

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: P331380-935

Luminaire Tested: **SA2XXDIP-C865D330U935-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331380-935  
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: SA2XXDIP-C865D330U935-4F0-1E-UDD-D4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

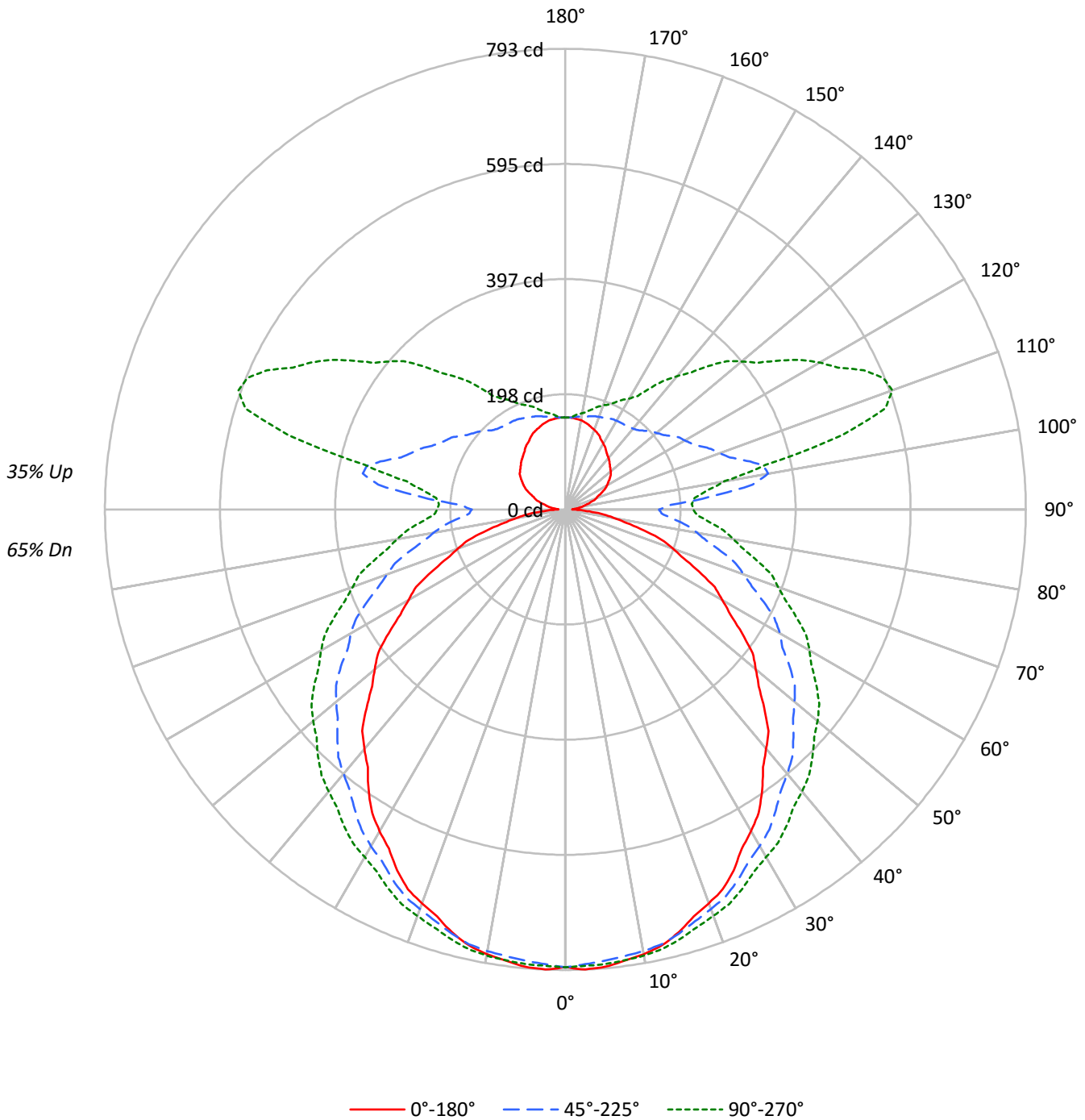
Lumens per Lamp: N/A  
Luminaire Lumens: 4109.8 lumens  
Efficiency: N/A  
Efficacy: 94.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 43.5  
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





