

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: P332826-935

Luminaire Tested: **S124DIW-S1020D1340U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332826-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1340U935-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7633.8 lumens
Efficiency: N/A
Efficacy: 109.4 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

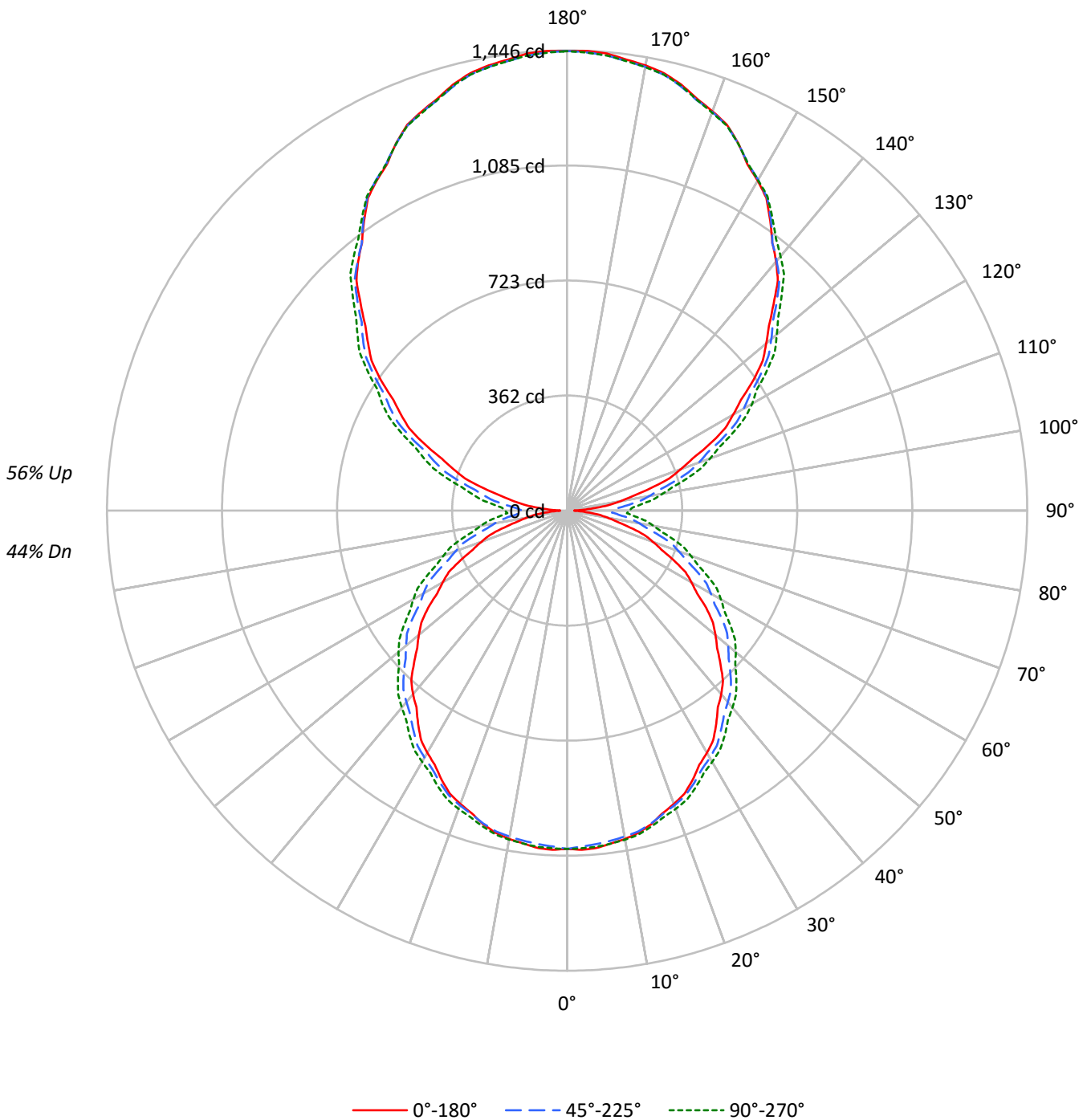
Input Watts (W): 69.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44
1	96	91	87	83	87	83	80	76	69	66	64	55	54	52	43	42	41	35
2	87	79	72	67	79	72	67	62	60	56	52	48	45	43	38	36	34	29
3	79	69	61	55	72	63	57	51	52	47	43	42	39	36	33	30	28	24
4	72	61	53	46	65	56	49	43	46	41	37	37	33	30	29	26	24	20
5	66	54	46	39	60	50	42	37	41	36	31	33	29	26	26	23	21	17
6	61	48	40	34	55	44	37	32	37	31	27	30	26	23	24	21	18	15
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	22	18	16	13
8	52	39	31	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13	11
10	45	33	25	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8582	8582	8582
5°	8608	8387	8412
10°	8556	8250	8244
15°	8479	8091	8047
20°	8364	7916	7856
25°	8233	7719	7645
30°	8093	7524	7428
35°	7933	7324	7239
40°	7804	7134	7041
45°	7615	6958	6871
50°	7455	6755	6692
55°	7289	6565	6482
60°	7031	6322	6290
65°	6747	6061	6055
70°	6405	5763	5780
75°	5924	5435	5533
80°	5397	5119	5288
85°	4721	4842	5146



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.7	1.3
10°-20°	288.4	3.8
20°-30°	436.1	5.7
30°-40°	527.7	6.9
40°-50°	557.9	7.3
50°-60°	525.0	6.9
60°-70°	435.6	5.7
70°-80°	306.0	4.0
80°-90°	177.3	2.3
90°-100°	197.9	2.6
100°-110°	358.1	4.7
110°-120°	529.8	6.9
120°-130°	660.1	8.6
130°-140°	721.5	9.5
140°-150°	699.3	9.2
150°-160°	586.0	7.7
160°-170°	389.9	5.1
170°-180°	136.5	1.8
0°-30°	825.2	10.8
0°-40°	1352.9	17.7
0°-60°	2435.8	31.9
0°-90°	3354.6	43.9
90°-120°	1085.9	14.2
90°-150°	3166.7	41.5
90°-180°	4279.0	56.1
0°-180°	7633.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1063	1063	1063	1063	1063	
5°	1064	1060	1052	1061	1061	101
