

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: P333936

Luminaire Tested: **S123DS-S560D930-4F0-1E-UDD-A**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333936
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DS-S560D930-4F0-1E-UDD-A
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER
PENDANT/SURFACE/WALL MOUNT, 560 LUMENS PER FOOT
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1823.4 lumens
Efficiency: N/A
Efficacy: 97.0 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 4' x L: 0.5' x H: 0')
CIE Type: Direct

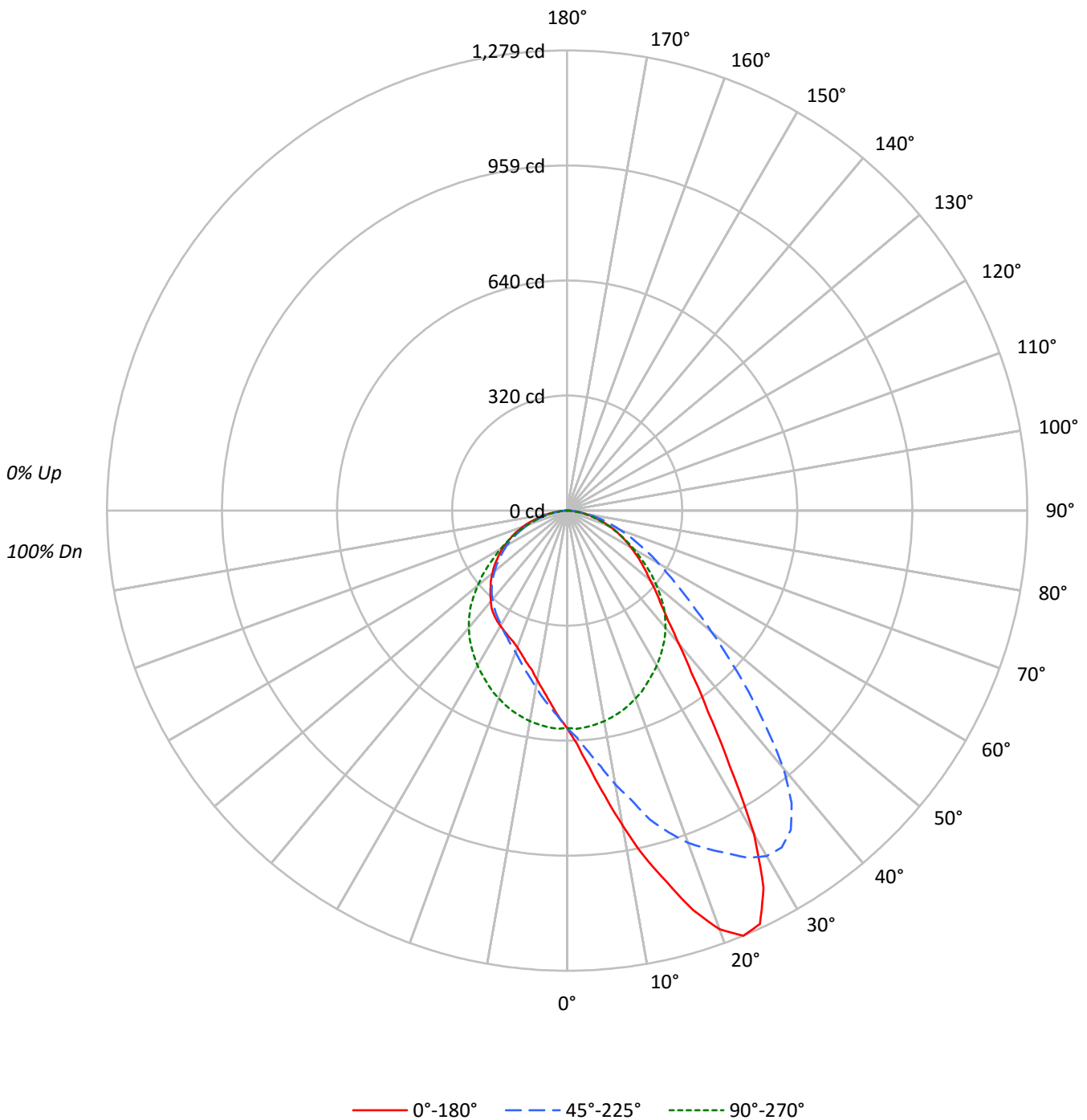
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85				85
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72				72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62				62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53				53
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47				47
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41				41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36				36
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33				33
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29				29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27				27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	3251	3251	3251
5°	3877	3265	2894
10°	4853	3249	2614
15°	5952	3223	2433
20°	7091	3182	2317
25°	7529	3132	2291
30°	6454	3096	2302
35°	4488	3044	2327
40°	3381	2984	2320
45°	2807	2894	2290
50°	2514	2710	2269
55°	2350	2513	2241
60°	2206	2306	2218
65°	2072	2103	2147
70°	1943	1869	2046
75°	1740	1637	1874
80°	1525	1342	1615
85°	1192	976	1087



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.4	3.3
10°-20°	190.8	10.5
20°-30°	321.1	17.6
30°-40°	362.9	19.9
40°-50°	325.0	17.8
50°-60°	262.4	14.4
60°-70°	182.8	10.0
70°-80°	95.9	5.3
80°-90°	23.0	1.3
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°	571.3	31.3
0°-40°	934.2	51.2
0°-60°	1521.6	83.5
0°-90°	1823.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1823.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	604	604	604	604	604	
5°	718	673	604	547	536	74
15°	1068	889	578	456	437	308
25°	1268	1051	527	392	386	561
35°	683	1084	463	346	354	441
45°	369	714	380	296	301	291
55°	250	388	268	229	239	225
