

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: P331942-840

Luminaire Tested: **S123DIP-S560D1025U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331942-840  
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-S560D1025U840-4F0-1E-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: 6136.7 lumens  
Efficiency: N/A  
Efficacy: 137.9 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

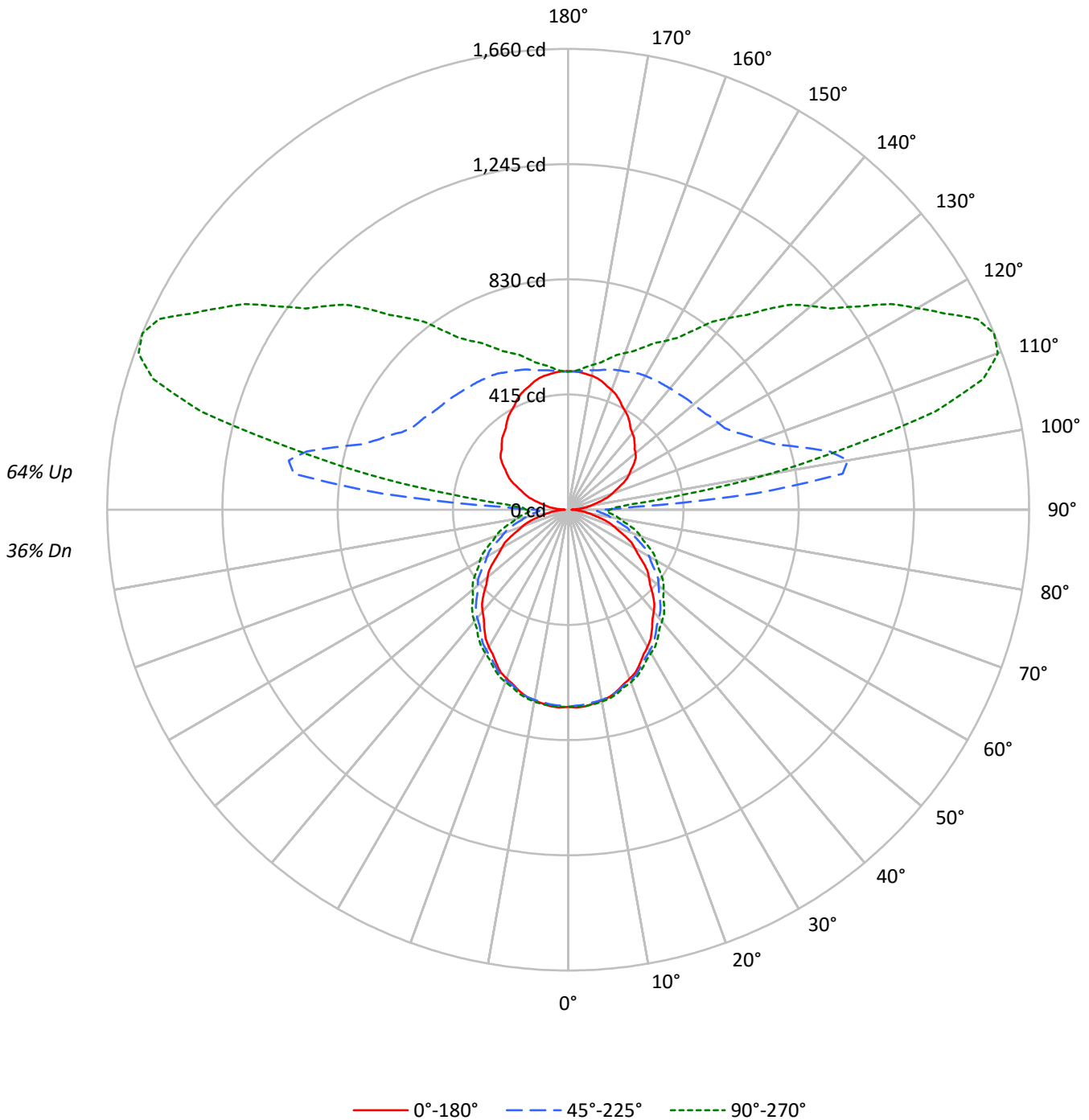
Input Watts (W): 44.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	7643	7643	7643
5°	7667	7451	7455
10°	7599	7280	7244
15°	7501	7084	7012
20°	7361	6862	6756
25°	7189	6606	6489
30°	7011	6375	6216
35°	6812	6132	6000
40°	6623	5910	5767
45°	6414	5697	5582
50°	6206	5488	5378
55°	5978	5271	5194
60°	5753	5053	5005
65°	5525	4819	4780
70°	5183	4558	4549
75°	4746	4256	4316
80°	4241	3962	4047
85°	3780	3757	3892



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.3	1.1
10°-20°	191.9	3.1
20°-30°	287.0	4.7
30°-40°	342.8	5.6
40°-50°	358.6	5.8
50°-60°	336.5	5.5
60°-70°	281.1	4.6
70°-80°	201.1	3.3
80°-90°	123.8	2.0
90°-100°	352.4	5.7
100°-110°	840.0	13.7
110°-120°	808.9	13.2
120°-130°	636.8	10.4
130°-140°	494.9	8.1
140°-150°	364.4	5.9
150°-160°	252.6	4.1
160°-170°	148.4	2.4
170°-180°	48.3	0.8
0°-30°	546.3	8.9
0°-40°	889.0	14.5
0°-60°	1584.2	25.8
0°-90°	2190.2	35.7
90°-120°	2001.2	32.6
90°-150°	3497.3	57.0
90°-180°	3947.0	64.3
0°-180°	6136.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	710	710	710	710	710	
5°	711	709	705	710	710	67
15°	677	679	678	686	685	191
25°	611	619	621	631	631	282
35°	526	538	548	560	563	329
45°	430	449	468	482	489	332
55°	328	354	381	401	408	294
65°	227	257	291	313	322	224
75°	123	160	198	223	233	131
85°	38	77	118	143	152	40
90°	12	60	113	141	151	9
95°	43	150	674	274	225	44
105°	123	198	868	1496	1369	131
115°	211	272	661	1418	1625	209
125°	290	343	603	1089	1276	257
135°	338	403	580	886	1024	261
145°	385	440	564	714	788	241
155°	436	471	545	620	646	201
165°	477	490	522	554	564	134
175°	497	498	501	508	507	47
180°	498	498	498	498	498	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	713.3	712.9	712.5	712.0	711.6	710.8	709.7	708.6	707.5	706.4	707.5
5°	710.9	710.5	710.2	709.9	709.5	708.8	707.8	706.8	705.8	704.7	706.1
