

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: P332453-830

Luminaire Tested: **S123RDIW-S1000D460U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332453-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S1000D460U830-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5081.4 lumens
Efficiency: N/A
Efficacy: 110.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Direct

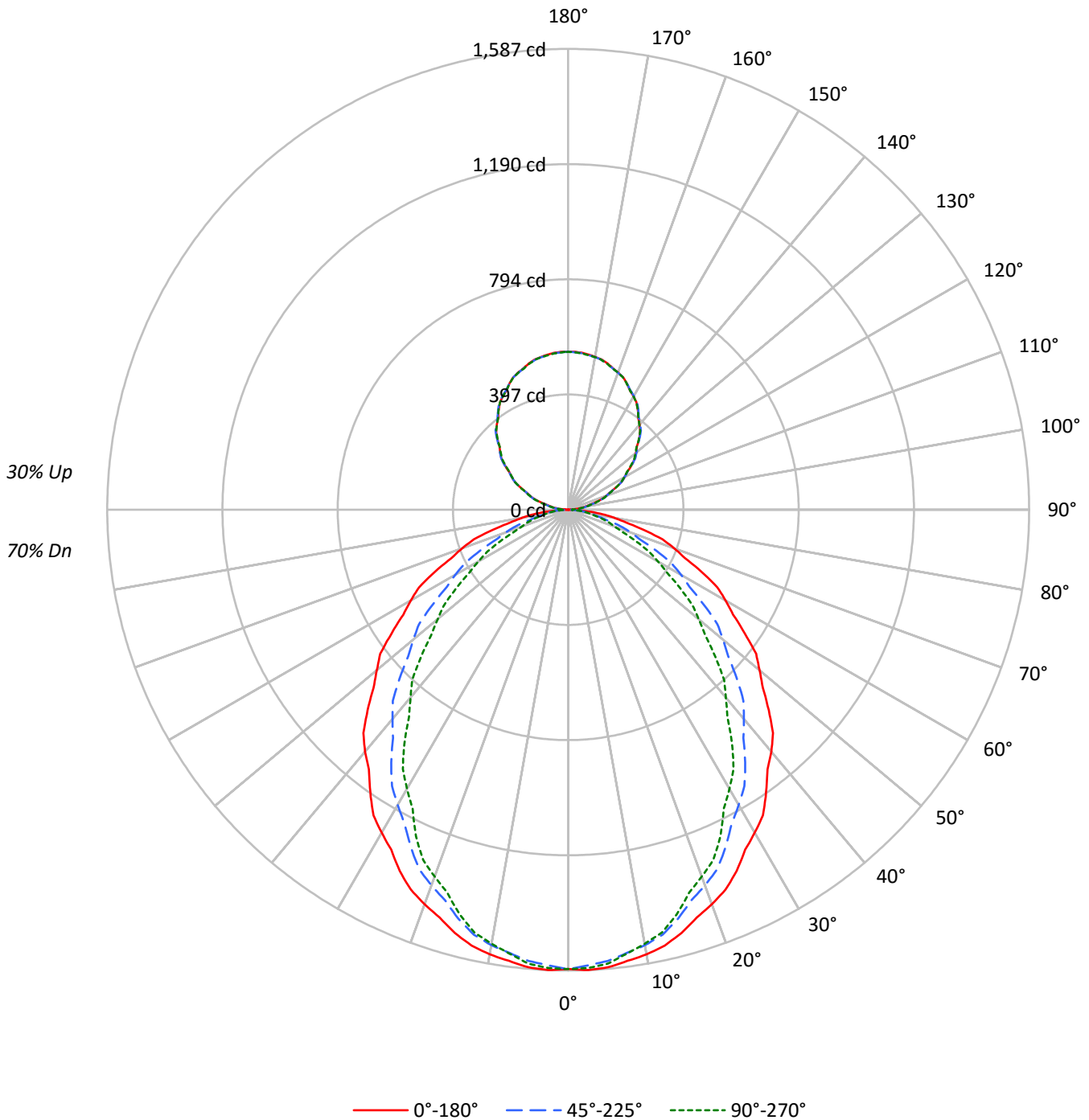
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	50	30	10	0		
RCR																										
0	112	112	112	112	106	106	106	106	95	95	95	84	84	84	75	75	75	75	75	75	75	75	75	70		
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	67	65	64	64	64	64	64	64	64	60		
2	94	87	80	75	89	82	77	72	74	70	66	66	63	60	59	57	55	55	55	55	55	55	55	51		
3	86	77	69	63	81	73	66	61	66	60	56	59	55	52	53	50	47	47	47	47	47	47	47	44		
4	79	68	60	54	75	65	58	52	59	53	48	53	48	45	48	44	41	41	41	41	41	41	41	38		
5	73	61	53	47	69	58	51	45	53	47	42	48	43	39	43	39	36	36	36	36	36	36	36	33		
6	67	55	47	41	64	53	45	40	48	42	37	43	38	34	39	35	32	32	32	32	32	32	32	29		
7	62	50	42	36	59	48	40	35	44	37	33	40	35	31	36	32	29	29	29	29	29	29	29	26		
8	58	46	38	32	55	44	36	31	40	34	29	36	31	28	33	29	26	26	26	26	26	26	26	24		
9	54	42	34	29	51	40	33	28	37	31	27	34	29	25	31	26	23	23	23	23	23	23	23	21		
10	51	39	31	26	48	37	30	26	34	28	24	31	26	23	29	24	21	21	21	21	21	21	21	19		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17026	17026	17026
5°	17091	16855	16953
10°	16994	16644	16587
15°	16811	16254	16082
20°	16561	15767	15400
25°	16302	15221	14733
30°	15960	14589	13793
35°	15609	13958	12929
40°	15286	13212	11861
45°	14862	12478	10898
50°	14393	11643	9818
55°	13915	10689	8811
60°	13476	9666	7705
65°	12905	8560	6599
70°	12192	7188	5331
75°	11154	5656	5016
80°	9937	5009	4612
85°	8398	4434	4125



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	148.5	2.9
10°-20°	413.3	8.1
20°-30°	595.1	11.7
30°-40°	670.3	13.2
40°-50°	641.3	12.6
50°-60°	525.1	10.3
60°-70°	354.3	7.0
70°-80°	178.2	3.5
80°-90°	48.8	1.0
90°-100°	35.4	0.7
