

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: P332184-840

Luminaire Tested: **S123DIW-S1000D460U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332184-840
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-S1000D460U840-4F0-1E-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: 6023.5 lumens
Efficiency: N/A
Efficacy: 130.4 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

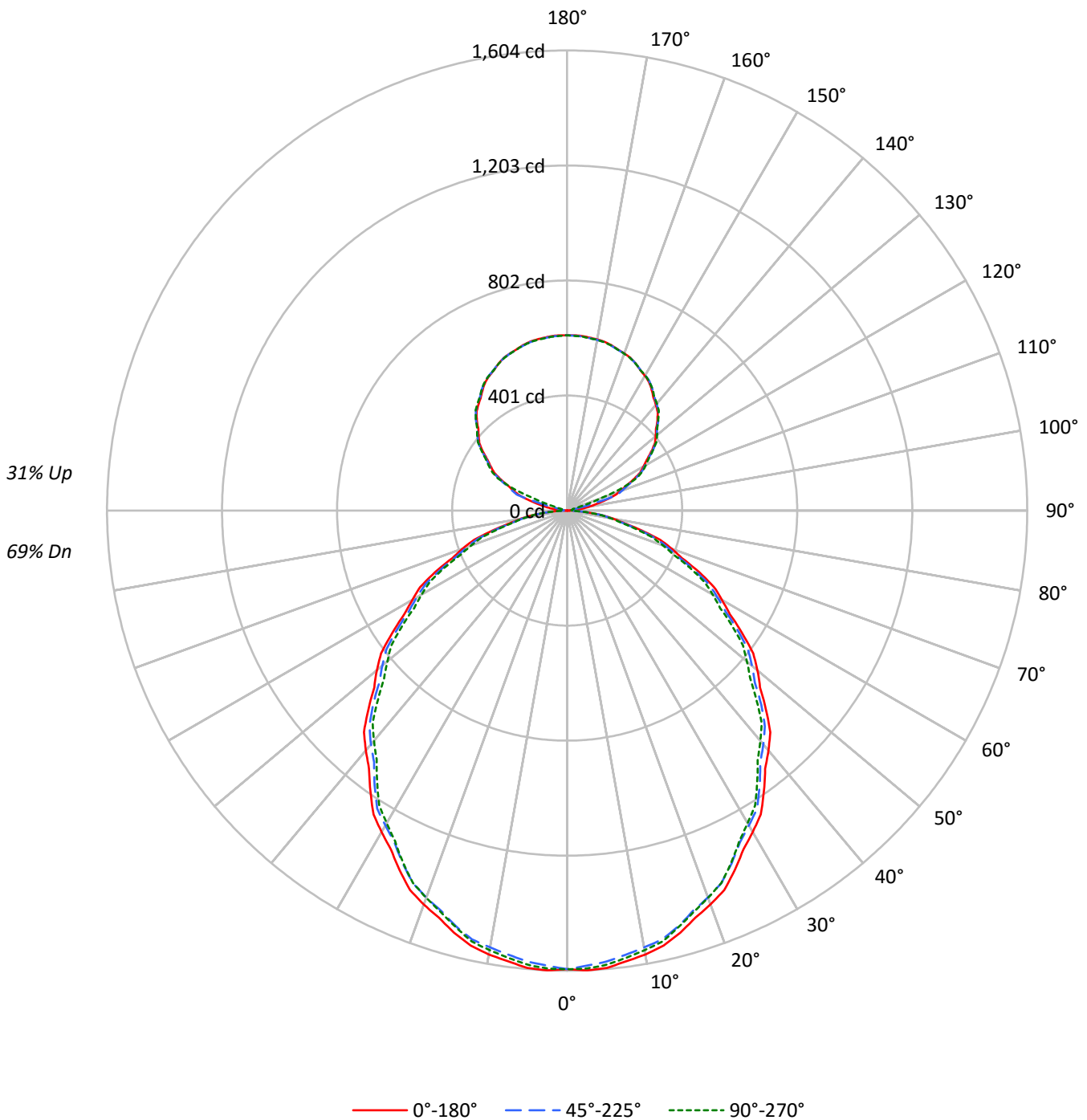
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	112	112	112	112	105	105	105	105	94	94	94	83	83	83	74	74	74
1	102	97	93	90	96	92	89	85	82	80	77	73	71	69	65	63	62
2	93	85	79	73	87	81	75	70	72	68	64	64	61	58	57	55	52
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	47	44
4	78	66	58	52	73	63	56	50	57	51	46	51	46	42	45	41	38
5	71	59	51	45	67	56	49	43	51	44	40	46	40	36	41	37	33
6	66	53	45	39	62	51	43	37	46	39	35	41	36	32	37	33	29
7	61	48	40	34	57	46	38	33	42	35	31	38	32	28	34	29	26
8	57	44	36	30	53	42	34	29	38	32	27	34	29	25	31	27	23
9	53	40	32	27	50	38	31	26	35	29	25	32	27	23	29	24	21
10	49	37	29	24	47	35	28	24	32	26	22	29	24	21	27	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17206	17206	17206
5°	17286	17049	17168
10°	17171	16901	17006
15°	16971	16710	16741
20°	16736	16436	16452
25°	16422	16112	16079
30°	16075	15751	15631
35°	15713	15369	15172
40°	15336	14948	14716
45°	14918	14562	14206
50°	14502	14086	13695
55°	13955	13594	13181
60°	13403	13020	12605
65°	12918	12394	12006
70°	12198	11679	11160
75°	11146	10746	10289
80°	10054	9627	9540
85°	8830	8497	8139



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.6	2.5
10°-20°	425.2	7.1
20°-30°	628.0	10.4
30°-40°	733.6	12.2
40°-50°	737.6	12.2
50°-60°	647.9	10.8
60°-70°	482.7	8.0
70°-80°	275.0	4.6
80°-90°	80.7	1.3
90°-100°	22.2	0.4
100°-110°	105.8	1.8
110°-120°	254.2	4.2
120°-130°	323.7	5.4
130°-140°	345.8	5.7
140°-150°	323.4	5.4
150°-160°	260.8	4.3
160°-170°	168.4	2.8
170°-180°	58.0	1.0
0°-30°	1203.8	20.0
0°-40°	1937.4	32.2
0°-60°	3322.8	55.2
0°-90°	4161.2	69.1
90°-120°	382.2	6.3