7.5°	704.0	704.0	704.1	704.2	704.3	703.8	702.8	701.8	700.7	699.7	701.5
10°	697.8	698.1	698.4	698.8	699.1	698.9	698.0	697.2	696.3	695.5	697.2
12.5°	690.3	690.8	691.4	691.8	692.3	692.3	691.7	691.1	690.4	689.8	691.5
15°	676.9	677.4	677.9	678.4	678.9	679.1	678.9	678.7	678.6	678.4	680.1
17.5°	659.8	660.9	662.0	663.0	664.0	664.5	664.4	664.3	664.3	664.2	665.7
20°	647.5	648.5	649.5	650.6	651.6	652.3	652.7	653.0	653.3	653.7	655.2
22.5°	634.5	635.5	636.5	637.6	638.6	639.3	639.9	640.4	640.9	641.3	643.3
25°	611.2	612.9	614.6	616.3	618.0	619.1	619.7	620.2	620.7	621.2	623.4
27.5°	587.6	589.6	591.6	593.5	595.4	596.9	598.0	599.2	600.3	601.4	603.3
30°	570.9	573.1	575.3	577.6	579.9	581.7	583.0	584.4	585.7	587.1	589.3
32.5°	552.3	554.8	557.3	559.9	562.4	564.5	566.3	568.0	569.9	571.7	573.9
35°	526.0	528.8	531.5	534.3	537.0	539.6	541.8	544.0	546.2	548.5	551.1
37.5°	498.2	501.3	504.3	507.5	510.6	513.5	516.2	519.0	521.7	524.5	527.5
40°	479.6	482.7	485.8	488.9	492.0	495.2	498.7	502.1	505.5	509.0	511.9
42.5°	459.2	463.0	466.8	470.5	474.3	478.0	481.6	485.1	488.8	492.3	495.5
45°	430.1	434.2	438.4	442.5	446.6	450.8	455.1	459.4	463.7	468.0	471.3
47.5°	399.6	404.3	409.0	413.6	418.3	423.1	428.1	432.9	437.9	442.8	446.5
50°	379.8	384.7	389.4	394.3	399.1	404.1	409.5	414.9	420.1	425.5	429.4
52.5°	358.8	363.9	369.0	374.1	379.1	384.7	390.5	396.4	402.2	408.2	412.2
55°	328.0	333.7	339.3	345.0	350.7	356.6	362.8	369.0	375.2	381.3	386.0
57.5°	298.0	303.9	309.8	315.7	321.6	328.0	334.8	341.5	348.3	355.1	359.7
60°	276.9	283.2	289.3	295.5	301.6	308.3	315.4	322.4	329.4	336.5	341.3
62.5°	257.1	263.5	269.8	276.1	282.5	289.3	296.8	304.3	311.7	319.2	324.0
65°	226.6	233.4	240.0	246.8	253.5	260.6	268.2	275.7	283.3	290.8	296.0
67.5°	195.7	202.9	210.0	217.0	224.2	231.6	239.3	247.0	254.7	262.4	268.0
70°	174.1	181.5	188.8	196.2	203.6	211.5	219.6	227.9	236.2	244.5	249.9
72.5°	154.2	161.7	169.1	176.4	183.8	191.8	200.3	208.8	217.3	225.9	231.6
75°	123.0	131.1	139.2	147.2	155.3	163.7	172.3	180.9	189.5	198.0	203.7
77.5°	95.7	103.9	112.1	120.2	128.4	136.7	145.4	154.1	162.8	171.5	177.4
80°	76.5	85.0	93.4	101.9	110.3	119.0	127.8	136.8	145.8	154.7	160.6
82.5°	59.9	68.5	77.0	85.5	94.1	102.9	112.0	121.1	130.2	139.3	145.1
85°	37.9	46.5	55.1	63.7	72.3	81.1	90.3	99.4	108.5	117.5	123.4
