

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: P331650-840

Luminaire Tested: **SA2XXRDIP-C485D330U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331650-840  
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-C485D330U840-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 485 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

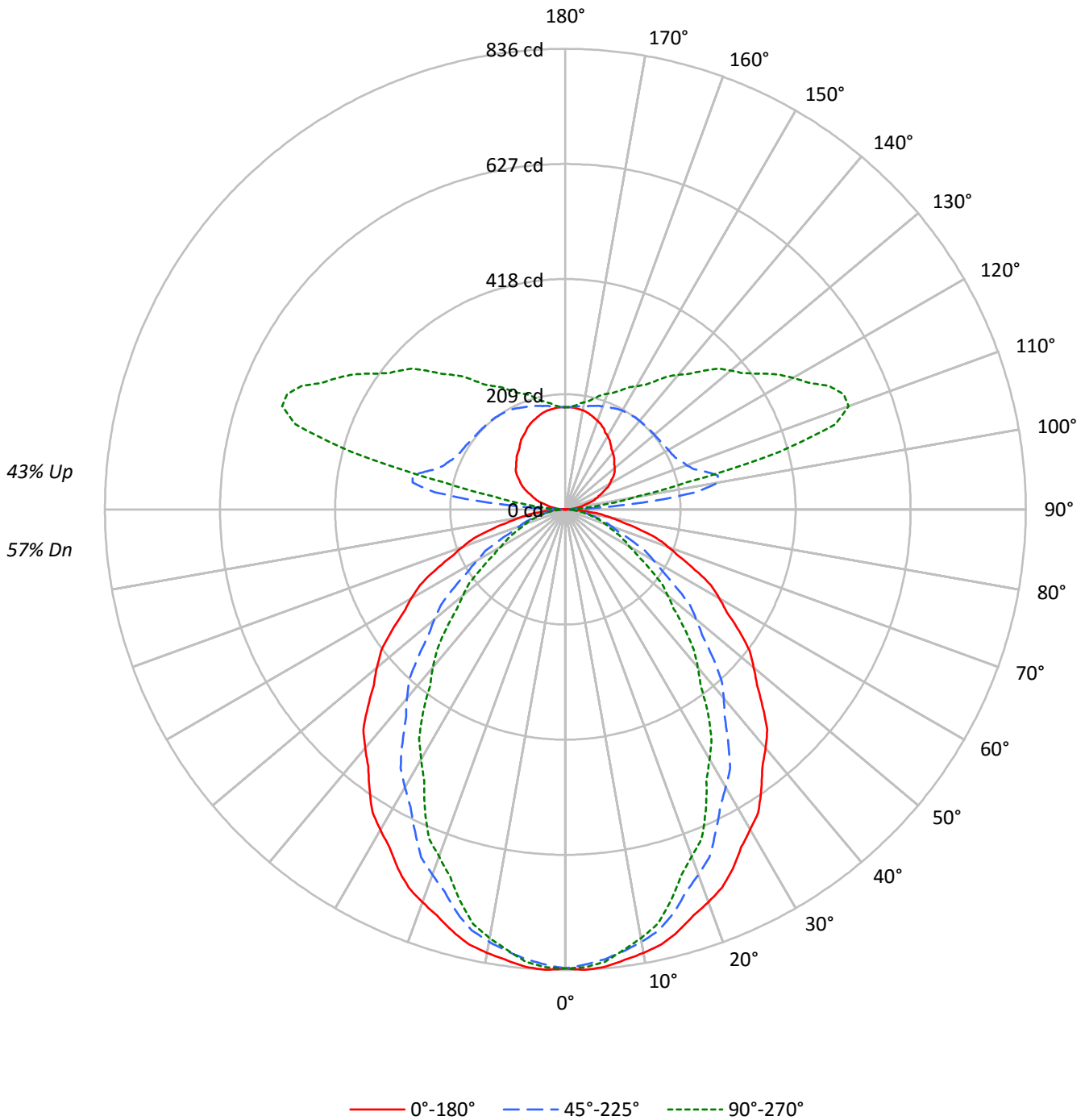
Lumens per Lamp: N/A  
Luminaire Lumens: 3006.9 lumens  
Efficiency: N/A  
Efficacy: 109.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 27.5  
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63	57
1	100	96	92	89	93	89	86	83	77	75	73	66	65	63	56	55	54	49
2	91	84	78	73	85	79	74	69	68	65	61	59	56	54	50	48	46	42
3	84	75	67	62	78	70	64	58	61	56	52	53	49	46	45	42	40	36
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35	32
5	71	59	52	46	66	56	49	43	49	43	39	43	38	35	37	33	31	28
6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	34	30	27	25
7	61	49	41	35	57	46	39	34	40	35	31	35	31	28	31	27	25	22
8	56	44	37	31	53	42	35	30	37	31	27	33	28	25	28	25	22	20
9	53	41	33	28	49	38	32	27	34	29	25	30	26	22	26	23	20	18
10	49	37	30	26	46	35	29	24	32	26	22	28	24	20	25	21	18	17

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

	0°	45°	90°
0°	13454	13454	13454
5°	13506	13287	13361
10°	13404	13070	12959
15°	13249	12682	12318
20°	13036	12129	11519
25°	12818	11501	10750
30°	12515	10856	9758
35°	12220	10153	8889
40°	11921	9428	7885
45°	11574	8611	6976
50°	11215	7784	6081
55°	10849	6899	5222
60°	10424	5968	4334
65°	9941	5012	3947
70°	9361	4131	3635
75°	8659	3762	3387
80°	7643	3366	3087
85°	6002	2649	2649



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.0	2.6
10°-20°	214.2	7.1
20°-30°	300.8	10.0
30°-40°	328.0	10.9
40°-50°	301.6	10.0
50°-60°	236.8	7.9
60°-70°	154.4	5.1
70°-80°	79.6	2.6
80°-90°	22.3	0.7
90°-100°	74.2	2.5
100°-110°	251.8	8.4
110°-120°	267.5	8.9
120°-130°	220.2	7.3
130°-140°	176.8	5.9
140°-150°	133.6	4.4
150°-160°	93.9	3.1
160°-170°	55.3	1.8
170°-180°	18.0	0.6
0°-30°	593.0	19.7
0°-40°	921.0	30.6
0°-60°	1459.4	48.5
0°-90°	1715.7	57.1
90°-120°	593.4	19.7
90°-150°	1124.0	37.4
90°-180°	1291.0	42.9
0°-180°	3006.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	833	833	833	833	833	
5°	833	829	820	826	824	79
15°	793	783	759	745	737	223
25°	720	694	646	616	603	331
35°	620	580	515	469	451	388