65°	163	218	165	155	169	162
75°	84	103	79	78	90	89
85°	19	22	16	16	18	23
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°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1
2.5°	650.4	649.8	648.3	649.5	647.1	643.9	643.6	640.7	632.2	631.6	629.3
5°	717.7	715.3	715.0	714.8	710.7	705.1	694.6	693.7	679.6	672.6	664.1
7.5°	799.0	798.2	795.8	793.2	779.4	772.7	762.8	749.9	733.5	717.7	707.7
10°	888.0	897.7	885.7	877.5	869.9	855.5	838.9	818.1	797.3	773.0	754.6
12.5°	983.4	987.0	987.0	979.3	966.5	942.8	910.0	886.6	867.8	823.3	807.5
15°	1068.3	1086.2	1074.8	1048.4	1049.0	1028.2	989.6	947.1	924.6	889.2	840.9
17.5°	1164.3	1167.5	1164.0	1139.4	1127.4	1097.3	1062.5	1023.0	980.5	937.5	887.4
20°	1238.1	1236.3	1226.1	1214.7	1189.5	1167.3	1128.3	1083.0	1024.4	982.3	926.4
22.5°	1279.1	1275.8	1272.3	1263.3	1243.4	1219.1	1185.1	1134.5	1079.4	1017.4	950.7
25°	1267.9	1271.7	1272.3	1269.7	1262.4	1248.0	1220.5	1181.0	1125.4	1050.8	983.4
27.5°	1181.9	1191.5	1203.8	1212.0	1225.2	1234.0	1225.2	1200.3	1154.7	1087.9	1005.1
30°	1038.5	1026.8	1055.7	1092.3	1117.2	1161.1	1185.7	1187.2	1164.0	1108.7	1028.5
32.5°	839.4	858.5	867.2	914.4	976.1	1026.8	1081.8	1130.7	1142.1	1109.9	1042.3
35°	683.1	699.2	722.7	746.1	804.6	855.0	941.0	1015.9	1075.6	1083.5	1040.5
37.5°	567.8	577.2	591.5	616.4	656.5	718.8	787.0	884.5	966.8	1024.7	1018.9
40°	481.2	483.5	500.2	518.1	549.1	598.3	658.3	742.0	845.6	935.4	972.9
42.5°	416.2	422.1	426.7	443.7	466.8	500.8	555.5	621.1	713.9	820.7	903.0
45°	368.8	374.6	379.0	390.5	408.0	432.9	471.8	535.0	607.3	714.2	812.8
47.5°	336.0	335.4	339.2	348.3	360.9	380.8	409.5	451.6	521.0	610.3	713.6
50°	300.3	305.0	306.2	312.9	322.3	336.0	358.8	393.4	447.8	523.9	617.0
52.5°	275.1	275.7	279.5	283.9	291.8	301.8	320.8	346.0	385.8	447.8	531.5
55°	250.5	250.5	253.8	257.6	262.3	271.9	285.1	305.0	337.5	387.8	458.6
57.5°	227.7	228.9	231.8	232.7	236.8	243.5	254.9	270.7	295.6	336.3	394.8
60°	204.9	207.5	207.2	209.6	213.1	218.1	227.4	239.7	261.4	292.4	339.8
62.5°	185.0	184.1	184.1	187.0	190.5	195.2	200.5	210.7	228.3	254.9	293.6
65°	162.7	162.2	164.2	166.0	167.1	170.6	175.3	184.7	197.0	217.5	248.8
67.5°	143.4	141.7	143.1	143.7	145.8	148.7	153.4	159.2	169.2	186.4	211.6
