

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: P332819-927

Luminaire Tested: **S124DIW-S1020D1050U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332819-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIW-S1020D1050U927-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1050 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6656.7 lumens  
Efficiency: N/A  
Efficacy: 108.8 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

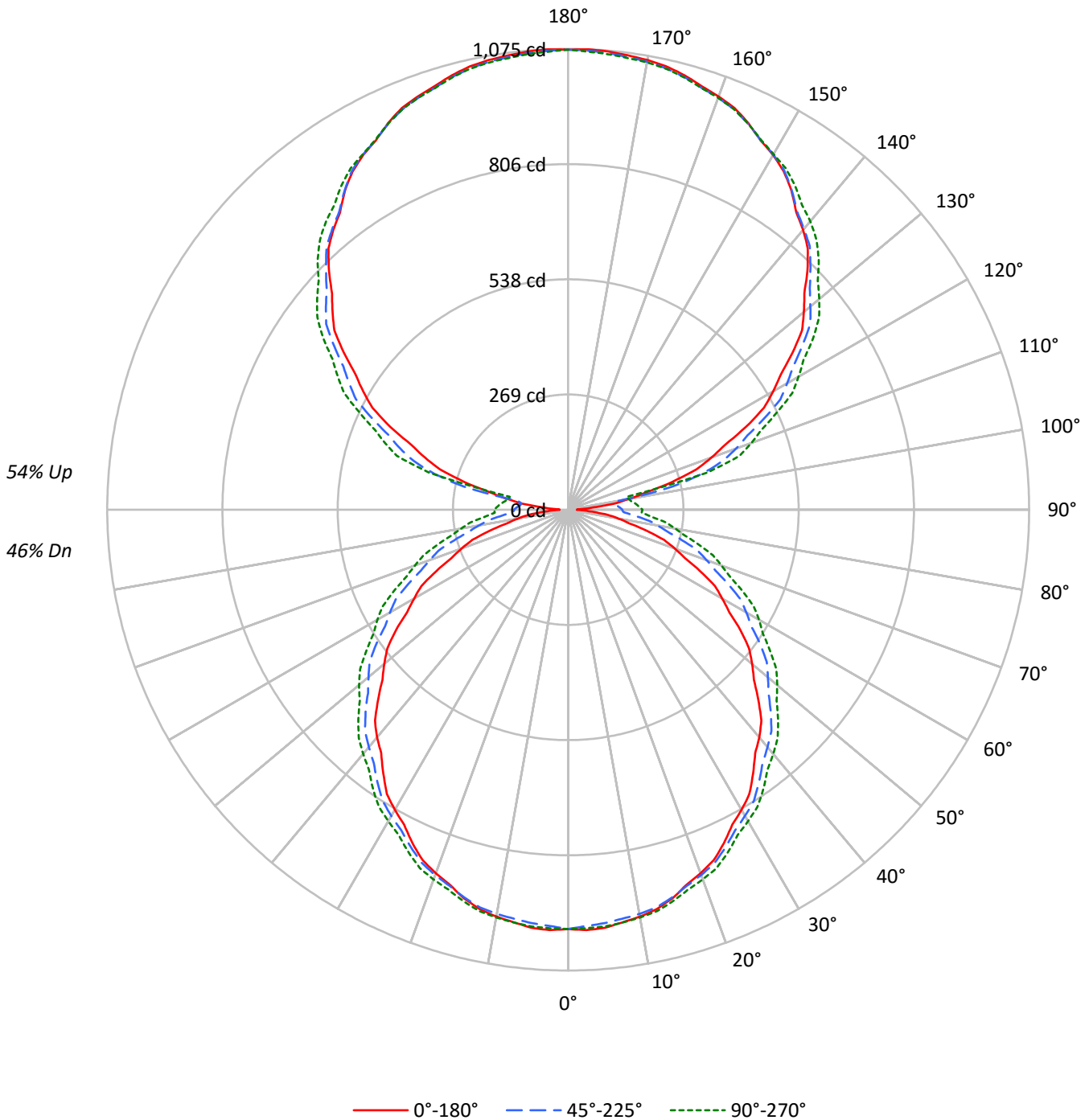
Input Watts (W): 61.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P332819-927

CATALOG NUMBER: S124DIW-S1020D1050U927-4F0-1E-UDD-D

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46
1	96	91	87	83	88	84	80	77	70	67	65	57	55	53	45	44	43	37
2	87	79	73	67	79	73	67	62	61	56	53	49	46	44	39	37	35	30
3	79	69	62	55	72	64	57	52	53	48	44	43	40	37	34	32	29	25
4	72	61	53	47	66	56	49	43	47	41	37	38	34	31	30	28	25	21
5	66	54	46	40	60	50	43	37	42	36	32	34	30	27	27	24	22	18
6	61	48	40	34	56	45	37	32	38	32	28	31	27	23	25	21	19	16
7	56	44	36	30	51	40	33	28	34	28	24	28	24	20	23	19	17	14
8	52	40	32	26	48	37	30	25	31	25	21	26	21	18	21	17	15	12
9	48	36	28	23	44	33	27	22	28	23	19	24	19	16	19	16	13	11
10	45	33	26	21	41	31	24	20	26	21	17	22	18	15	18	14	12	10

