

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: P331248-930

Luminaire Tested: **SA2XXDIP-C290D330U930-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331248-930  
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-C290D330U930-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

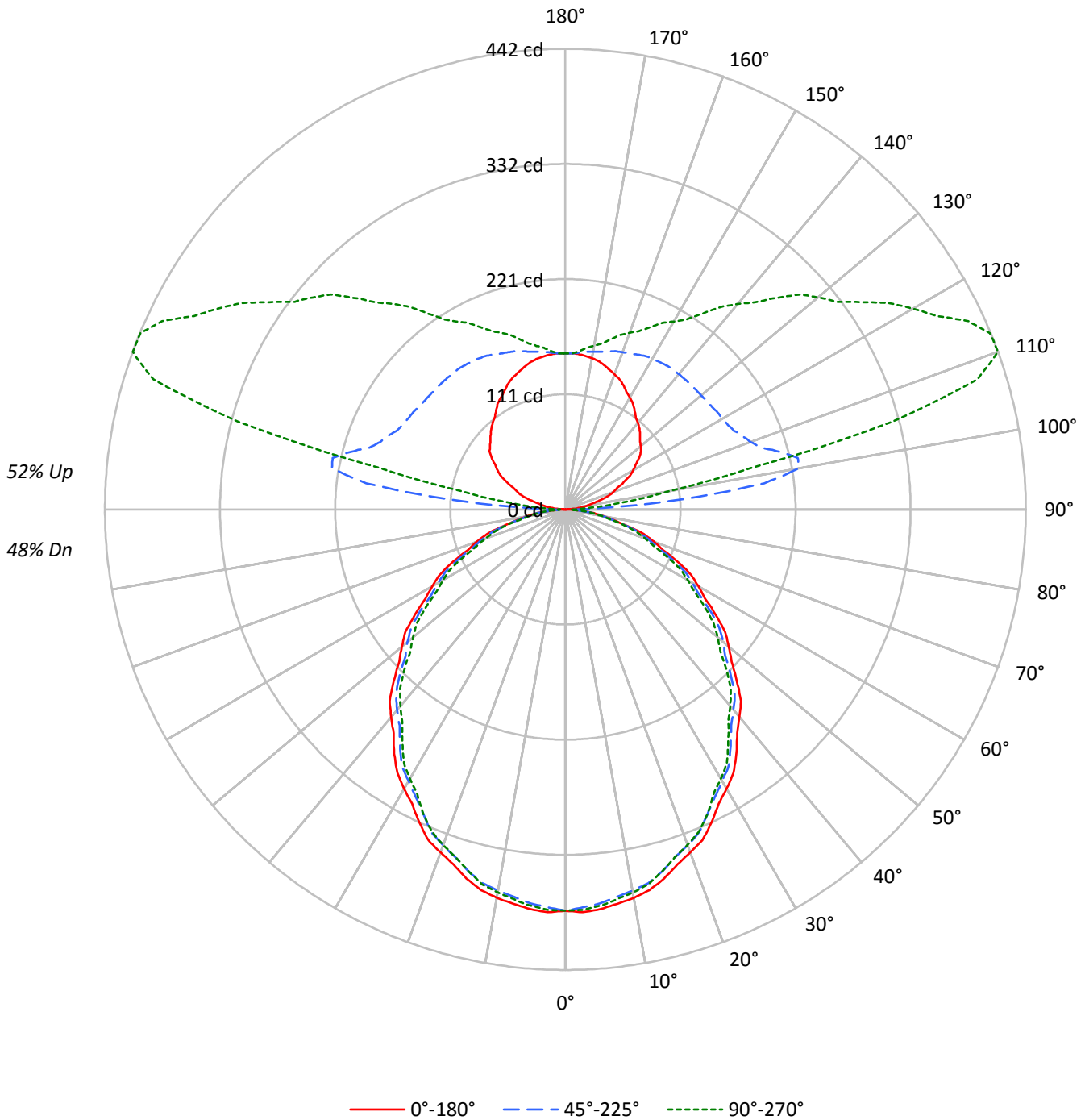
Lumens per Lamp: N/A  
Luminaire Lumens: 2023.7 lumens  
Efficiency: N/A  
Efficacy: 99.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 20.3  
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	50	30	10	0	
RCR																						
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48				48
1	97	93	89	86	90	86	83	80	72	70	68	60	58	57	48	47	46				41	
2	89	81	75	70	81	75	70	65	63	59	56	53	50	47	43	41	39				34	
3	81	71	64	58	74	66	60	55	56	51	47	46	43	40	38	35	33				29	
4	74	63	55	49	68	59	52	46	50	44	40	41	37	34	34	31	29				25	
5	68	56	48	42	62	52	45	40	44	39	35	37	33	30	30	27	25				22	
6	63	51	42	37	57	47	40	34	40	34	30	34	29	26	28	24	22				19	
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	19				17	
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	17				15	
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16				14	
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	14				12	

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

	0°	45°	90°
0°	6218	6218	6218
5°	6242	6152	6190
10°	6205	6091	6120
15°	6128	6011	6006
20°	6019	5893	5887
25°	5911	5747	5747
30°	5774	5614	5565
35°	5643	5452	5373
40°	5480	5292	5191
45°	5318	5133	5005
50°	5144	4968	4793
55°	4963	4777	4597
60°	4760	4543	4379
65°	4542	4317	4118
70°	4263	4036	3843
75°	3880	3718	3624
80°	3440	3347	3171
85°	2816	2668	2408



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.2	1.8
10°-20°	101.9	5.0
20°-30°	149.8	7.4
30°-40°	174.0	8.6
40°-50°	173.8	8.6
50°-60°	151.6	7.5
60°-70°	112.1	5.5
70°-80°	63.5	3.1
80°-90°	18.4	0.9
90°-100°	59.9	3.0
100°-110°	203.2	10.0
110°-120°	215.9	10.7
120°-130°	177.7	8.8
130°-140°	142.7	7.1
140°-150°	107.9	5.3
150°-160°	75.8	3.7
160°-170°	44.6	2.2
170°-180°	14.5	0.7
0°-30°	287.9	14.2
0°-40°	461.9	22.8
0°-60°	787.3	38.9
0°-90°	981.3	48.5
90°-120°	479.1	23.7
90°-150°	907.4	44.8
90°-180°	1042.0	51.5
0°-180°	2023.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	385	385	385	385	385	
5°	385	384	380	382	382	37
15°	367	364	360	361	359	103