90°-150°	1375.1	22.8
90°-180°	1862.0	30.9
0°-180°	6023.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1598	1598	1598	1598	1598	
5°	1600	1593	1578	1591	1589	152
15°	1523	1517	1500	1509	1502	429
25°	1383	1374	1357	1358	1354	637
35°	1196	1187	1170	1162	1155	748
45°	980	974	957	941	933	756
55°	744	741	724	710	702	666
65°	507	500	487	476	471	500
75°	268	263	258	252	247	287
85°	72	69	69	66	66	78
90°	0	5	11	13	14	5
95°	28	10	14	17	17	34
105°	135	138	99	24	20	143
115°	254	256	260	265	267	250
125°	358	361	363	364	365	319
135°	445	448	450	451	450	343
145°	514	517	518	519	519	321
155°	566	565	565	567	565	261
165°	597	595	595	598	595	169
175°	611	608	609	612	608	58
180°	611	611	611	611	611	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5
2.5°	1604.0	1603.1	1602.0	1601.0	1600.1	1598.2	1595.6	1592.9	1590.2	1587.5	1589.9
5°	1599.8	1598.3	1596.8	1595.3	1593.8	1591.3	1588.0	1584.6	1581.2	1577.9	1580.9
7.5°	1584.2	1582.7	1581.1	1579.6	1578.1	1575.6	1572.2	1568.6	1565.2	1561.7	1564.4
10°	1571.0	1569.5	1567.9	1566.4	1564.9	1562.2	1558.2	1554.2	1550.2	1546.3	1549.0
12.5°	1553.4	1552.2	1550.8	1549.5	1548.3	1545.8	1542.1	1538.3	1534.6	1530.9	1532.9
15°	1522.9	1521.7	1520.5	1519.2	1518.0	1515.4	1511.5	1507.5	1503.5	1499.5	1502.0
17.5°	1487.4	1485.8	1484.3	1482.7	1481.1	1478.3	1474.3	1470.4	1466.4	1462.4	1464.1
20°	1461.1	1459.3	1457.4	1455.5	1453.7	1450.8	1446.8	1442.9	1439.0	1434.9	1436.1
22.5°	1431.4	1429.6	1427.7	1425.8	1424.0	1421.2	1417.1	1413.2	1409.3	1405.2	1406.2
25°	1382.7	1380.9	1379.1	1377.3	1375.3	1372.5	1368.5	1364.5	1360.6	1356.6	1356.9
27.5°	1330.8	1329.0	1327.2	1325.4	1323.6	1320.6	1316.4	1312.1	1307.8	1303.5	1303.7
30°	1293.3	1291.8	1290.3	1288.8	1287.3	1284.3	1280.1	1275.8	1271.5	1267.3	1267.3
32.5°	1256.0	1253.9	1251.9	1249.9	1247.9	1245.3	1241.9	1238.7	1235.4	1232.0	1230.3
35°	1195.8	1194.0	1192.1	1190.3	1188.4	1185.6	1181.5	1177.6	1173.7	1169.6	1167.8
37.5°	1134.2	1131.9	1129.5	1127.2	1124.9	1121.8	1117.7	1113.7	1109.6	1105.6	1103.4
