

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: P243165

Luminaire Tested: **S122DR-H485D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243165  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DR-H485D930-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1629.7 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct

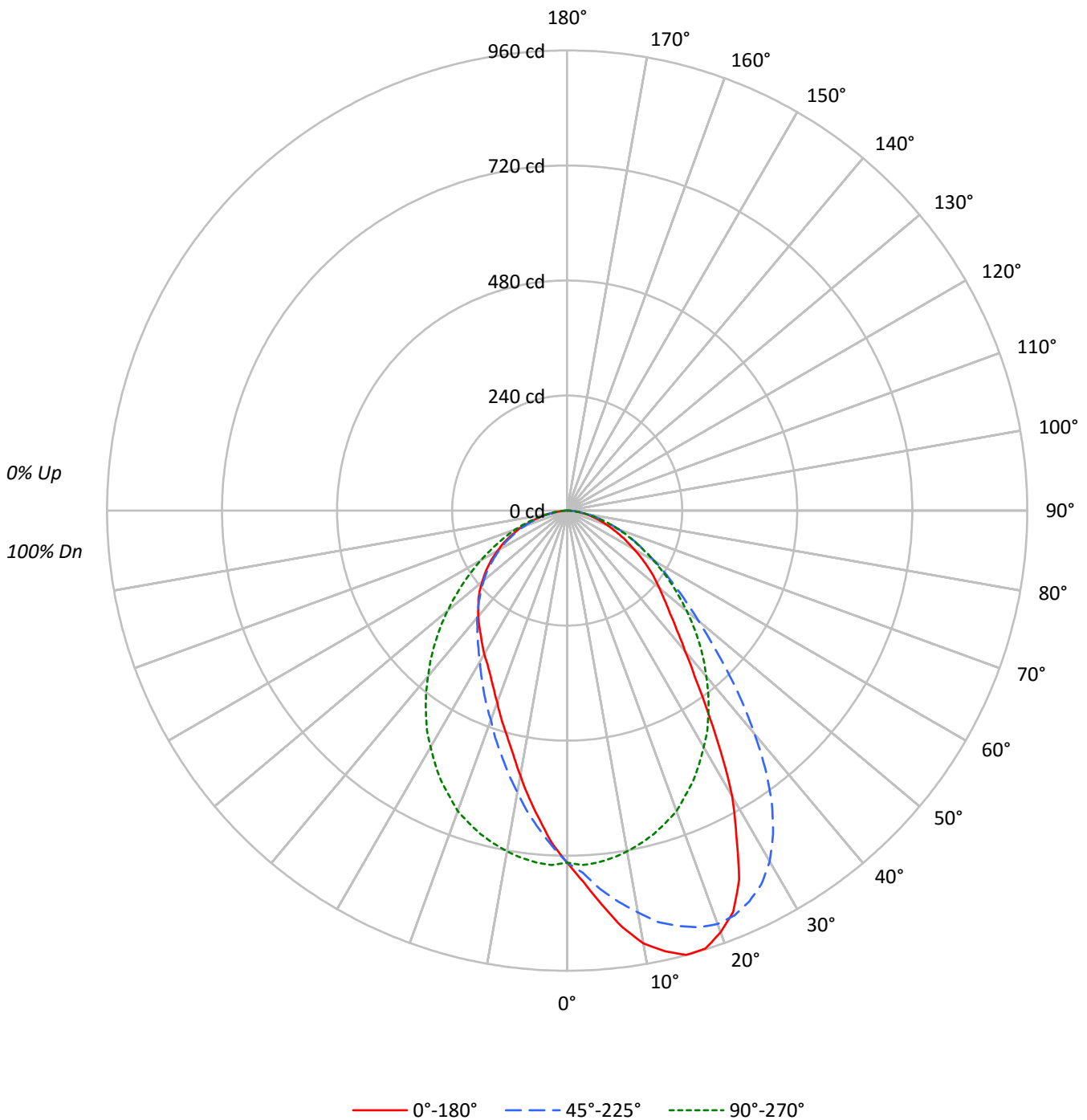
Input Watts (W): 17.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86				86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74				74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63				63
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55				55
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49				49
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43				43
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39				39
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35				35
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32				32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29				29

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

	0°	90°	180°
0°	13989	13989	13989
5°	15757	14090	12411
10°	17738	13963	10862
15°	18921	13774	9574
20°	18975	13526	8639
25°	17845	13077	7963
30°	15150	12530	7603
35°	11845	11945	7320
40°	9516	11227	7179
45°	8186	10484	7044
50°	7426	9648	6845
55°	6841	8790	6662
60°	6152	7920	6358
65°	5539	7117	6053
70°	4934	6327	5664
75°	4438	5439	4960
80°	3872	4388	3872
85°	3322	3256	2142



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	70.0	4.3
10°-20°	201.1	12.3
20°-30°	292.5	17.9
30°-40°	313.7	19.3
40°-50°	281.2	17.3
50°-60°	224.2	13.8
60°-70°	151.6	9.3
70°-80°	77.3	4.7
80°-90°	18.1	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°	563.5	34.6
0°-40°	877.3	53.8
0°-60°	1382.6	84.8
0°-90°	1629.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1629.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	734	734	734	734	734	
5°	824	793	737	667	649	82
15°	960	897	698	529	486	269
25°	849	899	622	413	379	382
35°	509	744	514	325	315	323
45°	304	471	389	258	262	238
55°	206	274	265	195	201	184
65°	123	159	158	128	134	122
75°	60	75	74	64	67	64
85°	15	17	15	12	10	18
