

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: P332647-935

Luminaire Tested: **S124DIP-S1020D810U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

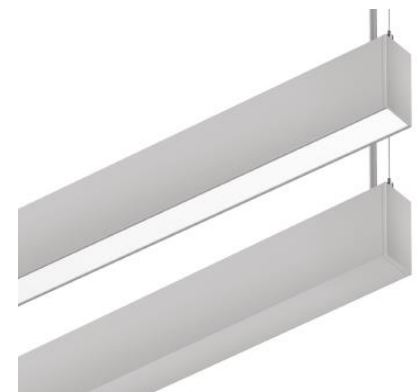
Test Information

Test Method: LM-79-08
Report Number: P332647-935
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: S124DIP-S1020D810U935-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6041.1 lumens
Efficiency: N/A
Efficacy: 111.0 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

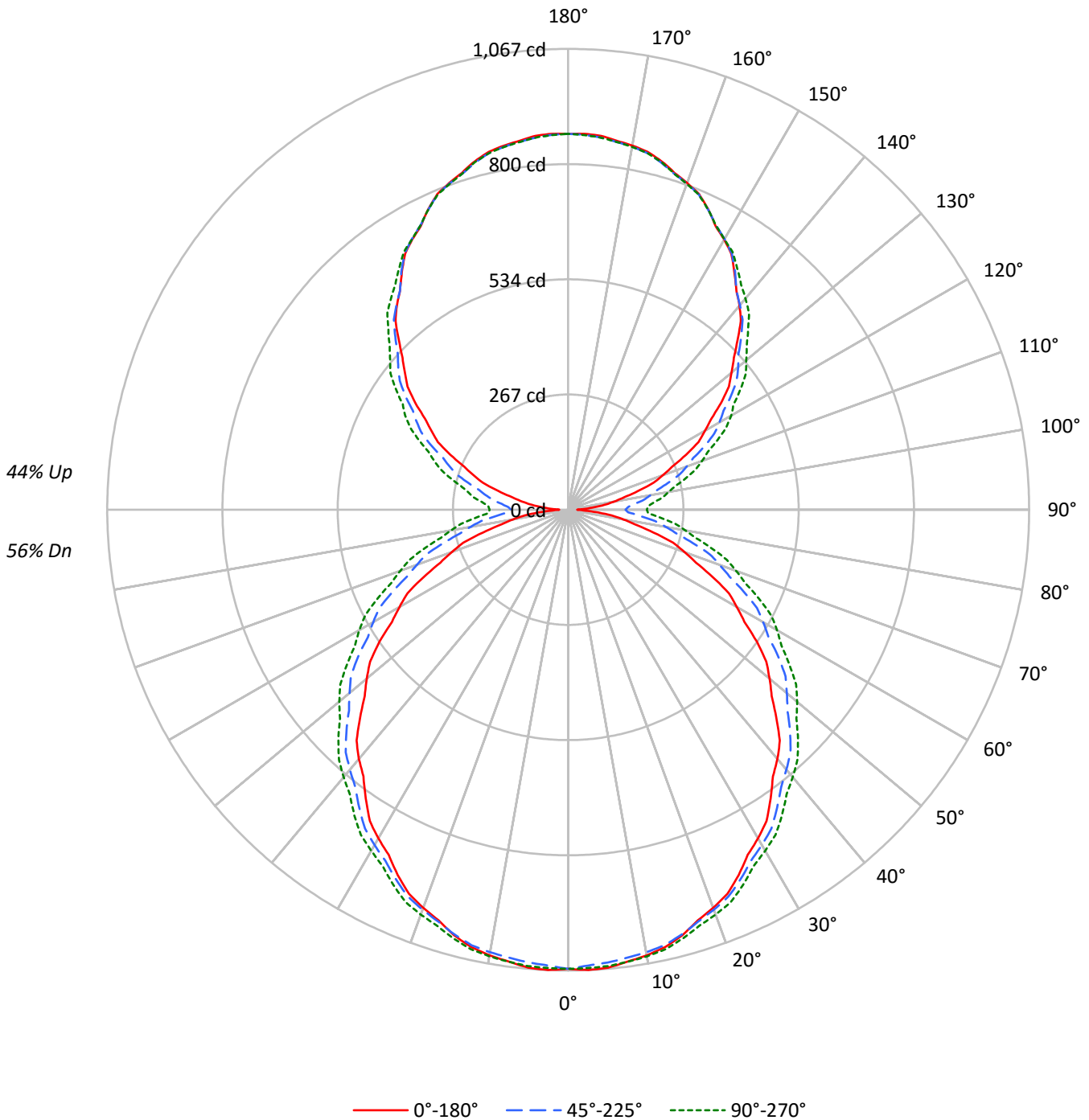
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	56
1	98	93	89	85	91	86	83	79	74	71	69	63	61	59	52	51	49	44
2	89	81	74	68	82	75	69	64	64	60	56	54	51	48	45	43	41	36
3	81	70	63	56	74	66	59	53	56	51	46	48	44	40	40	37	34	30
4	74	62	54	47	68	58	50	45	50	44	39	42	38	34	35	32	29	26
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	32	28	25	22
6	62	49	41	35	57	46	38	33	40	34	29	34	29	26	29	25	22	19
7	57	45	36	30	53	42	34	29	36	30	26	31	26	23	26	22	19	17
8	53	40	32	27	49	38	31	25	33	27	23	28	23	20	24	20	17	15
9	49	37	29	24	46	35	27	23	30	24	20	26	21	18	22	18	16	13
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12