70°	123.5	122.1	121.8	122.3	124.1	126.1	129.4	134.9	144.0	157.2	174.4
72.5°	103.0	102.1	102.1	103.6	104.2	105.4	107.4	112.4	119.1	128.2	144.0
75°	83.7	83.7	83.7	84.0	84.9	86.1	87.8	90.4	96.0	103.0	113.9
77.5°	66.1	66.4	65.9	65.6	67.0	67.6	67.9	70.8	74.1	79.3	87.8
80°	49.2	47.7	48.3	49.2	49.8	50.1	50.9	51.5	54.1	56.8	62.3
82.5°	33.4	32.2	32.2	33.7	33.7	34.0	34.8	35.7	36.3	38.6	41.0
85°	19.3	19.3	19.6	19.6	19.9	19.6	20.5	20.8	20.8	22.2	24.0
87.5°	8.8	8.2	8.5	8.8	8.5	8.8	9.1	9.4	9.7	10.0	10.2
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°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1
2.5°	627.5	625.2	622.8	618.7	615.2	610.3	608.8	607.0	601.8	597.1	593.6
5°	660.9	653.9	643.6	634.3	626.7	616.4	610.6	604.4	595.6	587.7	581.3
7.5°	692.8	680.5	666.2	650.7	635.7	621.4	610.0	599.7	588.3	577.2	568.7
10°	732.3	712.4	690.2	666.2	645.7	625.8	609.1	594.5	578.7	564.9	553.5
12.5°	777.4	745.5	712.7	682.3	657.1	627.5	606.5	586.8	568.4	551.1	538.0
15°	811.0	773.6	737.3	697.2	660.3	625.8	601.8	578.4	557.6	540.6	524.2
17.5°	844.4	803.4	757.2	708.9	665.6	625.8	593.0	567.8	542.4	521.9	506.1
20°	871.9	823.6	769.5	718.8	669.7	624.0	587.1	555.5	527.4	505.5	487.0
22.5°	895.6	837.1	780.6	725.6	669.4	619.3	576.3	543.5	512.5	491.1	471.2
25°	910.6	843.0	786.8	723.2	662.1	611.1	564.3	527.4	497.0	471.8	451.6
27.5°	924.6	842.1	778.6	710.1	653.3	602.7	552.3	512.8	480.9	453.7	432.9
30°	938.7	843.5	764.2	696.6	639.2	586.6	538.0	498.2	464.2	436.4	417.1
32.5°	947.4	842.7	751.0	677.9	617.0	571.9	522.5	480.9	445.8	418.5	400.1
35°	949.8	837.7	735.5	650.7	592.7	547.3	506.1	463.3	426.7	401.3	380.2
37.5°	944.8	828.6	718.6	626.1	563.4	518.4	482.4	445.8	410.6	382.3	363.8
40°	928.7	819.8	698.1	599.7	533.0	490.0	460.4	424.7	390.2	363.5	346.5
42.5°	898.0	802.0	675.5	570.5	501.4	458.4	431.7	403.3	371.1	346.5	329.6
45°	844.1	774.5	653.0	541.2	470.4	425.9	401.9	380.2	350.6	326.4	311.7
47.5°	775.3	737.3	620.5	510.5	437.9	394.8	369.7	351.8	328.7	309.1	294.7
50°	703.0	689.3	587.4	478.8	405.4	363.5	339.5	323.7	308.2	288.6	275.7
52.5°	619.6	633.7	548.8	446.1	372.3	331.3	309.1	297.4	283.6	268.4	257.6
55°	542.4	573.1	503.1	408.6	339.5	300.3	278.9	267.8	259.6	247.6	238.0
57.5°	467.4	506.6	455.7	370.8	307.3	273.1	252.0	239.4	234.2	227.4	219.5
