

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: P331248-840

Luminaire Tested: **SA2XXDIP-C290D330U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331248-840  
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: SA2XXDIP-C290D330U840-4F0-1E-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**

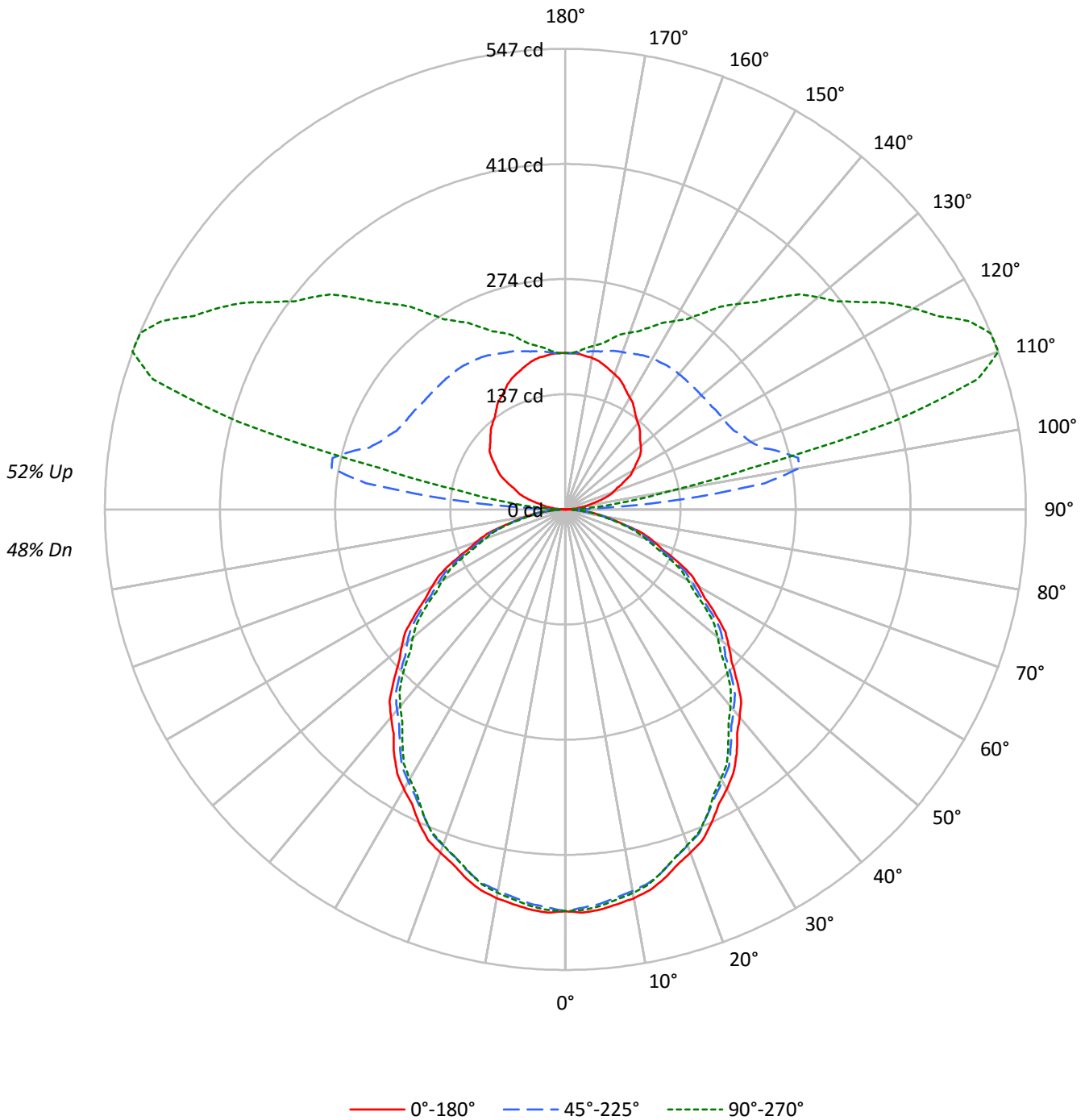
Lumens per Lamp: N/A  
Luminaire Lumens: 2506.6 lumens  
Efficiency: N/A  
Efficacy: 123.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

