

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: P243441

Luminaire Tested: **S123RDR-H775D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243441
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-H775D930-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED 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: 2296.8 lumens
Efficiency: N/A
Efficacy: 97.3 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

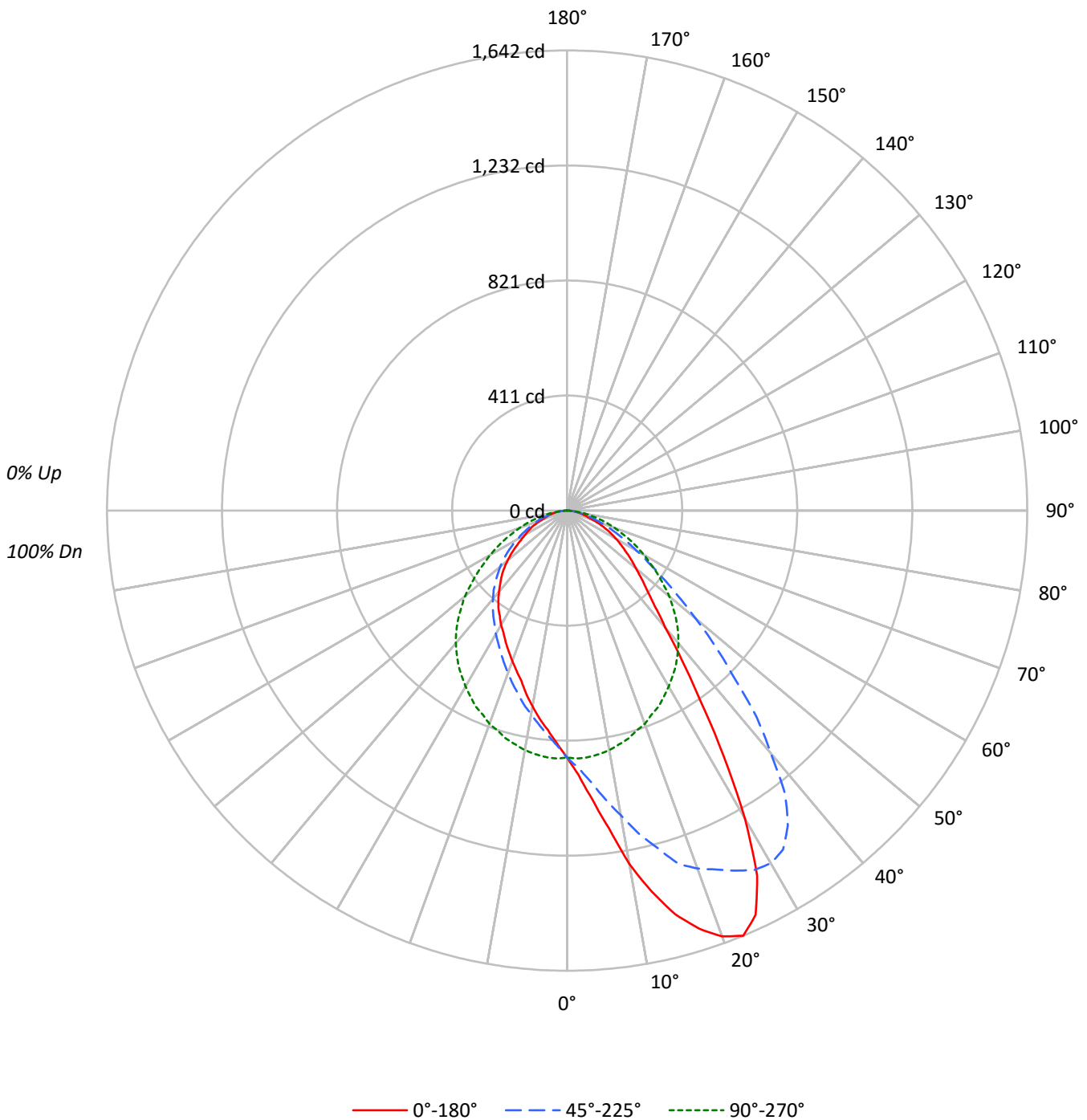
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	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°	10685	10685	10685
5°	12596	10744	9567
10°	15768	10681	8731
15°	18713	10574	7910
20°	20855	10447	7364
25°	21288	10318	6933
30°	17739	10143	6595
35°	12255	10001	6318
40°	8613	9774	5986
45°	6915	9428	5664
50°	6029	8978	5239
55°	5406	8309	4664
60°	4890	7678	4225
65°	4279	7073	3952
70°	3452	6365	3346
75°	2993	5545	3278
80°	2764	4726	3295
85°	2434	3811	2865



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.4	3.8
10°-20°	272.2	11.9
20°-30°	436.2	19.0
30°-40°	473.5	20.6
40°-50°	405.7	17.7
50°-60°	307.5	13.4
60°-70°	196.5	8.6
70°-80°	94.0	4.1
80°-90°	24.7	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°	794.9	34.6
0°-40°	1268.4	55.2
0°-60°	1981.6	86.3
0°-90°	2296.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2296.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	882	882	882	882	882	
5°	1035	972	883	803	786	106
15°	1491	1246	843	677	630	423
25°	1592	1418	772	560	518	706
35°	828	1373	676	459	427	532
45°	403	840	550	363	330	319
55°	256	412	393	260	221	231
65°	149	198	247	157	138	148
75°	64	78	118	75	70	69
85°	18	18	27	22	21	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°	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5
2.5°	944.7	945.8	943.9	943.5	943.1	937.0	935.1	932.1	921.4	918.8	916.9
5°	1035.2	1032.2	1035.6	1029.1	1021.9	1017.7	1010.9	995.7	982.3	971.7	964.8
7.5°	1142.6	1143.7	1140.3	1134.2	1119.7	1113.6	1095.0	1076.7	1059.2	1037.1	1020.8
10°	1281.1	1272.0	1273.9	1254.8	1239.6	1221.3	1195.8	1166.5	1135.7	1104.5	1081.3
