

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: P332772-840

Luminaire Tested: **S124DIW-S575D1560U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332772-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S575D1560U840-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 575 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7860.5 lumens
Efficiency: N/A
Efficacy: 129.7 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

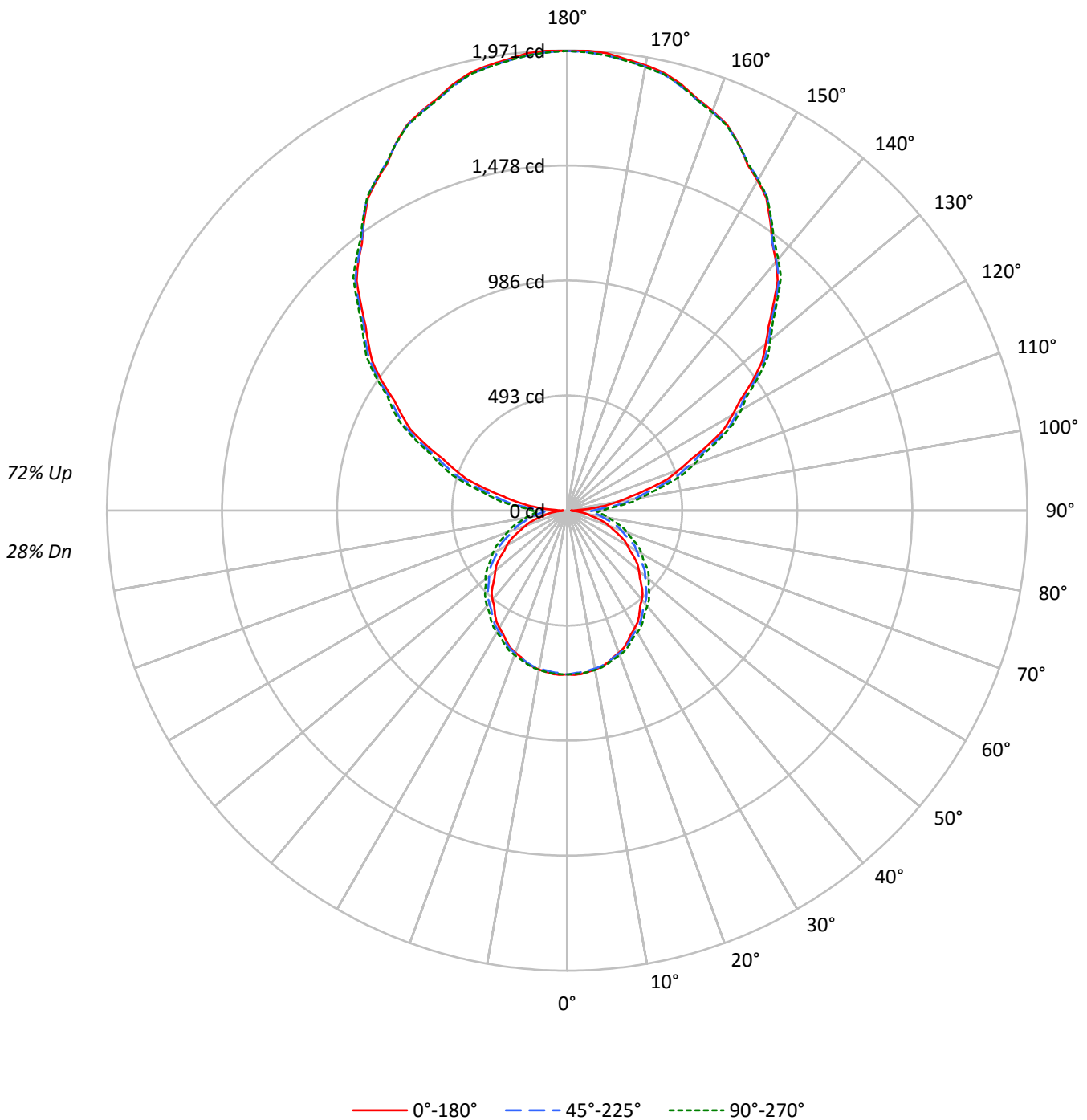
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23
2	84	76	70	65	75	68	63	59	53	50	47	40	37	35	27	25	24	18
3	76	67	60	54	68	60	54	49	47	42	39	35	32	29	24	22	20	15
4	70	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13
5	64	52	44	38	57	47	40	35	37	32	28	27	24	21	19	17	15	11
6	58	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	15	13	11	9
8	50	38	30	25	44	34	28	23	27	22	19	20	17	14	14	12	10	8
9	46	34	27	22	41	31	25	20	25	20	17	19	15	13	13	11	9	7
10	43	31	24	20	39	28	22	18	23	18	15	17	14	11	12	10	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5666	5666	5666
5°	5683	5537	5552
10°	5649	5446	5442
15°	5598	5341	5312
20°	5521	5226	5185
25°	5435	5096	5047
30°	5342	4967	4904
35°	5237	4834	4779
40°	5153	4710	4648
45°	5027	4594	4537
50°	4920	4460	4418
55°	4811	4333	4278
60°	4641	4173	4153
65°	4454	4001	3997
70°	4226	3805	3816
75°	3910	3587	3652
80°	3559	3381	3492
85°	3112	3195	3398



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.5	0.8
10°-20°	190.4	2.4
20°-30°	287.9	3.7
30°-40°	348.3	4.4
40°-50°	368.3	4.7
50°-60°	346.6	4.4
60°-70°	287.5	3.7
70°-80°	202.0	2.6
80°-90°	120.1	1.5
90°-100°	197.7	2.5
100°-110°	434.9	5.5
110°-120°	686.6	8.7
120°-130°	880.0	11.2
130°-140°	975.1	12.4
140°-150°	951.8	12.1
150°-160°	799.1	10.2
160°-170°	531.7	6.8
170°-180°	186.2	2.4
0°-30°	544.7	6.9
0°-40°	893.1	11.4
0°-60°	1607.9	20.5
0°-90°	2217.5	28.2
90°-120°	1319.2	16.8
90°-150°	4126.0	52.5
90°-180°	5643.0	71.8
0°-180°	7860.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	702	702	702	702	702	
5°	703	700	695	700	700	67
