

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: P332629-940

Luminaire Tested: **S124DIP-S1020D365U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332629-940
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-S1020D365U940-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4884.6 lumens
Efficiency: N/A
Efficacy: 112.3 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: Semi-Direct

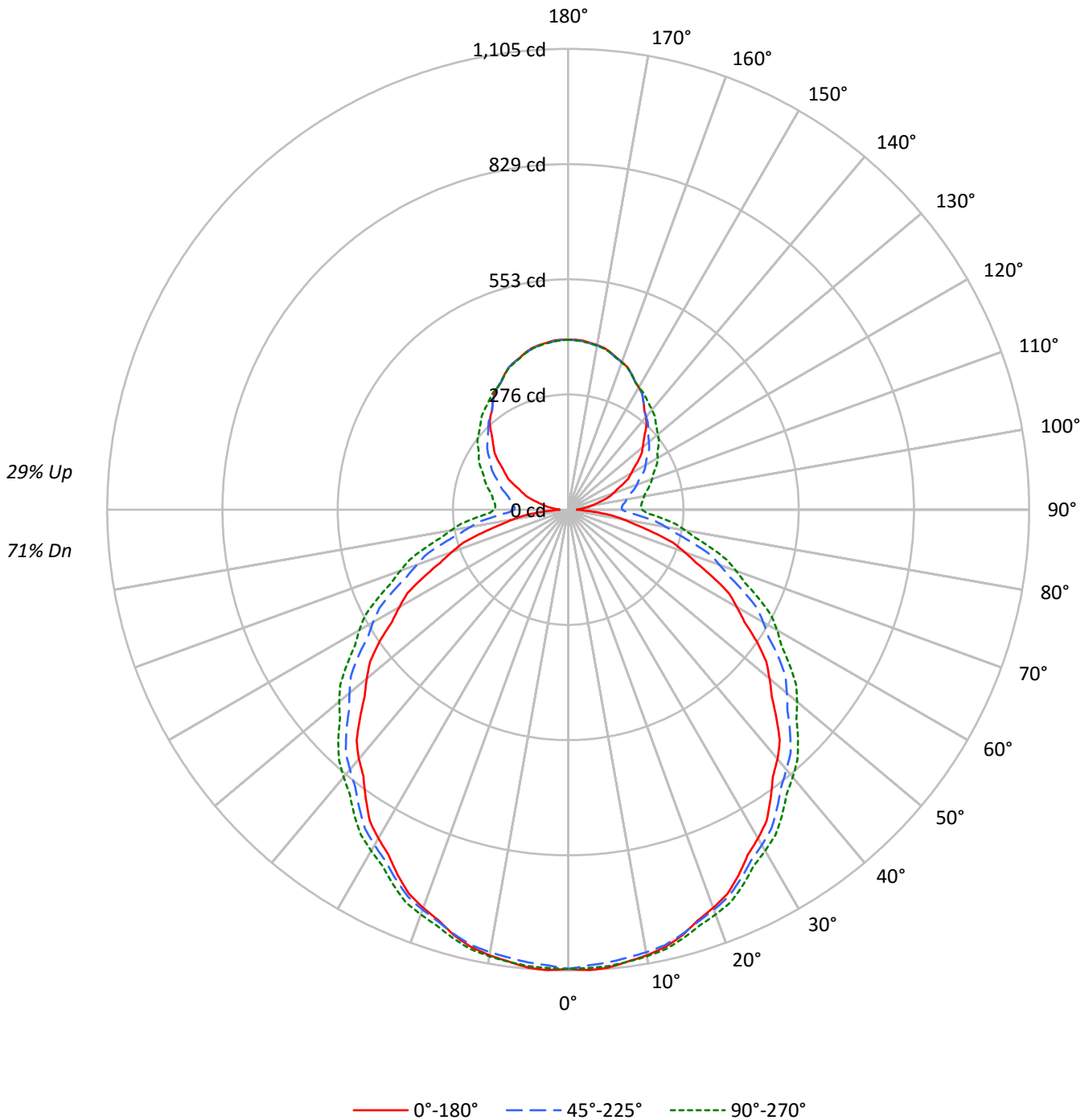
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75	71
1	101	96	91	87	95	91	87	83	81	78	75	73	70	68	64	63	61	57
2	91	83	76	70	86	79	72	67	70	65	61	63	59	56	56	53	50	46
3	83	73	64	58	78	69	61	55	62	56	51	55	50	46	49	45	42	39
4	76	64	55	49	71	61	53	47	55	48	43	49	44	39	44	39	36	33
5	70	57	48	41	65	54	46	40	49	42	37	44	38	34	39	35	31	28
6	64	51	42	36	60	49	40	35	44	37	32	39	34	30	35	31	27	24
7	59	46	37	31	56	44	36	30	40	33	28	36	30	26	32	28	24	22
8	55	42	34	28	52	40	32	27	36	30	25	33	27	23	30	25	21	19
9	51	38	30	25	48	37	29	24	33	27	22	30	25	21	27	23	19	17
10	48	35	27	22	45	34	26	22	31	24	20	28	23	19	25	21	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8888	8888	8888
5°	8916	8686	8711
10°	8861	8544	8538
15°	8782	8380	8334
20°	8662	8198	8135
25°	8527	7995	7918
30°	8381	7793	7693
35°	8216	7585	7497
40°	8083	7388	7292
45°	7887	7207	7117
50°	7721	6996	6931
55°	7549	6799	6714
60°	7282	6547	6515
65°	6989	6278	6271
70°	6633	5968	5986
75°	6136	5628	5730
80°	5588	5302	5476
85°	4893	5013	5328



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.3	2.1
10°-20°	298.7	6.1
20°-30°	451.7	9.2
30°-40°	546.5	11.2
40°-50°	577.7	11.8
50°-60°	543.7	11.1
60°-70°	451.1	9.2
70°-80°	316.9	6.5
80°-90°	180.4	3.7
90°-100°	133.2	2.7
100°-110°	158.3	3.2
110°-120°	188.0	3.8
120°-130°	208.0	4.3
130°-140°	213.0	4.4
140°-150°	199.2	4.1
150°-160°	165.4	3.4
160°-170°	110.0	2.3
170°-180°	38.5	0.8
0°-30°	854.6	17.5
0°-40°	1401.1	28.7
0°-60°	2522.6	51.6
0°-90°	3471.0	71.1
90°-120°	479.5	9.8
90°-150°	1099.7	22.5
90°-180°	1414.0	28.9
0°-180°	4884.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1102	1098	1090	1099	1098	105
15°	1057	1058	1054	1065	1064	298
25°	967	974	978	991	992	445
35°	846	860	873	889	894	529
45°	705	729	752	772	779	545
55°	552	579	615	639	647	492
65°	382	422	464	493	504	379
75°	212	258	309	343	355	226
85°	65	117	173	208	222	70
90°	21	74	129	165	177	14
95°	35	79	131	164	177	34
105°	84	111	156	187	199	90