12.5°	1391.5	1397.9	1393.4	1384.2	1354.9	1337.0	1313.8	1271.2	1222.5	1180.6	1145.2
15°	1491.2	1482.4	1483.6	1461.5	1450.8	1434.5	1396.0	1353.8	1322.2	1246.5	1204.6
17.5°	1564.3	1563.5	1562.4	1543.7	1530.8	1496.5	1457.3	1413.9	1374.3	1321.8	1269.3
20°	1616.8	1622.5	1621.0	1605.8	1582.9	1549.8	1526.2	1472.2	1407.1	1359.1	1294.8
22.5°	1641.9	1642.3	1643.1	1635.8	1620.6	1599.3	1565.8	1522.4	1464.6	1386.1	1314.6
25°	1591.7	1593.6	1603.5	1609.6	1613.7	1604.2	1586.7	1547.5	1497.7	1417.7	1343.5
27.5°	1468.4	1474.4	1485.5	1522.0	1536.9	1557.4	1564.6	1549.0	1512.1	1445.5	1361.0
30°	1267.4	1284.5	1295.2	1336.7	1394.9	1449.7	1475.6	1501.1	1497.7	1453.5	1367.9
32.5°	1037.5	1048.6	1079.4	1123.9	1170.0	1250.3	1340.1	1401.8	1436.4	1434.1	1373.6
35°	828.2	844.2	870.4	904.3	967.9	1051.2	1152.8	1249.9	1336.7	1372.8	1351.1
37.5°	672.1	673.7	698.4	746.4	785.9	859.4	951.1	1071.0	1184.8	1279.2	1300.1
40°	544.3	554.9	567.9	597.9	644.7	715.1	776.0	894.0	1012.0	1130.4	1214.9
42.5°	463.6	463.6	478.0	497.1	528.3	570.5	643.2	750.2	856.4	1001.7	1096.9
45°	403.4	407.2	413.7	425.9	448.0	480.7	537.0	609.7	718.2	840.4	983.5
47.5°	360.0	359.7	365.4	372.6	389.7	414.5	447.6	506.6	586.9	718.6	844.9
50°	319.7	321.2	325.4	331.5	342.9	360.4	381.4	425.9	493.6	597.9	730.4
52.5°	288.5	288.1	291.5	295.3	304.1	314.0	332.6	365.8	412.6	495.5	605.5
55°	255.8	257.3	261.5	263.8	271.0	277.5	293.1	311.7	349.4	411.8	511.9
57.5°	227.6	229.5	231.8	234.1	239.0	245.5	258.4	269.8	297.2	342.2	422.1
60°	201.7	201.0	203.6	207.4	210.1	215.8	223.0	234.8	253.9	285.8	344.4
62.5°	175.8	176.2	176.6	178.9	183.8	188.8	195.2	204.0	215.4	239.0	280.5
65°	149.2	149.6	150.3	152.6	157.6	160.6	167.5	175.1	184.2	198.3	227.2
67.5°	125.6	127.1	127.1	129.0	130.9	134.0	138.9	144.6	152.2	162.5	181.2
70°	97.4	97.1	99.0	102.8	104.7	110.0	113.4	117.2	124.1	130.5	146.5
72.5°	78.4	78.4	78.4	79.9	80.3	81.4	83.7	91.7	97.1	103.5	112.3
75°	63.9	64.3	64.3	64.7	65.1	66.2	67.0	69.3	70.8	77.6	83.0
77.5°	51.0	51.4	51.4	51.8	52.1	52.5	54.0	54.0	55.2	56.7	59.0
80°	39.6	39.2	39.2	39.6	39.6	40.7	40.7	41.5	41.9	42.6	43.8
82.5°	28.2	27.8	28.2	27.8	28.2	28.5	29.3	28.9	29.7	30.4	30.8
