

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: P334121

Luminaire Tested: **S124DS-S575D940-4F0-1E-UDD-A**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P334121  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DS-S575D940-4F0-1E-UDD-A  
Description: DEFINE 4 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 575 LUMENS PER FOOT  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2132.5 lumens  
Efficiency: N/A  
Efficacy: 113.4 lumens/watt  
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41  
Luminous Opening: Rectangular (W 4' x L: 0.33' x H: 0')  
CIE Type: Direct

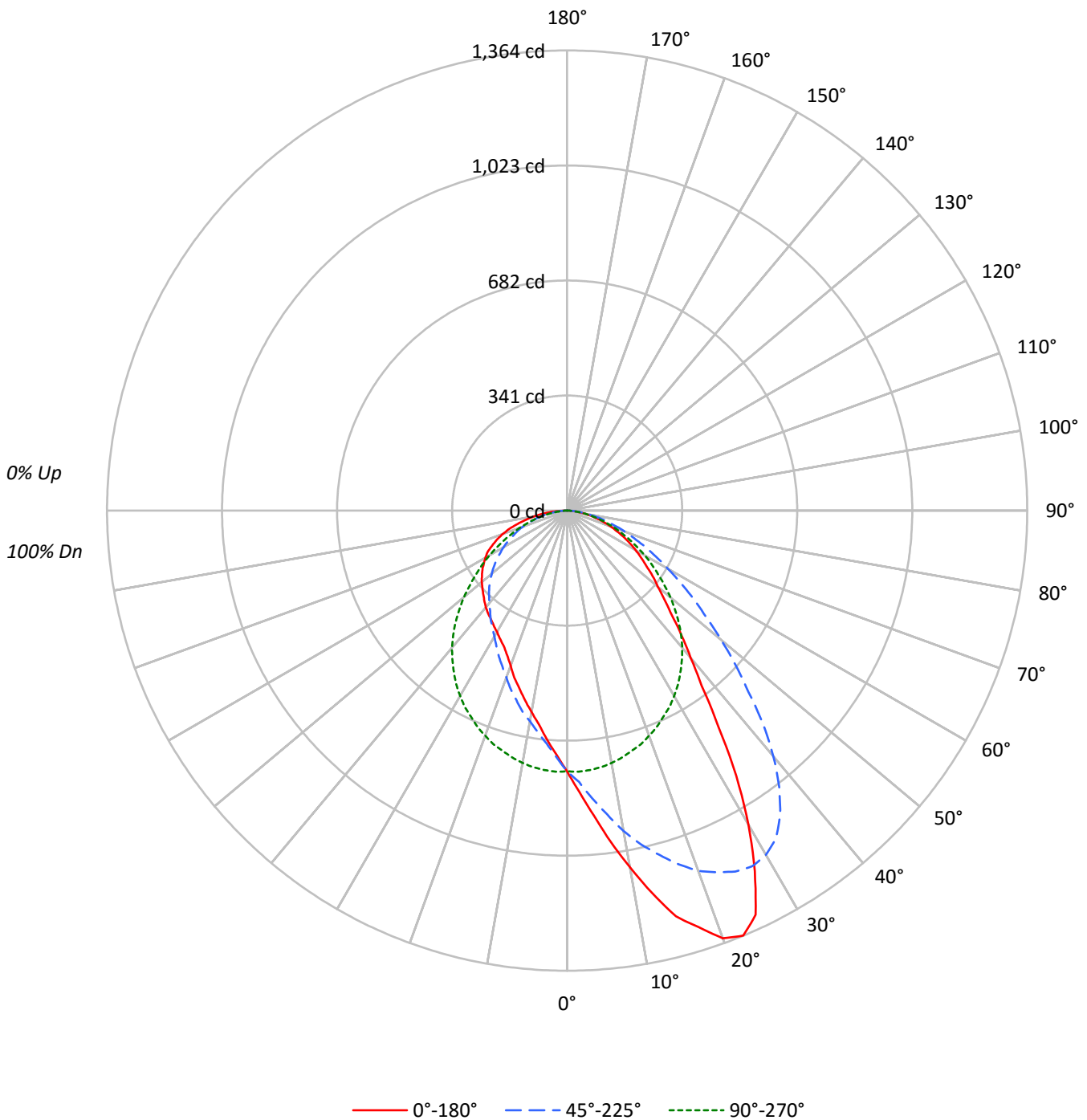
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27

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

	0°	90°	180°
0°	6239	6239	6239
5°	7347	6255	5521
10°	8797	6228	4970
15°	10408	6165	4565
20°	11590	6101	4203
25°	11778	6005	3952
30°	10021	5915	3873
35°	7705	5767	3874
40°	6005	5594	3948
45°	5007	5333	4013
50°	4407	5014	4150
55°	4037	4632	4317
60°	3783	4290	4518
65°	3522	3908	4684
70°	3220	3529	4792
75°	2876	3107	4732
80°	2413	2543	4584
85°	1778	1834	4391



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	75.2	3.5
10°-20°	232.2	10.9
20°-30°	368.8	17.3
30°-40°	409.8	19.2
40°-50°	372.7	17.5
50°-60°	304.5	14.3
60°-70°	217.4	10.2
70°-80°	119.6	5.6
80°-90°	32.3	1.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	676.2	31.7
0°-40°	1086.0	50.9
0°-60°	1763.2	82.7
0°-90°	2132.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2132.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	773	773	773	773	773	
5°	907	856	772	694	681	92
15°	1245	1057	738	581	546	352
25°	1322	1180	674	478	444	586
35°	782	1101	585	395	393	495
45°	439	760	467	327	352	345
55°	287	458	329	256	307	259
65°	184	255	205	178	245	182
75°	92	119	100	99	152	98
85°	19	25	20	28	47	24
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8
2.5°	834.9	834.6	831.4	830.8	828.5	825.6	825.0	819.9	809.6	804.8	803.5
5°	906.6	913.0	904.7	903.1	902.1	891.6	886.1	879.7	865.0	856.4	849.6
7.5°	990.5	990.8	987.3	983.8	977.7	968.7	956.6	942.5	925.5	908.2	896.1
