

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: P243150

Luminaire Tested: **S122DR-H485D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243150
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-H485D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1884.0 lumens
Efficiency: N/A
Efficacy: 109.5 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

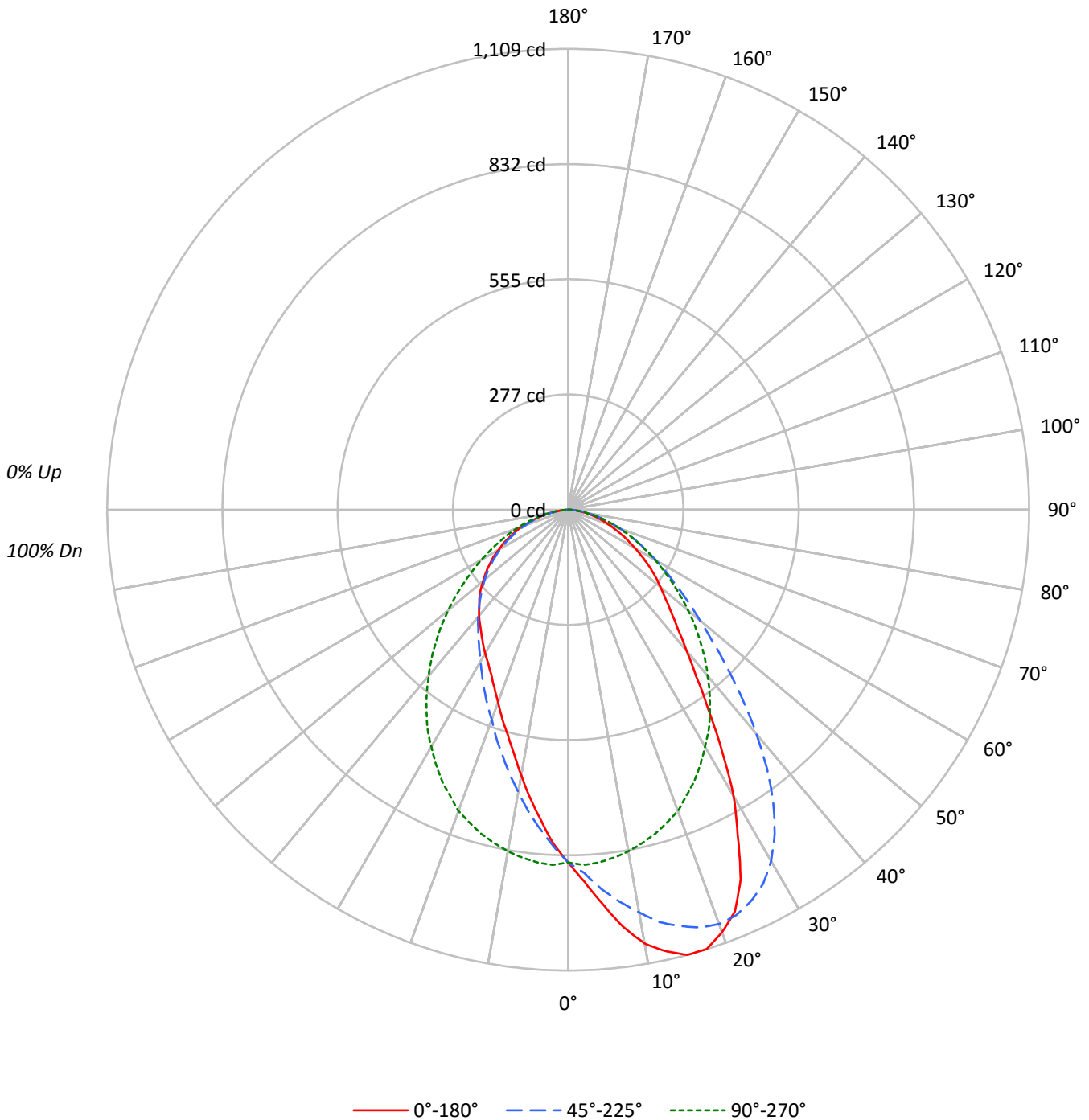
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	16172	16172	16172
5°	18216	16289	14348
10°	20506	16142	12557
15°	21873	15926	11067
20°	21936	15636	9987
25°	20632	15117	9205
30°	17514	14486	8791
35°	13694	13810	8462
40°	11000	12977	8297
45°	9463	12122	8143
50°	8585	11154	7915
55°	7910	10165	7701
60°	7112	9158	7349
65°	6400	8230	6995
70°	5703	7312	6544
75°	5137	6292	5733
80°	4475	5068	4475
85°	3846	3781	2470



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.9	4.3
10°-20°	232.5	12.3
20°-30°	338.1	17.9
30°-40°	362.7	19.3
40°-50°	325.1	17.3
50°-60°	259.1	13.8
60°-70°	175.3	9.3
70°-80°	89.4	4.7
80°-90°	20.9	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°	651.5	34.6
0°-40°	1014.2	53.8
0°-60°	1598.4	84.8
0°-90°	1884.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1884.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	849	849	849	849	849	
5°	953	916	852	771	750	94
15°	1109	1037	808	611	561	311
25°	982	1040	719	478	438	442
35°	589	860	594	376	364	373
45°	351	544	450	298	302	275
55°	238	316	306	225	232	213
65°	142	184	183	148	155	141
75°	70	87	86	74	78	74
85°	18	20	17	14	11	20
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°	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0
2.5°	896.2	899.0	896.5	895.6	893.7	893.0	888.0	883.9	881.4	874.5	875.1
5°	952.7	959.0	955.6	955.3	948.3	943.9	939.5	933.3	923.8	916.3	910.3
7.5°	1012.4	1009.3	1008.4	1004.9	999.9	993.6	983.9	974.7	962.8	951.8	943.6
10°	1060.2	1059.3	1060.8	1052.0	1048.9	1039.2	1030.7	1016.5	1001.1	983.9	973.2
12.5°	1088.5	1091.3	1093.5	1090.1	1082.5	1079.7	1065.6	1045.8	1040.4	1016.8	1004.0
