

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: P332215-840

Luminaire Tested: **S123DIW-S1165D460U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332215-840
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-S1165D460U840-4F0-1E-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: 6419.7 lumens
Efficiency: N/A
Efficacy: 122.5 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

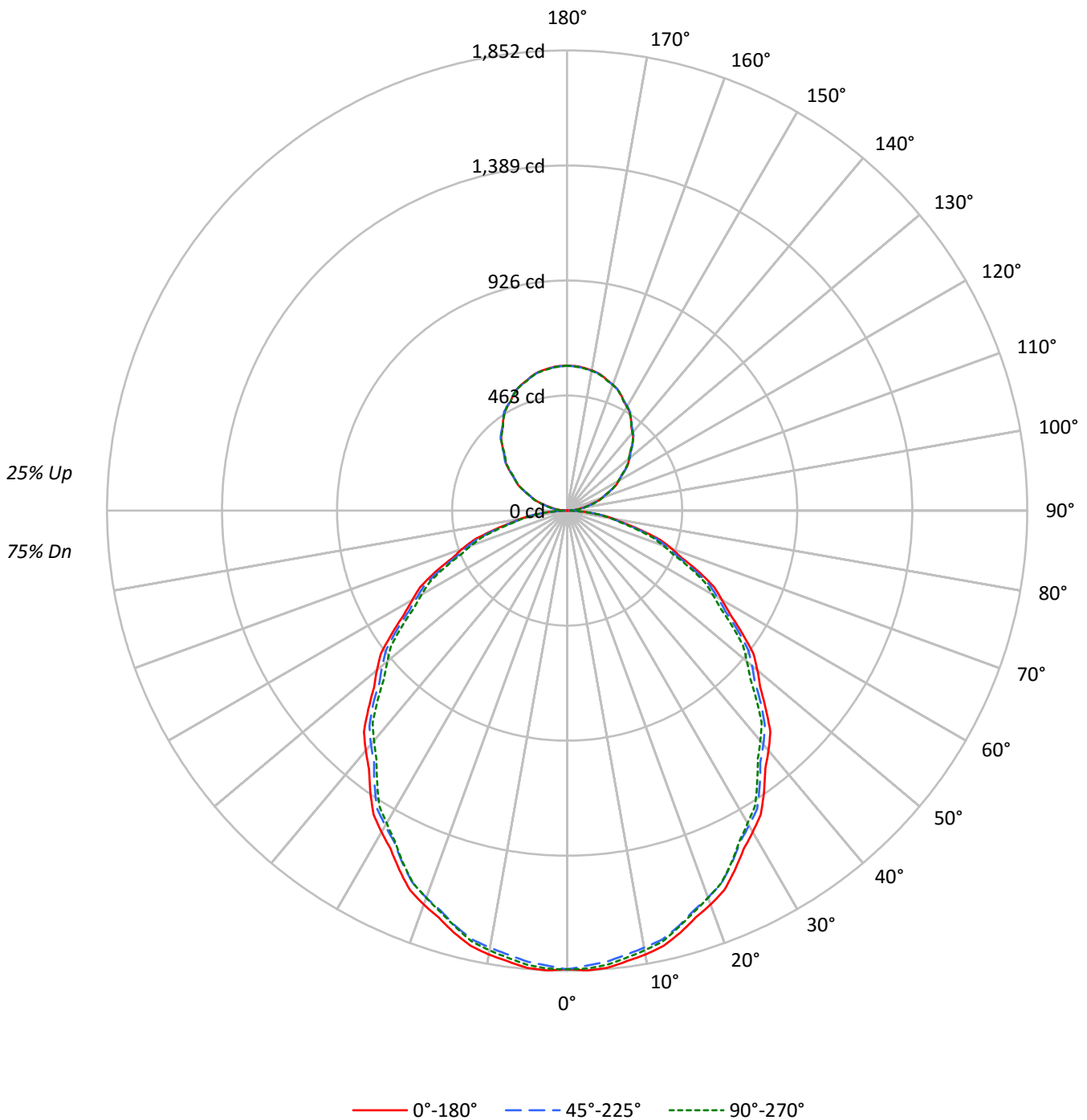
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332215-840