10°	1073.1	1075.7	1071.5	1070.9	1054.5	1044.3	1023.8	1006.5	986.7	964.6	944.4
12.5°	1160.2	1155.1	1153.5	1136.5	1136.8	1116.0	1091.3	1073.4	1040.1	1013.9	985.4
15°	1245.3	1238.3	1233.8	1214.9	1205.6	1179.7	1154.4	1134.9	1094.9	1056.8	1028.0
17.5°	1294.6	1303.3	1291.8	1284.1	1258.8	1241.8	1216.5	1176.5	1146.7	1099.4	1066.4
20°	1349.1	1349.7	1343.9	1335.9	1317.0	1294.0	1265.8	1221.0	1183.5	1136.5	1086.5
22.5°	1363.8	1363.8	1362.2	1354.8	1341.7	1324.1	1295.6	1260.1	1212.7	1160.5	1110.6
25°	1322.2	1320.9	1323.8	1332.1	1326.7	1320.9	1304.6	1276.7	1234.5	1180.3	1126.6
27.5°	1204.4	1212.7	1230.0	1250.5	1265.2	1278.3	1277.3	1265.5	1235.4	1188.7	1131.4
30°	1075.0	1085.9	1098.1	1118.6	1158.3	1181.0	1206.0	1224.8	1214.3	1178.7	1126.2
32.5°	932.9	933.5	953.1	977.1	1012.6	1061.6	1104.8	1148.0	1166.6	1152.2	1110.6
35°	781.8	786.3	805.8	828.8	873.3	926.8	986.3	1039.5	1083.3	1101.0	1078.5
37.5°	655.0	669.1	683.8	710.1	750.7	799.1	863.1	929.4	993.7	1032.8	1036.9
40°	569.8	577.8	587.8	606.7	640.0	687.3	740.5	819.2	888.7	951.4	971.9
42.5°	502.6	506.5	511.6	528.2	551.6	598.7	646.0	712.9	782.7	860.9	898.6
45°	438.6	443.4	453.6	463.6	482.8	515.4	560.6	617.5	687.7	760.0	823.4
47.5°	390.6	393.8	400.2	411.1	428.3	450.4	488.9	537.2	605.7	675.8	743.7
50°	350.9	353.4	358.2	367.8	380.3	399.5	429.6	474.1	525.0	595.8	662.0
52.5°	319.5	320.1	323.3	329.1	338.4	353.8	377.1	412.0	458.4	519.6	585.5
55°	286.8	288.1	291.3	296.1	304.8	315.0	333.9	361.4	402.7	457.5	514.8
57.5°	260.0	261.2	263.8	265.7	273.4	282.0	297.4	317.3	349.6	398.3	450.4
60°	234.3	233.7	236.9	238.5	243.3	250.3	261.6	280.4	307.7	345.1	392.2
62.5°	209.4	208.4	211.0	213.2	215.5	221.2	229.9	243.6	264.4	297.4	336.5
65°	184.4	183.1	184.7	187.3	189.8	193.0	199.8	212.9	230.5	254.8	285.9
67.5°	158.8	160.4	160.4	162.0	163.6	168.1	172.9	183.1	195.6	215.5	243.0
70°	136.4	136.7	138.0	138.0	138.9	142.8	146.6	152.1	164.2	182.2	203.6
72.5°	114.0	115.6	114.6	115.9	116.5	118.8	121.3	126.5	136.4	148.5	165.8
75°	92.2	93.2	93.2	93.5	94.4	95.4	97.6	101.5	108.8	118.8	131.3
77.5°	71.1	71.1	71.7	73.0	73.0	74.6	76.5	79.4	83.6	90.9	98.9
80°	51.9	52.5	52.2	52.8	52.8	54.1	54.7	58.6	60.2	64.7	70.8
