

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: P242737

Luminaire Tested: **S124RDR-S575D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242737
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-S575D830-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED 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: 2123.1 lumens
Efficiency: N/A
Efficacy: 112.9 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

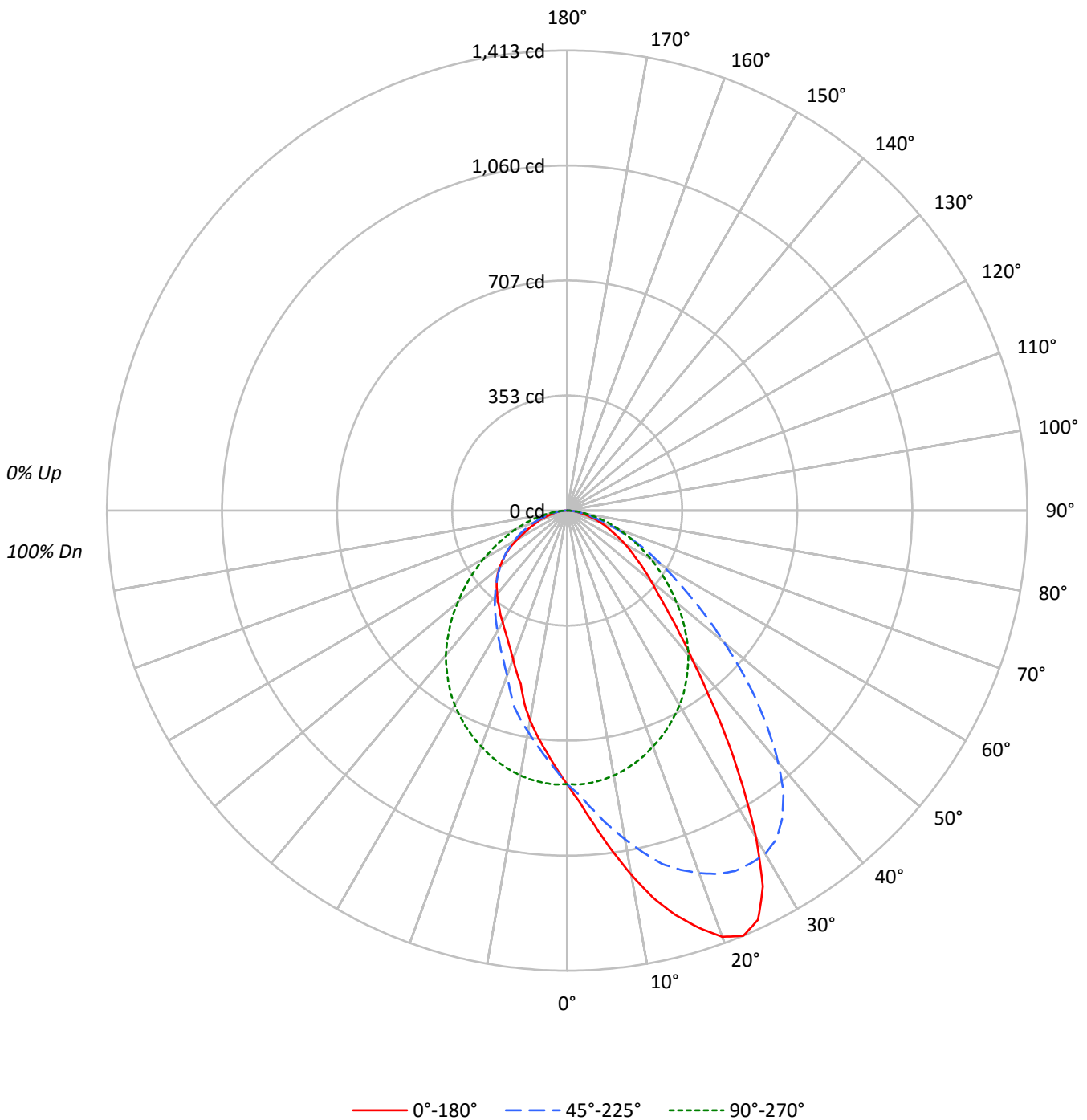
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	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	81	75	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57	55
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40	38
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7466	7466	7466
5°	8660	7488	6618
10°	10244	7456	5907
15°	11833	7387	5076
20°	13175	7291	4590
25°	13601	7199	4262
30°	11906	7085	4064
35°	9268	6918	3943
40°	6949	6727	3879
45°	5487	6419	3845
50°	4633	6064	3734
55°	4039	5674	3535
60°	3634	5269	3129
65°	3203	4833	2690
70°	2885	4379	2427
75°	2418	3881	2068
80°	2042	3307	1940
85°	1724	2591	1724



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.3	3.8
10°-20°	245.6	11.6
20°-30°	384.7	18.1
30°-40°	427.2	20.1
40°-50°	378.6	17.8
50°-60°	295.0	13.9
60°-70°	193.0	9.1
70°-80°	94.7	4.5
80°-90°	23.1	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°	711.6	33.5
0°-40°	1138.8	53.6
0°-60°	1812.4	85.4
0°-90°	2123.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2123.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	840	840	840	840	840	
5°	970	924	839	759	742	98
15°	1286	1123	803	625	552	366
25°	1387	1221	734	478	434	619
35°	854	1152	638	384	363	535
45°	436	821	511	306	306	344
55°	261	464	366	230	228	237
65°	152	239	230	149	128	153
75°	70	91	113	72	60	77
85°	17	18	25	18	17	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°	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9
2.5°	897.4	900.4	897.4	897.1	893.7	892.7	891.3	886.9	878.8	874.1	875.1
5°	970.5	979.0	974.2	973.5	966.1	958.6	953.9	943.1	931.6	923.8	917.4
7.5°	1051.7	1056.8	1053.4	1049.7	1036.8	1032.8	1021.6	1008.7	989.4	974.9	961.7
