

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: P334095

Luminaire Tested: **S124DS-S350D835-4F0-1E-UDD-A**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P334095  
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-S350D835-4F0-1E-UDD-A  
Description: DEFINE 4 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 350 LUMENS PER FOOT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1454.2 lumens  
Efficiency: N/A  
Efficacy: 125.4 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

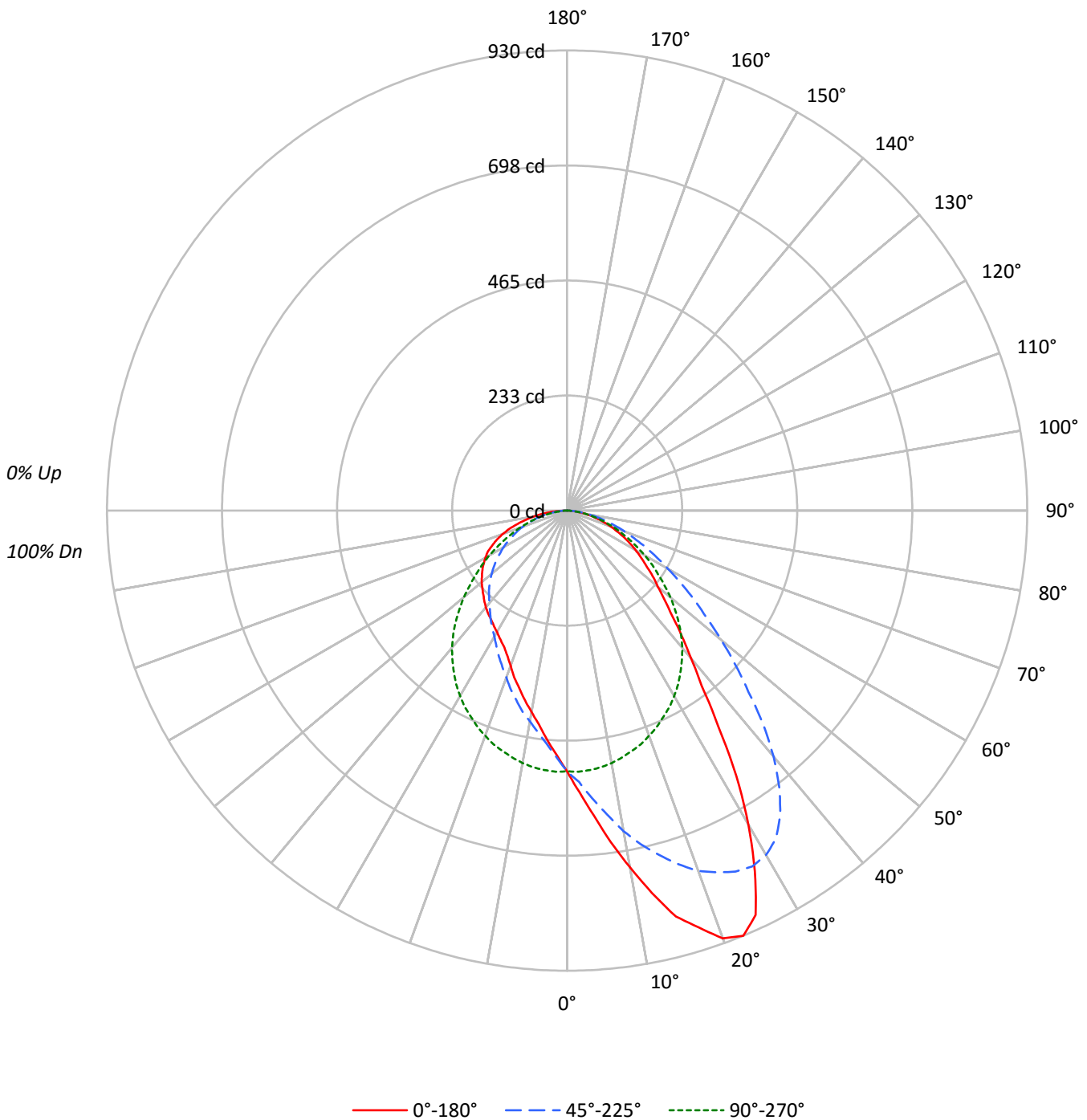
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	4254	4254	4254
5°	5011	4266	3765
10°	5999	4247	3390
15°	7097	4204	3112
20°	7904	4160	2866
25°	8031	4096	2695
30°	6834	4034	2642
35°	5254	3933	2642
40°	4095	3815	2692
45°	3415	3636	2737
50°	3005	3419	2830
55°	2753	3158	2943
60°	2580	2926	3081
65°	2401	2665	3194
70°	2195	2408	3267
75°	1962	2118	3228
80°	1646	1734	3124
85°	1213	1250	2992



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.3	3.5
10°-20°	158.3	10.9
20°-30°	251.5	17.3
30°-40°	279.4	19.2
40°-50°	254.1	17.5
50°-60°	207.7	14.3
60°-70°	148.3	10.2
70°-80°	81.6	5.6
80°-90°	22.0	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°	461.1	31.7
0°-40°	740.6	50.9
0°-60°	1202.4	82.7
0°-90°	1454.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1454.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	527	527	527	527	527	
5°	618	584	526	473	465	63
15°	849	721	503	396	372	240
25°	902	805	460	326	303	400
35°	533	751	399	269	268	337
45°	299	518	318	223	240	235
55°	196	312	224	174	209	177
65°	126	174	140	121	167	124
75°	63	81	68	68	104	67
85°	13	17	14	19	32	16
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°	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0
2.5°	569.4	569.1	567.0	566.5	565.0	563.0	562.6	559.1	552.1	548.8	548.0
5°	618.3	622.6	617.0	615.9	615.2	608.0	604.3	599.9	589.9	584.0	579.4
7.5°	675.5	675.7	673.3	670.9	666.7	660.6	652.3	642.7	631.1	619.4	611.1
10°	731.8	733.5	730.7	730.3	719.1	712.1	698.2	686.4	672.8	657.8	644.0
