

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: P332888-930

Luminaire Tested: **S124RDIP-S350D1035U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332888-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDIP-S350D1035U930-4F0-1E-UDD-F4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4179.8 lumens  
Efficiency: N/A  
Efficacy: 112.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

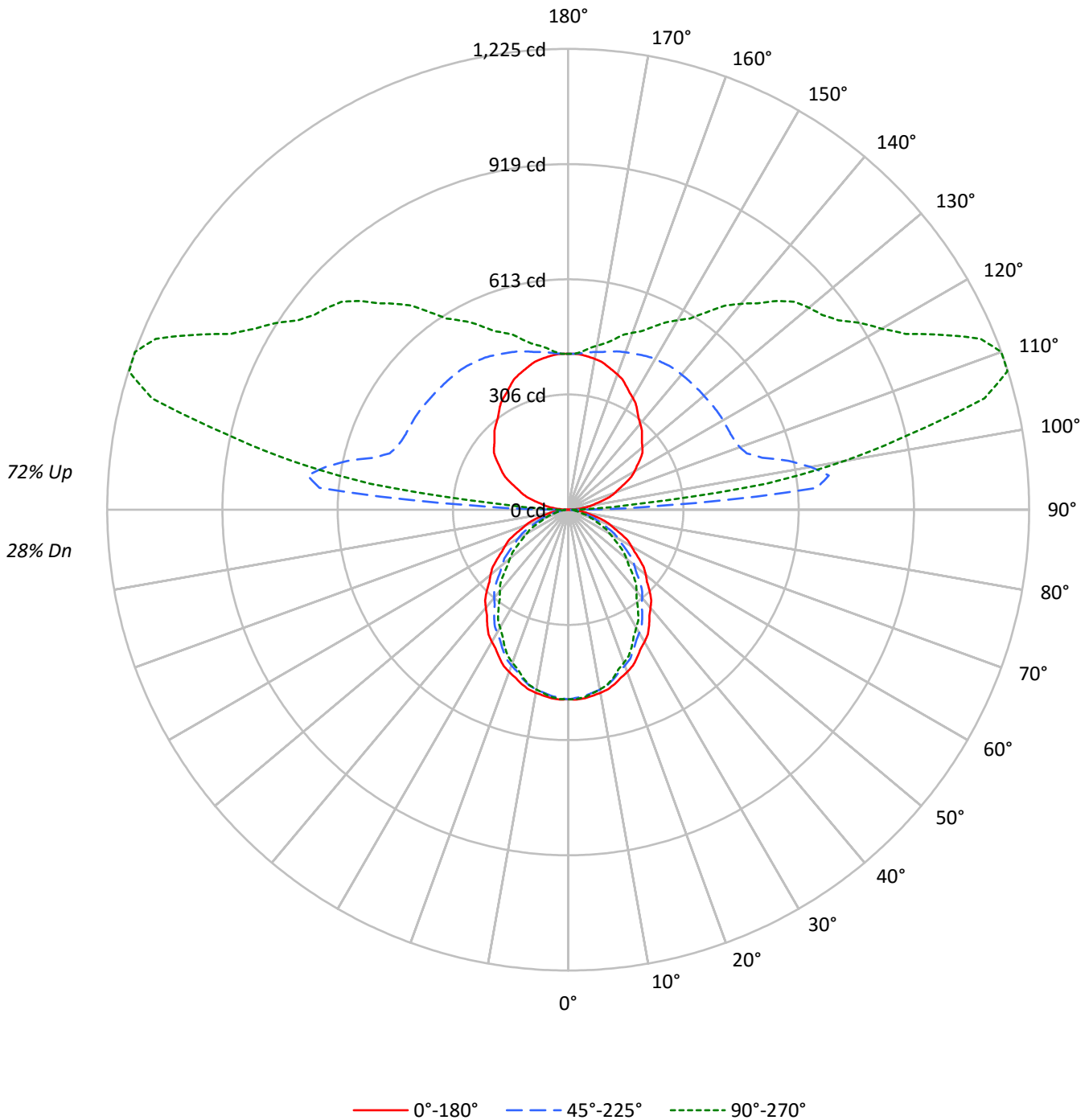
Input Watts (W): 37.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	93	89	85	82	83	80	77	74	62	60	58	46	45	44	32	31	30	24
2	85	78	72	67	76	70	65	61	55	51	49	41	39	37	28	27	26	20
3	77	68	61	56	69	61	56	51	48	44	41	36	34	31	25	24	22	17
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	22	21	19	15
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	20	18	17	13
6	60	48	40	35	53	43	37	32	35	30	26	26	23	20	18	16	15	11
7	55	43	36	30	49	39	33	28	31	26	23	24	20	18	17	15	13	10
8	51	39	32	27	46	36	29	25	28	24	20	22	18	16	15	13	12	9
9	47	36	29	24	42	32	26	22	26	21	18	20	17	14	14	12	11	8
10	44	33	26	21	40	30	24	19	24	19	16	18	15	13	13	11	10	8

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

	0°	45°	90°
0°	4069	4069	4069
5°	4078	4028	4053
10°	4052	3980	3980
15°	4006	3896	3867
20°	3942	3786	3716
25°	3861	3657	3564
30°	3781	3522	3375
35°	3693	3381	3183
40°	3587	3222	2977
45°	3490	3062	2767
50°	3378	2880	2545
55°	3258	2688	2303
60°	3127	2480	2055
65°	3007	2220	1813
70°	2832	1931	1539
75°	2611	1603	1251
80°	2278	1223	1148
85°	1936	1112	1037



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.3	1.1
10°-20°	132.0	3.2
20°-30°	190.6	4.6
30°-40°	216.1	5.2
40°-50°	208.7	5.0
50°-60°	173.5	4.2
60°-70°	119.8	2.9
70°-80°	60.7	1.5
80°-90°	17.9	0.4
90°-100°	299.2	7.2
100°-110°	622.8	14.9
110°-120°	557.8	13.3
120°-130°	469.2	11.2
130°-140°	391.2	9.4
140°-150°	298.9	7.2
150°-160°	210.1	5.0
160°-170°	123.6	3.0
170°-180°	40.2	1.0
0°-30°	370.0	8.9
0°-40°	586.1	14.0
0°-60°	968.3	23.2
0°-90°	1166.7	27.9
90°-120°	1479.8	35.4
90°-150°	2639.2	63.1
90°-180°	3013.0	72.1
0°-180°	4179.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	504	504	504	504	504	
5°	503	502	497	501	500	48
15°	479	475	466	465	463	135
25°	433	426	411	404	400	200
35°	375	362	343	330	323	234
45°	306	291	268	250	242	236
55°	232	216	191	172	164	207
65°	157	140	116	100	95	155
75°	84	69	51	43	40	88
