

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: P242639

Luminaire Tested: **S124DR-S575D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242639
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: S124DR-S575D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2391.5 lumens
Efficiency: N/A
Efficacy: 127.2 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

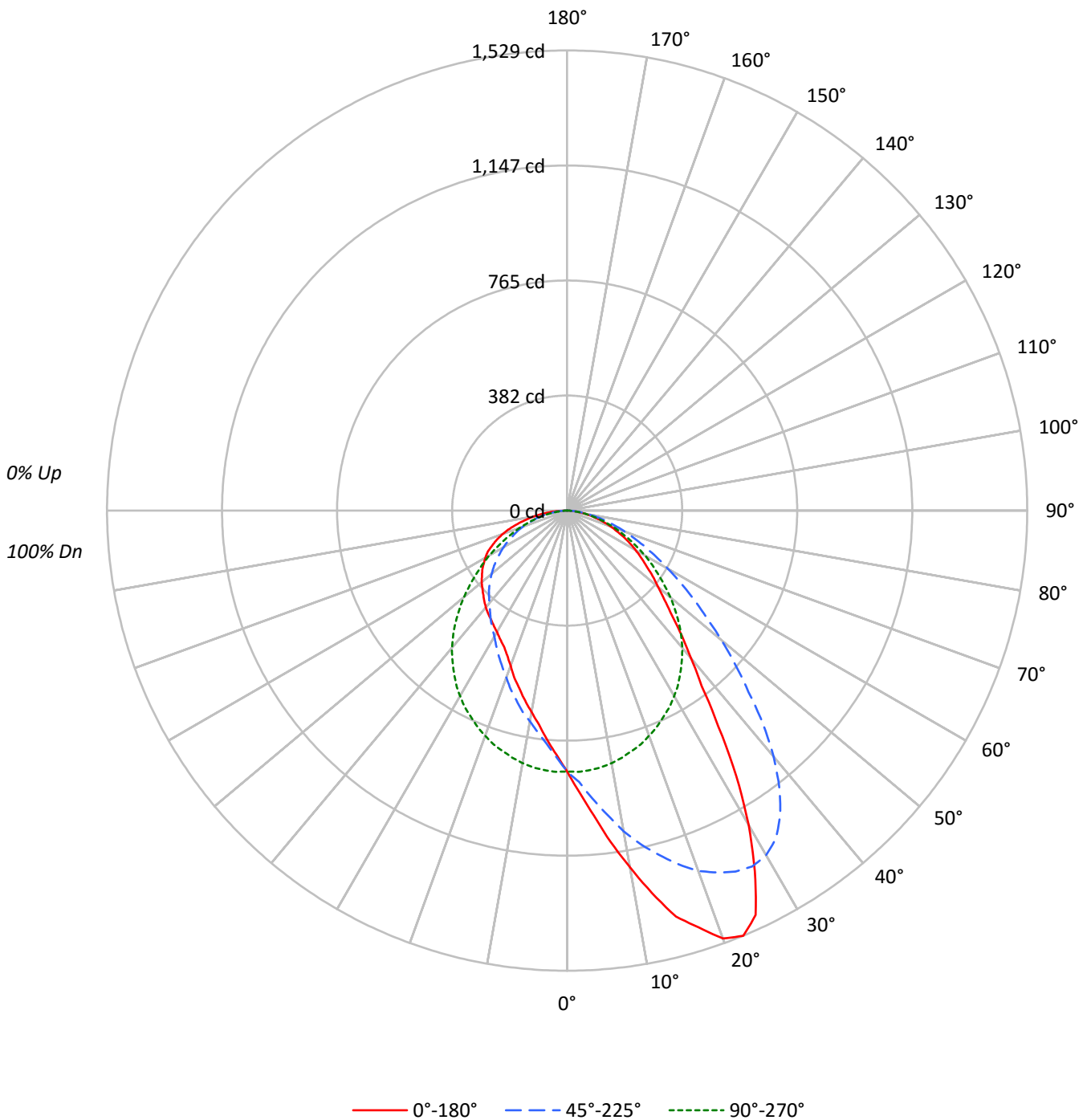
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	7704	7704	7704
5°	9072	7724	6817
10°	10862	7689	6138
15°	12852	7612	5637
20°	14311	7533	5189
25°	14542	7416	4880
30°	12374	7304	4783
35°	9513	7122	4784
40°	7415	6906	4874
45°	6184	6585	4955
50°	5442	6191	5124
55°	4985	5720	5330
60°	4672	5298	5579
65°	4350	4825	5784
70°	3974	4358	5915
75°	3551	3836	5845
80°	2979	3143	5662
85°	2193	2274	5416



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.3	3.5
10°-20°	260.4	10.9
20°-30°	413.6	17.3
30°-40°	459.6	19.2
40°-50°	417.9	17.5
50°-60°	341.5	14.3
60°-70°	243.8	10.2
70°-80°	134.1	5.6
80°-90°	36.2	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°	758.3	31.7
0°-40°	1217.8	50.9
0°-60°	1977.3	82.7
0°-90°	2391.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2391.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	867	867	867	867	867	
5°	1017	960	866	778	764	103
15°	1397	1185	827	652	612	395
25°	1483	1324	756	536	498	658
35°	877	1235	656	443	441	555
45°	492	852	524	367	394	387
55°	322	513	369	287	344	290
65°	207	286	229	199	275	205
75°	103	133	112	111	170	110
85°	22	28	22	32	53	26
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°	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7
2.5°	936.3	936.0	932.4	931.6	929.1	925.9	925.2	919.4	907.9	902.6	901.1
5°	1016.7	1023.9	1014.6	1012.8	1011.7	999.9	993.8	986.6	970.1	960.4	952.8
7.5°	1110.8	1111.2	1107.2	1103.3	1096.4	1086.4	1072.7	1056.9	1037.9	1018.5	1004.9
10°	1203.4	1206.3	1201.6	1200.9	1182.6	1171.1	1148.1	1128.7	1106.5	1081.7	1059.1
12.5°	1301.1	1295.3	1293.5	1274.5	1274.9	1251.5	1223.9	1203.8	1166.4	1137.0	1105.0
15°	1396.6	1388.7	1383.6	1362.5	1352.1	1323.0	1294.6	1272.7	1227.8	1185.1	1152.8
