

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: P332184

Luminaire Tested: **S123DIW-S1000D460U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332184
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1000D460U835-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5964.6 lumens
Efficiency: N/A
Efficacy: 129.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Direct

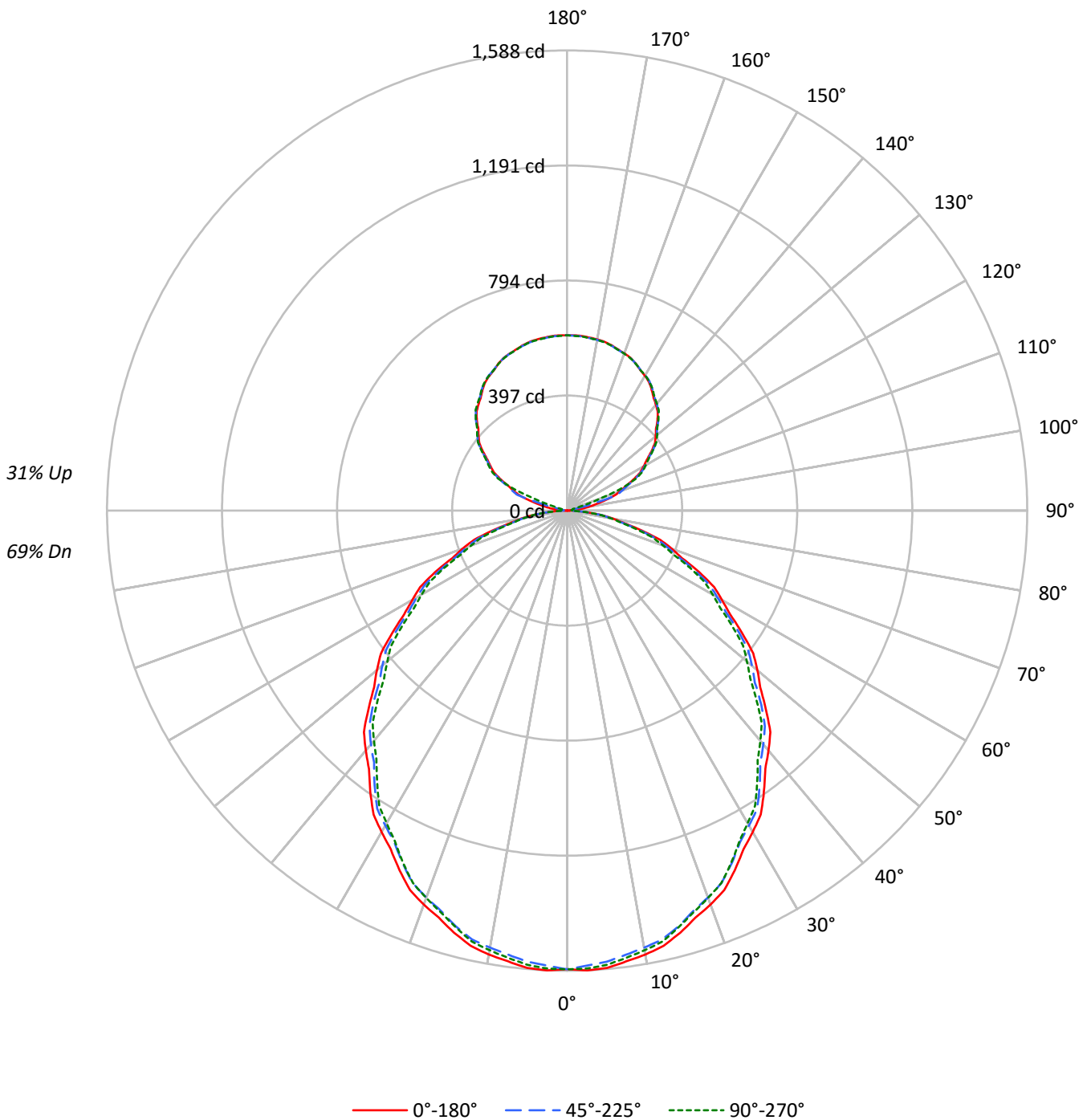
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	105	105	105	105	94	94	94	83	83	83	74	74	74	69
1	102	97	93	90	96	92	89	85	82	80	77	73	71	69	65	63	62	58
2	93	85	79	73	87	81	75	70	72	68	64	64	61	58	57	55	52	49
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	47	44	41
4	78	66	58	52	73	63	56	50	57	51	46	51	46	42	45	41	38	35
5	71	59	51	45	67	56	49	43	51	44	40	46	40	36	41	37	33	31
6	66	53	45	39	62	51	43	37	46	39	35	41	36	32	37	33	29	27
7	61	48	40	34	57	46	38	33	42	35	31	38	32	28	34	29	26	24
8	57	44	36	30	53	42	34	29	38	32	27	34	29	25	31	27	23	21
9	53	40	32	27	50	38	31	26	35	29	25	32	27	23	29	24	21	19
10	49	37	29	24	47	35	28	24	32	26	22	29	24	21	27	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17038	17038	17038
5°	17117	16883	17001
10°	17004	16736	16840
15°	16805	16547	16577
20°	16573	16276	16292
25°	16262	15954	15922
30°	15918	15597	15478
35°	15559	15219	15023
40°	15185	14802	14573
45°	14772	14420	14067
50°	14359	13949	13561
55°	13818	13461	13052
60°	13272	12893	12482
65°	12791	12271	11889
70°	12079	11566	11050
75°	11038	10643	10189
80°	9955	9534	9447
85°	8744	8410	8065



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.1	2.5
10°-20°	421.0	7.1
20°-30°	621.9	10.4
30°-40°	726.5	12.2
40°-50°	730.4	12.2
50°-60°	641.5	10.8
60°-70°	478.0	8.0
70°-80°	272.3	4.6
80°-90°	79.9	1.3
90°-100°	22.0	0.4
100°-110°	104.8	1.8
110°-120°	251.7	4.2
120°-130°	320.5	5.4
130°-140°	342.4	5.7
140°-150°	320.2	5.4
150°-160°	258.3	4.3
160°-170°	166.7	2.8
170°-180°	57.5	1.0
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0°-30°	1192.0	20.0
0°-40°	1918.5	32.2
0°-60°	3290.4	55.2
