

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: P332678-830

Luminaire Tested: **S124DIP-S1195D365U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332678-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1195D365U830-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6054.2 lumens
Efficiency: N/A
Efficacy: 121.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

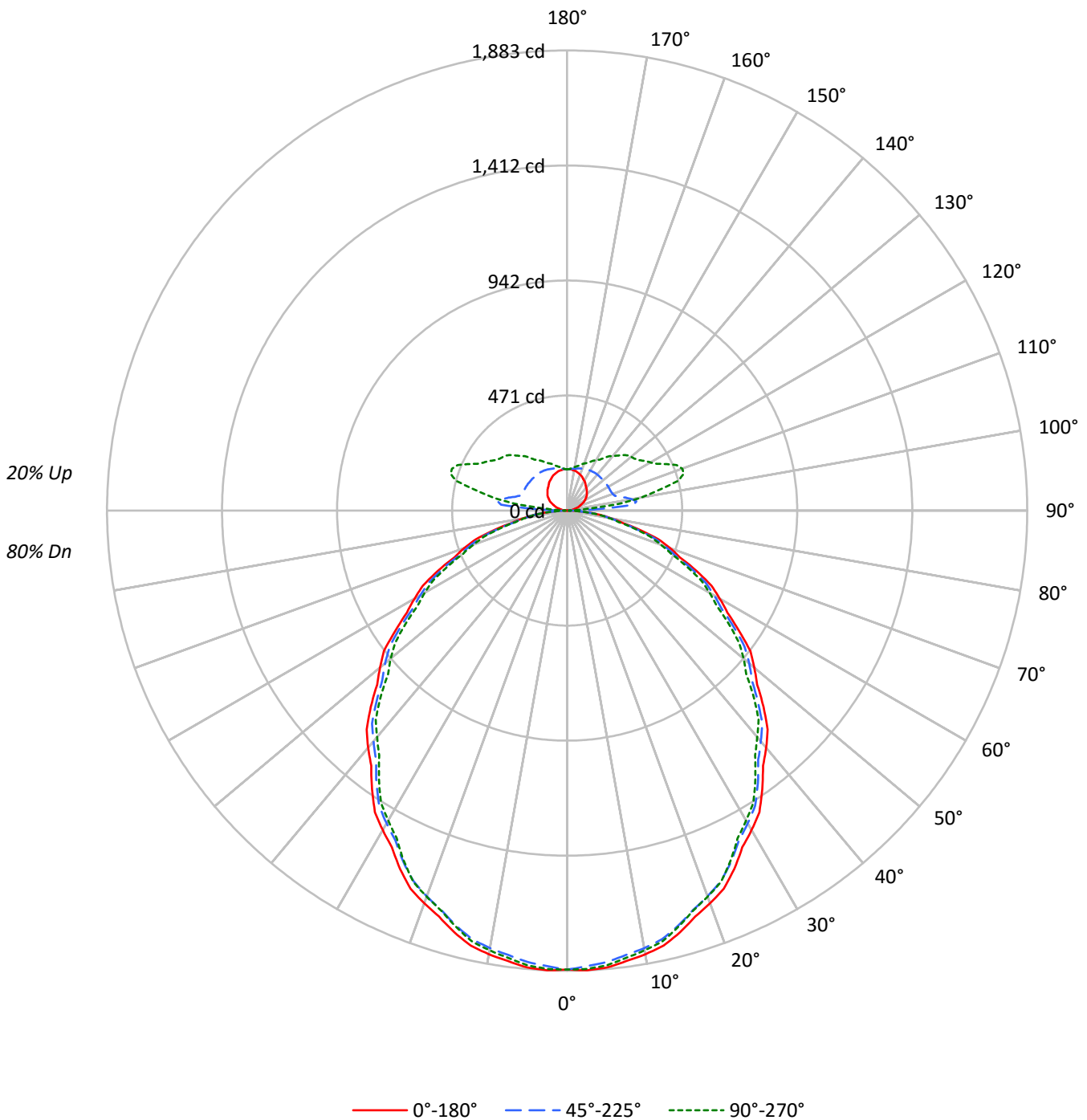
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	80
1	104	100	96	92	100	96	92	89	88	85	82	80	78	76	74	72	70	67
2	95	87	81	75	91	84	78	73	77	72	68	71	67	64	65	62	59	56
3	87	77	69	63	83	74	67	61	68	62	57	62	58	54	57	54	50	47
4	80	68	60	53	76	65	58	52	60	54	49	56	50	46	51	47	43	41
5	73	61	52	46	70	59	51	45	54	48	42	50	45	40	46	42	38	35
6	68	55	46	40	64	53	45	39	49	42	37	45	40	35	42	37	33	31
7	63	50	41	35	60	48	40	35	45	38	33	41	36	31	38	34	30	28
8	58	45	37	32	56	44	36	31	41	34	29	38	32	28	35	30	27	25
9	54	41	34	28	52	40	33	28	37	31	27	35	29	25	33	28	24	22
10	51	38	31	26	49	37	30	25	35	28	24	32	27	23	30	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15163	15163	15163
5°	15209	15027	15135
10°	15114	14905	14978
15°	14931	14692	14730
20°	14689	14430	14442
25°	14412	14130	14091
30°	14072	13778	13651
35°	13720	13409	13232
40°	13354	12991	12752
45°	12973	12578	12337
50°	12552	12210	11833
55°	12096	11736	11354
60°	11641	11202	10863
65°	11127	10695	10264
70°	10551	10017	9626
75°	9669	9201	8968
80°	8605	8257	8047
85°	7521	7243	7104



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.9	2.9
10°-20°	498.4	8.2
20°-30°	733.6	12.1
30°-40°	852.8	14.1
40°-50°	852.8	14.1
50°-60°	746.0	12.3
60°-70°	554.0	9.2
70°-80°	314.7	5.2
80°-90°	91.8	1.5
90°-100°	122.5	2.0
100°-110°	254.9	4.2
110°-120°	228.3	3.8
120°-130°	192.0	3.2
130°-140°	160.1	2.6
140°-150°	122.3	2.0
150°-160°	86.0	1.4
160°-170°	50.6	0.8
170°-180°	16.5	0.3
0°-30°	1408.8	23.3
0°-40°	2261.6	37.4
0°-60°	3860.5	63.8
0°-90°	4821.0	79.6
90°-120°	605.7	10.0
90°-150°	1080.2	17.8
90°-180°	1233.0	20.4