45°	507	455	377	326	306	391
55°	385	325	245	202	186	344
65°	260	199	131	107	103	258
75°	139	87	60	55	54	147
85°	32	17	14	14	14	38
90°	0	5	12	12	12	2
95°	12	31	140	53	41	13
105°	44	66	264	473	402	46
115°	77	97	221	457	529	76
125°	107	127	213	370	429	95
135°	126	150	210	311	356	97
145°	143	165	209	260	284	90
155°	163	176	203	230	239	75
165°	178	183	194	206	209	50
175°	185	185	187	189	189	18
180°	186	186	186	186	186	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3
2.5°	836.4	835.8	835.1	834.4	833.7	832.6	831.2	829.7	828.2	826.8	828.1
5°	833.3	832.5	831.7	830.9	830.0	828.5	826.4	824.2	822.0	819.8	821.3
7.5°	824.8	823.7	822.7	821.6	820.6	818.8	816.3	813.7	811.2	808.7	809.1
10°	817.6	816.4	815.2	814.1	812.8	810.6	807.3	803.9	800.5	797.2	796.7
12.5°	808.5	807.1	805.6	804.2	802.7	799.9	795.6	791.3	787.0	782.7	781.8
15°	792.6	790.8	789.0	787.1	785.3	781.5	775.8	770.1	764.5	758.7	755.6
17.5°	773.3	770.4	767.6	764.8	761.9	756.9	749.6	742.3	735.0	727.6	723.9
20°	758.7	755.4	752.0	748.7	745.3	739.4	731.0	722.7	714.3	705.9	701.8
22.5°	743.1	739.3	735.5	731.7	728.0	721.4	712.0	702.5	693.1	683.6	678.2
25°	719.5	714.2	708.8	703.4	698.0	689.8	678.7	667.7	656.6	645.6	638.7
27.5°	691.2	685.3	679.4	673.7	667.8	658.6	646.2	633.7	621.3	608.7	600.8
30°	671.3	664.9	658.5	652.2	645.8	635.9	622.5	609.0	595.6	582.3	573.7
32.5°	652.0	644.5	637.0	629.7	622.2	611.6	597.9	584.2	570.6	556.9	547.1
35°	620.0	611.4	602.9	594.3	585.7	574.1	559.4	544.6	529.9	515.1	504.5
37.5°	587.9	578.6	569.2	559.8	550.5	537.9	522.2	506.4	490.7	475.0	463.3
40°	565.6	555.6	545.5	535.5	525.4	512.3	496.0	479.8	463.5	447.3	435.4
42.5°	542.7	532.1	521.5	511.0	500.4	486.7	469.9	453.0	436.3	419.5	407.2
45°	506.9	495.6	484.3	473.1	461.9	447.5	429.9	412.3	394.7	377.1	365.2
47.5°	471.8	459.9	448.1	436.2	424.2	409.2	391.0	372.8	354.7	336.5	324.7
50°	446.5	434.5	422.7	410.8	398.9	383.7	365.3	346.9	328.4	309.9	298.4
52.5°	421.7	409.3	396.9	384.5	372.0	356.8	338.7	320.7	302.7	284.7	273.5
55°	385.4	372.3	359.2	346.2	333.2	317.5	299.4	281.3	263.2	245.1	235.1
57.5°	348.1	334.8	321.3	307.9	294.5	279.1	261.8	244.3	226.9	209.5	200.3
60°	322.8	309.4	296.0	282.6	269.1	253.9	236.6	219.3	202.1	184.8	176.2
62.5°	298.0	284.7	271.2	257.8	244.4	229.5	213.1	196.6	180.2	163.7	155.5
65°	260.2	246.6	233.1	219.4	205.9	191.6	176.5	161.4	146.3	131.2	125.5