87.5°	21.0	30.0	38.9	48.1	57.1	66.1	75.4	84.8	94.2	103.6	109.3
90°	12.1	22.5	32.9	44.4	54.8	65.4	77.3	89.1	100.8	112.6	117.4
92.5°	21.9	35.5	51.6	67.2	83.2	106.2	141.3	193.2	244.4	237.5	205.1
95°	42.8	52.5	70.3	94.1	127.0	173.9	268.0	426.7	600.4	674.4	566.7
97.5°	66.0	73.1	87.9	108.8	140.7	190.3	280.1	457.6	741.1	997.3	1067.2
100°	81.6	88.1	100.6	120.3	150.0	195.9	274.4	431.5	704.5	1021.9	1225.5
102.5°	97.9	104.6	115.8	134.1	160.8	203.3	274.4	408.7	652.6	965.7	1229.7
105°	123.1	130.3	140.5	156.6	180.0	216.9	278.8	390.0	587.9	868.5	1162.6
107.5°	149.2	155.7	165.1	180.5	202.0	236.2	291.0	384.4	544.9	782.0	1049.4
110°	167.9	174.1	182.2	196.4	216.6	249.8	302.1	385.6	527.5	733.0	978.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	185.7	191.3	198.8	212.5	232.2	264.2	312.9	390.4	516.0	698.6	915.6
115°	210.6	216.6	224.7	236.8	256.1	287.4	331.9	399.6	508.6	661.0	839.4
117.5°	236.0	241.9	248.2	258.7	279.1	307.9	351.6	412.2	505.3	636.2	791.0
120°	253.1	257.0	262.9	273.8	293.8	322.2	364.3	422.3	505.6	624.2	765.3
122.5°	268.4	271.9	277.4	288.7	307.5	337.2	378.1	431.9	508.5	615.5	743.5
125°	289.6	291.6	297.7	308.7	327.9	357.6	397.9	447.3	512.7	603.4	714.8
127.5°	306.3	309.2	316.5	327.6	348.6	377.8	416.0	460.0	518.6	595.1	689.0
130°	316.8	319.7	328.6	340.5	361.5	390.3	427.1	468.8	522.6	589.6	674.5
132.5°	324.3	328.1	337.9	352.3	373.5	401.3	436.5	476.8	525.0	585.7	660.8
135°	338.2	342.0	353.0	368.0	389.0	417.1	450.2	486.4	528.6	579.9	642.4
137.5°	351.3	355.5	366.2	382.2	403.0	428.7	459.8	493.5	530.5	573.9	626.4
140°	359.6	364.7	374.8	390.9	411.0	436.5	466.3	497.0	531.8	570.6	616.5
142.5°	369.3	373.4	384.2	398.5	418.6	442.1	470.7	500.2	532.2	566.5	607.3
145°	384.9	387.7	396.6	411.5	428.5	451.6	477.8	505.0	533.2	563.5	597.1
147.5°	399.8	401.6	410.5	423.5	440.1	459.9	483.8	508.3	533.2	559.7	587.6
150°	410.3	411.3	419.3	432.4	446.6	464.7	487.9	509.1	533.2	556.4	581.6
152.5°	420.7	420.9	429.0	440.5	453.0	470.4	490.3	510.7	530.8	552.4	575.2
155°	436.5	436.5	442.5	452.6	463.7	477.8	494.9	511.1	528.2	545.3	565.5
157.5°	449.0	449.8	454.6	463.5	472.9	483.8	497.6	512.1	524.8	539.1	554.6
160°	458.7	458.7	462.7	470.7	477.8	487.9	500.0	512.1	523.2	534.2	547.3
162.5°	466.0	466.0	469.2	475.5	481.8	490.3	500.8	511.3	520.0	529.4	540.1