25°	332	329	323	323	323	153
35°	286	282	277	274	273	179
45°	233	230	225	221	219	180
55°	176	174	170	165	163	158
65°	119	117	113	110	108	118
75°	62	61	60	58	58	66
85°	15	15	14	13	13	17
90°	0	4	10	9	10	1
95°	10	25	113	43	33	11
105°	35	53	213	382	325	37
115°	62	78	179	369	427	61
125°	86	102	172	299	347	77
135°	101	121	170	251	287	78
145°	116	133	169	210	229	73
155°	132	142	164	185	193	61
165°	144	148	157	166	169	40
175°	150	150	151	153	152	14
180°	150	150	150	150	150	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	386.9	386.6	386.3	386.0	385.6	385.1	384.4	383.7	382.9	382.2	382.9
5°	385.1	384.8	384.5	384.2	383.8	383.3	382.4	381.5	380.5	379.6	380.3
7.5°	381.8	381.2	380.7	380.3	379.8	379.0	378.1	377.2	376.3	375.4	376.0
10°	378.5	378.0	377.4	376.8	376.2	375.4	374.5	373.5	372.5	371.5	372.1
12.5°	374.1	373.6	373.1	372.5	372.0	371.3	370.3	369.3	368.4	367.4	367.8
15°	366.6	366.2	365.7	365.2	364.7	363.9	362.8	361.7	360.7	359.6	360.0
17.5°	357.2	356.7	356.2	355.7	355.2	354.4	353.4	352.2	351.1	350.1	350.4
20°	350.3	349.8	349.4	348.9	348.4	347.6	346.4	345.3	344.1	343.0	343.2
22.5°	343.6	342.8	342.2	341.4	340.8	339.9	338.8	337.7	336.6	335.6	335.6
25°	331.8	331.2	330.5	329.9	329.2	328.2	326.8	325.4	324.0	322.6	322.8
27.5°	318.5	318.0	317.3	316.7	316.2	315.3	314.2	313.1	312.0	310.9	310.6
30°	309.7	309.0	308.3	307.7	307.0	306.1	304.8	303.6	302.3	301.1	300.8
32.5°	300.1	299.6	299.1	298.6	298.1	297.1	295.8	294.6	293.3	292.0	291.5
35°	286.3	285.4	284.6	283.8	283.0	281.9	280.6	279.3	278.0	276.6	276.1
37.5°	270.7	269.9	269.2	268.5	267.7	266.8	265.5	264.2	262.8	261.5	260.9
40°	260.0	259.3	258.7	258.0	257.4	256.4	255.0	253.7	252.4	251.1	250.4
42.5°	249.6	249.0	248.3	247.7	247.0	246.0	244.7	243.4	242.1	240.8	239.9
45°	232.9	232.4	231.8	231.2	230.6	229.8	228.5	227.3	226.1	224.8	223.9
47.5°	216.4	215.8	215.3	214.7	214.2	213.3	212.0	210.8	209.5	208.1	207.2
50°	204.8	204.4	204.0	203.6	203.2	202.4	201.2	200.1	198.9	197.8	196.7
52.5°	193.6	193.0	192.5	191.9	191.4	190.5	189.5	188.4	187.3	186.2	185.2
55°	176.3	175.8	175.3	174.8	174.3	173.6	172.6	171.6	170.6	169.7	168.6
57.5°	159.0	158.6	158.2	157.8	157.4	156.6	155.6	154.5	153.4	152.3	151.3
60°	147.4	147.1	146.8	146.4	146.1	145.4	144.2	143.1	141.9	140.7	139.8
62.5°	136.2	135.6	135.1	134.6	134.0	133.3	132.4	131.6	130.7	129.8	128.9
