

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: P333101-927

Luminaire Tested: **S124RDIW-S1195D770U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333101-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIW-S1195D770U927-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6251.1 lumens
Efficiency: N/A
Efficacy: 104.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

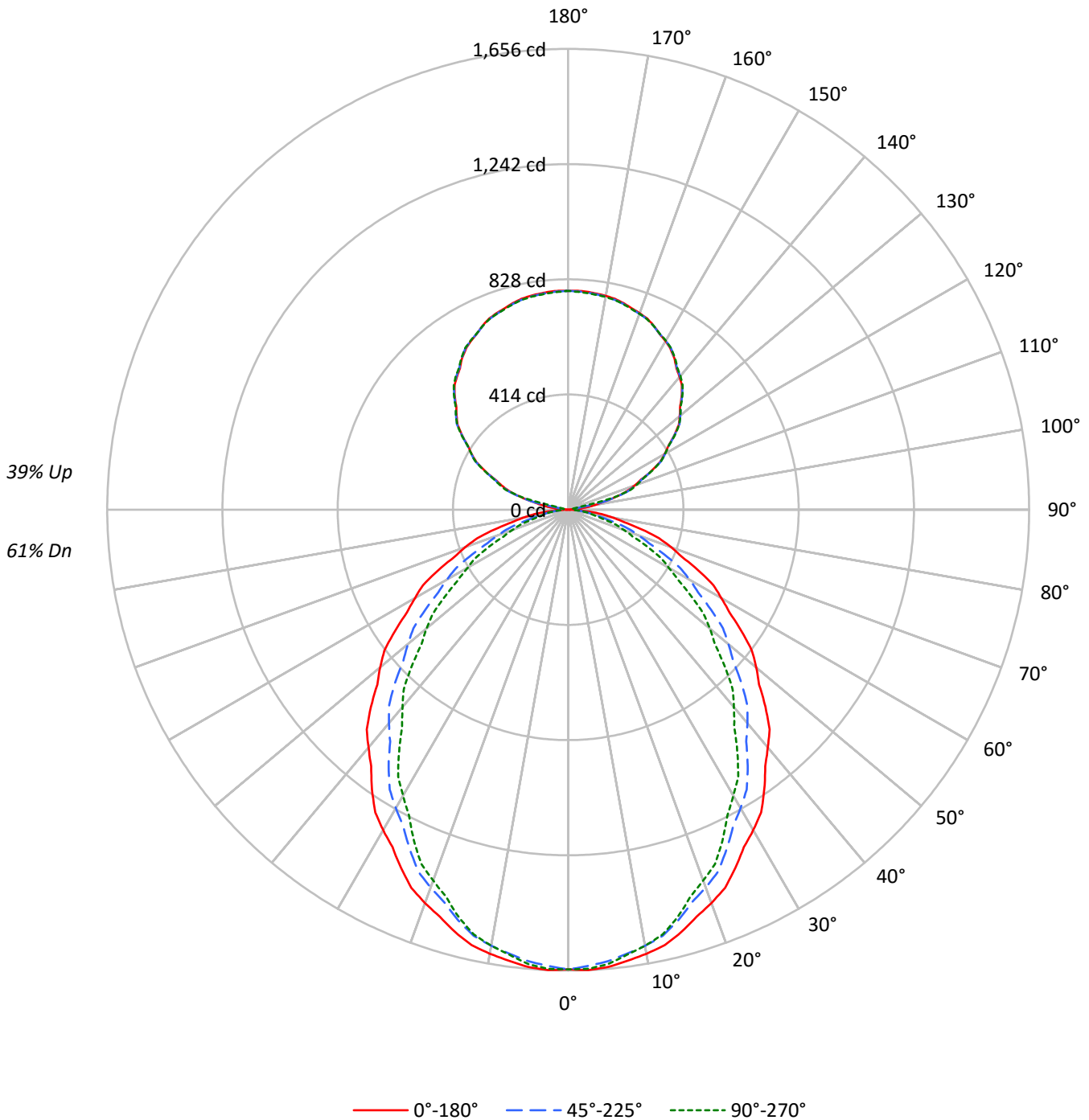
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	101	96	93	89	94	90	87	84	79	77	74	69	67	65	59	58	57	52
2	92	85	78	73	86	79	74	69	70	66	62	61	58	55	52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	53	54	50	47	47	44	41	38
4	77	66	58	52	72	62	55	50	55	49	45	48	44	40	42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39	44	39	35	38	34	31	29
6	65	53	45	39	61	50	43	38	45	39	34	39	35	31	35	31	28	25
7	61	48	40	35	57	46	38	33	41	35	30	36	31	28	32	28	25	22
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	22	20
9	53	40	33	28	49	38	31	27	34	28	24	30	26	22	27	23	20	18
10	49	37	30	25	46	35	28	24	32	26	22	28	24	20	25	21	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13337	13337	13337
5°	13367	13203	13285
10°	13283	13045	13045
15°	13131	12771	12676
20°	12921	12411	12182
25°	12653	11989	11685
30°	12393	11544	11060
35°	12105	11083	10435
40°	11758	10559	9759
45°	11439	10038	9070
50°	11074	9437	8341
55°	10683	8812	7548
60°	10253	8128	6739
65°	9859	7272	5945
70°	9286	6331	5046
75°	8562	5250	4105
80°	7471	3998	3766
85°	6326	3631	3399



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.2	2.5
10°-20°	432.8	6.9
20°-30°	624.9	10.0
30°-40°	708.3	11.3
40°-50°	684.0	10.9
50°-60°	568.8	9.1
60°-70°	392.8	6.3
70°-80°	199.1	3.2
80°-90°	53.4	0.9
90°-100°	26.9	0.4
100°-110°	171.5	2.7
110°-120°	328.0	5.2
120°-130°	416.3	6.7
130°-140°	445.5	7.1
140°-150°	416.6	6.7
150°-160°	335.9	5.4
160°-170°	216.7	3.5
170°-180°	74.7	1.2
0°-30°	1212.9	19.4
0°-40°	1921.2	30.7
0°-60°	3174.0	50.8
0°-90°	3819.2	61.1
90°-120°	526.3	8.4
90°-150°	1804.7	28.9
90°-180°	2432.0	38.9
0°-180°	6251.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1652	1652	1652	1652	1652	
5°	1650	1644	1629	1641	1639	156
15°	1571	1559	1528	1525	1517	442
25°	1420	1396	1346	1325	1312	654
35°	1228	1186	1125	1083	1059	767
45°	1002	953	879	819	794	772
55°	759	707	626	563	536	679
65°	516	460	381	328	311	509
75°	274	227	168	140	132	290
85°	68	44	39	37	37	77
90°	2	8	13	16	18	5
