

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: P334090

Luminaire Tested: **S124DW-S350D830-4F0-1E-UDD-A**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P334090  
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: S124DW-S350D830-4F0-1E-UDD-A  
Description: DEFINE 4 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 350 LUMENS PER FOOT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

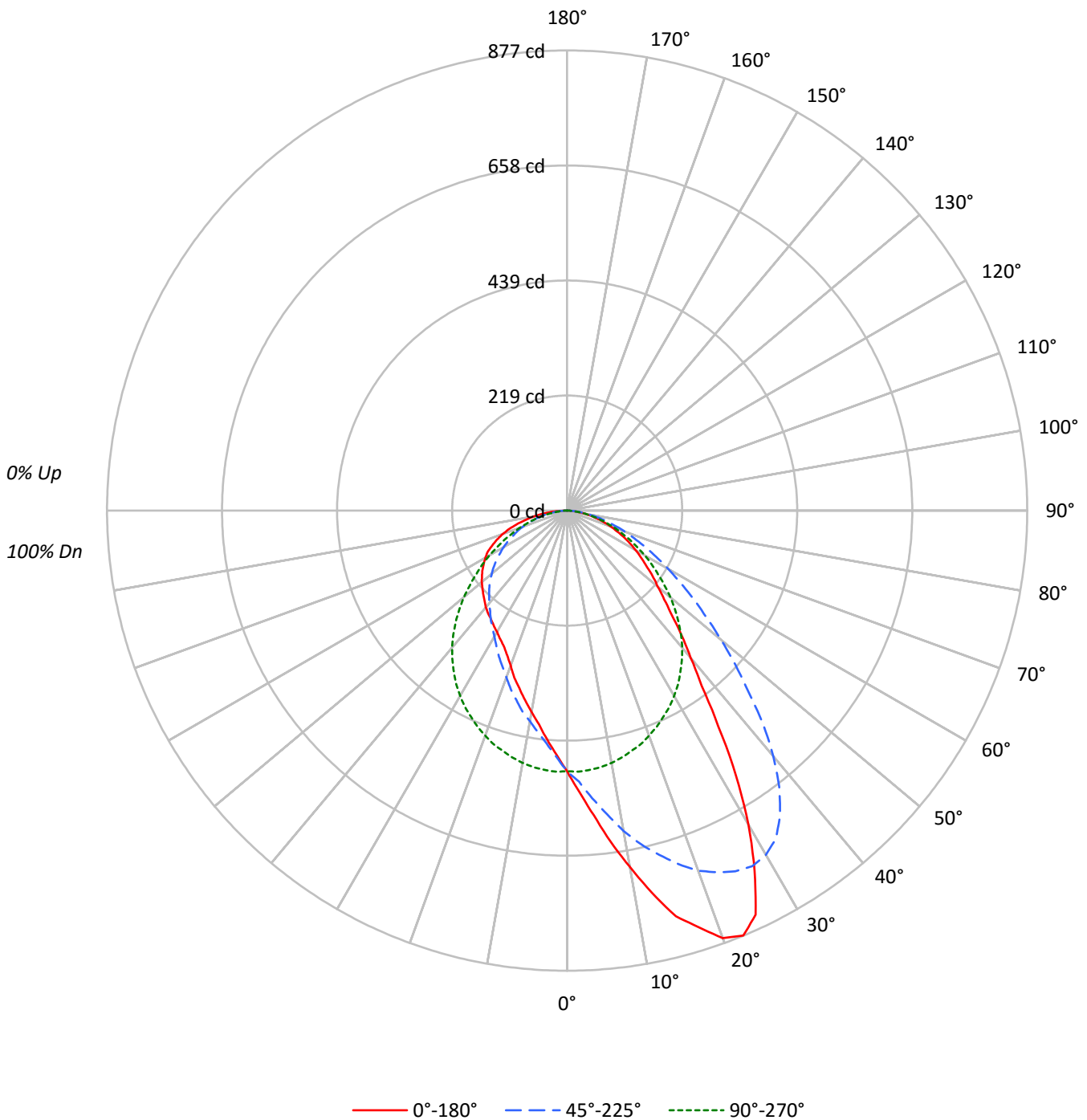
Lumens per Lamp: N/A  
Luminaire Lumens: 1370.7 lumens  
Efficiency: N/A  
Efficacy: 118.2 lumens/watt  
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41  
Luminous Opening: Rectangular (W 4' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (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	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°	4010	4010	4010
5°	4722	4020	3549
10°	5654	4003	3195
15°	6690	3962	2934
20°	7449	3921	2701
25°	7570	3861	2540
30°	6441	3801	2490
35°	4952	3707	2490
40°	3860	3596	2538
45°	3218	3427	2579
50°	2832	3223	2668
55°	2595	2977	2774
60°	2432	2758	2903
65°	2264	2512	3011
70°	2070	2268	3080
75°	1850	1996	3041
80°	1548	1636	2947
85°	1139	1186	2825



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	48.3	3.5
10°-20°	149.2	10.9
20°-30°	237.0	17.3
30°-40°	263.4	19.2
40°-50°	239.5	17.5
50°-60°	195.7	14.3
60°-70°	139.7	10.2
70°-80°	76.9	5.6
80°-90°	20.8	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°	434.6	31.7
0°-40°	698.0	50.9
0°-60°	1133.3	82.7
0°-90°	1370.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1370.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	497	497	497	497	497	
5°	583	550	496	446	438	59
15°	800	679	474	374	351	226
25°	850	759	433	307	285	377
35°	502	708	376	254	253	318
45°	282	488	300	210	226	222
55°	184	294	212	164	197	166
65°	118	164	132	114	158	117
75°	59	76	64	64	98	63
85°	12	16	13	18	30	15
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°	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7
2.5°	536.6	536.4	534.4	534.0	532.5	530.7	530.3	527.0	520.4	517.3	516.5
5°	582.7	586.9	581.5	580.5	579.9	573.1	569.6	565.5	556.0	550.4	546.1