65°	118.9	118.4	117.9	117.4	116.9	116.3	115.4	114.6	113.8	113.0	112.2
67.5°	101.3	100.9	100.5	100.1	99.8	99.2	98.4	97.7	96.9	96.2	95.6
70°	90.3	90.0	89.7	89.4	89.0	88.5	87.8	87.1	86.3	85.5	85.0
72.5°	79.1	78.8	78.4	78.1	77.8	77.4	76.9	76.5	76.0	75.5	74.9
75°	62.2	62.0	61.9	61.7	61.6	61.3	60.9	60.4	60.0	59.6	59.1
77.5°	47.1	46.8	46.6	46.3	46.0	45.7	45.6	45.4	45.2	45.1	44.8
80°	37.0	36.9	36.9	36.8	36.7	36.6	36.4	36.3	36.1	36.0	35.7
82.5°	27.6	27.6	27.6	27.5	27.5	27.4	27.3	27.2	27.1	27.1	26.7
85°	15.2	15.1	15.0	14.9	14.8	14.8	14.7	14.6	14.5	14.4	14.2
87.5°	5.4	5.5	5.5	5.5	5.5	5.5	5.7	6.0	6.2	6.1	5.9
90°	0.3	1.1	2.3	2.9	3.4	4.3	5.8	7.7	9.5	9.8	9.5
92.5°	3.5	5.1	7.2	8.4	10.4	13.0	19.6	28.8	36.9	37.4	31.6
95°	10.1	11.3	14.1	16.7	21.3	28.2	41.5	66.5	100.0	112.9	98.8
97.5°	16.4	17.9	21.0	24.9	30.2	38.1	54.7	89.7	145.2	192.7	202.2
100°	22.2	23.1	25.6	30.2	36.0	44.1	59.4	94.5	156.7	227.6	269.0
102.5°	27.5	28.1	30.7	35.3	41.3	49.4	63.5	94.7	152.3	228.7	293.9
105°	35.1	36.3	38.3	42.6	49.0	57.1	70.6	96.2	143.7	213.4	290.1
107.5°	43.5	44.4	46.3	50.3	56.6	64.7	77.9	100.2	139.5	197.1	264.8
110°	49.0	50.1	51.9	55.6	61.6	70.0	82.7	103.4	138.6	189.2	248.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	54.1	55.2	57.2	60.7	66.4	75.1	87.3	106.9	138.8	184.2	237.8
115°	62.0	63.3	65.1	68.6	74.4	82.1	94.5	112.0	140.0	178.6	224.1
117.5°	70.1	71.3	73.0	76.1	81.6	89.7	101.1	117.6	142.1	175.9	215.5
120°	75.2	76.3	78.1	80.6	86.4	94.5	105.7	121.3	143.5	174.3	210.8
122.5°	80.1	81.0	82.7	85.5	91.2	99.5	110.1	124.5	145.0	173.3	206.9
125°	86.4	87.3	89.0	92.5	98.2	106.3	116.7	129.6	147.5	171.7	201.4
127.5°	91.5	92.6	95.1	98.9	104.4	112.7	122.8	134.4	149.9	170.7	196.2
130°	94.5	95.6	98.5	102.6	108.4	116.3	126.5	137.4	151.8	170.2	192.7
132.5°	97.3	98.7	101.7	106.0	112.0	120.1	129.7	140.4	153.7	170.0	190.0
135°	101.4	102.6	106.0	110.3	117.0	125.0	134.3	144.3	155.9	169.7	186.1
137.5°	105.3	106.7	110.1	114.8	121.3	128.8	137.9	147.3	157.8	169.6	183.4
140°	108.4	109.5	112.9	117.6	123.8	131.3	140.0	149.0	158.7	169.4	181.7
142.5°	111.3	112.3	115.4	120.1	126.2	133.2	141.6	150.3	159.4	169.4	180.2
145°	115.8	117.0	119.8	124.2	130.0	136.2	144.1	152.1	160.1	168.8	178.1
147.5°	120.7	121.5	124.3	128.2	133.1	138.7	146.0	153.1	160.4	167.8	175.9
150°	123.8	124.7	127.0	130.8	135.1	140.3	146.9	153.5	160.1	167.1	174.0