100°-110°	106.0	2.1
110°-120°	180.3	3.5
120°-130°	237.2	4.7
130°-140°	266.6	5.2
140°-150°	262.1	5.2
150°-160°	220.6	4.3
160°-170°	146.9	2.9
170°-180°	51.4	1.0
0°-30°	1156.9	22.8
0°-40°	1827.2	36.0
0°-60°	2993.6	58.9
0°-90°	3574.9	70.4
90°-120°	321.8	6.3
90°-150°	1087.6	21.4
90°-180°	1507.0	29.7
0°-180°	5081.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1582	1582	1582	1582	1582	
5°	1582	1575	1560	1571	1569	150
15°	1509	1493	1459	1452	1443	425
25°	1373	1339	1282	1255	1240	631
35°	1188	1140	1062	1009	984	743
45°	976	916	820	749	716	753
55°	742	676	570	498	470	665
65°	507	435	336	276	259	501
75°	268	206	136	124	121	286
85°	68	41	36	34	33	76
90°	0	5	10	12	13	5
95°	25	28	32	33	33	28
105°	96	97	101	101	102	103
115°	182	183	182	182	182	180
125°	266	267	266	264	263	237
135°	345	347	347	345	344	266
145°	418	419	420	420	418	261
155°	479	479	479	481	478	220
165°	522	520	520	522	520	147
175°	542	541	541	543	540	52
180°	544	544	544	544	544	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8
2.5°	1586.9	1585.9	1585.1	1584.1	1583.2	1581.4	1578.7	1575.9	1573.2	1570.5	1572.9
5°	1581.8	1580.3	1578.9	1577.4	1576.0	1573.6	1570.2	1566.8	1563.4	1559.9	1562.5
7.5°	1567.1	1565.6	1564.1	1562.5	1560.9	1557.9	1553.5	1549.1	1544.6	1540.2	1541.6
10°	1554.8	1552.8	1550.8	1548.8	1546.8	1543.2	1538.1	1533.0	1527.9	1522.8	1523.1
12.5°	1537.4	1535.1	1533.0	1530.7	1528.4	1524.2	1518.0	1511.6	1505.4	1499.1	1498.9
15°	1508.6	1505.5	1502.3	1499.2	1496.1	1490.5	1482.5	1474.5	1466.6	1458.6	1457.2
17.5°	1472.4	1468.8	1465.2	1461.5	1457.8	1451.0	1440.8	1430.7	1420.5	1410.3	1407.3
20°	1445.8	1441.2	1436.6	1432.1	1427.5	1419.8	1409.0	1398.2	1387.3	1376.5	1372.8
22.5°	1416.0	1410.8	1405.5	1400.2	1395.1	1386.7	1375.1	1363.6	1352.1	1340.6	1336.0
25°	1372.6	1365.6	1358.4	1351.2	1344.2	1334.0	1320.9	1307.8	1294.7	1281.6	1275.5
27.5°	1320.0	1312.2	1304.3	1296.5	1288.5	1277.3	1262.7	1248.1	1233.5	1219.0	1210.6
30°	1284.1	1275.5	1267.1	1258.5	1249.9	1237.7	1221.7	1205.7	1189.8	1173.8	1164.1
32.5°	1248.2	1238.5	1228.8	1219.1	1209.5	1196.2	1179.3	1162.4	1145.5	1128.6	1118.0
