

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: P332215-940

Luminaire Tested: **S123DIW-S1165D460U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332215-940
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: S123DIW-S1165D460U940-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5668.6 lumens
Efficiency: N/A
Efficacy: 108.2 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

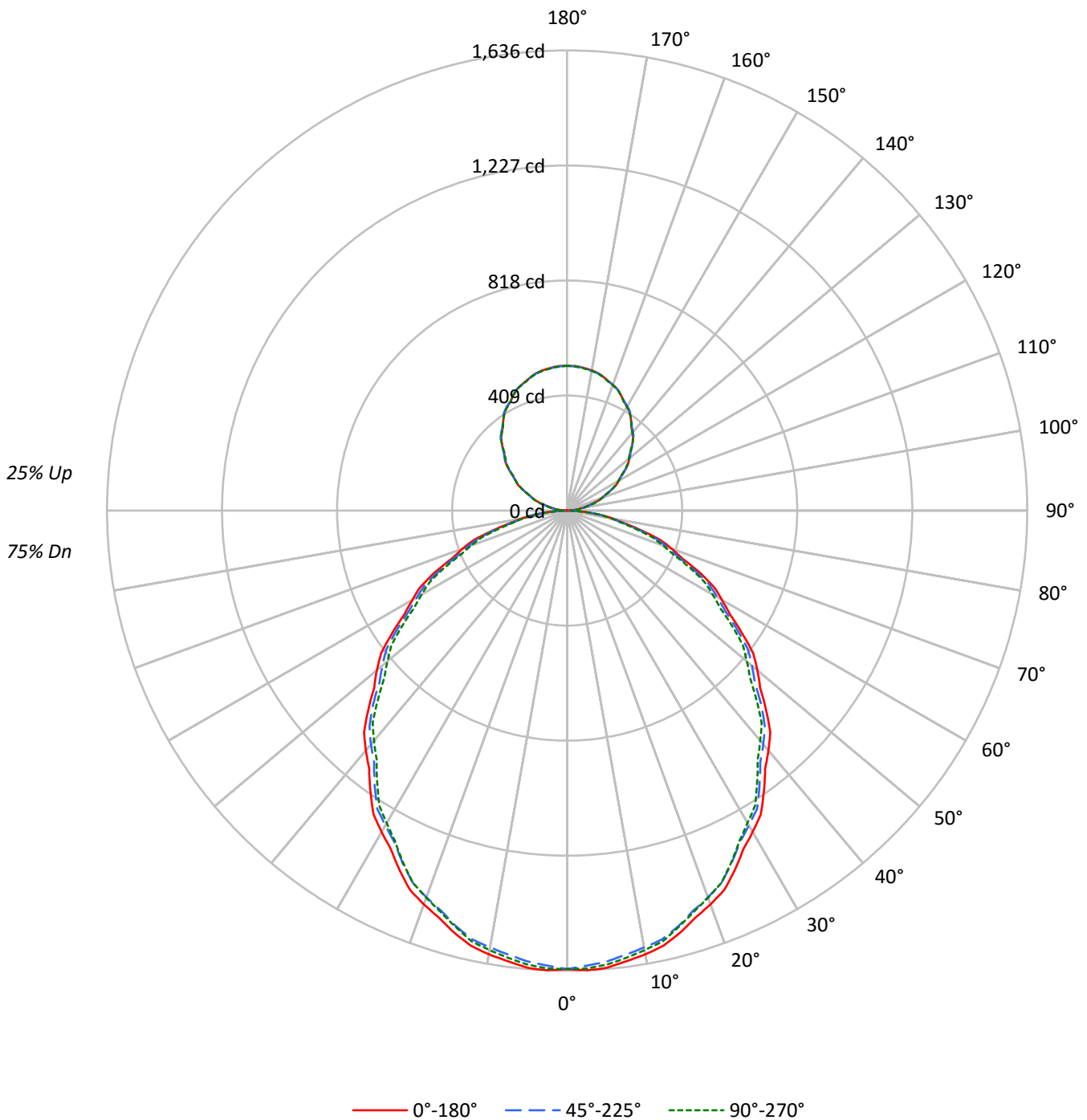
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	113	113	113	108	108	108	108	97	97	97	88	88	88	79	79	79	75
1	103	99	95	91	98	94	90	87	85	82	80	77	75	73	70	68	67	63
2	94	86	80	74	89	82	76	72	75	70	66	68	64	61	61	58	56	53
3	86	76	68	62	81	72	65	60	66	60	56	60	55	52	54	51	48	44
4	79	67	59	53	74	64	57	51	59	52	47	53	48	44	49	44	41	38
5	72	60	51	45	68	57	50	44	53	46	41	48	43	38	44	39	36	33
6	67	54	45	39	63	52	44	38	47	41	36	43	38	34	40	35	32	29
7	62	49	41	35	59	47	39	34	43	37	32	40	34	30	36	32	28	26
8	57	45	36	31	54	43	35	30	39	33	28	36	31	27	33	29	25	23
9	54	41	33	28	51	39	32	27	36	30	26	33	28	24	31	26	23	21
10	50	38	30	25	48	36	29	24	34	27	23	31	26	22	29	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17546	17546	17546
5°	17629	17386	17507
10°	17511	17235	17343
15°	17307	17041	17072
20°	17068	16763	16778
25°	16747	16431	16397
30°	16394	16063	15940
35°	16025	15674	15471
40°	15638	15244	15008
45°	15213	14850	14487
50°	14788	14364	13966
55°	14230	13863	13440
60°	13670	13276	12854
65°	13173	12638	12246
70°	12441	11909	11383
75°	11366	10959	10493
80°	10253	9819	9732
85°	9003	8657	8312



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.6	2.7
10°-20°	433.6	7.6
20°-30°	640.5	11.3
30°-40°	748.2	13.2
40°-50°	752.2	13.3
50°-60°	660.7	11.7
60°-70°	492.2	8.7
70°-80°	280.4	4.9
80°-90°	82.0	1.4
90°-100°	33.5	0.6
100°-110°	100.3	1.8
110°-120°	170.6	3.0
120°-130°	224.4	4.0
130°-140°	252.2	4.4
140°-150°	247.9	4.4
150°-160°	208.7	3.7
160°-170°	138.9	2.5
170°-180°	48.7	0.9
0°-30°	1227.6	21.7
0°-40°	1975.8	34.9
0°-60°	3388.7	59.8
0°-90°	4243.4	74.9
