

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: P242559

Luminaire Tested: **S123RDR-S340D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242559  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDR-S340D927-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

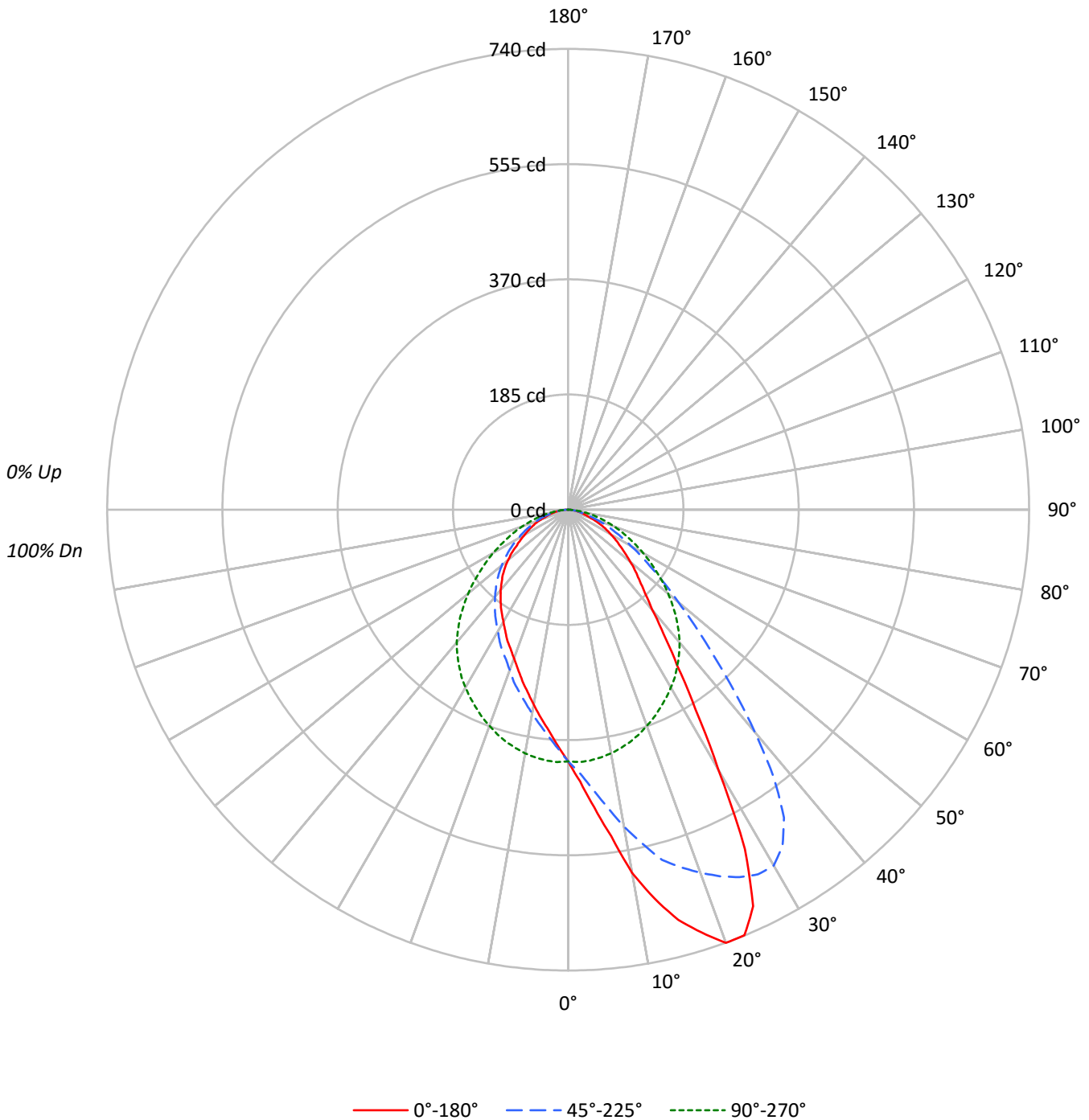
Lumens per Lamp: N/A  
Luminaire Lumens: 1006.0 lumens  
Efficiency: N/A  
Efficacy: 86.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<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	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	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74					74			
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64					64			
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44					44			
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39					39			
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36					36			
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32					32			
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29					29			

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

	0°	90°	180°
0°	4897	4897	4897
5°	5838	4918	4330
10°	7289	4890	3913
15°	8556	4840	3568
20°	9548	4765	3275
25°	9395	4686	3095
30°	6753	4613	2910
35°	4509	4519	2789
40°	3323	4405	2665
45°	2787	4207	2544
50°	2459	3947	2374
55°	2156	3648	2141
60°	1920	3362	1961
65°	1686	3055	1824
70°	1325	2782	1666
75°	1166	2431	1522
80°	1012	2066	1494
85°	821	1655	1585



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.7	3.9
10°-20°	124.2	12.3
20°-30°	195.6	19.4
30°-40°	203.4	20.2
40°-50°	174.0	17.3
50°-60°	132.6	13.2
60°-70°	85.0	8.4
70°-80°	40.7	4.0
80°-90°	10.7	1.1
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°	359.5	35.7
0°-40°	562.9	56.0
0°-60°	869.6	86.4
0°-90°	1006.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1006.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	404	404	404	404	404	
5°	480	450	404	365	356	49
15°	682	582	386	303	284	193
25°	702	651	350	250	231	305
35°	305	604	305	204	188	198
45°	163	328	245	162	148	128
55°	102	164	173	117	101	92
65°	59	81	106	73	64	58
75°	25	29	52	37	32	27
