

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: P331680-830

Luminaire Tested: **SA2XXRDIP-C675D330U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331680-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C675D330U830-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 675 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

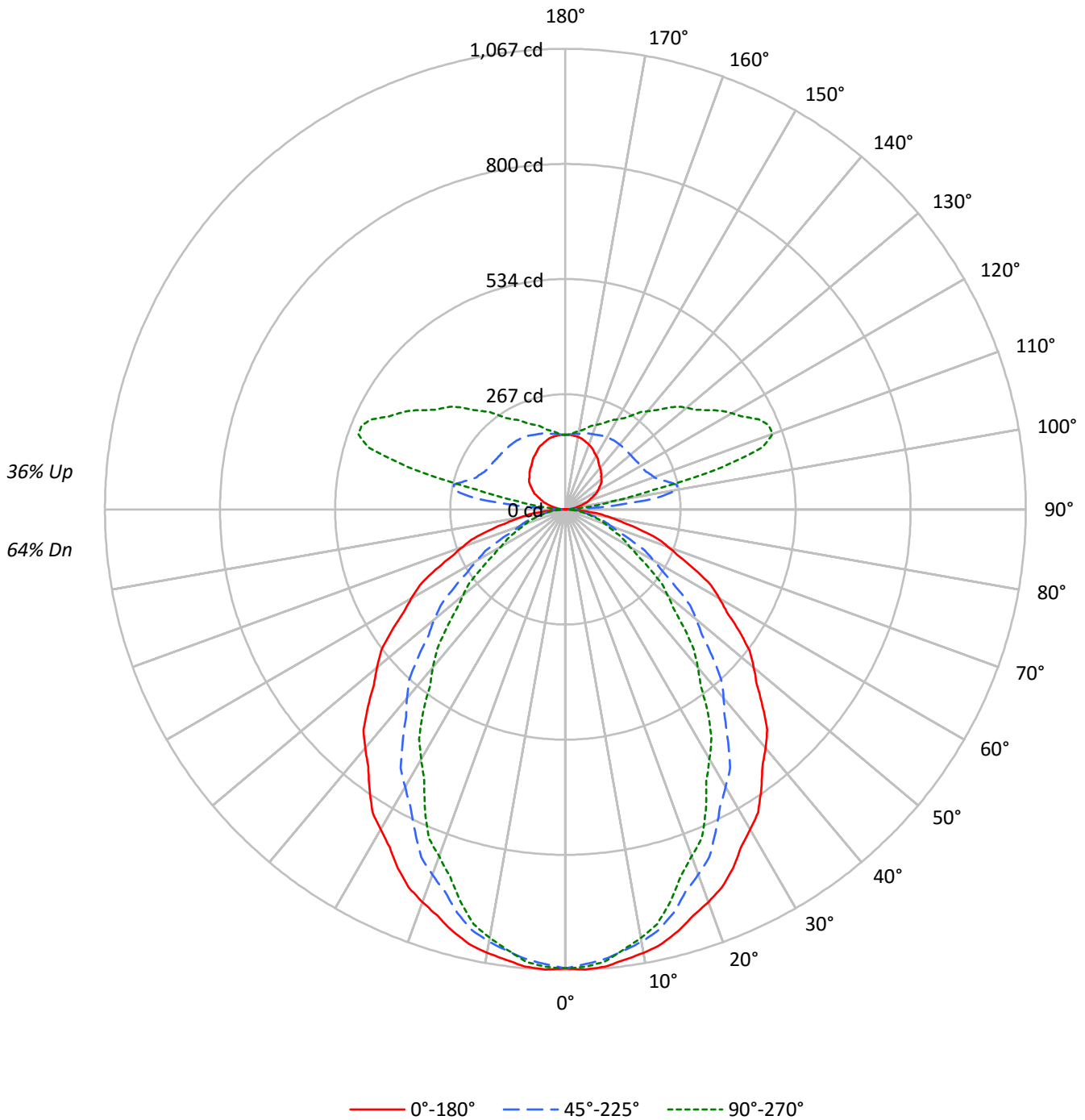
Lumens per Lamp: N/A
Luminaire Lumens: 3393.4 lumens
Efficiency: N/A
Efficacy: 97.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 35
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	50	30	10	0	
RCR																						
0	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69	64				
1	102	97	94	90	95	92	88	86	81	79	76	71	70	68	62	61	60	56				
2	93	86	80	75	87	81	76	71	72	68	64	63	60	58	56	53	51	48				
3	85	76	69	63	80	72	65	60	64	59	55	57	53	50	50	47	44	41				
4	78	68	60	54	74	64	57	52	57	52	47	51	47	43	45	42	39	36				
5	72	61	53	47	68	58	50	45	52	46	41	46	41	38	41	37	34	31				
6	67	55	47	41	63	52	45	40	47	41	36	42	37	33	37	33	31	28				
7	62	50	42	36	58	47	40	35	43	37	32	38	34	30	34	30	27	25				
8	58	46	38	33	54	43	36	31	39	33	29	35	30	27	32	28	25	23				
9	54	42	34	29	51	40	33	28	36	30	26	33	28	24	29	25	23	21				
10	51	39	31	26	48	37	30	26	33	28	24	30	26	22	27	23	21	19				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17166	17166	17166
5°	17232	16951	17045
10°	17100	16674	16531
15°	16904	16181	15714
20°	16632	15474	14698
25°	16352	14672	13714
30°	15966	13848	12450
35°	15589	12952	11341
40°	15209	12026	10058
45°	14764	10985	8896
50°	14307	9934	7759
55°	13841	8802	6663
60°	13298	7611	5532
65°	12684	6395	5039
70°	11948	5268	4631
75°	11042	4803	4323
80°	9754	4296	3933
85°	7669	3390	3390



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.5	2.9
10°-20°	273.3	8.1
20°-30°	383.7	11.3
30°-40°	418.4	12.3
40°-50°	384.7	11.3
50°-60°	302.2	8.9
60°-70°	197.0	5.8
70°-80°	101.6	3.0
80°-90°	27.9	0.8
90°-100°	69.2	2.0
100°-110°	235.0	6.9
110°-120°	249.6	7.4
120°-130°	205.5	6.1
130°-140°	165.0	4.9
140°-150°	124.7	3.7
150°-160°	87.6	2.6
160°-170°	51.6	1.5
170°-180°	16.8	0.5
0°-30°	756.5	22.3
0°-40°	1174.9	34.6
0°-60°	1861.8	54.9
0°-90°	2188.3	64.5
90°-120°	553.8	16.3
90°-150°	1049.0	30.9
90°-180°	1205.0	35.5
0°-180°	3393.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1063	1063	1063	1063	1063	
5°	1063	1058	1046	1054	1052	101
15°	1011	999	968	950	940	285