15°	1109.2	1110.5	1110.8	1107.0	1103.3	1096.0	1087.5	1075.0	1057.7	1037.3	1027.5
17.5°	1108.0	1107.7	1109.5	1107.3	1105.1	1102.9	1096.3	1086.6	1073.1	1053.9	1037.6
20°	1082.2	1087.9	1092.3	1093.2	1092.9	1094.1	1091.0	1084.7	1075.0	1061.2	1042.6
22.5°	1047.0	1044.8	1054.2	1053.6	1057.7	1067.1	1071.2	1068.7	1064.9	1056.1	1041.4
25°	981.7	983.9	990.5	997.4	1013.4	1019.0	1031.3	1040.7	1042.0	1039.8	1030.7
27.5°	883.6	899.3	902.8	911.9	934.2	952.7	977.6	992.3	1013.4	1015.3	1011.2
30°	796.3	795.6	801.0	817.3	837.7	865.7	897.8	935.8	960.0	976.6	982.6
32.5°	688.8	691.3	705.1	725.2	746.0	773.9	811.0	857.5	889.9	924.5	943.9
35°	588.9	596.7	609.9	623.7	646.4	684.7	725.9	764.5	814.2	860.4	891.8
37.5°	506.5	517.2	527.3	540.5	562.5	592.0	629.1	680.3	729.6	785.3	831.5
40°	442.4	446.5	453.4	466.3	481.1	510.6	548.0	586.4	639.8	703.6	764.2
42.5°	392.2	391.2	398.8	406.9	420.4	442.4	475.1	513.5	566.6	623.1	684.4
45°	351.3	351.6	354.8	363.2	373.9	386.5	411.6	447.8	488.0	544.2	609.3
47.5°	318.0	318.9	323.7	329.6	335.9	347.5	364.2	387.8	425.5	472.6	533.6
50°	289.7	291.3	294.4	298.8	303.5	311.7	324.3	342.8	372.7	412.6	467.9
52.5°	264.6	265.2	266.2	270.2	274.0	281.5	291.0	305.4	329.0	362.3	405.4
55°	238.2	237.6	239.8	243.2	246.7	252.0	261.8	273.4	290.0	316.4	351.9
57.5°	211.2	212.1	213.7	215.6	221.8	227.5	234.7	245.4	258.6	279.4	308.9
60°	186.7	186.7	188.5	191.1	195.1	198.9	205.8	215.6	227.2	243.2	268.0
62.5°	162.8	164.0	165.9	167.2	170.9	175.7	181.0	188.5	199.2	212.1	230.6
65°	142.0	141.4	143.3	145.8	148.6	151.8	157.7	164.0	172.2	183.8	199.2
67.5°	120.7	122.5	123.2	124.4	126.6	130.7	133.5	140.1	146.7	157.1	170.0
70°	102.4	103.7	104.6	106.2	108.1	110.0	112.8	118.2	124.7	132.0	141.1
72.5°	86.1	87.0	86.1	87.7	88.6	90.5	94.3	96.8	101.8	108.1	116.3
75°	69.8	70.4	70.1	71.6	72.0	73.8	75.7	77.9	83.6	87.0	92.7
77.5°	54.7	55.3	55.6	56.2	56.9	57.8	58.8	61.0	64.1	67.2	71.6
80°	40.8	40.8	41.8	42.1	42.4	43.0	44.6	45.2	47.4	48.4	51.8
82.5°	28.3	28.6	28.9	28.9	29.2	29.9	30.2	31.4	32.1	33.6	35.2
85°	17.6	17.9	17.9	17.9	18.9	18.5	18.5	19.2	20.1	20.1	20.7
87.5°	8.8	9.1	9.1	9.1	9.4	9.4	9.4	9.4	9.4	10.1	9.7