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	1.7
10°-20°	288.4	4.8
20°-30°	436.1	7.2
30°-40°	527.7	8.7
40°-50°	557.9	9.2
50°-60°	525.0	8.7
60°-70°	435.6	7.2
70°-80°	306.0	5.1
80°-90°	175.6	2.9
90°-100°	160.1	2.7
100°-110°	246.1	4.1
110°-120°	339.7	5.6
120°-130°	409.4	6.8
130°-140°	439.9	7.3
140°-150°	422.5	7.0
150°-160°	353.3	5.8
160°-170°	235.0	3.9
170°-180°	82.3	1.4
0°-30°	825.2	13.7
0°-40°	1352.9	22.4
0°-60°	2435.8	40.3
0°-90°	3352.9	55.5
90°-120°	745.9	12.3
90°-150°	2017.6	33.4
90°-180°	2688.0	44.5
0°-180°	6041.1	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°	21	76	133	170	182	15
95°	56	102	155	188	200	57
105°	168	193	239	269	282	179
115°	301	313	348	373	381	297
125°	432	433	460	480	487	385
135°	554	558	566	583	589	429
145°	671	672	673	679	682	420
155°	767	767	767	769	767	353
165°	835	833	832	836	833	235
175°	869	866	865	869	865	82
180°	870	870	870	870	870	



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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°	35.6	46.8	57.9	69.0	80.2	91.6	103.4	115.3	127.1	138.9	146.8
90°	21.1	33.3	45.5	57.8	70.0	82.4	95.0	107.5	120.1	132.7	141.2
92.5°	32.5	43.9	55.3	66.7	78.1	90.0	102.1	114.3	126.6	138.8	146.8
95°	55.9	66.0	76.0	86.1	96.2	107.1	119.1	131.0	142.8	154.7	162.3
97.5°	84.6	93.2	101.8	110.4	119.0	129.2	141.2	153.2	165.1	177.1	184.6
100°	107.4	114.8	122.3	129.8	137.2	146.8	158.5	170.1	181.8	193.5	200.9
102.5°	132.1	138.4	144.6	150.9	157.2	166.0	177.3	188.6	200.0	211.3	218.7
105°	167.6	173.0	178.4	183.9	189.3	197.3	207.6	218.0	228.4	238.8	245.8
107.5°	207.0	211.5	216.0	220.6	225.1	232.0	241.3	250.7	260.1	269.4	276.4
110°	233.0	237.0	241.0	245.0	249.0	255.5	264.7	273.8	282.9	292.0	297.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	260.0	263.4	266.7	270.1	273.4	279.4	287.9	296.5	305.1	313.7	319.4
115°	300.7	303.0	305.4	307.8	310.1	315.4	323.6	331.7	339.9	348.1	353.8
117.5°	339.9	341.5	343.0	344.6	346.1	350.8	358.4	366.1	373.8	381.4	386.4
120°	365.4	366.8	368.2	369.5	371.0	375.3	382.5	389.7	396.9	404.2	408.7
122.5°	392.9	393.2	393.6	394.1	394.4	398.2	405.2	412.2	419.3	426.4	431.1
125°	432.2	432.0	431.7	431.4	431.1	434.2	440.7	447.2	453.7	460.1	464.9
127.5°	468.7	468.9	469.1	469.2	469.4	471.9	476.8	481.6	486.5	491.3	495.8
130°	493.6	493.8	494.0	494.1	494.3	496.5	500.8	505.0	509.3	513.5	518.0
132.5°	520.0	520.0	520.1	520.2	520.2	521.9	525.2	528.5	531.7	534.9	539.2
135°	553.6	554.6	555.4	556.4	557.2	558.6	560.5	562.3	564.2	566.0	570.0
137.5°	591.6	591.8	591.9	592.1	592.3	592.9	594.0	595.2	596.3	597.4	600.9
140°	616.9	617.0	617.0	617.1	617.1	617.3	617.5	617.8	618.0	618.3	621.6
142.5°	639.1	639.4	639.6	639.9	640.2	640.1	639.8	639.6	639.3	639.0	642.0
145°	671.0	671.2	671.6	671.9	672.3	672.5	672.7	672.8	673.0	673.1	674.6
147.5°	702.7	703.2	703.6	704.0	704.6	704.7	704.6	704.5	704.3	704.2	704.3
150°	722.1	722.5	722.8	723.1	723.4	723.6	723.6	723.6	723.6	723.6	723.6
152.5°	739.4	739.8	740.0	740.4	740.7	740.9	741.0	741.1	741.2	741.4	741.8
155°	767.3	767.3	767.3	767.3	767.3	767.2	767.2	767.0	766.8	766.7	767.2
157.5°	791.1	790.7	790.5	790.2	790.0	789.8	789.8	789.8	789.7	789.7	790.1
160°	805.0	804.9	804.8	804.6	804.4	804.3	804.2	804.0	803.8	803.7	804.2
162.5°	817.9	817.6	817.2	816.8	816.4	816.1	816.0	815.9	815.7	815.5	816.4
165°	835.3	834.9	834.5	834.0	833.5	833.2	832.8	832.6	832.2	832.0	832.8
167.5°	848.7	848.0	847.4	846.8	846.2	845.8	845.8	845.9	845.9	845.9	846.9
170°	856.2	855.5	854.7	853.9	853.3	852.9	853.1	853.3	853.3	853.5	854.4
172.5°	861.6	861.0	860.3	859.7	859.1	858.8	858.8	858.8	858.8	858.9	859.9
175°	869.0	868.2	867.5	866.8	866.0	865.6	865.4	865.2	865.1	865.0	866.0
177.5°	871.4	870.8	870.2	869.6	869.0	868.7	868.7	868.7	868.7	868.7	869.5
180°	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3