10°	1134.9	1139.0	1137.7	1128.9	1120.1	1102.1	1092.0	1072.0	1046.0	1025.3	1006.0
12.5°	1216.8	1221.2	1206.7	1209.4	1190.8	1177.6	1160.0	1133.6	1102.5	1074.4	1049.0
15°	1285.9	1280.5	1280.5	1273.7	1255.1	1235.4	1218.9	1192.5	1154.6	1122.8	1089.3
17.5°	1342.7	1345.1	1342.4	1325.1	1311.6	1291.6	1261.8	1231.7	1198.9	1156.3	1123.1
20°	1392.8	1392.8	1389.8	1378.9	1360.0	1338.3	1305.5	1272.0	1227.3	1184.4	1145.8
22.5°	1413.1	1414.5	1410.7	1402.3	1385.7	1364.7	1338.0	1303.8	1257.4	1207.7	1157.6
25°	1386.7	1393.1	1393.8	1391.4	1386.4	1373.5	1349.5	1314.6	1273.3	1220.9	1169.5
27.5°	1301.4	1309.9	1313.3	1320.7	1334.6	1339.7	1336.6	1313.3	1273.3	1221.6	1170.5
30°	1160.0	1166.8	1188.8	1217.5	1239.8	1260.2	1277.7	1282.5	1262.2	1216.8	1162.4
32.5°	1003.0	1012.8	1034.8	1066.3	1107.2	1145.1	1190.1	1214.1	1218.5	1195.9	1146.5
35°	854.1	860.9	881.2	913.6	958.3	1009.4	1072.0	1120.7	1153.9	1151.5	1120.7
37.5°	711.3	720.8	741.4	768.1	812.1	877.4	936.7	1002.0	1061.5	1090.6	1075.1
40°	598.9	599.3	619.2	647.0	687.6	742.8	808.7	883.2	951.5	1007.4	1018.2
42.5°	510.3	510.3	521.8	552.2	578.6	629.7	692.0	765.8	848.7	915.3	948.5
45°	436.5	439.6	450.4	468.3	491.3	535.3	585.7	654.4	744.1	820.6	868.3
47.5°	378.3	383.7	390.2	406.4	425.4	456.1	499.1	563.4	637.9	722.8	788.8
50°	335.0	335.7	344.5	352.6	368.5	391.9	428.4	479.8	546.8	627.7	703.2
52.5°	297.8	297.4	301.8	312.7	324.9	341.8	369.5	415.2	472.7	543.1	621.6
55°	260.6	262.2	266.3	274.4	284.2	297.1	320.5	355.6	402.3	464.3	535.0
57.5°	232.1	233.1	236.9	239.9	249.4	258.9	277.8	303.2	344.1	395.9	465.3
60°	204.4	204.7	205.7	210.8	217.9	226.7	238.6	259.2	292.4	338.7	390.8
62.5°	177.3	178.0	179.7	183.1	188.1	193.6	206.1	221.6	247.7	285.6	331.3
65°	152.3	152.6	155.0	156.3	160.7	166.1	175.3	186.5	205.4	238.6	274.1
67.5°	131.3	131.3	131.3	133.3	136.7	140.4	146.5	156.0	171.2	192.5	225.7
70°	111.0	111.0	111.7	112.7	114.4	117.4	120.5	127.2	137.7	154.3	178.3
72.5°	92.0	92.4	93.1	93.1	93.7	96.1	98.1	101.9	109.0	120.5	138.7
75°	70.4	71.4	73.1	74.4	76.1	75.8	78.2	80.9	83.2	90.7	101.9
77.5°	55.5	54.8	54.8	56.2	56.5	56.8	58.5	60.9	62.9	67.0	71.1
