

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: P243597

Luminaire Tested: **S124RDR-H575D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243597
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H575D830-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2082.4 lumens
Efficiency: N/A
Efficacy: 121.1 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

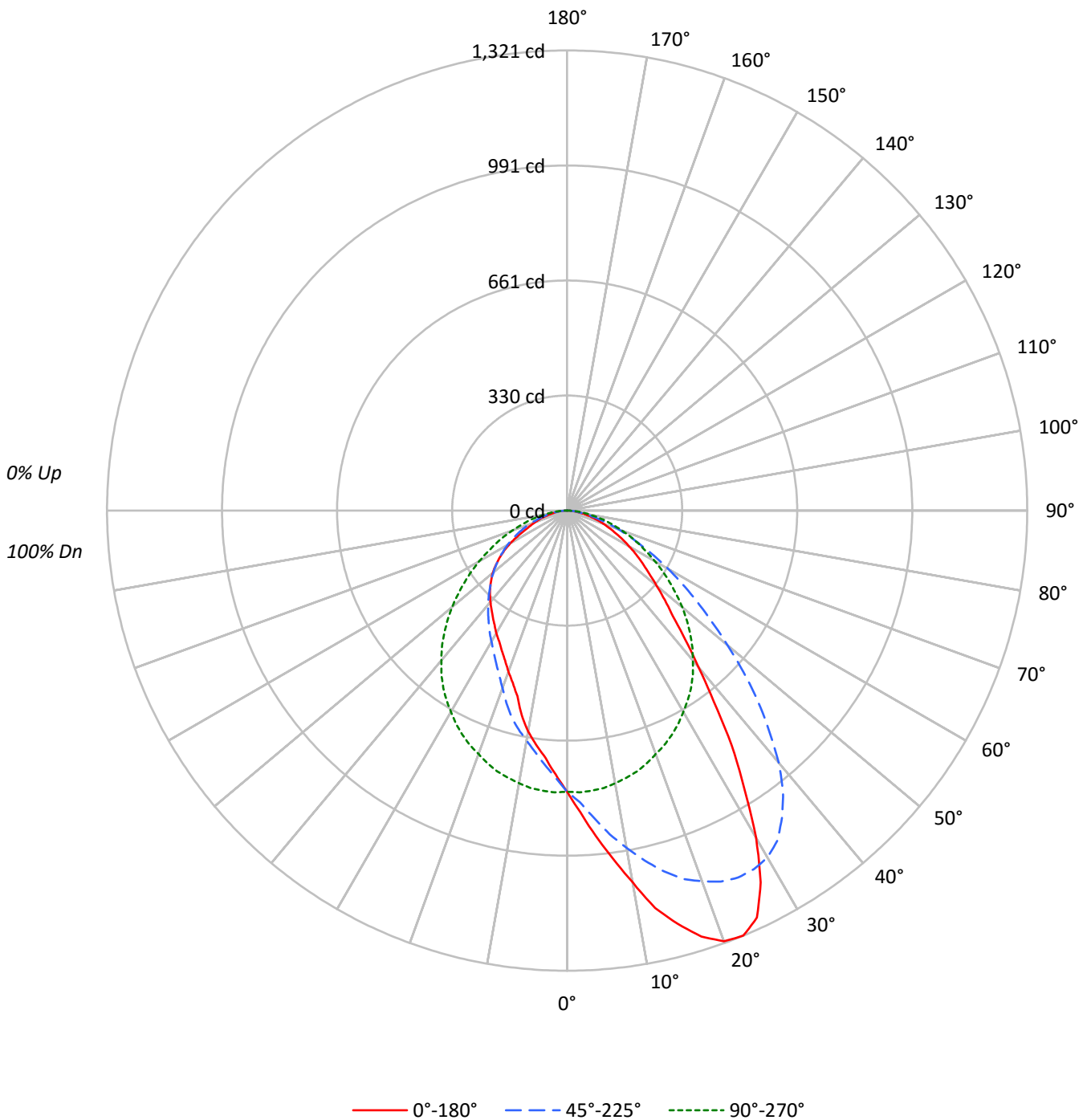
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	55
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44	42
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40	38
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7172	7172	7172
5°	8354	7202	6358
10°	9783	7172	5814
15°	11305	7136	5077
20°	12447	7035	4654
25°	12646	6970	4351
30°	11132	6846	4173
35°	8933	6730	4037
40°	6795	6515	3974
45°	5395	6275	3926
50°	4631	5966	3858
55°	4090	5581	3671
60°	3664	5179	3362
65°	3224	4785	2829
70°	2874	4343	2547
75°	2504	3950	2267
80°	2124	3394	2089
85°	1856	2917	2111



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.3	3.8
10°-20°	237.4	11.4
20°-30°	370.5	17.8
30°-40°	413.2	19.8
40°-50°	371.4	17.8
50°-60°	293.5	14.1
60°-70°	194.9	9.4
70°-80°	97.7	4.7
80°-90°	25.5	1.2
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°	686.2	33.0
0°-40°	1099.4	52.8
0°-60°	1764.3	84.7
0°-90°	2082.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2082.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	807	807	807	807	807	
5°	936	886	807	733	713	94
15°	1228	1072	775	614	552	349
25°	1289	1162	711	483	444	577
35°	823	1076	620	392	372	511
45°	429	775	499	314	312	340
55°	264	455	360	238	237	238
65°	153	233	228	156	134	153
75°	73	92	115	77	66	78
85°	18	20	29	21	21	21
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°	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8
2.5°	866.5	863.4	863.1	859.0	858.7	854.6	853.3	849.9	843.0	837.6	837.9
5°	936.3	933.8	933.5	929.4	928.1	923.1	915.2	905.8	894.8	885.7	879.7
7.5°	1007.9	1012.3	1007.6	1007.6	998.5	992.5	977.1	969.3	950.4	937.2	923.4
10°	1083.9	1088.0	1086.1	1082.4	1070.4	1058.2	1042.2	1026.8	1003.8	983.1	969.3