67.5°	223.7	210.3	196.7	183.3	169.8	156.2	142.7	129.2	115.5	102.0	99.4
70°	198.3	185.3	172.2	159.2	146.0	133.7	122.2	110.6	99.1	87.5	85.8
72.5°	174.2	161.7	149.2	136.6	124.1	113.2	103.9	94.6	85.3	76.0	74.6
75°	138.8	127.0	115.3	103.6	91.8	83.1	77.5	71.7	66.0	60.3	59.2
77.5°	103.9	93.6	83.3	73.0	62.8	56.2	53.5	50.8	48.0	45.2	44.5
80°	82.2	73.6	65.1	56.6	48.0	42.9	41.2	39.6	37.9	36.2	35.5
82.5°	62.3	55.6	49.0	42.3	35.6	31.7	30.6	29.4	28.3	27.2	26.8
85°	32.4	28.9	25.3	21.9	18.4	16.4	15.9	15.3	14.8	14.3	14.3
87.5°	9.7	8.9	8.1	7.2	6.3	5.9	6.3	6.8	7.2	7.3	7.1
90°	0.4	1.4	2.8	3.5	4.2	5.4	7.2	9.6	11.8	12.1	11.8
92.5°	4.3	6.3	8.9	10.4	12.8	16.2	24.2	35.6	45.7	46.4	39.2
95°	12.5	13.9	17.5	20.7	26.4	34.9	51.4	82.4	123.8	139.9	122.4
97.5°	20.3	22.2	26.1	30.9	37.5	47.2	67.8	111.1	179.9	238.7	250.4
100°	27.5	28.6	31.7	37.5	44.6	54.6	73.5	117.0	194.1	281.9	333.3
102.5°	34.0	34.8	38.1	43.7	51.2	61.2	78.7	117.3	188.6	283.3	364.1
105°	43.5	44.9	47.5	52.8	60.7	70.7	87.5	119.2	178.0	264.4	359.3
107.5°	53.8	54.9	57.4	62.3	70.1	80.2	96.4	124.1	172.8	244.1	328.0
110°	60.7	62.1	64.2	68.9	76.3	86.7	102.4	128.1	171.7	234.4	308.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	67.0	68.4	70.8	75.1	82.3	93.0	108.2	132.4	171.9	228.1	294.6
115°	76.7	78.5	80.7	84.9	92.1	101.7	117.0	138.8	173.4	221.3	277.6
117.5°	86.8	88.3	90.4	94.2	101.1	111.1	125.2	145.6	176.0	217.8	266.9
120°	93.1	94.5	96.7	99.9	107.0	117.0	131.0	150.3	177.7	215.9	261.2
122.5°	99.2	100.3	102.4	105.9	113.0	123.3	136.3	154.2	179.7	214.7	256.3
125°	107.0	108.2	110.3	114.5	121.7	131.7	144.5	160.6	182.7	212.7	249.4
127.5°	113.3	114.7	117.8	122.5	129.3	139.6	152.1	166.5	185.7	211.5	243.0
130°	117.0	118.5	122.0	127.0	134.2	144.1	156.6	170.2	188.0	210.9	238.7
132.5°	120.5	122.2	126.0	131.3	138.8	148.8	160.7	173.9	190.4	210.6	235.3
135°	125.6	127.0	131.3	136.6	144.9	154.8	166.3	178.7	193.1	210.2	230.5
137.5°	130.5	132.2	136.4	142.2	150.3	159.6	170.9	182.5	195.5	210.1	227.1
140°	134.2	135.6	139.9	145.6	153.4	162.7	173.4	184.5	196.6	209.8	225.1
142.5°	137.8	139.1	143.0	148.8	156.3	165.0	175.4	186.2	197.4	209.8	223.2
145°	143.4	144.9	148.5	153.8	161.0	168.7	178.4	188.4	198.3	209.0	220.6
147.5°	149.5	150.5	153.9	158.9	164.8	171.8	180.9	189.7	198.6	207.8	217.8
150°	153.4	154.5	157.3	162.0	167.3	173.8	182.0	190.2	198.3	206.9	215.5