25°	918	885	824	786	770	422
35°	791	740	657	599	575	495
45°	647	580	481	415	390	499
55°	492	415	313	257	237	439
65°	332	254	167	136	132	329
75°	177	112	77	71	69	187
85°	41	22	18	18	18	49
90°	0	4	11	11	11	2
95°	12	29	130	49	38	12
105°	41	61	247	441	375	43
115°	72	90	206	426	494	71
125°	100	118	198	345	401	89
135°	117	140	196	290	332	91
145°	134	154	195	242	265	84
155°	152	164	190	214	223	70
165°	166	171	182	192	196	47
175°	173	173	174	177	176	16
180°	173	173	173	173	173	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2
2.5°	1067.1	1066.2	1065.4	1064.5	1063.7	1062.2	1060.4	1058.5	1056.7	1054.8	1056.5
5°	1063.2	1062.2	1061.1	1060.0	1058.9	1057.1	1054.2	1051.5	1048.7	1045.9	1047.8
7.5°	1052.3	1050.9	1049.6	1048.3	1047.0	1044.6	1041.4	1038.2	1034.9	1031.7	1032.2
10°	1043.0	1041.5	1040.0	1038.5	1037.0	1034.2	1029.8	1025.6	1021.3	1017.0	1016.4
12.5°	1031.4	1029.6	1027.7	1026.0	1024.1	1020.5	1015.0	1009.6	1004.0	998.5	997.4
15°	1011.3	1008.9	1006.5	1004.2	1001.8	997.0	989.8	982.5	975.2	968.0	963.9
17.5°	986.5	982.9	979.3	975.6	972.0	965.6	956.3	947.0	937.6	928.3	923.5
20°	968.0	963.7	959.4	955.2	950.8	943.4	932.6	922.0	911.3	900.6	895.2
22.5°	947.9	943.2	938.4	933.6	928.8	920.4	908.3	896.3	884.2	872.1	865.3
25°	917.9	911.1	904.3	897.4	890.6	880.1	866.0	851.9	837.7	823.6	814.8
27.5°	881.7	874.3	866.9	859.4	852.0	840.3	824.4	808.5	792.6	776.7	766.5
30°	856.4	848.2	840.1	832.0	823.9	811.2	794.1	777.0	759.9	742.8	731.9
32.5°	831.7	822.2	812.8	803.2	793.7	780.2	762.8	745.4	727.9	710.5	698.0
35°	790.9	780.0	769.1	758.2	747.3	732.4	713.6	694.8	676.0	657.1	643.7
37.5°	750.2	738.1	726.1	714.2	702.2	686.2	666.2	646.1	626.0	606.0	591.2
40°	721.6	708.8	696.0	683.2	670.3	653.6	632.8	612.1	591.4	570.6	555.4
42.5°	692.4	678.9	665.3	651.9	638.4	620.9	599.5	578.1	556.6	535.2	519.4
45°	646.6	632.3	617.9	603.6	589.3	570.9	548.5	526.0	503.5	481.1	465.9
47.5°	601.9	586.7	571.6	556.4	541.2	522.1	498.9	475.7	452.5	429.3	414.2
50°	569.6	554.4	539.2	524.1	508.9	489.6	466.0	442.5	419.0	395.5	380.7
52.5°	538.1	522.2	506.3	490.5	474.6	455.2	432.2	409.2	386.2	363.2	348.9
55°	491.7	475.0	458.4	441.7	425.0	405.1	382.0	358.9	335.8	312.7	299.9
57.5°	444.1	427.1	409.9	392.9	375.7	356.1	333.8	311.7	289.5	267.3	255.5
60°	411.8	394.7	377.6	360.5	343.4	323.9	301.8	279.7	257.8	235.7	224.8
62.5°	380.2	363.2	346.0	328.9	311.8	292.8	271.8	250.8	229.8	208.8	198.4