90°-120°	304.4	5.4
90°-150°	1029.0	18.2
90°-180°	1425.0	25.1
0°-180°	5668.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1630	1630	1630	1630	1630	
5°	1632	1624	1609	1622	1620	155
15°	1553	1547	1529	1539	1532	438
25°	1410	1401	1384	1385	1381	649
35°	1220	1211	1193	1185	1177	763
45°	999	993	976	959	952	771
55°	758	756	739	724	716	679
65°	517	510	496	485	481	510
75°	273	268	264	257	252	292
85°	73	70	70	67	67	80
90°	0	4	10	11	12	5
95°	24	27	30	31	32	27
105°	91	92	95	95	96	97
115°	172	173	172	172	172	170
125°	251	252	252	250	248	224
135°	326	328	328	327	326	251
145°	396	396	398	397	396	247
155°	453	453	453	455	452	208
165°	493	492	492	494	492	139
175°	513	512	512	514	511	49
180°	514	514	514	514	514	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1
2.5°	1635.8	1634.8	1633.8	1632.8	1631.7	1629.9	1627.2	1624.4	1621.7	1618.9	1621.4
5°	1631.6	1630.0	1628.4	1626.9	1625.3	1622.8	1619.4	1616.0	1612.6	1609.1	1612.2
7.5°	1615.6	1614.0	1612.5	1610.9	1609.4	1606.8	1603.2	1599.7	1596.2	1592.6	1595.4
10°	1602.1	1600.5	1599.0	1597.4	1595.9	1593.1	1589.0	1585.0	1580.9	1576.9	1579.7
12.5°	1584.2	1582.9	1581.5	1580.3	1579.0	1576.4	1572.6	1568.8	1565.0	1561.2	1563.3
15°	1553.1	1551.8	1550.6	1549.3	1548.1	1545.4	1541.4	1537.3	1533.3	1529.2	1531.7
17.5°	1516.9	1515.3	1513.7	1512.1	1510.4	1507.6	1503.5	1499.5	1495.4	1491.4	1493.2
20°	1490.0	1488.1	1486.2	1484.3	1482.6	1479.5	1475.5	1471.5	1467.4	1463.4	1464.6
22.5°	1459.7	1457.9	1456.0	1454.1	1452.2	1449.3	1445.2	1441.2	1437.2	1433.1	1434.0
25°	1410.1	1408.2	1406.3	1404.4	1402.7	1399.6	1395.6	1391.6	1387.5	1383.5	1383.8
27.5°	1357.1	1355.3	1353.5	1351.7	1349.9	1346.8	1342.5	1338.1	1333.7	1329.4	1329.6
30°	1319.0	1317.4	1315.9	1314.3	1312.8	1309.8	1305.5	1301.1	1296.7	1292.4	1292.4
32.5°	1280.9	1278.8	1276.8	1274.7	1272.6	1269.9	1266.6	1263.2	1259.8	1256.5	1254.7
35°	1219.5	1217.6	1215.8	1213.9	1212.0	1209.1	1205.0	1201.0	1196.9	1192.8	1191.0
37.5°	1156.6	1154.3	1151.9	1149.6	1147.2	1144.0	1139.9	1135.8	1131.7	1127.5	1125.2