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°	7703	7703	7703
5°	7733	7621	7666
10°	7688	7543	7581
15°	7590	7447	7438
20°	7455	7301	7290
25°	7322	7119	7119
30°	7150	6952	6893
35°	6991	6753	6654
40°	6787	6555	6431
45°	6588	6357	6202
50°	6373	6154	5935
55°	6145	5917	5695
60°	5896	5628	5422
65°	5624	5349	5100
70°	5282	4999	4763
75°	4810	4604	4492
80°	4258	4138	3924
85°	3483	3316	2983



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.9	1.8
10°-20°	126.2	5.0
20°-30°	185.5	7.4
30°-40°	215.5	8.6
40°-50°	215.3	8.6
50°-60°	187.7	7.5
60°-70°	138.8	5.5
70°-80°	78.6	3.1
80°-90°	22.8	0.9
90°-100°	74.2	3.0
100°-110°	251.8	10.0
110°-120°	267.5	10.7
120°-130°	220.2	8.8
130°-140°	176.8	7.1
140°-150°	133.6	5.3
150°-160°	93.9	3.7
160°-170°	55.3	2.2
170°-180°	18.0	0.7
0°-30°	356.6	14.2
0°-40°	572.2	22.8
0°-60°	975.2	38.9
0°-90°	1215.5	48.5
90°-120°	593.4	23.7
90°-150°	1124.0	44.8
90°-180°	1291.0	51.5
0°-180°	2506.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	477	477	477	477	477	
5°	477	475	470	474	473	45
15°	454	451	446	447	445	128
25°	411	407	400	400	400	189
35°	355	350	343	340	338	221
45°	288	285	278	274	272	223
55°	218	215	210	205	202	195
65°	147	144	140	136	134	146
75°	77	76	74	71	72	82
85°	19	18	18	17	16	22
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°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	479.3	478.9	478.5	478.1	477.7	477.1	476.2	475.2	474.3	473.4	474.2
5°	477.1	476.7	476.3	475.8	475.4	474.7	473.6	472.5	471.3	470.2	471.0
7.5°	472.9	472.2	471.6	471.0	470.4	469.5	468.4	467.2	466.1	464.9	465.7
10°	468.9	468.2	467.5	466.8	466.0	465.0	463.8	462.6	461.4	460.1	460.9
12.5°	463.3	462.7	462.1	461.4	460.8	459.9	458.7	457.5	456.3	455.0	455.6
15°	454.1	453.5	452.9	452.3	451.7	450.8	449.4	448.1	446.8	445.5	445.9
17.5°	442.4	441.8	441.2	440.6	440.0	439.0	437.7	436.3	434.9	433.6	434.0
20°	433.9	433.3	432.7	432.1	431.5	430.5	429.1	427.7	426.3	424.9	425.2
22.5°	425.6	424.6	423.8	422.9	422.1	421.0	419.7	418.3	417.0	415.7	415.7
25°	411.0	410.2	409.4	408.6	407.8	406.5	404.8	403.0	401.3	399.6	399.8
27.5°	394.6	393.8	393.0	392.3	391.6	390.5	389.2	387.8	386.5	385.1	384.8
30°	383.5	382.7	381.9	381.1	380.2	379.1	377.6	376.1	374.5	372.9	372.6
32.5°	371.7	371.1	370.5	369.8	369.2	368.0	366.4	364.9	363.2	361.6	361.0
35°	354.7	353.6	352.5	351.5	350.5	349.2	347.6	346.0	344.4	342.6	342.0
37.5°	335.3	334.4	333.5	332.5	331.6	330.4	328.8	327.2	325.5	323.9	323.2
40°	322.0	321.2	320.4	319.6	318.8	317.6	315.9	314.3	312.7	311.0	310.1
42.5°	309.2	308.4	307.6	306.8	306.0	304.7	303.1	301.4	299.8	298.2	297.2
45°	288.5	287.8	287.1	286.4	285.7	284.6	283.1	281.6	280.0	278.4	277.3
47.5°	268.0	267.3	266.7	266.0	265.3	264.2	262.6	261.1	259.4	257.8	256.6
50°	253.7	253.2	252.7	252.2	251.7	250.6	249.2	247.8	246.4	245.0	243.6
52.5°	239.7	239.0	238.4	237.7	237.0	236.0	234.7	233.4	232.0	230.7	229.4
