

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: P242290

Luminaire Tested: **S122DR-S485D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242290
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-S485D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1942.6 lumens
Efficiency: N/A
Efficacy: 103.3 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

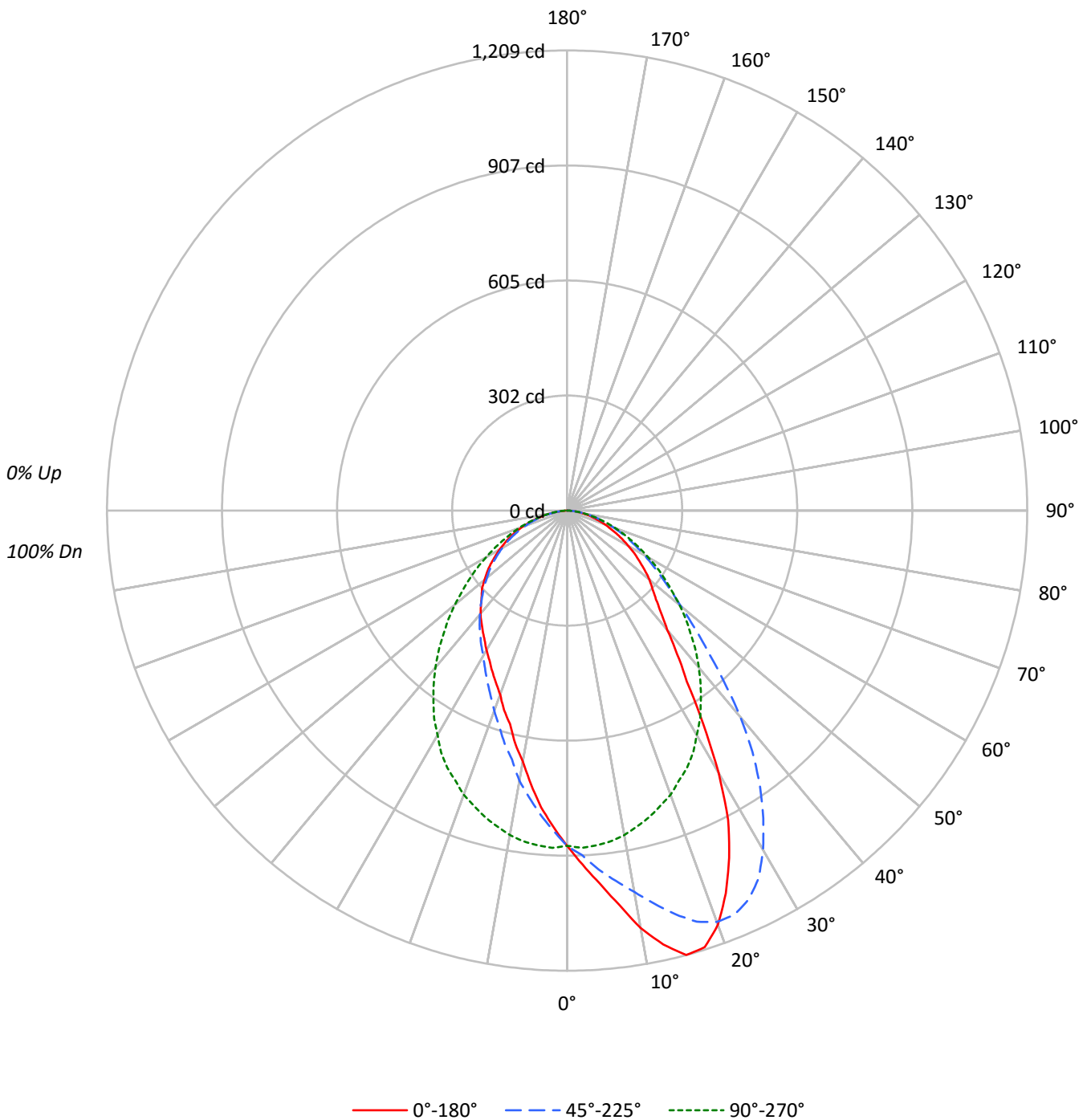
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					86			
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74					74			
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64					64			
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55					55			
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49					49			
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43					43			
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39					39			
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35					35			
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32					32			
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29					29			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	16773	16773	16773
5°	18805	16881	14960
10°	21548	16744	12947
15°	23837	16436	11439
20°	23475	16107	10427
25°	21166	15668	9788
30°	17492	14969	9319
35°	12747	14235	8987
40°	10182	13372	8802
45°	8897	12370	8550
50°	8362	11403	8383
55°	7711	10418	8159
60°	7067	9371	7813
65°	6436	8433	7473
70°	5842	7518	6973
75°	5181	6498	6175
80°	4453	5386	4969
85°	3999	3999	2950



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.9	4.3
10°-20°	244.1	12.6
20°-30°	354.3	18.2
30°-40°	373.5	19.2
40°-50°	330.5	17.0
50°-60°	263.8	13.6
60°-70°	179.2	9.2
70°-80°	91.7	4.7
80°-90°	21.7	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°	682.3	35.1
0°-40°	1055.8	54.3
0°-60°	1650.0	84.9
0°-90°	1942.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1942.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	881	881	881	881	881	
5°	984	947	883	802	782	98
15°	1209	1098	834	634	580	335
25°	1007	1128	746	496	466	457
35°	548	883	612	398	386	355
45°	330	523	459	315	317	259
55°	232	301	314	237	246	208
65°	143	178	187	156	166	142
75°	70	86	88	79	84	75
85°	18	20	18	15	14	21
