

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: P331931-940

Luminaire Tested: **S123DIP-S560D805U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331931-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S560D805U940-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 805 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4971.3 lumens  
Efficiency: N/A  
Efficacy: 129.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

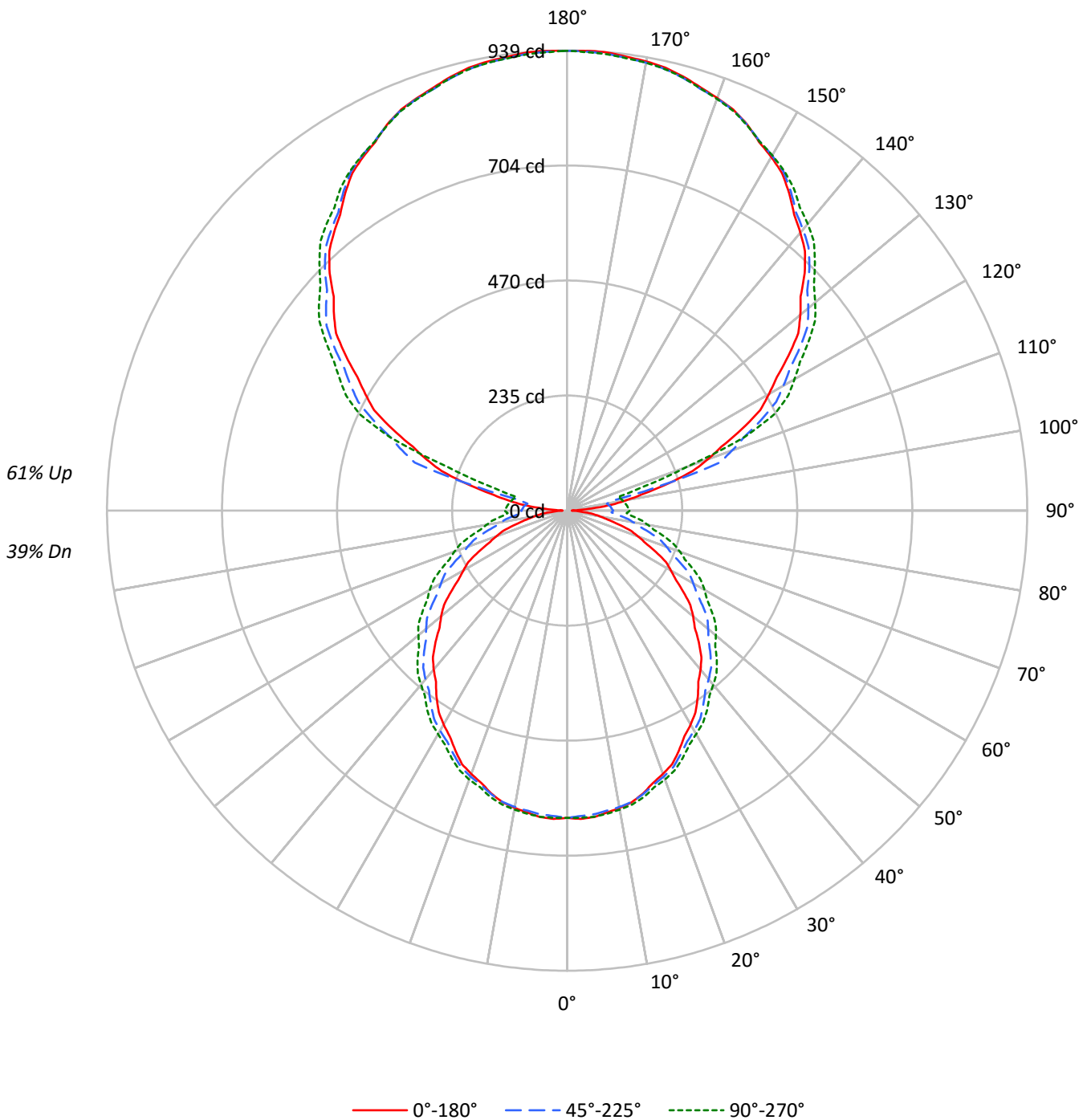
Input Watts (W): 38.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46	39
1	94	90	86	82	86	82	78	75	66	64	62	52	51	49	39	38	37	31
2	86	78	72	66	77	71	65	61	58	54	50	45	43	40	34	32	31	25
3	78	68	61	55	70	62	56	50	51	46	42	40	36	34	30	28	26	21
4	71	60	52	46	64	55	48	42	45	39	35	35	32	29	27	24	22	18
5	65	53	45	39	59	49	42	36	40	34	30	32	28	25	24	21	19	15
6	60	48	40	34	54	44	36	31	36	30	26	28	24	21	22	19	17	13
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	20	17	15	12
8	51	39	31	26	46	36	29	24	29	24	20	24	20	17	18	15	13	11
9	48	35	28	23	43	32	26	21	27	22	18	22	18	15	17	14	12	9
10	44	32	25	20	40	30	23	19	25	20	16	20	16	13	15	13	11	9

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

	0°	45°	90°
0°	6750	6750	6750
5°	6771	6579	6584
10°	6710	6428	6396
15°	6624	6256	6191
20°	6501	6059	5966
25°	6348	5833	5729
30°	6191	5629	5489
35°	6016	5414	5298
40°	5848	5218	5093
45°	5664	5030	4929
50°	5480	4845	4748
55°	5278	4654	4586
60°	5080	4461	4419
65°	4879	4255	4221
70°	4575	4025	4016
75°	4191	3760	3810
80°	3748	3499	3575
85°	3332	3319	3435



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	59.4	1.2
10°-20°	169.5	3.4
20°-30°	253.4	5.1
30°-40°	302.7	6.1
40°-50°	316.7	6.4
50°-60°	297.2	6.0
60°-70°	248.2	5.0
70°-80°	177.6	3.6
80°-90°	108.5	2.2
90°-100°	100.6	2.0
100°-110°	211.4	4.3
110°-120°	423.2	8.5
120°-130°	516.0	10.4
130°-140°	539.7	10.9
140°-150°	498.7	10.0
150°-160°	400.8	8.1
160°-170°	258.7	5.2
170°-180°	89.2	1.8
0°-30°	482.3	9.7
0°-40°	785.0	15.8
0°-60°	1398.8	28.1
0°-90°	1933.1	38.9
90°-120°	735.1	14.8
90°-150°	2289.5	46.1
90°-180°	3038.0	61.1
0°-180°	4971.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	627	627	627	627	627	
5°	628	626	622	627	627	59
15°	598	600	599	605	605	168
25°	540	546	548	557	557	249
35°	464	475	484	494	497	290
45°	380	396	413	426	432	293
55°	290	312	337	354	361	259
65°	200	227	257	277	284	198
75°	109	141	175	197	206	116
