

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: P331873-840

Luminaire Tested: **S123DIP-S340D365U840-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331873-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S340D365U840-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2751.7 lumens  
Efficiency: N/A  
Efficacy: 135.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

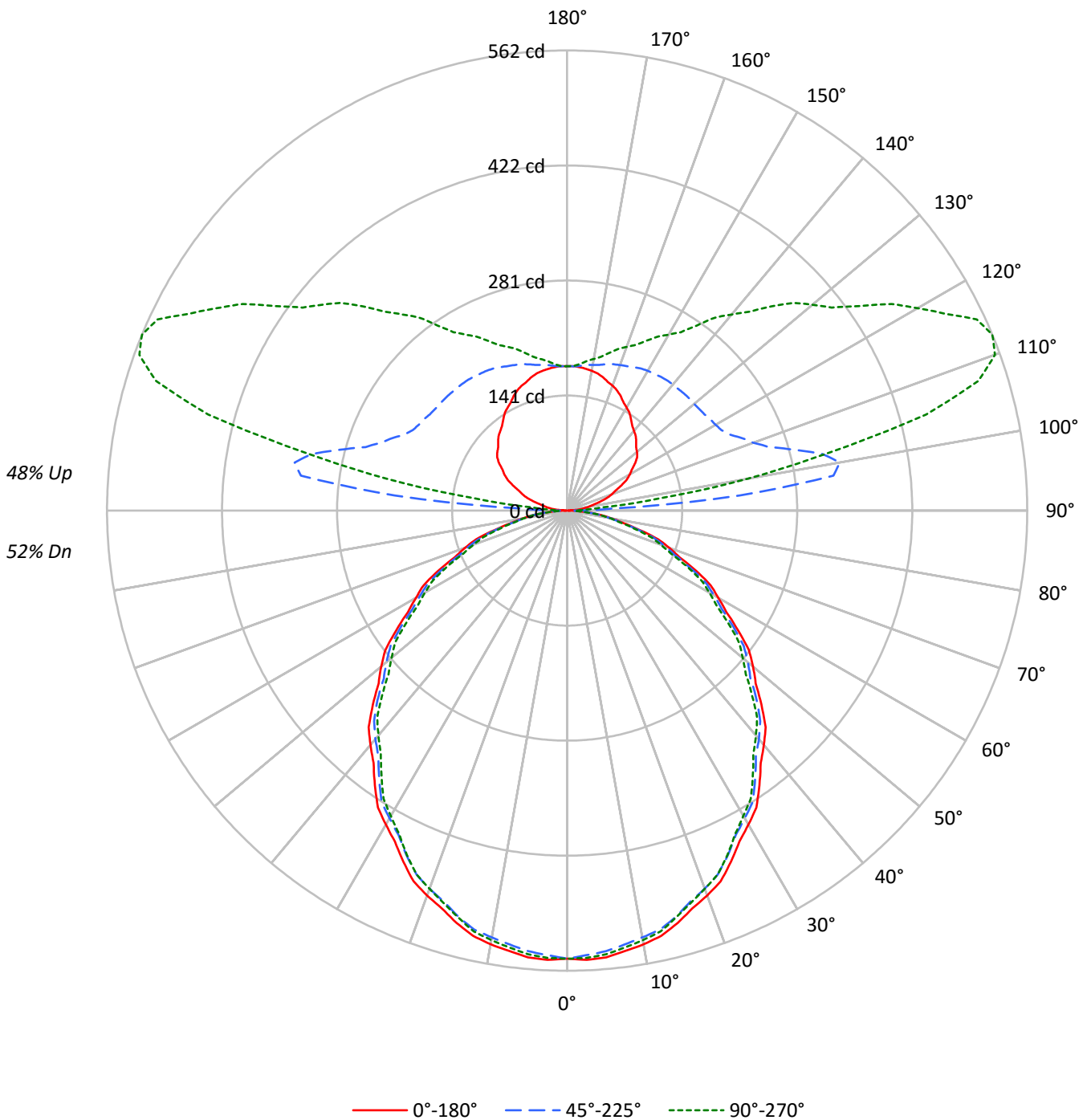
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58	52
1	98	94	90	86	91	87	83	80	74	71	69	62	60	59	51	50	49	43
2	89	82	76	70	82	76	70	66	65	61	57	54	51	49	45	43	41	36
3	81	72	65	59	75	67	60	55	57	52	48	48	44	41	40	37	35	31
4	75	64	56	50	69	59	52	47	51	45	41	43	39	35	35	32	30	26
5	68	57	48	42	63	53	45	40	45	40	35	38	34	31	32	29	26	23
6	63	51	43	37	58	47	40	35	41	35	31	35	30	27	29	26	23	20
7	58	46	38	32	54	43	36	31	37	31	27	32	27	24	26	23	20	18
8	54	42	34	29	50	39	32	27	34	28	24	29	24	21	24	21	18	16
9	50	38	31	25	47	36	29	24	31	25	22	27	22	19	22	19	17	14
10	47	35	28	23	44	33	26	22	29	23	19	25	20	17	21	17	15	13

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

	0°	45°	90°
0°	5890	5890	5890
5°	5919	5837	5877
10°	5879	5786	5822
15°	5810	5721	5731
20°	5730	5628	5632
25°	5621	5516	5505
30°	5504	5392	5351
35°	5380	5261	5194
40°	5251	5117	5039
45°	5107	4985	4864
50°	4963	4823	4687
55°	4778	4654	4511
60°	4590	4456	4316
65°	4422	4241	4111
70°	4176	3997	3821
75°	3818	3681	3523
80°	3440	3298	3267
85°	3013	2902	2791



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.5	1.9
10°-20°	145.6	5.3
20°-30°	215.0	7.8
30°-40°	251.2	9.1
40°-50°	252.5	9.2
50°-60°	221.8	8.1
60°-70°	165.2	6.0
70°-80°	94.1	3.4
80°-90°	28.4	1.0
90°-100°	98.1	3.6
100°-110°	277.8	10.1
110°-120°	273.3	9.9
120°-130°	218.0	7.9
130°-140°	171.9	6.2
140°-150°	128.3	4.7
150°-160°	89.4	3.2
160°-170°	52.5	1.9
170°-180°	17.1	0.6
0°-30°	412.1	15.0
0°-40°	663.3	24.1
0°-60°	1137.6	41.3
0°-90°	1425.3	51.8
90°-120°	649.2	23.6
90°-150°	1167.3	42.4
90°-180°	1326.0	48.2
0°-180°	2751.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	547	547	547	547	547	
5°	548	545	540	545	544	52
15°	521	519	513	517	514	147
25°	473	470	464	465	464	218
35°	409	406	400	398	395	256
45°	336	333	328	322	320	259
55°	255	254	248	243	240	228
65°	174	171	166	163	161	171
75°	92	90	88	86	85	98
85°	24	24	24	23	23	27