40°	1112.9	1111.1	1109.2	1107.3	1105.5	1102.3	1098.0	1093.6	1089.2	1084.9	1082.4
42.5°	1069.2	1067.1	1065.0	1062.8	1060.7	1057.5	1053.1	1048.7	1044.4	1040.1	1037.6
45°	999.4	998.2	996.9	995.7	994.4	991.8	987.7	983.6	979.6	975.5	971.9
47.5°	930.1	928.4	926.6	924.7	922.9	920.2	916.3	912.5	908.7	904.9	901.3
50°	883.1	881.5	879.9	878.4	876.8	874.1	870.0	865.9	861.8	857.8	854.4
52.5°	833.7	832.7	831.6	830.5	829.5	826.8	822.5	818.2	814.0	809.6	806.6
55°	758.3	758.0	757.7	757.4	757.1	754.9	750.8	746.8	742.7	738.7	735.3
57.5°	686.5	685.5	684.4	683.4	682.3	680.2	676.9	673.7	670.5	667.2	664.1
60°	635.0	634.6	634.4	634.0	633.7	631.7	627.9	624.2	620.5	616.7	613.9
62.5°	589.0	588.2	587.4	586.6	585.8	583.4	579.7	576.0	572.3	568.6	565.7
65°	517.2	515.7	514.1	512.6	511.0	508.6	505.5	502.4	499.3	496.2	493.7
67.5°	441.2	439.9	438.5	437.1	435.8	433.9	431.5	429.2	426.8	424.5	422.2
70°	395.3	393.4	391.6	389.7	387.8	385.9	384.1	382.2	380.3	378.4	376.3
72.5°	347.1	345.7	344.3	343.0	341.6	339.8	337.7	335.6	333.5	331.4	329.4
75°	273.3	272.1	270.8	269.6	268.3	267.2	266.4	265.4	264.5	263.5	262.0
77.5°	208.0	207.3	206.6	206.0	205.3	204.4	203.2	202.2	201.0	199.9	198.9
80°	165.4	164.4	163.5	162.6	161.7	160.9	160.2	159.6	159.0	158.4	158.1
82.5°	123.9	123.7	123.5	123.3	123.1	123.0	122.9	122.8	122.6	122.5	122.0
85°	72.9	72.2	71.6	71.0	70.4	70.1	70.1	70.1	70.1	70.1	69.5
87.5°	29.2	28.6	28.1	27.6	26.9	26.7	26.7	26.7	26.7	26.6	26.4
90°	0.4	1.3	2.2	3.1	4.0	5.0	6.2	7.4	8.6	9.7	10.1
92.5°	9.8	10.4	11.0	11.6	12.2	12.8	13.6	14.2	14.9	15.5	15.8
95°	23.8	24.4	25.1	25.8	26.4	27.0	27.7	28.4	29.2	29.9	30.2
97.5°	42.4	42.8	43.2	43.8	44.2	44.7	45.2	45.7	46.3	46.8	47.2
100°	54.9	55.5	56.0	56.5	57.1	57.6	58.1	58.5	58.9	59.4	59.7
102.5°	69.5	69.8	70.2	70.4	70.8	71.2	71.9	72.4	73.0	73.7	73.9
105°	91.0	91.1	91.3	91.5	91.7	92.1	92.9	93.7	94.5	95.3	95.3
107.5°	115.8	115.9	116.0	116.1	116.3	116.5	116.8	117.1	117.4	117.8	118.1
110°	131.3	131.5	131.7	131.9	132.1	132.2	132.4	132.6	132.8	133.0	133.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	147.5	147.6	147.8	147.8	147.9	148.0	148.0	148.1	148.1	148.1	148.6
