

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: P331378-940

Luminaire Tested: **SA2XXDIP-C865D330U940-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331378-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C865D330U940-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

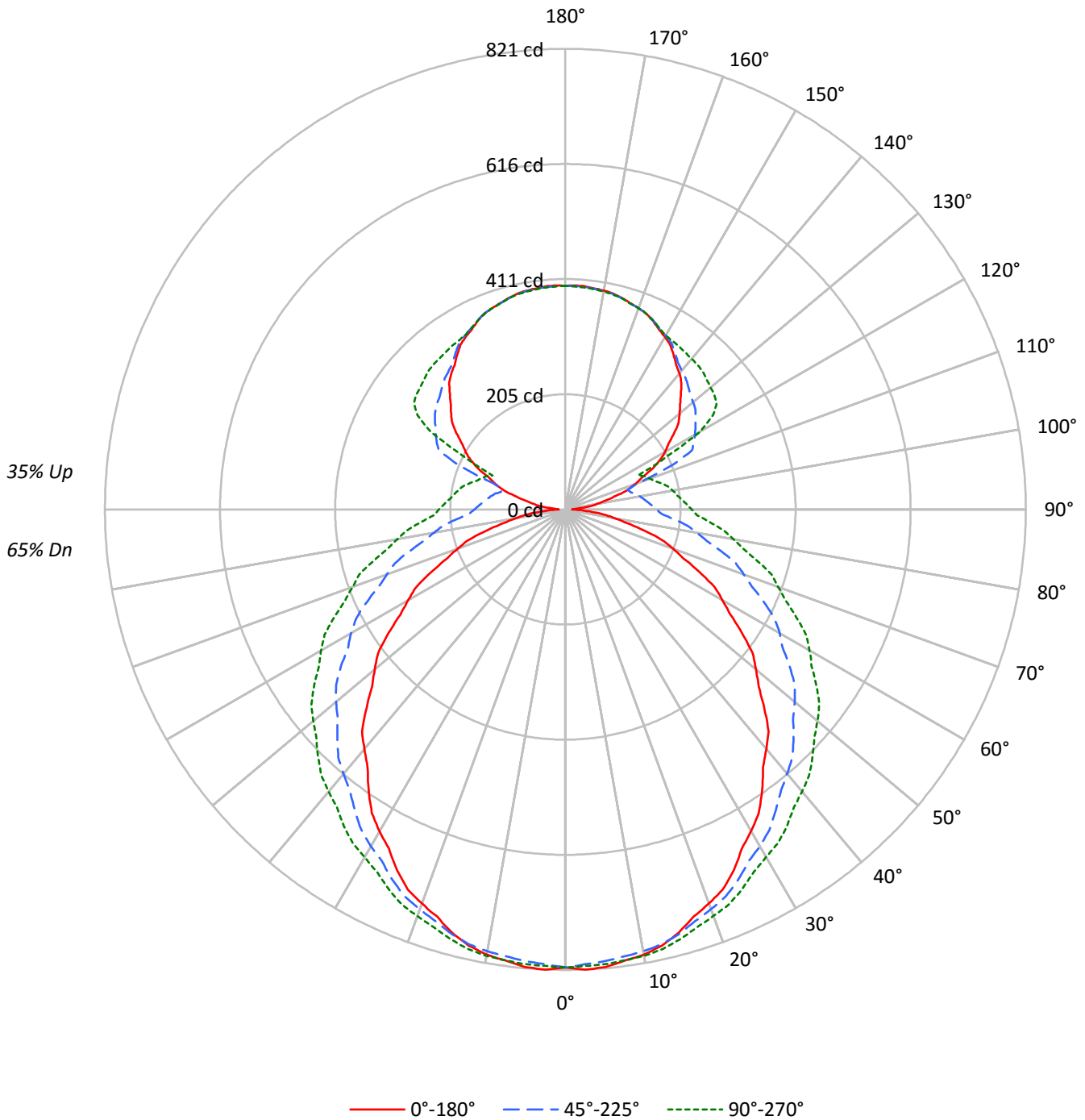
Lumens per Lamp: N/A  
Luminaire Lumens: 4283.5 lumens  
Efficiency: N/A  
Efficacy: 98.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

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



TEST NUMBER: P331378-940  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331378-940

