

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: P333945

Luminaire Tested: **S123DS-S340D940-4F0-1E-UDD-A**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333945  
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-S340D940-4F0-1E-UDD-A  
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 340 LUMENS PER FOOT  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

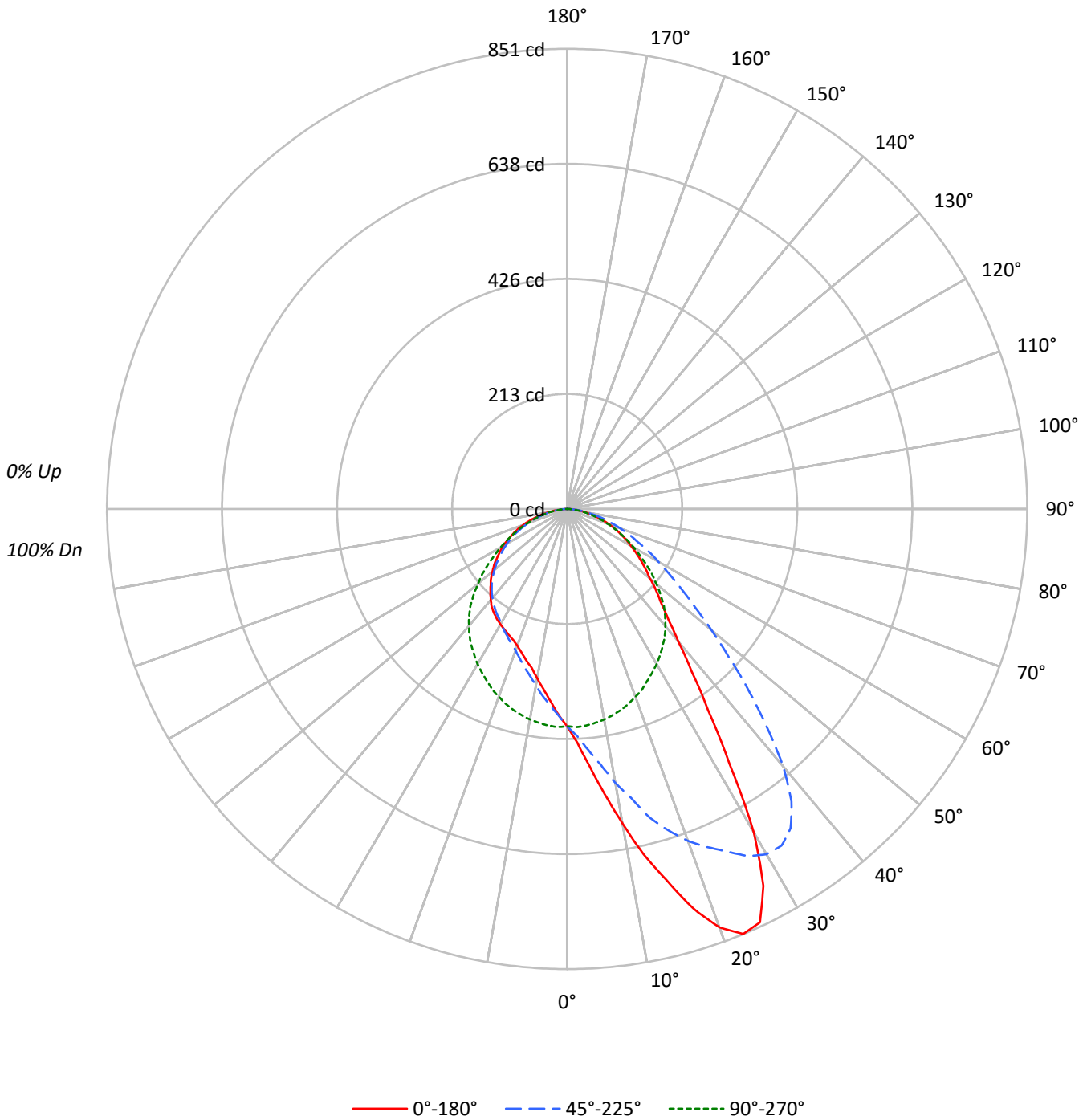
Lumens per Lamp: N/A  
Luminaire Lumens: 1212.7 lumens  
Efficiency: N/A  
Efficacy: 104.5 lumens/watt  
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5  
Luminous Opening: Rectangular (W 4' x L: 0.5' x H: 0')  
CIE Type: Direct

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°	2162	2162	2162
5°	2579	2172	1924
10°	3228	2161	1738
15°	3959	2143	1618
20°	4716	2116	1541
25°	5008	2083	1524
30°	4292	2059	1531
35°	2985	2025	1547
40°	2248	1985	1543
45°	1867	1925	1523
50°	1672	1803	1510
55°	1563	1671	1490
60°	1467	1534	1475
65°	1378	1398	1428
70°	1292	1243	1360
75°	1158	1090	1248
80°	1013	893	1075
85°	790	648	722



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.5	3.3
10°-20°	126.9	10.5
20°-30°	213.6	17.6
30°-40°	241.4	19.9
40°-50°	216.2	17.8
50°-60°	174.5	14.4
60°-70°	121.6	10.0
70°-80°	63.8	5.3
80°-90°	15.3	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°	380.0	31.3
0°-40°	621.3	51.2
0°-60°	1012.0	83.5
0°-90°	1212.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1212.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	402	402	402	402	402	
5°	477	447	402	364	356	49
15°	710	591	385	303	290	205
25°	843	699	351	261	257	373
35°	454	721	308	230	236	293
45°	245	475	253	197	200	193
55°	167	258	178	152	159	150
65°	108	145	110	103	112	108
75°	56	68	52	52	60	59
85°	13	15	10	10	12	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°	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8
2.5°	432.5	432.2	431.2	432.0	430.4	428.3	428.1	426.1	420.5	420.1	418.5
5°	477.3	475.8	475.6	475.4	472.6	468.9	461.9	461.4	452.0	447.3	441.7
7.5°	531.4	530.8	529.3	527.5	518.4	513.9	507.3	498.7	487.8	477.3	470.7