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°	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6
2.5°	931.3	931.7	932.4	926.9	926.3	926.3	921.5	917.5	912.7	906.3	907.0
5°	983.5	987.2	988.5	984.5	978.4	977.7	972.0	962.5	953.7	946.6	941.5
7.5°	1043.7	1045.1	1042.3	1037.6	1033.5	1025.8	1016.3	1007.1	993.6	981.4	972.6
10°	1114.1	1116.1	1110.4	1102.6	1096.2	1086.7	1071.1	1055.2	1035.9	1017.3	1002.4
12.5°	1167.6	1173.3	1165.5	1166.2	1154.0	1140.1	1120.9	1114.8	1085.7	1057.9	1041.7
15°	1208.8	1208.5	1209.2	1202.8	1194.6	1192.6	1173.0	1151.7	1113.4	1098.2	1071.8
17.5°	1202.8	1207.5	1210.2	1208.2	1206.8	1203.8	1195.3	1179.4	1158.4	1132.7	1101.2
20°	1158.1	1164.9	1165.9	1173.7	1178.1	1183.8	1186.2	1182.5	1170.6	1150.0	1123.6
22.5°	1089.0	1089.7	1093.4	1106.6	1117.5	1134.1	1142.9	1159.4	1156.7	1149.3	1128.3
25°	1007.1	1003.8	1015.6	1021.7	1043.7	1066.7	1083.3	1101.6	1117.8	1127.6	1121.2
27.5°	916.4	909.3	927.3	943.2	958.8	981.1	1006.1	1035.9	1058.6	1089.4	1096.8
30°	795.3	798.3	815.3	832.5	859.6	894.8	923.9	957.4	993.6	1029.1	1053.8
32.5°	664.7	678.5	687.7	716.4	739.5	779.7	825.8	869.7	917.1	958.8	1000.4
35°	548.2	561.8	576.7	596.0	629.5	668.4	710.0	766.5	828.1	883.3	928.6
37.5°	474.5	472.1	481.2	495.5	524.2	557.7	607.1	664.7	738.4	799.7	860.6
40°	409.5	408.1	414.2	427.1	447.7	470.7	512.7	561.8	629.1	708.3	784.5
42.5°	364.8	366.2	368.9	377.0	389.5	407.5	436.2	476.2	536.4	609.8	693.1
45°	330.3	332.7	336.4	340.8	348.9	364.5	382.1	411.9	460.6	522.9	603.4
47.5°	303.2	303.9	308.0	312.0	316.8	326.2	341.8	360.8	398.0	451.1	523.2
50°	282.2	279.9	282.6	285.6	290.7	296.8	306.3	323.9	346.9	387.8	445.7
52.5°	256.5	257.2	259.6	260.2	264.6	270.7	279.2	290.0	310.3	340.1	385.1
55°	232.2	233.9	235.2	237.2	241.3	245.7	252.5	260.6	276.8	300.9	336.1
57.5°	209.1	209.8	210.8	215.2	217.6	221.7	228.4	235.9	246.7	265.3	293.1
60°	185.5	185.5	188.2	189.9	193.2	197.3	202.4	209.5	219.0	233.5	254.8
62.5°	163.8	163.5	164.1	167.2	169.5	173.3	178.3	184.1	192.9	205.4	222.0
65°	142.8	142.1	144.2	144.8	147.6	151.3	155.3	161.8	168.9	178.3	193.9
67.5°	121.8	122.8	124.2	125.6	126.9	131.3	134.0	138.8	144.8	153.0	163.8
70°	104.9	104.9	104.9	105.9	108.0	110.0	112.7	116.4	122.2	128.9	138.4