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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	70	70	70	65				
1	99	94	89	85	93	88	84	80	77	74	71	68	65	63	58	57	55	50				
2	89	81	74	68	84	76	70	64	67	62	57	58	54	51	50	47	45	41				
3	81	70	62	56	76	66	59	53	58	52	47	51	46	42	44	40	37	34				
4	74	62	53	47	69	58	50	44	51	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	44	36	30	54	42	34	29	37	31	26	33	27	23	29	24	21	18				
8	54	40	32	26	50	38	31	25	34	28	23	30	25	21	26	22	19	16				
9	50	37	29	23	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	20	17	23	18	15	13				

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

	0°	45°	90°
0°	13183	13183	13183
5°	13247	12690	12640
10°	13163	12315	12177
15°	12982	11917	11686
20°	12752	11492	11215
25°	12527	11082	10786
30°	12206	10661	10357
35°	11884	10253	10054
40°	11544	9907	9750
45°	11222	9597	9493
50°	10875	9317	9238
55°	10513	9015	8977
60°	10070	8702	8703
65°	9607	8336	8376
70°	9087	7940	8025
75°	8422	7553	7701
80°	7376	7159	7372
85°	6374	6817	7118



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	77.4	1.8
10°-20°	221.8	5.2
20°-30°	336.2	7.8
30°-40°	409.5	9.6
40°-50°	440.5	10.3
50°-60°	427.8	10.0
60°-70°	373.5	8.7
70°-80°	287.6	6.7
80°-90°	194.0	4.5
90°-100°	146.2	3.4
100°-110°	145.8	3.4
110°-120°	194.4	4.5
120°-130°	250.9	5.9
130°-140°	243.7	5.7
140°-150°	215.2	5.0
150°-160°	170.9	4.0
160°-170°	110.1	2.6
170°-180°	37.9	0.9
0°-30°	635.4	14.8
0°-40°	1044.8	24.4
0°-60°	1913.1	44.7
0°-90°	2768.2	64.6
90°-120°	486.5	11.4
90°-150°	1196.3	27.9
90°-180°	1515.0	35.4
0°-180°	4283.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	816	816	816	816	816	
5°	819	815	808	815	814	78
15°	781	783	783	793	793	220
25°	710	718	729	742	747	326
35°	612	632	654	679	689	382
45°	502	534	575	610	624	387
55°	385	428	489	530	547	344
65°	263	321	390	437	454	261
75°	146	212	288	336	354	154
85°	43	116	192	240	258	46
90°	12	84	162	209	226	9
95°	28	76	147	192	208	30
105°	94	133	119	162	178	100
115°	170	191	249	156	143	167
125°	237	243	284	317	329	211
135°	291	296	310	337	347	225
145°	336	336	341	350	355	211
155°	370	368	371	373	371	171
165°	390	389	390	391	390	110
175°	399	397	398	400	397	38
180°	398	398	398	398	398	