82.5°	34.6	35.2	35.2	36.2	36.8	36.8	37.8	38.7	40.3	44.2	45.8
85°	19.2	19.8	19.2	19.8	20.8	21.1	22.1	22.4	23.7	24.7	26.9
87.5°	7.0	8.0	8.0	8.3	9.0	9.3	9.6	9.3	10.6	10.9	12.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8
2.5°	803.9	799.4	796.2	793.6	786.6	782.4	779.2	774.7	769.6	764.2	757.4
5°	842.9	832.0	824.0	811.9	800.3	790.7	780.8	771.9	761.0	749.1	740.5
7.5°	882.9	867.9	847.7	832.0	813.1	796.8	782.4	767.4	751.4	736.0	721.6
10°	920.7	899.9	876.9	849.6	824.0	801.3	780.2	759.7	739.8	720.0	703.0
12.5°	961.4	934.2	897.3	864.4	834.9	802.6	776.0	749.8	724.8	703.7	683.2
15°	996.9	959.5	920.1	877.5	839.7	804.2	769.3	737.6	710.7	683.2	664.0
17.5°	1019.3	972.9	930.6	886.1	842.6	798.1	761.9	726.4	693.1	666.2	642.2
20°	1041.4	995.3	939.3	894.8	840.4	794.3	750.7	710.1	674.9	645.7	620.7
22.5°	1060.6	1005.6	949.5	887.4	833.3	783.7	735.0	694.1	657.9	626.8	603.1
25°	1065.1	1004.0	943.1	884.9	823.4	765.4	722.2	674.2	635.8	603.5	577.8
27.5°	1066.7	1002.0	934.5	871.1	807.7	754.9	698.5	656.6	616.9	582.7	558.3
30°	1063.2	995.0	921.0	850.9	787.2	728.6	681.3	634.5	593.9	559.9	534.3
32.5°	1052.0	980.3	903.7	828.5	761.9	704.9	655.6	611.8	572.4	539.1	511.9
35°	1028.3	958.2	877.2	800.0	732.5	674.5	630.4	585.2	545.5	513.8	487.9
37.5°	996.6	931.3	849.0	768.7	703.7	644.8	600.3	558.6	522.8	490.1	463.2
40°	952.4	896.7	814.1	736.3	664.6	609.2	568.2	530.8	495.3	464.8	439.5
42.5°	901.5	854.8	780.2	696.6	628.1	572.4	532.7	500.1	467.1	439.5	414.3
45°	839.1	807.1	735.4	659.2	587.1	534.6	496.5	467.1	438.9	411.4	390.2
47.5°	769.6	751.7	689.3	616.3	547.1	494.6	461.6	433.5	407.9	383.8	365.0
50°	699.5	691.8	639.6	569.8	504.5	455.9	422.6	399.2	378.1	357.6	340.0
52.5°	630.4	632.0	586.2	523.7	464.5	418.1	385.1	363.7	346.1	330.4	315.0
55°	559.6	568.6	531.7	474.8	420.7	378.4	348.6	329.1	316.3	302.5	290.7
57.5°	494.6	509.7	477.6	425.5	379.7	339.3	313.1	298.0	284.0	275.0	265.7
60°	431.2	445.3	421.6	379.4	336.8	303.5	278.8	265.7	253.9	248.1	242.0
62.5°	374.9	387.0	371.0	332.6	297.1	265.4	245.5	233.1	226.0	219.6	216.1
65°	321.7	332.3	317.3	288.8	257.1	231.5	214.5	204.6	196.9	194.3	189.8
67.5°	269.2	278.8	270.8	245.9	219.0	198.8	185.4	174.8	170.3	167.8	164.9