152.5°	127.1	127.5	129.8	133.1	137.2	141.9	147.8	153.8	159.7	165.9	172.4
155°	131.7	131.9	133.6	136.8	140.0	144.3	149.2	154.1	159.0	163.9	169.4
157.5°	135.4	135.7	137.1	139.9	142.4	146.0	150.2	154.1	157.7	161.8	166.6
160°	137.9	138.3	139.4	141.7	144.1	147.2	150.7	154.1	157.0	160.5	164.4
162.5°	140.6	140.3	141.5	143.3	145.4	147.9	150.9	153.8	156.3	159.3	162.7
165°	143.5	143.2	143.7	145.4	146.9	148.6	151.2	153.3	155.0	157.0	159.6
167.5°	145.9	145.5	146.0	147.2	148.2	149.3	151.2	152.9	153.7	155.0	156.6
170°	147.5	146.9	147.2	148.1	148.6	149.5	150.9	152.4	153.0	153.8	155.0
172.5°	148.4	148.1	147.9	148.8	149.1	149.8	150.7	151.7	152.1	152.5	153.4
175°	149.5	149.2	149.0	149.5	149.5	149.8	150.3	150.9	150.7	150.9	151.2
177.5°	150.0	149.5	149.4	149.8	149.8	149.8	150.0	150.5	150.0	149.8	150.0
180°	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	383.5	384.2	384.8	385.1	385.0	384.8	384.7	384.6
5°	381.0	381.6	382.3	382.5	382.4	382.2	382.0	381.9
7.5°	376.7	377.3	378.0	378.2	378.1	377.8	377.6	377.5
10°	372.8	373.5	374.1	374.3	374.1	373.8	373.6	373.3
12.5°	368.3	368.7	369.2	369.3	369.2	368.9	368.8	368.6
15°	360.3	360.6	360.9	360.9	360.5	360.1	359.7	359.3
17.5°	350.8	351.2	351.6	351.6	351.1	350.8	350.4	350.0
20°	343.5	343.7	344.0	343.9	343.6	343.2	342.9	342.6
22.5°	335.7	335.7	335.7	335.7	335.5	335.3	335.1	334.9
25°	322.9	323.1	323.3	323.3	323.1	322.9	322.8	322.6
27.5°	310.4	310.1	309.9	309.6	309.2	308.8	308.4	308.0
30°	300.6	300.4	300.1	299.9	299.5	299.2	298.9	298.5
32.5°	291.1	290.6	290.2	289.8	289.4	289.1	288.8	288.5
35°	275.7	275.2	274.7	274.3	273.9	273.5	273.0	272.6
37.5°	260.2	259.7	259.0	258.5	258.1	257.7	257.4	257.0
40°	249.6	248.9	248.2	247.6	247.3	247.0	246.6	246.3
42.5°	239.1	238.3	237.5	236.8	236.4	235.9	235.5	235.1
45°	223.0	222.1	221.2	220.5	220.2	219.9	219.6	219.2
47.5°	206.3	205.3	204.3	203.6	203.2	202.7	202.2	201.7
50°	195.5	194.3	193.1	192.4	192.0	191.6	191.2	190.8
52.5°	184.3	183.4	182.4	181.6	181.1	180.6	180.0	179.4
55°	167.6	166.6	165.7	165.0	164.6	164.1	163.7	163.3
57.5°	150.3	149.4	148.4	147.7	147.5	147.2	146.8	146.5
60°	138.9	138.0	137.1	136.6	136.3	136.1	135.8	135.6
62.5°	128.1	127.3	126.5	125.9	125.6	125.2	124.9	124.6
65°	111.5	110.7	110.0	109.4	109.0	108.6	108.2	107.8
67.5°	95.1	94.5	93.9	93.4	93.1	92.8	92.5	92.1
70°	84.4	83.8	83.2	82.8	82.5	82.1	81.8	81.4
72.5°	74.4	73.8	73.2	72.7	72.5	72.2	72.0	71.7