115°	171.7	172.0	172.3	172.5	172.8	172.9	172.7	172.5	172.4	172.2	172.3
117.5°	196.2	196.4	196.5	196.7	196.9	196.8	196.6	196.4	196.2	195.9	195.9
120°	211.3	211.9	212.4	212.9	213.5	213.6	213.1	212.7	212.2	211.8	211.7
122.5°	227.2	227.6	228.0	228.4	228.7	228.8	228.6	228.4	228.2	227.9	227.7
125°	251.4	251.6	251.9	252.2	252.4	252.4	252.3	252.1	251.9	251.7	251.4
127.5°	273.7	274.2	274.8	275.4	276.0	276.2	276.0	275.7	275.5	275.4	274.8
130°	288.6	289.3	290.0	290.7	291.4	291.6	291.3	291.1	290.8	290.5	290.2
132.5°	303.4	304.1	304.9	305.6	306.3	306.6	306.3	306.1	305.9	305.8	305.3
135°	326.1	326.6	327.2	327.7	328.2	328.5	328.4	328.3	328.2	328.1	327.8
137.5°	347.1	347.6	348.0	348.5	348.9	349.3	349.5	349.7	350.0	350.2	349.8
140°	361.7	362.1	362.6	363.0	363.5	363.7	363.8	363.9	364.0	364.1	364.0
142.5°	375.0	375.4	375.9	376.3	376.7	377.0	377.2	377.4	377.6	377.6	377.6
145°	395.7	395.8	396.0	396.2	396.4	396.5	396.8	397.1	397.3	397.6	397.5
147.5°	413.8	414.0	414.4	414.6	415.0	415.3	415.5	415.8	416.1	416.3	416.3
150°	426.3	426.5	426.7	426.9	427.0	427.2	427.4	427.6	427.8	427.9	427.9
152.5°	436.7	436.9	437.2	437.4	437.7	437.8	437.9	438.1	438.2	438.3	438.5
155°	453.0	453.0	453.0	453.0	453.0	453.1	453.2	453.3	453.3	453.4	453.8
157.5°	466.9	466.8	466.7	466.5	466.5	466.5	466.5	466.6	466.6	466.7	467.1
160°	475.6	475.5	475.3	475.1	474.9	474.8	474.8	474.8	474.8	474.8	475.3
162.5°	483.4	483.1	482.9	482.6	482.4	482.3	482.3	482.4	482.5	482.6	483.0
165°	493.4	493.1	492.8	492.6	492.3	492.2	492.2	492.2	492.2	492.2	492.8
167.5°	501.4	501.1	500.7	500.3	500.0	499.8	499.9	500.0	500.1	500.1	500.7
170°	506.0	505.6	505.2	504.9	504.5	504.4	504.4	504.4	504.4	504.4	505.0
172.5°	509.5	509.2	508.8	508.5	508.0	507.8	507.8	507.8	507.8	507.8	508.5
175°	513.2	512.8	512.5	512.1	511.8	511.6	511.6	511.6	511.6	511.6	512.1
177.5°	514.8	514.4	514.2	513.9	513.6	513.4	513.4	513.4	513.4	513.4	513.9
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1