65°	332.0	314.6	297.3	280.0	262.7	244.4	225.2	205.9	186.6	167.4	160.1
67.5°	285.4	268.2	251.0	233.8	216.6	199.3	182.0	164.8	147.4	130.1	126.8
70°	253.1	236.4	219.7	203.0	186.3	170.6	155.9	141.1	126.4	111.6	109.4
72.5°	222.3	206.2	190.3	174.3	158.3	144.4	132.5	120.6	108.9	97.0	95.2
75°	177.0	162.1	147.1	132.1	117.2	106.0	98.8	91.5	84.3	77.0	75.5
77.5°	132.6	119.4	106.3	93.2	80.1	71.7	68.2	64.8	61.3	57.8	56.8
80°	104.9	94.0	83.0	72.2	61.3	54.8	52.6	50.4	48.4	46.2	45.3
82.5°	79.5	71.0	62.5	53.9	45.4	40.4	39.0	37.5	36.1	34.7	34.1
85°	41.4	36.9	32.4	27.9	23.4	20.8	20.2	19.6	18.9	18.3	18.3
87.5°	12.3	11.2	10.1	8.9	7.6	7.2	7.4	7.9	8.4	8.4	8.2
90°	0.4	1.3	2.6	3.3	4.0	5.0	6.7	9.0	11.0	11.3	11.0
92.5°	4.1	5.8	8.3	9.7	12.0	15.1	22.6	33.3	42.7	43.3	36.6
95°	11.7	13.0	16.3	19.3	24.6	32.6	48.0	76.9	115.6	130.5	114.2
97.5°	18.9	20.7	24.3	28.8	35.0	44.0	63.2	103.7	167.9	222.8	233.8
100°	25.6	26.7	29.6	35.0	41.7	51.0	68.6	109.2	181.2	263.1	311.0
102.5°	31.8	32.5	35.5	40.8	47.8	57.1	73.4	109.5	176.1	264.4	339.8
105°	40.6	41.9	44.3	49.3	56.6	66.0	81.6	111.2	166.2	246.8	335.4
107.5°	50.2	51.3	53.5	58.2	65.4	74.8	90.0	115.8	161.3	227.8	306.1
110°	56.6	58.0	59.9	64.3	71.3	81.0	95.6	119.5	160.2	218.8	287.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	62.5	63.8	66.1	70.1	76.8	86.8	100.9	123.6	160.4	212.9	274.9
115°	71.6	73.2	75.3	79.3	86.0	94.9	109.2	129.5	161.8	206.5	259.1
117.5°	81.1	82.4	84.4	87.9	94.3	103.7	116.9	135.9	164.3	203.3	249.1
120°	86.9	88.2	90.3	93.2	99.9	109.2	122.2	140.3	165.9	201.5	243.7
122.5°	92.6	93.6	95.6	98.9	105.5	115.1	127.2	143.9	167.7	200.4	239.2
125°	99.9	100.9	102.9	106.9	113.6	122.9	134.9	149.9	170.5	198.5	232.8
127.5°	105.8	107.1	109.9	114.3	120.6	130.3	141.9	155.4	173.3	197.4	226.8
130°	109.2	110.6	113.9	118.6	125.3	134.5	146.2	158.8	175.5	196.8	222.8
132.5°	112.4	114.0	117.6	122.5	129.5	138.8	150.0	162.3	177.7	196.5	219.6
135°	117.3	118.6	122.5	127.5	135.3	144.5	155.2	166.8	180.2	196.1	215.1
137.5°	121.8	123.4	127.3	132.7	140.3	148.9	159.5	170.3	182.5	196.0	212.0
140°	125.3	126.6	130.5	135.9	143.2	151.8	161.8	172.2	183.5	195.9	210.1
142.5°	128.7	129.8	133.5	138.8	145.9	154.0	163.7	173.8	184.3	195.9	208.3
145°	133.8	135.3	138.6	143.5	150.2	157.5	166.5	175.9	185.1	195.1	205.9
147.5°	139.5	140.4	143.6	148.3	153.8	160.3	168.8	177.0	185.4	194.0	203.3
150°	143.2	144.2	146.8	151.2	156.2	162.2	169.8	177.5	185.1	193.1	201.1
