

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: P332687-830

Luminaire Tested: **S124DIP-S1195D590U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332687-830
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-S1195D590U830-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6812.0 lumens
Efficiency: N/A
Efficacy: 123.6 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

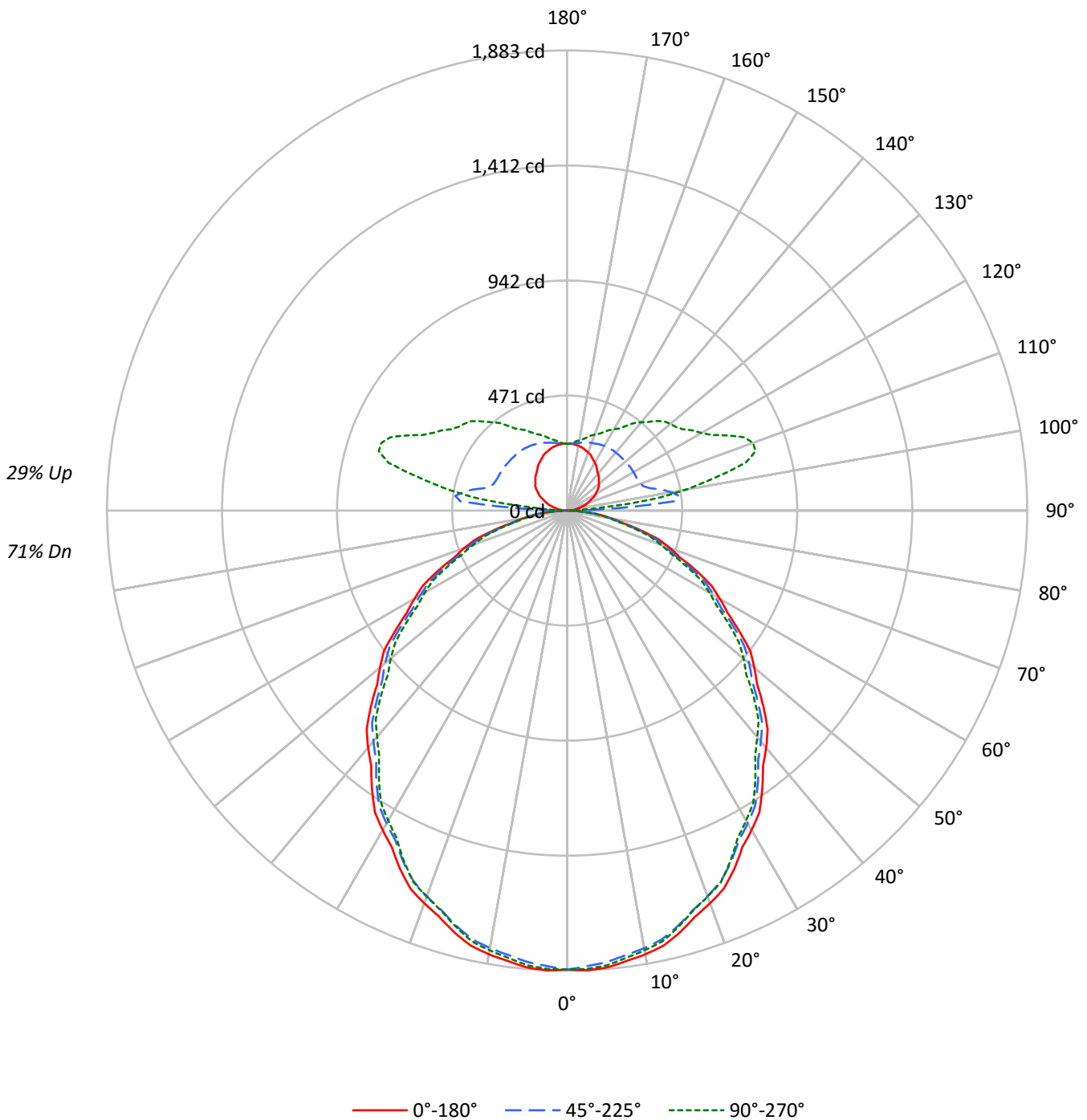
Input Watts (W): 55.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75	71
1	102	98	94	90	97	93	89	86	83	81	78	75	72	71	66	65	63	60
2	93	86	79	74	88	81	75	71	73	68	65	65	62	59	58	56	53	50
3	85	75	68	61	80	71	65	59	64	59	54	58	54	50	52	48	45	42
4	78	67	58	52	73	63	56	50	57	51	46	52	47	43	46	42	39	36
5	72	60	51	45	68	57	49	43	51	45	40	46	41	37	42	38	34	31
6	66	54	45	39	62	51	43	38	46	40	35	42	37	33	38	34	30	28
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	35	30	27	24
8	57	44	36	31	54	42	35	30	39	32	28	35	30	26	32	27	24	22
9	53	40	33	27	50	39	32	27	35	29	25	32	27	23	29	25	22	20
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	27	23	20	18

