

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: P332215-830

Luminaire Tested: **S123DIW-S1165D460U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332215-830  
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: S123DIW-S1165D460U830-4F0-1E-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: 5991.8 lumens  
Efficiency: N/A  
Efficacy: 114.3 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

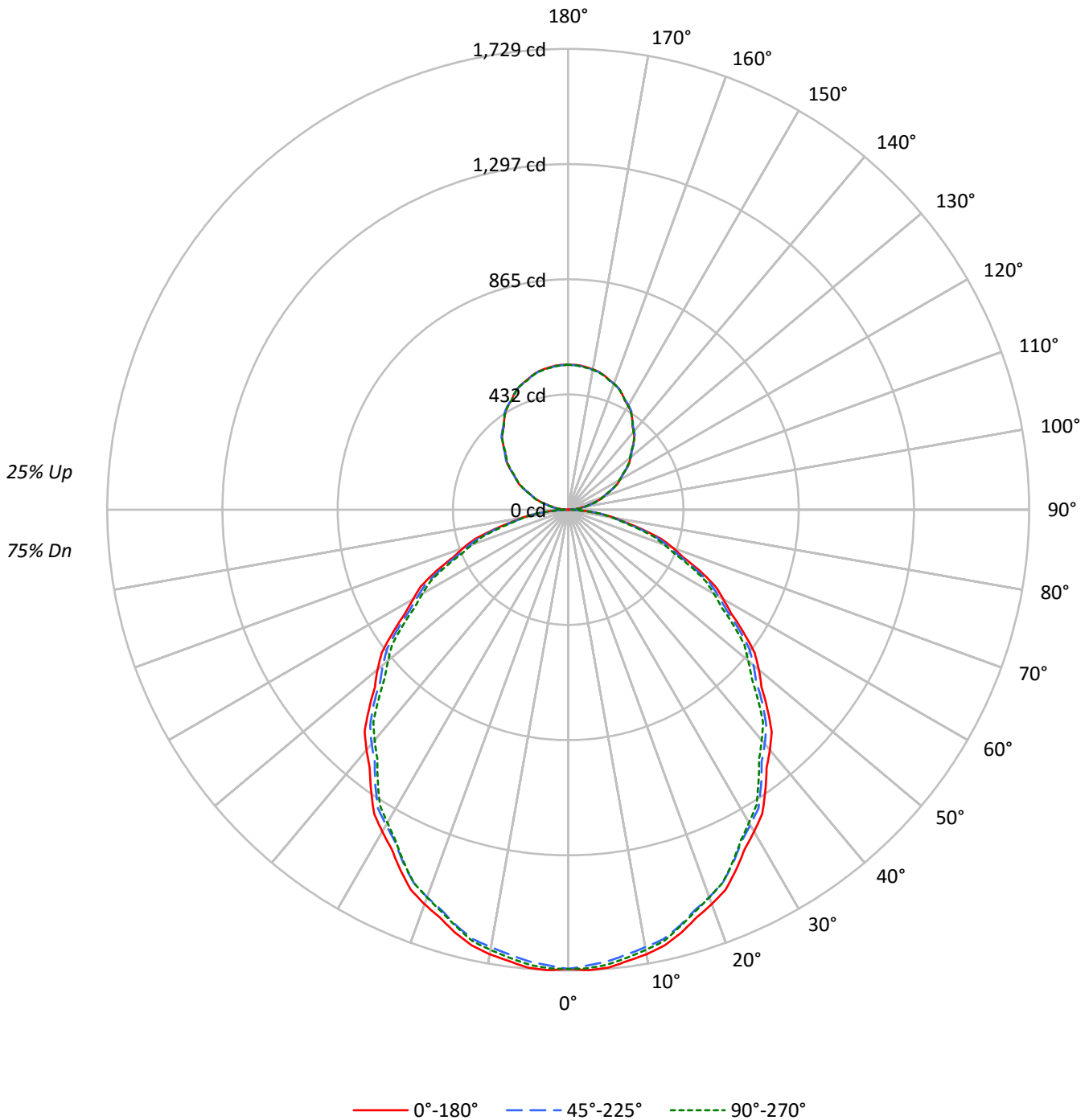
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	18547	18547	18547
5°	18634	18377	18506
10°	18510	18218	18332
15°	18293	18013	18046
20°	18040	17718	17734
25°	17701	17368	17332
30°	17329	16978	16850
35°	16938	16567	16353
40°	16530	16114	15864
45°	16081	15696	15314
50°	15630	15183	14763
55°	15041	14653	14208
60°	14449	14034	13586
65°	13924	13359	12944
70°	13149	12589	12032
75°	12015	11582	11088
80°	10835	10377	10290
85°	9510	9152	8793