40°	1091.4	1089.4	1087.6	1085.8	1084.0	1081.0	1076.6	1072.4	1068.1	1063.8	1061.4
42.5°	1048.4	1046.3	1044.3	1042.2	1040.2	1036.9	1032.7	1028.4	1024.1	1019.9	1017.4
45°	980.0	978.8	977.5	976.3	975.1	972.5	968.6	964.5	960.6	956.6	953.0
47.5°	912.1	910.3	908.6	906.8	905.0	902.2	898.6	894.8	891.1	887.4	883.7
50°	866.0	864.3	862.8	861.3	859.8	857.1	853.0	849.1	845.2	841.2	837.8
52.5°	817.5	816.5	815.5	814.5	813.3	810.7	806.6	802.3	798.1	793.9	791.0
55°	743.6	743.3	743.0	742.7	742.4	740.2	736.3	732.3	728.3	724.4	720.9
57.5°	673.2	672.2	671.2	670.1	669.0	666.9	663.8	660.6	657.4	654.3	651.3
60°	622.6	622.3	622.0	621.7	621.4	619.5	615.7	612.1	608.4	604.8	602.0
62.5°	577.5	576.7	575.9	575.1	574.4	572.2	568.5	564.8	561.2	557.4	554.7
65°	507.2	505.6	504.1	502.6	501.1	498.8	495.7	492.7	489.6	486.6	484.1
67.5°	432.7	431.3	430.0	428.7	427.3	425.5	423.1	420.8	418.5	416.2	414.0
70°	387.6	385.8	384.0	382.1	380.3	378.4	376.6	374.8	372.9	371.1	369.0
72.5°	340.3	339.0	337.6	336.3	335.0	333.3	331.1	329.1	327.0	324.9	323.1
75°	268.0	266.8	265.6	264.4	263.2	262.1	261.2	260.2	259.3	258.4	256.9
77.5°	204.0	203.3	202.6	202.0	201.3	200.4	199.3	198.2	197.1	196.0	195.0
80°	162.2	161.3	160.4	159.5	158.5	157.7	157.1	156.5	155.9	155.3	155.0
82.5°	121.5	121.3	121.2	121.0	120.8	120.6	120.5	120.4	120.3	120.2	119.6
85°	71.5	70.9	70.3	69.7	69.1	68.8	68.8	68.8	68.8	68.8	68.1
87.5°	28.7	28.2	27.6	27.1	26.6	26.3	26.4	26.4	26.4	26.4	26.2
90°	0.4	1.4	2.4	3.4	4.4	5.7	7.0	8.3	9.6	10.9	11.3
92.5°	8.5	8.2	7.9	7.6	7.3	7.7	8.7	9.6	10.6	11.6	12.2
95°	27.7	23.5	19.4	15.2	11.1	9.6	10.7	11.8	12.9	14.0	14.7
97.5°	55.6	53.7	51.9	50.1	48.2	43.6	36.4	29.1	21.9	14.6	15.5
100°	76.6	78.7	80.7	82.7	84.7	77.9	62.2	46.5	30.7	14.9	15.8
102.5°	100.6	102.1	103.5	105.0	106.4	98.6	81.4	64.2	47.1	29.9	27.4
105°	135.2	136.3	137.4	138.6	139.7	135.6	126.5	117.5	108.5	99.4	81.5
107.5°	171.7	172.6	173.5	174.3	175.2	176.4	177.8	179.3	180.7	182.1	169.1
110°	196.0	196.8	197.6	198.4	199.2	200.2	201.3	202.4	203.5	204.6	201.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.2	219.9	220.7	221.4	222.2	223.1	224.2	225.3	226.4	227.5	227.5