TEST NUMBER: P331378-940

CATALOG NUMBER: SA2XXDIP-C865D330U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	816.5	816.5	816.5	816.5	816.5	816.5	816.5	816.5	816.5	816.5	816.5
2.5°	821.2	820.6	819.9	819.3	818.7	817.6	816.1	814.7	813.2	811.7	812.8
5°	818.8	818.1	817.3	816.5	815.6	814.5	812.9	811.3	809.8	808.2	809.8
7.5°	811.5	810.9	810.4	809.9	809.4	808.5	807.3	806.1	804.9	803.7	805.6
10°	805.8	805.3	804.8	804.2	803.7	803.1	802.3	801.5	800.7	799.9	802.0
12.5°	796.3	796.5	796.6	796.7	796.7	796.5	795.9	795.3	794.8	794.2	796.3
15°	781.0	781.5	782.0	782.6	783.0	783.3	783.3	783.3	783.3	783.3	785.7
17.5°	761.1	762.1	763.3	764.4	765.4	766.4	767.3	768.1	769.0	769.8	772.3
20°	747.8	749.1	750.5	751.8	753.0	754.3	755.3	756.3	757.4	758.5	761.3
22.5°	733.6	735.1	736.6	738.2	739.7	741.2	742.7	744.1	745.6	747.1	750.0
25°	710.0	711.8	713.6	715.5	717.3	719.4	721.8	724.2	726.5	728.9	732.0
27.5°	681.5	684.6	687.5	690.5	693.6	696.4	699.2	702.0	704.8	707.6	711.6
30°	662.6	666.0	669.5	672.9	676.3	679.8	683.1	686.5	690.0	693.4	697.6
32.5°	641.8	645.6	649.4	653.4	657.2	661.1	665.1	669.2	673.2	677.3	682.2
35°	611.7	616.2	620.7	625.2	629.6	634.4	639.4	644.4	649.3	654.3	660.1
37.5°	579.1	584.2	589.4	594.5	599.7	605.5	612.0	618.5	624.9	631.4	637.8
40°	557.3	563.1	568.9	574.7	580.4	586.9	594.0	601.1	608.2	615.3	622.1
42.5°	536.5	542.2	548.0	553.8	559.6	566.6	574.7	582.9	591.0	599.2	606.6
45°	501.7	508.8	515.9	523.0	530.1	538.2	547.4	556.7	565.9	575.1	583.2
47.5°	467.3	475.1	482.9	490.6	498.3	507.6	518.4	529.1	539.9	550.7	559.2
50°	443.7	451.8	460.0	468.1	476.4	486.3	498.1	510.0	521.8	533.7	542.6
52.5°	421.0	429.5	438.2	446.7	455.3	465.8	478.3	490.7	503.2	515.7	524.8
55°	384.6	394.0	403.5	413.0	422.4	434.0	447.6	461.4	475.0	488.7	498.1
57.5°	348.6	359.3	370.0	380.6	391.3	403.6	417.5	431.5	445.4	459.3	469.6
60°	323.1	334.3	345.6	357.0	368.3	381.4	396.4	411.3	426.3	441.4	451.4
62.5°	300.3	312.0	323.8	335.5	347.2	360.6	375.6	390.6	405.6	420.5	431.1
65°	262.7	275.5	288.5	301.3	314.2	328.4	343.9	359.4	375.0	390.5	401.3
67.5°	228.1	241.6	255.0	268.5	282.0	296.7	312.5	328.4	344.3	360.2	371.0
70°	203.5	217.2	230.9	244.5	258.2	273.2	289.5	305.8	322.1	338.4	349.7
72.5°	180.8	194.9	209.0	223.1	237.2	252.4	269.0	285.5	302.0	318.5	329.7
75°	145.5	160.2	175.0	189.8	204.5	220.3	237.0	253.9	270.7	287.5	298.8
77.5°	111.5	126.9	142.3	157.7	173.1	189.3	206.4	223.6	240.6	257.7	268.9
80°	88.7	104.8	120.8	136.9	152.9	169.4	186.5	203.7	220.7	237.8	248.9
82.5°	69.8	85.6	101.5	117.3	133.1	149.7	167.0	184.3	201.6	218.9	230.0
85°	42.6	58.9	75.2	91.5	107.8	124.4	141.2	158.0	174.9	191.7	202.8
87.5°	23.3	39.1	54.8	70.7	86.5	102.9	119.8	136.7	153.6	170.6	181.4
90°	12.1	28.1	44.1	60.0	76.0	92.6	109.9	127.2	144.6	161.9	172.8
92.5°	16.7	30.9	44.9	59.1	73.2	88.5	105.0	121.5	137.9	154.4	164.9
95°	28.2	38.4	48.7	58.9	69.2	82.4	98.6	114.9	131.1	147.3	157.7
97.5°	45.5	50.5	55.6	60.5	65.6	76.2	92.4	108.6	124.8	141.0	151.0
100°	59.3	60.3	61.3	62.2	63.1	71.5	87.3	103.2	119.0	134.7	145.0
102.5°	73.6	80.6	87.7	94.7	101.7	107.8	113.0	118.2	123.4	128.6	138.8
105°	93.5	103.1	112.6	122.2	131.8	134.6	130.8	127.0	123.1	119.3	129.3