0°-90°	4120.5	69.1
90°-120°	378.5	6.3
90°-150°	1361.6	22.8
90°-180°	1844.0	30.9
0°-180°	5964.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1583	1583	1583	1583	1583	
5°	1584	1577	1562	1575	1573	150
15°	1508	1502	1485	1495	1488	425
25°	1369	1360	1343	1344	1341	630
35°	1184	1175	1158	1150	1143	740
45°	970	964	947	932	924	749
55°	736	734	717	703	696	659
65°	502	495	482	471	467	495
75°	265	260	256	249	245	284
85°	71	68	68	65	65	78
90°	0	5	11	13	14	5
95°	27	10	14	17	17	34
105°	134	136	98	23	20	142
115°	251	254	258	262	264	248
125°	354	358	359	360	361	316
135°	441	443	445	446	445	339
145°	509	512	513	513	514	318
155°	560	559	560	562	559	258
165°	591	590	589	592	590	167
175°	605	603	603	606	602	58
180°	605	605	605	605	605	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9
2.5°	1588.3	1587.4	1586.4	1585.4	1584.5	1582.6	1580.0	1577.3	1574.7	1572.0	1574.4
5°	1584.2	1582.7	1581.2	1579.7	1578.2	1575.8	1572.5	1569.1	1565.8	1562.5	1565.5
7.5°	1568.7	1567.2	1565.7	1564.2	1562.7	1560.2	1556.8	1553.3	1549.9	1546.4	1549.1
10°	1555.7	1554.2	1552.6	1551.1	1549.6	1546.9	1543.0	1539.0	1535.1	1531.2	1533.9
12.5°	1538.2	1537.0	1535.7	1534.4	1533.2	1530.7	1527.0	1523.3	1519.6	1515.9	1517.9
15°	1508.0	1506.8	1505.6	1504.4	1503.2	1500.6	1496.7	1492.8	1488.8	1484.9	1487.3
17.5°	1472.9	1471.3	1469.8	1468.2	1466.6	1463.9	1459.9	1456.0	1452.1	1448.1	1449.8
20°	1446.8	1445.0	1443.2	1441.3	1439.5	1436.6	1432.7	1428.8	1424.9	1420.9	1422.1
22.5°	1417.4	1415.6	1413.8	1411.9	1410.1	1407.3	1403.3	1399.4	1395.5	1391.5	1392.5
25°	1369.2	1367.4	1365.6	1363.8	1361.9	1359.1	1355.1	1351.2	1347.3	1343.3	1343.6
27.5°	1317.8	1316.0	1314.2	1312.5	1310.7	1307.7	1303.5	1299.3	1295.0	1290.8	1291.0
30°	1280.7	1279.2	1277.7	1276.2	1274.7	1271.8	1267.6	1263.3	1259.1	1254.9	1254.9
32.5°	1243.7	1241.7	1239.7	1237.7	1235.7	1233.1	1229.8	1226.6	1223.3	1220.0	1218.3
35°	1184.1	1182.3	1180.5	1178.7	1176.8	1174.0	1170.0	1166.1	1162.2	1158.2	1156.4
37.5°	1123.1	1120.8	1118.5	1116.2	1113.9	1110.8	1106.8	1102.8	1098.8	1094.8	1092.6