17.5°	1451.9	1461.6	1448.6	1440.0	1411.6	1392.6	1364.3	1319.4	1286.0	1232.9	1195.9
20°	1512.9	1513.6	1507.1	1498.2	1477.0	1451.1	1419.5	1369.3	1327.3	1274.5	1218.5
22.5°	1529.4	1529.4	1527.6	1519.4	1504.6	1484.9	1452.9	1413.1	1359.9	1301.4	1245.4
25°	1482.7	1481.3	1484.5	1493.9	1487.8	1481.3	1463.0	1431.8	1384.4	1323.7	1263.4
27.5°	1350.6	1359.9	1379.3	1402.3	1418.8	1433.5	1432.5	1419.2	1385.4	1333.0	1268.8
30°	1205.6	1217.8	1231.4	1254.4	1298.9	1324.4	1352.4	1373.6	1361.7	1321.9	1263.0
32.5°	1046.2	1046.9	1068.8	1095.7	1135.6	1190.5	1239.0	1287.4	1308.3	1292.1	1245.4
35°	876.7	881.7	903.6	929.5	979.4	1039.3	1106.1	1165.7	1214.9	1234.7	1209.5
37.5°	734.5	750.3	766.9	796.3	841.9	896.1	967.9	1042.2	1114.4	1158.2	1162.9
40°	639.0	648.0	659.2	680.3	717.7	770.8	830.4	918.7	996.6	1067.0	1090.0
42.5°	563.7	568.0	573.7	592.4	618.6	671.4	724.5	799.5	877.8	965.4	1007.8
45°	491.9	497.2	508.7	519.9	541.4	578.0	628.6	692.5	771.2	852.3	923.4
47.5°	438.0	441.6	448.8	461.0	480.4	505.1	548.2	602.4	679.3	757.9	834.0
50°	393.5	396.4	401.7	412.5	426.5	448.1	481.8	531.7	588.8	668.1	742.4
52.5°	358.3	359.0	362.6	369.1	379.5	396.7	422.9	462.1	514.1	582.7	656.6
55°	321.7	323.1	326.7	332.1	341.8	353.3	374.5	405.3	451.6	513.0	577.3
57.5°	291.5	293.0	295.8	298.0	306.6	316.3	333.5	355.8	392.0	446.6	505.1
60°	262.8	262.1	265.7	267.5	272.9	280.7	293.3	314.5	345.0	387.0	439.8
62.5°	234.8	233.7	236.6	239.1	241.6	248.1	257.8	273.2	296.5	333.5	377.3
65°	206.8	205.4	207.2	210.0	212.9	216.5	224.0	238.7	258.5	285.8	320.6
67.5°	178.1	179.9	179.9	181.7	183.5	188.5	193.9	205.4	219.4	241.6	272.5
70°	152.9	153.3	154.7	154.7	155.8	160.1	164.4	170.5	184.2	204.3	228.3
72.5°	127.8	129.6	128.5	130.0	130.7	133.2	136.1	141.8	152.9	166.6	186.0
75°	103.4	104.5	104.5	104.8	105.9	107.0	109.5	113.8	122.1	133.2	147.2
77.5°	79.7	79.7	80.4	81.9	81.9	83.7	85.8	89.0	93.7	102.0	110.9
80°	58.2	58.9	58.5	59.2	59.2	60.7	61.4	65.7	67.5	72.5	79.3
82.5°	38.8	39.5	39.5	40.6	41.3	41.3	42.4	43.4	45.2	49.5	51.3
85°	21.5	22.3	21.5	22.3	23.3	23.7	24.8	25.1	26.6	27.6	30.2