35°	1187.9	1177.6	1167.3	1157.2	1146.9	1132.8	1115.2	1097.5	1079.9	1062.2	1049.9
37.5°	1126.8	1115.4	1104.0	1092.6	1081.2	1066.1	1047.3	1028.3	1009.5	990.6	976.7
40°	1087.9	1075.3	1062.7	1050.2	1037.6	1021.2	1001.1	980.8	960.5	940.3	925.5
42.5°	1043.7	1031.1	1018.6	1006.1	993.5	976.9	955.9	935.0	914.1	893.2	876.9
45°	976.3	963.4	950.6	937.7	924.9	907.6	885.6	863.7	841.7	819.7	803.5
47.5°	908.8	894.7	880.6	866.5	852.4	834.4	812.5	790.5	768.5	746.6	729.0
50°	859.5	846.1	832.7	819.4	805.9	787.7	764.6	741.5	718.4	695.3	677.6
52.5°	815.4	800.9	786.3	771.8	757.2	738.5	715.7	692.8	670.0	647.1	628.7
55°	741.5	727.5	713.5	699.6	685.6	666.5	642.2	618.0	593.8	569.6	553.1
57.5°	673.3	658.0	642.8	627.5	612.4	592.6	568.2	543.8	519.5	495.2	479.6
60°	626.0	610.4	594.7	579.0	563.3	543.7	520.0	496.3	472.7	449.0	433.6
62.5°	578.8	563.2	547.4	531.8	516.1	496.4	472.8	449.1	425.5	401.8	387.3
65°	506.7	491.1	475.3	459.7	444.0	425.1	402.8	380.6	358.4	336.1	322.2
67.5°	434.6	418.8	402.9	387.1	371.3	352.6	331.3	310.0	288.7	267.3	256.9
70°	387.4	372.0	356.7	341.2	325.8	308.2	288.2	268.2	248.3	228.4	218.4
72.5°	340.2	325.1	309.9	294.7	279.6	262.9	244.8	226.7	208.5	190.4	182.2
75°	268.2	254.4	240.7	227.1	213.4	198.7	183.0	167.3	151.7	136.0	133.1
77.5°	202.5	190.0	177.7	165.3	153.0	141.7	131.6	121.5	111.4	101.3	99.8
80°	160.3	148.6	137.0	125.3	113.6	104.8	98.8	92.7	86.8	80.8	79.9
82.5°	120.4	110.3	100.2	90.0	79.9	73.5	70.7	68.0	65.1	62.3	61.5
85°	68.0	61.7	55.4	49.2	42.9	39.3	38.5	37.6	36.8	35.9	35.3
87.5°	24.7	22.4	20.1	17.7	15.5	14.4	14.6	14.9	15.2	15.4	15.3
90°	0.5	1.4	2.4	3.3	4.2	5.3	6.5	7.8	9.0	10.3	10.7
92.5°	10.4	11.0	11.6	12.3	12.9	13.6	14.3	15.0	15.7	16.4	16.7
95°	25.2	25.8	26.5	27.2	27.9	28.6	29.3	30.1	30.8	31.6	32.0
97.5°	44.8	45.2	45.7	46.3	46.8	47.2	47.8	48.4	48.9	49.5	49.9
100°	58.1	58.6	59.2	59.8	60.3	60.9	61.4	61.8	62.3	62.8	63.1
102.5°	73.4	73.8	74.2	74.5	74.8	75.3	76.0	76.5	77.2	77.9	78.1
105°	96.1	96.3	96.5	96.7	96.9	97.4	98.2	99.1	99.9	100.8	100.8
107.5°	122.4	122.5	122.6	122.7	122.9	123.1	123.5	123.8	124.1	124.5	124.8