115°	253.6	254.2	254.8	255.4	256.0	256.8	257.7	258.6	259.5	260.4	261.5
117.5°	286.9	287.7	288.4	289.1	289.9	290.5	290.9	291.4	292.0	292.4	293.2
120°	307.6	308.5	309.4	310.3	311.2	311.8	312.1	312.5	312.8	313.1	313.9
122.5°	328.7	329.4	330.1	330.9	331.6	332.2	332.6	333.0	333.4	333.8	334.3
125°	357.5	358.3	359.1	359.9	360.7	361.3	361.7	362.1	362.5	362.9	363.1
127.5°	385.5	386.3	387.1	387.9	388.7	389.3	389.8	390.3	390.8	391.3	391.6
130°	402.9	403.7	404.6	405.4	406.2	406.8	407.2	407.6	408.0	408.3	408.7
132.5°	419.6	420.4	421.2	422.0	422.8	423.3	423.7	424.0	424.3	424.6	425.1
135°	445.0	445.7	446.3	446.9	447.5	448.0	448.4	448.8	449.2	449.6	449.9
137.5°	466.9	467.7	468.4	469.2	469.9	470.4	470.7	470.9	471.1	471.3	471.8
140°	481.4	482.0	482.6	483.2	483.8	484.2	484.5	484.8	485.1	485.4	485.8
142.5°	494.8	495.4	496.0	496.7	497.3	497.7	498.0	498.3	498.6	498.9	499.2
145°	513.6	514.3	515.0	515.7	516.4	516.8	517.1	517.3	517.5	517.7	517.9
147.5°	531.3	531.8	532.2	532.7	533.1	533.5	533.7	533.9	534.1	534.3	534.5
150°	542.2	542.5	542.8	543.1	543.4	543.6	543.8	544.0	544.2	544.4	544.6
152.5°	552.0	552.1	552.3	552.4	552.6	552.7	552.8	552.9	553.0	553.2	553.5
155°	565.7	565.5	565.3	565.2	565.0	564.9	565.0	565.1	565.2	565.3	565.8
157.5°	576.5	576.4	576.4	576.4	576.4	576.3	576.2	576.1	576.0	575.9	576.5
160°	583.0	582.9	582.8	582.7	582.6	582.5	582.4	582.3	582.2	582.1	582.7
162.5°	589.2	589.0	588.7	588.4	588.1	587.9	587.8	587.7	587.6	587.5	588.2
165°	596.6	596.3	596.0	595.7	595.4	595.2	595.1	595.0	594.9	594.8	595.6
167.5°	602.5	602.1	601.7	601.3	600.9	600.7	600.7	600.7	600.7	600.7	601.5
170°	605.7	605.3	604.9	604.5	604.1	603.9	603.9	603.9	603.9	603.9	604.7
172.5°	607.8	607.4	606.9	606.4	605.9	605.7	605.8	605.9	606.0	606.0	606.8
175°	610.7	610.2	609.7	609.2	608.6	608.4	608.5	608.6	608.7	608.8	609.6
177.5°	611.4	611.0	610.6	610.2	609.8	609.7	609.8	609.8	609.9	610.0	610.6
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5