80°	39.9	39.9	40.9	41.3	40.9	41.3	43.0	44.0	44.7	46.0	49.7
82.5°	27.7	28.4	27.7	28.1	28.4	28.8	30.1	30.1	30.8	31.1	32.1
85°	16.9	17.3	17.6	16.9	16.9	16.9	17.6	17.9	18.6	18.3	18.9
87.5°	7.4	7.1	7.4	7.4	7.8	7.4	7.8	8.5	7.8	8.1	8.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9
2.5°	871.7	866.9	864.6	859.2	852.7	849.3	846.3	841.9	836.2	830.1	825.7
5°	909.2	901.1	891.0	878.8	868.0	857.5	848.3	839.2	828.7	817.9	807.1
7.5°	946.5	931.9	916.3	897.7	879.8	863.2	848.3	833.8	817.2	802.3	788.4
10°	985.7	964.1	940.0	914.7	889.3	867.3	845.6	826.0	804.3	785.1	768.8
12.5°	1017.5	991.1	961.0	927.9	896.0	868.3	842.6	815.5	790.1	768.8	745.8
15°	1053.4	1018.5	979.6	941.7	902.1	865.9	832.4	802.7	774.6	745.1	724.5
17.5°	1078.1	1037.8	991.8	947.8	902.5	860.5	822.6	788.1	756.0	726.5	702.2
20°	1099.8	1054.1	1001.6	949.9	897.4	851.7	810.1	770.8	737.3	704.9	679.5
22.5°	1111.9	1060.2	1001.6	946.8	892.0	841.6	794.9	753.6	716.4	683.9	655.1
25°	1112.6	1058.5	999.9	937.7	878.1	825.7	778.3	734.0	693.4	660.9	631.1
27.5°	1109.9	1047.3	988.4	925.1	863.9	808.1	759.0	712.0	671.7	637.2	606.7
30°	1101.8	1033.4	969.1	902.8	840.6	787.4	735.0	690.3	648.0	611.8	581.0
32.5°	1084.2	1016.5	946.1	877.8	814.5	759.3	710.3	665.3	624.0	586.8	553.6
35°	1059.8	991.1	916.0	846.3	784.4	727.5	680.8	637.5	597.9	558.3	523.8
37.5°	1031.7	960.0	885.9	809.4	747.8	693.7	650.0	608.4	569.8	533.6	495.4
40°	988.4	924.5	847.3	771.5	707.9	656.1	616.5	579.7	540.7	504.9	466.6
42.5°	936.0	883.9	805.7	729.6	667.0	617.6	581.3	545.5	511.0	476.4	436.2
45°	876.4	835.1	762.0	689.0	625.7	576.3	542.4	510.6	479.5	446.3	408.8
47.5°	810.1	779.6	716.0	639.5	580.3	535.0	502.5	476.1	448.7	415.2	381.4
50°	740.4	722.5	661.5	593.2	537.4	496.4	462.9	438.5	416.6	384.7	355.3
52.5°	665.9	658.5	609.4	544.8	491.3	451.4	424.0	402.7	380.3	355.3	328.2
55°	590.1	595.2	551.6	495.1	444.3	410.5	384.4	366.1	347.2	324.9	303.5
57.5°	511.3	530.6	498.1	447.0	397.9	366.1	346.2	329.9	314.0	295.1	275.8
60°	441.9	457.5	440.9	397.3	355.6	326.5	308.3	296.4	280.5	263.6	249.7
62.5°	374.3	391.2	383.1	349.9	312.0	288.0	272.4	261.6	250.7	236.5	222.0
65°	319.8	330.6	325.9	301.5	274.1	252.8	237.9	229.8	218.9	208.1	195.2