152.5°	157.4	157.9	160.8	164.8	170.0	175.7	183.1	190.5	197.8	205.5	213.5
155°	163.1	163.4	165.5	169.5	173.4	178.7	184.8	190.9	196.9	203.0	209.8
157.5°	167.7	168.1	169.9	173.3	176.4	180.9	186.0	190.9	195.3	200.5	206.3
160°	170.9	171.3	172.7	175.5	178.4	182.4	186.6	190.9	194.5	198.7	203.7
162.5°	174.1	173.8	175.3	177.5	180.2	183.2	186.9	190.6	193.6	197.3	201.5
165°	177.7	177.3	178.0	180.2	182.0	184.1	187.3	189.9	192.0	194.5	197.6
167.5°	180.7	180.3	180.9	182.3	183.6	184.9	187.2	189.3	190.4	192.0	194.0
170°	182.7	182.0	182.4	183.4	184.1	185.2	186.9	188.7	189.5	190.6	192.0
172.5°	183.8	183.4	183.2	184.3	184.7	185.5	186.7	187.9	188.3	188.8	190.0
175°	185.2	184.8	184.5	185.2	185.2	185.5	186.2	186.9	186.6	186.9	187.3
177.5°	185.8	185.2	185.0	185.5	185.5	185.5	185.8	186.4	185.8	185.5	185.8
180°	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3
2.5°	829.4	830.8	832.1	832.6	832.4	832.1	831.8	831.6
5°	822.8	824.4	825.9	826.4	825.9	825.4	824.9	824.4
7.5°	809.5	809.9	810.4	810.2	809.3	808.4	807.6	806.7
10°	796.2	795.7	795.2	794.5	793.5	792.4	791.4	790.4
12.5°	780.9	780.0	779.1	777.8	776.1	774.5	772.7	771.1
15°	752.3	749.2	746.0	743.6	741.8	740.2	738.5	736.9
17.5°	720.0	716.3	712.5	709.1	706.3	703.4	700.5	697.6
20°	697.5	693.4	689.1	685.2	681.6	677.8	674.2	670.4
22.5°	672.8	667.4	662.1	657.9	655.2	652.5	649.7	646.9
25°	631.9	625.0	618.1	613.4	610.9	608.3	605.9	603.4
27.5°	592.8	584.7	576.7	570.8	566.7	562.8	558.8	554.8
30°	565.1	556.6	548.1	541.5	536.9	532.5	528.0	523.4
32.5°	537.3	527.7	517.9	510.9	506.6	502.4	498.1	493.8
35°	494.0	483.4	472.9	465.7	462.1	458.4	454.7	451.0
37.5°	451.7	440.1	428.5	420.5	416.4	412.1	407.9	403.6
40°	423.4	411.5	399.6	391.5	387.2	382.8	378.4	374.1
42.5°	394.9	382.5	370.3	362.0	357.8	353.6	349.3	345.1
45°	353.3	341.4	329.5	321.5	317.5	313.5	309.4	305.5
47.5°	312.9	301.0	289.2	281.4	277.8	274.2	270.4	266.8
50°	286.8	275.3	263.7	256.2	252.7	249.1	245.6	242.1
52.5°	262.3	251.2	239.9	232.8	229.5	226.3	223.0	219.7
55°	225.0	214.9	204.9	198.2	195.1	191.9	188.7	185.5
57.5°	191.1	181.9	172.7	166.7	164.0	161.4	158.6	155.9
60°	167.6	159.2	150.6	145.0	142.3	139.6	136.9	134.2
62.5°	147.3	139.3	131.1	126.2	124.6	123.0	121.4	119.8
65°	119.9	114.1	108.5	105.3	104.8	104.3	103.8	103.3
67.5°	96.7	94.1	91.5	90.0	89.4	88.9	88.4	87.8
70°	84.1	82.5	80.8	79.6	79.0	78.3	77.6	77.0
72.5°	73.2	71.8	70.4	69.5	69.1	68.7	68.3	67.9