15°	674	674	672	678	678	190
25°	616	621	623	631	633	284
35°	539	548	556	567	570	337
45°	450	464	479	492	497	347
55°	352	369	392	407	412	314
65°	244	269	296	314	321	241
75°	135	164	197	218	226	144
85°	42	75	110	133	142	44
90°	17	65	111	142	153	14
95°	102	141	184	209	217	110
105°	362	380	414	438	449	384
115°	669	676	698	713	718	659
125°	970	970	987	999	1001	864
135°	1249	1258	1263	1272	1273	966
145°	1516	1521	1523	1526	1524	948
155°	1736	1736	1734	1740	1734	798
165°	1890	1885	1882	1890	1885	532
175°	1966	1958	1957	1966	1957	187
180°	1969	1969	1969	1969	1969	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	701.8	701.8	701.8	701.8	701.8	701.8	701.8	701.8	701.8	701.8	701.8
2.5°	704.3	703.9	703.5	703.0	702.6	701.9	700.7	699.6	698.4	697.3	698.3
5°	702.6	702.1	701.5	700.9	700.4	699.5	698.3	697.1	695.9	694.7	696.1
7.5°	696.6	696.2	695.9	695.6	695.3	694.7	693.7	692.7	691.6	690.5	692.2
10°	691.6	691.4	691.2	691.1	690.8	690.3	689.4	688.5	687.7	686.8	688.4
12.5°	684.6	684.6	684.6	684.5	684.5	684.2	683.6	683.0	682.4	681.8	683.2
15°	673.5	673.7	673.8	674.0	674.2	674.0	673.5	673.0	672.4	671.9	673.5
17.5°	658.2	658.7	659.2	659.7	660.4	660.6	660.5	660.4	660.2	660.1	661.7
20°	647.5	648.0	648.5	649.1	649.6	649.9	650.2	650.4	650.5	650.7	652.4
22.5°	635.6	636.2	636.9	637.5	638.2	638.7	639.0	639.3	639.6	640.0	641.8
25°	616.1	617.1	618.2	619.2	620.3	621.1	621.6	622.1	622.7	623.2	625.1
27.5°	594.4	595.9	597.4	599.1	600.6	601.7	602.5	603.3	604.1	604.9	606.7
30°	580.0	581.4	582.7	584.1	585.5	586.8	588.0	589.3	590.5	591.8	593.7
32.5°	564.2	565.9	567.5	569.3	571.0	572.5	573.8	575.2	576.5	577.9	580.1
35°	539.1	541.2	543.3	545.3	547.4	549.4	551.1	552.9	554.6	556.3	558.9
37.5°	513.8	516.1	518.6	521.0	523.4	525.7	527.9	530.1	532.2	534.3	536.8
40°	497.5	499.7	502.0	504.2	506.5	508.9	511.3	513.7	516.2	518.7	521.3
42.5°	478.6	481.1	483.6	486.3	488.8	491.5	494.3	497.2	500.1	502.9	505.8
45°	449.5	452.8	456.2	459.5	462.7	466.1	469.4	472.7	476.1	479.4	482.3
47.5°	421.7	425.1	428.5	431.9	435.4	439.0	442.8	446.7	450.5	454.3	457.5