107.5°	117.7	125.4	133.0	140.7	148.3	148.2	140.4	132.4	124.6	116.6	124.8
110°	132.4	139.0	145.7	152.3	158.9	159.3	153.7	148.1	142.5	136.8	138.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	147.2	152.8	158.5	164.1	169.7	176.3	184.0	191.6	199.3	207.1	192.1
115°	170.5	174.5	178.5	182.4	186.5	195.1	208.6	222.0	235.4	248.9	227.1
117.5°	190.1	193.2	196.4	199.5	202.6	210.2	222.2	234.3	246.3	258.3	259.0
120°	205.4	207.4	209.4	211.4	213.4	220.3	231.9	243.6	255.3	267.0	275.1
122.5°	218.3	219.7	221.1	222.6	224.0	230.3	241.5	252.6	263.8	274.9	282.5
125°	236.7	237.6	238.4	239.2	240.1	245.3	254.9	264.6	274.2	283.8	291.4
127.5°	254.6	255.2	255.9	256.5	257.3	261.4	269.1	276.8	284.5	292.2	299.3
130°	265.9	266.6	267.4	268.1	268.9	272.4	278.7	284.9	291.1	297.3	304.3
132.5°	277.4	278.0	278.7	279.3	279.8	282.7	287.6	292.6	297.6	302.5	309.2
135°	291.2	292.2	293.3	294.3	295.3	297.5	300.7	303.9	307.1	310.2	316.5
137.5°	306.4	307.0	307.7	308.4	309.1	310.3	312.1	313.9	315.8	317.5	323.0
140°	316.3	316.6	316.8	317.1	317.3	318.1	319.3	320.5	321.7	323.0	327.8
142.5°	324.6	324.9	325.0	325.2	325.4	326.0	326.9	327.8	328.7	329.6	333.5
145°	336.4	336.4	336.4	336.3	336.2	336.7	337.8	338.9	340.0	341.1	343.1
147.5°	347.9	347.6	347.3	347.1	346.9	347.2	348.3	349.5	350.5	351.6	352.1
150°	355.2	354.7	354.3	353.8	353.4	353.7	354.7	355.8	356.8	357.8	358.2
152.5°	361.4	361.0	360.4	359.9	359.4	359.6	360.6	361.6	362.6	363.6	363.9
155°	370.5	369.9	369.3	368.7	368.2	368.3	369.1	369.8	370.6	371.3	371.8
157.5°	377.6	377.1	376.6	376.1	375.6	375.7	376.2	376.7	377.3	377.8	378.3
160°	381.7	381.4	380.9	380.6	380.2	380.2	380.6	380.9	381.4	381.7	382.1
162.5°	385.4	385.0	384.7	384.2	383.9	383.9	384.1	384.5	384.9	385.2	385.7
165°	390.4	390.0	389.6	389.2	388.9	388.8	389.0	389.1	389.3	389.5	389.9
167.5°	394.0	393.7	393.3	392.9	392.5	392.4	392.6	392.8	393.0	393.2	393.6
170°	396.2	395.7	395.4	395.0	394.6	394.5	394.6	394.8	394.8	395.0	395.5
172.5°	397.5	397.2	396.7	396.4	396.0	395.8	396.0	396.1	396.3	396.4	396.8
175°	399.3	398.9	398.4	398.0	397.5	397.3	397.5	397.6	397.8	397.9	398.3
177.5°	399.6	399.2	398.9	398.5	398.1	398.1	398.1	398.1	398.1	398.2	398.6
180°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	816.5	816.5	816.5	816.5	816.5	816.5	816.5	816.5
2.5°	813.8	814.8	815.9	816.3	815.8	815.4	814.9	814.6
5°	811.3	812.9	814.5	815.1	814.8	814.6	814.3	814.0
7.5°	807.4	809.3	811.3	812.1	811.8	811.5	811.3	811.0
10°	804.1	806.2	808.3	809.2	809.0	808.7	808.4	808.2
12.5°	798.4	800.5	802.6	803.5	803.3	803.0	802.7	802.5
15°	788.0	790.4	792.8	793.8	793.5	793.3	793.0	792.8
17.5°	774.8	777.2	779.7	781.0	781.0	781.0	781.0	781.0
20°	764.3	767.1	770.0	771.5	771.5	771.5	771.5	771.5
22.5°	752.9	755.8	758.7	760.4	760.7	761.2	761.6	762.1
25°	735.2	738.3	741.5	743.5	744.2	745.0	745.8	746.6
27.5°	715.6	719.6	723.5	725.9	726.5	727.0	727.6	728.2
30°	701.8	706.0	710.2	712.7	713.5	714.3	715.1	715.9
32.5°	687.0	691.8	696.6	699.8	701.2	702.6	704.0	705.4
35°	665.9	671.7	677.5	681.3	683.1	685.0	686.8	688.7
37.5°	644.2	650.6	657.0	661.2	663.2	665.1	667.1	669.1
40°	628.9	635.8	642.7	647.2	649.6	651.9	654.3	656.7