7.5°	636.7	636.9	634.6	632.3	628.4	622.7	614.8	605.8	594.9	583.8	575.9
10°	689.7	691.4	688.7	688.3	677.8	671.2	658.1	646.9	634.2	620.0	607.0
12.5°	745.7	742.4	741.4	730.5	730.7	717.3	701.5	689.9	668.5	651.7	633.4
15°	800.4	795.9	793.0	780.9	774.9	758.3	742.0	729.5	703.7	679.2	660.7
17.5°	832.1	837.7	830.3	825.3	809.1	798.2	781.9	756.2	737.1	706.6	685.4
20°	867.1	867.5	863.8	858.7	846.5	831.7	813.6	784.8	760.7	730.5	698.4
22.5°	876.6	876.6	875.5	870.8	862.4	851.1	832.7	809.9	779.5	745.9	713.8
25°	849.8	849.0	850.9	856.2	852.7	849.0	838.5	820.6	793.4	758.7	724.1
27.5°	774.1	779.5	790.6	803.7	813.2	821.6	821.0	813.4	794.1	764.0	727.2
30°	691.0	698.0	705.8	719.0	744.5	759.1	775.1	787.3	780.5	757.6	723.9
32.5°	599.6	600.0	612.6	628.0	650.8	682.3	710.1	737.9	749.8	740.6	713.8
35°	502.5	505.4	517.9	532.7	561.3	595.7	634.0	668.1	696.3	707.6	693.2
37.5°	421.0	430.1	439.5	456.4	482.5	513.6	554.8	597.3	638.7	663.8	666.5
40°	366.3	371.4	377.8	389.9	411.3	441.8	475.9	526.6	571.2	611.5	624.7
42.5°	323.1	325.5	328.8	339.5	354.5	384.8	415.2	458.2	503.1	553.3	577.6
45°	281.9	285.0	291.6	298.0	310.3	331.3	360.3	396.9	442.0	488.5	529.2
47.5°	251.0	253.1	257.2	264.2	275.3	289.5	314.2	345.3	389.3	434.4	478.0
50°	225.5	227.2	230.3	236.4	244.5	256.8	276.1	304.7	337.5	382.9	425.5
52.5°	205.4	205.8	207.8	211.5	217.5	227.4	242.4	264.8	294.7	334.0	376.4
55°	184.4	185.2	187.3	190.3	195.9	202.5	214.6	232.3	258.9	294.0	330.9
57.5°	167.1	167.9	169.6	170.8	175.7	181.3	191.2	203.9	224.7	256.0	289.5
60°	150.6	150.2	152.3	153.3	156.4	160.9	168.1	180.3	197.7	221.8	252.1
62.5°	134.6	134.0	135.6	137.0	138.5	142.2	147.7	156.6	170.0	191.2	216.3
65°	118.5	117.7	118.7	120.4	122.0	124.1	128.4	136.8	148.2	163.8	183.8
67.5°	102.1	103.1	103.1	104.1	105.1	108.0	111.1	117.7	125.7	138.5	156.2
70°	87.7	87.9	88.7	88.7	89.3	91.8	94.2	97.7	105.6	117.1	130.9
72.5°	73.3	74.3	73.7	74.5	74.9	76.3	78.0	81.3	87.7	95.5	106.6
75°	59.3	59.9	59.9	60.1	60.7	61.3	62.8	65.2	70.0	76.3	84.4
77.5°	45.7	45.7	46.1	46.9	46.9	47.9	49.2	51.0	53.7	58.4	63.6
80°	33.3	33.7	33.5	34.0	34.0	34.8	35.2	37.7	38.7	41.6	45.5