40°	1080.7	1078.8	1077.0	1075.2	1073.4	1070.4	1066.1	1061.9	1057.7	1053.4	1051.0
42.5°	1038.2	1036.1	1034.1	1032.0	1030.0	1026.8	1022.6	1018.4	1014.1	1009.9	1007.5
45°	970.4	969.2	968.0	966.8	965.6	963.0	959.1	955.1	951.2	947.3	943.7
47.5°	903.2	901.4	899.7	897.9	896.2	893.4	889.8	886.1	882.4	878.7	875.1
50°	857.5	855.9	854.4	852.9	851.4	848.7	844.7	840.8	836.9	833.0	829.6
52.5°	809.5	808.5	807.5	806.5	805.4	802.8	798.7	794.5	790.3	786.1	783.3
55°	736.3	736.0	735.7	735.4	735.1	733.0	729.1	725.1	721.2	717.3	713.9
57.5°	666.6	665.6	664.6	663.6	662.5	660.4	657.3	654.1	651.0	647.9	644.9
60°	616.5	616.2	615.9	615.6	615.3	613.4	609.7	606.1	602.5	598.9	596.1
62.5°	571.9	571.1	570.3	569.5	568.8	566.6	562.9	559.3	555.7	552.0	549.3
65°	502.2	500.7	499.2	497.7	496.2	493.9	490.9	487.9	484.8	481.8	479.4
67.5°	428.5	427.1	425.8	424.5	423.1	421.3	419.0	416.7	414.4	412.1	410.0
70°	383.8	382.0	380.2	378.4	376.6	374.7	372.9	371.1	369.3	367.5	365.4
72.5°	337.0	335.7	334.3	333.0	331.7	330.0	327.9	325.9	323.8	321.7	319.9
75°	265.4	264.2	263.0	261.8	260.6	259.5	258.6	257.7	256.8	255.9	254.4
77.5°	202.0	201.3	200.6	200.0	199.3	198.4	197.4	196.3	195.2	194.1	193.1
80°	160.6	159.7	158.8	157.9	157.0	156.2	155.6	155.0	154.4	153.8	153.5
82.5°	120.3	120.1	120.0	119.8	119.6	119.4	119.3	119.2	119.1	119.0	118.4
85°	70.8	70.2	69.6	69.0	68.4	68.1	68.1	68.1	68.1	68.1	67.4
87.5°	28.4	27.9	27.3	26.8	26.3	26.0	26.1	26.1	26.1	26.1	25.9
90°	0.4	1.4	2.4	3.4	4.4	5.6	6.9	8.2	9.5	10.8	11.2
92.5°	8.4	8.1	7.8	7.5	7.2	7.6	8.6	9.5	10.5	11.5	12.1
95°	27.4	23.3	19.2	15.1	11.0	9.5	10.6	11.7	12.8	13.9	14.6
97.5°	55.1	53.2	51.4	49.6	47.7	43.2	36.0	28.8	21.7	14.5	15.3
100°	75.9	77.9	79.9	81.9	83.9	77.1	61.6	46.0	30.4	14.8	15.6
102.5°	99.6	101.1	102.5	104.0	105.4	97.6	80.6	63.6	46.6	29.6	27.1
105°	133.9	135.0	136.1	137.2	138.3	134.3	125.3	116.4	107.4	98.4	80.7
107.5°	170.0	170.9	171.8	172.6	173.5	174.7	176.1	177.5	178.9	180.3	167.4
110°	194.1	194.9	195.7	196.5	197.3	198.2	199.3	200.4	201.5	202.6	199.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	217.1	217.8	218.5	219.2	220.0	220.9	222.0	223.1	224.2	225.3	225.3