12.5°	791.2	787.7	786.6	775.0	775.2	761.0	744.2	732.0	709.3	691.4	672.0
15°	849.2	844.4	841.4	828.5	822.2	804.5	787.2	773.9	746.6	720.7	701.0
17.5°	882.9	888.8	880.9	875.7	858.4	846.8	829.6	802.3	782.0	749.7	727.2
20°	920.0	920.4	916.5	911.0	898.1	882.4	863.2	832.6	807.1	775.0	741.0
22.5°	930.0	930.0	928.9	923.9	915.0	902.9	883.5	859.3	827.0	791.4	757.3
25°	901.6	900.8	902.7	908.4	904.7	900.8	889.6	870.6	841.8	804.9	768.2
27.5°	821.3	827.0	838.8	852.7	862.8	871.7	871.1	863.0	842.5	810.6	771.5
30°	733.1	740.5	748.8	762.8	789.9	805.4	822.4	835.3	828.1	803.8	768.0
32.5°	636.2	636.6	649.9	666.3	690.5	723.9	753.4	782.9	795.5	785.7	757.3
35°	533.1	536.2	549.5	565.2	595.6	632.0	672.6	708.9	738.8	750.8	735.5
37.5°	446.7	456.3	466.3	484.2	511.9	544.9	588.6	633.8	677.6	704.3	707.1
40°	388.6	394.1	400.8	413.7	436.4	468.7	505.0	558.7	606.0	648.8	662.8
42.5°	342.8	345.4	348.9	360.2	376.2	408.2	440.6	486.2	533.8	587.0	612.8
45°	299.1	302.4	309.3	316.1	329.2	351.5	382.3	421.1	468.9	518.3	561.5
47.5°	266.3	268.5	272.9	280.3	292.1	307.2	333.4	366.3	413.0	460.9	507.1
50°	239.3	241.0	244.3	250.8	259.4	272.5	293.0	323.3	358.0	406.3	451.5
52.5°	217.9	218.3	220.5	224.4	230.8	241.2	257.2	281.0	312.6	354.3	399.3
55°	195.6	196.5	198.7	201.9	207.8	214.8	227.7	246.5	274.6	312.0	351.0
57.5°	177.3	178.1	179.9	181.2	186.4	192.3	202.8	216.3	238.4	271.6	307.2
60°	159.8	159.4	161.6	162.6	165.9	170.7	178.4	191.2	209.8	235.3	267.4
62.5°	142.8	142.1	143.9	145.4	146.9	150.9	156.7	166.1	180.3	202.8	229.4
65°	125.7	124.9	126.0	127.7	129.5	131.6	136.2	145.2	157.2	173.8	195.0
67.5°	108.3	109.4	109.4	110.5	111.6	114.6	117.9	124.9	133.4	146.9	165.7
70°	93.0	93.2	94.1	94.1	94.7	97.4	100.0	103.7	112.0	124.2	138.8
72.5°	77.7	78.8	78.2	79.0	79.5	81.0	82.7	86.2	93.0	101.3	113.1
75°	62.9	63.5	63.5	63.7	64.4	65.1	66.6	69.2	74.2	81.0	89.5
77.5°	48.5	48.5	48.9	49.8	49.8	50.9	52.2	54.1	57.0	62.0	67.5
80°	35.4	35.8	35.6	36.0	36.0	36.9	37.3	40.0	41.0	44.1	48.2
82.5°	23.6	24.0	24.0	24.7	25.1	25.1	25.8	26.4	27.5	30.1	31.2
85°	13.1	13.5	13.1	13.5	14.2	14.4	15.1	15.3	16.2	16.8	18.3