50°	401.5	405.4	409.2	413.1	417.0	420.8	424.6	428.5	432.3	436.2	439.6
52.5°	381.4	385.3	389.1	392.9	396.8	400.9	405.4	409.7	414.1	418.5	422.0
55°	352.0	355.7	359.4	363.0	366.7	371.1	376.4	381.6	386.9	392.1	395.7
57.5°	319.2	323.8	328.3	332.9	337.4	342.2	347.4	352.6	357.9	363.0	367.2
60°	297.8	302.4	306.9	311.4	316.0	321.1	326.9	332.6	338.4	344.2	348.2
62.5°	277.1	282.1	287.0	292.0	296.9	302.3	308.0	313.8	319.6	325.4	329.3
65°	243.6	249.2	254.8	260.3	266.0	271.8	277.6	283.6	289.5	295.5	299.8
67.5°	211.4	217.3	223.3	229.2	235.1	241.3	247.6	254.0	260.3	266.7	271.1
70°	189.3	195.3	201.3	207.2	213.2	219.4	226.0	232.7	239.3	246.0	250.6
72.5°	168.0	174.1	180.2	186.2	192.3	198.8	205.9	213.0	220.0	227.1	231.7
75°	135.1	141.6	148.0	154.5	161.0	167.9	175.2	182.6	190.0	197.2	202.2
77.5°	104.5	111.4	118.3	125.0	131.9	139.2	146.8	154.5	162.2	169.9	174.8
80°	85.6	92.6	99.7	106.6	113.6	120.9	128.7	136.3	144.0	151.7	156.9
82.5°	66.8	74.0	81.3	88.6	95.8	103.3	111.0	118.7	126.3	134.1	139.5
85°	41.6	49.0	56.4	63.6	71.0	78.6	86.4	94.3	102.2	110.0	115.2
87.5°	24.1	32.0	39.9	47.8	55.6	63.7	71.9	80.1	88.3	96.4	101.9
90°	17.2	27.9	38.6	49.3	60.0	70.4	80.7	90.9	101.1	111.3	118.4
92.5°	44.5	55.0	65.6	76.1	86.7	96.7	106.1	115.5	124.9	134.3	140.5
95°	101.6	110.4	119.2	128.1	136.8	146.0	155.5	165.0	174.6	184.1	189.9
97.5°	168.8	176.2	183.7	191.1	198.4	207.0	216.9	226.8	236.6	246.5	252.4
100°	221.9	227.7	233.6	239.5	245.4	253.3	263.2	273.0	282.9	292.7	298.1
102.5°	277.8	282.4	286.9	291.4	296.0	303.0	312.4	321.8	331.2	340.7	346.3
105°	361.8	365.7	369.5	373.3	377.2	383.0	390.8	398.6	406.5	414.2	419.7
107.5°	451.5	454.8	458.1	461.4	464.6	469.4	475.7	482.0	488.4	494.6	499.9
110°	511.8	514.9	518.1	521.2	524.3	528.8	534.5	540.3	546.0	551.9	555.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	574.5	576.8	579.2	581.5	583.7	587.5	592.7	597.9	603.2	608.4	612.2
115°	668.6	670.1	671.8	673.4	674.9	678.1	683.1	687.9	692.9	697.8	701.3
117.5°	758.0	759.2	760.4	761.6	762.9	765.8	770.5	775.3	780.0	784.8	787.2
120°	817.1	818.9	820.8	822.7	824.6	827.5	831.6	835.7	839.7	843.7	845.6