85°	21	13	12	11	11	23
90°	1	6	15	16	17	2
95°	27	85	663	328	199	30
105°	95	138	534	1150	1145	102
115°	168	210	476	915	1100	166
125°	234	278	474	778	877	208
135°	278	330	470	691	785	214
145°	320	366	467	583	641	201
155°	364	393	454	514	536	168
165°	396	409	436	461	468	112
175°	413	414	418	423	422	39
180°	414	414	414	414	414	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0
2.5°	505.2	504.9	504.7	504.4	504.1	503.6	502.9	502.1	501.3	500.6	501.3
5°	503.2	502.9	502.6	502.2	501.8	501.2	500.1	499.1	498.1	497.1	497.9
7.5°	498.6	498.3	498.0	497.6	497.3	496.4	495.0	493.7	492.4	491.1	491.5
10°	494.3	493.9	493.5	493.1	492.6	491.6	490.1	488.5	487.0	485.5	485.8
12.5°	488.8	488.3	487.8	487.3	486.8	485.7	483.8	482.0	480.2	478.3	478.6
15°	479.3	478.5	477.8	477.0	476.2	474.7	472.6	470.4	468.3	466.2	466.0
17.5°	467.8	466.7	465.5	464.5	463.3	461.5	458.9	456.3	453.8	451.2	450.7
20°	458.9	457.7	456.6	455.5	454.4	452.4	449.5	446.5	443.6	440.7	440.0
22.5°	449.0	447.7	446.5	445.2	443.9	441.7	438.6	435.5	432.4	429.3	428.3
25°	433.4	431.9	430.3	428.8	427.2	424.7	421.2	417.7	414.1	410.6	409.1
27.5°	417.0	415.1	413.1	411.2	409.3	406.4	402.7	398.9	395.2	391.4	389.6
30°	405.6	403.4	401.3	399.2	397.1	394.0	389.9	385.9	381.8	377.8	375.7
32.5°	393.5	391.1	388.7	386.3	383.8	380.6	376.4	372.3	368.1	363.9	361.4
35°	374.7	371.9	369.2	366.5	363.7	360.2	356.0	351.6	347.4	343.1	340.1
37.5°	354.6	351.7	348.9	346.1	343.2	339.5	334.7	330.0	325.2	320.5	317.2
40°	340.4	337.5	334.7	331.9	329.1	325.2	320.3	315.4	310.5	305.7	302.1
42.5°	326.8	323.8	320.8	317.9	315.0	310.9	305.8	300.7	295.6	290.5	286.8
45°	305.7	302.5	299.3	296.1	292.9	288.8	283.6	278.5	273.4	268.2	264.0
47.5°	283.8	280.5	277.3	273.9	270.7	266.4	261.1	255.7	250.3	245.0	240.6
50°	269.0	265.6	262.3	258.9	255.6	251.2	245.7	240.2	234.7	229.3	224.9
52.5°	253.9	250.5	247.3	244.0	240.8	236.3	230.6	225.0	219.4	213.8	209.5
55°	231.5	228.1	224.7	221.3	217.8	213.3	207.7	202.2	196.6	191.0	186.5
57.5°	209.5	205.9	202.4	198.8	195.2	190.7	185.2	179.7	174.2	168.7	164.2
60°	193.7	190.3	186.9	183.4	180.0	175.5	170.1	164.5	159.1	153.6	149.1
62.5°	179.5	175.9	172.4	168.8	165.3	160.7	155.1	149.4	143.8	138.2	134.0
65°	157.4	153.8	150.1	146.4	142.7	138.1	132.6	127.1	121.6	116.2	112.5
67.5°	134.5	131.0	127.4	123.9	120.4	116.1	111.0	105.9	100.8	95.7	92.5
70°	120.0	116.4	112.8	109.3	105.6	101.3	96.4	91.6	86.7	81.8	79.0