15°	1020	1021	1018	1028	1027	287
25°	933	940	944	956	958	430
35°	817	831	843	859	863	511
45°	681	704	726	746	752	526
55°	533	559	594	617	625	475
65°	369	407	448	476	487	366
75°	205	249	299	331	343	218
85°	63	113	167	201	214	67
90°	22	82	142	182	195	17
95°	82	132	188	223	235	87
105°	271	297	344	376	390	288
115°	494	506	540	565	573	487
125°	714	714	741	761	766	636
135°	917	924	932	948	952	709
145°	1112	1115	1117	1122	1124	696
155°	1273	1273	1272	1276	1272	586
165°	1386	1382	1380	1386	1382	390
175°	1442	1436	1435	1442	1435	137
180°	1444	1444	1444	1444	1444	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1066.9	1066.3	1065.6	1065.0	1064.3	1063.2	1061.4	1059.8	1058.1	1056.4	1057.8
5°	1064.2	1063.4	1062.6	1061.9	1061.1	1059.7	1057.9	1056.0	1054.2	1052.3	1054.5
7.5°	1055.2	1054.7	1054.2	1053.8	1053.3	1052.3	1050.8	1049.2	1047.7	1046.1	1048.5
10°	1047.6	1047.3	1047.1	1046.8	1046.5	1045.7	1044.4	1043.1	1041.7	1040.4	1042.8
12.5°	1037.1	1037.1	1037.0	1036.9	1036.9	1036.4	1035.5	1034.6	1033.7	1032.8	1035.0
15°	1020.2	1020.5	1020.7	1021.0	1021.2	1021.0	1020.2	1019.4	1018.6	1017.8	1020.2
17.5°	997.1	997.9	998.7	999.4	1000.3	1000.6	1000.4	1000.3	1000.1	1000.0	1002.4
20°	980.9	981.7	982.5	983.3	984.1	984.6	984.9	985.2	985.4	985.7	988.3
22.5°	962.8	963.8	964.8	965.9	966.8	967.6	968.0	968.5	969.0	969.5	972.2
25°	933.3	934.9	936.4	938.1	939.6	940.8	941.6	942.5	943.2	944.0	946.9
27.5°	900.4	902.8	905.1	907.4	909.7	911.5	912.7	914.0	915.2	916.4	919.1
30°	878.6	880.6	882.8	884.8	887.0	889.0	890.8	892.7	894.5	896.4	899.3
32.5°	854.7	857.3	859.8	862.4	864.9	867.2	869.3	871.3	873.4	875.5	878.7
35°	816.7	819.8	822.9	826.1	829.3	832.2	834.9	837.5	840.2	842.8	846.5
37.5°	778.3	782.0	785.6	789.3	792.9	796.3	799.6	802.9	806.2	809.5	813.2
40°	753.5	757.0	760.4	763.9	767.3	770.9	774.6	778.3	782.0	785.7	789.6
42.5°	725.0	728.8	732.7	736.6	740.4	744.5	748.8	753.2	757.5	761.9	766.3
45°	680.9	686.0	691.0	696.0	701.0	706.0	711.1	716.1	721.1	726.2	730.6
47.5°	638.8	643.9	649.1	654.4	659.5	665.0	670.8	676.7	682.5	688.3	692.9