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°	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4
2.5°	775.2	777.6	775.5	774.7	773.0	772.5	768.1	764.6	762.4	756.4	757.0
5°	824.1	829.6	826.6	826.3	820.3	816.5	812.7	807.3	799.1	792.6	787.4
7.5°	875.8	873.0	872.2	869.2	864.9	859.5	851.0	843.2	832.8	823.3	816.2
10°	917.1	916.3	917.6	910.0	907.3	898.9	891.5	879.3	866.0	851.0	841.8
12.5°	941.5	944.0	945.9	942.9	936.4	933.9	921.7	904.6	900.0	879.6	868.4
15°	959.5	960.6	960.8	957.6	954.3	948.1	940.7	929.9	914.9	897.2	888.8
17.5°	958.4	958.1	959.8	957.9	956.0	954.0	948.3	939.9	928.2	911.6	897.5
20°	936.1	941.0	944.8	945.6	945.4	946.4	943.7	938.3	929.9	917.9	901.9
22.5°	905.7	903.8	911.9	911.4	914.9	923.1	926.6	924.4	921.2	913.5	900.8
25°	849.1	851.0	856.7	862.7	876.6	881.5	892.1	900.2	901.3	899.4	891.5
27.5°	764.3	777.9	780.9	788.8	808.1	824.1	845.6	858.4	876.6	878.2	874.7
30°	688.8	688.2	692.8	707.0	724.6	748.8	776.6	809.4	830.4	844.8	849.9
32.5°	595.8	598.0	609.9	627.3	645.3	669.5	701.5	741.8	769.8	799.7	816.5
35°	509.4	516.2	527.6	539.5	559.1	592.3	627.9	661.3	704.3	744.2	771.4
37.5°	438.2	447.4	456.1	467.5	486.5	512.1	544.2	588.5	631.1	679.3	719.2
40°	382.7	386.2	392.2	403.4	416.1	441.7	474.0	507.2	553.4	608.6	661.0
42.5°	339.2	338.4	344.9	352.0	363.7	382.7	411.0	444.1	490.1	539.0	592.0
45°	303.9	304.2	306.9	314.2	323.5	334.3	356.1	387.3	422.1	470.8	527.0
47.5°	275.1	275.9	280.0	285.1	290.6	300.6	315.0	335.4	368.0	408.8	461.5
50°	250.6	252.0	254.7	258.5	262.6	269.6	280.5	296.5	322.4	356.9	404.7
52.5°	228.9	229.4	230.2	233.8	237.0	243.5	251.7	264.2	284.6	313.4	350.6
55°	206.0	205.5	207.4	210.4	213.4	218.0	226.4	236.5	250.9	273.7	304.4
57.5°	182.7	183.5	184.8	186.5	191.9	196.8	203.0	212.3	223.7	241.6	267.2
60°	161.5	161.5	163.1	165.3	168.8	172.1	178.0	186.5	196.5	210.4	231.9
62.5°	140.8	141.9	143.5	144.6	147.9	151.9	156.6	163.1	172.3	183.5	199.5
65°	122.9	122.3	123.9	126.1	128.6	131.3	136.4	141.9	149.0	159.0	172.3
67.5°	104.4	106.0	106.5	107.6	109.5	113.1	115.5	121.2	126.9	135.9	147.0
70°	88.6	89.7	90.5	91.9	93.5	95.1	97.6	102.2	107.9	114.2	122.0
72.5°	74.5	75.3	74.5	75.8	76.7	78.3	81.5	83.7	88.1	93.5	100.6