2.5°	1623.9	1626.4	1628.9	1630.0	1629.8	1629.5	1629.2	1629.1
5°	1615.3	1618.5	1621.6	1622.8	1622.2	1621.6	1621.0	1620.3
7.5°	1598.2	1601.0	1603.8	1605.0	1604.6	1604.3	1603.9	1603.6
10°	1582.5	1585.3	1588.1	1589.2	1588.6	1588.0	1587.3	1586.7
12.5°	1565.3	1567.4	1569.4	1570.3	1569.9	1569.5	1569.1	1568.8
15°	1534.2	1536.7	1539.2	1539.5	1537.7	1535.8	1533.9	1532.0
17.5°	1494.9	1496.6	1498.3	1498.9	1498.3	1497.5	1496.8	1496.2
20°	1465.9	1467.1	1468.4	1468.5	1467.6	1466.6	1465.7	1464.7
22.5°	1435.1	1436.1	1437.1	1437.0	1435.8	1434.6	1433.4	1432.3
25°	1384.1	1384.4	1384.7	1384.4	1383.5	1382.5	1381.6	1380.6
27.5°	1329.9	1330.1	1330.3	1329.9	1328.7	1327.5	1326.3	1325.2
30°	1292.4	1292.4	1292.4	1291.3	1289.1	1286.9	1284.7	1282.5
32.5°	1252.9	1251.2	1249.5	1248.0	1246.9	1245.6	1244.5	1243.3
35°	1189.1	1187.2	1185.4	1183.7	1182.1	1180.5	1178.9	1177.4
37.5°	1123.0	1120.8	1118.6	1117.0	1115.9	1114.9	1113.9	1112.9
40°	1080.0	1077.5	1075.0	1073.1	1071.8	1070.6	1069.3	1068.1
42.5°	1035.1	1032.6	1030.1	1028.2	1027.0	1025.7	1024.5	1023.2
45°	968.1	964.4	960.6	958.0	956.4	954.8	953.3	951.7
47.5°	897.6	893.9	890.2	887.7	886.4	884.9	883.6	882.3
50°	851.0	847.6	844.1	841.5	839.6	837.8	835.9	834.0
52.5°	803.8	800.8	797.9	795.5	793.6	791.8	789.9	788.0
55°	731.8	728.4	725.0	722.5	720.9	719.3	717.8	716.2
57.5°	661.1	658.1	655.0	652.6	650.8	649.0	647.1	645.3
60°	611.2	608.3	605.6	603.3	601.8	600.2	598.7	597.1
62.5°	562.9	560.1	557.3	555.4	554.3	553.2	552.2	551.2
65°	491.2	488.7	486.2	484.6	483.6	482.7	481.7	480.8
67.5°	420.1	417.9	415.7	413.9	412.7	411.3	410.0	408.8
70°	374.1	371.9	369.7	367.8	366.3	364.7	363.2	361.7
72.5°	327.5	325.6	323.6	322.3	321.5	320.7	319.9	319.1
75°	260.4	258.9	257.3	256.0	255.1	254.1	253.2	252.3
77.5°	197.8	196.7	195.6	195.1	195.1	195.1	195.1	195.1
80°	157.7	157.5	157.1	157.0	157.0	157.0	157.0	157.0
82.5°	121.4	120.8	120.3	119.8	119.6	119.4	119.1	118.9
85°	68.8	68.2	67.6	67.3	67.3	67.3	67.3	67.3
87.5°	26.2	26.0	25.9	25.9	25.9	25.9	25.9	25.9
90°	10.4	10.8	11.1	11.4	11.6	11.8	11.9	12.1
