

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: P333920

Luminaire Tested: **S123DS-S340D835-4F0-1E-UDD-A**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333920  
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-S340D835-4F0-1E-UDD-A  
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 340 LUMENS PER FOOT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1360.0 lumens  
Efficiency: N/A  
Efficacy: 117.2 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

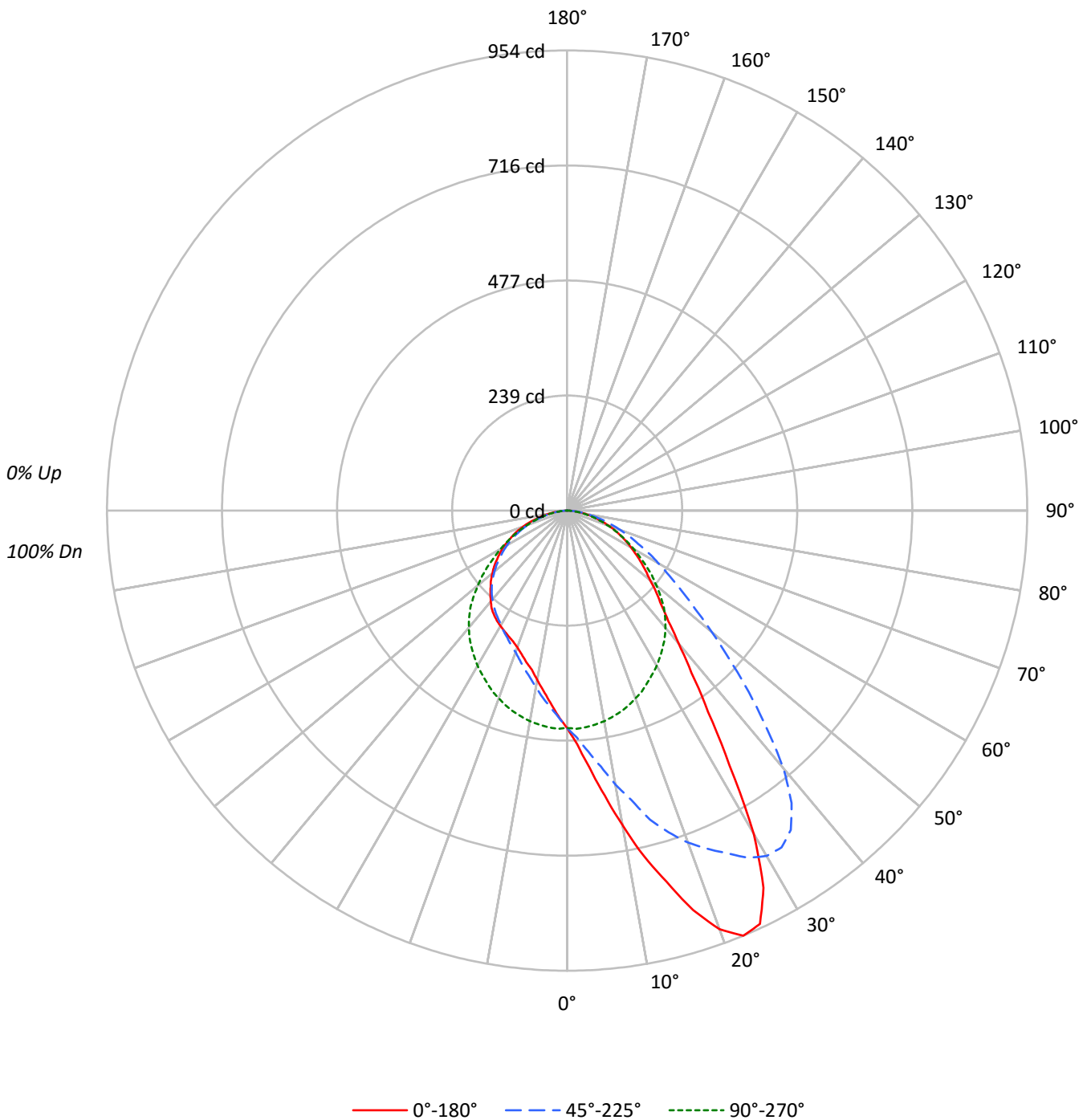
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	90°	180°
0°	2425	2425	2425
5°	2892	2435	2158
10°	3619	2423	1949
15°	4440	2404	1815
20°	5289	2373	1728
25°	5616	2336	1708
30°	4813	2309	1718
35°	3347	2271	1735
40°	2522	2226	1730
45°	2094	2159	1708
50°	1876	2021	1692
55°	1754	1874	1671
60°	1645	1720	1654
65°	1546	1568	1601
70°	1449	1394	1525
75°	1298	1221	1397
80°	1137	1001	1206
85°	889	729	809



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.3	3.3
10°-20°	142.3	10.5
20°-30°	239.5	17.6
30°-40°	270.7	19.9
40°-50°	242.4	17.8
50°-60°	195.7	14.4
60°-70°	136.4	10.0
70°-80°	71.6	5.3
80°-90°	17.1	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°	426.1	31.3
0°-40°	696.8	51.2
0°-60°	1134.9	83.5
0°-90°	1360.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1360.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	451	451	451	451	451	
5°	535	502	451	408	400	55
15°	797	663	431	340	326	230
25°	946	784	393	292	288	418
35°	510	808	346	258	264	329
45°	275	533	284	221	224	217
55°	187	289	200	171	178	168
65°	121	162	123	116	126	121
75°	62	77	59	58	67	67
85°	14	17	12	12	13	17
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°	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6
2.5°	485.1	484.6	483.5	484.4	482.7	480.3	480.0	477.9	471.5	471.1	469.4
5°	535.3	533.5	533.3	533.1	530.0	525.9	518.0	517.4	506.9	501.7	495.3
7.5°	596.0	595.3	593.6	591.6	581.3	576.3	568.9	559.3	547.1	535.3	527.9
10°	662.3	669.5	660.6	654.5	648.8	638.1	625.7	610.2	594.7	576.5	562.8
12.5°	733.5	736.1	736.1	730.4	720.8	703.2	678.7	661.2	647.3	614.1	602.3