72.5°	86.0	87.3	88.7	87.7	90.4	91.4	94.8	96.5	101.9	105.6	113.7
75°	70.4	70.4	70.4	72.1	73.1	74.1	76.1	78.2	80.9	86.3	90.7
77.5°	55.5	55.2	55.5	55.8	57.2	58.5	59.2	60.9	63.6	66.3	70.4
80°	40.6	41.3	41.6	42.3	42.3	43.0	43.3	45.7	47.4	49.1	51.4
82.5°	29.1	29.1	29.1	29.1	29.4	29.8	30.8	31.1	31.5	32.8	34.5
85°	18.3	17.9	17.9	18.6	18.3	18.3	19.0	19.6	19.6	20.0	21.0
87.5°	8.8	8.8	9.1	8.8	8.8	9.1	9.1	8.8	9.1	9.5	9.8
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°	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6
2.5°	909.3	906.6	904.9	898.9	893.4	888.0	886.3	887.0	879.6	872.5	869.4
5°	938.8	932.0	925.6	916.4	905.6	893.8	887.7	882.9	871.1	858.2	850.8
7.5°	965.5	956.7	945.2	929.0	914.1	896.5	885.7	876.5	859.9	842.7	832.2
10°	989.5	976.4	960.4	939.5	920.2	897.5	881.6	865.7	845.4	823.7	810.2
12.5°	1010.2	991.2	975.7	947.2	923.6	893.8	874.1	850.1	828.5	801.7	788.5
15°	1045.4	1012.6	982.8	952.3	924.2	884.6	863.7	833.5	805.4	773.6	758.4
17.5°	1071.4	1035.9	989.9	953.0	921.9	879.6	849.4	813.6	781.8	746.6	726.3
20°	1093.1	1050.8	1000.4	954.4	915.1	865.0	831.5	794.6	755.7	714.7	692.4
22.5°	1106.0	1061.0	1011.2	949.3	901.6	853.2	808.8	767.5	727.9	682.9	659.2
25°	1106.6	1066.0	1013.2	946.9	890.7	835.6	784.8	745.5	697.8	656.5	622.4
27.5°	1095.5	1063.3	1012.2	942.2	878.2	814.9	759.8	716.8	666.4	621.7	587.5
30°	1070.8	1053.8	1004.4	934.0	862.6	793.3	731.0	680.6	630.5	585.1	549.9
32.5°	1032.5	1032.2	990.2	922.5	846.1	765.9	700.9	649.8	592.9	548.6	515.4
35°	980.1	996.3	968.9	904.3	824.4	740.1	670.4	612.2	554.7	512.0	480.6
37.5°	913.4	951.0	940.1	879.9	796.6	712.7	636.9	576.0	520.8	476.8	446.0
40°	844.0	895.5	902.9	851.1	766.9	679.9	598.3	537.8	484.3	445.0	413.9
42.5°	769.6	831.8	855.5	816.6	734.4	645.4	563.8	500.5	447.7	409.8	383.1
45°	684.6	764.2	801.0	777.4	697.5	606.8	522.9	459.2	411.2	375.3	354.0
47.5°	607.8	694.1	741.1	730.0	657.9	567.9	485.0	423.0	375.3	346.2	326.2
50°	525.2	614.6	674.5	677.2	614.6	525.6	442.3	384.8	341.8	315.1	299.5
52.5°	453.5	537.8	604.4	621.7	566.2	481.6	404.1	346.9	310.3	286.3	272.8
55°	392.9	465.0	537.4	563.8	518.1	436.9	364.1	313.7	278.2	261.3	249.1
57.5°	335.4	398.7	467.4	495.1	466.0	394.6	324.2	279.9	249.8	234.5	225.1