85°	17.5	17.9	17.9	18.6	18.3	17.9	18.3	18.3	18.3	18.3	19.0
87.5°	7.6	8.4	8.4	8.0	8.4	8.4	7.6	8.4	8.4	8.4	8.8
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°	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5
2.5°	915.7	914.2	908.5	903.2	895.2	891.7	887.2	885.3	879.2	870.8	867.0
5°	958.4	946.9	935.9	922.6	911.5	898.6	891.4	883.0	870.1	858.3	849.9
7.5°	1003.6	986.9	966.3	944.3	924.5	905.8	889.8	876.5	859.8	843.4	830.5
10°	1053.5	1025.0	991.8	963.7	935.1	908.1	887.9	867.8	846.1	825.5	809.9
12.5°	1107.2	1066.8	1026.9	984.6	942.0	910.8	880.7	854.8	830.5	808.8	790.1
15°	1162.7	1107.5	1056.5	1009.0	949.6	907.7	874.6	842.6	812.2	785.6	767.3
17.5°	1202.3	1139.1	1074.8	1007.4	956.4	904.7	863.6	823.2	795.1	767.7	742.9
20°	1238.9	1167.3	1090.8	1028.0	956.8	893.6	848.7	809.9	770.7	741.4	720.5
22.5°	1254.5	1189.8	1112.5	1025.3	954.2	889.5	831.6	787.8	752.8	720.9	693.5
25°	1257.5	1185.2	1106.0	1021.9	943.9	873.9	815.2	771.5	725.8	692.7	671.4
27.5°	1270.8	1171.9	1094.2	1010.5	931.3	858.3	796.6	747.9	705.3	669.9	642.5
30°	1274.3	1166.2	1069.1	989.2	907.7	836.2	773.8	724.7	678.2	642.1	617.3
32.5°	1275.8	1158.5	1042.8	955.3	877.7	810.3	753.2	699.9	655.8	617.7	592.2
35°	1270.4	1147.9	1011.3	916.9	842.3	776.0	723.1	675.9	626.8	591.1	564.0
37.5°	1249.5	1131.1	993.4	872.0	800.8	738.4	693.5	647.0	601.7	562.9	535.1
40°	1209.9	1106.8	959.9	834.3	753.6	697.6	655.8	617.7	572.0	534.7	507.3
42.5°	1146.7	1073.7	929.0	791.6	706.8	653.9	618.9	586.1	545.0	509.6	479.6
45°	1053.1	1027.2	887.9	748.3	655.8	605.9	575.5	550.0	512.7	480.3	452.5
47.5°	951.9	957.6	846.5	704.1	609.3	561.8	535.1	512.7	484.5	449.9	424.4
50°	835.0	866.2	788.2	659.6	562.9	516.1	489.8	476.1	449.9	420.9	397.0
52.5°	728.1	777.6	729.2	610.9	517.2	471.2	446.8	433.1	415.6	391.6	367.3
55°	617.3	680.1	645.1	558.3	470.8	424.4	403.8	393.2	378.7	360.0	338.0
57.5°	525.6	592.6	570.5	503.2	425.5	383.6	365.4	353.2	344.4	327.3	309.4
60°	435.8	497.8	489.1	439.6	380.6	340.6	326.6	316.7	309.4	296.9	279.4
62.5°	351.7	411.8	417.1	378.3	336.8	300.7	287.7	280.9	275.2	265.3	249.3
65°	279.0	331.9	342.9	313.2	290.8	263.4	250.8	246.6	242.4	231.0	218.8