90°	1	4	9	10	10	2
95°	12	39	212	62	41	13
105°	41	61	287	502	454	44
115°	73	91	219	481	552	72
125°	102	120	205	371	435	90
135°	119	142	202	306	353	92
145°	136	156	199	251	276	85
155°	154	167	193	219	229	71
165°	169	174	185	196	199	48
175°	176	176	177	180	180	17
180°	176	176	176	176	176	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
2.5°	549.2	548.8	548.5	548.2	547.8	547.1	546.2	545.3	544.4	543.5	544.3
5°	547.8	547.1	546.6	546.1	545.6	544.8	543.6	542.5	541.3	540.2	541.2
7.5°	542.4	541.8	541.3	540.8	540.3	539.4	538.3	537.0	535.8	534.6	535.5
10°	537.9	537.3	536.7	536.2	535.7	534.8	533.4	532.1	530.7	529.4	530.3
12.5°	531.8	531.4	530.9	530.5	530.1	529.2	528.0	526.6	525.3	524.1	524.8
15°	521.4	521.0	520.5	520.1	519.7	518.8	517.5	516.0	514.7	513.4	514.2
17.5°	509.2	508.7	508.2	507.6	507.1	506.1	504.7	503.4	502.0	500.7	501.2
20°	500.2	499.6	499.0	498.3	497.7	496.7	495.3	493.9	492.6	491.3	491.7
22.5°	490.0	489.4	488.8	488.2	487.6	486.6	485.1	483.8	482.4	481.1	481.4
25°	473.3	472.7	472.1	471.5	470.9	469.9	468.5	467.2	465.7	464.4	464.5
27.5°	455.6	454.9	454.3	453.7	453.1	452.1	450.7	449.2	447.8	446.3	446.4
30°	442.8	442.2	441.7	441.2	440.7	439.7	438.3	436.8	435.4	433.8	433.8
32.5°	430.0	429.3	428.6	427.9	427.3	426.3	425.2	424.0	422.9	421.8	421.2
35°	409.4	408.8	408.1	407.5	406.9	405.9	404.6	403.1	401.8	400.4	399.8
37.5°	388.3	387.5	386.7	385.9	385.2	384.1	382.6	381.2	379.9	378.5	377.8
40°	373.7	372.9	372.3	371.7	371.1	370.0	368.6	367.1	365.7	364.2	363.3
42.5°	358.9	358.2	357.5	356.8	356.1	355.0	353.6	352.0	350.6	349.1	348.3
45°	335.5	335.1	334.7	334.3	333.9	333.0	331.5	330.2	328.8	327.5	326.3
47.5°	312.3	311.6	311.0	310.4	309.8	308.9	307.6	306.3	305.1	303.8	302.6
50°	296.4	295.9	295.4	294.9	294.4	293.4	292.1	290.7	289.3	288.0	286.8
52.5°	279.8	279.5	279.1	278.8	278.4	277.5	276.1	274.7	273.3	271.8	270.8
55°	254.6	254.5	254.4	254.3	254.2	253.4	252.1	250.6	249.3	248.0	246.8
57.5°	230.5	230.1	229.7	229.4	229.0	228.3	227.2	226.1	225.1	224.0	223.0
60°	213.2	213.1	213.0	212.9	212.8	212.1	210.8	209.5	208.3	207.0	206.1
62.5°	197.7	197.4	197.2	196.9	196.6	195.9	194.6	193.4	192.1	190.9	190.0
65°	173.6	173.1	172.6	172.1	171.6	170.8	169.8	168.6	167.6	166.5	165.7
67.5°	148.1	147.6	147.2	146.7	146.3	145.6	144.9	144.1	143.3	142.5	141.8
70°	132.7	132.1	131.5	130.8	130.2	129.6	129.0	128.3	127.6	127.0	126.3