85°	6	6	12	11	11	7
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°	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0
2.5°	436.9	437.6	435.3	435.0	432.4	431.7	431.7	428.0	425.8	422.9	421.1
5°	479.8	482.5	481.1	478.0	472.8	471.6	468.3	463.1	457.3	450.0	446.5
7.5°	528.9	534.6	533.5	528.7	523.2	519.7	510.5	503.1	491.9	481.7	473.7
10°	592.2	588.2	585.1	580.4	575.4	567.3	557.6	544.3	528.9	516.8	503.3
12.5°	639.6	639.7	635.6	630.7	623.1	615.5	603.1	586.1	567.6	548.8	532.8
15°	681.8	682.8	680.2	675.2	665.2	651.5	633.5	626.8	601.2	582.1	563.1
17.5°	711.8	712.0	711.5	704.8	693.9	684.5	667.7	652.0	627.8	602.0	576.6
20°	740.2	738.5	738.8	731.0	723.4	712.2	695.9	670.2	651.1	620.2	593.7
22.5°	739.5	739.5	741.1	739.7	734.7	726.7	714.8	694.0	668.4	637.1	606.5
25°	702.5	701.1	709.3	711.5	720.3	721.9	718.1	706.1	683.1	651.0	614.1
27.5°	614.3	609.3	626.2	643.0	665.3	679.5	694.0	697.3	686.4	660.1	621.6
30°	482.5	498.8	506.4	533.7	564.2	600.5	632.3	662.6	670.0	660.0	629.7
32.5°	380.1	393.8	399.9	422.3	450.2	494.3	546.0	592.0	628.0	640.1	624.9
35°	304.7	304.9	319.4	329.8	356.1	399.9	446.2	503.6	560.7	603.9	608.4
37.5°	251.5	252.2	261.5	271.9	293.0	317.5	360.6	409.0	477.7	542.2	575.7
40°	210.0	211.5	218.1	228.3	242.5	259.9	291.8	336.7	391.7	465.6	525.9
42.5°	183.3	186.1	188.7	195.9	203.4	219.5	243.7	275.8	324.6	393.5	465.4
45°	162.6	164.0	166.5	170.2	178.1	189.5	206.8	230.2	271.7	327.9	397.6
47.5°	146.7	145.8	148.7	151.8	157.2	165.5	177.6	197.9	229.0	276.0	336.4
50°	130.4	130.2	132.1	134.4	139.4	145.1	154.6	169.0	192.5	229.8	284.0
52.5°	115.2	116.0	117.3	120.2	123.5	127.8	136.1	145.4	164.8	195.8	238.7
55°	102.0	102.6	104.5	106.0	108.6	113.3	118.6	127.3	141.1	163.6	200.8
57.5°	90.6	90.5	92.4	92.5	95.8	99.8	104.1	110.9	121.4	139.2	165.2
60°	79.2	78.7	80.2	81.5	83.0	86.1	89.6	96.2	104.1	116.4	137.8
62.5°	68.8	68.7	69.7	70.9	72.1	74.9	77.7	82.3	88.2	98.1	114.0
65°	58.8	59.3	59.8	60.4	61.1	62.8	65.5	69.0	73.3	80.6	92.9
67.5°	48.4	49.1	49.3	50.5	51.9	52.7	54.3	57.6	60.9	67.4	74.7
70°	37.4	37.2	37.4	37.9	39.8	41.7	43.9	46.2	48.1	52.4	58.3
72.5°	30.8	30.4	31.0	31.0	31.6	31.8	33.0	35.1	37.7	40.3	44.1