TEST NUMBER: P331380-935

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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	92	92	92	80	80	80	70	70	70	65				
1	99	94	89	85	93	88	84	80	78	74	71	68	65	63	59	57	55	51				
2	90	81	74	68	84	76	70	64	67	62	58	58	55	51	51	48	45	41				
3	81	71	62	56	76	66	59	53	58	52	48	51	46	42	44	41	37	34				
4	74	62	53	47	69	58	51	44	52	45	40	45	40	36	39	35	32	28				
5	68	55	46	40	63	52	44	38	46	39	34	40	35	31	35	31	27	24				
6	62	49	41	34	58	47	39	33	41	35	30	36	31	27	32	27	24	21				
7	58	45	36	30	54	42	34	29	37	31	26	33	28	24	29	24	21	19				
8	54	40	32	26	50	38	31	25	34	28	23	30	25	21	26	22	19	16				
9	50	37	29	24	47	35	28	23	31	25	21	28	22	19	24	20	17	15				
10	47	34	26	21	44	32	25	20	29	23	19	26	21	17	23	18	15	13				

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

	0°	45°	90°
0°	12728	12728	12728
5°	12790	12252	12205
10°	12710	11890	11756
15°	12535	11506	11284
20°	12312	11097	10828
25°	12095	10701	10415
30°	11786	10293	10000
35°	11474	9900	9708
40°	11147	9566	9415
45°	10835	9267	9165
50°	10500	8995	8920
55°	10150	8703	8668
60°	9721	8403	8403
65°	9278	8047	8088
70°	8774	7666	7748
75°	8132	7293	7435
80°	7126	6912	7117
85°	6164	6582	6872