42.5°	614.1	621.6	629.1	634.0	636.3	638.7	641.1	643.5
45°	591.4	599.5	607.7	613.1	615.7	618.3	621.0	623.6
47.5°	567.8	576.2	584.8	590.5	593.3	596.3	599.1	602.1
50°	551.5	560.4	569.4	575.3	578.2	581.1	584.0	586.9
52.5°	534.0	543.1	552.2	558.4	561.5	564.6	567.7	570.8
55°	507.7	517.1	526.6	533.0	536.4	539.8	543.2	546.6
57.5°	479.7	489.9	500.2	507.0	510.4	513.9	517.4	520.8
60°	461.4	471.4	481.3	488.1	491.9	495.5	499.2	502.9
62.5°	441.8	452.4	463.0	470.1	473.5	477.0	480.5	483.9
65°	412.1	422.8	433.6	440.7	444.1	447.5	450.9	454.3
67.5°	381.9	392.8	403.8	411.0	414.6	418.1	421.7	425.3
70°	361.1	372.3	383.6	390.8	394.0	397.2	400.4	403.5
72.5°	340.7	351.8	362.9	370.3	374.2	377.9	381.7	385.5
75°	310.1	321.5	332.8	340.1	343.6	347.0	350.4	353.8
77.5°	280.3	291.5	302.7	310.2	313.9	317.5	321.3	324.9
80°	259.9	271.0	282.0	289.4	293.0	296.8	300.4	304.1
82.5°	241.0	252.0	263.1	270.4	273.8	277.2	280.7	284.2
85°	213.7	224.8	235.9	243.3	246.9	250.6	254.2	258.0
87.5°	192.2	203.0	213.7	220.9	224.3	227.7	231.0	234.4
90°	183.6	194.5	205.3	212.4	215.6	218.9	222.2	225.5
92.5°	175.3	185.7	196.3	203.1	206.3	209.6	212.8	216.1
95°	167.9	178.3	188.6	195.3	198.3	201.4	204.6	207.6
97.5°	161.0	170.9	180.9	187.4	190.6	193.9	197.0	200.2
100°	155.2	165.5	175.8	182.4	185.4	188.4	191.5	194.5
102.5°	149.0	159.2	169.3	175.9	179.1	182.1	185.2	188.2
105°	139.2	149.1	159.0	165.5	168.6	171.8	175.0	178.1
107.5°	133.0	141.1	149.2	154.8	157.9	161.0	164.3	167.4
110°	140.9	142.9	144.9	147.4	150.6	153.7	156.9	160.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	177.1	162.1	147.2	141.2	144.4	147.4	150.5	153.6
115°	205.4	183.5	161.8	150.1	148.3	146.6	144.9	143.1
117.5°	259.6	260.1	260.7	254.9	242.4	229.9	217.4	204.9
120°	283.2	291.3	299.4	300.7	294.9	289.2	283.4	277.6
122.5°	290.1	297.7	305.3	309.5	310.3	311.1	311.9	312.7
125°	299.0	306.5	314.1	319.1	321.6	324.2	326.8	329.3
127.5°	306.5	313.7	320.8	325.7	328.0	330.4	332.7	335.0
130°	311.4	318.3	325.4	329.9	332.0	334.0	336.1	338.0
132.5°	315.9	322.6	329.3	333.7	335.7	337.8	339.8	341.9
135°	322.6	328.8	334.9	339.0	341.0	343.0	344.9	346.9
137.5°	328.5	333.9	339.4	343.0	344.5	346.1	347.6	349.2
140°	332.5	337.3	342.1	345.1	346.4	347.7	348.9	350.2
142.5°	337.4	341.3	345.2	347.7	348.7	349.7	350.8	351.9
145°	345.1	347.1	349.2	350.7	351.7	352.7	353.7	354.6
147.5°	352.7	353.2	353.7	354.2	354.5	354.9	355.3	355.6
150°	358.6	358.9	359.4	359.4	359.1	358.7	358.4	358.1
152.5°	364.4	364.7	365.1	365.1	364.6	364.3	363.8	363.4
155°	372.1	372.5	372.9	372.8	372.3	371.8	371.3	370.8
157.5°	378.7	379.2	379.5	379.5	379.0	378.5	378.0	377.6
160°	382.5	382.9	383.3	383.3	382.8	382.4	381.9	381.5
162.5°	386.0	386.5	386.9	386.9	386.3	385.8	385.2	384.7
165°	390.4	390.8	391.3	391.3	390.8	390.4	389.9	389.5
167.5°	394.0	394.5	394.9	394.8	394.3	393.7	393.2	392.5
170°	395.9	396.4	396.8	396.7	396.2	395.6	395.0	394.4
172.5°	397.3	397.7	398.1	398.1	397.5	397.0	396.4	395.8
175°	398.8	399.2	399.7	399.6	399.0	398.3	397.6	397.0
177.5°	399.0	399.3	399.7	399.6	399.1	398.7	398.2	397.8
180°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4

(END OF REPORT)