75°	58.6	58.1	57.6	57.5	57.6	57.8	58.0	58.1
77.5°	44.6	44.4	44.1	43.9	43.6	43.5	43.2	43.0
80°	35.5	35.2	35.0	34.7	34.6	34.4	34.2	34.1
82.5°	26.4	26.1	25.8	25.6	25.6	25.5	25.5	25.5
85°	13.9	13.7	13.5	13.3	13.2	13.1	13.0	13.0
87.5°	5.6	5.3	5.2	5.1	5.1	5.0	4.9	4.9
90°	9.2	8.6	9.2	9.5	9.5	9.5	9.5	9.5
92.5°	25.1	21.5	19.2	17.4	17.1	16.2	16.4	16.0
95°	75.5	57.9	45.8	39.5	35.7	33.4	32.5	32.9
97.5°	176.1	144.1	112.9	92.1	78.4	71.3	67.1	64.7
100°	263.0	227.3	187.8	153.0	129.1	116.7	108.4	103.1
102.5°	319.9	311.9	283.0	246.1	220.0	198.9	188.5	181.5
105°	350.0	382.5	386.3	376.8	358.9	341.0	328.6	324.7
107.5°	328.3	377.4	407.3	421.3	423.5	422.6	420.0	414.7
110°	309.7	361.3	398.1	421.8	434.1	439.6	442.2	441.9





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	292.6	342.1	381.5	408.6	425.8	435.0	439.9	441.4
115°	271.7	316.0	353.8	383.4	403.9	417.1	424.6	427.2
117.5°	255.8	294.8	329.1	356.9	377.7	391.8	399.6	401.8
120°	248.0	283.7	314.3	340.5	360.7	374.2	382.5	385.5
122.5°	241.8	274.5	303.5	327.1	345.2	358.6	366.0	368.4
125°	232.8	262.4	287.8	309.4	326.1	337.0	344.2	346.6
127.5°	223.8	250.7	274.6	294.5	309.1	319.4	325.5	327.4
130°	218.1	242.9	265.6	284.6	298.7	308.5	314.3	316.6
132.5°	212.5	235.5	256.4	274.3	288.1	297.9	303.2	305.3
135°	204.8	223.8	242.9	258.9	271.3	280.9	286.1	287.2
137.5°	198.7	214.6	229.7	243.7	255.0	263.2	267.7	269.5
140°	194.7	208.6	221.8	234.5	243.7	251.2	255.5	257.2
142.5°	191.5	203.3	214.7	225.3	234.0	240.8	244.7	245.0
145°	186.9	196.5	205.4	213.8	220.6	225.6	228.4	229.3
147.5°	183.4	190.9	197.9	204.0	209.7	213.6	215.6	216.1
150°	180.9	187.3	193.3	198.4	202.8	206.3	208.0	208.3
152.5°	178.4	184.3	189.4	193.9	197.3	200.2	201.5	201.6
155°	174.9	179.4	183.8	186.9	190.1	192.2	193.3	192.7
157.5°	170.8	174.6	178.2	180.8	183.0	184.7	185.2	185.2
160°	168.2	171.4	174.6	176.6	178.6	180.0	180.3	180.3
162.5°	165.7	168.4	171.1	172.7	174.7	175.7	175.9	175.7
165°	161.9	163.9	165.9	167.1	168.2	169.4	169.4	169.1
167.5°	158.2	159.8	161.2	162.2	162.7	163.4	163.3	163.0
170°	156.5	157.3	158.4	159.0	159.3	160.1	159.9	159.3
172.5°	154.3	155.0	155.9	156.2	156.5	156.9	156.6	156.3
175°	152.1	152.4	152.7	153.0	153.0	153.3	153.0	152.4
177.5°	150.5	150.5	150.7	150.7	150.7	150.7	150.5	150.0
180°	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8

(END OF REPORT)