95°	32	14	13	16	17	42
105°	177	180	184	187	168	185
115°	330	332	332	333	333	325
125°	464	467	466	467	468	415
135°	576	576	578	579	580	444
145°	664	666	666	667	668	415
155°	729	729	727	729	728	336
165°	769	766	766	770	765	217
175°	786	783	783	788	782	75
180°	786	786	786	786	786	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0
2.5°	1656.1	1655.2	1654.3	1653.4	1652.5	1650.8	1648.4	1645.8	1643.4	1640.9	1643.4
5°	1649.5	1648.4	1647.3	1646.2	1645.0	1642.7	1639.4	1636.0	1632.7	1629.3	1632.1
7.5°	1634.6	1633.4	1632.2	1631.0	1629.8	1627.1	1622.7	1618.3	1613.9	1609.6	1611.4
10°	1620.4	1619.0	1617.6	1616.2	1614.8	1611.5	1606.5	1601.5	1596.4	1591.3	1592.4
12.5°	1602.2	1600.6	1598.9	1597.3	1595.7	1591.9	1585.9	1580.0	1574.0	1568.0	1568.8
15°	1571.1	1568.5	1566.1	1563.5	1561.0	1556.2	1549.2	1542.1	1535.1	1528.0	1527.5
17.5°	1533.4	1529.7	1526.1	1522.4	1518.8	1512.8	1504.3	1495.9	1487.4	1479.0	1477.4
20°	1504.0	1500.4	1496.7	1493.1	1489.5	1482.8	1473.3	1463.7	1454.1	1444.6	1442.3
22.5°	1471.6	1467.6	1463.5	1459.4	1455.2	1448.1	1437.8	1427.6	1417.4	1407.2	1403.7
25°	1420.5	1415.5	1410.4	1405.4	1400.3	1392.0	1380.5	1369.0	1357.5	1345.9	1341.2
27.5°	1366.9	1360.6	1354.2	1347.9	1341.5	1332.2	1319.9	1307.6	1295.2	1282.9	1277.0
30°	1329.5	1322.5	1315.4	1308.4	1301.4	1291.3	1278.0	1264.8	1251.6	1238.4	1231.4
32.5°	1290.0	1282.1	1274.1	1266.2	1258.3	1247.5	1233.8	1220.2	1206.5	1192.9	1184.7
35°	1228.3	1219.2	1210.3	1201.3	1192.3	1180.7	1166.7	1152.7	1138.6	1124.6	1115.0
37.5°	1162.3	1152.9	1143.7	1134.4	1125.1	1112.7	1097.2	1081.6	1066.0	1050.4	1039.7
40°	1115.7	1106.4	1097.2	1087.9	1078.6	1066.0	1050.0	1033.9	1017.9	1001.9	990.1
42.5°	1071.2	1061.4	1051.7	1042.0	1032.3	1019.1	1002.3	985.6	969.0	952.3	940.2
45°	1001.9	991.4	981.0	970.7	960.3	946.6	929.8	912.9	896.0	879.2	865.4
47.5°	930.3	919.5	908.8	898.0	887.3	873.1	855.6	838.0	820.5	803.0	788.7
50°	881.7	870.7	859.8	848.8	837.8	823.3	805.3	787.3	769.4	751.4	737.4
52.5°	832.1	821.3	810.6	799.9	789.2	774.5	756.1	737.7	719.2	700.8	686.5
55°	759.0	747.7	736.5	725.2	714.0	699.3	681.0	662.7	644.4	626.1	611.6
57.5°	686.6	674.9	663.2	651.6	639.8	625.0	607.0	589.0	571.0	553.0	538.2
60°	635.0	623.8	612.5	601.3	590.0	575.4	557.5	539.5	521.4	503.4	488.9
62.5°	588.4	576.8	565.1	553.4	541.7	526.6	508.2	489.7	471.3	452.9	439.3
65°	516.1	504.0	491.9	479.8	467.8	452.7	434.7	416.8	398.8	380.7	368.7
