

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: P332495-840

Luminaire Tested: **S124DIP-S350D365U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332495-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S350D365U840-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2777.4 lumens  
Efficiency: N/A  
Efficacy: 136.8 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

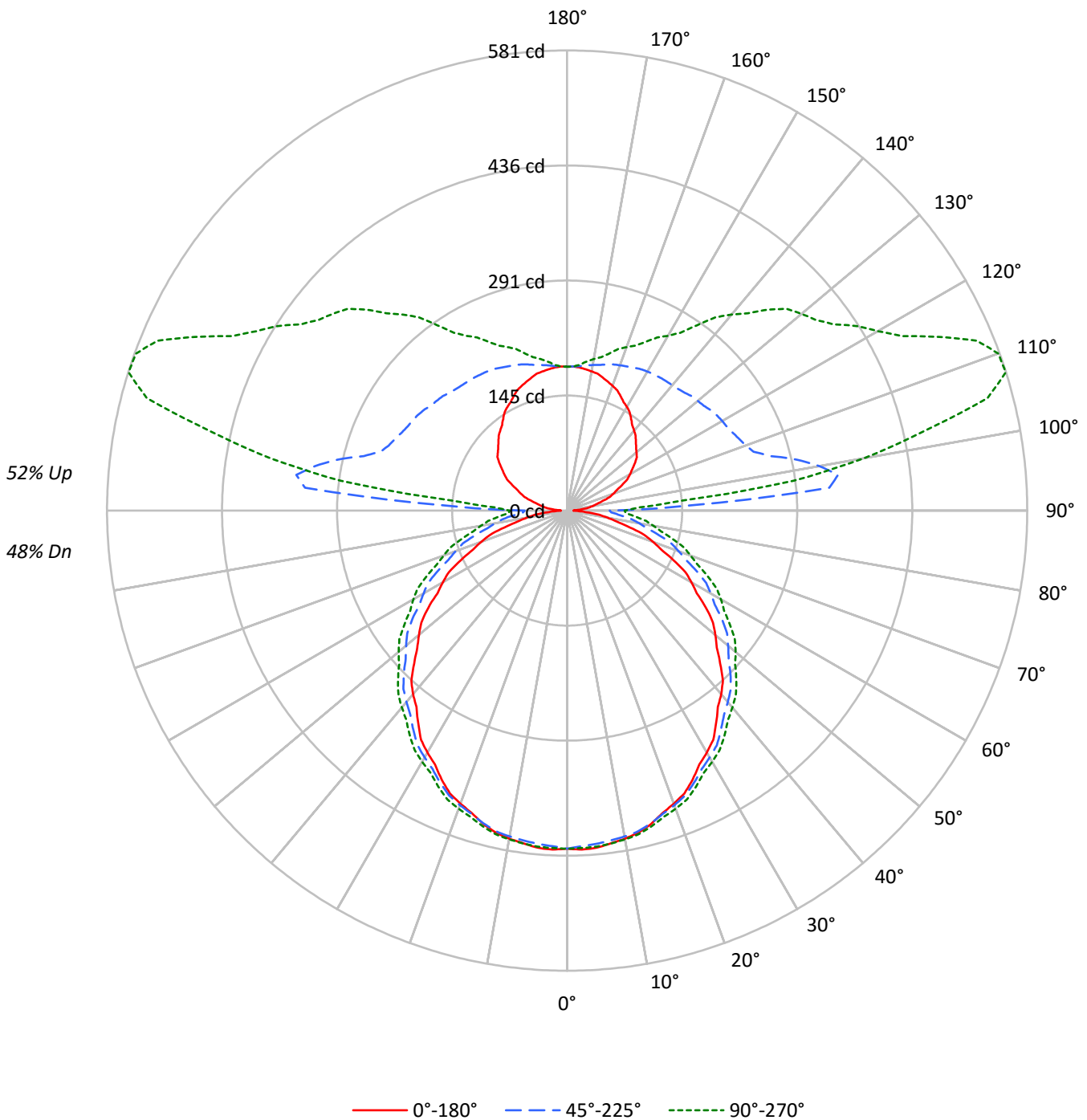
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48
1	96	92	87	84	89	84	81	77	71	68	66	58	56	55	47	45	44	39
2	87	79	73	67	80	73	68	63	61	57	54	51	48	45	41	38	36	32
3	79	70	62	56	73	64	57	52	54	49	45	44	41	37	36	33	31	26
4	73	61	53	47	66	57	49	44	48	42	38	39	35	32	32	29	26	22
5	66	54	46	40	61	50	43	37	42	37	32	35	31	27	28	25	22	19
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	26	22	20	17
7	56	44	36	30	52	41	33	28	34	29	24	29	24	21	23	20	17	15
8	52	40	32	26	48	37	30	25	31	26	22	26	22	19	21	18	15	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	17	20	16	14	12
10	45	33	26	21	42	31	24	20	26	21	17	22	18	15	18	15	13	11

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

	0°	45°	90°
0°	3446	3446	3446
5°	3457	3367	3378
10°	3435	3313	3310
15°	3404	3249	3231
20°	3358	3179	3155
25°	3306	3100	3070
30°	3249	3021	2983
35°	3185	2941	2907
40°	3134	2865	2828
45°	3058	2793	2759
50°	2994	2713	2687
55°	2928	2636	2603
60°	2824	2538	2526
65°	2708	2435	2431
70°	2572	2315	2320
75°	2379	2183	2220
80°	2166	2057	2123
85°	1893	1946	2065



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.4	1.5
10°-20°	115.8	4.2
20°-30°	175.1	6.3
30°-40°	211.9	7.6
40°-50°	224.0	8.1
50°-60°	210.8	7.6
60°-70°	174.9	6.3
70°-80°	122.9	4.4
80°-90°	70.5	2.5
90°-100°	172.5	6.2
100°-110°	303.6	10.9
110°-120°	265.1	9.5
120°-130°	217.3	7.8
130°-140°	176.6	6.4
140°-150°	132.1	4.8
150°-160°	92.1	3.3
160°-170°	54.2	2.0
170°-180°	17.6	0.6
0°-30°	331.4	11.9
0°-40°	543.2	19.6
0°-60°	978.1	35.2
0°-90°	1346.3	48.5
90°-120°	741.2	26.7
90°-150°	1267.1	45.6
90°-180°	1431.0	51.5
0°-180°	2777.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	427	426	422	426	426	41
15°	410	410	409	413	412	115
25°	375	378	379	384	385	173
35°	328	334	338	345	347	205
45°	273	282	292	299	302	211
55°	214	224	238	248	251	191
65°	148	164	180	191	196	147
75°	82	100	120	133	138	87
85°	25	46	67	81	86	27
90°	8	30	54	68	72	6
