

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: P334792

Luminaire Tested: **S124IP-S810U830-4F0-1E-UDD-4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P334792  
TEST 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: S124IP-S810U830-4F0-1E-UDD-4  
Description: DEFINE 4 INDIRECT LED LUMINAIRE, BATWING OPTIC  
PENDANT MOUNT, 810 LUMENS PER FOOT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2733.6 lumens  
Efficiency: N/A  
Efficacy: 103.5 lumens/watt  
Spacing Criteria (0/90/45): - / - / -  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Indirect

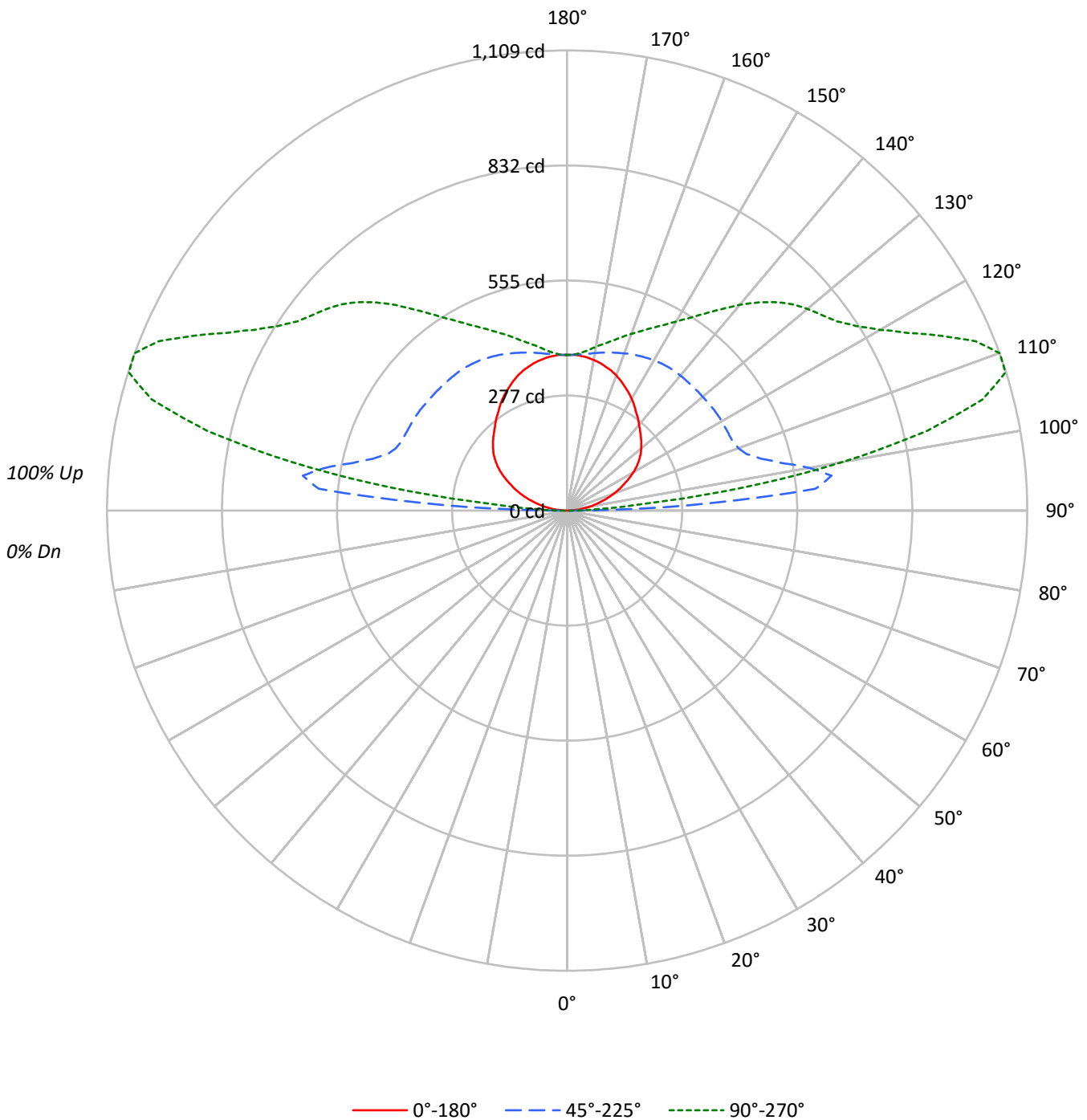
Input Watts (W): 26.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	27	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