67.5°	440.9	429.4	417.8	406.2	394.7	380.5	363.8	347.1	330.4	313.7	303.3
70°	393.4	381.6	369.8	358.0	346.2	332.2	316.2	300.2	284.2	268.2	258.9
72.5°	342.8	332.2	321.5	310.8	300.1	287.2	272.0	256.9	241.8	226.6	218.7
75°	274.5	264.1	253.7	243.3	232.9	221.1	207.9	194.6	181.5	168.3	161.8
77.5°	205.2	196.4	187.5	178.7	169.8	160.1	149.4	138.8	128.1	117.4	113.6
80°	160.7	152.5	144.3	136.2	128.0	119.8	111.3	102.9	94.4	86.0	85.2
82.5°	122.2	114.7	107.3	99.7	92.3	86.1	81.3	76.4	71.6	66.8	66.1
85°	68.3	62.7	57.0	51.4	45.8	42.6	41.7	40.9	40.1	39.2	38.7
87.5°	23.6	22.1	20.6	19.1	17.6	16.8	16.8	16.8	16.8	16.8	16.7
90°	1.7	3.2	4.7	6.1	7.5	8.8	9.8	10.9	11.9	12.9	13.7
92.5°	7.4	7.5	7.6	7.6	7.7	8.3	9.3	10.4	11.4	12.4	13.2
95°	32.3	27.9	23.4	19.0	14.6	12.4	12.5	12.7	12.8	12.9	13.7
97.5°	68.7	71.5	74.2	77.0	79.8	73.8	59.3	44.7	30.1	15.5	15.6
100°	96.4	98.8	101.2	103.5	105.8	98.0	80.0	61.9	43.9	25.9	23.7
102.5°	127.5	129.2	130.9	132.7	134.4	134.0	131.7	129.4	127.0	124.7	100.7
105°	177.0	177.8	178.6	179.4	180.1	180.9	181.5	182.1	182.8	183.5	184.7
107.5°	223.0	223.4	223.8	224.2	224.6	225.2	226.1	227.0	227.8	228.7	229.3
110°	254.1	254.4	254.8	255.2	255.6	256.2	257.0	257.8	258.6	259.3	259.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	284.2	284.9	285.6	286.2	286.9	287.5	287.9	288.2	288.6	289.0	288.9
115°	330.5	330.9	331.3	331.6	332.0	332.2	332.0	331.9	331.8	331.6	331.9
117.5°	372.2	372.7	373.3	373.8	374.3	374.7	375.0	375.3	375.6	375.9	375.8
120°	400.4	401.0	401.5	402.0	402.5	402.7	402.6	402.5	402.3	402.2	402.5
122.5°	426.8	427.1	427.4	427.7	428.0	428.3	428.5	428.6	428.8	429.0	429.2
125°	464.5	465.1	465.6	466.1	466.6	466.8	466.5	466.3	466.0	465.7	466.1
127.5°	500.3	500.4	500.6	500.7	500.8	501.2	501.8	502.4	503.0	503.6	503.5
130°	523.3	523.5	523.6	523.7	523.9	524.1	524.5	524.9	525.3	525.7	525.9
132.5°	544.5	544.8	545.0	545.2	545.4	545.8	546.3	546.8	547.3	547.8	548.0
135°	576.2	576.2	576.0	575.8	575.8	575.9	576.5	576.9	577.5	578.1	578.3
137.5°	604.4	604.4	604.5	604.5	604.6	604.9	605.5	606.0	606.7	607.2	607.4
140°	622.7	623.0	623.2	623.5	623.8	624.0	624.3	624.6	624.8	625.1	625.4
142.5°	639.2	639.7	640.2	640.6	641.0	641.4	641.5	641.7	641.8	642.0	642.3
145°	664.5	664.9	665.3	665.7	666.1	666.2	666.2	666.2	666.2	666.2	666.4
147.5°	684.6	685.3	686.0	686.7	687.5	687.8	687.7	687.5	687.4	687.3	687.4
150°	699.2	699.7	700.2	700.8	701.2	701.5	701.3	701.2	701.1	700.9	700.9
152.5°	711.4	711.8	712.3	712.6	713.0	713.1	712.9	712.7	712.5	712.3	712.4