0°-180°	6054.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1878	1878	1878	1878	1878	
5°	1877	1870	1854	1870	1868	178
15°	1786	1780	1758	1766	1762	503
25°	1618	1607	1586	1587	1582	744
35°	1392	1381	1361	1350	1343	870
45°	1136	1125	1102	1086	1081	876
55°	859	854	834	816	807	769
65°	582	575	560	545	537	577
75°	310	302	295	289	288	329
85°	81	81	78	78	77	89
90°	0	3	6	7	7	5
95°	11	35	272	134	81	12
105°	39	56	218	471	469	42
115°	69	86	195	374	450	68
125°	96	114	194	319	359	85
135°	114	135	192	283	321	88
145°	131	150	191	238	262	82
155°	149	161	186	210	220	69
165°	162	167	178	189	192	46
175°	169	170	171	173	173	16
180°	170	170	170	170	170	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3
2.5°	1883.1	1882.4	1881.5	1880.7	1879.9	1878.0	1875.1	1872.2	1869.3	1866.3	1869.0
5°	1876.8	1875.5	1874.2	1872.8	1871.5	1869.0	1865.3	1861.6	1857.9	1854.3	1857.9
7.5°	1859.4	1858.0	1856.7	1855.3	1854.0	1851.3	1847.2	1843.1	1839.1	1834.9	1838.0
10°	1843.7	1842.4	1841.1	1839.7	1838.3	1835.5	1831.2	1826.8	1822.5	1818.2	1820.8
12.5°	1823.3	1821.9	1820.5	1819.2	1817.9	1814.9	1810.3	1805.7	1801.1	1796.5	1799.4
15°	1786.5	1785.2	1783.9	1782.5	1781.1	1778.0	1772.9	1767.9	1762.9	1757.9	1759.9
17.5°	1742.3	1740.6	1738.9	1737.3	1735.6	1732.4	1727.6	1722.9	1718.2	1713.4	1714.7
20°	1709.8	1708.1	1706.4	1704.8	1703.1	1699.7	1694.7	1689.7	1684.7	1679.6	1680.6
22.5°	1674.8	1672.6	1670.5	1668.2	1666.0	1662.4	1657.4	1652.4	1647.4	1642.3	1644.2
25°	1618.0	1615.6	1613.3	1610.9	1608.5	1605.1	1600.3	1595.7	1591.0	1586.3	1586.7
27.5°	1552.9	1550.5	1548.1	1545.7	1543.3	1539.9	1535.6	1531.3	1526.9	1522.5	1521.7
30°	1509.6	1506.9	1504.2	1501.6	1498.9	1495.3	1491.0	1486.7	1482.3	1478.0	1476.7
32.5°	1463.9	1461.4	1459.1	1456.6	1454.2	1450.7	1446.0	1441.4	1436.8	1432.2	1430.6
35°	1392.2	1389.9	1387.5	1385.2	1382.8	1379.3	1374.6	1370.0	1365.3	1360.6	1358.2
37.5°	1316.6	1314.5	1312.4	1310.2	1308.1	1304.5	1299.5	1294.5	1289.4	1284.4	1281.9
40°	1267.2	1264.6	1261.9	1259.2	1256.6	1252.7	1247.7	1242.6	1237.7	1232.7	1229.3