165°	476.8	475.7	477.8	482.8	486.9	493.9	502.0	509.1	515.1	522.2	530.2
167.5°	485.0	483.8	484.8	488.7	491.5	495.9	501.8	507.5	510.3	514.9	520.8
170°	489.9	487.9	488.9	491.9	493.9	495.9	501.0	505.0	507.1	510.1	515.1
172.5°	493.1	491.9	492.1	494.3	495.5	496.8	501.0	504.2	504.6	506.0	509.5
175°	497.0	495.9	494.9	497.0	497.0	498.0	500.0	502.0	501.0	501.0	503.0
177.5°	498.8	498.0	497.2	498.0	498.0	498.0	498.8	500.4	498.8	498.0	498.8
180°	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	708.6	709.7	710.8	711.3	711.1	711.0	710.9	710.7
5°	707.5	708.8	710.2	710.8	710.6	710.4	710.3	710.1
7.5°	703.2	704.9	706.7	707.4	707.2	707.0	706.8	706.6
10°	698.9	700.6	702.4	703.0	702.7	702.4	702.0	701.7
12.5°	693.1	694.6	696.2	696.8	696.5	696.1	695.8	695.5
15°	681.9	683.6	685.3	686.1	685.9	685.7	685.6	685.4
17.5°	667.3	668.8	670.3	671.1	670.8	670.6	670.3	670.0
20°	656.8	658.3	659.8	660.8	660.9	661.1	661.3	661.4
22.5°	645.2	647.2	649.1	650.1	649.9	649.8	649.7	649.6
25°	625.6	627.9	630.2	631.3	631.3	631.3	631.3	631.3
27.5°	605.2	607.1	609.0	610.2	610.3	610.4	610.6	610.7
30°	591.3	593.3	595.4	596.4	596.4	596.4	596.4	596.4
32.5°	576.0	578.2	580.5	581.8	582.2	582.6	583.0	583.4
35°	553.6	556.2	558.8	560.4	561.1	561.8	562.5	563.2
37.5°	530.3	533.2	536.1	538.0	538.5	539.0	539.6	540.1
40°	514.8	517.8	520.7	522.5	523.2	523.9	524.5	525.2
42.5°	498.7	501.9	505.1	507.2	508.2	509.1	510.1	511.0
45°	474.5	477.8	481.1	483.4	484.7	486.1	487.6	488.9
47.5°	450.2	453.8	457.5	459.9	460.9	462.0	463.1	464.1
50°	433.3	437.4	441.3	443.8	445.0	446.3	447.5	448.7
52.5°	416.4	420.4	424.5	427.3	428.8	430.2	431.7	433.2
55°	390.6	395.3	399.9	402.9	404.3	405.7	407.1	408.5
57.5°	364.5	369.1	373.8	376.9	378.5	380.1	381.7	383.3
60°	346.2	350.9	355.8	359.1	361.0	362.8	364.8	366.7
62.5°	328.8	333.7	338.4	341.7	343.5	345.2	347.0	348.7
65°	301.1	306.3	311.5	315.0	316.7	318.4	320.1	321.8
67.5°	273.7	279.3	285.0	288.5	289.9	291.3	292.9	294.3
70°	255.5	260.9	266.5	270.0	271.8	273.5	275.2	276.9
72.5°	237.1	242.8	248.4	252.2	253.9	255.6	257.3	259.0
75°	209.3	215.1	220.8	224.6	226.6	228.7	230.8	232.9
77.5°	183.4	189.3	195.3	199.1	200.8	202.3	203.9	205.5
80°	166.4	172.3	178.1	181.9	183.6	185.3	187.0	188.7
82.5°	151.0	156.7	162.6	166.4	168.1	169.9	171.6	173.3
85°	129.3	135.1	141.0	144.7	146.4	148.1	149.9	151.6