115°	251.1	251.7	252.3	252.9	253.5	254.3	255.2	256.1	257.0	257.9	258.9
117.5°	284.1	284.9	285.6	286.3	287.1	287.7	288.1	288.6	289.1	289.5	290.3
120°	304.6	305.5	306.4	307.3	308.2	308.8	309.1	309.4	309.7	310.0	310.8
122.5°	325.5	326.2	326.9	327.7	328.4	329.0	329.4	329.7	330.1	330.5	331.0
125°	354.0	354.8	355.6	356.4	357.2	357.8	358.2	358.6	359.0	359.4	359.6
127.5°	381.7	382.5	383.3	384.1	384.9	385.5	386.0	386.5	387.0	387.5	387.8
130°	399.0	399.8	400.6	401.4	402.2	402.8	403.2	403.6	404.0	404.3	404.7
132.5°	415.5	416.3	417.1	417.9	418.7	419.2	419.6	419.9	420.2	420.5	420.9
135°	440.7	441.3	441.9	442.5	443.1	443.6	444.0	444.4	444.8	445.2	445.5
137.5°	462.3	463.1	463.8	464.6	465.3	465.8	466.1	466.3	466.5	466.7	467.2
140°	476.7	477.3	477.9	478.5	479.1	479.5	479.8	480.1	480.4	480.7	481.1
142.5°	490.0	490.6	491.2	491.8	492.4	492.8	493.1	493.4	493.7	494.0	494.3
145°	508.6	509.3	510.0	510.7	511.4	511.8	512.0	512.2	512.4	512.6	512.8
147.5°	526.1	526.6	527.0	527.5	527.9	528.3	528.5	528.7	528.9	529.1	529.3
150°	536.9	537.2	537.5	537.8	538.1	538.3	538.5	538.7	538.9	539.1	539.3
152.5°	546.6	546.7	546.9	547.0	547.2	547.3	547.4	547.5	547.6	547.8	548.1
155°	560.2	560.0	559.8	559.7	559.5	559.4	559.5	559.6	559.7	559.8	560.3
157.5°	570.9	570.8	570.8	570.8	570.8	570.7	570.6	570.5	570.4	570.3	570.9
160°	577.3	577.2	577.1	577.0	576.9	576.8	576.7	576.6	576.5	576.4	577.0
162.5°	583.4	583.2	582.9	582.7	582.4	582.2	582.1	582.0	581.9	581.8	582.5
165°	590.8	590.5	590.2	589.9	589.6	589.4	589.3	589.2	589.1	589.0	589.8
167.5°	596.6	596.2	595.8	595.4	595.0	594.8	594.8	594.8	594.8	594.8	595.6
170°	599.8	599.4	599.0	598.6	598.2	598.0	598.0	598.0	598.0	598.0	598.8
172.5°	601.9	601.5	601.0	600.5	600.0	599.8	599.9	600.0	600.1	600.1	600.9
175°	604.7	604.2	603.7	603.2	602.7	602.5	602.6	602.7	602.8	602.9	603.6
177.5°	605.4	605.0	604.6	604.2	603.8	603.7	603.8	603.8	603.9	604.0	604.6
180°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9