72.5°	104.6	101.3	98.1	94.8	91.6	87.6	83.0	78.4	73.8	69.1	66.8
75°	83.7	80.6	77.4	74.2	71.0	67.4	63.4	59.4	55.4	51.4	49.3
77.5°	62.6	59.9	57.2	54.5	51.9	48.8	45.6	42.3	39.1	35.8	34.7
80°	49.0	46.6	44.0	41.6	39.1	36.5	34.0	31.4	28.8	26.3	26.0
82.5°	37.3	35.0	32.7	30.4	28.1	26.3	24.8	23.3	21.9	20.4	20.2
85°	20.9	19.2	17.4	15.7	13.9	13.0	12.7	12.5	12.2	12.0	11.8
87.5°	7.3	7.0	7.0	6.6	6.2	5.9	6.8	6.8	7.0	7.3	7.0
90°	0.8	2.4	4.9	5.7	6.5	6.5	11.4	11.4	13.0	14.7	13.9
92.5°	9.3	13.5	21.2	31.1	43.0	59.9	101.3	164.4	225.9	258.2	215.1
95°	26.8	29.3	37.4	48.0	67.6	101.7	172.5	306.1	500.6	663.3	682.1
97.5°	48.2	48.2	55.2	65.0	81.7	110.4	164.9	275.1	468.5	698.6	856.9
100°	61.9	61.9	67.6	77.3	92.8	118.9	166.9	258.9	424.9	654.4	862.7
102.5°	74.8	76.1	81.2	90.3	105.2	129.9	173.3	254.3	395.6	599.1	813.9
105°	95.2	97.7	101.7	111.5	126.1	149.8	188.8	256.4	370.3	533.9	725.2
107.5°	117.7	119.4	123.4	133.8	147.8	171.0	206.9	268.4	365.7	497.5	653.5
110°	132.6	134.3	138.4	148.1	162.8	184.7	220.5	277.5	367.0	485.1	617.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	147.0	148.6	153.4	162.5	177.1	199.1	233.6	287.3	371.0	479.2	597.6
115°	167.7	170.1	175.8	183.9	199.4	221.4	254.0	302.8	378.5	476.1	578.7
117.5°	189.1	191.4	196.5	205.5	219.9	242.7	273.6	318.5	386.5	475.3	570.2
120°	203.5	205.1	210.8	219.7	233.6	256.4	287.3	329.6	392.3	475.3	565.7
122.5°	216.5	218.1	223.8	232.1	247.3	269.4	300.4	340.1	398.2	474.7	560.4
125°	233.6	236.8	241.7	250.7	266.1	288.9	318.2	355.7	407.0	473.7	551.9
127.5°	248.7	251.4	257.2	267.4	283.6	306.6	334.8	369.2	413.9	471.9	540.3
130°	257.2	260.5	266.9	279.2	294.6	318.2	345.9	377.6	419.1	471.2	533.1
132.5°	265.6	268.2	276.7	288.3	305.1	327.3	355.1	386.1	423.7	470.6	526.6
135°	277.5	280.8	288.9	302.8	319.8	341.0	367.9	397.2	430.6	469.6	516.8
137.5°	289.4	292.5	301.5	314.6	332.4	352.6	377.6	405.0	434.6	469.4	508.3
140°	297.9	300.4	309.3	323.1	340.2	359.8	384.2	410.2	437.9	468.8	503.9
142.5°	307.0	309.5	317.7	330.9	347.4	366.2	390.0	414.1	440.5	468.8	499.9
145°	319.8	322.3	330.4	341.9	357.3	375.2	396.4	418.3	442.0	467.2	493.3
147.5°	334.4	335.2	342.3	354.1	366.9	383.0	402.9	422.1	442.8	464.2	487.2
150°	343.5	344.3	350.8	360.6	372.8	388.2	406.2	424.0	442.8	462.3	482.7
152.5°	352.0	352.1	358.7	367.7	378.6	392.8	408.8	425.3	441.5	459.0	477.4
155°	363.8	364.6	369.5	377.6	386.6	398.8	412.6	426.5	439.5	454.2	469.6