87.5°	4.8	5.5	5.5	5.7	6.1	6.3	6.5	6.3	7.2	7.4	8.3
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0
2.5°	548.2	545.1	542.9	541.2	536.4	533.6	531.4	528.3	524.8	521.1	516.5
5°	574.8	567.4	561.9	553.6	545.8	539.2	532.5	526.4	518.9	510.9	505.0
7.5°	602.1	591.8	578.1	567.4	554.5	543.4	533.6	523.3	512.4	501.9	492.1
10°	627.9	613.7	598.0	579.4	561.9	546.4	532.0	518.1	504.5	491.0	479.4
12.5°	655.6	637.0	611.9	589.4	569.4	547.3	529.2	511.3	494.3	479.9	465.9
15°	679.8	654.3	627.4	598.4	572.6	548.4	524.6	503.0	484.7	465.9	452.8
17.5°	695.1	663.5	634.6	604.3	574.6	544.3	519.6	495.4	472.6	454.3	437.9
20°	710.2	678.7	640.5	610.2	573.1	541.6	511.9	484.2	460.2	440.3	423.3
22.5°	723.3	685.7	647.5	605.2	568.3	534.4	501.2	473.3	448.6	427.5	411.3
25°	726.3	684.6	643.2	603.4	561.5	522.0	492.5	459.8	433.6	411.5	394.1
27.5°	727.4	683.3	637.3	594.0	550.8	514.8	476.4	447.8	420.7	397.3	380.7
30°	725.0	678.5	628.1	580.3	536.8	496.9	464.6	432.7	405.0	381.8	364.4
32.5°	717.4	668.5	616.3	565.0	519.6	480.7	447.1	417.2	390.3	367.6	349.1
35°	701.2	653.4	598.2	545.6	499.5	460.0	429.9	399.1	372.0	350.4	332.7
37.5°	679.6	635.1	579.0	524.2	479.9	439.7	409.3	381.0	356.5	334.2	315.9
40°	649.5	611.5	555.2	502.1	453.2	415.4	387.5	362.0	337.7	317.0	299.7
42.5°	614.8	582.9	532.0	475.0	428.3	390.3	363.3	341.0	318.5	299.7	282.5
45°	572.2	550.4	501.5	449.5	400.4	364.6	338.6	318.5	299.3	280.5	266.1
47.5°	524.8	512.6	470.0	420.3	373.1	337.3	314.8	295.6	278.1	261.8	248.9
50°	477.0	471.8	436.2	388.6	344.1	310.9	288.2	272.2	257.8	243.9	231.8
52.5°	429.9	431.0	399.7	357.2	316.8	285.1	262.6	248.0	236.0	225.3	214.8
55°	381.6	387.7	362.6	323.8	286.9	258.0	237.7	224.4	215.7	206.3	198.2
57.5°	337.3	347.6	325.7	290.1	258.9	231.4	213.5	203.2	193.6	187.5	181.2
60°	294.1	303.7	287.5	258.7	229.7	207.0	190.2	181.2	173.1	169.2	165.0
62.5°	255.6	263.9	253.0	226.8	202.6	181.0	167.4	158.9	154.1	149.8	147.4
65°	219.4	226.6	216.3	196.9	175.3	157.8	146.3	139.5	134.3	132.5	129.5
67.5°	183.6	190.2	184.7	167.7	149.3	135.6	126.4	119.2	116.1	114.4	112.4
70°	152.4	158.9	153.0	138.6	125.3	114.2	105.7	102.0	98.7	98.0	95.0