42.5°	1214.3	1212.7	1211.1	1209.5	1207.9	1204.3	1198.7	1193.2	1187.6	1182.0	1178.2
45°	1136.3	1134.0	1131.6	1129.3	1127.0	1123.1	1117.8	1112.4	1107.0	1101.7	1098.1
47.5°	1054.7	1053.1	1051.5	1049.9	1048.3	1045.1	1040.1	1035.2	1030.2	1025.3	1021.2
50°	999.4	998.1	996.6	995.3	994.0	991.0	986.3	981.7	976.9	972.2	967.6
52.5°	945.2	943.6	942.0	940.4	938.8	935.5	930.6	925.6	920.7	915.7	911.5
55°	859.4	858.4	857.4	856.4	855.4	852.5	847.8	843.2	838.5	833.8	829.8
57.5°	777.5	776.4	775.2	774.1	773.0	770.1	765.4	760.8	756.2	751.6	747.8
60°	721.0	719.3	717.6	716.0	714.3	711.2	706.9	702.6	698.1	693.8	690.8
62.5°	665.5	664.1	662.7	661.3	660.0	657.0	652.3	647.7	643.1	638.5	635.7
65°	582.5	580.8	579.1	577.4	575.8	573.3	570.0	566.6	563.3	559.9	556.6
67.5°	498.8	497.3	495.7	494.2	492.7	490.2	487.0	483.8	480.6	477.4	474.2
70°	447.0	444.7	442.3	440.0	437.6	435.2	432.4	429.8	427.1	424.4	421.8
72.5°	391.6	389.3	386.9	384.6	382.3	380.0	377.9	375.7	373.6	371.5	369.3
75°	310.0	308.4	306.7	305.0	303.3	301.7	300.0	298.3	296.7	295.0	293.7
77.5°	232.1	231.3	230.6	229.9	229.1	228.0	226.6	225.1	223.7	222.2	221.8
80°	185.1	184.1	183.1	182.1	181.2	180.3	179.6	178.9	178.2	177.6	176.9
82.5°	139.4	138.9	138.5	138.0	137.5	137.2	137.0	137.0	136.8	136.7	136.3
85°	81.2	81.2	81.2	81.2	81.2	81.0	80.3	79.6	78.9	78.2	78.2
87.5°	31.4	31.2	31.2	31.0	30.7	30.5	30.6	30.3	30.3	30.1	30.1
90°	0.4	1.0	2.0	2.4	2.6	2.6	4.6	4.6	5.4	6.0	5.7
92.5°	3.8	5.6	8.7	12.7	17.6	24.5	41.5	67.3	92.5	105.7	88.0
95°	11.0	12.0	15.4	19.7	27.6	41.7	70.6	125.3	204.9	271.5	279.2
97.5°	19.7	19.7	22.6	26.6	33.5	45.1	67.5	112.6	191.7	286.0	350.7
100°	25.4	25.4	27.6	31.7	38.0	48.6	68.3	105.9	173.9	267.9	353.1
102.5°	30.6	31.2	33.3	36.9	43.1	53.2	71.0	104.1	161.9	245.2	333.1
105°	39.0	40.0	41.7	45.6	51.7	61.3	77.3	104.9	151.6	218.5	296.8
107.5°	48.2	48.8	50.5	54.8	60.5	70.0	84.6	109.9	149.7	203.6	267.5
110°	54.3	55.0	56.6	60.6	66.6	75.6	90.3	113.6	150.2	198.5	252.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	60.1	60.8	62.8	66.4	72.5	81.4	95.6	117.6	151.8	196.1	244.6