157.5°	375.4	375.4	379.9	386.3	394.1	403.7	415.4	426.5	437.4	449.1	461.6
160°	382.5	382.5	385.8	391.5	398.0	407.0	416.7	426.5	435.5	445.2	455.8
162.5°	389.1	388.4	391.0	396.1	401.9	409.0	418.0	426.5	433.5	441.3	450.6
165°	396.4	396.4	398.0	402.1	406.2	411.0	418.3	424.9	429.7	435.5	442.0
167.5°	403.7	402.9	403.7	406.8	409.1	412.8	418.2	422.9	425.8	429.6	434.1
170°	407.0	406.2	407.0	409.4	411.0	413.4	417.5	421.6	423.2	425.7	428.9
172.5°	410.2	409.4	409.5	411.3	412.3	414.1	416.9	420.3	420.6	421.8	424.4
175°	413.4	412.6	412.6	413.4	414.3	414.3	415.9	418.3	417.5	417.5	419.1
177.5°	414.9	414.3	413.6	414.3	414.3	414.3	414.9	416.2	414.9	414.9	415.6
180°	414.3	414.3	414.3	414.3	414.3	414.3	414.3	414.3	414.3	414.3	414.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0
2.5°	502.1	502.9	503.6	503.9	503.9	503.9	503.8	503.7
5°	498.8	499.6	500.5	500.8	500.7	500.5	500.3	500.1
7.5°	492.1	492.7	493.3	493.3	493.1	492.8	492.5	492.3
10°	486.2	486.5	486.8	486.8	486.5	486.2	485.8	485.5
12.5°	478.7	479.0	479.2	479.1	478.6	478.1	477.6	477.1
15°	465.9	465.7	465.5	465.1	464.5	463.9	463.3	462.7
17.5°	450.2	449.8	449.3	448.6	447.7	446.8	445.9	445.0
20°	439.4	438.6	438.0	437.1	435.9	434.8	433.7	432.6
22.5°	427.2	426.2	425.2	424.2	423.3	422.4	421.5	420.5
25°	407.6	406.3	404.8	403.7	402.8	401.9	401.0	400.1
27.5°	387.8	386.0	384.2	382.7	381.4	380.2	379.0	377.7
30°	373.5	371.4	369.2	367.5	366.1	364.8	363.4	362.0
32.5°	359.0	356.4	354.0	352.0	350.7	349.4	348.1	346.8
35°	337.2	334.4	331.4	329.2	327.7	326.1	324.6	323.0
37.5°	314.0	310.7	307.4	305.0	303.5	301.9	300.4	298.8
40°	298.4	294.8	291.2	288.7	287.1	285.6	284.1	282.5
42.5°	283.2	279.5	275.8	273.2	271.6	269.9	268.3	266.8
45°	259.8	255.6	251.4	248.5	247.0	245.4	243.9	242.4
47.5°	236.3	231.9	227.6	224.5	222.8	221.1	219.4	217.8
50°	220.6	216.4	212.1	209.1	207.5	205.9	204.2	202.6
52.5°	205.0	200.7	196.4	193.3	191.7	190.0	188.3	186.5
55°	182.1	177.7	173.2	170.2	168.5	166.9	165.3	163.6
57.5°	159.6	155.2	150.6	147.7	146.5	145.3	144.0	142.8
60°	144.6	140.2	135.7	132.8	131.4	130.1	128.7	127.3
62.5°	130.0	125.8	121.7	119.1	118.0	116.9	115.8	114.7
65°	108.8	105.1	101.4	99.1	98.0	97.0	96.0	94.9
67.5°	89.4	86.2	83.0	80.9	79.7	78.6	77.5	76.3
70°	76.1	73.3	70.5	68.6	67.8	66.9	66.0	65.2
72.5°	64.3	61.9	59.5	57.9	57.1	56.3	55.5	54.7
75°	47.4	45.4	43.5	42.2	41.7	41.2	40.7	40.1