60°	402.2	440.8	404.2	332.8	274.8	242.6	224.5	214.2	209.0	204.6	198.2
62.5°	343.9	383.1	353.9	294.2	242.9	213.7	198.4	188.5	184.7	182.9	177.7
65°	291.5	325.2	304.7	253.8	212.8	186.4	172.1	165.1	161.3	160.4	156.9
67.5°	246.2	272.2	256.4	218.1	184.7	160.7	148.1	142.0	138.7	138.4	135.5
70°	201.7	225.7	214.2	180.3	152.5	134.6	124.1	118.8	117.1	116.8	115.3
72.5°	167.1	182.1	173.6	146.6	126.7	110.9	103.9	98.3	96.3	96.9	96.0
75°	128.8	141.4	136.1	116.5	99.2	88.7	82.2	78.7	77.0	77.9	76.7
77.5°	98.3	107.1	101.9	86.9	75.8	67.9	62.9	60.6	58.8	58.8	58.2
80°	70.0	74.6	72.0	63.8	55.0	48.6	44.8	43.3	42.4	42.1	41.9
82.5°	44.8	48.6	45.4	40.4	35.1	31.9	30.1	28.1	27.5	27.8	27.5
85°	25.2	26.6	25.5	22.0	19.6	17.9	16.7	15.8	15.2	15.5	14.9
87.5°	10.8	11.1	10.2	9.1	8.5	7.6	7.6	7.0	6.4	6.4	6.1
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°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1
2.5°	591.5	589.5	586.6	582.2	578.7	573.1	573.1	574.0	574.0	573.7	573.1
5°	576.0	571.6	566.4	560.2	553.8	547.3	546.2	543.8	542.1	540.9	539.4
7.5°	560.2	552.9	545.6	537.1	529.8	523.6	519.2	515.4	513.1	510.5	508.4
10°	544.1	534.5	525.4	516.3	506.4	498.5	493.5	490.0	487.3	485.0	483.8
12.5°	525.1	513.7	503.4	494.9	483.8	475.6	470.9	469.8	466.5	461.0	458.1
15°	506.6	496.4	484.4	471.2	466.0	456.0	450.5	447.8	446.1	442.3	441.1
17.5°	491.4	477.7	463.9	454.3	444.6	436.7	433.5	430.0	427.6	424.1	423.2
20°	472.4	460.4	448.1	437.6	427.3	418.5	415.9	413.6	411.2	409.8	408.6
22.5°	453.1	441.1	431.4	421.8	410.6	405.7	402.7	400.1	398.6	397.8	396.6
25°	435.2	424.7	413.3	404.5	395.7	391.9	390.2	388.7	387.5	386.1	385.8
27.5°	419.4	407.7	398.1	389.6	383.1	379.9	377.9	377.0	377.0	377.6	377.9
30°	401.3	390.7	383.1	376.1	370.3	367.3	367.0	367.0	368.2	368.5	369.1
32.5°	384.6	376.4	368.8	362.1	358.0	356.2	357.7	357.7	358.5	359.4	360.6
35°	368.5	360.9	355.0	349.2	345.4	346.3	346.8	347.4	348.9	350.6	351.8
37.5°	353.3	346.3	340.1	335.4	333.1	334.8	336.3	337.5	339.2	340.7	341.9
40°	336.6	331.6	325.8	321.7	322.3	323.1	324.3	325.8	327.2	328.1	329.3
42.5°	321.1	315.8	311.7	308.5	309.4	310.5	311.1	311.7	313.5	315.2	315.8
45°	305.3	301.2	297.1	295.0	295.6	296.2	296.8	297.7	299.1	300.3	300.6
47.5°	287.4	284.5	281.9	279.5	280.7	280.4	281.3	283.0	283.6	284.2	286.0