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.3	2.7
10°-20°	458.3	7.6
20°-30°	677.0	11.3
30°-40°	790.8	13.2
40°-50°	795.1	13.3
50°-60°	698.4	11.7
60°-70°	520.3	8.7
70°-80°	296.4	4.9
80°-90°	86.7	1.4
90°-100°	35.4	0.6
100°-110°	106.0	1.8
110°-120°	180.3	3.0
120°-130°	237.2	4.0
130°-140°	266.6	4.4
140°-150°	262.1	4.4
150°-160°	220.6	3.7
160°-170°	146.9	2.5
170°-180°	51.4	0.9
0°-30°	1297.6	21.7
0°-40°	2088.4	34.9
0°-60°	3581.8	59.8
0°-90°	4485.2	74.9
90°-120°	321.8	5.4
90°-150°	1087.6	18.2
90°-180°	1507.0	25.2
0°-180°	5991.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1723	1723	1723	1723	1723	
5°	1725	1717	1701	1715	1713	163
15°	1642	1635	1616	1627	1619	463
25°	1490	1481	1462	1464	1459	686
35°	1289	1280	1261	1252	1244	806
45°	1056	1050	1031	1014	1006	815
55°	802	799	781	765	757	718
65°	547	539	524	513	508	539
75°	289	283	278	271	267	309
85°	77	74	74	71	71	85
90°	0	5	10	12	13	6
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°	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1
2.5°	1729.0	1728.0	1726.9	1725.9	1724.8	1722.8	1720.0	1717.0	1714.1	1711.2	1713.8
5°	1724.6	1723.0	1721.3	1719.7	1718.0	1715.3	1711.8	1708.1	1704.5	1700.8	1704.1
7.5°	1707.7	1706.0	1704.4	1702.7	1701.1	1698.4	1694.6	1690.9	1687.2	1683.4	1686.3
10°	1693.5	1691.8	1690.2	1688.5	1686.9	1683.9	1679.6	1675.4	1671.0	1666.8	1669.7
12.5°	1674.5	1673.1	1671.7	1670.4	1669.0	1666.2	1662.3	1658.2	1654.2	1650.2	1652.4
15°	1641.6	1640.3	1639.0	1637.7	1636.3	1633.5	1629.3	1624.9	1620.7	1616.4	1619.0
17.5°	1603.4	1601.7	1600.0	1598.3	1596.5	1593.6	1589.2	1585.0	1580.6	1576.4	1578.3
20°	1574.9	1572.9	1570.9	1569.0	1567.1	1563.9	1559.6	1555.4	1551.0	1546.8	1548.1
22.5°	1542.9	1541.0	1539.0	1537.0	1535.0	1531.9	1527.6	1523.3	1519.1	1514.8	1515.8
25°	1490.4	1488.5	1486.5	1484.5	1482.6	1479.4	1475.2	1470.9	1466.6	1462.4	1462.6
27.5°	1434.5	1432.6	1430.7	1428.7	1426.8	1423.6	1419.0	1414.4	1409.8	1405.1	1405.4
30°	1394.2	1392.5	1390.9	1389.2	1387.6	1384.5	1379.9	1375.3	1370.6	1366.0	1366.0
32.5°	1353.9	1351.7	1349.5	1347.4	1345.2	1342.3	1338.8	1335.2	1331.6	1328.1	1326.3
35°	1289.0	1287.0	1285.1	1283.1	1281.1	1278.0	1273.7	1269.4	1265.1	1260.8	1258.9
37.5°	1222.6	1220.1	1217.6	1215.1	1212.6	1209.2	1204.9	1200.5	1196.2	1191.8	1189.4
40°	1176.4	1174.4	1172.4	1170.4	1168.5	1165.2	1160.6	1155.9	1151.3	1146.8	1144.2
42.5°	1130.1	1127.9	1125.7	1123.4	1121.2	1117.8	1113.1	1108.5	1103.9	1099.4	1096.7
45°	1056.4	1055.1	1053.8	1052.4	1051.1	1048.3	1044.1	1039.7	1035.5	1031.1	1027.3
47.5°	983.2	981.3	979.4	977.4	975.5	972.6	968.6	964.5	960.5	956.5	952.6
50°	933.4	931.8	930.1	928.5	926.8	923.9	919.5	915.3	911.0	906.7	903.1
52.5°	881.3	880.1	879.0	877.9	876.8	873.9	869.4	864.9	860.4	855.7	852.6
55°	801.5	801.3	800.9	800.6	800.2	798.0	793.6	789.4	785.0	780.8	777.2
57.5°	725.7	724.5	723.4	722.4	721.2	719.0	715.5	712.1	708.7	705.2	702.0
60°	671.2	670.8	670.5	670.1	669.9	667.7	663.7	659.8	655.8	651.9	648.9
62.5°	622.5	621.7	620.9	620.0	619.2	616.7	612.7	608.8	604.9	601.0	597.9