2.5°	1592.4	1594.9	1597.3	1598.4	1598.1	1597.9	1597.6	1597.4
5°	1584.0	1587.0	1590.1	1591.3	1590.7	1590.1	1589.5	1588.9
7.5°	1567.2	1569.9	1572.7	1573.9	1573.5	1573.2	1572.8	1572.4
10°	1551.8	1554.5	1557.3	1558.3	1557.7	1557.1	1556.5	1555.9
12.5°	1534.9	1536.9	1538.9	1539.7	1539.4	1539.0	1538.6	1538.3
15°	1504.4	1506.8	1509.3	1509.6	1507.8	1505.9	1504.1	1502.3
17.5°	1465.8	1467.5	1469.3	1469.8	1469.2	1468.4	1467.7	1467.1
20°	1437.3	1438.7	1439.9	1440.0	1439.1	1438.1	1437.2	1436.3
22.5°	1407.2	1408.2	1409.2	1409.1	1408.0	1406.7	1405.6	1404.4
25°	1357.2	1357.6	1357.9	1357.6	1356.6	1355.6	1354.7	1353.8
27.5°	1304.0	1304.2	1304.5	1304.0	1302.9	1301.7	1300.6	1299.4
30°	1267.3	1267.3	1267.3	1266.2	1264.0	1261.9	1259.8	1257.6
32.5°	1228.6	1227.0	1225.3	1223.8	1222.6	1221.4	1220.3	1219.1
35°	1166.0	1164.2	1162.4	1160.6	1159.1	1157.6	1156.1	1154.6
37.5°	1101.3	1099.0	1096.8	1095.2	1094.3	1093.3	1092.3	1091.4
40°	1058.9	1056.5	1054.1	1052.2	1051.0	1049.8	1048.5	1047.3
42.5°	1014.9	1012.5	1010.1	1008.2	1007.0	1005.8	1004.6	1003.4
45°	949.3	945.6	942.0	939.4	937.9	936.3	934.8	933.2
47.5°	880.1	876.6	872.9	870.5	869.1	867.8	866.5	865.1
50°	834.5	831.1	827.7	825.2	823.3	821.4	819.6	817.8
52.5°	788.1	785.3	782.4	780.0	778.2	776.4	774.6	772.7
55°	717.6	714.3	710.9	708.4	706.9	705.4	703.9	702.4
57.5°	648.2	645.3	642.3	639.9	638.1	636.3	634.6	632.8
60°	599.3	596.5	593.8	591.7	590.1	588.5	587.0	585.5
62.5°	552.0	549.3	546.4	544.6	543.5	542.5	541.5	540.5
65°	481.7	479.2	476.8	475.1	474.2	473.3	472.3	471.4
67.5°	411.9	409.8	407.7	406.0	404.7	403.3	402.0	400.8
70°	366.8	364.7	362.5	360.7	359.2	357.7	356.2	354.6
72.5°	321.1	319.2	317.3	316.0	315.2	314.4	313.7	312.9
75°	255.4	253.8	252.3	251.1	250.1	249.2	248.3	247.4
77.5°	193.9	192.9	191.9	191.4	191.4	191.4	191.4	191.4
80°	154.7	154.4	154.1	153.9	153.9	153.9	153.9	153.9
82.5°	119.1	118.5	118.0	117.5	117.2	117.0	116.8	116.5
85°	67.5	66.9	66.2	65.9	65.9	65.9	65.9	65.9
87.5°	26.1	25.9	25.8	25.7	25.7	25.8	25.8	25.9
90°	11.7	12.1	12.5	12.8	13.0	13.2	13.4	13.6