2.5°	1576.8	1579.3	1581.7	1582.8	1582.5	1582.3	1582.0	1581.8
5°	1568.5	1571.5	1574.6	1575.8	1575.2	1574.6	1574.0	1573.4
7.5°	1551.9	1554.6	1557.3	1558.5	1558.1	1557.8	1557.4	1557.0
10°	1536.6	1539.3	1542.1	1543.1	1542.5	1541.9	1541.3	1540.7
12.5°	1519.9	1521.9	1523.9	1524.7	1524.4	1524.0	1523.6	1523.3
15°	1489.7	1492.1	1494.6	1494.9	1493.1	1491.2	1489.4	1487.6
17.5°	1451.5	1453.2	1454.9	1455.4	1454.8	1454.1	1453.4	1452.8
20°	1423.3	1424.6	1425.8	1425.9	1425.0	1424.1	1423.2	1422.3
22.5°	1393.5	1394.4	1395.4	1395.3	1394.2	1393.0	1391.9	1390.7
25°	1343.9	1344.3	1344.6	1344.3	1343.3	1342.4	1341.5	1340.6
27.5°	1291.3	1291.5	1291.8	1291.3	1290.2	1289.0	1287.9	1286.7
30°	1254.9	1254.9	1254.9	1253.8	1251.7	1249.6	1247.5	1245.3
32.5°	1216.6	1215.0	1213.3	1211.8	1210.7	1209.5	1208.4	1207.2
35°	1154.6	1152.8	1151.0	1149.3	1147.8	1146.3	1144.8	1143.3
37.5°	1090.5	1088.3	1086.1	1084.5	1083.6	1082.6	1081.6	1080.7
40°	1048.6	1046.2	1043.8	1041.9	1040.7	1039.5	1038.3	1037.1
42.5°	1005.0	1002.6	1000.2	998.4	997.2	996.0	994.8	993.6
45°	940.0	936.4	932.8	930.2	928.7	927.2	925.7	924.1
47.5°	871.5	868.0	864.4	862.0	860.6	859.3	858.0	856.6
50°	826.3	823.0	819.6	817.1	815.3	813.4	811.6	809.8
52.5°	780.4	777.6	774.8	772.4	770.6	768.8	767.0	765.2
55°	710.6	707.3	704.0	701.5	700.0	698.5	697.0	695.5
57.5°	641.9	639.0	636.0	633.6	631.9	630.1	628.4	626.6
60°	593.4	590.7	588.0	585.9	584.3	582.8	581.3	579.8
62.5°	546.6	543.9	541.1	539.3	538.2	537.2	536.2	535.2
65°	477.0	474.5	472.1	470.5	469.6	468.7	467.7	466.8
67.5°	407.9	405.8	403.7	402.0	400.7	399.4	398.1	396.9
70°	363.2	361.1	359.0	357.2	355.7	354.2	352.7	351.1
72.5°	318.0	316.1	314.2	312.9	312.1	311.3	310.6	309.8
75°	252.9	251.3	249.8	248.6	247.7	246.8	245.9	245.0
77.5°	192.0	191.0	190.0	189.5	189.5	189.5	189.5	189.5
80°	153.2	152.9	152.6	152.4	152.4	152.4	152.4	152.4
82.5°	117.9	117.3	116.8	116.4	116.1	115.9	115.7	115.4
85°	66.8	66.2	65.6	65.3	65.3	65.3	65.3	65.3
87.5°	25.8	25.6	25.5	25.4	25.4	25.5	25.5	25.6
90°	11.6	12.0	12.4	12.7	12.9	13.1	13.3	13.5