95°	18	59	332	198	146	18
105°	46	75	266	547	550	49
115°	76	100	231	434	519	76
125°	104	124	221	364	410	93
135°	123	146	210	315	359	95
145°	141	161	205	258	286	88
155°	160	172	199	226	235	74
165°	174	179	191	202	205	49
175°	181	182	183	186	185	17
180°	182	182	182	182	182	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	428.4	428.1	427.9	427.6	427.4	426.9	426.3	425.6	424.9	424.1	424.7
5°	427.4	427.0	426.7	426.4	426.1	425.6	424.7	424.0	423.3	422.5	423.4
7.5°	423.7	423.5	423.3	423.1	422.9	422.5	421.9	421.3	420.7	420.1	421.0
10°	420.6	420.5	420.4	420.3	420.2	419.9	419.4	418.8	418.3	417.8	418.7
12.5°	416.5	416.4	416.4	416.4	416.4	416.2	415.8	415.5	415.1	414.8	415.6
15°	409.6	409.8	409.9	410.0	410.1	410.0	409.6	409.3	409.0	408.7	409.6
17.5°	400.4	400.7	401.0	401.3	401.6	401.8	401.7	401.6	401.6	401.5	402.5
20°	393.8	394.2	394.6	394.9	395.2	395.4	395.5	395.6	395.7	395.8	396.9
22.5°	386.6	387.0	387.4	387.8	388.2	388.5	388.7	388.9	389.1	389.3	390.3
25°	374.8	375.4	376.1	376.7	377.3	377.8	378.1	378.4	378.7	379.1	380.2
27.5°	361.5	362.5	363.5	364.4	365.3	366.0	366.5	367.0	367.5	368.0	369.0
30°	352.7	353.7	354.5	355.3	356.2	357.0	357.7	358.4	359.2	359.9	361.1
32.5°	343.3	344.3	345.3	346.3	347.3	348.2	349.0	349.8	350.7	351.5	352.8
35°	327.9	329.2	330.4	331.7	333.1	334.2	335.3	336.3	337.4	338.4	339.9
37.5°	312.6	314.0	315.5	316.9	318.4	319.7	321.1	322.4	323.8	325.1	326.6
40°	302.6	304.0	305.4	306.7	308.1	309.5	311.0	312.6	314.0	315.5	317.1
42.5°	291.1	292.7	294.2	295.8	297.3	298.9	300.7	302.5	304.2	305.9	307.7
45°	273.4	275.4	277.4	279.4	281.4	283.5	285.5	287.5	289.5	291.5	293.4
47.5°	256.5	258.6	260.6	262.8	264.8	267.0	269.3	271.8	274.1	276.4	278.2
50°	244.3	246.6	248.9	251.3	253.6	255.9	258.3	260.6	263.0	265.3	267.4
52.5°	232.1	234.4	236.7	239.0	241.4	243.9	246.5	249.2	251.9	254.6	256.7
55°	214.2	216.4	218.6	220.9	223.1	225.8	228.9	232.2	235.3	238.5	240.7
57.5°	194.2	196.9	199.7	202.5	205.2	208.1	211.4	214.5	217.6	220.9	223.4
60°	181.2	183.9	186.7	189.5	192.2	195.3	198.8	202.4	205.8	209.3	211.8
62.5°	168.5	171.6	174.6	177.6	180.6	183.9	187.3	190.9	194.4	197.9	200.4
65°	148.1	151.6	155.0	158.3	161.8	165.3	168.8	172.5	176.1	179.8	182.4
67.5°	128.6	132.2	135.8	139.5	143.0	146.7	150.7	154.5	158.3	162.2	164.9
70°	115.2	118.8	122.4	126.0	129.7	133.5	137.5	141.6	145.6	149.7	152.5