CATALOG NUMBER: S123DIW-S1165D460U840-4F0-1E-UDD-F1

Luminous Intensity Polar Plot





TEST NUMBER: P332215-840

CATALOG NUMBER: S123DIW-S1165D460U840-4F0-1E-UDD-F1

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20						20								20		
RC	80					70						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°	19871	19871	19871
5°	19966	19690	19827
10°	19831	19519	19641
15°	19601	19299	19334
20°	19329	18984	19001
25°	18966	18608	18570
30°	18567	18191	18053
35°	18148	17751	17521
40°	17710	17265	16996
45°	17230	16818	16407
50°	16747	16268	15816
55°	16117	15700	15221
60°	15481	15035	14557
65°	14918	14314	13868
70°	14090	13489	12891
75°	12872	12410	11882
80°	11610	11120	11021
85°	10189	9806	9411



TEST NUMBER: P332215-840

CATALOG NUMBER: S123DIW-S1165D460U840-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	173.9	2.7
10°-20°	491.0	7.6
20°-30°	725.3	11.3
30°-40°	847.3	13.2
40°-50°	851.8	13.3
50°-60°	748.3	11.7
60°-70°	557.5	8.7
70°-80°	317.6	4.9
80°-90°	92.9	1.4
90°-100°	37.9	0.6
100°-110°	113.6	1.8
110°-120°	193.2	3.0
120°-130°	254.1	4.0
130°-140°	285.6	4.4
140°-150°	280.8	4.4
150°-160°	236.4	3.7
160°-170°	157.3	2.5
170°-180°	55.1	0.9
0°-30°	1390.3	21.7
0°-40°	2237.6	34.9
0°-60°	3837.7	59.8
0°-90°	4805.6	74.9
90°-120°	344.8	5.4
90°-150°	1165.3	18.2
90°-180°	1614.0	25.1
0°-180°	6419.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1846	1846	1846	1846	1846	
5°	1848	1839	1822	1837	1835	175
15°	1759	1752	1732	1743	1735	496
25°	1597	1587	1567	1568	1564	735
35°	1381	1371	1351	1341	1333	864
45°	1132	1125	1105	1086	1078	873
55°	859	856	837	820	811	769
65°	586	577	562	550	544	578
75°	310	303	298	291	286	331
85°	82	80	79	76	76	91
90°	0	5	11	13	14	6
95°	27	30	34	36	36	30
105°	103	104	108	108	109	110
115°	194	196	195	195	195	192
125°	285	286	285	283	281	254
135°	369	372	372	370	369	284
145°	448	449	450	450	448	280
155°	513	513	514	515	512	236
165°	559	557	557	560	557	157
175°	581	580	579	582	579	55
180°	583	583	583	583	583	