72.5°	116.5	116.0	115.6	115.1	114.6	114.1	113.4	112.7	112.0	111.3	110.6
75°	91.8	91.3	90.9	90.5	90.1	89.7	89.4	89.1	88.8	88.5	88.0
77.5°	69.8	69.6	69.4	69.2	68.9	68.6	68.3	67.9	67.5	67.1	66.8
80°	55.5	55.2	54.9	54.6	54.2	54.0	53.8	53.6	53.4	53.2	53.0
82.5°	41.6	41.5	41.5	41.4	41.3	41.3	41.2	41.2	41.2	41.1	40.9
85°	24.4	24.2	24.0	23.8	23.6	23.5	23.5	23.5	23.5	23.5	23.3
87.5°	9.9	9.8	9.7	9.7	9.6	9.6	9.7	9.8	9.9	10.1	9.9
90°	0.7	1.4	2.1	3.2	3.9	4.6	5.8	6.8	7.9	8.9	8.6
92.5°	4.4	6.6	9.6	12.3	15.3	20.6	30.0	45.3	60.4	54.8	41.4
95°	12.1	13.2	17.2	23.2	32.5	46.4	76.7	129.9	188.4	211.7	171.7
97.5°	20.7	21.0	24.1	29.4	38.6	53.6	82.6	142.5	240.1	328.0	350.8
100°	26.5	26.8	29.3	34.2	42.8	56.8	81.7	134.5	228.4	338.0	408.3
102.5°	32.4	33.0	35.2	40.0	47.7	60.5	82.9	127.6	211.3	319.4	411.1
105°	41.4	42.5	44.6	48.9	55.6	66.8	86.0	122.8	190.3	286.9	389.3
107.5°	51.0	52.0	54.1	58.3	64.6	74.9	91.9	122.4	176.8	258.2	351.2
110°	57.8	58.9	60.7	64.6	70.7	80.7	96.7	123.8	171.7	242.0	327.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	64.1	65.1	67.0	70.9	77.0	86.6	101.6	126.7	168.7	231.1	306.4
115°	73.1	74.6	76.7	80.3	86.3	96.0	109.6	131.3	167.7	219.4	281.2
117.5°	82.2	83.8	85.6	89.0	95.7	104.6	118.1	137.4	168.3	212.6	266.0
120°	88.5	89.6	91.4	94.9	101.7	110.6	123.5	142.0	169.6	209.4	258.0
122.5°	93.9	95.0	96.7	100.7	107.1	116.6	129.2	146.3	171.5	207.5	251.5
125°	101.7	102.4	104.5	108.5	115.2	124.9	137.4	153.1	174.5	204.8	243.1
127.5°	107.7	108.7	111.4	115.3	122.8	132.5	144.5	158.6	177.9	203.6	235.6
130°	111.4	112.4	115.6	119.9	127.4	137.0	148.9	162.4	180.3	202.7	231.6
132.5°	114.2	115.5	119.1	124.2	131.7	141.1	152.5	165.8	182.0	202.4	227.9
135°	119.2	120.6	124.5	129.9	137.4	147.0	158.0	170.3	184.5	202.0	223.1
137.5°	123.9	125.4	129.3	134.9	142.4	151.3	162.0	173.5	186.2	201.2	218.8
140°	127.0	128.9	132.4	138.1	145.2	154.2	164.5	175.2	187.3	201.0	216.2
142.5°	130.5	132.0	135.8	141.0	148.1	156.4	166.5	176.9	188.2	200.4	214.0
145°	135.9	137.0	140.3	145.6	151.7	159.9	169.2	178.7	188.7	199.4	210.9
147.5°	141.6	142.2	145.3	150.0	155.8	162.8	171.3	180.0	188.7	198.1	207.9
150°	145.2	145.6	148.5	153.1	158.0	164.5	172.7	180.3	188.7	197.0	205.9
152.5°	149.0	149.1	151.9	155.9	160.4	166.5	173.6	180.8	187.9	195.6	203.6
155°	154.5	154.5	156.6	160.3	164.2	169.2	175.2	181.0	187.0	193.1	200.2