10°	590.6	597.0	589.1	583.6	578.5	569.0	557.9	544.1	530.3	514.1	501.8
12.5°	654.1	656.4	656.4	651.3	642.8	627.0	605.2	589.6	577.2	547.6	537.1
15°	710.5	722.4	714.8	697.3	697.7	683.9	658.2	629.9	614.9	591.4	559.3
17.5°	774.4	776.5	774.2	757.8	749.8	729.8	706.6	680.3	652.1	623.5	590.2
20°	823.4	822.3	815.4	807.9	791.1	776.3	750.4	720.3	681.3	653.3	616.1
22.5°	850.7	848.5	846.2	840.2	826.9	810.8	788.2	754.5	717.9	676.6	632.3
25°	843.3	845.8	846.2	844.4	839.6	830.0	811.7	785.5	748.5	698.8	654.1
27.5°	786.0	792.5	800.6	806.1	814.9	820.7	814.9	798.3	767.9	723.6	668.5
30°	690.7	682.9	702.1	726.5	743.0	772.2	788.6	789.6	774.2	737.4	684.0
32.5°	558.3	570.9	576.8	608.1	649.2	682.9	719.5	752.0	759.6	738.2	693.2
35°	454.3	465.0	480.6	496.2	535.1	568.6	625.8	675.7	715.4	720.6	692.0
37.5°	377.6	383.9	393.4	410.0	436.6	478.1	523.4	588.3	643.0	681.5	677.6
40°	320.0	321.6	332.7	344.6	365.2	397.9	437.8	493.5	562.4	622.1	647.1
42.5°	276.8	280.7	283.8	295.1	310.5	333.1	369.5	413.1	474.8	545.8	600.5
45°	245.3	249.2	252.1	259.7	271.4	287.9	313.8	355.8	403.9	475.0	540.6
47.5°	223.5	223.1	225.6	231.6	240.0	253.3	272.3	300.4	346.5	405.9	474.6
50°	199.7	202.8	203.6	208.1	214.3	223.5	238.7	261.6	297.8	348.4	410.3
52.5°	183.0	183.4	185.9	188.8	194.1	200.7	213.4	230.1	256.6	297.8	353.5
55°	166.6	166.6	168.8	171.3	174.4	180.8	189.6	202.8	224.4	257.9	305.0
57.5°	151.4	152.2	154.2	154.8	157.5	162.0	169.6	180.1	196.6	223.7	262.6
60°	136.3	138.0	137.8	139.4	141.7	145.0	151.3	159.4	173.8	194.5	226.0
62.5°	123.0	122.4	122.4	124.4	126.7	129.8	133.3	140.2	151.8	169.6	195.2
65°	108.2	107.8	109.2	110.4	111.2	113.5	116.6	122.8	131.0	144.6	165.5
67.5°	95.4	94.2	95.2	95.6	96.9	98.9	102.0	105.9	112.5	124.0	140.7
70°	82.1	81.2	81.0	81.4	82.5	83.9	86.0	89.7	95.8	104.5	116.0
72.5°	68.5	67.9	67.9	68.9	69.3	70.1	71.4	74.8	79.2	85.3	95.8
75°	55.7	55.7	55.7	55.9	56.5	57.2	58.4	60.2	63.8	68.5	75.7
77.5°	44.0	44.2	43.8	43.6	44.6	45.0	45.2	47.1	49.2	52.8	58.4
80°	32.7	31.7	32.1	32.7	33.1	33.3	33.9	34.3	36.0	37.8	41.5
82.5°	22.2	21.4	21.4	22.4	22.4	22.6	23.2	23.7	24.1	25.7	27.3
