

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: P243318

Luminaire Tested: **S123DR-H775D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243318
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-59)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-H775D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2434.0 lumens
Efficiency: N/A
Efficacy: 103.1 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.21 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

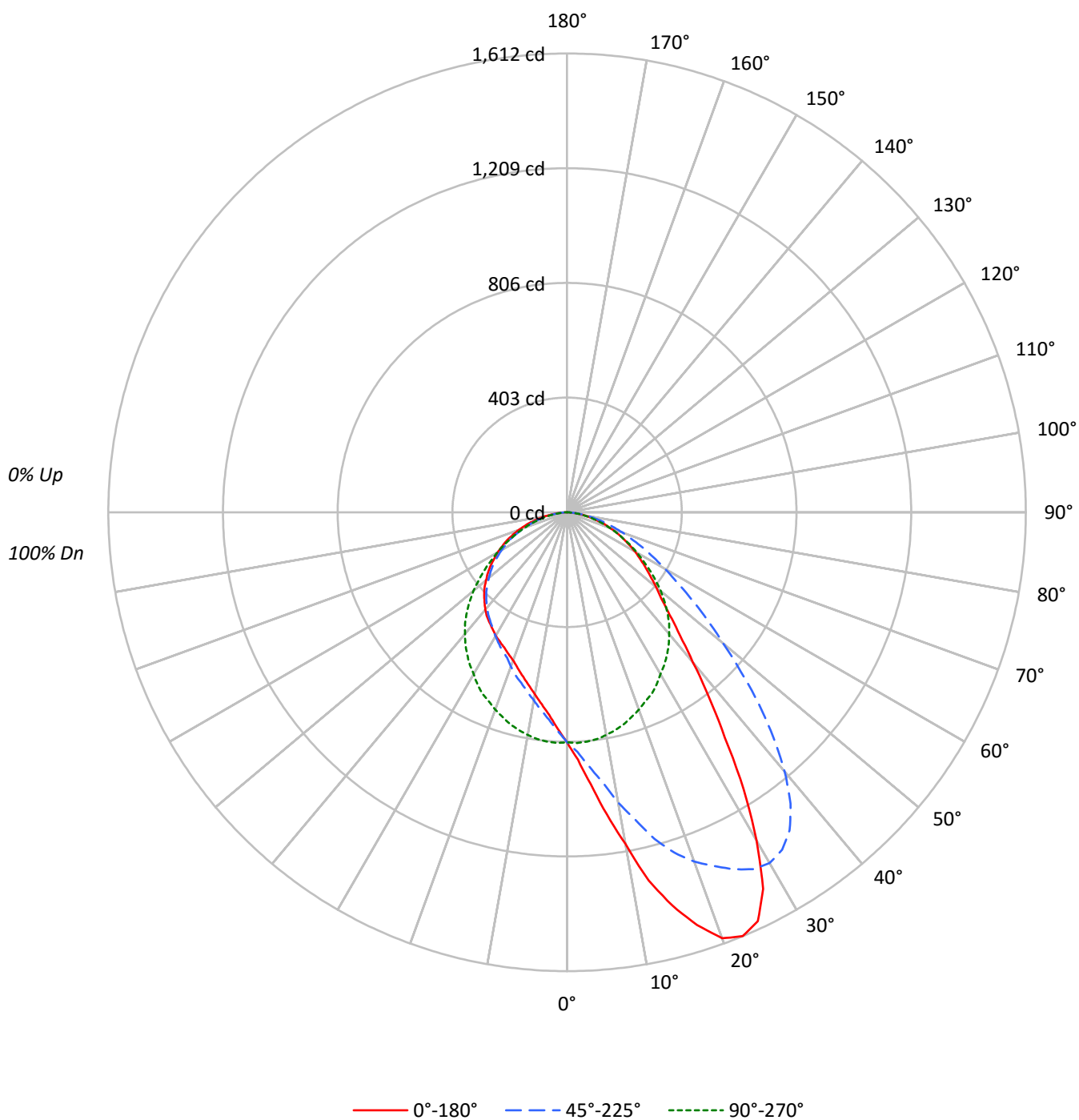
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		100
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		85
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72		72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		62
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53		53
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46		46
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41		41
7	67	54	45	39	65	53	45	39	51	44	39	50	43	39	49	43	38	36		36
8	62	49	41	35	61	48	41	35	47	40	35	46	39	35	45	39	34	33		33
9	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29		29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	28	38	33	28	27		27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	9789	9789	9789
5°	11663	9836	8692
10°	14564	9776	7993
15°	17950	9671	7499
20°	20539	9516	7136
25°	21197	9411	7003
30°	18622	9187	7008
35°	14293	9050	7015
40°	10872	8829	7068
45°	8748	8545	7063
50°	7699	8090	7002
55°	7096	7494	6955
60°	6688	6858	6812
65°	6215	6267	6683
70°	5688	5621	6397
75°	5058	4903	5957
80°	4230	4056	5214
85°	2976	2934	3908

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.5	3.3
10°-20°	255.1	10.5
20°-30°	421.3	17.3
30°-40°	482.2	19.8
40°-50°	437.0	18.0
50°-60°	353.1	14.5
60°-70°	246.0	10.1
70°-80°	129.0	5.3
80°-90°	30.8	1.3
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°	755.9	31.1
0°-40°	1238.1	50.9
0°-60°	2028.2	83.3
0°-90°	2434.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2434.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	808	808	808	808	808	
5°	958	896	808	731	714	99
15°	1430	1188	771	621	598	407
25°	1585	1383	704	537	524	708
35°	966	1363	612	469	474	612
45°	510	953	498	402	412	402
55°	336	535	355	315	329	302
65°	217	292	218	216	233	215