50°	608.3	614.2	619.9	625.8	631.5	637.4	643.3	649.0	654.9	660.6	666.0
52.5°	577.8	583.7	589.4	595.3	601.2	607.3	614.0	620.7	627.3	634.0	639.3
55°	533.3	538.9	544.4	550.0	555.5	562.2	570.2	578.2	586.1	594.0	599.3
57.5°	483.5	490.4	497.3	504.2	511.1	518.4	526.3	534.3	542.1	550.0	556.3
60°	451.2	458.1	464.9	471.8	478.7	486.5	495.2	503.9	512.6	521.4	527.4
62.5°	419.7	427.2	434.8	442.3	449.8	457.9	466.7	475.4	484.1	492.8	498.9
65°	369.0	377.5	386.0	394.4	402.9	411.6	420.6	429.6	438.6	447.6	454.2
67.5°	320.2	329.2	338.2	347.2	356.2	365.5	375.1	384.8	394.4	404.1	410.8
70°	286.9	295.9	304.9	313.8	322.9	332.4	342.4	352.5	362.6	372.6	379.8
72.5°	254.5	263.7	272.9	282.1	291.4	301.3	311.9	322.6	333.4	344.1	350.9
75°	204.7	214.6	224.3	234.1	243.9	254.3	265.4	276.6	287.7	298.8	306.2
77.5°	158.3	168.7	179.1	189.4	199.8	210.8	222.5	234.1	245.7	257.4	264.8
80°	129.8	140.3	150.9	161.5	172.1	183.2	194.8	206.5	218.1	229.7	237.7
82.5°	101.2	112.2	123.2	134.2	145.2	156.5	168.2	179.8	191.5	203.1	211.2
85°	63.1	74.2	85.3	96.4	107.5	119.1	131.0	142.8	154.7	166.7	174.6
87.5°	35.9	47.3	58.5	69.9	81.3	92.9	104.9	116.9	128.9	140.9	148.9
90°	22.4	35.7	49.0	62.3	75.7	88.9	102.4	115.7	129.1	142.4	151.5
92.5°	42.0	54.7	67.3	79.9	92.6	105.3	118.0	130.8	143.6	156.4	164.7
95°	82.5	93.4	104.4	115.4	126.3	138.1	150.7	163.2	175.8	188.4	196.3
97.5°	131.0	140.3	149.6	158.9	168.2	179.3	192.1	204.8	217.7	230.4	238.2
100°	169.4	177.3	185.2	193.0	200.9	211.1	223.7	236.2	248.7	261.3	269.0
102.5°	210.5	217.0	223.3	229.8	236.3	245.5	257.6	269.8	281.9	294.0	301.7
105°	270.9	276.5	282.0	287.5	293.0	301.2	311.9	322.8	333.6	344.3	351.7
107.5°	336.6	341.1	345.8	350.4	355.1	362.1	371.5	380.9	390.3	399.8	406.9
110°	380.2	384.4	388.7	392.9	397.0	403.6	412.7	421.6	430.7	439.7	445.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	425.8	429.1	432.5	435.8	439.3	445.1	453.5	461.9	470.3	478.7	484.5
115°	494.0	496.4	498.8	501.1	503.5	508.7	516.7	524.6	532.6	540.5	546.1
117.5°	559.4	561.0	562.7	564.3	565.9	570.5	578.0	585.6	593.1	600.6	605.3