115°	68.6	69.7	71.9	75.3	81.6	90.6	104.0	123.9	154.9	194.9	236.9
117.5°	77.4	78.3	80.4	84.1	90.0	99.3	112.0	130.4	158.2	194.5	233.4
120°	83.3	84.0	86.2	89.9	95.6	104.9	117.6	134.9	160.6	194.5	231.5
122.5°	88.6	89.3	91.6	95.0	101.2	110.3	122.9	139.2	163.0	194.3	229.4
125°	95.6	96.9	99.0	102.6	109.0	118.3	130.3	145.5	166.5	193.9	225.8
127.5°	101.8	102.8	105.3	109.4	116.0	125.5	137.0	151.1	169.5	193.1	221.1
130°	105.3	106.6	109.2	114.2	120.6	130.3	141.6	154.6	171.5	192.8	218.2
132.5°	108.8	109.8	113.3	118.0	124.9	133.9	145.3	158.1	173.4	192.7	215.6
135°	113.6	114.9	118.3	123.9	130.9	139.6	150.5	162.6	176.3	192.2	211.5
137.5°	118.5	119.7	123.4	128.8	136.0	144.3	154.6	165.8	177.9	192.2	208.1
140°	122.0	122.9	126.6	132.2	139.2	147.2	157.2	167.9	179.2	191.9	206.2
142.5°	125.6	126.7	130.1	135.4	142.1	149.9	159.7	169.5	180.3	191.9	204.6
145°	130.9	132.0	135.3	139.9	146.3	153.5	162.2	171.3	180.9	191.2	201.9
147.5°	136.9	137.1	140.2	144.9	150.1	156.7	164.9	172.8	181.3	190.0	199.4
150°	140.5	140.9	143.5	147.6	152.6	158.9	166.3	173.5	181.3	189.2	197.6
152.5°	144.0	144.1	146.8	150.5	155.0	160.8	167.3	174.1	180.7	187.8	195.4
155°	148.9	149.2	151.3	154.6	158.3	163.2	168.9	174.6	179.9	185.9	192.2
157.5°	153.6	153.6	155.5	158.1	161.3	165.2	170.0	174.6	179.0	183.8	189.0
160°	156.6	156.6	157.9	160.2	162.9	166.5	170.6	174.6	178.2	182.2	186.5
162.5°	159.2	159.0	160.0	162.1	164.5	167.4	171.1	174.6	177.4	180.6	184.5
165°	162.2	162.2	162.9	164.6	166.3	168.2	171.3	173.9	175.9	178.2	180.9
167.5°	165.2	164.9	165.2	166.5	167.4	169.0	171.2	173.1	174.3	175.8	177.7
170°	166.5	166.3	166.5	167.6	168.2	169.2	170.9	172.6	173.2	174.2	175.6
172.5°	167.9	167.6	167.6	168.3	168.7	169.5	170.6	172.0	172.2	172.6	173.7
175°	169.2	168.9	168.9	169.2	169.6	169.6	170.2	171.3	170.9	170.9	171.5
177.5°	169.8	169.6	169.3	169.6	169.6	169.6	169.8	170.3	169.8	169.8	170.1
180°	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3
2.5°	1871.6	1874.3	1877.0	1878.2	1877.9	1877.6	1877.4	1877.1