82.5°	22.2	22.6	22.6	23.3	23.7	23.7	24.3	24.9	25.9	28.4	29.4
85°	12.3	12.8	12.3	12.8	13.4	13.6	14.2	14.4	15.2	15.8	17.3
87.5°	4.5	5.1	5.1	5.4	5.8	6.0	6.2	6.0	6.8	7.0	7.8
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°	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7
2.5°	516.7	513.8	511.7	510.1	505.6	502.9	500.8	498.0	494.7	491.2	486.9
5°	541.8	534.8	529.7	521.8	514.4	508.3	501.9	496.1	489.1	481.5	475.9
7.5°	567.5	557.8	544.9	534.8	522.7	512.2	502.9	493.2	482.9	473.1	463.8
10°	591.8	578.4	563.6	546.1	529.7	515.0	501.5	488.3	475.5	462.8	451.9
12.5°	617.9	600.4	576.8	555.6	536.6	515.9	498.8	481.9	465.9	452.3	439.1
15°	640.8	616.7	591.4	564.0	539.7	516.9	494.5	474.1	456.8	439.1	426.8
17.5°	655.2	625.3	598.2	569.6	541.6	513.0	489.7	466.9	445.5	428.2	412.8
20°	669.4	639.7	603.7	575.1	540.1	510.5	482.5	456.4	433.8	415.0	399.0
22.5°	681.7	646.3	610.3	570.4	535.6	503.7	472.4	446.1	422.9	402.9	387.7
25°	684.6	645.3	606.2	568.7	529.2	492.0	464.2	433.4	408.7	387.9	371.4
27.5°	685.6	644.1	600.6	559.9	519.2	485.2	449.0	422.0	396.5	374.5	358.9
30°	683.4	639.5	592.0	546.9	506.0	468.3	437.9	407.8	381.7	359.9	343.4
32.5°	676.2	630.1	580.9	532.5	489.7	453.1	421.4	393.2	367.9	346.5	329.0
35°	660.9	615.9	563.8	514.2	470.8	433.6	405.2	376.1	350.6	330.3	313.6
37.5°	640.6	598.6	545.7	494.1	452.3	414.4	385.8	359.1	336.0	315.0	297.7
40°	612.2	576.4	523.3	473.3	427.2	391.6	365.2	341.2	318.3	298.8	282.5
42.5°	579.4	549.4	501.5	447.8	403.7	367.9	342.4	321.4	300.2	282.5	266.3
45°	539.3	518.7	472.7	423.7	377.4	343.6	319.1	300.2	282.1	264.4	250.8
47.5°	494.7	483.1	443.0	396.1	351.7	317.9	296.7	278.6	262.2	246.7	234.6
50°	449.6	444.7	411.1	366.3	324.3	293.0	271.6	256.6	243.0	229.8	218.5
52.5°	405.2	406.2	376.8	336.6	298.6	268.7	247.5	233.8	222.4	212.4	202.5
55°	359.7	365.4	341.8	305.2	270.4	243.2	224.1	211.5	203.3	194.5	186.8
57.5°	317.9	327.6	307.0	273.5	244.0	218.1	201.2	191.6	182.5	176.8	170.8
60°	277.2	286.2	271.0	243.8	216.5	195.1	179.2	170.8	163.2	159.5	155.6
62.5°	241.0	248.8	238.5	213.8	191.0	170.6	157.8	149.8	145.3	141.2	138.9
65°	206.8	213.6	203.9	185.6	165.2	148.8	137.9	131.5	126.5	124.9	122.0