12.5°	1168.8	1156.5	1164.4	1152.8	1143.0	1123.5	1108.1	1077.3	1059.1	1029.0	1001.9
15°	1228.5	1223.8	1223.4	1215.6	1204.9	1183.5	1166.9	1134.8	1103.7	1072.0	1041.5
17.5°	1281.9	1282.5	1278.1	1265.5	1251.7	1231.0	1208.4	1179.8	1144.3	1109.1	1073.0
20°	1315.8	1316.1	1313.0	1306.4	1291.3	1272.5	1249.2	1211.8	1171.6	1132.6	1096.5
22.5°	1320.8	1321.8	1320.8	1316.8	1306.4	1291.0	1269.6	1237.9	1197.4	1152.8	1109.7
25°	1289.4	1292.6	1292.9	1298.5	1293.2	1287.2	1271.5	1244.8	1207.4	1162.2	1115.4
27.5°	1203.3	1212.1	1220.3	1230.4	1239.5	1247.6	1248.9	1234.8	1202.7	1160.6	1116.0
30°	1084.6	1094.9	1111.3	1122.0	1150.2	1168.1	1192.3	1197.7	1182.3	1149.9	1106.9
32.5°	946.3	957.3	963.6	998.8	1039.3	1068.6	1108.8	1132.6	1138.6	1123.2	1088.0
35°	823.2	825.1	829.8	869.7	909.9	954.2	1004.1	1045.6	1073.9	1075.5	1058.2
37.5°	691.2	693.4	711.9	742.4	777.3	826.0	883.5	942.6	994.4	1018.3	1013.3
40°	585.6	585.0	604.8	631.2	665.1	715.7	775.1	839.5	894.8	944.8	956.7
42.5°	500.2	502.4	519.4	534.7	567.4	602.9	666.4	733.3	804.3	859.0	895.4
45°	429.2	434.8	446.5	460.9	485.4	518.1	569.9	636.5	709.1	774.8	818.5
47.5°	380.2	381.7	387.7	405.6	422.0	448.3	492.6	549.2	613.6	687.1	744.6
50°	334.9	338.7	340.9	351.6	367.6	392.7	427.0	469.1	532.9	600.4	672.4
52.5°	296.0	298.2	302.2	312.0	324.6	342.2	369.2	406.2	459.3	521.9	589.7
55°	263.9	264.2	268.3	275.2	285.0	298.5	324.2	350.9	398.1	454.9	516.5
57.5°	235.0	233.1	236.9	241.0	250.4	262.0	278.7	306.0	342.8	391.2	446.8
60°	206.1	207.7	207.4	212.1	217.1	228.7	242.9	260.8	290.9	335.2	382.4
62.5°	179.1	178.8	181.9	184.7	188.2	197.6	209.2	224.0	247.6	280.3	325.8
65°	153.3	154.0	156.5	158.7	162.4	168.4	177.2	189.1	208.0	233.1	271.5
67.5°	130.1	132.3	133.5	134.2	137.6	142.0	149.6	159.3	172.2	192.3	224.3
70°	110.6	111.2	111.9	114.1	115.6	118.1	123.8	129.1	140.8	155.5	178.8
72.5°	92.4	91.7	93.6	94.3	94.9	97.4	100.9	103.7	111.2	123.8	138.2
75°	72.9	73.2	73.5	74.5	77.0	77.3	78.9	82.0	87.3	92.4	102.1
77.5°	54.7	55.6	55.3	56.2	57.2	58.1	58.8	61.6	65.4	69.4	74.1
80°	41.5	41.5	41.5	42.1	41.5	43.7	43.7	44.6	45.6	47.4	50.9
82.5°	28.3	28.9	29.2	29.5	29.8	29.8	30.2	30.8	32.0	32.7	33.6