87.5°	7.9	9.0	9.0	9.3	10.1	10.4	10.8	10.4	11.8	12.2	13.6
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°	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7
2.5°	901.5	896.5	892.9	890.0	882.1	877.4	873.8	868.8	863.1	857.0	849.4
5°	945.3	933.1	924.1	910.5	897.5	886.8	875.6	865.6	853.4	840.1	830.4
7.5°	990.2	973.3	950.7	933.1	911.9	893.6	877.4	860.6	842.6	825.4	809.2
10°	1032.5	1009.2	983.3	952.8	924.1	898.6	874.9	851.9	829.7	807.4	788.4
12.5°	1078.1	1047.6	1006.3	969.3	936.3	900.1	870.3	840.8	812.8	789.1	766.1
15°	1118.0	1076.0	1031.8	984.1	941.7	901.8	862.7	827.2	797.0	766.1	744.6
17.5°	1143.1	1091.0	1043.7	993.8	944.9	895.0	854.5	814.6	777.3	747.1	720.2
20°	1167.9	1116.2	1053.4	1003.4	942.4	890.7	841.9	796.3	756.8	724.1	696.1
22.5°	1189.4	1127.7	1064.8	995.2	934.5	878.9	824.3	778.3	737.8	703.0	676.4
25°	1194.4	1125.9	1057.7	992.3	923.4	858.4	809.9	756.1	713.0	676.7	648.0
27.5°	1196.2	1123.7	1048.0	976.9	905.8	846.6	783.4	736.3	691.8	653.4	626.1
30°	1192.3	1115.8	1032.9	954.3	882.8	817.1	764.0	711.6	666.0	627.9	599.2
32.5°	1179.7	1099.3	1013.5	929.1	854.5	790.6	735.3	686.1	641.9	604.6	574.1
35°	1153.2	1074.5	983.7	897.2	821.4	756.4	706.9	656.3	611.8	576.2	547.1
37.5°	1117.6	1044.4	952.1	862.0	789.1	723.1	673.2	626.5	586.3	549.7	519.5
40°	1068.1	1005.6	913.0	825.7	745.3	683.2	637.3	595.2	555.4	521.3	492.9
42.5°	1011.0	958.6	874.9	781.2	704.4	641.9	597.4	560.8	523.8	492.9	464.6
45°	941.0	905.1	824.7	739.2	658.4	599.6	556.8	523.8	492.2	461.3	437.6
47.5°	863.1	843.0	773.0	691.1	613.6	554.7	517.7	486.1	457.4	430.5	409.3
50°	784.4	775.8	717.3	639.0	565.8	511.2	473.9	447.7	424.0	401.0	381.3
52.5°	706.9	708.7	657.4	587.3	520.9	468.9	431.9	407.8	388.1	370.5	353.3
55°	627.6	637.6	596.3	532.4	471.7	424.4	391.0	369.1	354.7	339.3	326.0
57.5°	554.7	571.6	535.7	477.1	425.8	380.6	351.1	334.2	318.4	308.4	298.0
60°	483.6	499.4	472.8	425.4	377.7	340.3	312.7	298.0	284.7	278.2	271.4
62.5°	420.4	434.0	416.1	373.0	333.2	297.6	275.4	261.4	253.5	246.3	242.3
65°	360.8	372.7	355.8	323.8	288.3	259.6	240.5	229.4	220.8	217.9	212.9
67.5°	301.9	312.7	303.7	275.7	245.6	222.9	207.9	196.0	191.0	188.1	184.9