92.5°	16.1	16.4	16.7	16.8	16.7	16.5	16.4	16.3
95°	30.6	30.9	31.3	31.5	31.5	31.5	31.5	31.5
97.5°	47.6	48.1	48.4	48.6	48.6	48.6	48.5	48.5
100°	59.9	60.2	60.5	60.7	60.9	61.1	61.3	61.4
102.5°	74.2	74.5	74.7	74.8	74.8	74.7	74.7	74.6
105°	95.3	95.3	95.3	95.4	95.7	95.9	96.0	96.2
107.5°	118.3	118.6	118.9	119.0	118.9	118.8	118.7	118.6
110°	133.7	134.0	134.4	134.5	134.3	134.1	133.9	133.8



TEST NUMBER: P332215-940

CATALOG NUMBER: S123DIW-S1165D460U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	149.0	149.5	149.9	150.1	150.0	150.0	150.0	149.9
115°	172.4	172.5	172.5	172.5	172.5	172.4	172.3	172.2
117.5°	195.9	195.8	195.8	195.7	195.5	195.2	194.9	194.7
120°	211.6	211.5	211.4	211.2	211.1	210.9	210.7	210.5
122.5°	227.5	227.2	226.9	226.8	226.5	226.2	226.0	225.7
125°	251.0	250.7	250.3	249.9	249.6	249.2	248.9	248.5
127.5°	274.4	273.8	273.3	272.9	272.5	272.1	271.6	271.3
130°	289.8	289.4	289.1	288.6	288.0	287.4	286.8	286.1
132.5°	304.9	304.4	304.0	303.5	303.1	302.6	302.1	301.6
135°	327.4	327.1	326.7	326.5	326.3	326.1	325.9	325.7
137.5°	349.5	349.1	348.7	348.3	347.9	347.7	347.3	347.0
140°	363.9	363.8	363.7	363.4	362.7	362.1	361.5	360.9
142.5°	377.5	377.4	377.3	377.0	376.6	376.0	375.6	375.1
145°	397.4	397.3	397.3	397.1	396.7	396.4	396.0	395.7
147.5°	416.3	416.3	416.3	416.1	415.5	414.9	414.4	413.8
150°	427.9	427.9	427.9	427.7	427.1	426.6	426.1	425.5
152.5°	438.5	438.7	438.9	438.7	438.3	437.7	437.3	436.8
155°	454.1	454.5	454.9	454.7	454.1	453.4	452.8	452.2
157.5°	467.5	467.9	468.2	468.1	467.7	467.2	466.6	466.2
160°	475.7	476.2	476.6	476.6	476.3	475.9	475.5	475.2
162.5°	483.5	483.9	484.4	484.3	483.8	483.1	482.6	482.0
165°	493.3	493.8	494.4	494.3	493.7	493.0	492.4	491.8
167.5°	501.2	501.8	502.3	502.3	501.8	501.2	500.7	500.1
170°	505.6	506.2	506.8	506.8	506.2	505.6	505.0	504.4
172.5°	509.0	509.5	510.1	510.1	509.4	508.8	508.2	507.6
175°	512.6	513.2	513.7	513.7	513.1	512.5	511.8	511.2
177.5°	514.3	514.8	515.1	515.1	514.6	514.2	513.6	513.1
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4

(END OF REPORT)