120°	602.2	604.0	605.8	607.6	609.3	613.7	620.7	627.6	634.5	641.4	645.5
122.5°	647.8	648.3	648.9	649.5	650.0	653.8	660.6	667.5	674.4	681.3	685.8
125°	713.9	713.5	713.3	713.0	712.7	715.8	722.2	728.6	734.9	741.2	745.8
127.5°	774.6	775.0	775.5	776.0	776.4	779.0	783.7	788.4	793.1	797.8	802.0
130°	816.5	816.9	817.4	817.9	818.4	820.7	825.0	829.2	833.4	837.7	842.0
132.5°	860.2	860.5	860.8	861.1	861.3	863.1	866.3	869.4	872.6	875.8	879.9
135°	916.9	918.3	919.9	921.4	922.8	924.5	926.3	928.2	930.1	931.9	935.6
137.5°	979.9	980.3	980.8	981.2	981.6	982.5	983.8	985.1	986.4	987.7	990.8
140°	1021.8	1022.1	1022.4	1022.5	1022.8	1023.0	1023.3	1023.6	1023.8	1024.1	1027.3
142.5°	1059.3	1059.7	1060.2	1060.7	1061.1	1061.1	1060.8	1060.4	1060.1	1059.7	1062.6
145°	1112.2	1112.9	1113.7	1114.4	1115.2	1115.6	1115.9	1116.1	1116.4	1116.6	1117.9
147.5°	1164.9	1165.9	1166.7	1167.7	1168.6	1169.0	1168.8	1168.6	1168.4	1168.2	1168.2
150°	1197.0	1197.8	1198.5	1199.3	1200.0	1200.3	1200.3	1200.3	1200.3	1200.3	1200.3
152.5°	1226.5	1227.0	1227.6	1228.1	1228.6	1229.1	1229.2	1229.4	1229.7	1229.9	1230.5
155°	1272.9	1272.9	1272.9	1272.9	1272.9	1272.8	1272.6	1272.3	1272.0	1271.9	1272.8
157.5°	1312.3	1311.8	1311.4	1310.9	1310.4	1310.2	1310.2	1310.1	1310.1	1310.0	1310.8
160°	1335.5	1335.2	1335.0	1334.7	1334.5	1334.2	1333.9	1333.8	1333.5	1333.3	1333.9
162.5°	1356.9	1356.2	1355.6	1355.0	1354.4	1353.9	1353.7	1353.4	1353.1	1352.9	1354.3
165°	1385.7	1385.0	1384.2	1383.5	1382.8	1382.2	1381.6	1381.1	1380.6	1380.1	1381.6
167.5°	1407.8	1406.8	1405.8	1404.7	1403.7	1403.2	1403.3	1403.3	1403.3	1403.3	1404.9
170°	1420.3	1419.1	1417.9	1416.6	1415.4	1414.9	1415.1	1415.4	1415.7	1415.8	1417.4
172.5°	1429.3	1428.2	1427.2	1426.2	1425.1	1424.6	1424.7	1424.7	1424.8	1424.8	1426.5
175°	1441.6	1440.3	1439.1	1437.9	1436.6	1435.8	1435.6	1435.4	1435.1	1434.9	1436.6
177.5°	1445.5	1444.6	1443.6	1442.6	1441.6	1441.1	1441.1	1441.1	1441.1	1441.1	1442.5
180°	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1059.4	1060.8	1062.3	1062.9	1062.7	1062.5	1062.3	1062.1