75°	108	133	105	109	127	115
85°	21	27	21	24	28	27
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°	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6
2.5°	869.8	871.6	868.7	870.5	866.1	863.5	859.4	857.6	848.7	842.4	840.2
5°	958.5	958.5	959.3	954.8	949.6	940.4	928.2	920.4	911.5	896.4	888.6
7.5°	1070.2	1064.6	1060.9	1052.8	1045.8	1030.6	1017.3	1001.4	980.7	955.6	942.2
10°	1183.3	1189.3	1185.6	1177.1	1158.9	1134.2	1114.6	1091.6	1059.5	1035.1	1000.3
12.5°	1324.6	1316.8	1310.9	1298.0	1278.0	1251.8	1221.4	1187.4	1146.0	1105.7	1066.9
15°	1430.4	1431.5	1431.1	1414.1	1394.5	1359.0	1330.9	1274.3	1221.8	1187.8	1123.4
17.5°	1519.9	1524.7	1519.1	1493.6	1476.2	1455.1	1419.3	1356.4	1308.7	1253.6	1182.6
20°	1592.3	1593.1	1584.2	1565.3	1545.4	1521.7	1474.4	1426.3	1379.7	1305.8	1238.1
22.5°	1611.6	1613.4	1611.6	1603.4	1587.2	1562.0	1526.5	1482.1	1423.3	1344.6	1281.7
25°	1584.9	1583.8	1590.1	1585.3	1584.6	1576.4	1553.1	1517.3	1459.2	1383.4	1303.5
27.5°	1491.8	1484.0	1499.9	1520.6	1523.6	1536.5	1536.9	1520.2	1478.4	1413.7	1326.8
30°	1330.5	1337.9	1345.7	1389.0	1413.0	1446.6	1475.9	1486.6	1470.7	1423.0	1341.6
32.5°	1155.2	1178.9	1200.7	1230.7	1265.8	1322.8	1369.0	1409.7	1427.0	1406.0	1341.6
35°	965.9	978.5	1012.9	1051.0	1101.6	1146.0	1237.7	1296.9	1349.8	1363.4	1324.6
37.5°	818.0	829.5	841.3	870.9	927.8	1001.8	1077.6	1155.2	1233.6	1289.8	1287.6
40°	687.1	689.7	700.0	725.5	772.9	838.7	918.2	1011.8	1113.5	1190.0	1222.2
42.5°	586.5	586.5	599.4	629.0	656.4	704.5	781.4	863.8	975.2	1073.5	1142.3
45°	510.3	511.1	521.4	542.5	563.9	601.7	658.6	736.3	850.9	952.6	1048.4
47.5°	448.2	455.2	461.1	472.2	493.7	527.0	568.4	634.6	716.3	827.2	938.9
50°	408.3	409.7	414.2	420.8	437.5	459.3	495.2	545.4	617.9	716.3	829.1
52.5°	369.1	369.1	373.5	381.6	391.2	409.0	434.9	476.7	531.0	620.1	721.5
55°	335.8	336.9	337.6	344.3	352.4	365.7	386.1	413.4	463.4	534.7	623.1
57.5°	303.2	307.3	306.2	311.4	317.3	326.9	341.3	365.0	403.1	457.4	536.9
60°	275.9	275.1	277.0	279.2	283.3	289.9	303.2	320.6	352.4	397.9	463.0
62.5°	244.8	244.1	246.3	248.9	252.6	258.1	267.7	281.0	306.2	340.2	396.8
65°	216.7	216.0	217.1	218.5	222.6	227.1	234.5	245.5	262.2	292.1	335.4
67.5°	188.6	188.6	189.3	190.8	193.4	196.7	202.6	209.3	225.9	245.9	279.9