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	74.7	1.8
10°-20°	214.2	5.2
20°-30°	324.6	7.9
30°-40°	395.4	9.6
40°-50°	425.3	10.3
50°-60°	413.1	10.1
60°-70°	360.7	8.8
70°-80°	277.7	6.8
80°-90°	187.8	4.6
90°-100°	191.6	4.7
100°-110°	308.4	7.5
110°-120°	289.9	7.1
120°-130°	222.3	5.4
130°-140°	165.2	4.0
140°-150°	116.4	2.8
150°-160°	80.1	1.9
160°-170°	47.1	1.1
170°-180°	15.3	0.4
0°-30°	613.5	14.9
0°-40°	1008.9	24.5
0°-60°	1847.2	44.9
0°-90°	2673.3	65.0
90°-120°	790.0	19.2
90°-150°	1293.9	31.5
90°-180°	1436.0	34.9
0°-180°	4109.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	788	788	788	788	788	
5°	791	787	780	787	786	75
15°	754	756	756	766	766	212
25°	686	694	704	717	721	315
35°	591	610	632	656	665	369
45°	484	516	555	589	602	374
55°	371	413	472	512	528	332
65°	254	310	377	422	439	252
75°	140	205	278	325	342	149
85°	41	112	185	231	249	44
90°	12	82	161	205	220	8
95°	20	90	251	218	223	18
105°	43	96	324	540	494	46
115°	70	102	257	491	566	69
125°	94	112	220	384	446	83
135°	108	130	192	301	349	84
145°	122	141	178	228	255	77
155°	139	150	173	196	204	64
165°	152	156	166	176	179	43
175°	158	158	159	161	161	15
180°	158	158	158	158	158	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3
2.5°	792.9	792.3	791.7	791.1	790.5	789.5	788.0	786.6	785.1	783.8	784.8
5°	790.6	789.9	789.1	788.3	787.6	786.4	784.9	783.3	781.9	780.3	781.9
7.5°	783.5	783.0	782.5	782.0	781.5	780.7	779.5	778.3	777.1	776.0	777.8
10°	778.1	777.6	777.1	776.5	776.0	775.4	774.6	773.9	773.1	772.3	774.4
12.5°	768.9	769.0	769.1	769.2	769.3	769.0	768.5	767.9	767.4	766.8	768.9
15°	754.1	754.6	755.1	755.6	756.0	756.3	756.3	756.3	756.3	756.3	758.6
17.5°	734.9	735.9	737.0	738.0	739.1	740.0	740.9	741.7	742.5	743.3	745.7
20°	722.0	723.3	724.6	725.9	727.1	728.3	729.3	730.3	731.3	732.4	735.1
22.5°	708.3	709.8	711.3	712.7	714.2	715.7	717.1	718.5	720.0	721.3	724.2
25°	685.5	687.3	689.1	690.9	692.6	694.7	696.9	699.2	701.5	703.8	706.8
27.5°	658.1	661.0	663.8	666.8	669.7	672.4	675.1	677.9	680.5	683.2	687.1
30°	639.8	643.1	646.4	649.7	653.0	656.3	659.6	662.9	666.2	669.5	673.6
32.5°	619.7	623.4	627.1	630.9	634.6	638.3	642.2	646.2	650.1	653.9	658.7
35°	590.6	595.0	599.3	603.6	608.0	612.5	617.3	622.2	627.0	631.8	637.4
37.5°	559.1	564.1	569.1	574.0	579.0	584.6	590.9	597.2	603.4	609.7	615.9
40°	538.1	543.7	549.3	554.9	560.4	566.7	573.5	580.4	587.3	594.1	600.7
42.5°	518.0	523.6	529.2	534.8	540.4	547.1	554.9	562.8	570.7	578.6	585.7
45°	484.4	491.3	498.1	505.0	511.9	519.7	528.6	537.5	546.4	555.3	563.1
47.5°	451.3	458.7	466.2	473.7	481.1	490.1	500.5	510.9	521.3	531.8	539.9
50°	428.4	436.3	444.2	452.0	459.9	469.6	481.0	492.4	503.9	515.3	523.9
52.5°	406.5	414.7	423.1	431.4	439.6	449.8	461.8	473.8	485.9	497.9	506.7
55°	371.3	380.5	389.6	398.7	407.9	419.0	432.2	445.5	458.7	471.8	481.0
57.5°	336.6	346.9	357.2	367.5	377.8	389.7	403.1	416.6	430.1	443.5	453.4
60°	311.9	322.8	333.7	344.7	355.6	368.2	382.7	397.2	411.6	426.2	435.8
62.5°	290.0	301.3	312.6	323.9	335.3	348.2	362.7	377.1	391.6	406.0	416.3
65°	253.7	266.0	278.5	290.9	303.4	317.1	332.1	347.1	362.1	377.0	387.4
67.5°	220.2	233.2	246.2	259.2	272.2	286.5	301.8	317.1	332.4	347.8	358.3
70°	196.5	209.7	222.9	236.1	249.3	263.8	279.6	295.2	311.0	326.7	337.7
72.5°	174.6	188.2	201.8	215.4	229.0	243.7	259.8	275.7	291.6	307.5	318.3
75°	140.5	154.7	168.9	183.2	197.4	212.7	228.9	245.1	261.4	277.6	288.5
77.5°	107.6	122.5	137.4	152.2	167.1	182.8	199.3	215.9	232.3	248.8	259.7