122.5°	879.2	879.8	880.5	881.1	881.8	884.2	888.6	892.8	897.2	901.5	903.8
125°	970.1	969.9	969.7	969.6	969.4	971.3	975.3	979.4	983.4	987.4	990.1
127.5°	1053.1	1053.9	1054.7	1055.6	1056.4	1058.2	1061.1	1063.9	1066.7	1069.4	1072.0
130°	1110.9	1111.8	1112.6	1113.4	1114.3	1116.1	1118.8	1121.7	1124.5	1127.2	1129.7
132.5°	1170.5	1171.1	1171.7	1172.3	1172.9	1174.2	1176.1	1178.1	1180.0	1181.9	1184.3
135°	1248.7	1250.7	1252.7	1254.8	1256.8	1258.4	1259.6	1260.8	1262.1	1263.3	1265.5
137.5°	1334.5	1335.3	1336.1	1336.9	1337.7	1338.6	1339.7	1340.9	1342.0	1343.1	1344.8
140°	1391.8	1392.3	1392.8	1393.3	1393.8	1394.1	1394.3	1394.5	1394.7	1394.8	1396.7
142.5°	1443.6	1444.2	1444.8	1445.5	1446.1	1446.2	1445.9	1445.5	1445.1	1444.7	1446.7
145°	1515.9	1517.0	1518.2	1519.4	1520.6	1521.4	1521.7	1522.1	1522.4	1522.7	1523.4
147.5°	1587.7	1589.2	1590.6	1592.2	1593.6	1594.2	1593.9	1593.6	1593.4	1593.1	1593.0
150°	1631.6	1632.7	1634.0	1635.2	1636.3	1636.9	1636.9	1636.9	1636.9	1636.9	1636.9
152.5°	1672.4	1673.1	1674.0	1674.8	1675.5	1676.1	1676.3	1676.6	1676.9	1677.1	1677.9
155°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.8	1735.4	1735.0	1734.7	1734.3	1735.8
157.5°	1789.5	1788.9	1788.3	1787.7	1787.1	1786.8	1786.7	1786.6	1786.6	1786.5	1787.5
160°	1821.2	1820.8	1820.5	1820.2	1819.8	1819.5	1819.2	1818.8	1818.5	1818.2	1819.2
162.5°	1850.4	1849.6	1848.7	1847.8	1846.8	1846.2	1845.9	1845.6	1845.2	1844.9	1846.7
165°	1889.7	1888.6	1887.6	1886.6	1885.6	1884.8	1884.1	1883.4	1882.8	1882.1	1884.1
167.5°	1919.9	1918.4	1917.0	1915.6	1914.2	1913.5	1913.6	1913.6	1913.7	1913.8	1915.8
170°	1936.9	1935.2	1933.5	1931.8	1930.2	1929.4	1929.8	1930.2	1930.5	1930.8	1932.8
172.5°	1949.0	1947.6	1946.2	1944.8	1943.4	1942.7	1942.8	1942.9	1942.9	1943.0	1945.3
175°	1965.8	1964.1	1962.5	1960.8	1959.0	1958.0	1957.7	1957.3	1957.0	1956.7	1959.0
177.5°	1971.3	1969.9	1968.6	1967.2	1965.9	1965.2	1965.2	1965.2	1965.2	1965.2	1967.1
180°	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	701.8	701.8	701.8	701.8	701.8	701.8	701.8	701.8