115°	145	157	195	220	230	143
125°	205	206	234	256	264	183
135°	261	263	271	289	297	202
145°	315	315	315	322	326	197
155°	359	359	359	360	359	165
165°	391	390	390	391	390	110
175°	407	405	405	407	405	39
180°	407	407	407	407	407	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1104.9	1104.3	1103.6	1103.0	1102.2	1101.1	1099.3	1097.6	1095.8	1094.0	1095.6
5°	1102.2	1101.4	1100.5	1099.7	1098.9	1097.5	1095.6	1093.7	1091.8	1089.8	1092.1
7.5°	1092.8	1092.3	1091.8	1091.4	1090.8	1089.8	1088.2	1086.6	1085.0	1083.4	1085.9
10°	1084.9	1084.7	1084.4	1084.1	1083.9	1083.0	1081.6	1080.3	1078.9	1077.5	1080.0
12.5°	1074.1	1074.1	1074.0	1073.9	1073.9	1073.4	1072.5	1071.5	1070.6	1069.6	1071.9
15°	1056.6	1056.9	1057.1	1057.4	1057.7	1057.4	1056.6	1055.8	1054.9	1054.1	1056.6
17.5°	1032.7	1033.5	1034.3	1035.1	1036.0	1036.3	1036.1	1036.0	1035.8	1035.6	1038.1
20°	1015.9	1016.7	1017.5	1018.3	1019.2	1019.8	1020.0	1020.3	1020.6	1020.8	1023.6
22.5°	997.1	998.2	999.3	1000.3	1001.3	1002.1	1002.6	1003.1	1003.5	1004.1	1006.8
25°	966.6	968.2	969.8	971.5	973.1	974.4	975.2	976.1	976.9	977.7	980.7
27.5°	932.6	935.0	937.4	939.8	942.2	944.1	945.3	946.6	947.8	949.0	951.9
30°	909.9	912.0	914.3	916.4	918.6	920.7	922.6	924.5	926.4	928.4	931.4
32.5°	885.2	887.9	890.5	893.1	895.7	898.1	900.3	902.4	904.6	906.7	910.1
35°	845.8	849.1	852.3	855.6	858.9	861.9	864.7	867.4	870.1	872.9	876.7
37.5°	806.0	809.9	813.6	817.4	821.2	824.7	828.1	831.5	835.0	838.4	842.2
40°	780.4	784.0	787.6	791.1	794.7	798.3	802.2	806.0	809.9	813.7	817.8
42.5°	750.8	754.8	758.8	762.9	766.8	771.1	775.5	780.1	784.5	789.1	793.6
45°	705.2	710.4	715.6	720.9	726.0	731.2	736.5	741.6	746.8	752.1	756.7
47.5°	661.6	666.9	672.3	677.7	683.1	688.8	694.7	700.8	706.9	712.8	717.6
50°	630.0	636.1	642.0	648.1	654.1	660.1	666.2	672.2	678.2	684.2	689.7
52.5°	598.4	604.5	610.5	616.5	622.6	629.0	635.9	642.8	649.7	656.7	662.1
55°	552.3	558.1	563.8	569.6	575.3	582.3	590.6	598.8	607.0	615.2	620.7
57.5°	500.8	507.9	515.1	522.2	529.3	536.9	545.1	553.3	561.4	569.6	576.1
60°	467.3	474.4	481.5	488.7	495.8	503.8	512.9	521.9	530.9	540.0	546.3
62.5°	434.7	442.5	450.3	458.1	465.8	474.2	483.3	492.3	501.4	510.4	516.7
65°	382.2	390.9	399.8	408.5	417.2	426.3	435.6	445.0	454.2	463.6	470.4
67.5°	331.6	341.0	350.3	359.6	368.9	378.5	388.5	398.5	408.5	418.5	425.4
70°	297.1	306.5	315.8	325.0	334.4	344.3	354.6	365.1	375.5	385.9	393.3