72.5°	102.2	105.9	109.6	113.3	116.9	121.0	125.2	129.6	133.8	138.1	140.9
75°	82.2	86.1	90.1	94.0	98.0	102.1	106.6	111.1	115.5	120.0	123.0
77.5°	63.6	67.8	71.9	76.0	80.2	84.6	89.3	94.0	98.7	103.3	106.3
80°	52.1	56.4	60.6	64.8	69.1	73.5	78.3	82.9	87.6	92.3	95.4
82.5°	40.6	45.0	49.5	53.9	58.3	62.8	67.6	72.2	76.9	81.6	84.8
85°	25.3	29.8	34.2	38.7	43.2	47.8	52.6	57.4	62.1	67.0	70.1
87.5°	14.2	18.7	23.2	27.7	32.0	36.6	41.6	46.3	51.1	55.8	58.9
90°	8.0	12.9	18.3	22.9	27.5	31.9	38.6	43.2	48.5	53.7	56.5
92.5°	11.3	17.0	24.2	32.4	41.4	53.0	75.7	108.0	139.6	158.2	142.3
95°	18.0	22.5	29.7	37.8	49.9	68.8	104.2	167.0	256.7	332.4	343.6
97.5°	26.8	29.8	35.9	43.2	53.5	69.8	98.0	150.7	239.7	345.0	417.2
100°	32.4	35.1	40.4	47.5	57.0	71.9	97.0	141.6	218.5	323.3	417.5
102.5°	38.1	41.1	45.7	52.1	61.1	75.1	98.3	137.8	203.8	297.1	394.2
105°	46.0	49.3	53.1	59.6	68.2	81.5	102.6	136.1	190.1	265.7	352.2
107.5°	55.8	58.3	61.8	68.1	75.9	89.0	108.4	139.1	185.4	246.9	318.0
110°	62.0	64.2	67.5	73.2	81.2	93.4	112.8	141.5	184.5	239.9	300.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	67.9	69.9	73.3	78.7	86.3	98.5	117.1	144.2	184.5	235.5	289.7
115°	76.3	78.5	81.9	86.4	94.1	105.9	123.6	148.5	185.0	231.3	278.5
117.5°	85.7	87.3	90.1	94.6	101.5	113.4	130.1	153.0	185.9	228.0	271.9
120°	91.6	92.6	95.4	99.7	106.1	117.8	134.4	156.1	186.6	226.1	267.8
122.5°	97.4	98.1	100.7	104.4	111.1	122.3	138.8	159.1	187.4	223.9	263.7
125°	104.3	105.6	107.8	111.5	118.2	129.5	145.0	164.0	189.1	221.1	257.4
127.5°	110.9	111.9	114.4	118.8	125.7	136.7	151.3	168.3	190.0	217.4	249.3
130°	114.2	115.5	118.3	123.5	130.2	141.4	155.2	170.8	190.8	215.3	244.3
132.5°	118.0	119.0	122.6	127.5	134.8	145.2	158.6	173.7	191.6	213.5	239.8
135°	122.7	124.1	127.6	133.7	141.2	150.9	163.4	177.0	192.4	210.3	232.7
137.5°	127.8	129.2	132.9	138.7	146.3	155.3	166.6	178.9	192.4	207.9	226.6
140°	131.6	132.6	136.3	142.3	149.8	158.2	169.1	180.7	192.9	206.5	223.3
142.5°	135.2	136.2	139.9	145.6	152.8	161.1	171.4	181.9	193.4	205.8	220.7
145°	140.8	141.7	145.2	150.1	156.7	164.5	173.8	183.5	193.8	204.9	216.9
147.5°	147.1	147.3	150.4	155.4	161.0	167.9	176.6	185.1	194.2	203.6	213.7
150°	151.1	151.4	154.1	158.2	163.5	170.3	178.1	185.9	194.2	202.7	211.7
152.5°	154.4	154.5	157.3	161.3	166.0	172.3	179.3	186.5	193.6	201.3	209.3
155°	159.6	159.9	162.1	165.6	169.6	174.9	181.0	187.0	192.8	199.1	205.9