67.5°	218.5	260.0	274.4	257.7	241.7	225.7	215.8	210.1	207.0	200.2	191.8
70°	167.1	202.9	215.0	207.8	197.2	191.1	183.4	179.6	176.6	167.8	163.3
72.5°	125.2	149.6	164.8	162.5	160.2	156.0	151.5	150.3	145.8	140.1	135.9
75°	91.7	105.8	119.5	124.5	123.7	125.2	120.3	118.4	115.7	111.5	108.1
77.5°	65.8	74.2	83.7	89.8	92.9	93.2	93.2	92.1	90.2	87.2	84.5
80°	45.7	47.6	56.3	62.0	65.1	67.4	67.4	67.7	65.8	64.7	62.8
82.5°	31.6	32.7	34.6	39.2	43.0	45.7	46.1	45.7	44.9	44.5	41.9
85°	19.8	19.4	19.4	20.6	23.6	26.3	26.6	27.4	27.0	26.6	24.0
87.5°	8.4	8.4	8.8	8.4	9.5	9.9	10.7	12.6	12.2	10.3	9.5
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5	881.5
2.5°	864.7	859.8	855.2	850.3	844.2	838.5	837.7	836.9	838.8	835.0	833.5
5°	843.4	833.9	826.7	817.5	811.1	802.7	798.1	797.0	796.6	794.3	791.3
7.5°	820.2	809.9	799.6	789.4	778.7	770.0	765.0	762.3	760.1	756.3	753.2
10°	798.5	785.6	774.5	760.4	749.0	737.6	733.0	729.2	726.9	721.6	717.4
12.5°	774.1	757.8	745.6	730.4	720.1	710.2	703.0	695.7	690.4	682.4	679.0
15°	752.8	735.7	715.1	706.0	691.6	676.7	668.7	668.7	657.7	651.2	647.0
17.5°	724.3	709.4	695.0	676.3	655.8	647.0	637.9	629.9	622.3	620.4	612.8
20°	699.2	681.7	666.8	646.6	628.0	617.7	607.1	598.3	592.6	587.3	583.1
22.5°	674.4	656.9	634.1	614.3	601.7	588.0	576.6	569.0	564.0	556.1	552.3
25°	648.5	627.6	607.1	587.6	572.0	560.2	548.4	544.3	535.5	531.3	526.0
27.5°	622.7	597.5	578.1	561.4	543.9	532.5	524.5	516.9	509.2	507.0	503.9
30°	593.7	570.5	551.9	535.5	518.8	508.9	499.3	492.5	486.0	481.1	477.7
32.5°	564.8	545.4	527.5	508.5	493.3	482.6	474.6	468.5	465.5	457.1	454.1
35°	538.2	518.4	499.3	481.5	469.3	459.0	451.8	446.1	439.6	434.3	431.2
37.5°	510.8	492.9	473.5	458.2	444.5	436.2	428.2	420.6	415.6	412.6	408.8
40°	484.1	465.1	450.3	433.5	421.3	411.8	403.4	397.7	391.6	389.0	384.0
42.5°	459.0	440.7	423.6	408.4	397.3	388.2	380.2	373.7	368.8	363.9	361.2
45°	430.1	414.1	398.5	383.3	373.0	363.1	354.3	348.6	341.8	337.6	336.1
47.5°	405.7	389.0	372.2	358.1	347.5	336.8	329.6	322.7	317.0	312.9	310.6
50°	376.8	361.2	347.5	333.4	323.1	311.7	303.0	296.5	290.0	287.0	283.2