72.5°	263.6	273.1	282.7	292.2	301.8	312.0	323.1	334.1	345.3	356.3	363.5
75°	212.0	222.2	232.3	242.5	252.6	263.4	274.9	286.4	297.9	309.4	317.1
77.5°	164.0	174.7	185.5	196.2	207.0	218.3	230.4	242.5	254.5	266.5	274.3
80°	134.4	145.3	156.3	167.3	178.3	189.8	201.8	213.8	225.9	237.9	246.2
82.5°	104.8	116.2	127.6	139.0	150.3	162.1	174.2	186.2	198.3	210.4	218.7
85°	65.4	76.9	88.4	99.9	111.4	123.3	135.6	147.9	160.2	172.6	180.8
87.5°	36.6	48.0	59.4	70.7	82.0	93.7	105.8	118.0	130.1	142.1	150.3
90°	20.7	32.4	44.1	55.8	67.6	79.6	91.9	104.3	116.6	129.0	137.3
92.5°	25.5	36.2	47.0	57.7	68.5	79.9	92.1	104.2	116.5	128.6	136.6
95°	35.0	44.6	54.3	63.9	73.7	84.4	96.0	107.7	119.5	131.2	138.8
97.5°	47.5	55.8	64.1	72.4	80.7	90.7	102.4	114.1	125.8	137.5	144.9
100°	57.7	65.1	72.5	79.9	87.3	96.7	108.0	119.3	130.6	141.9	149.5
102.5°	69.3	75.6	81.9	88.4	94.7	103.4	114.4	125.5	136.5	147.6	155.0
105°	84.5	90.1	95.6	101.1	106.7	114.7	125.1	135.5	146.0	156.4	163.5
107.5°	102.8	107.5	112.0	116.5	121.2	128.2	137.9	147.6	157.2	166.8	173.7
110°	114.5	118.4	122.4	126.4	130.4	137.1	146.7	156.1	165.7	175.2	181.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	126.6	130.0	133.5	136.9	140.3	146.5	155.5	164.6	173.6	182.6	188.7
115°	144.8	147.2	149.7	152.2	154.6	160.2	168.8	177.5	186.1	194.7	200.6
117.5°	163.1	164.6	166.1	167.6	169.2	174.0	182.1	190.1	198.2	206.3	211.7
120°	174.4	175.5	176.6	177.7	178.9	183.2	191.0	198.8	206.4	214.2	219.4
122.5°	187.3	187.5	187.8	188.2	188.4	192.3	199.7	207.1	214.5	221.9	227.1
125°	205.0	204.7	204.5	204.2	203.9	207.1	213.9	220.7	227.5	234.3	239.3
127.5°	221.9	221.9	221.9	221.8	221.7	224.3	229.4	234.5	239.7	244.9	249.7
130°	233.1	233.0	233.0	232.9	232.8	235.0	239.3	243.8	248.2	252.5	257.3
132.5°	245.5	245.3	245.2	245.0	245.0	246.6	250.0	253.5	257.0	260.5	265.0
135°	260.6	260.9	261.4	261.8	262.3	263.4	265.3	267.2	269.1	271.1	275.3
137.5°	278.3	278.2	278.1	278.0	278.0	278.5	279.6	280.5	281.6	282.7	286.5
140°	290.2	290.0	289.9	289.7	289.6	289.7	290.0	290.3	290.5	290.8	294.3
142.5°	300.0	300.1	300.1	300.2	300.3	300.2	300.1	299.9	299.6	299.4	302.5
145°	314.8	314.8	314.8	314.8	314.8	314.9	314.9	315.0	315.0	315.1	316.6
147.5°	329.7	329.7	329.8	329.8	329.8	329.8	329.8	329.8	329.8	329.7	329.8
150°	338.7	338.7	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
152.5°	346.3	346.4	346.5	346.6	346.8	346.8	346.9	347.0	347.0	347.1	347.2
155°	359.2	359.2	359.2	359.2	359.2	359.2	359.1	359.0	359.0	358.9	359.2