85°	12.8	12.8	13.0	13.0	13.2	13.0	13.6	13.8	13.8	14.8	16.0
87.5°	5.8	5.5	5.6	5.8	5.6	5.8	6.0	6.2	6.4	6.6	6.8
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8
2.5°	417.4	415.8	414.2	411.5	409.2	405.9	404.9	403.7	400.2	397.1	394.8
5°	439.5	434.9	428.1	421.8	416.8	410.0	406.1	402.0	396.1	390.9	386.6
7.5°	460.8	452.6	443.1	432.7	422.8	413.3	405.7	398.9	391.3	383.9	378.2
10°	487.0	473.8	459.0	443.1	429.4	416.2	405.1	395.4	384.8	375.7	368.1
12.5°	517.0	495.8	474.0	453.8	437.0	417.4	403.3	390.3	378.0	366.6	357.8
15°	539.4	514.5	490.4	463.7	439.2	416.2	400.2	384.7	370.8	359.5	348.6
17.5°	561.6	534.4	503.6	471.5	442.7	416.2	394.4	377.6	360.7	347.1	336.6
20°	579.9	547.8	511.8	478.1	445.4	415.0	390.5	369.5	350.8	336.2	323.9
22.5°	595.7	556.7	519.2	482.6	445.2	411.9	383.3	361.5	340.9	326.6	313.4
25°	605.6	560.6	523.3	481.0	440.3	406.5	375.3	350.8	330.5	313.8	300.4
27.5°	614.9	560.0	517.8	472.3	434.5	400.8	367.3	341.0	319.8	301.7	287.9
30°	624.3	561.0	508.3	463.3	425.1	390.1	357.8	331.3	308.7	290.2	277.4
32.5°	630.1	560.4	499.5	450.8	410.3	380.4	347.5	319.8	296.5	278.4	266.1
35°	631.7	557.1	489.2	432.7	394.2	364.0	336.6	308.2	283.8	266.9	252.9
37.5°	628.4	551.1	477.9	416.4	374.7	344.7	320.8	296.5	273.1	254.2	242.0
40°	617.7	545.3	464.3	398.9	354.5	325.9	306.2	282.5	259.5	241.8	230.5
42.5°	597.2	533.4	449.3	379.4	333.5	304.8	287.1	268.2	246.8	230.5	219.2
45°	561.4	515.1	434.3	359.9	312.8	283.2	267.3	252.9	233.2	217.0	207.3
47.5°	515.7	490.4	412.7	339.5	291.2	262.6	245.9	234.0	218.6	205.6	196.0
50°	467.6	458.4	390.7	318.5	269.6	241.8	225.8	215.3	205.0	191.9	183.4
52.5°	412.1	421.4	365.0	296.7	247.6	220.4	205.6	197.8	188.6	178.5	171.3
55°	360.7	381.2	334.6	271.7	225.8	199.7	185.5	178.1	172.7	164.7	158.3
57.5°	310.9	337.0	303.1	246.6	204.4	181.6	167.6	159.2	155.7	151.3	146.0
60°	267.5	293.2	268.8	221.3	182.8	161.4	149.3	142.5	139.0	136.1	131.8
62.5°	228.7	254.8	235.3	195.6	161.6	142.1	132.0	125.4	122.8	121.7	118.2
65°	193.9	216.3	202.6	168.8	141.5	124.0	114.5	109.8	107.3	106.7	104.3
67.5°	163.7	181.0	170.5	145.0	122.8	106.9	98.5	94.4	92.3	92.1	90.1