70°	160.5	160.9	160.9	162.3	164.6	167.1	172.0	177.9	188.2	206.0	233.3
72.5°	136.1	136.1	135.3	136.1	137.6	138.7	141.6	147.2	154.9	167.9	188.6
75°	108.0	109.8	109.5	109.1	110.2	112.0	114.6	119.1	123.9	133.1	148.7
77.5°	82.8	83.9	83.9	84.3	85.4	86.9	87.6	92.1	96.5	102.1	113.5
80°	60.6	61.4	60.6	61.0	61.8	63.2	64.7	65.5	68.8	73.6	79.1
82.5°	40.7	39.6	41.0	40.7	41.4	41.8	42.5	42.9	45.1	48.1	51.8
85°	21.4	23.3	22.9	23.7	22.9	23.3	23.7	25.1	25.5	27.4	29.6
87.5°	8.1	8.9	8.9	8.9	8.9	8.9	9.6	10.0	10.7	11.1	11.8
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°	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6
2.5°	841.7	838.3	833.5	828.3	822.8	817.2	814.7	811.3	804.7	798.0	792.8
5°	882.3	873.1	860.5	851.3	838.0	825.4	815.4	808.4	797.7	784.7	776.2
7.5°	927.8	911.2	891.2	870.9	850.9	832.0	816.5	803.2	786.6	770.7	757.7
10°	981.4	949.3	921.5	891.9	862.4	835.7	813.6	794.3	772.9	753.6	737.7
12.5°	1028.8	991.4	953.0	911.2	871.2	836.8	808.4	783.2	757.3	735.2	718.9
15°	1080.9	1028.4	975.2	927.8	879.4	837.2	799.9	770.7	741.1	715.9	697.1
17.5°	1140.8	1070.6	1003.6	935.6	892.7	838.3	792.5	754.0	723.7	698.5	674.1
20°	1176.3	1106.4	1024.3	954.4	883.4	827.6	776.6	737.7	702.2	673.4	653.4
22.5°	1195.6	1122.0	1036.2	964.4	881.6	819.1	764.7	718.9	680.8	652.0	629.4
25°	1222.5	1122.0	1042.5	956.3	884.6	809.1	747.7	703.7	663.8	630.5	606.8
27.5°	1234.7	1131.9	1043.2	940.8	866.8	790.3	728.1	681.5	637.2	604.6	584.3
30°	1244.7	1133.8	1028.4	928.6	846.1	769.2	708.5	656.4	615.0	583.9	562.5
32.5°	1245.5	1129.0	1008.4	905.6	818.4	744.4	685.2	636.0	592.8	559.9	538.8
35°	1238.8	1117.2	985.5	870.5	786.2	718.9	659.7	611.6	567.6	536.2	514.8
37.5°	1221.8	1103.8	964.1	837.6	748.1	682.6	632.4	586.5	542.9	511.4	493.7
40°	1185.6	1082.4	936.0	802.5	709.6	644.2	600.2	558.0	519.2	486.7	468.9
42.5°	1137.5	1050.2	901.9	765.1	666.7	603.5	564.7	530.7	491.1	463.0	444.9
45°	1069.5	1006.6	867.9	725.9	624.2	562.1	526.6	498.5	464.5	436.4	420.5
47.5°	992.5	954.1	823.9	681.9	579.5	521.0	487.4	464.8	436.0	412.0	396.1
50°	906.0	891.6	775.5	637.5	537.7	477.8	446.7	429.0	404.6	385.3	371.6
52.5°	812.1	820.9	724.4	592.4	497.4	436.7	407.1	390.9	375.3	359.1	346.1
55°	716.7	737.7	662.7	543.2	451.2	398.3	369.4	354.6	343.2	329.5	320.2
57.5°	627.2	660.1	598.7	490.7	408.6	358.0	330.6	317.7	309.1	301.8	293.2
