

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: P331942-940

Luminaire Tested: **S123DIP-S560D1025U940-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331942-940  
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-S560D1025U940-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5418.7 lumens  
Efficiency: N/A  
Efficacy: 121.8 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

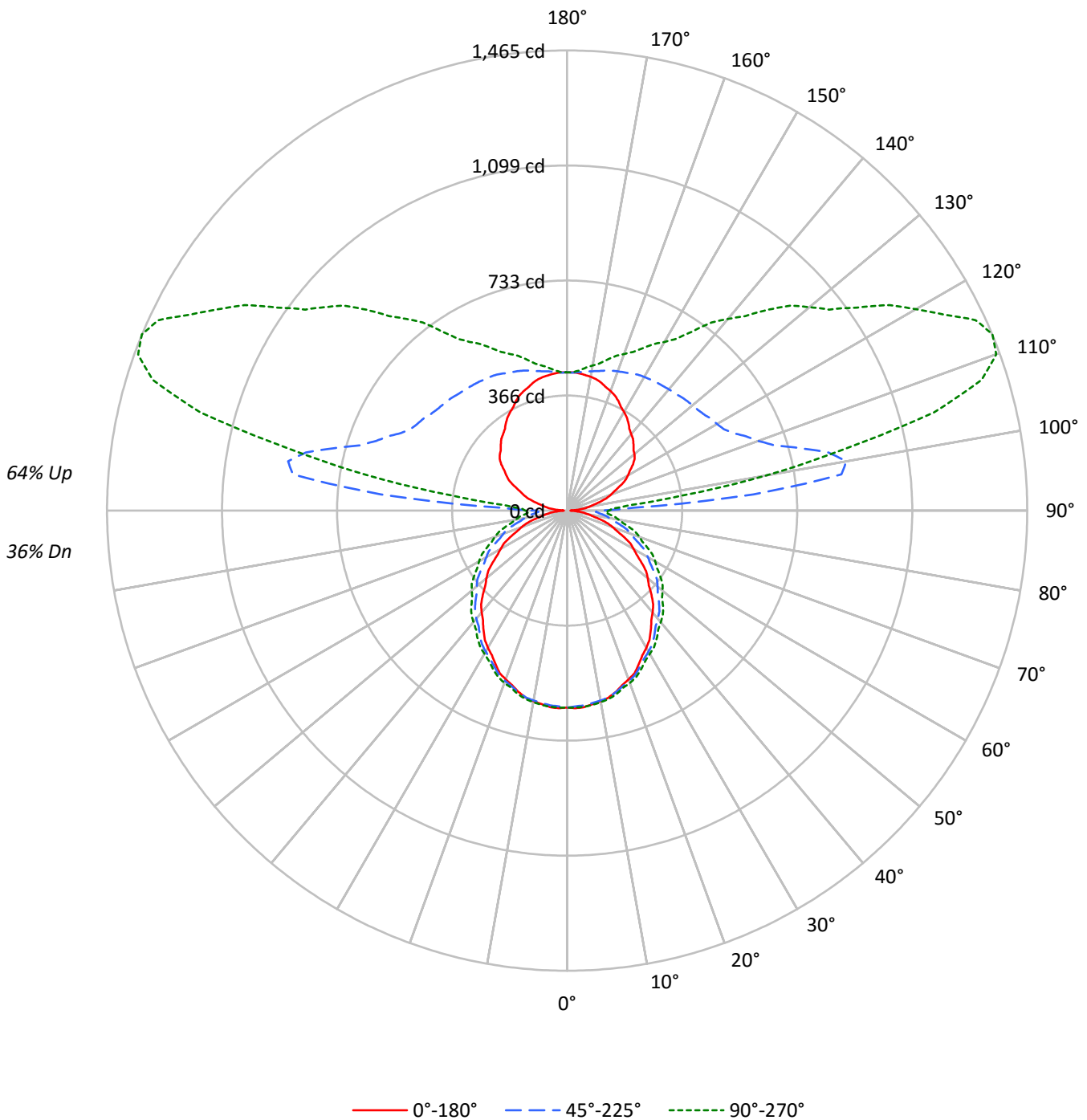
Input Watts (W): 44.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	36
1	94	89	85	81	85	81	77	74	65	62	60	50	49	47	37	36	35	28
2	85	77	71	66	77	70	65	60	56	53	49	44	41	39	32	30	29	23
3	77	68	60	54	70	61	55	50	49	45	41	38	35	32	28	26	24	19
4	71	60	52	46	63	54	47	42	44	39	35	34	30	27	25	22	21	16
5	65	53	45	39	58	48	41	36	39	34	30	30	27	24	22	20	18	14
6	59	47	39	34	53	43	36	31	35	30	26	27	23	21	20	18	15	12
7	55	43	35	29	49	39	32	27	32	26	22	25	21	18	18	16	14	11
8	51	39	31	26	46	35	28	24	29	23	20	23	19	16	17	14	12	10
9	47	35	28	23	43	32	25	21	26	21	18	21	17	14	16	13	11	9
10	44	32	25	20	40	29	23	19	24	19	16	19	15	13	14	12	10	8