70°	223.5	233.1	224.4	203.3	183.8	167.4	154.9	149.5	144.7	143.7	139.3
72.5°	184.7	190.5	181.8	166.5	150.5	137.3	128.4	122.6	120.7	118.8	116.9
75°	144.4	150.1	144.4	131.6	119.7	110.1	101.8	99.6	96.7	95.7	94.1
77.5°	108.2	113.6	109.2	100.5	91.2	83.2	78.4	75.2	74.9	73.0	73.6
80°	78.1	81.3	77.2	71.7	64.7	59.5	56.3	54.7	52.8	52.2	53.5
82.5°	50.6	51.5	49.9	46.7	41.9	39.1	37.1	35.2	35.2	35.5	35.2
85°	29.1	28.8	28.5	25.3	23.7	21.4	20.2	19.8	19.5	20.2	20.8
87.5°	12.2	12.5	12.2	10.9	9.9	9.0	8.6	8.3	8.6	9.0	9.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8
2.5°	754.2	751.4	747.2	741.4	736.6	731.5	730.2	728.3	732.2	729.0	728.0
5°	733.1	726.4	717.7	707.8	702.1	693.7	692.1	688.9	685.7	685.4	682.2
7.5°	711.0	701.7	690.9	680.6	671.6	662.7	656.9	656.3	651.2	648.6	645.4
10°	689.9	677.7	664.6	655.0	644.1	634.5	627.8	623.9	620.7	617.2	614.0
12.5°	664.9	651.8	641.6	631.0	617.5	610.8	598.7	591.3	591.3	592.3	582.7
15°	646.7	633.9	617.2	602.5	595.5	581.4	575.3	567.6	562.8	558.0	554.2
17.5°	624.3	608.6	595.8	579.1	566.0	555.4	547.1	543.0	535.3	528.2	523.4
20°	603.5	586.5	572.7	554.8	540.1	526.3	519.6	513.2	507.7	502.0	496.5
22.5°	582.3	564.4	546.8	529.5	516.1	501.3	494.9	485.6	480.5	478.0	472.5
25°	559.9	540.7	521.5	504.9	490.8	478.0	469.3	462.6	456.8	454.3	450.8
27.5°	535.6	516.7	498.5	479.2	462.9	453.6	446.6	441.1	437.6	433.8	432.2
30°	512.5	492.7	472.8	455.2	440.5	431.2	424.8	421.3	418.7	417.1	415.5
32.5°	489.2	469.6	448.5	432.8	420.0	412.0	407.5	404.0	403.1	402.7	402.4
35°	463.9	444.0	424.8	410.4	397.9	394.7	390.6	388.6	388.0	390.2	391.2
37.5°	439.5	421.0	403.1	388.6	380.3	375.2	373.6	373.3	375.5	377.4	379.7
40°	416.2	398.3	381.6	369.4	361.8	358.9	358.2	359.8	362.4	364.6	367.2
42.5°	393.4	375.8	361.1	349.9	345.1	342.5	343.2	344.8	348.6	351.5	355.7
45°	369.8	355.0	340.3	331.0	326.5	327.2	327.2	330.1	333.6	337.7	341.9
47.5°	347.7	332.6	320.1	312.1	309.9	308.9	310.5	314.4	319.2	324.0	329.7
50°	325.3	311.2	300.6	293.6	291.0	292.0	294.5	298.0	304.1	310.5	316.6
52.5°	302.5	290.0	280.4	274.0	272.4	274.4	276.9	283.0	288.1	295.2	302.9
55°	278.8	268.0	260.3	255.5	254.8	255.8	258.7	264.8	272.4	281.1	288.1