70°	250.6	261.4	251.7	228.0	206.1	187.8	173.8	167.7	162.3	161.2	156.2
72.5°	207.2	213.6	203.9	186.7	168.7	154.0	144.0	137.5	135.3	133.2	131.0
75°	161.9	168.4	161.9	147.6	134.3	123.5	114.2	111.7	108.4	107.3	105.6
77.5°	121.3	127.5	122.4	112.7	102.3	93.3	88.0	84.4	84.0	81.9	82.6
80°	87.6	91.2	86.5	80.4	72.5	66.8	63.2	61.4	59.2	58.5	60.0
82.5°	56.7	57.8	56.0	52.4	47.0	43.8	41.6	39.5	39.5	39.9	39.5
85°	32.7	32.3	32.0	28.4	26.6	24.1	22.6	22.3	21.9	22.6	23.3
87.5°	13.6	14.0	13.6	12.2	11.1	10.1	9.7	9.3	9.7	10.1	10.4
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7
2.5°	845.8	842.6	837.9	831.5	826.1	820.3	818.9	816.8	821.1	817.5	816.4
5°	822.1	814.6	804.9	793.8	787.3	778.0	776.2	772.6	769.0	768.7	765.1
7.5°	797.4	787.0	774.8	763.3	753.2	743.2	736.7	736.0	730.2	727.4	723.8
10°	773.7	760.0	745.3	734.5	722.3	711.6	704.0	699.7	696.1	692.2	688.6
12.5°	745.7	731.0	719.5	707.6	692.5	685.0	671.4	663.1	663.1	664.2	653.4
15°	725.2	710.9	692.2	675.7	667.8	652.0	645.2	636.5	631.1	625.8	621.5
17.5°	700.1	682.5	668.1	649.5	634.7	622.9	613.6	608.9	600.3	592.4	587.0
20°	676.7	657.7	642.3	622.2	605.7	590.2	582.7	575.5	569.4	562.9	556.8
22.5°	653.0	632.9	613.2	593.8	578.7	562.2	555.0	544.6	538.9	536.0	529.9
25°	627.9	606.4	584.8	566.2	550.4	536.0	526.3	518.8	512.3	509.4	505.5
27.5°	600.6	579.5	559.0	537.4	519.1	508.7	500.8	494.7	490.8	486.5	484.7
30°	574.8	552.5	530.3	510.5	494.0	483.6	476.4	472.5	469.6	467.8	466.0
32.5°	548.6	526.7	503.0	485.4	471.0	462.1	457.0	453.1	452.0	451.6	451.3
35°	520.2	498.0	476.4	460.3	446.3	442.7	438.0	435.8	435.1	437.6	438.7
37.5°	492.9	472.1	452.0	435.8	426.5	420.8	419.0	418.6	421.1	423.3	425.8
40°	466.7	446.6	427.9	414.3	405.7	402.5	401.7	403.5	406.4	408.9	411.8
42.5°	441.2	421.5	405.0	392.4	387.0	384.1	384.9	386.7	391.0	394.2	398.9
45°	414.7	398.1	381.6	371.2	366.2	366.9	366.9	370.1	374.1	378.8	383.4
47.5°	389.9	373.0	359.0	350.0	347.5	346.4	348.2	352.6	357.9	363.3	369.8
50°	364.8	349.0	337.1	329.2	326.3	327.4	330.3	334.2	341.1	348.2	355.1
52.5°	339.3	325.3	314.5	307.3	305.5	307.7	310.5	317.4	323.1	331.0	339.6