85°	18.2	17.6	17.9	17.9	17.9	17.9	18.5	19.2	19.2	19.5	20.4
87.5°	8.2	8.2	8.2	8.2	7.9	8.2	8.5	8.5	8.8	8.8	9.4
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°	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8
2.5°	836.1	835.1	830.4	825.4	820.7	815.9	814.4	809.7	804.0	799.0	793.3
5°	873.4	865.9	855.5	844.9	833.9	823.8	815.9	807.1	797.1	785.2	775.7
7.5°	911.1	897.3	880.4	864.6	845.8	830.7	815.6	803.1	788.6	771.6	758.8
10°	947.9	925.0	904.2	879.4	855.5	834.8	815.6	794.6	775.4	757.2	739.3
12.5°	977.1	954.2	924.3	893.9	863.1	836.1	810.3	785.5	761.6	739.6	719.8
15°	1010.4	977.4	940.7	907.1	865.0	831.7	802.1	775.4	748.1	721.4	699.7
17.5°	1034.9	996.0	950.4	911.8	871.2	829.8	794.3	760.6	729.2	701.3	679.0
20°	1053.8	1007.6	962.0	913.0	864.6	822.2	782.3	743.7	711.9	681.5	657.9
22.5°	1062.0	1013.3	962.7	909.6	858.0	810.0	768.5	728.6	692.8	661.4	634.0
25°	1065.4	1012.0	959.5	899.2	847.0	798.0	751.9	710.7	673.9	638.4	611.4
27.5°	1062.6	1005.4	945.1	888.2	829.1	781.1	732.1	690.3	651.9	617.7	587.5
30°	1055.0	990.3	930.3	866.5	809.7	759.1	711.3	667.0	628.4	593.5	563.7
32.5°	1035.6	973.4	905.2	843.0	781.7	731.7	688.4	644.7	605.4	569.0	540.1
35°	1011.4	950.4	879.1	814.1	753.4	702.8	659.2	620.2	581.6	542.9	513.4
37.5°	980.9	919.0	850.2	780.1	720.7	671.7	631.8	592.6	554.2	518.7	485.7
40°	939.7	883.2	814.1	743.7	684.0	636.9	597.6	561.5	527.5	492.6	457.1
42.5°	888.5	845.5	774.2	704.7	646.3	599.5	564.6	532.2	499.6	463.7	431.7
45°	833.9	797.1	732.4	662.3	606.7	561.1	527.8	499.2	468.5	436.7	403.1
47.5°	772.3	744.9	689.0	619.6	561.1	522.2	491.4	465.3	437.3	409.1	376.4
50°	702.8	686.2	638.4	575.3	519.7	480.1	454.6	431.4	407.5	379.2	351.3
52.5°	633.4	630.3	585.6	530.0	477.6	440.8	416.0	394.6	375.1	348.4	324.9
55°	560.5	569.9	532.9	481.6	434.8	399.3	377.3	360.1	343.1	320.5	297.8
57.5°	495.8	506.5	481.0	433.9	390.2	360.1	341.2	325.5	310.7	290.0	274.9
60°	424.2	443.6	430.1	387.1	348.4	321.4	303.8	291.3	279.0	261.1	247.9
62.5°	367.6	381.1	373.3	341.2	307.0	285.0	269.3	257.6	247.9	234.1	221.2
65°	307.0	323.9	319.8	298.8	268.6	248.5	236.6	227.5	217.4	206.4	195.7