157.5°	164.6	164.6	166.6	169.4	172.8	177.0	182.2	187.0	191.8	196.9	202.5
160°	167.7	167.7	169.2	171.7	174.5	178.4	182.8	187.0	191.0	195.2	199.9
162.5°	170.6	170.4	171.5	173.7	176.2	179.4	183.3	187.0	190.1	193.5	197.6
165°	173.8	173.8	174.5	176.3	178.1	180.3	183.5	186.3	188.4	191.0	193.8
167.5°	177.0	176.6	177.0	178.3	179.4	181.1	183.4	185.4	186.7	188.3	190.4
170°	178.4	178.1	178.4	179.6	180.3	181.3	183.1	184.9	185.6	186.6	188.1
172.5°	179.9	179.6	179.6	180.4	180.8	181.6	182.8	184.3	184.5	184.9	186.1
175°	181.3	181.0	181.0	181.3	181.7	181.7	182.4	183.5	183.1	183.1	183.8
177.5°	182.0	181.7	181.4	181.7	181.7	181.7	182.0	182.5	182.0	182.0	182.3
180°	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	425.4	426.0	426.6	426.8	426.8	426.7	426.6	426.5
5°	424.2	425.1	426.0	426.4	426.3	426.1	426.0	425.9
7.5°	422.0	422.9	423.9	424.3	424.2	424.1	424.0	423.9
10°	419.7	420.6	421.6	422.0	421.9	421.8	421.7	421.6
12.5°	416.5	417.4	418.2	418.6	418.6	418.6	418.6	418.5
15°	410.6	411.5	412.5	412.9	412.8	412.7	412.6	412.5
17.5°	403.4	404.5	405.5	405.9	405.8	405.7	405.7	405.6
20°	397.9	399.0	400.0	400.6	400.6	400.6	400.6	400.6
22.5°	391.4	392.4	393.5	394.2	394.4	394.5	394.7	394.9
25°	381.4	382.5	383.7	384.4	384.5	384.6	384.7	384.8
27.5°	370.1	371.2	372.3	372.9	373.0	373.1	373.2	373.4
30°	362.2	363.5	364.6	365.3	365.5	365.8	366.0	366.2
32.5°	354.2	355.6	356.9	357.7	357.9	358.1	358.3	358.5
35°	341.4	342.8	344.4	345.3	345.6	345.9	346.3	346.6
37.5°	328.1	329.5	331.0	332.0	332.3	332.6	333.1	333.4
40°	318.7	320.2	321.8	322.9	323.3	323.8	324.2	324.6
42.5°	309.4	311.2	313.0	314.1	314.4	314.7	315.1	315.4
45°	295.2	297.0	298.8	299.9	300.5	301.0	301.5	302.1
47.5°	280.1	282.0	283.9	285.1	285.8	286.4	287.0	287.7
50°	269.5	271.7	273.8	275.2	275.8	276.4	277.1	277.7
52.5°	258.8	260.9	263.1	264.5	265.1	265.7	266.4	267.0
55°	242.8	244.9	247.0	248.4	249.0	249.6	250.3	251.0
57.5°	225.9	228.4	231.0	232.5	233.1	233.7	234.3	234.9
60°	214.3	216.7	219.1	220.8	221.7	222.5	223.4	224.2
62.5°	202.8	205.2	207.6	209.3	210.2	211.0	211.9	212.7
65°	185.0	187.7	190.4	192.1	193.0	193.8	194.7	195.5
67.5°	167.6	170.4	173.0	174.8	175.6	176.4	177.2	178.1
70°	155.3	158.2	161.1	162.9	163.6	164.4	165.1	165.8
72.5°	143.7	146.5	149.3	151.1	151.9	152.7	153.6	154.4
75°	125.9	128.9	131.9	133.8	134.8	135.7	136.7	137.6