5°	1861.6	1865.3	1869.0	1870.5	1869.8	1869.2	1868.5	1867.7
7.5°	1840.9	1843.8	1846.7	1848.0	1847.7	1847.2	1846.8	1846.4
10°	1823.4	1826.2	1828.8	1829.9	1829.2	1828.5	1827.8	1827.1
12.5°	1802.3	1805.3	1808.3	1809.2	1808.3	1807.3	1806.4	1805.4
15°	1761.9	1764.0	1765.9	1766.4	1765.5	1764.4	1763.4	1762.5
17.5°	1715.9	1717.2	1718.4	1718.7	1718.1	1717.4	1716.7	1716.1
20°	1681.7	1682.6	1683.7	1683.9	1683.2	1682.5	1681.9	1681.1
22.5°	1646.0	1647.8	1649.5	1649.8	1648.7	1647.5	1646.2	1645.0
25°	1587.1	1587.3	1587.7	1587.1	1585.8	1584.5	1583.2	1581.9
27.5°	1520.9	1520.1	1519.3	1518.1	1516.4	1514.8	1513.1	1511.4
30°	1475.3	1473.9	1472.6	1471.1	1469.4	1467.8	1466.1	1464.4
32.5°	1429.0	1427.4	1425.8	1424.2	1422.5	1420.8	1419.2	1417.5
35°	1355.9	1353.6	1351.2	1349.2	1347.6	1345.9	1344.2	1342.6
37.5°	1279.3	1276.8	1274.2	1271.9	1269.7	1267.4	1265.3	1263.0
40°	1226.0	1222.6	1219.3	1216.7	1215.1	1213.4	1211.7	1210.0
42.5°	1174.3	1170.4	1166.6	1164.0	1162.9	1161.8	1160.6	1159.5
45°	1094.4	1090.7	1087.0	1084.7	1083.6	1082.6	1081.7	1080.6
47.5°	1017.0	1012.9	1008.7	1005.3	1002.8	1000.2	997.7	995.1
50°	962.9	958.2	953.6	950.2	948.2	946.2	944.1	942.2
52.5°	907.4	903.2	899.1	895.8	893.2	890.7	888.2	885.6
55°	825.8	821.8	817.7	814.7	812.8	810.8	808.7	806.7
57.5°	744.0	740.2	736.4	733.5	731.6	729.6	727.6	725.8
60°	687.8	684.9	681.8	679.5	677.8	676.1	674.5	672.8
62.5°	632.9	630.2	627.5	625.3	623.6	621.9	620.3	618.6
65°	553.2	549.9	546.5	544.0	542.3	540.6	538.9	537.3
67.5°	471.0	467.8	464.6	462.7	462.2	461.8	461.3	460.8
70°	419.1	416.4	413.7	411.9	410.9	409.9	408.9	407.8
72.5°	367.2	365.0	362.9	361.3	360.3	359.3	358.3	357.3
75°	292.3	291.0	289.6	288.8	288.5	288.1	287.8	287.5
77.5°	221.3	220.9	220.6	219.9	219.0	218.2	217.3	216.4
80°	176.3	175.6	174.9	174.5	174.1	173.7	173.4	173.1
82.5°	135.8	135.4	135.1	134.7	134.3	134.0	133.7	133.4
85°	78.2	78.2	78.2	78.1	77.8	77.4	77.1	76.7
87.5°	30.1	30.2	30.3	30.3	30.3	30.3	30.3	30.3
90°	6.0	6.3	6.7	6.7	7.0	7.4	7.0	7.0
92.5°	65.4	49.2	39.2	32.5	28.6	26.8	25.6	25.6