5°	1056.5	1058.7	1060.8	1061.7	1061.4	1061.2	1060.9	1060.7
7.5°	1050.9	1053.3	1055.7	1056.7	1056.4	1056.2	1055.9	1055.7
10°	1045.2	1047.6	1050.0	1051.0	1050.8	1050.5	1050.2	1050.0
12.5°	1037.2	1039.3	1041.5	1042.6	1042.5	1042.4	1042.4	1042.3
15°	1022.6	1024.9	1027.3	1028.4	1028.1	1027.9	1027.6	1027.3
17.5°	1004.8	1007.3	1009.7	1010.8	1010.6	1010.4	1010.1	1010.0
20°	990.9	993.6	996.3	997.6	997.6	997.6	997.6	997.6
22.5°	974.7	977.4	980.1	981.6	982.1	982.4	982.8	983.3
25°	949.9	952.7	955.6	957.3	957.5	957.8	958.0	958.3
27.5°	921.8	924.5	927.2	928.7	929.0	929.4	929.6	930.0
30°	902.2	905.1	908.0	909.7	910.2	910.8	911.4	911.9
32.5°	882.1	885.5	888.8	890.7	891.2	891.7	892.3	892.9
35°	850.2	853.9	857.6	859.9	860.7	861.4	862.3	863.1
37.5°	817.0	820.8	824.5	826.8	827.7	828.5	829.3	830.2
40°	793.6	797.5	801.6	804.1	805.1	806.2	807.3	808.3
42.5°	770.7	775.1	779.5	782.0	782.9	783.8	784.6	785.4
45°	735.1	739.7	744.2	747.1	748.4	749.7	751.1	752.3
47.5°	697.6	702.2	707.0	710.1	711.6	713.3	714.8	716.4
50°	671.2	676.6	681.8	685.3	686.9	688.5	690.0	691.6
52.5°	644.6	649.9	655.2	658.6	660.2	661.8	663.4	665.0
55°	604.6	609.9	615.2	618.6	620.2	621.8	623.4	625.0
57.5°	562.6	568.9	575.1	579.0	580.5	582.0	583.5	585.0
60°	533.6	539.7	545.7	549.8	552.0	554.1	556.2	558.3
62.5°	505.0	511.1	517.2	521.2	523.4	525.5	527.6	529.8
65°	460.8	467.4	474.1	478.5	480.5	482.7	484.7	486.9
67.5°	417.5	424.2	430.9	435.3	437.4	439.5	441.5	443.6
70°	386.8	394.0	401.1	405.7	407.5	409.4	411.2	413.1
72.5°	357.9	364.8	371.8	376.3	378.3	380.4	382.5	384.5
75°	313.6	321.0	328.4	333.3	335.7	338.1	340.4	342.9
77.5°	272.4	279.9	287.4	292.5	295.0	297.6	300.1	302.6
80°	245.6	253.6	261.5	266.5	268.6	270.8	272.9	275.0
82.5°	219.4	227.6	235.7	240.9	243.2	245.6	247.9	250.2
85°	182.5	190.5	198.4	203.7	206.4	209.0	211.6	214.3
87.5°	156.8	164.8	172.7	178.0	180.4	182.8	185.2	187.6
90°	160.7	169.9	179.1	184.9	187.5	190.2	192.8	195.4
92.5°	173.1	181.4	189.8	195.2	197.6	200.0	202.4	204.8
95°	204.2	212.1	220.0	225.2	227.5	229.9	232.2	234.6
97.5°	246.1	253.9	261.7	266.7	269.1	271.3	273.5	275.9