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°	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0
2.5°	874.8	874.5	873.2	867.6	863.2	857.5	856.6	855.6	847.8	839.3	836.8
5°	905.6	900.0	892.1	882.7	873.2	862.9	856.9	851.9	839.9	826.7	819.2
7.5°	935.8	924.8	912.5	897.8	882.0	865.4	854.7	844.6	828.3	811.0	800.7
10°	961.5	946.8	929.8	910.3	888.6	866.0	850.3	834.6	813.9	792.8	779.0
12.5°	982.9	964.1	941.7	915.4	895.6	864.4	842.5	821.7	798.8	771.4	756.4
15°	999.3	980.7	950.5	923.8	897.8	856.3	829.6	807.6	776.8	750.1	726.2
17.5°	1019.0	992.7	962.8	924.5	895.6	848.1	817.9	789.3	756.0	724.6	698.2
20°	1027.8	1000.2	968.1	925.4	888.6	839.3	799.1	771.4	731.2	695.1	665.2
22.5°	1029.1	1002.7	967.8	922.6	876.7	826.4	780.2	744.1	703.9	665.5	631.9
25°	1023.8	998.6	962.5	917.6	863.5	812.6	761.1	719.3	672.8	633.2	598.9
27.5°	1009.3	988.9	954.6	906.6	850.0	791.2	735.0	689.4	643.5	598.6	565.9
30°	986.1	972.5	943.0	892.1	832.7	768.0	711.7	658.6	609.0	566.9	531.7
32.5°	956.2	949.6	925.1	874.8	815.1	742.5	683.8	629.1	575.0	535.1	499.0
35°	918.2	921.6	900.9	855.3	792.8	716.8	651.1	593.9	541.1	498.7	465.4
37.5°	868.8	885.8	872.6	829.9	764.2	690.7	616.8	559.3	504.0	463.2	434.0
40°	813.5	843.4	837.1	801.3	733.4	660.2	583.8	521.9	467.9	429.2	401.3
42.5°	748.5	791.9	798.8	766.4	702.9	622.2	546.8	487.1	434.9	396.9	370.2
45°	675.6	729.3	752.6	727.1	667.4	585.4	508.7	450.0	398.4	366.1	343.8
47.5°	602.4	667.1	698.5	686.3	625.9	546.1	471.0	413.5	364.8	336.5	315.5
50°	530.1	599.6	645.4	637.3	585.1	508.7	433.0	376.4	331.8	305.7	287.8
52.5°	466.6	532.3	582.3	586.4	539.5	466.0	392.8	340.3	302.3	278.7	263.6
55°	404.1	465.1	519.7	529.8	491.8	421.1	355.7	306.1	271.5	252.0	239.8
57.5°	348.2	403.5	457.8	475.4	444.6	380.8	315.8	272.1	242.3	227.2	216.5
60°	300.7	350.7	397.5	415.4	394.4	336.2	279.4	240.4	215.6	202.0	193.6
62.5°	259.2	297.9	339.4	359.2	345.0	294.4	244.8	210.2	190.1	178.5	171.9
65°	221.8	251.7	284.4	307.3	291.6	253.9	212.4	182.6	165.6	154.9	150.2
67.5°	187.3	212.1	238.2	256.4	248.6	214.3	179.4	156.2	142.0	133.9	129.5