157.5°	159.0	159.3	161.0	164.1	167.4	171.3	176.1	181.3	185.8	190.9	196.3
160°	162.4	162.4	163.8	166.6	169.2	172.7	177.0	181.3	185.2	189.1	193.8
162.5°	164.9	164.9	166.1	168.3	170.6	173.6	177.3	181.0	184.1	187.4	191.2
165°	168.7	168.4	169.2	171.0	172.4	174.9	177.7	180.3	182.4	184.9	187.7
167.5°	171.7	171.3	171.7	173.0	174.0	175.6	177.6	179.7	180.7	182.3	184.4
170°	173.4	172.7	173.1	174.1	174.9	175.6	177.3	178.7	179.6	180.6	182.4
172.5°	174.6	174.1	174.2	175.0	175.4	175.8	177.3	178.5	178.6	179.2	180.4
175°	175.9	175.6	175.2	175.9	175.9	176.3	177.0	177.7	177.3	177.3	178.0
177.5°	176.6	176.3	176.0	176.3	176.3	176.3	176.6	177.1	176.6	176.3	176.6
180°	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
2.5°	545.1	546.0	546.8	547.2	547.1	547.0	546.9	546.8
5°	542.3	543.3	544.4	544.8	544.6	544.4	544.1	543.9
7.5°	536.5	537.5	538.4	538.8	538.7	538.6	538.5	538.3
10°	531.3	532.2	533.1	533.5	533.3	533.1	532.9	532.7
12.5°	525.4	526.1	526.8	527.1	527.0	526.8	526.7	526.6
15°	515.0	515.8	516.7	516.8	516.1	515.5	514.9	514.3
17.5°	501.8	502.4	503.0	503.2	502.9	502.7	502.5	502.3
20°	492.1	492.5	492.9	493.0	492.6	492.3	492.0	491.7
22.5°	481.7	482.1	482.4	482.4	482.0	481.6	481.2	480.8
25°	464.6	464.7	464.8	464.7	464.4	464.1	463.8	463.5
27.5°	446.5	446.6	446.6	446.5	446.1	445.7	445.2	444.8
30°	433.8	433.8	433.8	433.4	432.7	432.0	431.3	430.5
32.5°	420.6	420.0	419.5	419.0	418.6	418.2	417.8	417.4
35°	399.2	398.6	397.9	397.4	396.9	396.3	395.8	395.3
37.5°	377.0	376.3	375.5	375.0	374.7	374.3	374.0	373.7
40°	362.5	361.7	360.8	360.2	359.8	359.4	359.0	358.6
42.5°	347.5	346.6	345.8	345.2	344.8	344.4	344.0	343.5
45°	325.0	323.8	322.4	321.6	321.0	320.5	320.0	319.5
47.5°	301.3	300.1	298.8	298.0	297.5	297.1	296.6	296.2
50°	285.7	284.5	283.4	282.5	281.9	281.2	280.6	279.9
52.5°	269.8	268.8	267.8	267.0	266.4	265.8	265.2	264.6
55°	245.7	244.5	243.4	242.6	242.1	241.5	241.0	240.4
57.5°	222.0	220.9	219.8	219.0	218.4	217.8	217.2	216.6
60°	205.2	204.2	203.3	202.6	202.0	201.5	201.0	200.5
62.5°	188.9	188.0	187.1	186.4	186.1	185.7	185.4	185.0
65°	164.9	164.1	163.2	162.7	162.4	162.0	161.7	161.4
67.5°	141.0	140.3	139.6	139.0	138.6	138.0	137.6	137.2
70°	125.6	124.8	124.1	123.5	123.0	122.5	121.9	121.4
72.5°	110.0	109.3	108.7	108.2	108.0	107.7	107.3	107.0
75°	87.5	86.8	86.3	85.9	85.6	85.3	85.0	84.7