67.5°	252.3	269.9	268.9	254.5	232.2	215.5	204.2	197.6	189.5	178.8	172.2
70°	203.0	219.3	219.9	212.7	197.0	181.3	173.1	167.1	160.9	153.0	148.3
72.5°	157.7	172.5	175.0	171.5	161.5	151.1	143.9	139.8	134.5	127.9	123.8
75°	117.8	128.5	134.5	132.9	128.8	121.9	117.8	115.0	109.7	104.9	101.5
77.5°	83.9	92.4	98.3	100.9	99.0	96.1	92.4	90.2	84.5	82.3	80.4
80°	56.2	63.8	69.1	70.7	71.6	71.0	67.6	66.3	63.5	62.5	60.6
82.5°	34.6	38.6	42.4	46.5	48.4	48.4	46.5	46.8	44.3	43.0	42.4
85°	21.1	22.0	22.6	25.8	28.3	29.2	28.3	28.6	27.6	26.7	25.8
87.5°	9.7	9.7	10.1	10.7	11.3	13.2	13.8	14.8	13.5	13.5	11.3
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°	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8
2.5°	789.9	785.8	782.6	777.6	773.5	766.9	764.7	764.7	766.0	764.4	766.0
5°	769.1	761.6	753.4	746.2	738.3	732.7	727.0	725.8	725.1	721.4	721.7
7.5°	748.4	738.3	728.0	718.5	708.8	700.0	694.0	691.5	689.3	686.8	684.0
10°	726.1	714.5	702.2	691.5	682.1	670.2	664.2	662.3	656.0	654.8	650.4
12.5°	702.5	690.6	678.3	664.5	655.4	643.8	635.0	630.9	624.9	620.5	613.9
15°	684.0	668.9	652.6	639.1	627.1	614.2	602.3	594.4	586.6	574.3	568.4
17.5°	661.1	643.8	629.6	615.2	597.9	579.0	564.9	553.3	544.8	534.7	528.8
20°	636.2	620.2	602.6	582.2	564.0	542.6	529.7	520.0	513.4	507.4	504.3
22.5°	614.2	595.7	571.5	552.0	526.6	509.6	499.2	493.0	486.7	480.4	477.3
25°	590.4	568.7	539.1	515.3	496.1	482.9	472.9	466.9	460.3	456.5	451.8
27.5°	566.8	538.8	509.3	487.6	472.5	457.1	448.7	443.9	438.9	433.6	429.8
30°	538.2	506.5	482.0	462.2	447.1	434.2	427.9	421.0	416.6	413.5	411.3
32.5°	508.4	477.9	455.6	438.6	423.8	414.1	406.2	401.8	398.1	394.6	392.1
35°	480.4	450.9	432.0	415.7	403.4	392.4	386.5	382.4	379.2	376.4	375.1
37.5°	452.7	427.6	407.2	394.3	381.4	372.6	367.0	363.2	361.3	358.5	358.8
40°	425.4	402.8	386.5	371.7	359.7	352.2	347.8	346.2	343.4	342.5	343.4
42.5°	400.9	380.2	364.5	350.6	340.3	333.0	329.6	327.4	326.4	326.1	326.4
45°	377.0	357.5	342.5	331.2	320.5	313.9	311.0	309.5	308.5	310.1	310.4
47.5°	353.1	335.6	322.0	308.8	300.0	295.3	292.5	291.3	292.2	292.8	295.0
50°	329.6	313.2	299.1	287.5	280.6	276.2	275.2	273.0	274.6	275.5	277.1