92.5°	12.8	13.4	14.1	14.4	14.6	14.7	14.8	14.9
95°	15.3	16.0	16.7	17.1	17.1	17.1	17.1	17.1
97.5°	16.1	16.9	17.7	18.1	18.2	18.3	18.4	18.5
100°	16.4	17.2	18.0	18.5	18.6	18.7	18.8	18.9
102.5°	24.6	22.1	19.7	18.5	18.7	18.9	19.0	19.2
105°	63.0	45.4	27.7	19.0	19.2	19.4	19.6	19.8
107.5°	154.4	141.5	128.5	115.4	102.0	88.7	75.4	62.1
110°	196.0	192.7	189.4	180.7	166.4	152.1	137.8	123.6



TEST NUMBER: P332184

CATALOG NUMBER: S123DIW-S1000D460U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	225.4	225.4	225.5	224.0	221.0	218.0	215.0	212.0
115°	259.9	260.9	261.9	262.6	263.0	263.4	263.8	264.2
117.5°	291.1	291.9	292.7	293.1	293.2	293.3	293.4	293.5
120°	311.6	312.4	313.2	313.6	313.6	313.6	313.6	313.6
122.5°	331.6	332.2	332.7	333.0	333.1	333.2	333.3	333.4
125°	359.8	360.0	360.2	360.4	360.6	360.8	361.0	361.2
127.5°	388.1	388.4	388.7	388.8	388.6	388.4	388.2	388.0
130°	405.1	405.5	405.9	406.0	405.8	405.6	405.4	405.2
132.5°	421.3	421.7	422.1	422.2	421.9	421.6	421.3	421.1
135°	445.8	446.1	446.4	446.4	446.1	445.8	445.5	445.2
137.5°	467.7	468.1	468.6	468.8	468.6	468.4	468.2	468.0
140°	481.5	481.9	482.3	482.4	482.2	482.0	481.8	481.6
142.5°	494.7	495.0	495.3	495.3	495.0	494.8	494.5	494.2
145°	513.0	513.2	513.4	513.5	513.5	513.5	513.5	513.5
147.5°	529.5	529.7	529.9	529.7	529.3	528.8	528.4	527.9
150°	539.5	539.7	539.9	539.9	539.6	539.3	539.0	538.7
152.5°	548.5	548.8	549.2	549.1	548.7	548.2	547.8	547.3
155°	560.8	561.3	561.8	561.7	561.1	560.5	559.9	559.4
157.5°	571.5	572.1	572.7	572.6	571.8	571.1	570.3	569.5
160°	577.6	578.2	578.8	578.8	578.1	577.4	576.7	576.0
162.5°	583.2	583.9	584.5	584.6	583.9	583.3	582.7	582.1
165°	590.6	591.4	592.2	592.2	591.5	590.9	590.2	589.5
167.5°	596.4	597.1	597.9	597.9	597.1	596.4	595.6	594.8
170°	599.6	600.4	601.2	601.2	600.4	599.6	598.8	598.0
172.5°	601.7	602.5	603.3	603.3	602.4	601.5	600.7	599.8
175°	604.3	605.0	605.7	605.7	604.9	604.1	603.3	602.5
177.5°	605.3	605.9	606.6	606.5	605.7	604.9	604.1	603.3
180°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7

(END OF REPORT)