152.5°	146.9	147.4	150.1	153.8	158.6	164.0	170.9	177.8	184.6	191.8	199.3
155°	152.2	152.5	154.5	158.2	161.8	166.8	172.5	178.1	183.8	189.5	195.9
157.5°	156.6	156.9	158.5	161.7	164.7	168.8	173.6	178.1	182.3	187.1	192.6
160°	159.5	159.9	161.2	163.8	166.5	170.2	174.2	178.1	181.5	185.5	190.1
162.5°	162.5	162.2	163.6	165.7	168.1	171.0	174.5	177.9	180.7	184.2	188.0
165°	165.9	165.5	166.2	168.1	169.8	171.8	174.8	177.2	179.2	181.5	184.5
167.5°	168.6	168.2	168.8	170.1	171.4	172.6	174.7	176.7	177.7	179.2	181.1
170°	170.5	169.8	170.2	171.2	171.8	172.9	174.5	176.2	176.8	177.9	179.2
172.5°	171.5	171.2	171.0	172.0	172.4	173.1	174.3	175.4	175.8	176.3	177.3
175°	172.9	172.5	172.2	172.9	172.9	173.1	173.8	174.5	174.2	174.5	174.8
177.5°	173.4	172.9	172.7	173.1	173.1	173.1	173.4	174.0	173.4	173.1	173.4
180°	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2
2.5°	1058.2	1059.9	1061.6	1062.2	1062.0	1061.6	1061.3	1060.9
5°	1049.7	1051.7	1053.6	1054.2	1053.6	1052.9	1052.3	1051.7
7.5°	1032.7	1033.3	1033.9	1033.6	1032.5	1031.4	1030.3	1029.2
10°	1015.8	1015.1	1014.5	1013.5	1012.2	1011.0	1009.7	1008.3
12.5°	996.3	995.1	993.9	992.3	990.1	988.1	985.9	983.7
15°	959.9	955.7	951.7	948.6	946.5	944.3	942.2	940.1
17.5°	918.7	913.8	909.0	904.7	901.1	897.4	893.7	890.0
20°	889.9	884.6	879.2	874.2	869.5	864.8	860.1	855.4
22.5°	858.4	851.5	844.6	839.4	835.8	832.4	828.9	825.4
25°	806.1	797.3	788.5	782.6	779.4	776.2	773.0	769.8
27.5°	756.2	746.0	735.8	728.1	723.0	717.9	712.8	707.8
30°	721.0	710.1	699.2	690.9	685.0	679.3	673.5	667.8
32.5°	685.6	673.2	660.7	651.8	646.3	640.9	635.5	630.1
35°	630.3	616.8	603.3	594.2	589.5	584.8	580.1	575.4
37.5°	576.3	561.5	546.7	536.5	531.1	525.8	520.4	515.0
40°	540.2	525.0	509.8	499.5	493.9	488.3	482.8	477.2
42.5°	503.8	488.0	472.4	461.8	456.5	451.1	445.7	440.3
45°	450.7	435.5	420.4	410.2	405.1	399.9	394.8	389.6
47.5°	399.2	384.1	368.9	359.1	354.4	349.8	345.1	340.4
50°	366.0	351.2	336.5	326.8	322.3	317.8	313.4	308.9
52.5°	334.7	320.4	306.1	297.0	292.8	288.7	284.6	280.4
55°	287.1	274.2	261.4	253.0	248.9	244.8	240.7	236.7
57.5°	243.7	232.1	220.3	212.6	209.2	205.9	202.4	199.0
60°	214.0	203.0	192.1	184.9	181.5	178.1	174.7	171.3
62.5°	188.0	177.6	167.2	161.0	158.9	156.9	154.9	152.8
65°	152.9	145.6	138.4	134.4	133.7	133.1	132.4	131.9
67.5°	123.4	120.1	116.8	114.7	114.0	113.4	112.7	112.0
70°	107.4	105.2	103.0	101.6	100.7	99.8	99.0	98.1