60°	540.3	578.4	532.9	441.5	366.1	319.9	295.5	282.9	278.8	273.3	265.1
62.5°	463.4	502.2	468.2	390.9	323.2	283.6	261.4	251.1	245.2	243.3	238.5
65°	391.2	427.5	401.6	338.0	282.5	247.4	227.8	218.5	215.2	214.9	211.2
67.5°	328.7	363.9	340.2	286.6	239.6	211.2	196.4	189.0	185.6	186.0	183.4
70°	271.1	295.8	281.8	239.6	203.4	178.2	166.8	158.6	156.1	156.1	155.3
72.5°	217.4	237.0	226.3	194.1	165.7	146.4	136.5	131.6	129.4	129.1	129.4
75°	170.1	187.1	177.5	152.4	130.9	116.5	108.0	104.7	103.5	102.8	103.2
77.5°	127.2	137.9	132.0	115.7	98.0	88.0	83.9	80.6	79.5	79.9	80.6
80°	89.9	95.8	92.4	82.1	70.3	63.6	60.6	58.1	56.9	58.1	58.1
82.5°	56.9	61.4	58.4	51.8	45.9	41.4	38.5	37.7	37.3	36.6	37.7
85°	31.1	33.3	31.8	29.6	25.5	23.7	21.4	21.1	21.1	21.1	21.1
87.5°	12.2	13.7	11.8	11.8	11.1	9.2	9.2	8.9	8.5	8.9	8.9
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°	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6	807.6
2.5°	790.6	785.8	782.9	778.8	774.0	767.7	765.1	767.7	766.2	763.6	764.7
5°	768.8	762.5	754.4	747.7	740.3	731.1	728.1	726.6	724.4	723.3	721.5
7.5°	747.4	738.1	728.1	718.9	708.2	700.0	696.3	693.7	693.0	687.5	685.2
10°	725.2	713.7	703.7	691.1	681.9	671.2	666.7	663.8	660.5	656.8	654.2
12.5°	701.9	690.4	677.8	666.0	656.8	644.9	639.0	635.7	633.1	630.5	627.5
15°	681.5	670.1	652.7	643.8	632.7	620.9	617.2	609.8	610.5	606.1	603.1
17.5°	660.1	643.1	630.9	617.6	609.4	600.9	593.9	586.1	585.0	581.7	580.6
20°	636.0	618.3	609.8	596.1	585.0	576.5	570.2	569.5	567.3	562.5	560.6
22.5°	612.4	598.0	586.1	573.6	563.6	552.5	549.5	550.6	546.6	545.4	541.4
25°	590.9	578.4	563.6	551.7	543.6	536.6	532.5	531.0	529.5	528.4	526.6
27.5°	568.0	554.7	542.1	532.5	524.7	519.9	517.3	514.0	513.6	513.6	512.9
30°	545.1	533.2	524.7	512.5	505.5	502.6	500.3	499.2	500.3	500.3	500.7
32.5°	524.0	512.5	502.6	494.0	487.0	484.8	484.4	484.4	485.9	485.9	487.0
35°	502.2	490.7	481.5	475.6	469.6	469.3	469.6	470.4	472.2	472.6	474.1
37.5°	478.5	469.6	462.6	455.2	453.7	454.5	455.2	456.0	456.7	459.7	459.7
40°	456.7	450.0	443.0	438.2	435.6	437.5	438.6	438.9	441.2	443.0	444.5
42.5°	435.3	429.0	423.4	419.3	418.2	419.7	420.8	421.9	424.2	425.6	428.2
45°	411.2	407.1	402.3	399.0	399.4	401.6	401.6	405.3	406.8	407.5	409.4
47.5°	389.0	384.6	381.3	379.8	379.4	381.3	382.4	385.3	386.1	388.7	390.1