75°	60.3	60.9	60.6	62.0	62.2	63.9	65.5	67.4	72.3	75.3	80.2
77.5°	47.3	47.8	48.1	48.7	49.2	50.0	50.8	52.7	55.4	58.2	62.0
80°	35.3	35.3	36.2	36.4	36.7	37.2	38.6	39.1	41.0	41.9	44.8
82.5°	24.5	24.7	25.0	25.0	25.3	25.8	26.1	27.2	27.7	29.1	30.4
85°	15.2	15.5	15.5	15.5	16.3	16.0	16.0	16.6	17.4	17.4	17.9
87.5°	7.6	7.9	7.9	7.9	8.2	8.2	8.2	8.2	8.2	8.7	8.4
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°	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4
2.5°	756.7	756.4	755.4	750.5	746.7	741.8	741.0	740.1	733.3	726.0	723.8
5°	783.4	778.5	771.7	763.5	755.4	746.4	741.2	736.9	726.5	715.1	708.6
7.5°	809.4	799.9	789.3	776.6	763.0	748.6	739.3	730.6	716.5	701.5	692.6
10°	831.7	819.0	804.3	787.4	768.7	749.1	735.5	721.9	704.0	685.8	673.8
12.5°	850.2	833.9	814.6	791.8	774.7	747.7	728.7	710.8	690.9	667.3	654.2
15°	864.4	848.3	822.2	799.1	776.6	740.7	717.6	698.5	671.9	648.8	628.2
17.5°	881.5	858.6	832.8	799.7	774.7	733.6	707.5	682.8	654.0	626.8	604.0
20°	889.1	865.2	837.4	800.5	768.7	726.0	691.2	667.3	632.5	601.2	575.4
22.5°	890.2	867.3	837.2	798.0	758.3	714.9	674.9	643.6	608.9	575.7	546.6
25°	885.6	863.8	832.6	793.7	746.9	702.9	658.3	622.2	581.9	547.7	518.1
27.5°	873.0	855.4	825.8	784.2	735.2	684.4	635.8	596.3	556.7	517.8	489.5
30°	852.9	841.2	815.7	771.7	720.3	664.3	615.6	569.7	526.8	490.3	459.9
32.5°	827.1	821.4	800.2	756.7	705.1	642.3	591.5	544.2	497.4	462.9	431.6
35°	794.2	797.2	779.3	739.9	685.8	620.0	563.2	513.7	468.1	431.4	402.5
37.5°	751.6	766.2	754.8	717.8	661.0	597.4	533.6	483.8	436.0	400.6	375.4
40°	703.7	729.5	724.1	693.1	634.4	571.1	505.0	451.5	404.7	371.3	347.1
42.5°	647.4	685.0	690.9	662.9	608.0	538.2	472.9	421.3	376.2	343.3	320.2
45°	584.4	630.9	651.0	629.0	577.3	506.4	440.1	389.2	344.7	316.7	297.4
47.5°	521.1	577.1	604.2	593.6	541.4	472.4	407.4	357.7	315.6	291.1	272.9
50°	458.5	518.6	558.3	551.2	506.1	440.1	374.6	325.6	287.0	264.5	249.0
52.5°	403.6	460.4	503.7	507.2	466.7	403.1	339.8	294.4	261.5	241.1	228.0
55°	349.5	402.3	449.6	458.3	425.4	364.2	307.7	264.7	234.8	218.0	207.4
57.5°	301.2	349.0	396.0	411.2	384.6	329.4	273.2	235.4	209.6	196.5	187.3
60°	260.1	303.3	343.8	359.3	341.1	290.8	241.6	207.9	186.5	174.8	167.4