80°	85.7	101.2	116.7	132.2	147.7	163.6	180.1	196.7	213.1	229.6	240.3
82.5°	67.4	82.7	98.0	113.2	128.5	144.6	161.3	178.0	194.7	211.4	222.1
85°	41.2	56.9	72.6	88.3	104.1	120.1	136.3	152.6	168.8	185.1	195.8
87.5°	22.5	37.8	53.1	68.4	83.7	99.5	116.1	132.8	149.4	165.7	176.0
90°	11.7	27.4	43.3	58.6	74.0	90.4	108.1	126.6	144.6	161.2	171.0
92.5°	14.2	29.5	45.5	60.5	76.3	93.8	116.3	141.6	165.9	182.1	186.0
95°	19.8	33.0	47.9	62.6	79.4	100.3	129.5	171.2	221.7	250.6	245.4
97.5°	25.3	37.6	51.4	66.2	82.4	103.3	135.5	187.0	260.3	325.1	344.5
100°	31.4	41.8	53.9	68.1	83.6	103.9	134.2	185.6	265.5	354.6	407.8
102.5°	36.1	45.4	56.7	70.1	85.1	104.8	133.5	180.3	254.9	349.4	427.5
105°	42.8	51.4	60.9	72.8	86.9	105.6	133.2	173.5	236.9	323.6	413.5
107.5°	51.4	58.2	66.2	76.3	88.8	106.7	133.2	169.4	223.5	297.0	377.0
110°	56.3	62.6	69.5	78.5	90.0	107.5	133.4	167.7	217.3	283.3	354.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	61.6	67.2	73.4	81.5	91.9	108.9	133.7	166.2	211.7	271.6	336.3
115°	70.0	74.3	78.9	85.3	94.2	109.5	134.1	164.0	205.0	257.2	312.9
117.5°	77.5	80.5	84.2	89.2	96.9	111.6	134.3	162.2	198.6	245.0	294.3
120°	82.8	85.1	87.9	91.7	98.8	112.9	134.9	161.4	195.0	237.7	283.5
122.5°	87.9	89.3	91.5	95.0	101.4	115.2	135.9	160.6	191.8	231.3	273.6
125°	93.6	94.5	96.3	100.0	106.0	118.6	137.7	159.5	186.5	220.2	258.4
127.5°	98.9	99.9	102.2	105.9	111.5	123.5	140.6	159.5	182.4	210.9	244.1
130°	102.0	103.1	105.8	109.9	115.6	126.7	142.7	159.5	180.1	204.9	234.7
132.5°	105.0	106.2	109.3	113.5	119.5	130.0	144.3	159.7	177.8	199.2	226.1
135°	108.2	109.4	113.1	117.7	124.7	134.4	146.7	159.9	174.6	191.7	214.4
137.5°	112.4	113.7	117.4	122.2	129.1	137.5	148.3	159.3	171.5	185.0	204.3
140°	115.5	116.5	119.9	124.5	131.0	139.0	148.6	158.5	169.4	181.2	198.3
142.5°	118.7	119.4	122.6	127.2	133.4	140.7	149.7	159.0	168.7	179.3	194.0
145°	122.3	123.6	126.6	131.1	137.2	143.9	152.1	160.7	169.1	178.2	189.5
147.5°	127.4	128.3	131.2	135.4	140.5	146.5	154.2	161.7	169.4	177.2	185.9
150°	130.8	131.7	134.1	138.1	142.7	148.2	155.2	162.1	169.1	176.4	183.7
152.5°	134.2	134.7	137.1	140.5	144.9	149.8	156.1	162.4	168.7	175.2	182.0
155°	139.1	139.3	141.1	144.5	147.8	152.4	157.6	162.7	167.9	173.1	178.9
157.5°	143.0	143.4	144.8	147.7	150.4	154.2	158.6	162.7	166.5	170.9	175.9
160°	145.7	146.0	147.2	149.6	152.1	155.5	159.1	162.7	165.8	169.4	173.7
162.5°	148.4	148.2	149.5	151.4	153.6	156.2	159.4	162.5	165.1	168.2	171.8
165°	151.5	151.2	151.8	153.6	155.2	157.0	159.7	161.9	163.7	165.8	168.5
167.5°	154.0	153.7	154.2	155.4	156.5	157.6	159.6	161.4	162.3	163.7	165.4
170°	155.8	155.2	155.5	156.4	157.0	157.9	159.4	160.9	161.5	162.5	163.7
172.5°	156.7	156.4	156.2	157.1	157.5	158.2	159.2	160.2	160.6	161.0	162.0
175°	157.9	157.6	157.3	157.9	157.9	158.2	158.8	159.4	159.1	159.4	159.7
177.5°	158.4	157.9	157.7	158.2	158.2	158.2	158.4	158.9	158.4	158.2	158.4
180°	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3
2.5°	785.7	786.8	787.8	788.2	787.7	787.3	786.9	786.5
5°	783.3	784.9	786.4	787.0	786.8	786.5	786.3	786.0
7.5°	779.6	781.4	783.3	784.1	783.9	783.6	783.3	783.1
10°	776.4	778.4	780.5	781.4	781.1	780.8	780.6	780.3
12.5°	770.9	772.9	775.0	775.8	775.6	775.3	775.1	774.8
15°	760.9	763.2	765.5	766.5	766.2	765.9	765.7	765.5
17.5°	748.1	750.4	752.9	754.1	754.1	754.1	754.1	754.1
20°	738.0	740.7	743.5	744.9	744.9	744.9	744.9	744.9
22.5°	726.9	729.8	732.5	734.2	734.5	734.9	735.4	735.8
25°	709.9	712.9	716.0	717.9	718.6	719.4	720.1	720.9