85°	33	68	104	126	134	35
90°	10	50	94	119	128	8
95°	50	50	89	114	122	58
105°	213	234	204	106	107	226
115°	393	406	436	459	468	388
125°	551	558	580	595	602	492
135°	685	689	699	713	715	527
145°	790	794	795	802	805	494
155°	869	868	869	872	868	400
165°	917	915	914	919	915	259
175°	938	935	936	940	935	89
180°	938	938	938	938	938	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	629.8	629.5	629.1	628.7	628.3	627.7	626.7	625.7	624.7	623.8	624.7
5°	627.8	627.4	627.1	626.9	626.5	625.9	625.0	624.1	623.2	622.2	623.5
7.5°	621.6	621.6	621.7	621.8	621.9	621.4	620.5	619.6	618.8	617.9	619.4
10°	616.2	616.4	616.7	617.1	617.3	617.2	616.4	615.6	614.8	614.1	615.6
12.5°	609.6	610.0	610.5	610.8	611.3	611.3	610.7	610.2	609.7	609.1	610.6
15°	597.7	598.2	598.6	599.1	599.5	599.7	599.5	599.3	599.2	599.1	600.6
17.5°	582.6	583.5	584.5	585.4	586.3	586.7	586.7	586.6	586.6	586.5	587.8
20°	571.8	572.7	573.5	574.4	575.3	576.0	576.3	576.6	576.8	577.2	578.5
22.5°	560.3	561.2	562.0	563.0	563.9	564.5	565.0	565.4	565.9	566.2	568.0
25°	539.7	541.2	542.7	544.2	545.7	546.7	547.2	547.6	548.0	548.5	550.5
27.5°	518.9	520.6	522.4	524.1	525.8	527.1	528.1	529.1	530.0	531.0	532.7
30°	504.1	506.0	508.0	510.1	512.0	513.6	514.8	516.0	517.2	518.4	520.3
32.5°	487.7	489.9	492.1	494.4	496.6	498.5	500.1	501.6	503.2	504.8	506.8
35°	464.5	466.9	469.3	471.8	474.2	476.4	478.4	480.4	482.3	484.3	486.6
37.5°	439.9	442.6	445.3	448.1	450.8	453.4	455.8	458.3	460.7	463.2	465.7
40°	423.5	426.2	429.0	431.7	434.4	437.3	440.3	443.4	446.4	449.4	452.0
42.5°	405.5	408.8	412.1	415.4	418.8	422.0	425.3	428.4	431.6	434.7	437.6
45°	379.8	383.4	387.1	390.7	394.3	398.1	401.9	405.6	409.5	413.2	416.2
47.5°	352.8	357.0	361.1	365.2	369.3	373.6	378.0	382.3	386.6	391.0	394.2
50°	335.4	339.7	343.8	348.1	352.4	356.9	361.6	366.3	371.0	375.7	379.2
52.5°	316.8	321.3	325.8	330.3	334.7	339.7	344.8	350.0	355.2	360.4	364.0
55°	289.6	294.6	299.6	304.6	309.7	314.9	320.4	325.8	331.3	336.7	340.8
57.5°	263.1	268.3	273.6	278.7	284.0	289.6	295.6	301.6	307.6	313.5	317.6
60°	244.5	250.0	255.5	260.9	266.4	272.2	278.5	284.7	290.9	297.1	301.4
62.5°	227.0	232.6	238.3	243.8	249.4	255.5	262.1	268.7	275.3	281.9	286.1
65°	200.1	206.1	212.0	217.9	223.8	230.2	236.8	243.4	250.1	256.8	261.4
67.5°	172.8	179.1	185.4	191.6	198.0	204.5	211.3	218.1	224.9	231.7	236.7
70°	153.7	160.2	166.7	173.3	179.8	186.7	193.9	201.3	208.6	215.9	220.7