70°	134.1	150.1	142.5	119.9	101.4	89.5	82.5	79.0	77.9	77.7	76.7
72.5°	111.2	121.1	115.4	97.5	84.3	73.8	69.1	65.4	64.0	64.4	63.8
75°	85.7	94.0	90.5	77.5	66.0	59.0	54.7	52.4	51.2	51.8	51.0
77.5°	65.4	71.2	67.7	57.8	50.4	45.2	41.9	40.3	39.1	39.1	38.7
80°	46.5	49.6	47.9	42.4	36.6	32.3	29.8	28.8	28.2	28.0	27.8
82.5°	29.8	32.3	30.2	26.9	23.4	21.2	20.1	18.7	18.3	18.5	18.3
85°	16.7	17.7	16.9	14.6	13.0	11.9	11.1	10.5	10.1	10.3	9.9
87.5°	7.2	7.4	6.8	6.0	5.6	5.1	5.1	4.7	4.3	4.3	4.1
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°	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8	401.8
2.5°	393.4	392.1	390.1	387.2	384.8	381.2	381.2	381.7	381.7	381.5	381.2
5°	383.1	380.2	376.7	372.6	368.3	364.0	363.2	361.7	360.5	359.7	358.8
7.5°	372.6	367.7	362.9	357.2	352.3	348.3	345.3	342.8	341.2	339.5	338.1
10°	361.9	355.5	349.4	343.4	336.8	331.5	328.2	325.9	324.1	322.6	321.8
12.5°	349.2	341.6	334.8	329.2	321.8	316.3	313.2	312.4	310.3	306.6	304.6
15°	337.0	330.1	322.2	313.4	309.9	303.3	299.6	297.8	296.7	294.1	293.4
17.5°	326.8	317.7	308.5	302.1	295.7	290.4	288.3	286.0	284.4	282.1	281.5
20°	314.2	306.2	298.0	291.0	284.2	278.4	276.6	275.1	273.5	272.5	271.7
22.5°	301.3	293.4	286.9	280.5	273.1	269.8	267.9	266.1	265.1	264.5	263.8
25°	289.5	282.5	274.9	269.0	263.2	260.7	259.5	258.5	257.7	256.8	256.6
27.5°	279.0	271.2	264.7	259.1	254.8	252.7	251.3	250.7	250.7	251.1	251.3
30°	266.9	259.9	254.8	250.1	246.2	244.3	244.1	244.1	244.9	245.1	245.5
32.5°	255.8	250.3	245.3	240.8	238.1	236.9	237.9	237.9	238.5	239.0	239.8
35°	245.1	240.0	236.1	232.2	229.7	230.3	230.7	231.1	232.0	233.2	234.0
37.5°	235.0	230.3	226.2	223.1	221.5	222.7	223.7	224.4	225.6	226.6	227.4
40°	223.9	220.6	216.7	213.9	214.3	214.9	215.7	216.7	217.6	218.2	219.0
42.5°	213.5	210.0	207.3	205.2	205.8	206.5	206.9	207.3	208.5	209.7	210.0
45°	203.0	200.3	197.6	196.2	196.6	197.0	197.4	198.0	198.9	199.7	199.9
47.5°	191.2	189.2	187.5	185.9	186.7	186.5	187.1	188.2	188.6	189.0	190.2
50°	179.9	178.1	176.0	175.6	175.6	175.6	175.8	177.3	177.3	178.1	178.9