67.5°	173.1	179.2	174.1	158.0	140.7	127.8	119.1	112.4	109.5	107.8	106.0
70°	143.6	149.8	144.2	130.7	118.1	107.6	99.6	96.1	93.0	92.4	89.5
72.5°	118.7	122.4	116.9	107.0	96.7	88.3	82.5	78.8	77.6	76.3	75.1
75°	92.8	96.5	92.8	84.6	77.0	70.8	65.4	64.0	62.1	61.5	60.5
77.5°	69.6	73.0	70.2	64.6	58.6	53.5	50.4	48.4	48.2	46.9	47.3
80°	50.2	52.3	49.6	46.1	41.6	38.3	36.2	35.2	34.0	33.5	34.4
82.5°	32.5	33.1	32.1	30.0	27.0	25.1	23.9	22.6	22.6	22.8	22.6
85°	18.7	18.5	18.3	16.3	15.2	13.8	13.0	12.8	12.6	13.0	13.4
87.5°	7.8	8.0	7.8	7.0	6.4	5.8	5.6	5.4	5.6	5.8	6.0
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°	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7
2.5°	484.8	482.9	480.3	476.6	473.5	470.2	469.4	468.1	470.6	468.5	467.9
5°	471.2	466.9	461.3	455.0	451.3	445.9	444.9	442.8	440.8	440.6	438.5
7.5°	457.0	451.0	444.1	437.5	431.7	425.9	422.2	421.8	418.5	416.9	414.8
10°	443.4	435.6	427.2	421.0	414.0	407.8	403.5	401.0	399.0	396.7	394.7
12.5°	427.4	418.9	412.4	405.6	396.9	392.6	384.8	380.1	380.1	380.7	374.5
15°	415.7	407.4	396.7	387.3	382.7	373.7	369.8	364.8	361.7	358.7	356.2
17.5°	401.3	391.2	382.9	372.2	363.8	357.0	351.7	349.0	344.0	339.5	336.4
20°	387.9	377.0	368.1	356.6	347.1	338.3	334.0	329.8	326.4	322.6	319.1
22.5°	374.3	362.8	351.5	340.3	331.7	322.2	318.1	312.2	308.9	307.2	303.7
25°	359.9	347.5	335.2	324.5	315.4	307.2	301.7	297.3	293.6	292.0	289.7
27.5°	344.3	332.1	320.4	308.0	297.5	291.6	287.0	283.6	281.3	278.8	277.8
30°	329.4	316.7	303.9	292.6	283.1	277.2	273.1	270.8	269.1	268.1	267.1
32.5°	314.4	301.9	288.3	278.2	270.0	264.8	261.9	259.7	259.1	258.9	258.7
35°	298.2	285.4	273.1	263.8	255.8	253.7	251.0	249.8	249.4	250.8	251.5
37.5°	282.5	270.6	259.1	249.8	244.5	241.2	240.1	239.9	241.4	242.6	244.0
40°	267.5	256.0	245.3	237.5	232.5	230.7	230.3	231.3	232.9	234.4	236.0
42.5°	252.9	241.6	232.1	224.9	221.8	220.2	220.6	221.6	224.1	225.9	228.6
45°	237.7	228.2	218.7	212.8	209.9	210.3	210.3	212.1	214.4	217.1	219.8
47.5°	223.5	213.8	205.8	200.6	199.2	198.6	199.6	202.1	205.2	208.2	211.9
50°	209.1	200.0	193.2	188.7	187.0	187.7	189.3	191.6	195.5	199.6	203.5