60°	291.7	339.1	398.7	433.5	409.2	347.2	287.7	246.0	222.3	209.1	200.3
62.5°	251.1	291.7	339.8	370.9	360.4	302.9	251.1	215.6	195.9	183.8	178.0
65°	213.9	247.0	286.0	315.4	306.6	262.3	218.6	187.1	170.9	161.1	156.0
67.5°	182.1	207.5	235.2	262.3	254.8	222.0	185.1	159.7	147.2	138.4	135.4
70°	152.3	170.6	194.6	215.2	209.5	183.8	156.0	135.0	124.5	117.4	114.4
72.5°	123.9	138.1	155.0	170.9	167.5	147.2	125.2	110.7	103.2	96.8	94.4
75°	97.8	109.3	120.5	131.6	130.6	114.0	100.5	88.3	81.9	76.8	75.8
77.5°	76.5	83.6	91.7	98.8	97.1	86.3	75.1	67.7	62.6	59.2	58.9
80°	55.2	58.9	64.3	69.0	66.7	62.6	54.1	49.1	45.7	42.3	40.9
82.5°	36.2	39.9	42.6	44.7	43.0	39.3	34.9	31.8	30.1	28.1	27.8
85°	21.0	23.0	24.4	25.0	24.4	22.0	19.6	18.3	16.6	15.6	15.2
87.5°	10.2	10.2	10.2	10.8	9.8	9.8	8.5	7.4	7.1	6.8	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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6
2.5°	866.0	864.0	856.9	853.2	847.1	841.3	837.6	839.3	840.6	840.0	839.0
5°	844.0	837.6	827.8	819.3	813.2	802.1	797.3	795.0	792.9	790.6	788.2
7.5°	819.7	810.5	796.6	785.8	775.0	760.8	753.7	749.6	745.2	740.1	735.4
10°	793.3	779.0	764.2	747.2	733.7	721.2	710.0	702.6	695.8	689.4	684.6
12.5°	765.5	748.6	729.3	704.6	689.4	670.1	670.8	656.2	644.7	641.3	635.6
15°	735.7	712.7	689.4	662.0	650.1	633.9	623.7	613.6	604.4	598.0	596.3
17.5°	703.2	672.4	649.8	629.5	610.2	593.6	584.8	576.7	568.9	559.4	559.1
20°	665.0	639.3	613.9	596.6	576.7	559.8	548.2	540.1	533.7	528.6	524.2
22.5°	628.8	600.0	577.3	558.1	538.4	525.6	517.1	509.3	504.3	498.5	494.4
25°	589.5	567.5	542.2	520.8	504.6	495.8	488.3	481.6	478.2	474.5	469.7
27.5°	556.0	531.7	506.6	490.0	475.1	467.4	461.6	456.5	453.5	451.1	448.1
30°	520.2	495.5	476.8	460.6	448.7	441.0	437.6	434.9	431.2	429.8	428.4
32.5°	485.6	464.0	448.7	435.2	424.0	419.6	416.6	414.2	411.5	410.2	407.1
35°	453.5	434.9	419.3	411.5	402.4	398.0	395.6	392.2	389.5	388.2	387.8
37.5°	422.7	405.8	395.3	384.8	380.4	378.0	374.6	372.3	371.3	370.9	370.6
40°	392.9	379.7	370.6	362.5	360.8	356.7	354.0	352.0	352.0	352.3	352.0
42.5°	365.8	354.3	346.5	339.8	337.7	335.7	333.0	333.3	334.0	335.4	334.0
45°	338.4	330.0	324.2	320.8	317.1	314.7	314.4	315.4	315.7	316.1	317.1
47.5°	312.7	307.3	301.9	297.8	296.1	295.8	295.1	296.8	298.5	298.8	300.5