55°	312.7	300.5	291.9	286.5	285.8	286.9	290.1	296.9	305.5	315.2	323.1
57.5°	286.5	276.1	267.8	263.9	264.2	265.0	270.0	278.2	286.9	297.3	307.3
60°	259.9	250.6	244.1	241.3	241.6	243.8	250.2	257.8	269.3	279.3	290.1
62.5°	234.8	226.9	220.8	218.3	217.6	222.9	229.1	237.0	248.4	259.9	271.8
65°	207.5	201.0	196.0	194.6	195.7	199.3	207.2	217.6	227.3	239.1	251.3
67.5°	180.9	175.6	172.0	172.7	173.8	178.8	185.6	194.6	205.4	217.6	230.1
70°	155.8	150.8	147.9	148.3	150.4	156.9	162.6	171.6	183.5	196.0	206.1
72.5°	130.0	127.1	124.6	126.4	128.5	132.5	140.0	149.0	159.0	170.5	181.3
75°	103.8	103.8	102.3	103.4	106.6	110.9	116.3	125.7	136.1	145.4	154.0
77.5°	81.5	80.4	81.1	82.2	84.4	89.8	95.9	102.7	110.9	120.6	127.8
80°	58.9	59.2	61.0	63.2	63.9	67.9	74.3	80.4	86.5	94.4	101.2
82.5°	40.6	40.9	41.6	44.5	45.2	49.5	53.1	59.2	64.6	69.3	74.7
85°	24.1	24.1	25.8	26.9	28.7	31.6	34.1	37.7	42.7	46.3	51.7
87.5°	11.5	11.5	12.9	13.6	14.7	16.5	17.2	21.2	22.6	24.4	27.6
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°	866.7	866.7	866.7	866.7
2.5°	815.7	815.0	812.5	812.1
5°	762.9	761.1	760.0	764.0
7.5°	723.1	721.6	718.4	717.3
10°	685.0	683.6	680.7	680.0
12.5°	648.4	645.2	645.2	646.2
15°	616.8	615.4	611.4	612.5
17.5°	584.5	583.0	577.7	583.0
20°	554.3	551.4	548.9	548.6
22.5°	525.6	523.1	523.4	520.6
25°	502.6	500.1	499.4	497.6
27.5°	484.0	482.5	481.1	481.8
30°	467.1	466.7	466.0	466.0
32.5°	453.1	453.1	453.8	453.8
35°	440.2	441.2	441.9	440.9
37.5°	428.7	429.4	430.5	431.5
40°	415.0	417.5	418.3	420.0
42.5°	402.1	405.0	407.1	407.1
45°	388.8	391.7	394.2	394.2
47.5°	375.2	379.1	381.6	382.0
50°	361.2	366.2	368.7	370.5
52.5°	347.5	352.6	356.1	356.9
55°	331.4	338.6	342.5	343.9
57.5°	317.0	323.5	327.8	328.9
60°	299.8	307.0	312.7	313.8
62.5°	282.2	289.7	294.8	298.0
65°	261.4	268.9	273.9	275.0
67.5°	239.5	247.4	250.6	252.7
70°	216.1	222.2	225.8	227.6
72.5°	189.6	196.0	200.3	200.3
75°	162.3	168.0	170.2	170.2
77.5°	133.9	137.1	140.0	140.7
80°	106.6	108.4	110.6	110.6
82.5°	78.6	80.1	82.2	81.9
85°	51.0	54.2	53.9	53.1
87.5°	28.7	29.1	30.2	30.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)