75°	58.0	56.9	55.6	54.9	54.8	54.6	54.4	54.3
77.5°	43.9	43.2	42.6	42.1	41.8	41.6	41.3	41.0
80°	34.8	34.2	33.5	33.2	33.2	33.2	33.2	33.2
82.5°	26.4	26.0	25.5	25.3	25.3	25.3	25.3	25.3
85°	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3
87.5°	6.9	6.6	6.6	6.6	6.6	6.6	6.6	6.6
90°	11.4	10.7	11.4	11.8	11.8	11.8	11.8	11.8
92.5°	31.1	26.7	23.7	21.5	21.2	20.1	20.3	19.8
95°	93.5	71.7	56.8	48.9	44.2	41.4	40.3	40.7
97.5°	218.1	178.4	139.9	114.1	97.0	88.3	83.1	80.1
100°	325.8	281.6	232.7	189.5	159.9	144.5	134.2	127.7
102.5°	396.3	386.3	350.5	304.8	272.6	246.4	233.5	224.8
105°	433.5	473.8	478.5	466.8	444.5	422.4	407.1	402.1
107.5°	406.7	467.5	504.5	521.8	524.6	523.4	520.3	513.7
110°	383.5	447.5	493.1	522.4	537.8	544.5	547.8	547.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	362.4	423.7	472.5	506.1	527.5	538.8	544.8	546.7
115°	336.5	391.4	438.2	474.9	500.3	516.6	525.9	529.2
117.5°	316.9	365.2	407.6	442.0	467.9	485.2	494.9	497.7
120°	307.2	351.4	389.3	421.7	446.8	463.5	473.8	477.5
122.5°	299.5	340.0	375.9	405.2	427.6	444.1	453.3	456.3
125°	288.3	325.1	356.5	383.2	403.9	417.5	426.4	429.3
127.5°	277.2	310.5	340.1	364.8	382.8	395.6	403.2	405.6
130°	270.1	300.8	329.0	352.5	370.0	382.1	389.3	392.1
132.5°	263.3	291.6	317.6	339.7	356.9	369.0	375.6	378.2
135°	253.7	277.2	300.8	320.7	336.1	347.9	354.4	355.8
137.5°	246.1	265.8	284.5	301.8	315.9	326.0	331.6	333.8
140°	241.2	258.3	274.8	290.4	301.8	311.1	316.5	318.6
142.5°	237.2	251.8	265.9	279.0	289.8	298.3	303.1	303.5
145°	231.6	243.4	254.4	264.8	273.3	279.4	283.0	284.0
147.5°	227.2	236.5	245.1	252.7	259.7	264.6	267.0	267.7
150°	224.1	232.0	239.4	245.8	251.2	255.5	257.6	258.0
152.5°	221.0	228.2	234.6	240.1	244.4	248.0	249.6	249.7
155°	216.6	222.3	227.6	231.6	235.5	238.0	239.4	238.7
157.5°	211.6	216.3	220.8	223.9	226.6	228.7	229.3	229.3
160°	208.3	212.3	216.2	218.7	221.3	223.0	223.4	223.4
162.5°	205.2	208.6	212.0	213.9	216.4	217.6	217.9	217.6
165°	200.6	203.0	205.5	206.9	208.3	209.8	209.8	209.4
167.5°	196.0	197.9	199.7	201.0	201.6	202.4	202.3	201.9
170°	193.8	194.8	196.2	196.9	197.3	198.3	198.0	197.3
172.5°	191.2	192.0	193.1	193.5	193.9	194.4	194.0	193.6
175°	188.4	188.7	189.1	189.5	189.5	189.9	189.5	188.7
177.5°	186.4	186.4	186.7	186.7	186.7	186.7	186.4	185.8
180°	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5

(END OF REPORT)