15°	796.8	810.1	801.6	782.0	782.4	766.9	738.1	706.4	689.6	663.2	627.2
17.5°	868.4	870.8	868.2	849.9	840.9	818.4	792.4	763.0	731.3	699.2	661.9
20°	923.4	922.1	914.5	906.0	887.2	870.6	841.6	807.7	764.1	732.6	690.9
22.5°	954.0	951.6	949.0	942.2	927.4	909.2	883.9	846.1	805.1	758.8	709.0
25°	945.7	948.5	949.0	947.0	941.5	930.8	910.3	880.9	839.4	783.7	733.5
27.5°	881.5	888.7	897.9	904.0	913.8	920.4	913.8	895.3	861.2	811.4	749.7
30°	774.5	765.8	787.4	814.7	833.3	866.0	884.3	885.4	868.2	826.9	767.1
32.5°	626.1	640.3	646.8	682.0	728.0	765.8	806.8	843.3	851.8	827.8	777.4
35°	509.5	521.5	539.0	556.5	600.1	637.7	701.8	757.7	802.3	808.2	776.1
37.5°	423.5	430.5	441.2	459.7	489.7	536.2	587.0	659.7	721.1	764.3	759.9
40°	358.9	360.6	373.1	386.4	409.5	446.2	491.0	553.4	630.7	697.7	725.6
42.5°	310.4	314.8	318.3	330.9	348.2	373.5	414.3	463.2	532.4	612.1	673.5
45°	275.1	279.4	282.7	291.2	304.3	322.9	351.9	399.1	453.0	532.7	606.2
47.5°	250.6	250.2	253.0	259.8	269.2	284.0	305.4	336.8	388.6	455.2	532.2
50°	224.0	227.5	228.3	233.4	240.4	250.6	267.6	293.4	334.0	390.8	460.2
52.5°	205.2	205.6	208.5	211.8	217.6	225.1	239.3	258.0	287.7	334.0	396.4
55°	186.9	186.9	189.3	192.1	195.6	202.8	212.6	227.5	251.7	289.3	342.1
57.5°	169.8	170.7	172.9	173.6	176.6	181.6	190.1	201.9	220.5	250.8	294.5
60°	152.8	154.8	154.6	156.3	158.9	162.6	169.6	178.8	194.9	218.1	253.4
62.5°	138.0	137.3	137.3	139.5	142.1	145.6	149.5	157.2	170.3	190.1	219.0
65°	121.4	120.9	122.5	123.8	124.7	127.3	130.8	137.7	146.9	162.2	185.6
67.5°	107.0	105.7	106.8	107.2	108.7	110.9	114.4	118.8	126.2	139.1	157.8
70°	92.1	91.0	90.8	91.3	92.6	94.1	96.5	100.6	107.4	117.2	130.1
72.5°	76.8	76.2	76.2	77.3	77.7	78.6	80.1	83.8	88.8	95.6	107.4
75°	62.4	62.4	62.4	62.7	63.3	64.2	65.5	67.5	71.6	76.8	84.9
77.5°	49.3	49.6	49.1	48.9	50.0	50.4	50.6	52.8	55.2	59.2	65.5
80°	36.7	35.6	36.0	36.7	37.1	37.3	38.0	38.4	40.4	42.4	46.5
82.5°	24.9	24.0	24.0	25.1	25.1	25.3	26.0	26.6	27.1	28.8	30.6
85°	14.4	14.4	14.6	14.6	14.8	14.6	15.3	15.5	15.5	16.6	17.9
87.5°	6.5	6.1	6.3	6.5	6.3	6.5	6.8	7.0	7.2	7.4	7.6