92.5°	12.9	13.5	14.2	14.5	14.7	14.8	14.9	15.0
95°	15.5	16.2	16.9	17.3	17.3	17.3	17.3	17.3
97.5°	16.3	17.1	17.9	18.3	18.4	18.5	18.6	18.7
100°	16.6	17.4	18.2	18.7	18.8	18.9	19.0	19.1
102.5°	24.8	22.3	19.9	18.7	18.9	19.1	19.2	19.4
105°	63.6	45.8	28.0	19.2	19.4	19.6	19.8	20.0
107.5°	155.9	142.9	129.8	116.5	103.0	89.6	76.1	62.7
110°	197.9	194.6	191.3	182.5	168.0	153.6	139.2	124.8



TEST NUMBER: P332184-840

CATALOG NUMBER: S123DIW-S1000D460U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	227.6	227.6	227.7	226.2	223.2	220.2	217.1	214.1
115°	262.5	263.5	264.5	265.2	265.6	266.0	266.4	266.8
117.5°	294.0	294.8	295.6	296.0	296.1	296.2	296.3	296.4
120°	314.7	315.5	316.3	316.7	316.7	316.7	316.7	316.7
122.5°	334.9	335.5	336.0	336.3	336.4	336.5	336.6	336.7
125°	363.3	363.6	363.8	364.0	364.2	364.4	364.6	364.8
127.5°	391.9	392.2	392.5	392.6	392.4	392.2	392.0	391.8
130°	409.1	409.5	409.9	410.0	409.8	409.6	409.4	409.2
132.5°	425.5	425.9	426.3	426.4	426.1	425.8	425.5	425.3
135°	450.2	450.5	450.8	450.8	450.5	450.2	449.9	449.6
137.5°	472.3	472.7	473.2	473.4	473.2	473.0	472.8	472.6
140°	486.3	486.7	487.1	487.2	487.0	486.8	486.6	486.4
142.5°	499.6	499.9	500.2	500.2	499.9	499.7	499.4	499.1
145°	518.1	518.3	518.5	518.6	518.6	518.6	518.6	518.6
147.5°	534.7	534.9	535.1	534.9	534.5	534.0	533.6	533.1
150°	544.8	545.0	545.2	545.2	544.9	544.6	544.3	544.0
152.5°	553.9	554.2	554.6	554.5	554.1	553.6	553.2	552.7
155°	566.3	566.8	567.3	567.2	566.6	566.0	565.4	564.9
157.5°	577.1	577.7	578.3	578.2	577.4	576.7	575.9	575.1
160°	583.3	583.9	584.5	584.5	583.8	583.1	582.4	581.7
162.5°	589.0	589.7	590.3	590.4	589.7	589.1	588.4	587.8
165°	596.4	597.2	598.0	598.0	597.3	596.7	596.0	595.3
167.5°	602.3	603.0	603.8	603.8	603.0	602.3	601.5	600.7
170°	605.5	606.3	607.1	607.1	606.3	605.5	604.7	603.9
172.5°	607.6	608.4	609.3	609.3	608.3	607.4	606.6	605.7
175°	610.3	611.0	611.7	611.7	610.9	610.1	609.3	608.4
177.5°	611.3	611.9	612.6	612.5	611.7	610.9	610.1	609.3
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7

(END OF REPORT)