55°	218.3	217.7	217.1	216.5	215.9	215.0	213.8	212.6	211.4	210.2	208.8
57.5°	196.9	196.4	195.9	195.4	194.9	194.0	192.7	191.4	190.0	188.6	187.4
60°	182.6	182.2	181.8	181.4	181.0	180.1	178.6	177.2	175.7	174.3	173.2
62.5°	168.6	167.9	167.3	166.7	166.0	165.1	164.0	163.0	161.9	160.8	159.7
65°	147.2	146.6	146.0	145.4	144.8	144.0	143.0	142.0	141.0	140.0	139.0
67.5°	125.5	125.0	124.5	124.0	123.6	122.9	121.9	121.0	120.1	119.2	118.5
70°	111.9	111.5	111.1	110.7	110.3	109.7	108.8	107.9	106.8	105.9	105.2
72.5°	98.0	97.6	97.1	96.7	96.3	95.8	95.2	94.7	94.1	93.5	92.8
75°	77.1	76.9	76.6	76.4	76.2	75.9	75.4	74.8	74.3	73.8	73.2
77.5°	58.4	58.0	57.7	57.4	57.0	56.7	56.5	56.2	56.0	55.8	55.5
80°	45.8	45.7	45.6	45.5	45.4	45.3	45.1	44.9	44.7	44.5	44.2
82.5°	34.1	34.1	34.1	34.0	34.0	33.9	33.8	33.7	33.6	33.5	33.1
85°	18.8	18.7	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	17.6
87.5°	6.7	6.8	6.9	6.9	6.8	6.9	7.1	7.4	7.7	7.6	7.3
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°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	475.0	475.8	476.7	477.1	476.9	476.7	476.6	476.4
5°	471.9	472.7	473.5	473.8	473.6	473.4	473.2	473.0
7.5°	466.6	467.4	468.2	468.5	468.3	468.0	467.8	467.6
10°	461.8	462.6	463.4	463.6	463.3	463.0	462.7	462.4
12.5°	456.2	456.7	457.3	457.5	457.3	457.0	456.8	456.6
15°	446.3	446.7	447.1	447.1	446.6	446.1	445.6	445.0
17.5°	434.5	435.0	435.5	435.5	434.9	434.5	434.0	433.5
20°	425.5	425.8	426.1	426.0	425.6	425.2	424.7	424.3
22.5°	415.8	415.9	415.9	415.8	415.6	415.3	415.1	414.9
25°	400.0	400.2	400.4	400.4	400.2	400.0	399.8	399.6
27.5°	384.5	384.2	383.8	383.4	382.9	382.4	382.0	381.5
30°	372.3	372.0	371.7	371.4	371.0	370.6	370.2	369.7
32.5°	360.5	359.9	359.4	358.9	358.5	358.1	357.7	357.3
35°	341.4	340.8	340.2	339.7	339.2	338.7	338.2	337.6
37.5°	322.3	321.6	320.8	320.2	319.7	319.2	318.8	318.3
40°	309.2	308.3	307.4	306.7	306.3	305.9	305.5	305.1
42.5°	296.2	295.2	294.2	293.4	292.9	292.3	291.8	291.1
45°	276.2	275.1	274.0	273.2	272.8	272.4	272.0	271.6
47.5°	255.5	254.3	253.1	252.2	251.7	251.1	250.4	249.8
50°	242.2	240.7	239.2	238.3	237.8	237.3	236.8	236.3
52.5°	228.3	227.1	225.9	225.0	224.3	223.7	223.0	222.3
55°	207.6	206.4	205.2	204.4	203.9	203.3	202.8	202.3
57.5°	186.2	185.0	183.8	183.0	182.7	182.3	181.9	181.5
60°	172.1	171.0	169.9	169.2	168.8	168.5	168.2	167.9
62.5°	158.6	157.6	156.6	155.9	155.5	155.1	154.7	154.3
65°	138.0	137.1	136.2	135.5	135.0	134.5	134.0	133.5
67.5°	117.8	117.0	116.3	115.7	115.3	114.9	114.5	114.1
70°	104.5	103.8	103.1	102.6	102.2	101.7	101.3	100.9
72.5°	92.1	91.4	90.7	90.1	89.8	89.5	89.2	88.8
75°	72.6	72.0	71.4	71.2	71.4	71.6	71.8	72.0
77.5°	55.2	54.9	54.6	54.3	54.0	53.8	53.5	53.2
80°	43.9	43.6	43.3	43.0	42.8	42.6	42.4	42.2
82.5°	32.7	32.3	31.9	31.7	31.7	31.6	31.6	31.6
85°	17.3	17.0	16.7	16.5	16.4	16.3	16.2	16.1
87.5°	7.0	6.6	6.5	6.4	6.3	6.2	6.1	6.1
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)