95°	246.9	195.2	150.5	118.3	101.9	91.6	85.6	81.2
97.5°	364.7	345.5	312.9	278.1	254.2	234.2	224.2	217.3
100°	401.7	408.4	392.1	367.4	338.5	318.1	308.1	305.5
102.5°	399.9	432.9	437.6	427.3	409.6	394.9	384.4	382.2
105°	373.1	430.7	463.7	477.4	478.1	475.3	470.7	468.7
107.5°	335.1	396.4	442.8	472.6	489.0	496.6	499.9	500.8
110°	312.2	369.8	418.1	454.7	478.3	492.4	498.3	501.3



TEST NUMBER: P332678-830

CATALOG NUMBER: S124DIP-S1195D365U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	295.3	346.3	391.9	428.6	455.4	472.4	480.8	485.6
115°	278.5	319.4	358.4	390.4	416.7	436.7	447.4	450.1
117.5°	270.2	304.2	334.8	361.9	384.4	401.1	411.9	414.0
120°	266.5	297.5	324.1	347.8	366.7	381.4	390.1	393.8
122.5°	263.3	293.2	317.4	338.2	354.2	366.7	374.1	377.8
125°	257.9	286.4	309.4	327.8	341.1	350.8	357.1	359.1
127.5°	251.2	278.5	301.5	318.9	332.2	340.8	346.2	348.2
130°	245.8	272.2	294.8	312.5	326.1	334.4	339.8	341.8
132.5°	240.3	264.9	287.1	304.7	318.1	327.5	332.6	334.6
135°	232.5	254.2	274.5	291.2	304.4	313.8	319.1	321.1
137.5°	225.6	243.8	261.0	276.0	288.5	297.7	302.1	304.4
140°	221.5	237.1	252.1	266.2	277.9	285.1	289.8	292.5
142.5°	217.8	231.6	244.4	256.6	266.9	273.7	277.9	279.7
145°	212.5	223.9	233.8	243.2	251.5	257.1	260.5	262.1
147.5°	208.2	217.2	225.2	232.5	238.7	243.6	246.0	246.7
150°	205.6	213.2	219.9	225.8	231.2	235.5	237.5	237.8
152.5°	202.6	209.2	215.4	220.3	224.8	228.3	229.5	229.9
155°	198.2	203.5	208.5	212.5	215.8	218.5	219.5	219.5
157.5°	193.5	197.9	202.2	205.4	207.8	209.9	210.5	210.5
160°	190.6	194.2	197.8	200.6	202.6	204.5	204.9	204.9
162.5°	187.7	190.8	193.6	196.0	197.5	199.4	199.8	199.5
165°	183.5	185.6	187.8	189.5	190.9	192.2	191.9	191.5
167.5°	179.6	181.2	183.0	184.0	184.6	185.6	185.5	185.2
170°	177.2	178.2	179.6	180.6	181.3	181.5	181.3	181.3
172.5°	175.1	175.8	176.6	177.4	177.8	178.0	177.8	177.2
175°	172.2	172.6	173.2	173.2	173.2	173.9	173.2	172.6
177.5°	170.3	170.6	170.6	170.9	170.6	170.9	170.3	169.8
180°	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6

(END OF REPORT)