62.5°	224.2	257.7	293.6	310.7	298.4	254.7	211.7	181.8	164.4	154.4	148.7
65°	191.9	217.7	246.0	265.8	252.2	219.6	183.7	157.9	143.2	134.0	129.9
67.5°	162.0	183.5	206.0	221.8	215.0	185.4	155.2	135.1	122.9	115.8	112.0
70°	134.8	150.9	169.1	181.3	176.4	153.6	129.7	113.6	103.3	98.4	95.1
72.5°	110.6	121.0	134.8	144.9	139.7	123.7	106.5	93.8	86.2	80.5	78.0
75°	87.8	96.8	106.5	113.3	109.3	97.3	83.7	73.9	68.8	65.2	63.6
77.5°	66.6	73.7	80.5	83.7	81.8	73.1	63.9	56.3	51.9	49.7	47.8
80°	47.8	51.9	56.5	59.5	58.4	52.5	45.9	40.0	38.1	35.3	34.8
82.5°	32.1	35.3	36.4	37.8	37.0	34.2	29.6	26.1	24.5	23.1	22.8
85°	19.0	19.8	21.2	21.2	20.4	18.5	16.0	14.9	13.3	13.0	12.2
87.5°	8.4	8.4	8.4	8.4	8.4	7.9	6.8	6.3	5.7	5.4	5.2
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4
2.5°	721.9	719.2	715.4	711.1	707.2	701.3	699.4	699.4	700.7	699.1	697.7
5°	703.2	697.7	692.3	683.9	676.8	667.3	664.6	661.9	661.6	658.9	655.3
7.5°	683.1	674.9	663.8	651.8	644.2	633.9	628.2	626.5	621.4	616.5	610.8
10°	659.7	647.2	633.9	622.4	610.5	597.2	590.4	585.7	580.6	574.6	570.5
12.5°	631.4	617.3	605.0	591.7	581.7	562.9	560.7	554.8	544.4	535.5	532.2
15°	614.0	589.3	575.4	563.2	548.0	528.7	521.6	515.1	505.3	499.6	495.0
17.5°	583.3	561.0	543.6	527.3	512.6	497.7	487.1	481.6	473.8	468.9	464.2
20°	555.3	531.1	512.9	493.9	478.7	465.1	456.1	449.3	445.2	440.3	435.7
22.5°	527.0	501.8	484.4	465.1	447.1	439.0	428.4	422.7	417.2	413.4	408.5
25°	494.1	474.0	452.3	437.3	421.6	413.1	403.1	397.7	393.3	389.0	386.5
27.5°	464.8	444.4	424.3	409.3	396.0	387.9	381.6	376.5	371.0	367.8	365.9
30°	434.4	415.6	397.9	383.5	373.2	364.2	360.4	355.5	351.4	350.1	347.1
32.5°	407.2	386.2	372.1	359.1	350.4	344.1	341.4	336.2	335.4	334.1	332.4
35°	380.0	362.0	348.5	337.3	330.0	325.4	321.8	320.5	319.1	317.7	316.4
37.5°	353.1	338.9	326.2	317.2	311.2	307.7	306.9	304.2	303.9	302.0	302.0
40°	328.9	314.5	305.5	298.4	293.6	291.9	289.7	289.2	288.4	287.8	288.9
42.5°	304.7	294.9	287.3	280.0	276.2	274.8	274.3	273.4	272.9	274.5	275.1
45°	282.1	273.7	267.2	262.0	259.8	258.2	258.2	259.0	258.8	259.6	259.6
47.5°	261.2	253.6	248.2	246.3	243.5	243.0	243.3	243.0	244.4	245.4	246.5
50°	241.4	234.6	230.2	228.3	227.8	227.0	228.0	228.6	229.4	230.5	231.0