**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	1.1
10°-20°	169.5	3.1
20°-30°	253.4	4.7
30°-40°	302.7	5.6
40°-50°	316.7	5.8
50°-60°	297.2	5.5
60°-70°	248.2	4.6
70°-80°	177.6	3.3
80°-90°	109.3	2.0
90°-100°	311.1	5.7
100°-110°	741.7	13.7
110°-120°	714.2	13.2
120°-130°	562.3	10.4
130°-140°	437.0	8.1
140°-150°	321.7	5.9
150°-160°	223.0	4.1
160°-170°	131.0	2.4
170°-180°	42.6	0.8
0°-30°	482.3	8.9
0°-40°	785.0	14.5
0°-60°	1398.8	25.8
0°-90°	1933.9	35.7
90°-120°	1767.1	32.6
90°-150°	3088.2	57.0
90°-180°	3485.0	64.3
0°-180°	5418.7	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°	11	53	99	124	133	8
95°	38	133	596	242	199	39
105°	109	175	767	1321	1209	115
115°	186	240	584	1252	1435	184
125°	256	303	533	961	1127	227
135°	299	356	512	782	904	231
145°	340	389	498	631	696	213
155°	385	416	482	547	570	177
165°	421	433	461	489	498	119
175°	439	439	442	449	448	42
180°	440	440	440	440	440	



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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°	18.5	26.5	34.3	42.4	50.4	58.4	66.6	74.9	83.2	91.5	96.5
90°	10.7	19.9	29.1	39.2	48.4	57.8	68.2	78.6	89.0	99.4	103.7
92.5°	19.4	31.4	45.6	59.3	73.5	93.8	124.8	170.6	215.8	209.7	181.1
95°	37.8	46.4	62.1	83.1	112.2	153.6	236.7	376.7	530.1	595.5	500.4
97.5°	58.3	64.6	77.6	96.0	124.2	168.0	247.4	404.0	654.4	880.7	942.4
100°	72.1	77.8	88.8	106.2	132.4	173.0	242.3	381.0	622.1	902.3	1082.1
102.5°	86.4	92.4	102.3	118.4	142.0	179.5	242.3	360.9	576.2	852.7	1085.8
105°	108.7	115.0	124.0	138.3	158.9	191.5	246.2	344.4	519.2	766.9	1026.5
107.5°	131.7	137.5	145.8	159.3	178.3	208.6	257.0	339.4	481.2	690.5	926.6
110°	148.3	153.7	160.9	173.4	191.3	220.6	266.7	340.5	465.7	647.2	863.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	164.0	168.9	175.6	187.6	205.0	233.3	276.3	344.7	455.7	616.9	808.5
115°	185.9	191.3	198.4	209.1	226.1	253.8	293.1	352.8	449.1	583.6	741.2
117.5°	208.4	213.6	219.2	228.5	246.5	271.9	310.5	364.0	446.2	561.8	698.5
120°	223.5	226.9	232.1	241.7	259.4	284.5	321.6	372.9	446.5	551.2	675.7
122.5°	237.0	240.0	245.0	254.9	271.5	297.7	333.9	381.4	449.0	543.5	656.5
125°	255.7	257.5	262.9	272.6	289.5	315.8	351.3	394.9	452.7	532.8	631.2
127.5°	270.5	273.0	279.5	289.3	307.8	333.6	367.3	406.2	457.9	525.5	608.4
130°	279.7	282.3	290.2	300.7	319.2	344.6	377.1	413.9	461.5	520.6	595.6
132.5°	286.3	289.7	298.4	311.1	329.8	354.4	385.4	421.0	463.6	517.2	583.4
135°	298.6	302.0	311.7	324.9	343.5	368.3	397.5	429.4	466.7	512.0	567.2
137.5°	310.2	313.9	323.3	337.5	355.9	378.5	406.0	435.8	468.4	506.8	553.1
140°	317.5	322.0	330.9	345.2	362.9	385.4	411.7	438.8	469.6	503.8	544.4
142.5°	326.1	329.8	339.2	351.9	369.6	390.4	415.6	441.7	469.9	500.2	536.3
145°	339.8	342.3	350.2	363.4	378.4	398.8	421.9	445.9	470.8	497.6	527.3
147.5°	353.0	354.6	362.5	374.0	388.6	406.1	427.2	448.8	470.8	494.2	518.9
150°	362.3	363.2	370.2	381.8	394.3	410.4	430.8	449.5	470.8	491.3	513.5
152.5°	371.5	371.7	378.8	389.0	400.0	415.4	432.9	450.9	468.7	487.8	507.9
155°	385.4	385.4	390.7	399.7	409.5	421.9	437.0	451.3	466.4	481.5	499.4
157.5°	396.5	397.2	401.4	409.3	417.6	427.2	439.3	452.2	463.4	476.0	489.7
160°	405.0	405.0	408.6	415.6	421.9	430.8	441.5	452.2	462.0	471.7	483.3
162.5°	411.4	411.4	414.3	419.9	425.4	432.9	442.2	451.5	459.1	467.4	476.9
165°	421.0	420.1	421.9	426.3	429.9	436.1	443.3	449.5	454.9	461.1	468.1
167.5°	428.3	427.2	428.1	431.5	434.0	437.9	443.1	448.1	450.6	454.7	459.9
170°	432.6	430.8	431.7	434.4	436.1	437.9	442.4	445.9	447.7	450.4	454.9
172.5°	435.4	434.4	434.5	436.5	437.6	438.6	442.4	445.2	445.6	446.8	449.9
175°	438.8	437.9	437.0	438.8	438.8	439.7	441.5	443.3	442.4	442.4	444.2
177.5°	440.4	439.7	439.0	439.7	439.7	439.7	440.4	441.8	440.4	439.7	440.4
180°	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7