72.5°	136.2	142.8	149.3	155.8	162.3	169.3	176.8	184.4	191.9	199.5	204.5
75°	108.6	115.7	122.9	130.0	137.1	144.5	152.1	159.7	167.3	174.9	179.9
77.5°	84.5	91.8	99.0	106.1	113.3	120.7	128.4	136.1	143.7	151.4	156.7
80°	67.6	75.1	82.5	90.0	97.4	105.0	112.9	120.8	128.8	136.6	141.8
82.5°	52.9	60.5	67.9	75.5	83.1	90.9	98.9	106.9	114.9	123.0	128.1
85°	33.4	41.0	48.7	56.3	63.8	71.6	79.7	87.7	95.8	103.8	109.0
87.5°	18.3	26.2	34.1	41.9	49.8	57.8	65.9	74.1	82.2	90.3	95.7
90°	9.5	18.5	27.6	36.6	45.6	54.9	64.6	74.4	84.2	93.9	99.7
92.5°	21.3	27.6	33.9	40.1	46.4	54.1	63.2	72.4	81.5	90.7	96.7
95°	50.0	49.6	49.1	48.8	48.3	52.7	61.8	71.0	80.1	89.3	95.1
97.5°	92.2	94.7	97.1	99.6	102.1	101.4	97.3	93.3	89.2	85.2	91.0
100°	123.9	131.9	139.9	147.8	155.8	151.1	134.0	116.8	99.6	82.4	88.1
102.5°	160.2	166.8	173.4	180.0	186.6	180.1	160.6	141.1	121.5	102.0	102.5
105°	213.2	218.6	223.9	229.3	234.6	233.5	226.1	218.7	211.3	203.9	180.7
107.5°	268.4	272.9	277.3	281.8	286.2	292.7	301.1	309.5	317.9	326.3	310.2
110°	305.2	309.2	313.2	317.2	321.1	327.0	334.8	342.6	350.4	358.1	357.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	341.0	344.3	347.7	351.1	354.4	359.8	367.4	374.9	382.5	389.9	393.9
115°	393.2	395.8	398.6	401.4	404.1	408.9	415.8	422.7	429.5	436.3	441.6
117.5°	444.2	446.4	448.7	450.9	453.3	457.3	463.2	469.0	474.8	480.6	485.5
120°	475.4	477.5	479.7	481.9	484.0	487.9	493.3	498.7	504.3	509.7	514.4
122.5°	507.7	509.3	510.9	512.4	513.9	517.4	522.7	528.1	533.4	538.8	543.0
125°	551.4	552.6	553.8	555.1	556.3	559.5	564.5	569.5	574.5	579.5	583.1
127.5°	594.3	595.4	596.5	597.6	598.7	601.5	605.8	610.2	614.6	618.9	622.5
130°	621.1	622.2	623.3	624.4	625.4	627.9	631.5	635.2	638.8	642.5	646.0
132.5°	646.2	647.4	648.6	649.9	651.0	653.1	656.0	659.0	661.9	664.8	668.2
135°	685.3	686.0	686.8	687.6	688.4	689.9	692.1	694.5	696.8	699.1	702.2
137.5°	718.5	719.6	720.7	721.8	722.8	724.0	725.2	726.6	727.8	729.1	732.3
140°	740.3	741.3	742.2	743.2	744.0	745.0	745.9	746.8	747.8	748.7	751.5
142.5°	761.0	761.8	762.6	763.4	764.2	764.9	765.4	766.0	766.6	767.1	769.6
145°	789.9	790.8	791.7	792.6	793.5	794.2	794.5	794.8	795.1	795.4	796.9
147.5°	816.4	817.1	817.8	818.5	819.2	819.7	820.0	820.3	820.6	820.9	821.6
150°	833.0	833.6	834.0	834.5	834.9	835.4	835.6	836.0	836.2	836.6	836.9
152.5°	848.1	848.4	848.6	848.8	849.0	849.2	849.4	849.5	849.8	850.0	850.5
155°	869.3	869.1	868.7	868.4	868.1	868.0	868.2	868.3	868.4	868.6	869.4