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°	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6
2.5°	468.0	466.3	464.5	461.5	458.9	455.2	454.1	452.8	448.8	445.3	442.7
5°	492.9	487.7	480.0	473.1	467.4	459.7	455.4	450.8	444.2	438.4	433.5
7.5°	516.7	507.6	496.9	485.3	474.2	463.5	454.9	447.3	438.8	430.5	424.2
10°	546.2	531.3	514.8	496.9	481.6	466.7	454.3	443.4	431.6	421.3	412.8
12.5°	579.8	556.0	531.6	508.9	490.1	468.0	452.3	437.7	423.9	411.1	401.2
15°	604.9	577.0	549.9	520.0	492.5	466.7	448.8	431.4	415.9	403.2	391.0
17.5°	629.8	599.2	564.7	528.7	496.4	466.7	442.3	423.5	404.5	389.2	377.4
20°	650.3	614.3	573.9	536.2	499.5	465.4	437.9	414.3	393.4	377.0	363.3
22.5°	668.0	624.3	582.2	541.2	499.3	461.9	429.8	405.4	382.2	366.3	351.5
25°	679.1	628.7	586.8	539.4	493.8	455.8	420.9	393.4	370.7	351.9	336.8
27.5°	689.6	628.1	580.7	529.6	487.3	449.5	411.9	382.5	358.7	338.4	322.9
30°	700.1	629.1	570.0	519.6	476.8	437.5	401.2	371.6	346.2	325.5	311.1
32.5°	706.6	628.5	560.2	505.6	460.2	426.6	389.7	358.7	332.5	312.2	298.4
35°	708.4	624.8	548.6	485.3	442.1	408.2	377.4	345.6	318.3	299.3	283.6
37.5°	704.7	618.0	535.9	466.9	420.2	386.6	359.8	332.5	306.3	285.1	271.4
40°	692.7	611.5	520.7	447.3	397.5	365.4	343.4	316.8	291.0	271.1	258.5
42.5°	669.8	598.1	503.8	425.5	374.0	341.9	322.0	300.8	276.8	258.5	245.8
45°	629.6	577.6	487.0	403.6	350.8	317.6	299.7	283.6	261.5	243.4	232.5
47.5°	578.3	549.9	462.8	380.7	326.6	294.5	275.7	262.4	245.2	230.5	219.8
50°	524.4	514.1	438.1	357.1	302.3	271.1	253.2	241.4	229.9	215.2	205.6
52.5°	462.1	472.6	409.3	332.7	277.7	247.1	230.5	221.8	211.5	200.2	192.1
55°	404.5	427.4	375.3	304.8	253.2	224.0	208.0	199.7	193.6	184.7	177.5
57.5°	348.6	377.9	339.9	276.6	229.2	203.7	188.0	178.6	174.6	169.6	163.7
60°	299.9	328.8	301.5	248.2	205.0	181.0	167.4	159.8	155.9	152.6	147.8
62.5°	256.5	285.8	263.9	219.4	181.2	159.4	148.0	140.6	137.7	136.4	132.5
65°	217.4	242.5	227.3	189.3	158.7	139.1	128.4	123.1	120.3	119.6	117.0
67.5°	183.6	203.0	191.2	162.6	137.7	119.8	110.5	105.9	103.5	103.3	101.1