52.5°	219.3	216.1	213.4	211.5	211.2	211.5	211.2	213.1	213.9	215.5	215.3
55°	200.6	198.1	196.2	194.1	193.8	194.6	195.2	196.8	197.9	199.2	199.0
57.5°	182.9	181.0	178.9	178.3	178.0	178.3	180.8	180.5	182.1	183.2	183.7
60°	163.6	162.3	160.4	160.4	161.2	161.7	162.5	163.9	165.5	165.3	167.2
62.5°	146.0	144.3	143.8	144.6	144.3	145.7	146.5	146.5	148.7	149.5	150.0
65°	128.3	127.8	126.9	126.9	127.8	128.0	129.4	130.2	131.0	132.6	134.0
67.5°	111.7	110.4	110.4	109.8	110.9	111.7	112.5	113.6	114.2	116.1	116.9
70°	94.3	93.8	93.5	94.0	94.0	94.9	96.2	97.6	98.7	98.9	100.6
72.5°	77.5	77.5	77.5	78.3	78.8	79.6	79.9	81.0	82.6	82.9	83.7
75°	62.2	62.5	62.2	62.5	62.8	63.6	64.1	65.2	66.3	66.6	67.1
77.5°	48.1	47.6	47.0	47.8	48.4	50.0	49.7	50.3	51.4	50.8	51.4
80°	33.7	34.5	33.4	35.1	35.1	34.8	35.3	36.2	35.9	36.4	35.9
82.5°	22.8	22.0	22.0	22.8	23.1	22.3	22.8	23.1	23.4	22.8	22.6
85°	12.5	12.2	12.8	12.0	12.2	11.7	11.7	11.1	11.7	11.1	10.6
87.5°	4.6	4.3	4.6	3.8	3.5	3.3	3.0	3.0	2.4	2.4	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):**

	165°	170°	175°	180°
0°	734.4	734.4	734.4	734.4
2.5°	699.6	696.6	695.3	696.4
5°	651.5	652.3	647.4	649.1
7.5°	609.9	606.4	607.5	605.6
10°	565.9	564.0	561.0	561.6
12.5°	536.3	523.5	522.7	520.2
15°	494.7	487.6	486.0	485.5
17.5°	461.5	455.6	457.7	456.1
20°	431.6	431.9	428.4	426.2
22.5°	405.3	404.7	403.4	401.2
25°	383.0	383.0	379.7	378.9
27.5°	362.6	363.1	360.4	360.4
30°	347.4	345.5	345.2	345.7
32.5°	332.2	330.0	330.2	330.0
35°	315.8	316.4	315.6	314.8
37.5°	302.0	302.0	302.0	301.2
40°	288.4	288.9	288.1	288.7
42.5°	274.8	275.1	275.1	274.0
45°	261.2	260.9	260.4	261.5
47.5°	247.1	247.1	246.8	247.3
50°	231.6	232.1	231.3	231.0
52.5°	215.8	216.1	215.8	216.4
55°	199.8	199.8	200.1	200.6
57.5°	183.2	185.1	183.7	184.8
60°	166.9	167.2	167.4	166.9
62.5°	151.4	151.1	151.4	152.2
65°	134.5	135.1	134.8	134.3
67.5°	118.0	117.4	118.2	117.4
70°	100.3	101.4	100.6	101.7
72.5°	84.3	84.0	84.5	83.2
75°	67.4	67.4	67.7	67.4
77.5°	51.6	51.1	50.8	50.0
80°	35.6	35.6	34.5	35.3
82.5°	21.7	22.0	22.3	20.7
85°	10.3	10.3	10.1	9.8
87.5°	2.2	2.2	2.4	2.7
90°	0.0	0.0	0.0	0.0

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