52.5°	305.7	290.9	278.4	267.4	260.1	257.3	255.1	254.2	256.4	256.4	257.9
55°	281.5	268.6	257.0	247.0	241.3	237.8	236.3	235.0	236.3	236.6	236.3
57.5°	258.9	246.6	234.4	225.9	221.2	217.4	215.8	215.2	214.9	216.2	215.8
60°	235.0	223.4	213.6	204.9	200.1	197.9	194.5	195.1	195.1	195.1	192.0
62.5°	211.1	199.5	191.0	185.1	179.4	175.6	175.0	174.1	172.2	171.9	167.8
65°	186.6	177.8	170.6	164.6	159.0	155.8	154.9	152.1	149.9	145.8	143.0
67.5°	164.0	157.7	149.2	144.2	139.5	135.7	132.3	130.1	125.7	121.6	119.1
70°	141.4	134.8	129.1	123.8	119.1	115.6	111.5	107.5	104.6	102.1	100.2
72.5°	118.8	113.1	108.4	103.4	98.3	94.9	91.7	88.6	87.3	86.1	85.1
75°	97.7	92.4	88.0	83.9	81.1	77.0	75.4	74.1	72.9	71.3	69.4
77.5°	77.3	73.2	69.7	66.3	63.8	61.6	60.3	56.6	53.4	52.8	52.2
80°	57.5	54.4	52.2	49.6	46.8	43.7	42.7	41.5	40.8	40.8	41.2
82.5°	40.2	38.3	35.8	33.6	32.7	31.4	31.4	31.1	30.8	31.1	31.1
85°	24.5	22.0	21.4	21.1	21.4	21.4	21.4	21.4	21.1	21.4	20.7
87.5°	10.7	11.6	11.9	11.0	11.3	10.7	11.0	11.0	11.0	11.3	11.0
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°	806.8	806.8	806.8	806.8
2.5°	764.1	764.1	761.0	758.4
5°	721.1	717.0	716.3	712.6
7.5°	680.8	680.2	678.6	678.6
10°	648.8	646.6	644.4	644.1
12.5°	603.6	606.7	602.9	602.0
15°	564.0	561.5	558.3	551.7
17.5°	527.2	522.5	521.2	518.4
20°	498.3	494.8	493.6	492.0
22.5°	471.0	470.3	466.6	465.6
25°	450.9	447.7	445.2	443.6
27.5°	428.9	426.7	425.4	422.9
30°	408.8	408.1	406.6	406.6
32.5°	390.5	388.7	388.7	388.3
35°	373.9	374.5	372.6	372.0
37.5°	358.2	357.2	357.5	356.9
40°	342.8	342.2	342.2	342.5
42.5°	327.1	327.4	328.0	328.0
45°	311.4	311.7	312.3	312.3
47.5°	296.6	296.0	296.6	296.0
50°	277.7	279.6	279.3	279.0
52.5°	258.6	257.9	259.2	258.9
55°	237.8	236.9	238.2	236.9
57.5°	214.6	214.9	214.9	214.3
60°	191.3	190.4	189.1	189.1
62.5°	164.3	161.5	159.6	160.9
65°	138.2	136.0	135.4	134.5
67.5°	117.5	115.0	114.1	113.7
70°	99.6	98.3	98.0	98.0
72.5°	84.5	84.5	83.6	82.9
75°	68.8	67.6	66.0	66.0
77.5°	51.5	51.2	50.9	50.9
80°	40.2	40.2	40.5	40.8
82.5°	30.2	30.5	30.8	30.8
85°	20.4	20.4	20.7	20.7
87.5°	11.0	11.0	11.0	10.7
90°	0.0	0.0	0.0	0.0

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