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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°	154.6	162.5	170.3	175.5	177.8	180.2	182.6	184.9
90°	149.8	158.3	166.9	172.5	174.9	177.3	179.7	182.1
92.5°	154.8	162.8	170.8	175.9	178.2	180.6	182.8	185.1
95°	169.9	177.5	185.1	190.1	192.4	194.8	197.3	199.6
97.5°	192.0	199.5	207.0	211.8	214.1	216.4	218.7	220.9
100°	208.4	215.8	223.3	227.9	229.7	231.6	233.4	235.3
102.5°	226.0	233.3	240.7	245.5	247.6	249.9	252.0	254.3
105°	252.9	259.9	267.0	271.8	274.4	277.0	279.6	282.1
107.5°	283.3	290.2	297.1	301.5	303.4	305.3	307.1	309.0
110°	303.6	309.4	315.1	319.3	321.8	324.4	327.0	329.6



TEST NUMBER: P332647-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	325.3	331.1	336.9	340.9	343.1	345.3	347.5	349.7
115°	359.4	365.1	370.7	374.4	376.2	377.9	379.5	381.3
117.5°	391.4	396.4	401.4	404.8	406.7	408.5	410.3	412.1
120°	413.3	417.8	422.3	425.9	428.3	430.7	433.1	435.5
122.5°	435.9	440.7	445.5	448.5	449.9	451.3	452.6	454.0
125°	469.5	474.2	479.0	482.0	483.3	484.6	485.9	487.2
127.5°	500.2	504.7	509.2	512.2	513.8	515.3	516.9	518.4
130°	522.4	526.8	531.3	534.1	535.0	536.1	537.0	538.0
132.5°	543.5	547.8	552.0	554.7	556.1	557.5	558.8	560.2
135°	573.9	577.8	581.8	584.3	585.5	586.6	587.7	588.8
137.5°	604.4	607.9	611.3	613.8	615.2	616.6	618.0	619.4
140°	624.8	628.2	631.5	633.7	634.8	636.0	637.2	638.3
142.5°	645.0	648.0	650.9	653.0	654.0	655.1	656.3	657.3
145°	676.0	677.4	678.9	679.9	680.5	681.1	681.7	682.3
147.5°	704.4	704.5	704.6	705.0	705.7	706.4	707.1	707.7
150°	723.6	723.6	723.6	723.5	723.4	723.2	723.1	722.9
152.5°	742.1	742.4	742.8	742.8	742.4	742.0	741.7	741.2
155°	767.8	768.4	769.0	769.0	768.4	767.8	767.2	766.7
157.5°	790.6	791.1	791.5	791.4	791.0	790.5	790.0	789.5
160°	804.6	805.0	805.5	805.4	804.6	803.8	803.1	802.4
162.5°	817.2	817.9	818.8	818.8	818.0	817.3	816.6	815.8
165°	833.8	834.7	835.6	835.7	835.1	834.5	833.9	833.4
167.5°	847.7	848.7	849.5	849.5	848.6	847.7	846.8	845.8
170°	855.3	856.2	857.1	857.0	856.0	855.0	853.9	852.8
172.5°	860.9	861.9	863.0	863.0	861.9	860.8	859.8	858.8
175°	867.0	868.1	869.2	869.2	868.1	867.0	866.0	865.0
177.5°	870.4	871.2	872.1	872.0	871.1	870.1	869.2	868.1
180°	870.3	870.3	870.3	870.3	870.3	870.3	870.3	870.3

(END OF REPORT)