72.5°	93.4	91.6	89.8	88.7	88.1	87.7	87.1	86.6
75°	74.0	72.5	71.0	70.1	69.9	69.7	69.5	69.3
77.5°	56.0	55.1	54.3	53.7	53.3	53.1	52.7	52.3
80°	44.5	43.6	42.8	42.3	42.3	42.3	42.3	42.3
82.5°	33.6	33.1	32.6	32.3	32.3	32.3	32.3	32.3
85°	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3
87.5°	7.9	7.6	7.6	7.5	7.5	7.5	7.5	7.5
90°	10.7	10.0	10.7	11.0	11.0	11.0	11.0	11.0
92.5°	29.0	24.9	22.1	20.1	19.8	18.8	18.9	18.5
95°	87.3	66.9	53.0	45.6	41.3	38.6	37.6	38.0
97.5°	203.6	166.5	130.5	106.5	90.6	82.4	77.6	74.7
100°	304.1	262.8	217.2	176.8	149.2	134.9	125.3	119.2
102.5°	369.9	360.5	327.2	284.5	254.4	230.0	217.9	209.8
105°	404.6	442.2	446.6	435.6	414.9	394.3	379.9	375.3
107.5°	379.6	436.3	470.9	487.0	489.7	488.5	485.6	479.5
110°	358.0	417.6	460.2	487.6	501.9	508.2	511.2	510.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	338.3	395.5	441.0	472.4	492.3	502.8	508.5	510.3
115°	314.1	365.3	409.0	443.3	466.9	482.2	490.9	493.9
117.5°	295.8	340.8	380.4	412.6	436.7	452.9	461.9	464.5
120°	286.7	328.0	363.4	393.6	417.0	432.6	442.2	445.6
122.5°	279.6	317.4	350.8	378.1	399.1	414.5	423.1	425.8
125°	269.1	303.4	332.7	357.7	377.0	389.6	397.9	400.7
127.5°	258.7	289.8	317.4	340.4	357.3	369.2	376.4	378.5
130°	252.1	280.8	307.1	329.0	345.3	356.7	363.4	366.0
132.5°	245.7	272.2	296.4	317.1	333.1	344.4	350.5	353.0
135°	236.8	258.7	280.8	299.4	313.7	324.7	330.7	332.1
137.5°	229.7	248.1	265.5	281.7	294.8	304.3	309.5	311.5
140°	225.1	241.1	256.5	271.1	281.7	290.4	295.4	297.4
142.5°	221.4	235.0	248.2	260.4	270.5	278.4	282.9	283.2
145°	216.1	227.2	237.4	247.1	255.1	260.8	264.1	265.0
147.5°	212.1	220.7	228.8	235.8	242.4	246.9	249.2	249.9
150°	209.2	216.5	223.5	229.4	234.4	238.5	240.4	240.8
152.5°	206.2	213.0	219.0	224.1	228.1	231.5	233.0	233.1
155°	202.2	207.5	212.4	216.1	219.8	222.2	223.5	222.8
157.5°	197.5	201.9	206.0	209.0	211.5	213.5	214.1	214.1
160°	194.4	198.1	201.8	204.2	206.5	208.1	208.5	208.5
162.5°	191.5	194.7	197.8	199.6	202.0	203.1	203.4	203.1
165°	187.2	189.5	191.8	193.1	194.4	195.9	195.9	195.5
167.5°	182.9	184.7	186.3	187.6	188.1	188.9	188.8	188.4
170°	180.9	181.8	183.1	183.8	184.2	185.1	184.8	184.2
172.5°	178.4	179.2	180.2	180.6	181.0	181.4	181.1	180.7
175°	175.9	176.2	176.5	176.8	176.8	177.2	176.8	176.2
177.5°	174.0	174.0	174.3	174.3	174.3	174.3	174.0	173.4
180°	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1

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