2.5°	699.3	700.2	701.3	701.7	701.6	701.4	701.3	701.1
5°	697.5	698.8	700.2	700.8	700.7	700.5	700.3	700.1
7.5°	693.8	695.3	696.9	697.6	697.4	697.2	697.0	696.9
10°	689.9	691.6	693.1	693.8	693.7	693.5	693.3	693.1
12.5°	684.7	686.1	687.5	688.2	688.2	688.1	688.1	688.1
15°	675.0	676.6	678.1	678.8	678.7	678.5	678.3	678.1
17.5°	663.3	664.9	666.5	667.2	667.1	667.0	666.8	666.7
20°	654.2	655.9	657.6	658.5	658.5	658.5	658.5	658.5
22.5°	643.5	645.2	646.9	648.0	648.2	648.5	648.8	649.1
25°	627.0	628.9	630.9	631.9	632.1	632.3	632.4	632.6
27.5°	608.5	610.3	612.1	613.1	613.3	613.5	613.7	613.9
30°	595.6	597.5	599.5	600.6	600.9	601.3	601.6	602.0
32.5°	582.3	584.5	586.7	587.9	588.3	588.7	589.1	589.4
35°	561.3	563.7	566.1	567.6	568.2	568.7	569.2	569.8
37.5°	539.4	541.8	544.3	545.8	546.3	546.9	547.4	548.1
40°	523.9	526.5	529.2	530.8	531.5	532.2	532.9	533.6
42.5°	508.8	511.6	514.5	516.2	516.8	517.4	518.0	518.5
45°	485.3	488.3	491.2	493.1	494.0	494.9	495.7	496.7
47.5°	460.5	463.6	466.7	468.7	469.8	470.8	471.9	472.9
50°	443.1	446.7	450.1	452.4	453.4	454.4	455.6	456.6
52.5°	425.6	429.0	432.5	434.7	435.9	436.9	437.9	439.0
55°	399.1	402.6	406.1	408.4	409.4	410.5	411.5	412.5
57.5°	371.3	375.6	379.7	382.2	383.2	384.2	385.2	386.2
60°	352.2	356.3	360.2	362.9	364.4	365.8	367.2	368.6
62.5°	333.4	337.4	341.4	344.1	345.5	346.9	348.3	349.7
65°	304.2	308.6	313.0	315.8	317.2	318.6	320.0	321.4
67.5°	275.6	280.0	284.5	287.3	288.7	290.0	291.4	292.8
70°	255.4	260.1	264.8	267.8	269.0	270.2	271.5	272.7
72.5°	236.2	240.9	245.4	248.3	249.7	251.1	252.5	253.8
75°	207.0	211.9	216.8	220.0	221.6	223.2	224.8	226.3
77.5°	179.9	184.8	189.8	193.1	194.7	196.4	198.0	199.8
80°	162.2	167.3	172.6	175.9	177.3	178.7	180.2	181.6
82.5°	144.8	150.2	155.6	159.1	160.6	162.1	163.6	165.2
85°	120.5	125.7	131.0	134.5	136.2	137.9	139.7	141.5
87.5°	107.3	112.9	118.4	121.9	123.6	125.2	126.9	128.6
90°	125.5	132.6	139.7	144.3	146.3	148.5	150.5	152.6
92.5°	146.6	152.8	158.9	162.9	164.7	166.4	168.2	170.1
95°	195.5	201.3	207.0	210.7	212.3	213.8	215.4	216.9
97.5°	258.1	263.9	269.7	273.4	274.9	276.4	277.8	279.3