67.5°	255.8	277.1	273.8	260.2	233.8	216.9	206.4	199.0	188.8	180.7	171.6
70°	201.3	220.6	220.3	209.8	196.9	181.4	174.6	168.5	159.7	151.9	144.8
72.5°	155.7	172.9	176.3	168.9	161.1	150.2	143.8	140.1	131.6	126.9	121.5
75°	115.4	128.2	131.6	131.6	127.6	121.5	115.7	113.0	106.9	102.2	98.8
77.5°	81.2	90.0	95.1	96.1	96.4	94.1	88.7	86.6	81.9	80.2	76.5
80°	53.5	58.9	65.0	67.0	68.7	68.0	66.0	64.6	60.2	58.5	57.2
82.5°	32.8	35.2	39.9	45.0	44.0	46.4	44.7	43.7	40.6	40.3	38.9
85°	19.3	19.6	20.3	23.3	25.0	25.7	26.1	25.4	24.4	24.4	22.0
87.5°	8.1	7.8	8.5	8.5	8.8	10.2	11.2	11.5	10.5	9.5	8.5
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°	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9	839.9
2.5°	820.9	817.5	813.1	808.1	802.0	796.6	794.2	796.2	797.2	794.5	794.2
5°	799.6	791.1	784.4	774.2	766.1	759.3	754.6	752.6	753.2	747.8	746.5
7.5°	775.9	766.8	755.6	744.1	733.3	723.8	718.7	716.4	710.6	708.2	704.5
10°	753.2	739.7	728.9	714.7	701.8	690.0	684.2	679.5	673.7	671.0	665.3
12.5°	729.9	713.7	701.5	686.6	673.4	658.5	653.1	643.3	633.5	627.0	619.2
15°	708.2	689.3	674.7	657.1	641.6	625.3	610.8	594.5	588.5	575.6	568.2
17.5°	682.5	662.9	646.7	624.0	600.6	581.0	564.8	547.8	538.7	529.9	526.2
20°	657.1	639.5	614.5	587.1	560.4	538.0	525.5	515.4	505.2	499.5	495.4
22.5°	633.1	609.4	579.3	549.2	522.5	506.2	496.1	485.6	477.8	472.4	466.6
25°	605.7	576.3	545.5	511.6	493.4	478.1	466.6	458.2	453.1	446.0	443.3
27.5°	579.0	543.4	508.6	485.6	466.6	452.1	441.6	435.5	428.7	424.0	420.3
30°	547.2	511.0	480.5	458.9	439.6	428.1	419.9	412.5	407.4	403.7	401.0
32.5°	515.7	479.5	455.1	431.4	417.2	406.1	397.3	392.2	388.5	383.4	382.0
35°	485.6	453.4	431.1	410.1	394.6	384.4	377.6	371.9	368.5	367.1	366.1
37.5°	456.1	429.4	404.7	387.8	373.2	365.5	356.7	354.0	351.6	348.5	349.9
40°	428.4	403.7	382.4	364.1	352.9	344.1	339.4	336.0	334.0	334.0	334.0
42.5°	404.4	380.3	359.7	343.8	332.6	325.5	320.1	317.4	317.1	316.7	318.8
45°	379.3	357.0	336.0	322.5	313.0	305.6	302.5	300.1	300.1	301.5	301.8
47.5°	354.3	333.3	316.4	300.8	292.0	287.3	284.6	283.2	283.2	284.9	286.3
50°	331.6	311.0	294.4	280.9	272.7	268.3	266.0	265.3	266.0	266.0	268.3