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.6	1.4
10°-20°	265.4	4.0
20°-30°	401.3	6.0
30°-40°	485.5	7.3
40°-50°	513.3	7.7
50°-60°	483.1	7.3
60°-70°	400.8	6.0
70°-80°	281.5	4.2
80°-90°	162.3	2.4
90°-100°	131.2	2.0
100°-110°	304.0	4.6
110°-120°	494.6	7.4
120°-130°	594.8	8.9
130°-140°	619.5	9.3
140°-150°	570.9	8.6
150°-160°	458.5	6.9
160°-170°	295.7	4.4
170°-180°	101.9	1.5
0°-30°	759.3	11.4
0°-40°	1244.8	18.7
0°-60°	2241.1	33.7
0°-90°	3085.6	46.4
90°-120°	929.8	14.0
90°-150°	2714.9	40.8
90°-180°	3571.0	53.6
0°-180°	6656.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	20	73	126	161	173	14
95°	58	69	113	146	158	68
105°	251	279	323	354	337	264
115°	458	471	504	529	538	451
125°	638	642	666	689	697	570
135°	789	789	799	817	826	608
145°	908	909	909	917	923	567
155°	994	995	993	996	994	458
165°	1049	1045	1045	1051	1044	296
175°	1073	1069	1069	1075	1067	102
180°	1073	1073	1073	1073	1073	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	32.9	43.3	53.6	63.8	74.2	84.8	95.8	106.7	117.6	128.7	135.9
90°	20.0	31.6	43.3	55.1	66.7	78.5	90.4	102.3	114.2	126.1	134.2
92.5°	26.8	35.6	44.5	53.4	62.3	72.6	84.5	96.4	108.3	120.2	128.1
95°	58.4	60.4	62.3	64.3	66.2	72.3	82.5	92.6	102.8	113.0	120.6
97.5°	106.7	117.4	128.1	138.8	149.4	149.8	139.7	129.8	119.7	109.7	116.1
100°	143.7	153.2	162.8	172.3	181.8	179.0	163.9	148.8	133.6	118.6	122.1
102.5°	186.1	193.9	201.8	209.8	217.7	224.7	230.8	236.9	243.0	249.0	222.7
105°	251.4	257.4	263.3	269.3	275.2	283.1	293.0	302.9	312.8	322.7	330.4
107.5°	314.0	318.5	323.1	327.6	332.1	339.2	349.0	358.7	368.4	378.2	384.9
110°	355.5	359.4	363.4	367.3	371.3	378.0	387.6	397.2	406.8	416.4	422.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	395.7	399.7	403.7	407.7	411.6	418.0	426.6	435.2	443.9	452.5	457.8
115°	457.6	460.3	463.1	465.8	468.6	473.7	481.3	488.9	496.5	504.1	509.8
117.5°	514.4	516.4	518.5	520.5	522.5	527.4	535.0	542.6	550.3	557.9	562.9
120°	552.1	553.5	554.9	556.4	557.9	562.0	568.9	575.8	582.7	589.5	594.8
122.5°	588.0	588.6	589.1	589.8	590.3	594.1	600.9	607.9	614.8	621.7	626.9
125°	638.4	638.9	639.4	639.8	640.3	643.4	649.2	654.9	660.6	666.3	671.5
127.5°	687.1	687.0	686.9	686.8	686.7	689.5	695.0	700.4	706.0	711.5	715.7
130°	717.6	717.6	717.5	717.4	717.3	719.5	724.0	728.4	732.8	737.3	741.8
132.5°	746.6	746.6	746.6	746.7	746.8	748.8	752.6	756.4	760.2	763.9	768.3
135°	788.8	788.6	788.4	788.2	788.1	789.2	791.5	794.0	796.4	798.8	803.1
137.5°	827.1	827.0	826.8	826.6	826.4	827.1	828.8	830.4	832.0	833.6	837.6
140°	852.2	852.3	852.4	852.5	852.6	852.9	853.6	854.2	854.8	855.4	859.0
142.5°	873.8	874.3	875.0	875.5	876.2	876.5	876.5	876.6	876.7	876.7	879.9
145°	908.1	908.3	908.6	908.9	909.2	909.3	909.3	909.3	909.3	909.3	911.0
147.5°	935.5	936.3	937.0	937.8	938.5	938.8	938.7	938.5	938.3	938.1	938.4
150°	955.5	955.8	956.3	956.8	957.3	957.4	957.3	957.1	956.9	956.7	956.7
152.5°	971.2	971.8	972.2	972.8	973.4	973.4	973.1	972.8	972.5	972.2	972.4
155°	994.4	994.7	994.8	995.0	995.1	995.0	994.4	994.0	993.4	992.8	993.6
157.5°	1014.2	1014.1	1014.0	1013.8	1013.8	1013.4	1012.8	1012.2	1011.6	1011.0	1011.9
160°	1025.7	1025.2	1024.7	1024.1	1023.6	1023.3	1023.1	1022.9	1022.7	1022.5	1023.6
162.5°	1036.0	1035.4	1034.7	1034.0	1033.3	1032.8	1032.7	1032.5	1032.4	1032.1	1033.2
165°	1049.0	1048.1	1047.3	1046.3	1045.4	1045.0	1045.0	1045.0	1045.0	1045.0	1046.5
167.5°	1059.3	1058.4	1057.5	1056.5	1055.6	1055.1	1054.9	1054.9	1054.8	1054.6	1056.2
170°	1065.1	1064.0	1063.0	1061.8	1060.8	1060.3	1060.5	1060.7	1060.9	1061.0	1062.5
172.5°	1068.9	1067.9	1066.8	1065.7	1064.6	1064.2	1064.4	1064.5	1064.8	1064.9	1066.4
175°	1073.1	1072.1	1071.0	1069.9	1068.8	1068.4	1068.6	1068.7	1068.9	1069.1	1070.7
177.5°	1075.0	1074.0	1073.0	1072.1	1071.0	1070.7	1071.0	1071.3	1071.5	1071.8	1072.9
180°	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	143.1	150.4	157.7	162.5	164.7	166.8	169.1	171.3
90°	142.4	150.5	158.6	163.8	166.1	168.4	170.7	173.0
92.5°	136.1	144.0	151.9	156.9	158.9	161.0	163.0	165.0
95°	128.3	135.9	143.5	148.5	150.9	153.3	155.7	158.0
97.5°	122.6	129.1	135.6	140.0	142.3	144.6	146.8	149.1
100°	125.6	129.2	132.7	135.5	137.3	139.2	141.1	143.0
102.5°	196.4	170.0	143.7	131.5	133.4	135.4	137.3	139.2
105°	338.1	345.8	353.5	355.1	350.6	346.1	341.7	337.2
107.5°	391.7	398.5	405.3	409.9	412.3	414.7	417.2	419.5
110°	428.3	434.3	440.2	444.4	446.9	449.4	451.9	454.3