157.5°	885.7	885.7	885.7	885.6	885.6	885.6	885.4	885.3	885.1	884.9	885.9
160°	895.8	895.6	895.5	895.4	895.2	895.0	894.9	894.7	894.6	894.4	895.4
162.5°	905.3	904.9	904.5	904.1	903.7	903.4	903.2	903.1	902.9	902.8	903.8
165°	916.8	916.2	915.8	915.3	914.9	914.5	914.4	914.3	914.1	913.9	915.2
167.5°	925.7	925.1	924.4	923.8	923.2	922.8	922.8	922.8	922.8	922.8	924.1
170°	930.7	930.1	929.4	928.8	928.2	927.9	927.9	927.9	927.9	927.9	929.2
172.5°	934.0	933.3	932.6	931.7	931.0	930.8	930.9	930.9	931.1	931.2	932.5
175°	938.3	937.5	936.8	936.0	935.2	935.0	935.0	935.2	935.4	935.6	936.7
177.5°	939.4	938.9	938.3	937.6	937.0	936.7	936.8	937.0	937.1	937.2	938.3
180°	938.3	938.3	938.3	938.3	938.3	938.3	938.3	938.3	938.3	938.3	938.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	625.7	626.7	627.7	628.1	627.9	627.9	627.8	627.6
5°	624.7	625.9	627.1	627.7	627.5	627.3	627.2	627.1
7.5°	620.9	622.4	624.0	624.6	624.5	624.3	624.1	623.9
10°	617.2	618.7	620.2	620.7	620.5	620.2	619.8	619.6
12.5°	612.0	613.3	614.7	615.3	615.0	614.7	614.4	614.1
15°	602.1	603.6	605.1	605.8	605.6	605.5	605.4	605.2
17.5°	589.2	590.6	591.9	592.5	592.3	592.1	591.9	591.7
20°	580.0	581.3	582.6	583.4	583.5	583.7	583.9	584.0
22.5°	569.7	571.5	573.2	574.0	573.9	573.8	573.7	573.6
25°	552.4	554.5	556.4	557.4	557.4	557.4	557.4	557.4
27.5°	534.4	536.1	537.8	538.8	538.9	539.0	539.1	539.2
30°	522.1	523.9	525.8	526.6	526.6	526.6	526.6	526.6
32.5°	508.6	510.6	512.6	513.7	514.1	514.4	514.8	515.1
35°	488.8	491.2	493.4	494.8	495.4	496.1	496.7	497.3
37.5°	468.2	470.8	473.4	475.0	475.5	475.9	476.4	476.9
40°	454.6	457.2	459.8	461.4	462.0	462.6	463.2	463.8
42.5°	440.3	443.2	446.0	447.8	448.7	449.5	450.4	451.2
45°	419.0	421.9	424.8	426.9	428.0	429.3	430.5	431.7
47.5°	397.5	400.7	403.9	406.1	407.0	408.0	408.9	409.8
50°	382.6	386.2	389.7	391.9	393.0	394.0	395.1	396.2
52.5°	367.7	371.2	374.9	377.3	378.6	379.9	381.2	382.5
55°	344.9	349.0	353.1	355.8	357.0	358.2	359.4	360.7
57.5°	321.8	325.9	330.0	332.8	334.2	335.6	337.1	338.5
60°	305.7	309.9	314.1	317.1	318.8	320.4	322.1	323.8
62.5°	290.3	294.6	298.8	301.8	303.3	304.8	306.4	307.9
65°	265.9	270.5	275.1	278.1	279.6	281.2	282.7	284.2
67.5°	241.7	246.6	251.6	254.8	256.0	257.3	258.6	259.8
70°	225.6	230.4	235.3	238.4	240.0	241.5	243.0	244.5
72.5°	209.4	214.4	219.4	222.7	224.2	225.7	227.2	228.7
75°	184.9	189.9	194.9	198.3	200.1	202.0	203.8	205.6