100°	303.5	308.9	314.3	317.6	318.8	320.0	321.2	322.4
102.5°	351.7	357.3	362.8	366.4	368.0	369.6	371.3	372.9
105°	425.1	430.4	435.8	439.7	442.1	444.5	447.0	449.4
107.5°	505.1	510.4	515.6	518.9	520.1	521.3	522.4	523.6
110°	558.6	561.9	565.2	568.0	570.5	572.9	575.3	577.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	615.9	619.7	623.4	626.0	627.6	629.2	630.9	632.5
115°	704.8	708.3	711.9	714.0	714.9	715.8	716.7	717.5
117.5°	789.7	792.2	794.7	796.3	797.0	797.7	798.4	799.1
120°	847.4	849.1	850.9	852.8	855.0	857.0	859.1	861.2
122.5°	906.2	908.5	910.9	912.0	912.1	912.1	912.2	912.2
125°	992.7	995.3	997.9	999.5	999.9	1000.2	1000.6	1001.0
127.5°	1074.4	1076.9	1079.3	1080.9	1081.6	1082.2	1082.9	1083.5
130°	1132.2	1134.7	1137.1	1138.2	1137.9	1137.6	1137.3	1137.0
132.5°	1186.6	1189.0	1191.3	1192.8	1193.3	1193.8	1194.3	1194.8
135°	1267.6	1269.7	1271.8	1272.8	1272.9	1272.9	1272.9	1273.0
137.5°	1346.5	1348.2	1349.8	1351.2	1352.3	1353.3	1354.4	1355.5
140°	1398.8	1400.7	1402.6	1403.8	1404.3	1404.9	1405.4	1405.9
142.5°	1448.7	1450.6	1452.5	1453.7	1454.4	1455.1	1455.7	1456.4
145°	1524.1	1524.8	1525.5	1525.7	1525.4	1525.1	1524.8	1524.5
147.5°	1592.8	1592.7	1592.6	1592.6	1592.8	1593.1	1593.3	1593.5
150°	1636.9	1636.9	1636.9	1636.8	1636.4	1636.1	1635.8	1635.4
152.5°	1678.7	1679.5	1680.3	1680.3	1679.4	1678.6	1677.7	1676.8
155°	1737.1	1738.4	1739.8	1739.8	1738.4	1737.1	1735.8	1734.3
157.5°	1788.5	1789.5	1790.5	1790.4	1789.3	1788.2	1787.0	1785.8
160°	1820.2	1821.2	1822.2	1821.8	1820.2	1818.5	1816.7	1815.0
162.5°	1848.6	1850.4	1852.2	1852.3	1850.6	1849.0	1847.2	1845.5
165°	1886.1	1888.1	1890.2	1890.6	1889.2	1887.8	1886.4	1885.1
167.5°	1917.8	1919.9	1921.9	1921.9	1919.8	1917.6	1915.5	1913.4
170°	1934.9	1936.9	1938.9	1938.7	1936.4	1934.0	1931.7	1929.2
172.5°	1947.6	1949.8	1952.2	1952.2	1949.7	1947.4	1945.0	1942.7
175°	1961.5	1963.8	1966.2	1966.2	1963.8	1961.5	1959.0	1956.7
177.5°	1969.0	1970.9	1972.8	1972.7	1970.4	1968.3	1966.2	1964.0
180°	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8	1968.8

(END OF REPORT)