TEST NUMBER: P332819-927

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	463.1	468.4	473.8	477.8	480.4	483.0	485.6	488.3
115°	515.6	521.3	527.0	530.7	532.4	534.1	535.8	537.5
117.5°	567.9	572.9	577.9	581.3	583.2	585.1	587.0	588.8
120°	600.0	605.2	610.5	613.9	615.4	617.0	618.6	620.2
122.5°	631.9	637.0	642.1	645.3	646.7	648.1	649.5	650.9
125°	676.7	681.8	687.0	690.4	692.1	693.6	695.3	697.0
127.5°	720.0	724.3	728.6	731.4	732.9	734.5	736.0	737.5
130°	746.4	750.9	755.5	758.5	759.9	761.4	762.9	764.4
132.5°	772.7	777.1	781.4	784.3	785.5	786.9	788.2	789.5
135°	807.3	811.6	815.9	818.9	820.7	822.5	824.3	826.2
137.5°	841.5	845.4	849.4	851.9	853.0	854.1	855.2	856.3
140°	862.8	866.5	870.2	872.7	874.1	875.5	876.9	878.3
142.5°	883.0	886.2	889.4	891.5	892.6	893.7	894.7	895.7
145°	912.7	914.3	915.9	917.4	918.8	920.0	921.4	922.7
147.5°	938.8	939.1	939.4	940.1	941.0	942.0	942.9	944.0
150°	956.7	956.7	956.7	956.8	957.0	957.2	957.4	957.5
152.5°	972.7	973.0	973.3	973.4	973.3	973.1	973.0	973.0
155°	994.3	995.0	995.7	995.8	995.2	994.7	994.2	993.6
157.5°	1012.8	1013.8	1014.7	1014.7	1013.8	1012.8	1011.9	1011.0
160°	1024.7	1025.7	1026.8	1026.8	1025.7	1024.7	1023.6	1022.5
162.5°	1034.3	1035.4	1036.4	1036.4	1035.1	1034.0	1032.8	1031.5
165°	1047.9	1049.3	1050.8	1050.6	1049.0	1047.4	1045.8	1044.2
167.5°	1057.8	1059.4	1060.9	1060.8	1059.1	1057.2	1055.5	1053.7
170°	1063.9	1065.3	1066.8	1066.6	1064.8	1063.0	1061.2	1059.5
172.5°	1067.8	1069.2	1070.6	1070.4	1068.4	1066.5	1064.6	1062.6
175°	1072.3	1073.9	1075.5	1075.2	1073.1	1071.0	1068.8	1066.7
177.5°	1074.1	1075.2	1076.4	1076.1	1074.4	1072.7	1071.0	1069.3
180°	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1

(END OF REPORT)