77.5°	161.9	167.2	172.5	175.8	177.3	178.6	180.0	181.5
80°	147.0	152.1	157.3	160.6	162.1	163.6	165.1	166.7
82.5°	133.3	138.4	143.6	147.0	148.5	150.0	151.5	153.0
85°	114.1	119.3	124.5	127.8	129.3	130.8	132.3	133.8
87.5°	100.9	106.2	111.6	114.9	116.5	118.1	119.7	121.3
90°	105.5	111.3	117.1	120.8	122.7	124.5	126.4	128.1
92.5°	102.7	108.8	114.8	118.6	120.2	121.7	123.3	124.9
95°	100.9	106.6	112.4	116.0	117.5	119.0	120.6	122.2
97.5°	96.7	102.5	108.2	111.9	113.6	115.3	116.9	118.6
100°	93.7	99.3	105.0	108.6	110.3	112.0	113.7	115.4
102.5°	102.9	103.3	103.8	104.9	106.6	108.5	110.3	112.1
105°	157.6	134.4	111.2	100.5	102.2	103.8	105.5	107.2
107.5°	294.2	278.1	262.1	244.4	225.1	205.8	186.5	167.1
110°	355.8	354.6	353.5	342.4	321.5	300.5	279.6	258.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	397.8	401.7	405.6	405.9	402.6	399.2	395.9	392.5
115°	446.7	451.9	457.1	460.7	462.4	464.3	466.2	468.0
117.5°	490.4	495.2	500.1	503.1	504.4	505.8	507.0	508.4
120°	519.2	523.9	528.6	531.5	532.6	533.7	534.8	535.7
122.5°	547.2	551.5	555.7	558.4	559.6	560.8	562.0	563.2
125°	586.6	590.0	593.5	596.0	597.4	598.7	600.1	601.5
127.5°	626.0	629.5	632.9	635.1	635.8	636.5	637.2	638.0
130°	649.4	653.0	656.5	658.5	659.2	659.7	660.3	660.9
132.5°	671.5	674.9	678.3	680.4	680.9	681.5	682.2	682.7
135°	705.4	708.6	711.9	713.5	713.9	714.2	714.4	714.8
137.5°	735.4	738.5	741.6	743.5	744.0	744.4	744.8	745.3
140°	754.5	757.3	760.3	762.0	762.4	762.9	763.3	763.8
142.5°	772.1	774.7	777.2	778.6	779.0	779.4	779.6	780.0
145°	798.4	800.0	801.6	802.6	803.2	803.8	804.4	805.0
147.5°	822.3	823.0	823.7	823.9	823.8	823.6	823.4	823.2
150°	837.1	837.5	837.8	837.9	837.7	837.6	837.4	837.2
152.5°	851.0	851.6	852.2	852.1	851.5	850.9	850.2	849.5
155°	870.2	870.9	871.7	871.6	870.8	869.8	868.9	867.9
157.5°	886.8	887.7	888.7	888.5	887.3	886.1	884.9	883.7
160°	896.3	897.2	898.1	898.0	897.0	895.9	894.8	893.8
162.5°	904.9	906.0	907.0	907.0	906.1	905.1	904.2	903.2
165°	916.4	917.7	918.9	919.0	917.9	916.8	915.7	914.6
167.5°	925.3	926.6	927.8	927.8	926.6	925.3	924.1	922.8
170°	930.3	931.6	932.8	932.8	931.6	930.3	929.2	927.9
172.5°	933.7	935.0	936.2	936.1	934.8	933.4	932.0	930.7
175°	937.7	938.8	939.9	939.8	938.6	937.4	936.1	934.9
177.5°	939.2	940.2	941.2	941.1	939.9	938.6	937.4	936.1
180°	938.3	938.3	938.3	938.3	938.3	938.3	938.3	938.3

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