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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°	101.8	107.1	112.4	116.2	117.5	119.2	120.9	122.3
90°	109.8	115.8	121.9	127.0	127.6	130.0	132.4	133.0
92.5°	157.8	147.4	145.5	144.1	143.8	142.6	144.9	144.6
95°	397.4	298.9	256.5	227.6	212.1	205.6	200.9	198.9
97.5°	870.5	716.0	605.7	502.3	438.2	399.7	377.1	371.0
100°	1117.7	1050.0	950.2	826.8	738.4	674.9	641.8	644.2
102.5°	1197.5	1199.4	1143.0	1065.8	997.3	947.4	919.9	901.0
105°	1216.8	1310.1	1331.2	1310.9	1271.3	1238.9	1211.7	1208.7
107.5°	1141.6	1290.2	1372.3	1406.6	1408.6	1398.6	1390.4	1383.5
110°	1071.7	1239.4	1355.5	1420.3	1446.5	1454.8	1454.3	1453.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1001.9	1173.0	1302.6	1385.3	1432.2	1455.5	1463.7	1465.3
115°	909.5	1068.1	1202.6	1302.0	1369.9	1410.3	1429.3	1435.0
117.5°	841.2	978.5	1099.6	1200.4	1271.2	1317.2	1344.1	1351.3
120°	804.7	928.4	1038.7	1130.9	1202.2	1253.1	1275.6	1281.9
122.5°	775.3	887.5	989.9	1075.6	1139.2	1185.1	1209.6	1217.5
125°	735.8	836.1	924.7	998.0	1056.1	1096.3	1119.6	1126.9
127.5°	700.8	790.3	870.4	937.2	989.0	1023.5	1044.6	1051.3
130°	678.6	761.5	836.5	898.9	947.1	980.0	999.6	1007.6
132.5°	657.8	734.2	804.1	863.7	909.1	942.2	959.7	965.7
135°	629.6	695.5	756.1	808.6	853.0	880.5	897.2	904.2
137.5°	603.8	658.0	710.2	755.7	793.2	821.0	835.3	840.2
140°	588.5	636.1	681.2	720.9	755.5	781.2	796.2	796.1
142.5°	573.7	614.7	653.8	688.5	718.1	740.9	754.5	754.4
145°	557.0	587.5	617.2	644.0	666.8	686.1	693.8	696.2
147.5°	543.3	567.0	590.3	609.1	626.6	639.8	647.1	648.4
150°	534.0	554.6	573.2	590.3	604.0	614.0	619.6	620.0
152.5°	526.2	543.9	560.4	574.5	585.1	594.2	597.4	597.5
155°	514.4	528.7	542.1	552.8	560.8	567.8	569.6	570.5
157.5°	502.0	513.9	524.2	532.6	539.6	544.9	546.4	546.2
160°	494.9	504.7	513.5	519.8	526.0	531.4	531.4	530.5
162.5°	486.3	494.7	502.9	508.5	512.6	517.1	517.1	516.2
165°	475.3	480.6	486.9	491.3	494.9	498.5	497.6	497.6
167.5°	465.7	469.8	473.3	476.5	478.1	480.6	479.7	479.7
170°	459.3	462.0	465.5	467.3	468.1	469.9	469.0	469.0
172.5°	453.6	455.6	458.4	459.5	459.7	461.5	459.9	459.1
175°	445.9	446.8	448.6	448.6	448.6	449.5	448.6	447.7
177.5°	441.1	441.8	442.6	442.6	441.8	442.6	441.1	441.1
180°	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7

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