155°	728.6	728.7	728.8	729.0	729.1	729.0	728.6	728.2	727.8	727.4	727.9
157.5°	743.1	743.0	742.9	742.8	742.8	742.4	742.0	741.6	741.1	740.7	741.3
160°	751.5	751.1	750.8	750.4	750.0	749.6	749.6	749.4	749.2	749.2	750.0
162.5°	759.0	758.5	758.0	757.6	757.0	756.7	756.6	756.5	756.3	756.2	757.0
165°	768.6	767.9	767.2	766.6	766.0	765.6	765.6	765.6	765.6	765.6	766.7
167.5°	776.1	775.4	774.8	774.0	773.3	773.0	772.9	772.9	772.8	772.7	773.8
170°	780.3	779.5	778.7	777.9	777.2	776.8	777.0	777.1	777.2	777.4	778.4
172.5°	783.2	782.4	781.6	780.8	780.0	779.7	779.8	779.9	780.1	780.2	781.3
175°	786.2	785.4	784.7	783.9	783.1	782.8	782.8	783.0	783.2	783.2	784.4
177.5°	787.6	786.9	786.2	785.4	784.7	784.4	784.7	784.8	785.1	785.2	786.1
180°	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0	1652.0
2.5°	1645.8	1648.4	1650.8	1651.9	1651.7	1651.5	1651.2	1651.1
5°	1634.9	1637.7	1640.5	1641.6	1641.1	1640.5	1640.0	1639.4
7.5°	1613.1	1614.9	1616.8	1617.2	1616.3	1615.4	1614.5	1613.6
10°	1593.6	1594.7	1595.9	1595.9	1594.7	1593.6	1592.4	1591.3
12.5°	1569.4	1570.1	1570.7	1570.3	1568.8	1567.2	1565.6	1564.0
15°	1526.9	1526.4	1525.8	1524.6	1522.6	1520.6	1518.7	1516.7
17.5°	1475.8	1474.3	1472.7	1470.4	1467.4	1464.4	1461.5	1458.5
20°	1440.1	1437.8	1435.6	1432.7	1429.0	1425.4	1421.7	1418.0
22.5°	1400.4	1397.0	1393.7	1390.5	1387.5	1384.5	1381.6	1378.6
25°	1336.3	1331.6	1326.8	1323.0	1320.2	1317.4	1314.5	1311.8
27.5°	1271.1	1265.2	1259.3	1254.3	1250.3	1246.3	1242.2	1238.2
30°	1224.3	1217.3	1210.3	1204.5	1200.0	1195.6	1191.0	1186.5
32.5°	1176.5	1168.4	1160.2	1154.1	1149.8	1145.5	1141.2	1136.9
35°	1105.4	1095.9	1086.3	1079.0	1074.0	1068.9	1063.8	1058.8
37.5°	1029.0	1018.4	1007.7	999.8	994.7	989.7	984.7	979.6
40°	978.3	966.5	954.7	946.2	941.1	936.0	931.1	926.0
42.5°	928.2	916.2	904.1	895.5	890.2	884.9	879.6	874.3
45°	851.6	837.8	824.0	814.6	809.6	804.5	799.5	794.4
47.5°	774.4	760.2	745.9	735.9	730.4	724.8	719.2	713.7
50°	723.3	709.2	695.1	685.5	680.2	674.8	669.5	664.1
52.5°	672.2	658.0	643.6	633.7	628.2	622.7	617.0	611.5
55°	596.9	582.3	567.7	557.7	552.4	547.0	541.7	536.3
57.5°	523.4	508.5	493.7	484.3	480.2	476.1	472.1	468.0
60°	474.2	459.6	445.0	435.5	430.9	426.4	421.9	417.4
62.5°	425.9	412.4	398.9	390.3	386.7	383.2	379.5	376.0
65°	356.6	344.5	332.4	324.6	321.3	317.9	314.6	311.2
67.5°	292.9	282.5	272.1	265.1	261.3	257.6	253.9	250.2
70°	249.6	240.3	231.1	225.1	222.2	219.4	216.6	213.8