72.5°	126.0	129.9	124.0	113.5	102.6	93.7	87.5	83.6	82.3	81.0	79.7
75°	98.5	102.4	98.5	89.7	81.6	75.1	69.4	67.9	65.9	65.3	64.2
77.5°	73.8	77.5	74.4	68.6	62.2	56.8	53.5	51.3	51.1	49.8	50.2
80°	53.3	55.5	52.6	48.9	44.1	40.6	38.4	37.3	36.0	35.6	36.5
82.5°	34.5	35.1	34.1	31.9	28.6	26.6	25.3	24.0	24.0	24.2	24.0
85°	19.9	19.6	19.4	17.2	16.2	14.6	13.8	13.5	13.3	13.8	14.2
87.5°	8.3	8.5	8.3	7.4	6.8	6.1	5.9	5.7	5.9	6.1	6.3
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°	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0
2.5°	514.3	512.4	509.5	505.6	502.3	498.8	498.0	496.7	499.3	497.1	496.4
5°	499.9	495.4	489.5	482.7	478.8	473.1	472.0	469.8	467.6	467.4	465.2
7.5°	484.9	478.5	471.1	464.1	458.0	451.9	448.0	447.5	444.0	442.3	440.1
10°	470.5	462.2	453.2	446.7	439.2	432.7	428.1	425.5	423.3	420.9	418.7
12.5°	453.4	444.5	437.5	430.3	421.1	416.5	408.2	403.2	403.2	403.9	397.3
15°	441.0	432.3	420.9	410.9	406.1	396.5	392.3	387.1	383.8	380.5	377.9
17.5°	425.7	415.0	406.3	394.9	386.0	378.8	373.1	370.3	365.0	360.2	356.9
20°	411.5	399.9	390.6	378.3	368.3	358.9	354.3	350.0	346.2	342.3	338.6
22.5°	397.1	384.9	372.9	361.1	351.9	341.9	337.5	331.2	327.7	325.9	322.2
25°	381.8	368.7	355.6	344.3	334.7	325.9	320.0	315.5	311.5	309.8	307.4
27.5°	365.2	352.4	339.9	326.8	315.7	309.3	304.5	300.8	298.4	295.8	294.7
30°	349.5	336.0	322.4	310.4	300.4	294.1	289.7	287.3	285.6	284.5	283.4
32.5°	333.6	320.3	305.9	295.2	286.4	281.0	277.9	275.5	274.9	274.6	274.4
35°	316.3	302.8	289.7	279.9	271.4	269.2	266.3	265.0	264.6	266.1	266.8
37.5°	299.7	287.1	274.9	265.0	259.4	255.9	254.8	254.6	256.1	257.4	258.9
40°	283.8	271.6	260.2	251.9	246.7	244.7	244.3	245.4	247.1	248.7	250.4
42.5°	268.3	256.3	246.3	238.6	235.3	233.6	234.0	235.1	237.7	239.7	242.5
45°	252.2	242.1	232.1	225.7	222.7	223.1	223.1	225.1	227.5	230.3	233.2
47.5°	237.1	226.8	218.3	212.9	211.3	210.7	211.8	214.4	217.7	220.9	224.9
50°	221.8	212.2	205.0	200.2	198.4	199.1	200.8	203.2	207.4	211.8	215.9
52.5°	206.3	197.8	191.2	186.9	185.8	187.1	188.8	193.0	196.5	201.3	206.5