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	2.6
10°-20°	498.4	7.3
20°-30°	733.6	10.8
30°-40°	852.8	12.5
40°-50°	852.8	12.5
50°-60°	746.0	11.0
60°-70°	554.0	8.1
70°-80°	314.7	4.6
80°-90°	92.3	1.4
90°-100°	197.7	2.9
100°-110°	411.4	6.0
110°-120°	368.5	5.4
120°-130°	310.0	4.6
130°-140°	258.4	3.8
140°-150°	197.4	2.9
150°-160°	138.8	2.0
160°-170°	81.6	1.2
170°-180°	26.6	0.4
0°-30°	1408.8	20.7
0°-40°	2261.6	33.2
0°-60°	3860.5	56.7
0°-90°	4821.6	70.8
90°-120°	977.6	14.4
90°-150°	1743.4	25.6
90°-180°	1990.0	29.2
0°-180°	6812.0	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°	1	4	10	11	11	5
95°	18	56	438	217	131	20
105°	63	91	353	760	756	67
115°	111	139	314	604	726	110
125°	154	183	313	514	580	137
135°	183	218	310	456	518	142
145°	211	242	309	385	423	133
155°	240	259	300	340	354	111
165°	262	270	288	305	309	74
175°	273	274	276	280	278	26
180°	274	274	274	274	274	



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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	31.4	31.4	31.3	31.1	30.8	31.2	30.9	30.9	30.8	30.7
90°	0.6	1.6	3.2	3.8	4.3	4.3	7.5	7.5	8.6	9.7	9.1
92.5°	6.1	9.0	13.9	20.5	28.4	39.6	66.9	108.6	149.3	170.5	142.0
95°	17.7	19.3	24.7	31.8	44.6	67.2	114.0	202.2	330.6	438.2	450.5
97.5°	31.9	31.9	36.5	42.9	54.0	73.0	109.0	181.7	309.5	461.6	566.1
100°	40.9	40.9	44.6	51.1	61.3	78.5	110.2	171.0	280.7	432.3	570.0
102.5°	49.5	50.3	53.6	59.7	69.5	85.8	114.5	168.0	261.3	395.8	537.6
105°	62.9	64.6	67.2	73.7	83.3	99.0	124.7	169.4	244.7	352.7	479.1
107.5°	77.8	78.8	81.5	88.4	97.6	113.0	136.7	177.3	241.7	328.7	431.8
110°	87.7	88.7	91.4	97.8	107.5	122.1	145.7	183.3	242.5	320.5	408.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	97.1	98.2	101.3	107.4	117.0	131.5	154.3	189.8	245.1	316.6	394.7
115°	110.7	112.4	116.1	121.5	131.8	146.3	167.8	200.0	250.1	314.5	382.3
117.5°	125.0	126.5	129.8	135.7	145.2	160.3	180.8	210.5	255.2	314.0	376.7
120°	134.4	135.5	139.2	145.2	154.3	169.4	189.8	217.7	259.2	314.0	373.7
122.5°	143.0	144.1	147.9	153.4	163.3	178.0	198.4	224.6	263.1	313.6	370.2
125°	154.3	156.5	159.7	165.6	175.8	190.9	210.2	235.0	268.8	312.9	364.6
127.5°	164.3	166.1	169.9	176.6	187.3	202.5	221.2	243.9	273.4	311.7	356.9
130°	169.9	172.0	176.3	184.5	194.6	210.2	228.5	249.5	276.9	311.3	352.1
132.5°	175.5	177.2	182.9	190.5	201.5	216.2	234.5	255.1	279.9	310.9	347.9
135°	183.3	185.5	190.9	200.0	211.3	225.3	243.0	262.4	284.5	310.2	341.4
137.5°	191.2	193.2	199.2	207.8	219.6	232.9	249.5	267.6	287.1	310.1	335.8
140°	196.8	198.4	204.3	213.5	224.7	237.6	253.8	271.0	289.3	309.7	332.8
142.5°	202.8	204.4	209.9	218.6	229.5	242.0	257.7	273.5	291.0	309.7	330.3
145°	211.3	212.9	218.3	225.8	236.0	247.9	261.8	276.4	292.0	308.6	325.8
147.5°	220.8	221.4	226.1	233.8	242.4	253.1	266.2	278.8	292.5	306.7	321.9
150°	226.9	227.4	231.8	238.2	246.3	256.5	268.3	280.1	292.5	305.4	318.9
152.5°	232.5	232.6	236.9	242.9	250.2	259.5	270.0	281.0	291.6	303.2	315.4
155°	240.3	240.9	244.1	249.5	255.4	263.4	272.6	281.7	290.3	300.0	310.2
157.5°	248.0	248.0	251.0	255.1	260.3	266.6	274.5	281.7	289.0	296.7	305.0
160°	252.7	252.7	254.9	258.6	262.9	268.8	275.3	281.7	287.7	294.1	301.1
162.5°	257.0	256.6	258.3	261.6	265.5	270.1	276.2	281.7	286.3	291.5	297.7
165°	261.8	261.8	262.9	265.6	268.3	271.5	276.4	280.7	283.9	287.7	292.0
167.5°	266.6	266.2	266.6	268.7	270.2	272.7	276.3	279.4	281.3	283.8	286.8
170°	268.8	268.3	268.8	270.4	271.5	273.1	275.8	278.5	279.6	281.2	283.3
172.5°	271.0	270.4	270.5	271.7	272.4	273.5	275.4	277.7	277.9	278.6	280.3
175°	273.1	272.6	272.6	273.1	273.7	273.7	274.8	276.4	275.8	275.8	276.9
177.5°	274.1	273.7	273.2	273.7	273.7	273.7	274.1	274.9	274.1	274.1	274.6
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7