157.5°	370.3	370.1	370.1	370.0	369.8	369.7	369.7	369.7	369.7	369.7	369.9
160°	376.8	376.7	376.7	376.7	376.6	376.5	376.5	376.4	376.3	376.2	376.5
162.5°	382.9	382.7	382.5	382.4	382.2	382.1	382.0	381.9	381.8	381.7	382.2
165°	391.0	390.8	390.7	390.4	390.2	390.0	389.9	389.8	389.6	389.5	389.9
167.5°	397.3	397.0	396.7	396.4	396.1	395.9	396.0	396.0	396.0	396.0	396.5
170°	400.8	400.5	400.1	399.8	399.4	399.3	399.3	399.4	399.5	399.6	399.9
172.5°	403.3	403.1	402.7	402.4	402.2	402.0	402.0	402.1	402.1	402.1	402.5
175°	406.8	406.4	406.1	405.7	405.4	405.2	405.1	405.0	405.0	404.9	405.4
177.5°	408.0	407.7	407.3	407.1	406.8	406.7	406.7	406.7	406.7	406.7	407.1
180°	407.4	407.4	407.4	407.4	407.4	407.4	407.4	407.4	407.4	407.4	407.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1097.2	1098.7	1100.2	1100.8	1100.6	1100.4	1100.2	1100.0
5°	1094.2	1096.4	1098.7	1099.6	1099.3	1099.0	1098.8	1098.5
7.5°	1088.4	1090.8	1093.3	1094.4	1094.1	1093.9	1093.6	1093.3
10°	1082.4	1084.9	1087.4	1088.5	1088.2	1088.0	1087.7	1087.4
12.5°	1074.2	1076.4	1078.6	1079.8	1079.7	1079.6	1079.6	1079.5
15°	1059.1	1061.5	1064.0	1065.1	1064.8	1064.5	1064.3	1064.0
17.5°	1040.6	1043.2	1045.7	1046.9	1046.6	1046.4	1046.2	1046.0
20°	1026.3	1029.0	1031.8	1033.1	1033.1	1033.1	1033.1	1033.1
22.5°	1009.5	1012.3	1015.0	1016.6	1017.1	1017.4	1017.9	1018.3
25°	983.7	986.7	989.7	991.4	991.7	991.9	992.2	992.5
27.5°	954.7	957.4	960.3	961.8	962.2	962.5	962.8	963.1
30°	934.4	937.4	940.4	942.2	942.7	943.3	943.9	944.4
32.5°	913.6	917.0	920.5	922.5	923.0	923.5	924.1	924.7
35°	880.6	884.4	888.2	890.6	891.4	892.2	893.0	893.9
37.5°	846.1	850.1	853.9	856.3	857.2	858.1	858.9	859.8
40°	821.9	826.0	830.2	832.8	833.8	834.9	836.1	837.1
42.5°	798.2	802.7	807.3	809.9	810.8	811.7	812.6	813.4
45°	761.3	766.1	770.7	773.7	775.1	776.4	777.8	779.2
47.5°	722.5	727.3	732.2	735.4	737.0	738.7	740.3	742.0
50°	695.2	700.7	706.1	709.7	711.4	713.0	714.6	716.3
52.5°	667.6	673.1	678.6	682.1	683.8	685.4	687.1	688.7
55°	626.2	631.7	637.1	640.7	642.3	644.0	645.6	647.3
57.5°	582.6	589.2	595.7	599.7	601.2	602.8	604.3	605.8
60°	552.6	558.9	565.2	569.4	571.7	573.8	576.0	578.2
62.5°	523.0	529.3	535.7	539.8	542.1	544.2	546.4	548.7
65°	477.2	484.1	491.0	495.5	497.7	499.9	502.0	504.3
67.5°	432.4	439.3	446.3	450.8	453.0	455.1	457.3	459.4
70°	400.6	408.0	415.4	420.2	422.0	424.0	425.9	427.8
72.5°	370.7	377.8	385.0	389.7	391.8	394.0	396.1	398.2