100°	276.6	284.2	291.9	296.6	298.5	300.3	302.2	304.0
102.5°	309.4	316.9	324.6	329.5	331.7	334.1	336.3	338.5
105°	359.0	366.4	373.8	378.8	381.7	384.6	387.4	390.3
107.5°	414.1	421.4	428.5	433.1	434.9	436.8	438.6	440.5
110°	450.9	456.4	462.0	466.2	469.2	472.0	474.8	477.7



TEST NUMBER: P332826-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	490.3	496.0	501.8	505.8	508.1	510.3	512.6	514.9
115°	551.7	557.2	562.8	566.5	568.0	569.6	571.3	572.8
117.5°	609.9	614.6	619.2	622.4	624.1	625.7	627.2	628.9
120°	649.5	653.6	657.6	661.0	663.6	666.2	668.8	671.4
122.5°	690.3	694.7	699.1	701.9	702.8	703.9	704.9	705.9
125°	750.4	754.8	759.4	762.2	763.3	764.4	765.4	766.5
127.5°	806.3	810.5	814.9	817.7	819.1	820.4	821.9	823.3
130°	846.2	850.5	854.7	857.1	857.7	858.3	858.9	859.5
132.5°	884.0	888.0	892.1	894.7	895.9	897.1	898.3	899.5
135°	939.4	943.1	946.8	949.2	950.0	950.8	951.7	952.5
137.5°	994.1	997.3	1000.5	1002.9	1004.4	1005.8	1007.3	1008.7
140°	1030.4	1033.6	1036.8	1039.0	1040.1	1041.1	1042.2	1043.3
142.5°	1065.7	1068.6	1071.6	1073.6	1074.6	1075.7	1076.8	1077.8
145°	1119.3	1120.6	1122.0	1122.8	1123.1	1123.4	1123.8	1124.0
147.5°	1168.2	1168.2	1168.3	1168.5	1169.2	1169.8	1170.4	1171.0
150°	1200.3	1200.3	1200.3	1200.2	1200.0	1199.7	1199.5	1199.3
152.5°	1231.1	1231.7	1232.3	1232.2	1231.6	1230.9	1230.3	1229.6
155°	1273.8	1274.8	1275.8	1275.8	1274.8	1273.8	1272.8	1271.9
157.5°	1311.5	1312.3	1313.0	1312.9	1312.1	1311.2	1310.4	1309.6
160°	1334.7	1335.5	1336.2	1335.9	1334.7	1333.5	1332.2	1331.0
162.5°	1355.6	1356.9	1358.2	1358.3	1357.0	1355.8	1354.6	1353.3
165°	1383.1	1384.6	1386.1	1386.4	1385.3	1384.3	1383.4	1382.3
167.5°	1406.4	1407.8	1409.3	1409.3	1407.7	1406.2	1404.7	1403.2
170°	1418.8	1420.3	1421.9	1421.7	1420.0	1418.2	1416.5	1414.8
172.5°	1428.1	1429.9	1431.6	1431.5	1429.8	1428.1	1426.3	1424.6
175°	1438.3	1440.0	1441.8	1441.8	1440.0	1438.3	1436.6	1434.9
177.5°	1443.9	1445.3	1446.7	1446.6	1445.0	1443.4	1441.8	1440.2
180°	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8	1443.8

(END OF REPORT)