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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°	30.8	30.9	31.0	31.0	31.2	31.3	31.2	31.2
90°	9.7	10.2	10.7	10.7	11.3	11.8	11.3	11.3
92.5°	105.6	79.5	63.2	52.5	46.1	43.3	41.4	41.4
95°	398.4	315.1	243.0	190.9	164.6	147.9	138.2	131.2
97.5°	588.6	557.7	505.1	448.9	410.4	378.0	361.8	350.6
100°	648.5	659.2	632.8	593.0	546.3	513.5	497.4	493.0
102.5°	645.5	698.8	706.4	689.8	661.1	637.3	620.4	616.9
105°	602.2	695.2	748.5	770.5	771.6	767.2	759.7	756.5
107.5°	540.8	639.8	714.8	762.7	789.3	801.5	806.9	808.3
110°	503.8	596.8	674.8	734.0	772.1	794.7	804.4	809.2



TEST NUMBER: P332687-830

CATALOG NUMBER: S124DIP-S1195D590U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	476.7	558.9	632.6	691.7	735.1	762.4	776.0	783.8
115°	449.5	515.7	578.5	630.2	672.6	704.9	722.1	726.4
117.5°	436.1	490.9	540.4	584.1	620.4	647.4	664.9	668.3
120°	430.2	480.1	523.1	561.3	592.0	615.7	629.6	635.6
122.5°	425.0	473.3	512.4	545.8	571.7	592.0	603.8	609.7
125°	416.1	462.4	499.5	529.0	550.5	566.2	576.4	579.6
127.5°	405.4	449.6	486.6	514.6	536.3	550.2	558.7	561.9
130°	396.8	439.3	475.8	504.4	526.4	539.8	548.5	551.7
132.5°	387.8	427.6	463.4	491.8	513.5	528.7	536.8	540.1
135°	375.3	410.3	443.0	470.0	491.4	506.5	515.1	518.3
137.5°	364.0	393.6	421.2	445.5	465.6	480.5	487.6	491.4
140°	357.5	382.9	407.0	429.6	448.5	460.2	467.8	472.1
142.5°	351.6	373.8	394.5	414.2	430.7	441.8	448.5	451.4
145°	343.0	361.3	377.5	392.5	406.0	415.1	420.5	423.1
147.5°	336.0	350.5	363.4	375.3	385.2	393.0	397.1	398.1
150°	331.8	344.1	354.9	364.6	373.2	380.1	383.3	383.9
152.5°	327.0	337.6	347.5	355.5	362.8	368.5	370.4	371.0
155°	319.9	328.5	336.6	343.0	348.5	352.7	354.3	354.3
157.5°	312.3	319.5	326.2	331.4	335.5	338.7	339.7	339.7
160°	307.6	313.5	319.3	323.7	326.9	330.2	330.6	330.6
162.5°	302.8	307.8	312.5	316.4	318.8	322.0	322.5	322.1
165°	296.2	299.4	303.2	305.9	308.1	310.2	309.7	309.2
167.5°	289.9	292.4	295.4	297.0	298.1	299.4	299.4	299.0
170°	286.1	287.7	289.8	291.4	292.5	293.0	292.5	292.5
172.5°	282.6	283.8	285.1	286.3	286.9	287.5	286.9	286.1
175°	278.0	278.5	279.6	279.6	279.6	280.7	279.6	278.5
177.5°	274.9	275.4	275.4	275.8	275.4	275.8	274.9	274.1
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7

(END OF REPORT)