75°	24.9	24.9	24.9	24.9	25.6	25.9	26.5	27.0	27.8	29.2	32.3
77.5°	19.4	19.4	19.7	19.9	20.1	20.2	20.6	21.1	21.4	22.1	23.7
80°	14.5	14.7	14.5	14.7	14.7	15.0	15.2	15.7	15.9	16.8	17.3
82.5°	10.0	9.9	10.0	10.2	10.2	10.5	10.5	10.9	10.9	11.2	11.8
85°	5.9	5.5	5.9	5.7	6.1	5.7	5.9	6.2	6.2	6.4	7.1
87.5°	1.7	2.1	1.7	1.9	1.9	2.1	2.1	2.1	2.4	2.2	2.4
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°	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0
2.5°	420.4	419.9	417.5	414.7	411.1	408.7	406.8	405.7	402.6	398.8	396.2
5°	442.9	437.7	432.2	425.4	419.2	412.8	408.8	404.2	398.5	392.1	387.6
7.5°	465.2	456.2	446.4	436.2	425.8	416.6	408.2	401.2	392.6	383.8	377.7
10°	491.7	476.8	461.4	445.7	431.3	417.8	407.5	397.3	386.4	375.8	367.9
12.5°	515.7	495.0	476.6	456.4	437.0	420.3	404.2	391.7	378.1	366.6	357.3
15°	535.3	515.2	493.8	464.4	440.0	419.6	401.4	385.7	369.8	355.9	347.1
17.5°	555.7	525.2	497.0	474.2	442.4	417.7	396.4	378.1	360.8	346.6	335.5
20°	567.4	538.2	506.9	475.6	444.5	415.9	390.2	369.4	351.3	334.7	324.6
22.5°	574.5	540.5	507.1	472.8	439.3	409.4	383.9	360.6	340.5	325.0	312.0
25°	579.7	540.3	504.0	470.8	437.0	404.9	374.6	350.4	329.1	312.3	299.2
27.5°	583.9	538.2	496.5	460.4	426.3	393.6	366.3	340.4	319.1	301.6	287.3
30°	584.9	535.6	487.7	447.8	413.0	383.6	354.2	329.6	306.8	288.0	274.8
32.5°	586.3	529.2	475.8	432.7	396.9	367.9	341.9	318.7	295.2	276.7	263.2
35°	581.4	527.7	463.7	414.9	379.3	351.1	327.0	305.4	282.4	264.4	250.8
37.5°	566.7	519.2	451.6	395.0	358.2	332.2	312.2	292.5	271.2	251.5	238.8
40°	542.0	505.3	437.0	377.2	338.3	311.5	293.8	278.4	258.0	239.9	226.0
42.5°	505.2	486.5	423.2	358.5	315.8	290.2	276.0	261.8	244.5	226.0	213.2
45°	458.5	461.4	403.3	338.5	295.4	269.5	255.4	245.4	229.5	214.3	201.0
47.5°	401.8	426.3	382.0	317.4	273.3	248.9	236.6	227.4	216.4	200.6	188.3
50°	346.4	385.7	355.4	296.1	252.7	228.5	216.4	209.3	199.9	188.2	176.6
52.5°	295.4	338.3	323.2	272.4	230.4	208.7	197.0	191.5	184.5	173.6	163.4
55°	249.2	291.9	287.8	248.5	208.1	188.2	179.2	172.6	167.6	159.3	151.0
57.5°	209.1	250.4	251.3	222.1	188.7	168.4	160.7	155.5	152.0	145.4	137.3
60°	171.6	208.7	216.0	195.3	167.6	150.3	142.7	138.7	136.1	131.1	125.2