55°	190.2	182.7	177.5	174.2	173.8	174.4	176.4	180.5	185.8	191.7	196.5
57.5°	174.2	167.9	162.9	160.5	160.7	161.1	164.2	169.2	174.4	180.8	186.9
60°	158.1	152.4	148.5	146.7	146.9	148.2	152.2	156.7	163.7	169.8	176.4
62.5°	142.8	138.0	134.3	132.7	132.3	135.6	139.3	144.1	151.1	158.1	165.3
65°	126.2	122.3	119.2	118.3	119.0	121.2	126.0	132.3	138.2	145.4	152.8
67.5°	110.0	106.8	104.6	105.0	105.7	108.7	112.9	118.3	124.9	132.3	139.9
70°	94.7	91.7	89.9	90.2	91.5	95.4	98.9	104.4	111.6	119.2	125.3
72.5°	79.0	77.3	75.8	76.8	78.2	80.6	85.1	90.6	96.7	103.7	110.2
75°	63.1	63.1	62.2	62.9	64.8	67.5	70.7	76.4	82.7	88.4	93.7
77.5°	49.6	48.9	49.3	50.0	51.3	54.6	58.3	62.4	67.5	73.4	77.7
80°	35.8	36.0	37.1	38.4	38.9	41.3	45.2	48.9	52.6	57.4	61.6
82.5°	24.7	24.9	25.3	27.1	27.5	30.1	32.3	36.0	39.3	42.1	45.4
85°	14.6	14.6	15.7	16.4	17.5	19.2	20.7	22.9	26.0	28.2	31.4
87.5°	7.0	7.0	7.9	8.3	9.0	10.0	10.5	12.9	13.8	14.8	16.8
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°	527.0	527.0	527.0	527.0
2.5°	496.0	495.6	494.0	493.8
5°	463.9	462.8	462.2	464.6
7.5°	439.7	438.8	436.8	436.2
10°	416.5	415.7	413.9	413.5
12.5°	394.3	392.3	392.3	393.0
15°	375.1	374.2	371.8	372.4
17.5°	355.4	354.5	351.3	354.5
20°	337.1	335.3	333.8	333.6
22.5°	319.6	318.1	318.3	316.6
25°	305.6	304.1	303.7	302.6
27.5°	294.3	293.4	292.5	293.0
30°	284.0	283.8	283.4	283.4
32.5°	275.5	275.5	275.9	275.9
35°	267.7	268.3	268.7	268.1
37.5°	260.7	261.1	261.8	262.4
40°	252.4	253.9	254.3	255.4
42.5°	244.5	246.3	247.6	247.6
45°	236.4	238.2	239.7	239.7
47.5°	228.1	230.5	232.1	232.3
50°	219.6	222.7	224.2	225.3
52.5°	211.3	214.4	216.6	217.0
55°	201.5	205.9	208.3	209.1
57.5°	192.8	196.7	199.3	200.0
60°	182.3	186.7	190.2	190.8
62.5°	171.6	176.2	179.2	181.2
65°	158.9	163.5	166.6	167.2
67.5°	145.6	150.4	152.4	153.7
70°	131.4	135.1	137.3	138.4
72.5°	115.3	119.2	121.8	121.8
75°	98.7	102.2	103.5	103.5
77.5°	81.4	83.4	85.1	85.6
80°	64.8	65.9	67.2	67.2
82.5°	47.8	48.7	50.0	49.8
85°	31.0	33.0	32.7	32.3
87.5°	17.5	17.7	18.3	18.8
90°	0.0	0.0	0.0	0.0

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