110°	138.8	139.0	139.2	139.4	139.6	139.8	140.0	140.2	140.3	140.5	140.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	155.9	156.0	156.2	156.3	156.4	156.5	156.5	156.6	156.6	156.6	157.0
115°	181.5	181.8	182.1	182.4	182.7	182.8	182.6	182.4	182.2	182.0	182.1
117.5°	207.4	207.5	207.7	207.9	208.1	208.0	207.8	207.5	207.4	207.1	207.1
120°	223.4	223.9	224.5	225.1	225.6	225.7	225.3	224.8	224.3	223.9	223.8
122.5°	240.2	240.5	241.0	241.4	241.8	241.9	241.7	241.4	241.2	240.9	240.6
125°	265.7	266.0	266.3	266.6	266.8	266.8	266.6	266.5	266.3	266.1	265.7
127.5°	289.3	289.8	290.5	291.1	291.7	291.9	291.7	291.4	291.2	291.1	290.5
130°	305.0	305.8	306.5	307.3	308.0	308.2	307.9	307.6	307.4	307.1	306.7
132.5°	320.7	321.4	322.3	323.0	323.8	324.0	323.8	323.6	323.4	323.2	322.7
135°	344.7	345.3	345.8	346.4	346.9	347.2	347.1	347.0	346.9	346.9	346.5
137.5°	366.9	367.4	367.9	368.3	368.8	369.2	369.4	369.7	369.9	370.1	369.8
140°	382.3	382.8	383.2	383.7	384.2	384.5	384.6	384.7	384.7	384.8	384.7
142.5°	396.3	396.8	397.3	397.8	398.2	398.5	398.7	398.9	399.1	399.2	399.1
145°	418.2	418.4	418.6	418.8	419.0	419.1	419.4	419.7	420.0	420.3	420.2
147.5°	437.3	437.6	438.0	438.3	438.7	438.9	439.2	439.5	439.8	440.1	440.1
150°	450.6	450.8	451.0	451.2	451.4	451.6	451.8	451.9	452.1	452.3	452.3
152.5°	461.6	461.8	462.1	462.3	462.6	462.8	462.9	463.1	463.2	463.3	463.4
155°	478.8	478.8	478.8	478.8	478.8	478.9	479.0	479.1	479.2	479.3	479.7
157.5°	493.5	493.4	493.3	493.1	493.0	493.0	493.1	493.2	493.2	493.3	493.7
160°	502.8	502.6	502.4	502.2	502.0	501.9	501.9	501.9	501.9	501.9	502.4
162.5°	511.0	510.7	510.4	510.1	509.9	509.8	509.8	509.9	510.0	510.1	510.6
165°	521.5	521.2	520.9	520.7	520.4	520.3	520.3	520.3	520.3	520.3	520.8
167.5°	530.0	529.6	529.2	528.9	528.5	528.3	528.4	528.5	528.6	528.6	529.2
170°	534.8	534.4	534.0	533.7	533.3	533.1	533.1	533.1	533.1	533.1	533.8
172.5°	538.6	538.2	537.8	537.4	537.0	536.8	536.8	536.8	536.8	536.8	537.4
175°	542.4	542.1	541.7	541.3	540.9	540.7	540.7	540.7	540.7	540.7	541.3