65°	546.7	545.1	543.4	541.8	540.1	537.6	534.3	531.0	527.7	524.5	521.9
67.5°	466.4	465.0	463.5	462.0	460.6	458.6	456.1	453.6	451.1	448.7	446.3
70°	417.8	415.8	413.9	411.9	409.9	407.9	406.0	404.0	402.0	400.0	397.8
72.5°	366.8	365.4	363.9	362.5	361.1	359.2	356.9	354.7	352.5	350.2	348.2
75°	288.9	287.6	286.3	284.9	283.6	282.5	281.5	280.5	279.6	278.5	276.9
77.5°	219.9	219.1	218.4	217.7	217.0	216.0	214.8	213.7	212.4	211.3	210.2
80°	174.8	173.8	172.9	171.8	170.9	170.0	169.4	168.7	168.1	167.4	167.1
82.5°	131.0	130.7	130.5	130.4	130.2	130.0	129.9	129.8	129.6	129.5	128.9
85°	77.0	76.3	75.7	75.0	74.4	74.1	74.1	74.1	74.1	74.1	73.4
87.5°	30.9	30.3	29.7	29.1	28.5	28.2	28.2	28.2	28.2	28.1	27.9
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°	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1
2.5°	1716.5	1719.1	1721.7	1723.0	1722.7	1722.4	1722.1	1721.9
5°	1707.4	1710.7	1714.0	1715.3	1714.7	1714.0	1713.4	1712.7
7.5°	1689.3	1692.2	1695.3	1696.5	1696.1	1695.7	1695.4	1695.0
10°	1672.7	1675.7	1678.7	1679.8	1679.1	1678.5	1677.8	1677.2
12.5°	1654.5	1656.7	1658.9	1659.8	1659.3	1659.0	1658.6	1658.2
15°	1621.6	1624.3	1626.9	1627.3	1625.3	1623.3	1621.4	1619.4
17.5°	1580.1	1582.0	1583.8	1584.3	1583.7	1582.9	1582.2	1581.5
20°	1549.4	1550.8	1552.1	1552.2	1551.2	1550.2	1549.3	1548.2
22.5°	1516.9	1518.0	1519.0	1518.9	1517.7	1516.4	1515.1	1513.9
25°	1463.0	1463.3	1463.7	1463.3	1462.4	1461.3	1460.4	1459.3
27.5°	1405.7	1405.9	1406.2	1405.7	1404.5	1403.2	1401.9	1400.7
30°	1366.0	1366.0	1366.0	1364.9	1362.5	1360.3	1357.9	1355.7
32.5°	1324.4	1322.6	1320.7	1319.2	1318.0	1316.6	1315.4	1314.2
35°	1256.9	1254.9	1252.9	1251.1	1249.4	1247.8	1246.1	1244.5
37.5°	1187.0	1184.7	1182.3	1180.6	1179.5	1178.5	1177.4	1176.4
40°	1141.5	1138.9	1136.2	1134.3	1132.9	1131.6	1130.3	1129.0
42.5°	1094.1	1091.5	1088.8	1086.8	1085.5	1084.2	1082.9	1081.6
45°	1023.3	1019.4	1015.4	1012.6	1011.0	1009.3	1007.7	1006.0
47.5°	948.8	944.9	940.9	938.3	936.9	935.4	934.0	932.6
50°	899.5	895.9	892.2	889.5	887.5	885.5	883.5	881.6
52.5°	849.6	846.5	843.4	840.8	838.9	836.9	834.9	832.9
55°	773.5	770.0	766.3	763.6	762.0	760.3	758.7	757.1
57.5°	698.8	695.6	692.3	689.8	687.9	686.0	684.0	682.1
60°	646.0	643.0	640.1	637.7	636.1	634.4	632.8	631.1
62.5°	595.0	592.0	589.1	587.0	585.9	584.8	583.7	582.6
65°	519.2	516.6	514.0	512.2	511.1	510.2	509.2	508.2
67.5°	444.0	441.7	439.4	437.5	436.2	434.8	433.4	432.1
70°	395.4	393.1	390.8	388.8	387.2	385.5	383.9	382.3
72.5°	346.2	344.1	342.0	340.6	339.8	338.9	338.1	337.2
75°	275.2	273.6	271.9	270.6	269.7	268.6	267.7	266.6
77.5°	209.1	207.9	206.8	206.2	206.2	206.2	206.2	206.2
80°	166.7	166.5	166.1	166.0	166.0	166.0	166.0	166.0
82.5°	128.3	127.7	127.1	126.7	126.4	126.2	125.9	125.6
85°	72.8	72.1	71.4	71.2	71.2	71.2	71.2	71.2
87.5°	27.7	27.5	27.3	27.3	27.3	27.3	27.4	27.4
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: P332215-830

CATALOG NUMBER: S123DIW-S1165D460U830-4F0-1E-UDD-F1

**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)