52.5°	194.5	186.4	180.3	176.1	175.1	176.3	178.0	181.9	185.2	189.7	194.7
55°	179.2	172.2	167.3	164.2	163.8	164.4	166.3	170.2	175.1	180.7	185.2
57.5°	164.2	158.2	153.5	151.2	151.4	151.9	154.7	159.5	164.4	170.4	176.1
60°	149.0	143.6	139.9	138.3	138.5	139.7	143.4	147.7	154.3	160.1	166.3
62.5°	134.6	130.0	126.5	125.1	124.7	127.8	131.3	135.8	142.4	149.0	155.8
65°	118.9	115.2	112.4	111.5	112.1	114.2	118.7	124.7	130.3	137.0	144.0
67.5°	103.7	100.6	98.6	99.0	99.6	102.5	106.4	111.5	117.7	124.7	131.9
70°	89.3	86.4	84.8	85.0	86.2	89.9	93.2	98.4	105.1	112.4	118.1
72.5°	74.5	72.8	71.4	72.4	73.7	75.9	80.3	85.4	91.2	97.7	103.9
75°	59.5	59.5	58.6	59.3	61.1	63.6	66.7	72.0	78.0	83.3	88.3
77.5°	46.7	46.1	46.5	47.1	48.4	51.4	54.9	58.9	63.6	69.1	73.3
80°	33.7	34.0	35.0	36.2	36.6	38.9	42.6	46.1	49.6	54.1	58.0
82.5°	23.3	23.5	23.9	25.5	25.9	28.4	30.5	34.0	37.0	39.7	42.8
85°	13.8	13.8	14.8	15.4	16.5	18.1	19.5	21.6	24.5	26.5	29.6
87.5°	6.6	6.6	7.4	7.8	8.4	9.5	9.9	12.1	13.0	14.0	15.8
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°	496.7	496.7	496.7	496.7
2.5°	467.5	467.1	465.7	465.5
5°	437.3	436.2	435.6	437.9
7.5°	414.4	413.6	411.7	411.1
10°	392.6	391.8	390.1	389.7
12.5°	371.6	369.8	369.8	370.4
15°	353.5	352.7	350.4	351.0
17.5°	335.0	334.2	331.1	334.2
20°	317.7	316.1	314.6	314.4
22.5°	301.2	299.8	300.0	298.4
25°	288.1	286.6	286.2	285.2
27.5°	277.4	276.6	275.7	276.1
30°	267.7	267.5	267.1	267.1
32.5°	259.7	259.7	260.1	260.1
35°	252.3	252.9	253.3	252.7
37.5°	245.7	246.1	246.7	247.3
40°	237.9	239.3	239.7	240.8
42.5°	230.5	232.1	233.3	233.3
45°	222.8	224.5	225.9	225.9
47.5°	215.0	217.3	218.7	218.9
50°	207.0	209.9	211.3	212.4
52.5°	199.2	202.1	204.1	204.5
55°	189.9	194.0	196.3	197.1
57.5°	181.7	185.4	187.9	188.5
60°	171.8	175.9	179.2	179.8
62.5°	161.7	166.1	168.9	170.8
65°	149.8	154.1	157.0	157.6
67.5°	137.2	141.8	143.6	144.9
70°	123.9	127.4	129.4	130.5
72.5°	108.6	112.4	114.8	114.8
75°	93.0	96.3	97.5	97.5
77.5°	76.8	78.6	80.3	80.7
80°	61.1	62.1	63.4	63.4
82.5°	45.1	45.9	47.1	46.9
85°	29.2	31.1	30.9	30.5
87.5°	16.5	16.7	17.3	17.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)