52.5°	306.9	289.0	272.7	261.9	252.4	248.4	247.4	246.3	246.7	248.0	248.7
55°	282.9	266.3	250.7	239.9	233.1	230.4	227.4	227.7	227.1	227.7	227.7
57.5°	258.5	244.0	228.7	220.0	214.2	210.1	206.8	207.8	206.8	206.8	206.4
60°	235.2	218.9	207.4	199.6	192.9	189.5	186.5	187.1	186.1	185.4	184.1
62.5°	209.8	196.9	186.1	178.7	173.6	169.5	166.5	165.5	162.8	160.1	156.7
65°	185.4	174.3	164.5	157.3	152.3	149.2	146.9	144.8	139.8	134.3	131.6
67.5°	161.4	153.3	143.8	137.7	133.7	129.6	125.2	121.5	116.4	113.0	111.3
70°	138.4	130.6	122.8	117.1	112.7	109.0	103.9	101.5	98.1	96.8	95.1
72.5°	116.4	109.3	102.2	97.1	92.4	89.7	86.0	83.6	82.6	82.2	80.5
75°	94.1	88.3	82.9	78.2	74.4	72.4	70.7	69.0	68.4	65.3	63.6
77.5°	72.4	68.4	65.0	61.2	58.9	57.5	53.8	51.4	50.1	48.4	48.1
80°	53.5	50.8	47.4	45.3	41.6	40.3	38.9	38.6	38.2	37.9	37.6
82.5°	36.9	34.2	30.8	29.8	29.4	28.8	28.1	27.7	27.4	27.7	27.7
85°	20.3	18.9	18.9	18.6	18.3	17.9	17.6	17.6	17.3	17.6	17.3
87.5°	8.5	8.1	8.1	7.4	7.8	7.8	7.4	7.4	7.8	7.1	7.1
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):

	165°	170°	175°	180°
0°	839.9	839.9	839.9	839.9
2.5°	792.2	792.8	790.5	789.8
5°	743.8	743.1	741.4	741.7
7.5°	701.8	699.4	701.1	698.4
10°	663.9	660.2	657.1	654.4
12.5°	612.1	609.1	604.7	606.4
15°	563.8	558.7	550.6	551.6
17.5°	520.4	521.1	516.4	517.7
20°	488.3	485.9	486.3	485.2
22.5°	466.0	462.9	459.9	457.5
25°	440.2	438.2	435.2	434.5
27.5°	417.6	417.2	415.9	414.2
30°	398.3	397.6	396.9	395.9
32.5°	381.0	380.7	380.0	380.3
35°	364.8	364.4	363.8	363.4
37.5°	349.6	350.6	349.9	349.9
40°	333.6	334.0	334.7	334.3
42.5°	320.5	320.5	321.5	320.1
45°	304.2	306.2	305.9	305.9
47.5°	287.0	289.3	289.7	289.7
50°	270.0	269.4	270.4	270.0
52.5°	249.4	249.7	249.4	249.1
55°	228.1	228.4	227.7	228.1
57.5°	205.4	204.0	205.1	204.4
60°	180.7	178.0	177.3	176.0
62.5°	153.0	151.3	148.6	150.2
65°	128.9	127.6	126.6	127.9
67.5°	109.6	109.0	109.0	108.3
70°	95.1	94.1	94.1	93.4
72.5°	80.2	79.2	79.5	79.2
75°	61.6	59.9	59.9	60.2
77.5°	48.1	47.7	48.4	47.4
80°	37.6	37.2	36.9	37.9
82.5°	27.1	27.1	27.1	28.4
85°	17.6	16.9	17.6	16.9
87.5°	7.8	7.4	7.1	7.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)