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

	0°	45°	90°
0°	0	0	0
5°	0	0	0
10°	0	0	0
15°	0	0	0
20°	0	0	0
25°	0	0	0
30°	0	0	0
35°	0	0	0
40°	0	0	0
45°	0	0	0
50°	0	0	0
55°	0	0	0
60°	0	0	0
65°	0	0	0
70°	0	0	0
75°	0	0	0
80°	0	0	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	0.0	0.0
10°-20°	0.0	0.0
20°-30°	0.0	0.0
30°-40°	0.0	0.0
40°-50°	0.0	0.0
50°-60°	0.0	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	1.5	0.1
90°-100°	271.9	9.9
100°-110°	567.6	20.8
110°-120°	504.6	18.5
120°-130°	424.7	15.5
130°-140°	354.4	13.0
140°-150°	270.6	9.9
150°-160°	190.2	7.0
160°-170°	111.9	4.1
170°-180°	36.4	1.3
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	1.5	0.1
90°-120°	1344.1	49.2
90°-150°	2393.7	87.6
90°-180°	2732.0	99.9
0°-180°	2733.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	0	0	0	0	0	
5°	0	0	0	0	0	0
15°	0	0	0	0	0	0
25°	0	0	0	0	0	0
35°	0	0	0	0	0	0
45°	0	0	0	0	0	0
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	1	6	13	15	16	2
95°	24	77	601	297	180	27
105°	86	125	484	1041	1037	92
115°	152	191	431	828	996	151
125°	212	251	429	705	794	189
135°	251	299	425	626	710	194
145°	290	332	423	528	580	182
155°	329	356	411	466	486	152
165°	359	370	394	418	424	101
175°	374	375	378	383	382	36
180°	375	375	375	375	375	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.7	2.2	4.4	5.2	5.9	5.9	10.3	10.3	11.8	13.3	12.5
92.5°	10.3	14.7	22.8	33.9	47.2	66.3	112.0	183.5	252.8	288.9	240.3
95°	24.3	26.5	33.9	43.5	61.2	92.1	156.2	277.1	453.3	600.7	617.6
97.5°	40.5	40.5	47.2	56.0	71.5	98.0	148.9	252.8	434.1	642.7	774.6
100°	56.0	56.0	61.2	70.0	84.0	107.6	151.1	234.4	384.7	592.5	781.2
102.5°	70.8	72.2	76.6	84.8	98.0	120.1	158.5	229.2	351.5	529.9	725.9
105°	86.2	88.4	92.1	101.0	114.2	135.6	171.0	232.2	335.3	483.5	656.7
107.5°	103.2	104.7	108.3	117.9	130.4	151.8	184.2	241.0	330.9	453.3	599.9
110°	120.1	121.6	125.3	134.1	147.4	167.3	199.7	251.3	332.4	439.2	559.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	136.3	137.8	142.2	150.3	163.6	183.5	214.5	262.4	336.8	432.6	536.5
115°	151.8	154.0	159.2	166.6	180.6	200.5	229.9	274.2	342.7	431.1	524.0
117.5°	168.0	170.2	174.7	182.8	196.0	216.7	244.7	286.0	348.6	430.4	517.4
120°	184.2	185.7	190.9	199.0	211.5	232.2	260.2	298.5	355.2	430.4	512.2
122.5°	199.0	200.5	205.6	213.0	227.0	246.9	274.9	310.3	361.9	429.7	506.3
125°	211.5	214.5	218.9	227.0	241.0	261.6	288.2	322.1	368.5	428.9	499.7
127.5°	223.3	225.5	230.7	239.5	254.3	274.9	300.7	332.4	373.7	427.5	490.8
130°	232.9	235.8	241.7	252.8	266.8	288.2	313.2	342.0	379.6	426.7	482.7
132.5°	242.5	244.7	252.8	263.1	278.6	298.5	323.5	351.5	384.7	426.0	475.4
135°	251.3	254.3	261.6	274.2	289.6	308.8	333.1	359.7	389.9	425.2	468.0
137.5°	260.2	263.1	271.2	283.0	299.2	317.6	340.5	365.5	392.8	425.2	461.4
140°	269.7	272.0	280.1	292.6	308.1	325.8	347.9	371.4	396.5	424.5	456.2
142.5°	280.1	282.3	289.6	301.4	316.2	333.1	354.5	375.9	399.5	424.5	451.8
145°	289.6	291.9	299.2	309.5	323.5	339.8	358.9	378.8	400.2	423.0	446.6
147.5°	300.7	301.4	308.1	319.1	330.9	345.7	364.1	381.8	400.9	420.8	442.2
