	219.5	220.7	222.0	223.2
100°	237.8	242.5	247.2	250.5	252.4	254.3	256.2	258.0
102.5°	276.7	281.3	285.9	288.8	290.1	291.4	292.6	293.8
105°	335.0	338.7	342.5	345.3	347.1	348.8	350.5	352.3
107.5°	398.3	402.7	407.2	409.9	410.7	411.6	412.5	413.4
110°	441.0	445.5	450.1	452.7	453.2	453.8	454.3	454.9





TEST NUMBER: P332147-927

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	483.2	487.9	492.6	495.4	496.5	497.6	498.7	499.7
115°	548.0	551.5	555.1	557.2	558.0	558.8	559.7	560.5
117.5°	613.4	616.5	619.6	621.4	621.7	622.0	622.3	622.7
120°	657.1	660.0	662.8	664.4	664.8	665.3	665.7	666.1
122.5°	701.4	703.7	706.0	707.3	707.5	707.7	707.9	708.1
125°	767.1	769.0	770.7	771.5	771.4	771.3	771.2	771.0
127.5°	832.1	833.3	834.5	835.0	834.6	834.3	834.0	833.7
130°	875.3	876.7	878.2	878.5	877.4	876.4	875.4	874.3
132.5°	917.1	918.3	919.5	919.8	919.2	918.8	918.2	917.7
135°	980.0	981.4	982.7	983.5	983.7	983.8	983.9	984.0
137.5°	1041.6	1042.6	1043.6	1044.0	1043.6	1043.3	1043.0	1042.7
140°	1082.3	1084.0	1085.8	1086.1	1084.9	1083.7	1082.5	1081.3
142.5°	1120.0	1121.6	1123.1	1123.5	1122.8	1122.0	1121.2	1120.5
145°	1177.1	1177.9	1178.7	1178.8	1178.4	1177.8	1177.3	1176.8
147.5°	1231.3	1231.6	1231.9	1231.5	1230.4	1229.3	1228.2	1227.1
150°	1265.0	1265.0	1265.0	1264.4	1263.1	1261.7	1260.4	1259.1
152.5°	1296.5	1296.9	1297.4	1296.9	1295.5	1294.2	1292.9	1291.6
155°	1342.4	1343.5	1344.6	1344.2	1342.3	1340.5	1338.6	1336.7
157.5°	1382.0	1383.1	1384.2	1384.0	1382.5	1381.0	1379.5	1378.1
160°	1406.3	1407.6	1408.9	1409.1	1408.0	1406.9	1405.9	1404.8
162.5°	1429.2	1430.5	1431.9	1431.7	1430.0	1428.3	1426.6	1424.9
165°	1458.2	1459.8	1461.3	1461.3	1459.4	1457.5	1455.6	1453.8
167.5°	1481.7	1483.4	1484.9	1484.9	1483.4	1481.7	1480.0	1478.4
170°	1494.5	1496.4	1498.3	1498.3	1496.4	1494.5	1492.7	1490.8
172.5°	1504.6	1506.3	1507.9	1507.8	1505.9	1504.1	1502.2	1500.4
175°	1515.5	1517.1	1518.7	1518.5	1516.7	1514.8	1513.0	1511.2
177.5°	1520.4	1521.6	1522.9	1522.8	1521.3	1519.8	1518.4	1516.9
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7

(END OF REPORT)