62.5°	140.4	170.7	179.2	165.7	147.4	131.4	125.9	122.1	120.5	116.4	111.4
65°	112.2	138.5	146.5	138.2	127.6	114.7	109.8	106.5	105.0	102.6	98.8
67.5°	88.5	109.0	117.6	110.7	106.7	97.5	94.3	92.4	91.0	89.2	86.0
70°	67.8	82.0	91.0	89.4	86.3	82.0	79.7	78.5	77.1	75.8	73.0
72.5°	51.2	59.8	68.1	69.5	67.1	67.1	65.2	64.9	64.2	62.4	61.2
75°	36.1	42.9	48.8	51.0	52.1	52.9	52.1	51.9	51.7	50.3	49.5
77.5°	25.1	29.4	33.4	37.4	38.7	40.0	40.1	40.8	40.3	39.4	39.1
80°	18.2	19.0	21.6	24.9	27.5	28.5	29.2	29.6	29.4	29.2	28.5
82.5°	11.9	12.6	13.5	15.6	17.6	19.5	19.9	19.7	20.2	20.4	19.9
85°	7.1	7.3	7.6	8.0	9.2	11.1	11.6	11.9	12.3	12.3	11.2
87.5°	2.8	2.6	2.9	2.9	3.5	3.6	4.7	5.5	5.7	5.0	5.0
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0
2.5°	395.4	393.1	391.6	388.1	385.8	383.4	381.0	382.6	382.4	382.2	382.2
5°	383.8	379.8	376.2	371.5	368.5	364.9	362.1	361.8	362.5	360.1	358.7
7.5°	372.9	367.7	362.5	357.7	352.3	348.1	345.5	344.5	342.6	341.0	339.7
10°	361.3	354.9	349.9	343.5	337.6	332.4	329.1	326.9	325.7	324.4	322.2
12.5°	349.4	343.1	336.4	328.9	323.4	317.2	314.9	312.3	309.7	308.4	305.1
15°	337.8	329.6	322.9	315.3	309.1	303.2	299.7	294.7	294.0	292.3	289.2
17.5°	326.5	317.5	307.7	302.5	296.3	290.0	284.5	282.9	277.8	276.0	273.1
20°	312.7	304.6	297.5	290.0	279.8	274.1	270.0	267.7	263.7	261.3	259.6
22.5°	300.8	292.5	284.0	275.0	267.0	260.5	257.7	253.9	252.2	248.5	246.6
25°	289.5	280.5	270.7	261.3	255.3	250.4	245.6	242.5	239.4	237.8	234.3
27.5°	275.8	266.9	257.3	250.1	243.2	238.3	233.7	231.1	227.1	224.5	222.6
30°	265.0	253.9	245.9	239.5	230.0	225.5	222.2	218.8	216.0	213.2	211.3
32.5°	252.3	242.5	235.0	226.7	220.0	215.0	210.5	207.5	205.3	202.7	200.8
35°	239.0	230.5	222.8	214.8	209.4	204.4	199.4	196.8	194.6	192.1	190.4
37.5°	226.9	218.9	211.7	204.1	197.5	193.2	189.0	187.3	184.2	182.5	180.7
40°	215.8	208.1	200.1	192.8	185.9	182.8	179.2	176.2	173.5	172.3	170.4
42.5°	203.7	195.9	189.5	181.6	176.2	171.7	168.4	165.2	163.3	161.4	160.5
45°	191.8	184.9	178.3	170.5	165.2	161.5	157.7	154.8	152.9	151.7	149.8
47.5°	180.4	173.3	166.7	159.8	154.6	150.5	146.5	144.6	142.0	140.6	139.2