70°	150.4	168.3	159.8	134.5	113.7	100.4	92.6	88.6	87.3	87.1	86.0
72.5°	124.7	135.8	129.5	109.4	94.5	82.7	77.5	73.3	71.8	72.3	71.6
75°	96.1	105.4	101.5	86.9	74.0	66.1	61.3	58.7	57.4	58.1	57.2
77.5°	73.3	79.9	76.0	64.8	56.5	50.6	46.9	45.2	43.9	43.9	43.4
80°	52.2	55.7	53.7	47.6	41.0	36.2	33.4	32.3	31.7	31.4	31.2
82.5°	33.4	36.2	33.8	30.1	26.2	23.8	22.5	21.0	20.5	20.7	20.5
85°	18.8	19.9	19.0	16.4	14.6	13.3	12.4	11.8	11.4	11.6	11.1
87.5°	8.1	8.3	7.6	6.8	6.3	5.7	5.7	5.2	4.8	4.8	4.6
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°	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6
2.5°	441.2	439.7	437.5	434.2	431.6	427.4	427.4	428.1	428.1	427.9	427.4
5°	429.6	426.3	422.4	417.8	413.0	408.2	407.4	405.6	404.3	403.4	402.3
7.5°	417.8	412.4	406.9	400.6	395.1	390.5	387.3	384.4	382.7	380.7	379.2
10°	405.8	398.6	391.9	385.1	377.7	371.8	368.1	365.4	363.5	361.7	360.9
12.5°	391.6	383.1	375.5	369.2	360.9	354.7	351.2	350.4	348.0	343.8	341.6
15°	377.9	370.2	361.3	351.5	347.5	340.1	336.0	334.0	332.7	329.9	329.0
17.5°	366.5	356.3	346.0	338.8	331.6	325.7	323.3	320.7	318.9	316.3	315.7
20°	352.3	343.4	334.2	326.4	318.7	312.2	310.2	308.5	306.7	305.6	304.8
22.5°	337.9	329.0	321.8	314.6	306.3	302.6	300.4	298.4	297.3	296.7	295.8
25°	324.6	316.8	308.2	301.7	295.1	292.3	291.0	289.9	289.0	287.9	287.7
27.5°	312.8	304.1	296.9	290.6	285.8	283.4	281.8	281.2	281.2	281.6	281.8
30°	299.3	291.4	285.8	280.5	276.2	274.0	273.8	273.8	274.6	274.8	275.3
32.5°	286.8	280.7	275.1	270.0	267.0	265.7	266.8	266.8	267.4	268.1	268.9
35°	274.8	269.2	264.8	260.4	257.6	258.3	258.7	259.1	260.2	261.5	262.4
37.5°	263.5	258.3	253.7	250.2	248.4	249.7	250.8	251.7	253.0	254.1	255.0
40°	251.0	247.3	243.0	239.9	240.4	241.0	241.9	243.0	244.1	244.7	245.6
42.5°	239.5	235.5	232.5	230.1	230.7	231.6	232.1	232.5	233.8	235.1	235.5
45°	227.7	224.6	221.6	220.0	220.5	220.9	221.4	222.0	223.1	224.0	224.2
47.5°	214.4	212.2	210.2	208.5	209.4	209.1	209.8	211.1	211.5	212.0	213.3
50°	201.7	199.7	197.3	196.9	196.9	196.9	197.1	198.9	198.9	199.7	200.6
52.5°	187.7	186.6	185.3	184.5	184.0	184.0	185.1	185.8	186.2	187.5	188.4