52.5°	352.1	336.8	320.1	307.5	295.7	285.8	277.8	272.5	266.8	262.2	259.6
55°	321.2	306.4	293.1	279.7	267.9	260.0	253.5	244.3	239.4	234.8	227.6
57.5°	294.2	280.1	266.0	253.1	242.1	232.5	224.6	218.5	212.0	208.6	203.6
60°	265.7	250.8	237.9	228.0	215.8	205.5	200.2	193.0	187.6	182.3	180.8
62.5°	237.5	223.8	210.9	200.6	189.5	181.5	174.7	171.3	165.9	161.8	160.2
65°	208.2	196.8	184.6	173.2	166.3	157.2	153.4	147.7	144.6	142.7	142.3
67.5°	179.3	169.0	157.9	149.2	142.7	136.6	132.1	129.8	126.7	124.5	122.6
70°	153.0	143.1	133.6	126.4	121.4	116.8	113.8	109.6	106.6	103.5	99.3
72.5°	127.1	119.1	111.1	105.4	100.5	97.8	93.6	87.2	84.1	83.4	83.0
75°	103.1	94.4	88.7	85.6	81.1	74.6	71.9	71.2	70.8	70.0	70.0
77.5°	79.5	74.2	70.4	63.9	61.7	61.3	59.4	59.0	58.2	58.6	58.6
80°	57.9	54.8	50.2	48.3	47.6	48.0	47.2	47.6	46.8	47.2	46.4
82.5°	38.4	35.8	36.5	35.4	35.4	36.2	35.8	34.6	34.6	34.3	34.3
85°	22.8	22.5	23.2	23.2	22.8	21.7	22.5	22.1	20.9	21.3	21.3
87.5°	9.9	9.9	9.9	9.5	9.9	9.5	9.5	9.5	8.4	8.4	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):

	165°	170°	175°	180°
0°	881.5	881.5	881.5	881.5
2.5°	834.3	833.5	832.4	831.2
5°	791.3	787.8	787.5	786.3
7.5°	750.9	749.4	746.7	749.8
10°	714.0	715.1	712.5	709.4
12.5°	675.6	673.3	669.1	671.4
15°	641.7	637.9	635.6	630.3
17.5°	606.3	603.3	603.3	599.8
20°	575.5	572.4	573.2	570.9
22.5°	549.6	547.3	543.9	544.3
25°	525.2	521.8	518.0	518.4
27.5°	498.2	495.2	494.4	491.7
30°	474.2	471.6	471.2	471.2
32.5°	451.0	449.9	448.0	446.8
35°	430.8	429.3	426.3	427.0
37.5°	405.7	404.2	403.8	403.4
40°	382.1	381.0	377.9	378.3
42.5°	358.5	356.6	354.7	354.0
45°	333.0	332.6	329.6	330.4
47.5°	308.7	307.9	306.4	304.5
50°	281.6	281.3	280.1	277.8
52.5°	255.4	254.2	252.0	249.7
55°	225.7	222.3	222.7	220.7
57.5°	201.3	199.8	196.8	195.6
60°	177.7	176.2	175.8	174.3
62.5°	157.9	156.4	155.3	155.3
65°	140.1	138.2	137.8	137.8
67.5°	120.3	118.4	118.0	117.2
70°	95.5	95.2	94.4	94.4
72.5°	82.2	81.8	82.2	80.7
75°	70.0	69.6	69.6	70.0
77.5°	58.2	58.2	57.9	57.9
80°	46.1	46.4	46.1	47.2
82.5°	34.6	33.9	34.3	33.5
85°	21.3	21.3	20.6	20.6
87.5°	8.4	8.4	8.4	8.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)