50°	365.4	362.0	359.4	357.6	358.0	358.7	361.3	364.2	365.0	367.9	370.5
52.5°	340.6	337.6	335.4	336.1	337.3	337.3	339.8	341.7	343.5	345.8	348.3
55°	316.2	312.1	312.5	311.4	312.5	315.1	316.2	319.1	320.6	321.7	325.4
57.5°	289.6	288.8	287.7	286.6	288.8	289.9	291.8	293.6	296.2	297.7	300.3
60°	262.2	261.1	261.1	262.6	263.3	265.5	268.5	269.6	270.3	273.3	276.6
62.5°	237.0	235.9	235.6	237.8	237.8	240.0	241.1	243.0	245.9	247.0	251.5
65°	210.0	209.3	209.3	211.2	211.5	215.6	215.6	215.6	217.4	221.5	223.7
67.5°	181.9	182.3	183.4	184.5	186.0	187.1	187.5	189.7	192.7	195.3	199.7
70°	153.8	155.7	157.9	157.5	158.6	160.5	160.9	163.1	165.7	169.0	174.2
72.5°	128.7	129.8	132.0	132.0	133.5	134.6	136.5	137.9	141.3	144.2	146.4
75°	103.5	103.9	105.8	106.9	108.0	108.7	110.6	113.2	115.0	117.6	120.9
77.5°	81.4	80.6	82.1	82.5	83.2	84.7	86.2	88.8	90.2	93.2	94.3
80°	57.7	59.2	59.5	59.9	60.6	62.5	63.6	64.7	66.2	68.8	69.9
82.5°	38.1	38.8	39.9	40.3	41.0	41.4	41.8	43.6	44.7	45.5	49.2
85°	22.2	23.3	22.6	22.6	23.3	23.7	25.1	25.1	26.6	25.9	27.7
87.5°	9.6	9.2	9.2	9.6	9.2	8.9	10.0	10.0	9.6	10.0	10.0
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):

	165°	170°	175°	180°
0°	807.6	807.6	807.6	807.6
2.5°	762.9	762.9	759.9	761.0
5°	717.8	719.3	715.6	714.4
7.5°	684.5	683.0	680.4	680.4
10°	652.0	650.5	649.4	649.4
12.5°	623.8	622.4	620.1	622.0
15°	598.7	599.1	597.6	597.6
17.5°	579.5	576.1	575.0	574.7
20°	556.5	557.3	555.8	553.2
22.5°	542.1	540.3	538.8	538.4
25°	527.3	525.5	525.1	523.6
27.5°	512.5	512.9	511.8	511.8
30°	500.3	501.4	500.3	500.7
32.5°	488.1	488.1	488.1	486.7
35°	474.8	475.2	474.8	474.1
37.5°	461.1	461.1	461.5	462.2
40°	446.0	446.0	446.7	446.7
42.5°	427.9	429.7	430.8	429.0
45°	411.6	412.0	412.3	412.0
47.5°	393.5	392.4	392.7	393.5
50°	370.9	373.5	373.5	371.3
52.5°	349.1	349.8	351.3	351.3
55°	327.6	328.0	328.4	329.1
57.5°	303.2	303.6	303.6	303.2
60°	278.8	281.0	280.7	281.0
62.5°	252.6	255.9	257.0	256.6
65°	227.8	228.5	230.4	233.0
67.5°	201.5	203.4	206.3	205.6
70°	175.7	178.2	179.0	180.5
72.5°	149.8	153.1	153.8	154.6
75°	124.6	126.1	127.6	127.2
77.5°	97.3	99.5	102.1	100.6
80°	72.8	73.2	75.4	74.7
82.5°	48.1	51.0	51.0	49.6
85°	28.1	28.1	28.1	28.1
87.5°	9.6	9.2	10.0	9.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)