50°	290.4	283.9	279.5	277.2	275.8	275.1	275.8	277.8	279.2	280.9	281.9
52.5°	265.3	261.3	258.6	256.9	256.5	257.2	257.2	259.6	261.9	262.3	262.6
55°	242.6	239.3	238.6	235.5	236.9	236.6	238.2	239.6	241.6	243.7	244.0
57.5°	219.6	216.6	214.6	214.9	215.2	216.6	217.9	220.3	222.7	225.1	225.1
60°	196.6	195.3	194.3	194.3	194.9	197.0	198.7	201.0	202.4	203.7	204.7
62.5°	175.6	174.3	173.3	173.9	176.0	177.0	179.0	180.0	181.4	182.7	183.1
65°	153.3	152.6	153.6	154.3	154.7	156.4	158.7	159.7	161.1	161.8	164.1
67.5°	133.0	133.0	132.7	133.7	135.7	136.0	138.4	141.1	141.1	142.5	144.2
70°	112.4	113.0	113.7	114.4	116.1	116.8	118.4	119.5	120.8	121.8	122.8
72.5°	93.4	93.4	94.1	93.7	95.1	96.8	98.1	99.2	100.5	101.9	102.9
75°	74.8	74.8	75.5	75.8	77.5	79.2	78.9	79.5	80.9	82.2	82.9
77.5°	57.9	57.2	57.9	58.2	58.9	60.2	60.6	61.6	63.3	62.9	63.6
80°	41.6	40.6	41.6	42.0	42.0	43.7	43.7	44.3	45.3	44.3	45.3
82.5°	26.7	26.4	27.1	27.1	27.8	27.4	28.1	28.1	29.1	28.8	29.1
85°	14.9	14.6	14.9	14.6	14.9	15.2	15.2	14.9	14.9	15.6	14.6
87.5°	5.8	5.4	5.1	5.1	4.7	4.4	4.1	4.1	4.1	3.4	3.4
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°	880.6	880.6	880.6	880.6
2.5°	835.6	834.9	834.9	831.8
5°	783.4	782.4	780.7	782.4
7.5°	734.0	729.6	729.0	725.6
10°	678.9	676.2	675.8	669.4
12.5°	636.9	629.5	631.2	628.1
15°	587.2	587.2	585.8	580.1
17.5°	551.6	551.3	548.2	550.3
20°	520.5	518.5	514.4	514.4
22.5°	491.1	491.4	487.0	488.7
25°	469.4	466.7	464.7	465.7
27.5°	447.1	446.0	445.7	442.7
30°	428.1	424.7	425.4	423.7
32.5°	406.4	405.8	404.8	403.4
35°	387.2	387.5	385.8	386.5
37.5°	369.9	371.3	370.2	370.2
40°	353.0	353.0	353.0	354.0
42.5°	336.7	336.1	335.4	335.0
45°	317.8	318.8	319.1	317.4
47.5°	301.2	301.5	301.2	303.2
50°	283.6	282.9	283.6	282.9
52.5°	265.0	265.3	264.6	264.6
55°	245.4	246.0	245.7	245.7
57.5°	225.4	225.7	226.4	224.7
60°	204.4	206.1	205.8	205.1
62.5°	185.1	185.5	185.5	185.5
65°	165.2	165.8	164.8	165.8
67.5°	143.5	143.8	144.5	144.8
70°	123.5	123.2	124.2	125.2
72.5°	102.5	103.6	102.9	103.6
75°	82.2	83.3	82.9	83.9
77.5°	62.9	63.3	63.3	63.6
80°	45.3	44.7	44.0	45.3
82.5°	28.1	28.8	28.1	27.8
85°	14.6	14.2	13.5	13.5
87.5°	3.4	3.0	3.0	2.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)