57.5°	255.5	246.2	238.8	235.3	235.6	236.3	240.7	248.1	255.8	265.1	274.0
60°	231.8	223.5	217.7	215.1	215.5	217.4	223.1	229.9	240.1	249.1	258.7
62.5°	209.4	202.3	196.9	194.6	194.0	198.8	204.2	211.3	221.5	231.8	242.3
65°	185.0	179.3	174.8	173.5	174.5	177.7	184.7	194.0	202.6	213.2	224.1
67.5°	161.3	156.5	153.3	154.0	154.9	159.4	165.5	173.5	183.1	194.0	205.2
70°	138.9	134.5	131.9	132.2	134.1	139.9	145.0	153.0	163.6	174.8	183.8
72.5°	115.9	113.3	111.1	112.7	114.6	118.1	124.9	132.9	141.8	152.1	161.7
75°	92.5	92.5	91.2	92.2	95.1	98.9	103.7	112.0	121.3	129.7	137.3
77.5°	72.7	71.7	72.4	73.3	75.2	80.0	85.5	91.6	98.9	107.6	114.0
80°	52.5	52.8	54.4	56.3	57.0	60.5	66.3	71.7	77.2	84.2	90.3
82.5°	36.2	36.5	37.1	39.7	40.3	44.2	47.4	52.8	57.6	61.8	66.6
85°	21.4	21.4	23.0	24.0	25.6	28.2	30.4	33.6	38.1	41.3	46.1
87.5°	10.2	10.2	11.5	12.2	13.1	14.7	15.4	18.9	20.2	21.8	24.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





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**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	772.8	772.8	772.8	772.8
2.5°	727.4	726.7	724.5	724.2
5°	680.3	678.7	677.7	681.3
7.5°	644.8	643.5	640.6	639.6
10°	610.8	609.5	607.0	606.3
12.5°	578.2	575.3	575.3	576.2
15°	550.0	548.7	545.2	546.2
17.5°	521.2	519.9	515.1	519.9
20°	494.3	491.7	489.5	489.2
22.5°	468.7	466.4	466.8	464.2
25°	448.2	446.0	445.3	443.7
27.5°	431.5	430.3	429.0	429.6
30°	416.5	416.2	415.5	415.5
32.5°	404.0	404.0	404.7	404.7
35°	392.5	393.4	394.1	393.1
37.5°	382.2	382.9	383.8	384.8
40°	370.1	372.3	373.0	374.6
42.5°	358.6	361.1	363.0	363.0
45°	346.7	349.3	351.5	351.5
47.5°	334.5	338.1	340.3	340.6
50°	322.1	326.5	328.8	330.4
52.5°	309.9	314.4	317.6	318.2
55°	295.5	301.9	305.4	306.7
57.5°	282.7	288.4	292.3	293.2
60°	267.3	273.7	278.8	279.8
62.5°	251.6	258.4	262.8	265.7
65°	233.1	239.8	244.3	245.2
67.5°	213.5	220.6	223.5	225.4
70°	192.7	198.2	201.4	203.0
72.5°	169.0	174.8	178.6	178.6
75°	144.7	149.8	151.7	151.7
77.5°	119.4	122.3	124.9	125.5
80°	95.1	96.7	98.6	98.6
82.5°	70.1	71.4	73.3	73.0
85°	45.5	48.3	48.0	47.4
87.5°	25.6	25.9	26.9	27.5
90°	0.0	0.0	0.0	0.0

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