87.5°	115.3	121.3	127.3	131.6	133.1	135.0	136.9	138.5
90°	124.3	131.2	138.0	143.8	144.5	147.2	150.0	150.7
92.5°	178.7	166.9	164.8	163.2	162.9	161.5	164.1	163.8
95°	450.1	338.5	290.4	257.7	240.2	232.9	227.5	225.2
97.5°	985.8	810.9	686.0	568.9	496.2	452.6	427.1	420.1
100°	1265.8	1189.1	1076.1	936.3	836.3	764.4	726.8	729.5
102.5°	1356.1	1358.4	1294.4	1207.0	1129.4	1072.9	1041.8	1020.4
105°	1378.1	1483.7	1507.6	1484.6	1439.8	1403.0	1372.3	1368.9
107.5°	1292.8	1461.2	1554.1	1593.0	1595.3	1583.9	1574.6	1566.8
110°	1213.7	1403.6	1535.1	1608.5	1638.2	1647.6	1647.0	1646.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1134.7	1328.5	1475.2	1568.8	1621.9	1648.4	1657.6	1659.5
115°	1030.1	1209.6	1361.9	1474.5	1551.5	1597.2	1618.7	1625.2
117.5°	952.6	1108.1	1245.3	1359.5	1439.7	1491.8	1522.2	1530.3
120°	911.3	1051.4	1176.3	1280.7	1361.5	1419.2	1444.6	1451.8
122.5°	878.1	1005.1	1121.1	1218.1	1290.1	1342.1	1369.9	1378.8
125°	833.3	946.8	1047.2	1130.2	1196.0	1241.5	1268.0	1276.2
127.5°	793.7	895.0	985.7	1061.4	1120.0	1159.1	1183.1	1190.6
130°	768.5	862.4	947.4	1018.0	1072.6	1109.8	1132.1	1141.1
132.5°	745.0	831.5	910.7	978.2	1029.6	1067.0	1086.9	1093.7
135°	713.1	787.7	856.3	915.7	966.0	997.1	1016.1	1024.0
137.5°	683.8	745.2	804.4	855.9	898.3	929.8	945.9	951.5
140°	666.5	720.4	771.4	816.5	855.7	884.7	901.7	901.6
142.5°	649.7	696.2	740.4	779.7	813.2	839.1	854.4	854.3
145°	630.8	665.4	699.0	729.3	755.2	777.0	785.8	788.5
147.5°	615.3	642.2	668.5	689.8	709.6	724.6	732.9	734.3
150°	604.8	628.0	649.1	668.5	684.0	695.4	701.8	702.2
152.5°	595.9	615.9	634.7	650.7	662.6	673.0	676.6	676.7
155°	582.6	598.7	613.9	626.0	635.1	643.1	645.1	646.1
157.5°	568.6	582.0	593.7	603.2	611.1	617.1	618.7	618.5
160°	560.5	571.6	581.6	588.7	595.7	601.8	601.8	600.8
162.5°	550.8	560.3	569.6	575.8	580.5	585.6	585.6	584.6
165°	538.3	544.3	551.4	556.4	560.5	564.5	563.5	563.5
167.5°	527.4	532.0	536.0	539.7	541.5	544.3	543.3	543.3
170°	520.2	523.2	527.1	529.2	530.2	532.2	531.2	531.2
172.5°	513.7	515.9	519.2	520.4	520.6	522.6	520.8	520.0
175°	505.0	506.0	508.1	508.1	508.1	509.1	508.1	507.1
177.5°	499.6	500.4	501.2	501.2	500.4	501.2	499.6	499.6
180°	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0

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