70°	155.9	174.4	195.5	209.6	203.9	177.5	149.9	131.3	119.4	113.8	110.0
72.5°	127.9	139.8	155.9	167.5	161.5	143.0	123.2	108.4	99.6	93.0	90.2
75°	101.5	111.9	123.2	131.0	126.3	112.5	96.8	85.5	79.5	75.4	73.5
77.5°	77.0	85.2	93.0	96.8	94.6	84.5	73.8	65.0	60.0	57.5	55.3
80°	55.3	60.0	65.4	68.8	67.6	60.6	53.1	46.2	44.0	40.8	40.2
82.5°	37.1	40.8	42.1	43.7	42.7	39.6	34.3	30.2	28.3	26.7	26.4
85°	22.0	22.9	24.5	24.5	23.6	21.4	18.5	17.3	15.4	15.1	14.1
87.5°	9.7	9.7	9.7	9.7	9.7	9.1	7.9	7.2	6.6	6.3	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°	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0
2.5°	834.6	831.5	827.1	822.0	817.6	810.7	808.5	808.5	810.1	808.2	806.6
5°	812.9	806.6	800.3	790.6	782.4	771.4	768.3	765.1	764.8	761.7	757.6
7.5°	789.7	780.2	767.3	753.5	744.7	732.8	726.2	724.3	718.3	712.7	706.1
10°	762.6	748.2	732.8	719.6	705.8	690.4	682.5	677.2	671.2	664.3	659.6
12.5°	730.0	713.6	699.5	684.1	672.5	650.8	648.3	641.3	629.4	619.0	615.3
15°	709.8	681.3	665.2	651.1	633.5	611.2	603.0	595.5	584.2	577.6	572.2
17.5°	674.3	648.6	628.5	609.6	592.6	575.4	563.1	556.8	547.7	542.0	536.7
20°	642.0	614.0	593.0	571.0	553.4	537.6	527.3	519.4	514.7	509.1	503.7
22.5°	609.3	580.1	560.0	537.6	516.9	507.5	495.2	488.6	482.3	477.9	472.3
25°	571.3	548.0	522.9	505.6	487.4	477.6	466.0	459.7	454.7	449.7	446.8
27.5°	537.3	513.8	490.5	473.2	457.8	448.4	441.2	435.2	428.9	425.2	423.0
30°	502.1	480.5	460.0	443.4	431.4	421.1	416.7	411.0	406.3	404.7	401.3
32.5°	470.7	446.5	430.2	415.1	405.0	397.8	394.7	388.7	387.8	386.2	384.3
35°	439.3	418.6	402.8	390.0	381.5	376.1	372.0	370.5	368.9	367.3	365.8
37.5°	408.2	391.8	377.1	366.7	359.8	355.7	354.8	351.6	351.3	349.1	349.1
40°	380.2	363.6	353.2	345.0	339.4	337.5	335.0	334.3	333.4	332.8	334.0
42.5°	352.3	340.9	332.1	323.7	319.3	317.7	317.1	316.1	315.5	317.4	318.0
45°	326.2	316.4	308.9	302.9	300.4	298.5	298.5	299.5	299.1	300.1	300.1
47.5°	302.0	293.2	286.9	284.7	281.5	280.9	281.2	280.9	282.5	283.7	285.0
50°	279.0	271.2	266.2	264.0	263.3	262.4	263.6	264.3	265.2	266.5	267.1
52.5°	253.6	249.8	246.7	244.5	244.2	244.5	244.2	246.4	247.3	249.2	248.9