177.5°	544.1	543.8	543.5	543.2	542.9	542.7	542.7	542.7	542.7	542.7	543.2
180°	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8	1581.8
2.5°	1575.5	1578.0	1580.5	1581.5	1581.0	1580.6	1580.2	1579.7
5°	1565.1	1567.6	1570.2	1571.2	1570.7	1570.1	1569.5	1569.0
7.5°	1543.0	1544.5	1545.9	1546.1	1545.1	1544.2	1543.2	1542.2
10°	1523.3	1523.6	1523.9	1523.3	1521.8	1520.4	1519.0	1517.6
12.5°	1498.7	1498.6	1498.5	1497.5	1495.9	1494.2	1492.6	1490.9
15°	1455.8	1454.3	1452.9	1451.1	1449.2	1447.2	1445.2	1443.2
17.5°	1404.3	1401.3	1398.3	1395.2	1392.3	1389.3	1386.4	1383.4
20°	1369.0	1365.4	1361.7	1358.1	1354.7	1351.2	1347.8	1344.4
22.5°	1331.3	1326.7	1322.1	1318.1	1315.0	1311.8	1308.6	1305.4
25°	1269.6	1263.6	1257.6	1253.0	1249.9	1246.8	1243.7	1240.5
27.5°	1202.3	1194.0	1185.6	1179.1	1174.3	1169.5	1164.7	1160.0
30°	1154.4	1144.7	1135.0	1127.9	1123.3	1118.8	1114.2	1109.7
32.5°	1107.4	1096.8	1086.2	1078.6	1073.7	1068.9	1064.1	1059.3
35°	1037.6	1025.4	1013.1	1004.5	999.4	994.2	989.1	983.9
37.5°	962.8	948.9	935.0	924.8	918.5	912.2	905.9	899.6
40°	910.7	895.9	881.0	870.3	863.7	857.2	850.6	844.1
42.5°	860.7	844.5	828.3	817.3	811.4	805.6	799.7	793.8
45°	787.2	771.0	754.7	743.2	736.3	729.5	722.6	715.9
47.5°	711.2	693.6	675.9	664.0	657.9	651.9	645.7	639.6
50°	660.0	642.2	624.6	612.5	606.0	599.4	592.9	586.3
52.5°	610.4	592.0	573.6	561.5	555.6	549.8	543.9	538.0
55°	536.5	520.0	503.4	492.3	486.6	480.9	475.2	469.5
57.5°	463.9	448.3	432.7	422.4	417.6	412.7	407.9	403.0
60°	418.2	402.8	387.4	377.3	372.5	367.6	362.8	357.9
62.5°	372.8	358.4	343.8	334.0	329.0	324.0	318.9	313.8
65°	308.2	294.2	280.2	271.6	268.5	265.4	262.3	259.1
67.5°	246.5	236.0	225.6	218.7	215.4	212.0	208.6	205.3
70°	208.4	198.4	188.4	181.9	178.7	175.6	172.5	169.4
72.5°	174.1	165.9	157.8	153.1	151.7	150.4	149.1	147.8
75°	130.3	127.4	124.6	122.9	122.3	121.7	121.1	120.6
77.5°	98.3	96.7	95.2	94.2	93.6	93.0	92.5	91.9
80°	79.1	78.2	77.4	76.7	76.2	75.6	74.9	74.4
82.5°	60.6	59.8	58.9	58.4	58.3	58.2	58.1	58.0
85°	34.8	34.2	33.6	33.4	33.4	33.4	33.4	33.4
87.5°	15.1	14.9	14.8	14.6	14.4	14.2	14.0	13.9