TEST NUMBER: P332215-840

CATALOG NUMBER: S123DIW-S1165D460U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1
2.5°	1852.5	1851.4	1850.3	1849.2	1848.0	1845.8	1842.8	1839.7	1836.5	1833.4	1836.2
5°	1847.8	1846.0	1844.2	1842.5	1840.7	1837.9	1834.0	1830.1	1826.2	1822.3	1825.8
7.5°	1829.7	1827.9	1826.1	1824.3	1822.6	1819.7	1815.6	1811.7	1807.7	1803.6	1806.7
10°	1814.4	1812.6	1810.9	1809.1	1807.4	1804.2	1799.6	1795.0	1790.4	1785.8	1789.0
12.5°	1794.1	1792.6	1791.1	1789.7	1788.2	1785.2	1781.0	1776.7	1772.3	1768.1	1770.4
15°	1758.9	1757.5	1756.1	1754.6	1753.2	1750.2	1745.7	1741.0	1736.5	1731.8	1734.6
17.5°	1717.9	1716.1	1714.2	1712.4	1710.5	1707.4	1702.7	1698.2	1693.5	1689.0	1691.0
20°	1687.4	1685.3	1683.1	1681.0	1679.0	1675.6	1671.0	1666.5	1661.8	1657.3	1658.7
22.5°	1653.1	1651.0	1648.9	1646.8	1644.7	1641.3	1636.7	1632.1	1627.6	1623.0	1624.1
25°	1596.9	1594.8	1592.7	1590.5	1588.5	1585.1	1580.5	1576.0	1571.3	1566.8	1567.1
27.5°	1536.9	1534.9	1532.9	1530.8	1528.7	1525.3	1520.4	1515.4	1510.5	1505.5	1505.8
30°	1493.8	1492.0	1490.3	1488.4	1486.7	1483.4	1478.4	1473.5	1468.5	1463.6	1463.6
32.5°	1450.6	1448.2	1445.9	1443.6	1441.3	1438.1	1434.4	1430.6	1426.7	1423.0	1421.0
35°	1381.1	1379.0	1376.8	1374.7	1372.6	1369.3	1364.6	1360.1	1355.4	1350.9	1348.8
37.5°	1309.9	1307.3	1304.5	1301.9	1299.2	1295.6	1290.9	1286.3	1281.6	1276.9	1274.3
40°	1260.4	1258.3	1256.2	1254.1	1251.9	1248.4	1243.4	1238.5	1233.6	1228.7	1225.9
42.5°	1210.8	1208.5	1206.1	1203.7	1201.2	1197.6	1192.7	1187.7	1182.8	1177.9	1175.1
45°	1131.9	1130.4	1129.0	1127.6	1126.2	1123.2	1118.6	1114.0	1109.4	1104.8	1100.7
47.5°	1053.4	1051.4	1049.4	1047.2	1045.2	1042.1	1037.7	1033.4	1029.2	1024.8	1020.7
50°	1000.1	998.4	996.5	994.8	993.0	989.9	985.2	980.7	976.0	971.5	967.7
52.5°	944.2	943.0	941.8	940.6	939.4	936.3	931.5	926.7	921.8	916.9	913.5
55°	858.8	858.5	858.1	857.8	857.4	855.0	850.3	845.8	841.1	836.6	832.7
57.5°	777.5	776.3	775.1	774.0	772.7	770.3	766.6	763.0	759.3	755.6	752.1
60°	719.1	718.7	718.4	718.0	717.7	715.4	711.1	706.9	702.7	698.4	695.3
62.5°	667.0	666.1	665.2	664.3	663.4	660.8	656.5	652.3	648.1	643.9	640.7
65°	585.7	584.0	582.2	580.5	578.7	576.0	572.5	569.0	565.4	562.0	559.2
67.5°	499.7	498.2	496.7	495.0	493.5	491.4	488.7	486.0	483.3	480.7	478.2
70°	447.7	445.6	443.4	441.3	439.2	437.1	434.9	432.8	430.7	428.6	426.2
72.5°	393.0	391.5	389.9	388.4	386.9	384.9	382.4	380.0	377.7	375.3	373.0
75°	309.5	308.1	306.7	305.3	303.9	302.7	301.6	300.5	299.5	298.4	296.7
77.5°	235.6	234.8	234.0	233.3	232.5	231.5	230.1	228.9	227.6	226.4	225.2
80°	187.3	186.2	185.2	184.1	183.1	182.2	181.5	180.8	180.1	179.4	179.0
82.5°	140.4	140.1	139.9	139.7	139.5	139.3	139.2	139.1	138.9	138.8	138.1
85°	82.5	81.8	81.1	80.4	79.7	79.4	79.4	79.4	79.4	79.4	78.7
87.5°	33.1	32.4	31.8	31.2	30.5	30.2	30.2	30.2	30.2	30.1	29.9
90°	0.5	1.5	2.5	3.5	4.5	5.7	7.0	8.4	9.7	11.0	11.4
92.5°	11.1	11.8	12.4	13.1	13.8	14.5	15.3	16.1	16.9	17.6	17.9
95°	27.0	27.7	28.4	29.2	29.9	30.6	31.4	32.2	33.0	33.8	34.2
97.5°	48.0	48.5	49.0	49.6	50.1	50.6	51.2	51.8	52.4	53.0	53.4
100°	62.2	62.8	63.4	64.0	64.6	65.2	65.7	66.2	66.8	67.3	67.6
102.5°	78.7	79.1	79.5	79.8	80.2	80.7	81.4	82.0	82.7	83.4	83.7
105°	103.0	103.2	103.4	103.6	103.8	104.3	105.2	106.1	107.0	108.0	108.0
107.5°	131.2	131.3	131.4	131.5	131.7	131.9	132.3	132.6	133.0	133.4	133.7
110°	148.8	149.0	149.2	149.4	149.6	149.8	150.0	150.2	150.4	150.6	151.0