75°	324.8	332.4	340.1	345.2	347.7	350.2	352.6	355.1
77.5°	282.1	289.9	297.7	302.9	305.5	308.2	310.8	313.4
80°	254.4	262.6	270.8	276.0	278.2	280.4	282.6	284.8
82.5°	227.2	235.7	244.1	249.5	251.9	254.3	256.7	259.1
85°	189.0	197.2	205.5	211.0	213.7	216.4	219.2	221.9
87.5°	158.3	166.3	174.3	179.5	182.0	184.4	186.8	189.3
90°	145.7	154.1	162.5	167.8	170.1	172.5	174.8	177.1
92.5°	144.5	152.6	160.5	165.7	167.9	170.2	172.5	174.8
95°	146.4	154.0	161.7	166.7	169.2	171.6	174.1	176.6
97.5°	152.4	159.8	167.2	172.1	174.4	176.8	179.1	181.6
100°	156.9	164.5	172.1	176.8	178.7	180.7	182.5	184.5
102.5°	162.3	169.7	177.1	181.8	184.0	186.2	188.4	190.6
105°	170.5	177.5	184.6	189.3	191.7	194.1	196.5	198.9
107.5°	180.7	187.6	194.6	199.0	200.9	202.9	204.8	206.8
110°	187.5	193.7	199.8	204.1	206.5	208.9	211.3	213.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	194.7	200.8	206.9	211.0	213.2	215.4	217.7	219.9
115°	206.6	212.6	218.6	222.4	224.3	226.1	228.0	229.8
117.5°	217.2	222.7	228.1	231.8	233.9	235.9	238.0	240.0
120°	224.4	229.6	234.7	238.4	240.8	243.1	245.4	247.8
122.5°	232.4	237.6	242.8	246.3	248.1	249.8	251.5	253.2
125°	244.4	249.5	254.6	257.9	259.3	260.8	262.3	263.9
127.5°	254.4	259.2	264.0	267.3	269.0	270.8	272.5	274.3
130°	262.1	266.9	271.7	274.7	276.2	277.5	278.8	280.3
132.5°	269.6	274.1	278.7	281.8	283.3	284.8	286.3	287.9
135°	279.6	283.7	288.0	290.9	292.3	293.7	295.2	296.6
137.5°	290.3	294.1	297.9	300.5	301.9	303.4	304.8	306.2
140°	297.7	301.2	304.8	307.1	308.4	309.8	311.0	312.4
142.5°	305.6	308.7	311.8	314.0	315.1	316.2	317.4	318.5
145°	318.3	319.9	321.4	322.6	323.5	324.4	325.3	326.2
147.5°	330.0	330.1	330.3	330.8	331.6	332.4	333.2	334.0
150°	338.8	338.8	338.8	338.7	338.7	338.6	338.5	338.4
152.5°	347.4	347.6	347.8	347.7	347.5	347.3	347.1	347.0
155°	359.4	359.7	360.0	360.0	359.7	359.4	359.2	358.9
157.5°	370.1	370.3	370.5	370.5	370.2	370.1	369.8	369.5
160°	376.7	376.8	377.1	377.0	376.7	376.3	375.9	375.6
162.5°	382.5	382.9	383.3	383.3	383.0	382.6	382.3	381.9
165°	390.3	390.7	391.1	391.2	390.9	390.7	390.4	390.1
167.5°	396.9	397.3	397.7	397.7	397.3	396.8	396.4	395.9
170°	400.4	400.8	401.3	401.2	400.7	400.2	399.8	399.2
172.5°	403.1	403.5	403.9	403.9	403.5	403.0	402.5	402.0
175°	405.9	406.4	406.9	406.9	406.4	405.9	405.4	404.9
177.5°	407.4	407.9	408.2	408.2	407.8	407.3	406.9	406.4
180°	407.4	407.4	407.4	407.4	407.4	407.4	407.4	407.4

(END OF REPORT)