52.5°	167.4	166.4	165.3	164.5	164.1	164.1	165.1	165.7	166.0	167.2	168.0
55°	155.1	154.0	152.8	152.2	151.8	152.2	153.8	154.2	155.1	155.7	156.3
57.5°	142.3	141.5	140.5	140.2	140.2	140.4	141.5	142.5	142.7	144.6	145.4
60°	129.6	128.3	127.5	127.5	127.1	128.9	128.5	130.4	130.8	132.0	133.3
62.5°	116.6	114.7	114.5	114.5	115.2	115.4	116.2	116.8	118.0	119.5	120.5
65°	102.4	101.4	102.8	102.6	102.2	103.4	103.4	104.3	105.5	106.9	109.0
67.5°	89.2	88.4	88.8	88.6	89.2	89.9	90.5	91.3	92.7	94.2	95.6
70°	75.7	76.3	75.3	76.1	76.7	76.9	77.3	78.4	80.0	81.0	82.5
72.5°	62.7	62.5	62.9	63.1	63.7	64.0	64.4	65.8	67.5	68.3	69.5
75°	50.2	50.0	50.6	50.6	51.6	52.0	52.4	52.9	54.5	55.7	56.6
77.5°	38.9	39.1	38.9	39.7	39.3	39.5	40.7	41.3	41.5	44.0	44.4
80°	27.6	28.0	28.2	28.4	28.6	28.2	29.6	30.2	30.2	31.5	32.5
82.5°	17.9	18.1	18.7	18.9	18.9	19.5	19.3	19.7	20.2	20.6	22.0
85°	9.9	10.5	10.7	10.5	10.7	10.3	10.9	11.1	11.3	11.3	11.3
87.5°	3.9	4.1	3.9	4.1	3.9	4.1	4.1	3.7	3.7	4.3	3.5
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°	401.8	401.8	401.8	401.8
2.5°	379.8	379.6	381.0	380.0
5°	357.6	358.2	356.2	356.2
7.5°	337.5	336.8	337.0	335.6
10°	319.4	318.3	317.9	318.1
12.5°	304.5	304.5	301.3	301.3
15°	293.4	289.7	289.3	290.4
17.5°	281.1	279.0	279.1	278.8
20°	271.7	270.6	270.4	269.0
22.5°	263.2	263.0	263.2	261.6
25°	256.4	257.3	256.6	256.6
27.5°	251.7	251.7	251.1	251.1
30°	246.2	246.1	246.4	246.4
32.5°	240.8	241.2	241.2	241.4
35°	235.2	235.3	235.9	235.5
37.5°	227.8	228.7	228.5	228.9
40°	219.2	219.8	219.6	219.6
42.5°	210.4	210.8	210.2	209.8
45°	200.7	200.3	200.9	200.1
47.5°	190.0	190.2	190.4	191.2
50°	179.3	180.5	180.5	180.3
52.5°	168.8	169.2	170.1	170.1
55°	157.9	158.3	158.7	158.8
57.5°	146.8	146.6	147.4	147.6
60°	134.9	134.9	136.5	137.0
62.5°	122.2	123.0	124.6	123.4
65°	110.0	111.5	111.3	112.1
67.5°	97.1	98.1	99.7	99.7
70°	84.1	85.1	85.8	86.4
72.5°	71.4	71.8	74.0	72.8
75°	58.0	59.4	60.5	60.0
77.5°	45.2	46.9	47.3	46.7
80°	33.9	33.7	34.8	34.7
82.5°	22.6	22.4	22.8	23.0
85°	12.1	12.7	11.9	11.7
87.5°	3.5	3.5	3.3	3.1
90°	0.0	0.0	0.0	0.0

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