55°	231.9	229.1	226.9	224.4	224.0	225.0	225.6	227.5	228.8	230.3	230.0
57.5°	211.5	209.3	206.8	206.1	205.8	206.1	209.0	208.6	210.5	211.8	212.4
60°	189.2	187.6	185.4	185.4	186.3	187.0	187.9	189.5	191.4	191.1	193.3
62.5°	168.7	166.9	166.2	167.2	166.9	168.4	169.4	169.4	171.9	172.8	173.5
65°	148.3	147.7	146.7	146.7	147.7	148.0	149.6	150.5	151.5	153.3	154.9
67.5°	129.1	127.6	127.6	126.9	128.2	129.1	130.1	131.3	132.0	134.2	135.1
70°	109.0	108.4	108.1	108.7	108.7	109.7	111.2	112.8	114.1	114.4	116.3
72.5°	89.6	89.6	89.6	90.5	91.1	92.1	92.4	93.6	95.5	95.8	96.8
75°	72.0	72.3	72.0	72.3	72.6	73.5	74.2	75.4	76.7	77.0	77.6
77.5°	55.6	55.0	54.4	55.3	55.9	57.8	57.5	58.1	59.4	58.8	59.4
80°	39.0	39.9	38.7	40.5	40.5	40.2	40.8	41.8	41.5	42.1	41.5
82.5°	26.4	25.5	25.5	26.4	26.7	25.8	26.4	26.7	27.0	26.4	26.1
85°	14.5	14.1	14.8	13.8	14.1	13.5	13.5	12.9	13.5	12.9	12.3
87.5°	5.3	5.0	5.3	4.4	4.1	3.8	3.5	3.5	2.8	2.8	2.8
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°	849.0	849.0	849.0	849.0
2.5°	808.8	805.4	803.8	805.1
5°	753.2	754.2	748.5	750.4
7.5°	705.1	701.0	702.3	700.1
10°	654.2	652.0	648.6	649.2
12.5°	620.0	605.2	604.3	601.4
15°	571.9	563.7	561.8	561.2
17.5°	533.6	526.6	529.2	527.3
20°	499.0	499.3	495.2	492.7
22.5°	468.5	467.9	466.3	463.8
25°	442.7	442.7	439.0	438.0
27.5°	419.2	419.8	416.7	416.7
30°	401.6	399.4	399.1	399.7
32.5°	384.0	381.5	381.8	381.5
35°	365.1	365.8	364.8	363.9
37.5°	349.1	349.1	349.1	348.2
40°	333.4	334.0	333.1	333.7
42.5°	317.7	318.0	318.0	316.7
45°	302.0	301.7	301.0	302.3
47.5°	285.6	285.6	285.3	285.9
50°	267.7	268.4	267.4	267.1
52.5°	249.5	249.8	249.5	250.1
55°	231.0	231.0	231.3	231.9
57.5°	211.8	214.0	212.4	213.7
60°	192.9	193.3	193.6	192.9
62.5°	175.0	174.7	175.0	176.0
65°	155.5	156.2	155.9	155.2
67.5°	136.4	135.7	136.7	135.7
70°	116.0	117.2	116.3	117.5
72.5°	97.4	97.1	97.7	96.2
75°	77.9	77.9	78.2	77.9
77.5°	59.7	59.1	58.8	57.8
80°	41.2	41.2	39.9	40.8
82.5°	25.1	25.5	25.8	23.9
85°	11.9	11.9	11.6	11.3
87.5°	2.5	2.5	2.8	3.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)