77.5°	66.3	66.0	65.6	65.5	65.5	65.5	65.5	65.5
80°	52.9	52.8	52.7	52.7	52.7	52.7	52.7	52.7
82.5°	40.8	40.6	40.4	40.2	40.2	40.1	40.0	39.9
85°	23.1	22.9	22.7	22.6	22.6	22.6	22.6	22.6
87.5°	9.9	9.9	9.9	10.0	9.9	10.0	10.0	10.0
90°	8.9	9.3	9.6	10.3	10.0	10.3	10.7	10.3
92.5°	30.1	23.8	21.0	19.2	18.6	17.5	17.9	17.2
95°	128.5	87.1	68.2	55.3	48.6	45.3	42.8	41.4
97.5°	320.2	256.5	210.5	167.8	141.5	125.4	115.7	112.7
100°	420.7	391.8	350.1	299.4	263.4	237.3	223.4	223.8
102.5°	454.1	453.2	428.9	396.8	368.7	348.1	336.5	328.2
105°	463.9	499.6	506.3	497.2	480.7	467.2	455.8	453.9
107.5°	435.8	493.7	525.0	537.8	538.1	533.4	529.6	526.3
110°	409.0	474.6	519.6	544.6	554.6	557.4	556.7	556.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	382.4	449.5	499.9	532.0	550.3	559.2	561.9	562.0
115°	347.2	409.3	461.8	500.7	527.5	543.1	550.3	552.1
117.5°	321.7	375.4	422.4	461.9	489.9	507.9	518.1	520.5
120°	308.3	356.5	399.3	435.4	463.5	483.5	492.1	494.2
122.5°	297.8	341.3	381.0	414.5	439.6	457.6	467.0	469.7
125°	283.7	322.7	356.9	385.5	408.3	423.9	432.9	435.4
127.5°	271.5	306.1	337.0	363.0	383.3	396.8	404.9	407.1
130°	263.7	295.9	324.8	349.0	367.9	380.8	388.3	391.1
132.5°	256.6	286.1	313.1	336.2	354.0	366.8	373.4	375.5
135°	246.9	272.3	295.5	315.8	333.4	344.1	350.4	352.9
137.5°	238.1	258.9	278.9	296.6	311.2	322.1	327.5	329.2
140°	233.1	251.3	268.3	283.7	297.3	307.3	313.0	312.7
142.5°	228.2	243.8	258.6	272.0	283.6	292.5	297.5	297.2
145°	222.4	234.1	245.5	255.9	264.8	272.3	275.2	275.9
147.5°	217.5	226.9	236.1	243.5	250.2	255.3	258.0	258.3
150°	214.1	222.4	229.8	236.6	242.0	245.9	248.0	248.0
152.5°	211.0	218.0	224.7	230.4	234.5	238.1	239.4	239.4
155°	206.3	212.0	217.3	221.6	224.8	227.7	228.4	228.7
157.5°	201.3	206.0	210.2	213.6	216.3	218.4	219.0	218.9
160°	198.4	202.4	205.9	208.4	210.9	213.1	213.1	212.7
162.5°	195.0	198.3	201.7	203.9	205.5	207.3	207.3	207.0
165°	190.6	192.7	195.2	197.0	198.4	199.9	199.4	199.4
167.5°	186.7	188.3	189.8	191.1	191.7	192.7	192.4	192.4
170°	184.1	185.2	186.6	187.3	187.7	188.4	188.0	188.0
172.5°	181.9	182.7	183.8	184.2	184.3	185.0	184.4	184.1
175°	178.7	179.2	179.9	179.9	179.9	180.3	179.9	179.6
177.5°	176.8	177.1	177.4	177.4	177.1	177.4	176.8	176.8
180°	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3

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