77.5°	109.4	112.4	115.4	117.4	118.5	119.5	120.5	121.5
80°	98.7	101.8	105.0	107.0	107.9	108.8	109.6	110.4
82.5°	88.1	91.4	94.6	96.7	97.7	98.6	99.6	100.5
85°	73.3	76.4	79.7	81.8	82.8	83.9	84.9	86.0
87.5°	62.0	65.1	68.4	70.4	71.4	72.4	73.2	74.1
90°	59.9	63.3	66.8	68.8	70.0	71.2	71.7	72.5
92.5°	121.1	106.7	99.0	93.8	90.4	89.4	89.0	89.8
95°	311.7	259.3	214.4	181.7	165.1	155.0	149.6	145.9
97.5°	434.9	417.2	385.1	349.6	324.9	304.4	294.6	288.0
100°	472.5	482.5	467.9	443.3	412.9	391.9	382.0	379.9
102.5°	468.4	506.6	514.4	505.2	487.1	472.1	461.6	460.2
105°	436.6	501.0	539.0	555.4	556.9	554.9	550.8	549.5
107.5°	392.9	461.3	513.7	547.2	565.6	574.5	578.9	580.6
110°	366.6	430.7	484.9	525.8	552.1	567.8	575.1	579.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	346.5	403.4	454.7	495.5	525.2	544.2	554.0	560.1
115°	325.5	371.7	415.9	451.6	480.6	502.7	514.9	518.6
117.5°	313.6	352.0	387.2	417.7	442.6	461.5	473.8	477.0
120°	307.5	342.7	373.4	400.3	421.5	438.1	448.2	452.9
122.5°	302.2	336.3	364.5	388.1	406.1	420.2	428.8	433.5
125°	293.7	326.4	353.0	374.0	388.9	399.9	407.3	410.1
127.5°	283.5	314.7	341.1	361.1	376.2	386.1	392.5	395.5
130°	275.8	306.0	332.1	352.3	367.6	377.2	383.4	386.3
132.5°	268.1	296.4	321.9	342.1	357.1	367.8	373.9	376.7
135°	256.8	281.8	305.2	324.2	339.1	349.7	356.1	358.9
137.5°	246.8	268.0	287.9	305.1	319.0	329.3	334.6	337.7
140°	241.1	259.2	276.7	292.7	305.6	314.0	319.5	323.0
142.5°	236.0	252.0	266.9	280.7	292.3	300.0	304.9	307.3
145°	228.9	241.8	253.1	263.7	273.0	279.4	283.5	285.7
147.5°	223.3	233.0	241.7	249.6	256.6	262.2	265.2	266.2
150°	220.3	228.4	235.6	242.0	247.7	252.4	254.5	254.8
152.5°	217.1	224.2	230.8	236.0	240.9	244.6	245.9	246.3
155°	212.4	218.0	223.4	227.7	231.3	234.1	235.2	235.2
157.5°	207.3	212.1	216.6	220.0	222.7	224.9	225.5	225.5
160°	204.2	208.0	212.0	214.9	217.0	219.1	219.5	219.5
162.5°	201.1	204.4	207.4	210.1	211.6	213.7	214.1	213.8
165°	196.6	198.8	201.3	203.1	204.5	205.9	205.6	205.2
167.5°	192.5	194.1	196.1	197.1	197.8	198.8	198.7	198.4
170°	189.9	191.0	192.4	193.5	194.2	194.5	194.2	194.2
172.5°	187.6	188.3	189.2	190.1	190.5	190.8	190.5	189.9
175°	184.5	184.9	185.6	185.6	185.6	186.3	185.6	184.9
177.5°	182.5	182.8	182.8	183.1	182.8	183.1	182.5	182.0
180°	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7

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