50°	167.8	161.5	154.4	148.2	143.0	138.9	135.8	133.2	130.9	129.0	128.2
52.5°	156.2	149.4	143.5	137.8	132.3	127.5	124.7	121.9	120.4	118.1	117.1
55°	143.2	136.8	131.6	125.9	120.5	116.6	113.1	110.7	109.0	106.5	105.2
57.5°	131.3	125.7	119.3	114.3	108.6	105.5	102.6	99.1	97.0	95.1	93.7
60°	119.2	112.6	107.2	102.6	97.7	93.4	90.8	88.2	86.0	84.1	82.8
62.5°	106.5	101.0	96.0	90.8	86.5	82.8	79.7	77.7	75.8	74.7	73.5
65°	93.6	89.1	83.9	79.7	75.6	72.8	70.4	68.5	67.1	66.2	65.2
67.5°	81.6	77.3	72.6	68.3	65.5	63.3	61.6	59.8	59.1	58.1	57.4
70°	70.0	65.5	61.6	58.5	55.7	54.1	53.1	51.9	51.2	49.8	49.1
72.5°	57.4	54.5	51.9	49.5	47.4	46.0	44.6	43.1	41.9	40.3	39.6
75°	47.2	44.3	42.0	40.3	38.9	37.0	35.1	33.6	33.0	32.5	32.3
77.5°	36.8	34.9	33.2	31.8	29.9	28.2	27.7	27.3	27.2	26.8	26.8
80°	27.5	25.8	24.6	22.8	21.8	21.8	21.8	21.4	21.6	21.6	21.6
82.5°	18.7	17.1	16.6	16.3	16.3	16.4	16.4	16.6	16.4	16.8	16.6
85°	10.5	10.7	11.1	10.9	11.1	11.1	11.4	11.2	11.4	11.1	11.4
87.5°	4.8	5.4	5.5	5.7	5.9	5.7	5.9	5.9	6.1	6.1	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):**

	165°	170°	175°	180°
0°	404.0	404.0	404.0	404.0
2.5°	380.1	380.0	380.1	379.4
5°	358.2	358.0	357.5	355.9
7.5°	338.3	337.9	336.6	336.9
10°	321.0	321.2	319.1	317.9
12.5°	304.2	303.2	301.6	300.2
15°	289.9	288.1	284.0	284.3
17.5°	272.0	270.7	270.5	268.1
20°	256.8	256.0	256.3	253.9
22.5°	244.9	244.0	242.1	241.8
25°	233.3	231.9	230.5	231.4
27.5°	221.5	220.5	218.9	218.9
30°	210.5	209.4	208.7	207.9
32.5°	199.2	199.2	197.9	197.9
35°	189.7	188.7	188.3	188.5
37.5°	180.6	179.2	178.5	177.8
40°	170.5	169.1	168.8	168.4
42.5°	159.3	158.9	158.8	158.1
45°	149.3	149.1	148.0	148.4
47.5°	138.5	137.7	137.1	137.7
50°	127.5	127.1	125.6	125.9
52.5°	116.4	114.8	114.5	114.1
55°	103.9	102.4	101.7	101.3
57.5°	91.7	91.1	90.5	91.0
60°	81.1	81.1	81.1	80.9
62.5°	73.0	72.5	72.3	72.6
65°	64.7	64.5	63.8	63.6
67.5°	57.1	56.4	56.4	56.0
70°	48.3	47.9	46.9	47.0
72.5°	38.7	38.4	38.4	38.0
75°	32.2	32.0	31.8	32.5
77.5°	26.8	26.8	27.0	26.6
80°	21.6	21.6	21.4	21.4
82.5°	16.3	16.4	16.6	16.3
85°	11.4	11.2	11.6	11.4
87.5°	6.4	6.1	6.1	6.2
90°	0.0	0.0	0.0	0.0

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