50°	270.4	267.8	264.6	264.0	264.0	264.0	264.3	266.6	266.6	267.8	269.0
52.5°	251.7	250.3	248.5	247.3	246.7	246.7	248.2	249.1	249.7	251.4	252.6
55°	233.3	231.5	229.8	228.9	228.3	228.9	231.2	231.8	233.3	234.2	235.0
57.5°	214.0	212.8	211.3	210.7	210.7	211.0	212.8	214.2	214.5	217.5	218.6
60°	194.9	192.9	191.7	191.7	191.1	193.8	193.2	196.1	196.7	198.4	200.5
62.5°	175.3	172.4	172.1	172.1	173.3	173.6	174.7	175.6	177.4	179.7	181.2
65°	154.0	152.5	154.5	154.2	153.7	155.4	155.4	156.9	158.6	160.7	163.9
67.5°	134.1	132.9	133.5	133.2	134.1	135.2	136.1	137.3	139.3	141.7	143.7
70°	113.9	114.7	113.3	114.4	115.3	115.6	116.2	118.0	120.3	121.8	124.1
72.5°	94.2	94.0	94.5	94.8	95.7	96.3	96.9	98.9	101.6	102.7	104.5
75°	75.5	75.2	76.1	76.1	77.6	78.1	78.7	79.6	82.0	83.7	85.2
77.5°	58.5	58.8	58.5	59.7	59.1	59.4	61.2	62.1	62.3	66.1	66.7
80°	41.6	42.1	42.4	42.7	43.0	42.4	44.5	45.4	45.4	47.4	48.9
82.5°	26.9	27.2	28.1	28.4	28.4	29.3	29.0	29.6	30.4	31.0	33.1
85°	14.9	15.8	16.1	15.8	16.1	15.5	16.4	16.7	17.0	17.0	17.0
87.5°	5.9	6.1	5.9	6.1	5.9	6.1	6.1	5.6	5.6	6.4	5.3
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):

	165°	170°	175°	180°
0°	604.1	604.1	604.1	604.1
2.5°	571.0	570.7	572.8	571.3
5°	537.7	538.6	535.6	535.6
7.5°	507.5	506.4	506.6	504.6
10°	480.3	478.6	478.0	478.3
12.5°	457.8	457.8	453.1	453.1
15°	441.1	435.5	434.9	436.7
17.5°	422.6	419.4	419.7	419.1
20°	408.6	406.8	406.5	404.5
22.5°	395.7	395.4	395.7	393.4
25°	385.5	386.9	385.8	385.8
27.5°	378.4	378.4	377.6	377.6
30°	370.3	370.0	370.5	370.5
32.5°	362.1	362.6	362.6	362.9
35°	353.6	353.9	354.7	354.2
37.5°	342.4	343.9	343.6	344.2
40°	329.6	330.4	330.2	330.2
42.5°	316.4	317.0	316.1	315.5
45°	301.8	301.2	302.1	300.9
47.5°	285.7	286.0	286.3	287.4
50°	269.6	271.3	271.3	271.0
52.5°	253.8	254.3	255.8	255.8
55°	237.4	238.0	238.5	238.8
57.5°	220.7	220.4	221.6	221.9
60°	202.8	202.8	205.2	206.1
62.5°	183.8	185.0	187.3	185.6
65°	165.4	167.7	167.4	168.6
67.5°	146.1	147.5	149.9	149.9
70°	126.4	127.9	129.1	130.0
72.5°	107.4	108.0	111.2	109.5
75°	87.2	89.3	91.0	90.1
77.5°	67.9	70.5	71.1	70.2
80°	50.9	50.6	52.4	52.1
82.5°	34.0	33.7	34.2	34.5
85°	18.1	19.0	17.9	17.6
87.5°	5.3	5.3	5.0	4.7
90°	0.0	0.0	0.0	0.0

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