77.5°	33.5	32.4	31.2	30.6	30.4	30.2	30.1	29.9
80°	25.8	25.4	25.2	25.0	24.9	24.9	24.8	24.7
82.5°	20.0	19.8	19.6	19.5	19.4	19.3	19.2	19.2
85°	11.7	11.4	11.3	11.2	11.2	11.2	11.2	11.2
87.5°	7.1	7.2	7.3	7.3	7.5	7.7	7.7	7.7
90°	14.7	15.5	16.3	16.3	17.1	17.9	17.1	17.1
92.5°	159.9	120.3	95.7	79.4	69.9	65.5	62.7	62.7
95°	603.1	477.0	367.9	288.9	249.1	223.8	209.2	198.6
97.5°	891.1	844.2	764.6	679.6	621.2	572.2	547.8	530.8
100°	981.6	997.8	958.0	897.7	827.0	777.3	752.8	746.4
102.5°	977.1	1057.8	1069.3	1044.2	1000.8	964.8	939.1	933.9
105°	911.6	1052.4	1132.9	1166.4	1168.0	1161.5	1150.1	1145.2
107.5°	818.6	968.6	1082.1	1154.6	1194.8	1213.4	1221.6	1223.7
110°	762.6	903.4	1021.5	1111.0	1168.8	1203.0	1217.6	1225.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	721.6	846.1	957.7	1047.2	1112.8	1154.1	1174.7	1186.5
115°	680.4	780.6	875.8	953.9	1018.2	1067.1	1093.1	1099.6
117.5°	660.2	743.1	818.0	884.3	939.1	980.2	1006.5	1011.5
120°	651.1	726.8	792.0	849.7	896.1	932.0	953.1	962.1
122.5°	643.4	716.4	775.7	826.3	865.5	896.1	914.0	923.0
125°	630.0	699.9	756.1	800.9	833.5	857.0	872.5	877.4
127.5°	613.7	680.6	736.6	779.1	811.8	832.8	845.8	850.7
130°	600.7	665.0	720.3	763.4	796.8	817.2	830.2	835.1
132.5°	587.0	647.4	701.4	744.6	777.3	800.2	812.6	817.5
135°	568.1	621.0	670.7	711.3	744.0	766.7	779.8	784.6
137.5°	551.1	595.8	637.6	674.4	704.8	727.3	738.1	744.0
140°	541.3	579.5	616.1	650.3	678.8	696.8	708.1	714.6
142.5°	532.1	565.8	597.3	626.9	652.1	668.7	678.8	683.4
145°	519.3	547.0	571.4	594.2	614.5	628.4	636.5	640.6
147.5°	508.7	530.7	550.2	568.1	583.1	595.0	601.2	602.6
150°	502.2	520.9	537.2	551.9	564.8	575.4	580.3	581.1
152.5°	495.0	511.1	526.1	538.2	549.3	557.8	560.8	561.6
155°	484.3	497.3	509.5	519.3	527.4	533.9	536.4	536.4
157.5°	472.7	483.6	493.9	501.7	507.8	512.7	514.2	514.2
160°	465.5	474.5	483.5	490.0	494.9	499.8	500.6	500.6
162.5°	458.4	466.0	473.0	478.9	482.5	487.4	488.2	487.5
165°	448.5	453.4	459.0	463.1	466.4	469.6	468.8	468.0
167.5°	438.9	442.6	447.2	449.6	451.3	453.4	453.2	452.6
170°	433.0	435.5	438.7	441.2	442.8	443.6	442.8	442.8
172.5°	427.8	429.6	431.5	433.3	434.3	435.1	434.3	433.0
175°	420.8	421.6	423.2	423.2	423.2	424.9	423.2	421.6
177.5°	416.2	416.9	416.9	417.5	416.9	417.5	416.2	414.9
180°	414.3	414.3	414.3	414.3	414.3	414.3	414.3	414.3

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