150°	311.0	311.7	317.6	326.5	337.5	351.5	367.8	384.0	400.9	418.6	437.0
152.5°	320.6	320.6	326.5	334.6	344.2	356.7	370.7	385.4	399.5	414.9	431.1
155°	329.4	330.2	334.6	342.0	350.1	361.1	373.7	386.2	398.0	411.2	425.2
157.5°	338.3	338.3	342.7	348.6	356.0	364.8	375.9	386.2	396.5	407.6	419.4
160°	346.4	346.4	349.3	354.5	360.4	368.5	377.3	386.2	394.3	403.1	412.7
162.5°	353.8	353.0	355.2	359.7	364.8	370.7	378.8	386.2	392.1	398.7	406.8
165°	358.9	358.9	360.4	364.1	367.8	372.2	378.8	384.7	389.1	394.3	400.2
167.5°	364.8	364.1	364.8	367.8	370.0	373.7	378.8	383.2	386.2	389.9	394.3
170°	368.5	367.8	368.5	370.7	372.2	374.4	378.1	381.8	383.2	385.4	388.4
172.5°	372.2	371.4	371.4	372.9	373.7	375.1	377.3	380.3	380.3	381.0	383.2
175°	374.4	373.7	373.7	374.4	375.1	375.1	376.6	378.8	378.1	378.1	379.6
177.5°	375.9	375.1	374.4	375.1	375.1	375.1	375.9	377.3	375.9	375.9	376.6
180°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	13.3	14.0	14.7	14.7	15.5	16.2	15.5	15.5
92.5°	177.6	132.7	104.7	86.2	75.2	70.0	67.1	67.1
95°	546.1	431.9	333.1	261.6	225.5	202.7	189.4	179.8
97.5°	786.4	729.6	648.6	566.0	515.9	471.7	449.6	431.9
100°	888.8	903.6	867.4	812.9	748.8	703.8	681.7	675.8
102.5°	883.7	971.4	993.5	978.7	945.6	916.1	892.5	888.1
105°	825.4	952.9	1025.9	1056.1	1057.6	1051.7	1041.4	1037.0
107.5°	753.9	891.8	993.5	1055.4	1087.8	1101.1	1107.0	1107.7
110°	690.6	818.1	924.9	1006.0	1058.3	1089.3	1102.5	1109.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	644.1	753.2	852.7	933.8	994.9	1034.0	1053.9	1065.7
115°	616.1	706.8	793.0	863.8	922.0	966.2	989.8	995.7
117.5°	599.9	676.6	746.6	808.5	860.1	898.4	923.5	927.1
120°	589.6	658.1	717.1	769.4	811.4	843.9	863.0	871.1
122.5°	580.8	646.3	698.7	742.9	776.8	803.3	818.8	826.9
125°	570.4	633.8	684.7	725.2	754.7	776.1	790.1	794.5
127.5°	558.6	619.8	670.7	709.0	738.5	757.6	769.4	773.8
130°	543.9	602.1	652.2	691.3	721.5	739.9	751.7	756.2
132.5°	528.4	582.2	630.9	669.9	699.4	720.8	731.8	736.3
135°	514.4	562.3	607.3	644.1	673.6	694.2	706.0	710.5
137.5°	501.2	543.2	582.2	616.1	644.1	665.5	675.1	680.2
140°	490.1	524.7	557.9	588.9	614.7	630.9	641.2	647.1
142.5°	479.8	509.3	536.5	562.3	584.4	599.2	608.0	611.7
145°	470.2	495.3	517.4	538.0	556.4	569.0	576.3	580.0
147.5°	462.1	482.7	501.2	518.1	532.1	543.2	549.1	550.5
150°	454.7	471.7	486.4	499.7	511.5	521.1	525.5	526.2
152.5°	446.6	460.6	473.9	484.2	493.8	501.2	503.4	504.1
155°	438.5	450.3	461.4	470.2	477.6	483.5	485.7	485.7
157.5°	429.7	440.0	449.6	456.9	462.8	467.3	468.7	468.7
160°	421.6	429.7	437.8	443.7	448.1	452.5	453.3	453.3
162.5°	413.5	420.1	426.0	431.1	434.1	438.5	439.2	438.5
165°	406.1	410.5	415.7	419.4	422.3	425.2	424.5	423.8
167.5°	398.7	402.4	406.8	409.0	410.5	412.7	412.7	412.0
170°	392.1	394.3	397.2	399.5	400.9	401.7	400.9	400.9
172.5°	386.2	387.7	389.1	390.6	391.3	392.1	391.3	389.9
175°	381.0	381.8	383.2	383.2	383.2	384.7	383.2	381.8
177.5°	377.3	378.1	378.1	378.8	378.1	378.8	377.3	375.9
180°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1

(END OF REPORT)