90°	11.0	11.4	11.8	12.1	12.3	12.4	12.6	12.8
92.5°	17.0	17.3	17.6	17.7	17.6	17.4	17.3	17.2
95°	32.3	32.7	33.1	33.3	33.3	33.3	33.3	33.3
97.5°	50.3	50.8	51.2	51.4	51.4	51.4	51.3	51.3
100°	63.3	63.6	63.9	64.2	64.4	64.6	64.8	64.9
102.5°	78.4	78.7	79.0	79.1	79.1	79.0	79.0	78.9
105°	100.8	100.8	100.8	100.9	101.1	101.3	101.5	101.7
107.5°	125.1	125.4	125.6	125.7	125.6	125.5	125.5	125.4
110°	141.3	141.7	142.0	142.1	141.9	141.8	141.6	141.4



TEST NUMBER: P332453-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	157.5	158.0	158.4	158.6	158.5	158.5	158.5	158.4
115°	182.2	182.3	182.4	182.4	182.3	182.2	182.1	182.0
117.5°	207.1	207.0	207.0	206.9	206.6	206.3	206.0	205.8
120°	223.7	223.6	223.5	223.3	223.1	222.9	222.7	222.5
122.5°	240.4	240.2	239.9	239.7	239.4	239.1	238.8	238.6
125°	265.3	264.9	264.6	264.2	263.8	263.4	263.1	262.7
127.5°	290.0	289.5	288.9	288.4	288.0	287.6	287.1	286.7
130°	306.3	305.9	305.6	305.1	304.4	303.8	303.1	302.4
132.5°	322.3	321.8	321.3	320.8	320.4	319.8	319.3	318.8
135°	346.1	345.7	345.3	345.1	344.9	344.7	344.5	344.3
137.5°	369.4	369.0	368.5	368.2	367.8	367.5	367.1	366.7
140°	384.7	384.6	384.5	384.1	383.4	382.8	382.1	381.4
142.5°	399.0	398.9	398.8	398.5	398.0	397.5	397.0	396.4
145°	420.1	420.0	419.9	419.7	419.3	419.0	418.6	418.2
147.5°	440.1	440.1	440.1	439.8	439.2	438.6	438.0	437.4
150°	452.3	452.3	452.3	452.0	451.5	450.9	450.3	449.8
152.5°	463.5	463.7	463.9	463.7	463.3	462.7	462.2	461.8
155°	480.0	480.4	480.8	480.6	479.9	479.3	478.6	478.0
157.5°	494.2	494.6	494.9	494.8	494.4	493.8	493.2	492.8
160°	502.8	503.3	503.8	503.8	503.4	503.0	502.7	502.3
162.5°	511.0	511.5	512.0	511.9	511.3	510.7	510.1	509.4
165°	521.4	522.0	522.5	522.5	521.8	521.1	520.5	519.8
167.5°	529.8	530.4	530.9	530.9	530.4	529.8	529.2	528.6
170°	534.4	535.1	535.7	535.7	535.1	534.4	533.8	533.1
172.5°	538.0	538.6	539.1	539.1	538.5	537.8	537.2	536.5
175°	541.9	542.4	543.0	543.0	542.3	541.7	541.0	540.4
177.5°	543.7	544.1	544.5	544.5	543.9	543.5	542.9	542.3
180°	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8

(END OF REPORT)