72.5°	210.8	202.9	195.0	189.7	187.1	184.6	182.0	179.4
75°	155.3	148.9	142.4	138.3	136.7	134.9	133.2	131.6
77.5°	109.9	106.1	102.3	100.2	99.7	99.2	98.7	98.2
80°	84.4	83.5	82.6	82.1	81.8	81.5	81.3	81.0
82.5°	65.6	65.0	64.3	63.8	63.6	63.3	63.1	62.7
85°	38.1	37.5	37.0	36.7	36.7	36.7	36.7	36.7
87.5°	16.6	16.6	16.5	16.6	16.9	17.1	17.4	17.7
90°	14.5	15.3	16.1	16.6	16.9	17.1	17.3	17.7
92.5°	14.0	14.8	15.6	16.0	16.1	16.2	16.2	16.2
95°	14.5	15.3	16.1	16.6	16.6	16.8	17.0	17.0
97.5°	15.7	15.8	15.8	15.9	16.1	16.2	16.3	16.5
100°	21.5	19.2	17.0	15.9	16.1	16.2	16.3	16.5
102.5°	76.8	52.8	28.8	16.8	16.9	16.9	16.9	17.0
105°	185.8	187.0	188.1	186.4	181.7	177.0	172.3	167.6
107.5°	229.9	230.4	231.1	231.6	232.1	232.6	233.1	233.5
110°	259.8	260.1	260.4	260.7	261.1	261.5	261.9	262.3



TEST NUMBER: P333101-927

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	288.8	288.8	288.8	289.0	289.5	289.9	290.5	291.0
115°	332.2	332.4	332.7	332.8	332.8	332.8	332.8	332.8
117.5°	375.7	375.7	375.7	375.6	375.6	375.5	375.4	375.4
120°	402.7	403.0	403.2	403.2	403.0	402.7	402.5	402.2
122.5°	429.4	429.5	429.7	429.6	429.4	429.0	428.8	428.6
125°	466.5	466.9	467.3	467.5	467.7	467.8	467.9	468.1
127.5°	503.4	503.4	503.3	503.2	503.1	503.0	502.9	502.8
130°	525.9	526.1	526.2	526.2	526.2	526.2	526.2	526.2
132.5°	548.0	548.2	548.3	548.3	548.3	548.1	548.0	548.0
135°	578.5	578.8	579.1	579.3	579.6	579.9	580.1	580.4
137.5°	607.8	608.1	608.3	608.5	608.4	608.3	608.2	608.2
140°	625.8	626.2	626.6	626.9	627.0	627.2	627.3	627.4
142.5°	642.6	642.9	643.2	643.3	643.3	643.3	643.4	643.4
145°	666.5	666.6	666.8	666.9	667.2	667.5	667.7	668.0
147.5°	687.5	687.6	687.7	687.9	687.9	688.1	688.2	688.3
150°	700.9	700.9	700.9	701.0	701.2	701.2	701.4	701.5
152.5°	712.6	712.8	713.0	713.1	713.0	713.0	712.9	712.8
155°	728.4	729.0	729.4	729.5	729.1	728.7	728.3	728.0
157.5°	742.0	742.8	743.4	743.4	742.8	742.0	741.3	740.7
160°	750.8	751.5	752.3	752.3	751.5	750.8	750.0	749.2
162.5°	757.8	758.5	759.3	759.3	758.4	757.5	756.6	755.7
165°	767.7	768.7	769.8	769.8	768.6	767.4	766.2	765.0
167.5°	775.0	776.1	777.3	777.2	775.9	774.6	773.2	772.0
170°	779.4	780.5	781.6	781.4	780.1	778.8	777.5	776.2
172.5°	782.3	783.3	784.3	784.2	782.8	781.4	780.0	778.6
175°	785.6	786.8	788.0	787.7	786.2	784.7	783.1	781.5
177.5°	787.0	787.7	788.6	788.4	787.1	785.8	784.7	783.4
180°	786.2	786.2	786.2	786.2	786.2	786.2	786.2	786.2

(END OF REPORT)