27.5°	691.0	694.8	698.6	700.9	701.5	702.0	702.6	703.1
30°	677.6	681.7	685.8	688.2	688.9	689.7	690.4	691.2
32.5°	663.3	668.0	672.6	675.7	677.0	678.4	679.8	681.1
35°	643.0	648.6	654.2	657.8	659.6	661.4	663.1	665.0
37.5°	622.0	628.2	634.4	638.4	640.3	642.2	644.1	646.0
40°	607.3	613.9	620.5	624.9	627.2	629.5	631.8	634.1
42.5°	593.0	600.2	607.4	612.2	614.4	616.7	619.0	621.3
45°	571.0	578.9	586.8	591.9	594.5	597.0	599.6	602.1
47.5°	548.2	556.4	564.6	570.2	572.9	575.8	578.5	581.3
50°	532.5	541.1	549.8	555.5	558.3	561.1	563.9	566.7
52.5°	515.6	524.4	533.2	539.2	542.2	545.2	548.1	551.1
55°	490.2	499.3	508.4	514.6	517.9	521.2	524.5	527.8
57.5°	463.2	473.0	482.9	489.6	492.8	496.2	499.6	502.9
60°	445.5	455.1	464.8	471.3	474.9	478.5	482.0	485.6
62.5°	426.5	436.8	447.0	453.9	457.2	460.5	463.9	467.3
65°	397.9	408.3	418.7	425.5	428.8	432.1	435.4	438.7
67.5°	368.8	379.3	389.9	396.8	400.3	403.7	407.2	410.6
70°	348.6	359.5	370.4	377.4	380.5	383.5	386.6	389.6
72.5°	329.0	339.7	350.4	357.6	361.3	364.9	368.6	372.2
75°	299.5	310.4	321.3	328.4	331.7	335.0	338.3	341.6
77.5°	270.6	281.5	292.3	299.5	303.1	306.6	310.2	313.7
80°	251.0	261.7	272.3	279.4	282.9	286.5	290.1	293.6
82.5°	232.7	243.3	254.0	261.1	264.4	267.7	271.0	274.4
85°	206.4	217.1	227.7	234.9	238.4	241.9	245.5	249.1
87.5°	186.2	196.5	207.0	213.9	217.1	220.3	223.6	226.9
90°	180.9	190.4	201.1	208.1	211.1	214.1	217.2	220.2
92.5°	189.0	195.2	202.6	207.2	210.0	212.1	215.3	217.9
95°	230.4	221.4	218.3	218.0	217.1	217.7	219.8	223.2
97.5°	326.3	302.0	278.4	262.6	251.1	246.6	245.1	245.6
100°	410.8	382.5	350.2	319.4	297.0	286.7	280.7	278.0
102.5°	464.1	464.8	443.5	410.4	385.8	366.3	358.1	353.4
105°	485.7	528.9	541.7	537.5	521.5	505.4	495.2	493.7
107.5°	452.7	513.0	553.2	573.5	578.7	580.5	580.7	577.8
110°	426.7	489.2	536.3	566.7	582.6	591.2	596.7	599.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	402.3	462.7	512.4	546.5	567.5	579.9	587.9	592.3
115°	370.7	425.2	472.6	509.1	533.6	550.4	561.0	566.5
117.5°	344.4	393.0	436.7	471.1	495.8	513.2	524.1	529.0
120°	329.8	374.7	414.1	446.7	470.8	487.8	499.5	505.3
122.5°	317.4	358.9	396.3	425.9	447.5	463.9	474.2	479.1
125°	298.3	336.6	370.1	397.5	417.5	431.4	441.3	445.9
127.5°	279.6	314.3	345.8	371.1	388.7	401.8	410.6	414.7
130°	267.6	299.9	330.0	354.1	371.1	383.5	391.6	396.1
132.5°	255.9	286.0	313.9	336.8	353.4	365.8	373.5	377.7
135°	239.5	264.9	290.3	311.1	326.1	338.3	345.8	349.0
137.5°	225.1	246.5	267.2	285.2	298.9	309.2	315.7	319.3
140°	216.0	234.7	252.8	269.0	280.3	289.6	295.8	299.1
142.5°	209.2	224.9	240.1	253.7	264.2	272.7	278.1	279.8
145°	200.4	212.1	223.0	233.2	241.8	248.2	252.5	254.7
147.5°	194.2	202.2	209.8	216.6	223.3	228.1	230.7	231.9
150°	191.1	197.8	204.1	209.6	214.1	217.8	219.6	220.0
152.5°	188.4	194.6	200.0	204.7	208.4	211.5	212.8	212.9
155°	184.7	189.5	194.1	197.4	200.8	202.9	204.1	203.5
157.5°	180.4	184.4	188.2	190.9	193.2	195.0	195.5	195.5
160°	177.6	181.0	184.3	186.5	188.6	190.1	190.5	190.5
162.5°	175.0	177.9	180.7	182.4	184.5	185.5	185.8	185.5
165°	171.0	173.1	175.2	176.4	177.6	178.9	178.9	178.6
167.5°	167.1	168.8	170.2	171.3	171.9	172.5	172.5	172.1
170°	165.2	166.1	167.3	167.9	168.2	169.1	168.8	168.2
172.5°	163.0	163.7	164.6	165.0	165.3	165.7	165.4	165.1
175°	160.7	160.9	161.3	161.5	161.5	161.9	161.5	160.9
177.5°	158.9	158.9	159.2	159.2	159.2	159.2	158.9	158.4
180°	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2

(END OF REPORT)