TEST NUMBER: P332215-840

CATALOG NUMBER: S123DIW-S1165D460U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	167.0	167.1	167.3	167.4	167.5	167.6	167.6	167.7	167.7	167.7	168.2
115°	194.5	194.8	195.1	195.4	195.7	195.8	195.6	195.4	195.2	195.0	195.1
117.5°	222.2	222.4	222.6	222.8	223.0	222.9	222.7	222.4	222.2	221.9	221.9
120°	239.3	239.9	240.5	241.2	241.8	241.9	241.4	240.9	240.3	239.8	239.7
122.5°	257.3	257.7	258.2	258.6	259.0	259.1	258.9	258.6	258.4	258.1	257.8
125°	284.7	285.0	285.3	285.6	285.9	285.9	285.7	285.5	285.3	285.1	284.7
127.5°	309.9	310.5	311.2	311.8	312.6	312.8	312.6	312.3	312.0	311.8	311.2
130°	326.8	327.6	328.4	329.2	330.0	330.2	329.9	329.6	329.3	329.0	328.6
132.5°	343.6	344.4	345.3	346.1	346.9	347.2	346.9	346.7	346.5	346.3	345.8
135°	369.3	369.9	370.5	371.1	371.7	372.0	371.9	371.8	371.7	371.6	371.2
137.5°	393.1	393.6	394.2	394.7	395.2	395.6	395.8	396.1	396.4	396.6	396.2
140°	409.6	410.1	410.6	411.1	411.6	411.9	412.0	412.1	412.2	412.3	412.2
142.5°	424.6	425.2	425.7	426.2	426.7	427.0	427.2	427.4	427.6	427.7	427.6
145°	448.1	448.3	448.5	448.7	448.9	449.1	449.4	449.7	450.0	450.3	450.2
147.5°	468.6	468.9	469.3	469.6	470.0	470.3	470.6	470.9	471.2	471.5	471.5
150°	482.8	483.0	483.2	483.4	483.6	483.8	484.0	484.2	484.4	484.6	484.6
152.5°	494.5	494.8	495.1	495.3	495.6	495.8	495.9	496.1	496.2	496.3	496.6
155°	513.0	513.0	513.0	513.0	513.0	513.1	513.2	513.3	513.4	513.5	513.9
157.5°	528.8	528.7	528.6	528.4	528.3	528.3	528.4	528.5	528.5	528.6	529.0
160°	538.7	538.5	538.3	538.1	537.9	537.8	537.8	537.8	537.8	537.8	538.3
162.5°	547.4	547.1	546.8	546.5	546.3	546.2	546.2	546.3	546.4	546.5	547.0
165°	558.8	558.5	558.2	557.8	557.5	557.4	557.4	557.4	557.4	557.4	558.1
167.5°	567.8	567.4	567.0	566.6	566.2	566.0	566.1	566.2	566.3	566.3	567.0
170°	573.0	572.6	572.2	571.8	571.4	571.2	571.2	571.2	571.2	571.2	571.9
172.5°	577.0	576.6	576.2	575.8	575.3	575.1	575.1	575.1	575.1	575.1	575.8
175°	581.2	580.8	580.4	580.0	579.6	579.4	579.4	579.4	579.4	579.4	580.0
177.5°	583.0	582.6	582.3	582.0	581.7	581.5	581.5	581.5	581.5	581.5	582.0
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6