55°	174.0	172.7	171.4	170.7	170.3	170.7	172.5	172.9	174.0	174.6	175.3
57.5°	159.6	158.7	157.6	157.2	157.2	157.4	158.7	159.8	160.0	162.2	163.1
60°	145.4	143.9	143.0	143.0	142.6	144.5	144.1	146.3	146.7	148.0	149.5
62.5°	130.8	128.6	128.4	128.4	129.2	129.5	130.3	131.0	132.3	134.0	135.1
65°	114.8	113.7	115.3	115.0	114.6	115.9	115.9	117.0	118.3	119.8	122.2
67.5°	100.0	99.1	99.5	99.3	100.0	100.9	101.5	102.4	103.9	105.7	107.2
70°	84.9	85.6	84.5	85.4	86.0	86.2	86.7	88.0	89.7	90.8	92.6
72.5°	70.3	70.1	70.5	70.7	71.4	71.8	72.3	73.8	75.8	76.6	77.9
75°	56.3	56.1	56.8	56.8	57.9	58.3	58.7	59.4	61.1	62.4	63.5
77.5°	43.7	43.9	43.7	44.5	44.1	44.3	45.6	46.3	46.5	49.3	49.8
80°	31.0	31.4	31.7	31.9	32.1	31.7	33.2	33.8	33.8	35.4	36.5
82.5°	20.1	20.3	21.0	21.2	21.2	21.8	21.6	22.0	22.7	23.1	24.7
85°	11.1	11.8	12.0	11.8	12.0	11.6	12.2	12.4	12.7	12.7	12.7
87.5°	4.4	4.6	4.4	4.6	4.4	4.6	4.6	4.1	4.1	4.8	3.9
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°	450.6	450.6	450.6	450.6
2.5°	425.9	425.7	427.2	426.1
5°	401.0	401.7	399.5	399.5
7.5°	378.5	377.7	377.9	376.4
10°	358.2	356.9	356.5	356.7
12.5°	341.4	341.4	337.9	337.9
15°	329.0	324.8	324.4	325.7
17.5°	315.2	312.8	313.0	312.6
20°	304.8	303.4	303.2	301.7
22.5°	295.1	294.9	295.1	293.4
25°	287.5	288.6	287.7	287.7
27.5°	282.3	282.3	281.6	281.6
30°	276.2	275.9	276.4	276.4
32.5°	270.0	270.5	270.5	270.7
35°	263.7	263.9	264.6	264.1
37.5°	255.4	256.5	256.3	256.7
40°	245.8	246.5	246.2	246.2
42.5°	236.0	236.4	235.8	235.3
45°	225.1	224.6	225.3	224.4
47.5°	213.1	213.3	213.5	214.4
50°	201.1	202.4	202.4	202.1
52.5°	189.3	189.7	190.8	190.8
55°	177.0	177.5	177.9	178.1
57.5°	164.6	164.4	165.3	165.5
60°	151.3	151.3	153.0	153.7
62.5°	137.1	138.0	139.7	138.4
65°	123.3	125.1	124.9	125.7
67.5°	108.9	110.0	111.8	111.8
70°	94.3	95.4	96.3	96.9
72.5°	80.1	80.6	83.0	81.6
75°	65.1	66.6	67.9	67.2
77.5°	50.6	52.6	53.0	52.4
80°	38.0	37.8	39.1	38.9
82.5°	25.3	25.1	25.5	25.8
85°	13.5	14.2	13.3	13.1
87.5°	3.9	3.9	3.7	3.5
90°	0.0	0.0	0.0	0.0

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