TEST NUMBER: P332215-840

CATALOG NUMBER: S123DIW-S1165D460U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1
2.5°	1839.1	1841.9	1844.7	1846.0	1845.7	1845.4	1845.1	1844.9
5°	1829.4	1832.9	1836.4	1837.9	1837.1	1836.4	1835.7	1835.0
7.5°	1810.0	1813.1	1816.3	1817.7	1817.3	1816.8	1816.4	1816.0
10°	1792.2	1795.3	1798.6	1799.8	1799.1	1798.4	1797.7	1797.0
12.5°	1772.7	1775.0	1777.4	1778.4	1777.9	1777.5	1777.1	1776.7
15°	1737.5	1740.3	1743.1	1743.5	1741.4	1739.3	1737.2	1735.0
17.5°	1692.9	1695.0	1696.9	1697.5	1696.8	1696.0	1695.2	1694.5
20°	1660.1	1661.5	1662.9	1663.0	1662.0	1660.9	1659.9	1658.8
22.5°	1625.3	1626.4	1627.5	1627.4	1626.1	1624.7	1623.4	1622.0
25°	1567.5	1567.8	1568.2	1567.8	1566.8	1565.7	1564.7	1563.6
27.5°	1506.1	1506.3	1506.6	1506.1	1504.8	1503.4	1502.1	1500.8
30°	1463.6	1463.6	1463.6	1462.4	1459.9	1457.4	1454.9	1452.5
32.5°	1419.0	1417.0	1415.0	1413.4	1412.1	1410.7	1409.4	1408.1
35°	1346.7	1344.5	1342.4	1340.5	1338.7	1337.0	1335.1	1333.4
37.5°	1271.8	1269.3	1266.8	1265.0	1263.7	1262.6	1261.5	1260.4
40°	1223.0	1220.2	1217.4	1215.3	1213.9	1212.4	1211.0	1209.6
42.5°	1172.3	1169.4	1166.6	1164.5	1163.1	1161.6	1160.2	1158.8
45°	1096.4	1092.2	1087.9	1084.9	1083.2	1081.4	1079.6	1077.8
47.5°	1016.5	1012.4	1008.1	1005.3	1003.8	1002.2	1000.7	999.2
50°	963.7	959.9	955.9	953.0	950.9	948.8	946.6	944.5
52.5°	910.3	907.0	903.6	900.9	898.8	896.7	894.5	892.4
55°	828.8	825.0	821.0	818.2	816.5	814.7	812.9	811.1
57.5°	748.7	745.3	741.7	739.0	737.0	735.0	732.9	730.8
60°	692.2	688.9	685.8	683.3	681.6	679.7	678.0	676.2
62.5°	637.5	634.3	631.2	628.9	627.7	626.5	625.4	624.2
65°	556.3	553.5	550.7	548.8	547.6	546.6	545.5	544.5
67.5°	475.7	473.2	470.8	468.8	467.4	465.9	464.3	462.9
70°	423.6	421.2	418.7	416.6	414.9	413.0	411.3	409.6
72.5°	370.9	368.7	366.5	365.0	364.1	363.1	362.2	361.3
75°	294.9	293.2	291.3	289.9	288.9	287.8	286.8	285.7
77.5°	224.0	222.8	221.6	221.0	221.0	221.0	221.0	221.0
80°	178.6	178.3	177.9	177.8	177.8	177.8	177.8	177.8
82.5°	137.4	136.8	136.2	135.7	135.4	135.2	134.9	134.6
85°	78.0	77.3	76.5	76.2	76.2	76.2	76.2	76.2
87.5°	29.7	29.5	29.3	29.3	29.3	29.3	29.4	29.4
90°	11.8	12.2	12.6	12.9	13.1	13.3	13.5	13.7
92.5°	18.2	18.6	18.9	19.0	18.9	18.7	18.6	18.5
95°	34.6	35.0	35.4	35.6	35.6	35.6	35.6	35.6
97.5°	53.9	54.4	54.8	55.0	55.0	55.0	54.9	54.9
100°	67.9	68.2	68.5	68.8	69.0	69.2	69.4	69.6
102.5°	84.0	84.3	84.6	84.7	84.7	84.6	84.6	84.5
105°	108.0	108.0	108.0	108.1	108.4	108.6	108.8	109.0
107.5°	134.0	134.3	134.6	134.7	134.6	134.5	134.4	134.3
110°	151.4	151.8	152.2	152.3	152.1	151.9	151.7	151.5



TEST NUMBER: P332215-840

CATALOG NUMBER: S123DIW-S1165D460U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	168.7	169.3	169.8	170.0	169.9	169.9	169.9	169.8
115°	195.2	195.3	195.4	195.4	195.3	195.2	195.1	195.0
117.5°	221.9	221.8	221.8	221.7	221.4	221.1	220.8	220.5
120°	239.6	239.5	239.4	239.2	239.0	238.8	238.6	238.4
122.5°	257.6	257.3	257.0	256.8	256.5	256.2	255.9	255.6
125°	284.3	283.9	283.5	283.1	282.7	282.3	281.9	281.4
127.5°	310.7	310.1	309.5	309.0	308.6	308.1	307.6	307.2
130°	328.2	327.8	327.4	326.9	326.2	325.5	324.8	324.0
132.5°	345.3	344.8	344.3	343.8	343.3	342.6	342.1	341.5
135°	370.8	370.4	370.0	369.7	369.5	369.3	369.1	368.9
137.5°	395.8	395.4	394.9	394.5	394.0	393.7	393.3	392.9
140°	412.1	412.0	411.9	411.5	410.8	410.1	409.4	408.7
142.5°	427.5	427.4	427.3	427.0	426.5	425.9	425.4	424.7
145°	450.1	450.0	449.9	449.7	449.3	448.9	448.5	448.1
147.5°	471.5	471.5	471.5	471.2	470.6	469.9	469.3	468.7
150°	484.6	484.6	484.6	484.3	483.7	483.1	482.5	481.9
152.5°	496.7	496.9	497.1	496.9	496.3	495.7	495.2	494.7
155°	514.3	514.7	515.1	514.9	514.2	513.5	512.8	512.1
157.5°	529.5	529.9	530.3	530.2	529.7	529.1	528.5	528.0
160°	538.8	539.3	539.8	539.8	539.4	539.0	538.6	538.2
162.5°	547.5	548.1	548.6	548.5	547.9	547.1	546.5	545.8
165°	558.7	559.3	559.9	559.8	559.1	558.4	557.6	556.9
167.5°	567.6	568.3	568.9	568.9	568.3	567.6	567.0	566.3
170°	572.6	573.3	574.0	574.0	573.3	572.6	571.9	571.2
172.5°	576.4	577.0	577.6	577.6	576.9	576.2	575.5	574.8
175°	580.6	581.2	581.8	581.8	581.1	580.4	579.7	579.0
177.5°	582.5	583.0	583.4	583.4	582.8	582.3	581.7	581.1
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6

(END OF REPORT)