

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: P242293

Luminaire Tested: **S122DR-S1005D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242293
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-S1005D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4009.7 lumens
Efficiency: N/A
Efficacy: 97.6 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

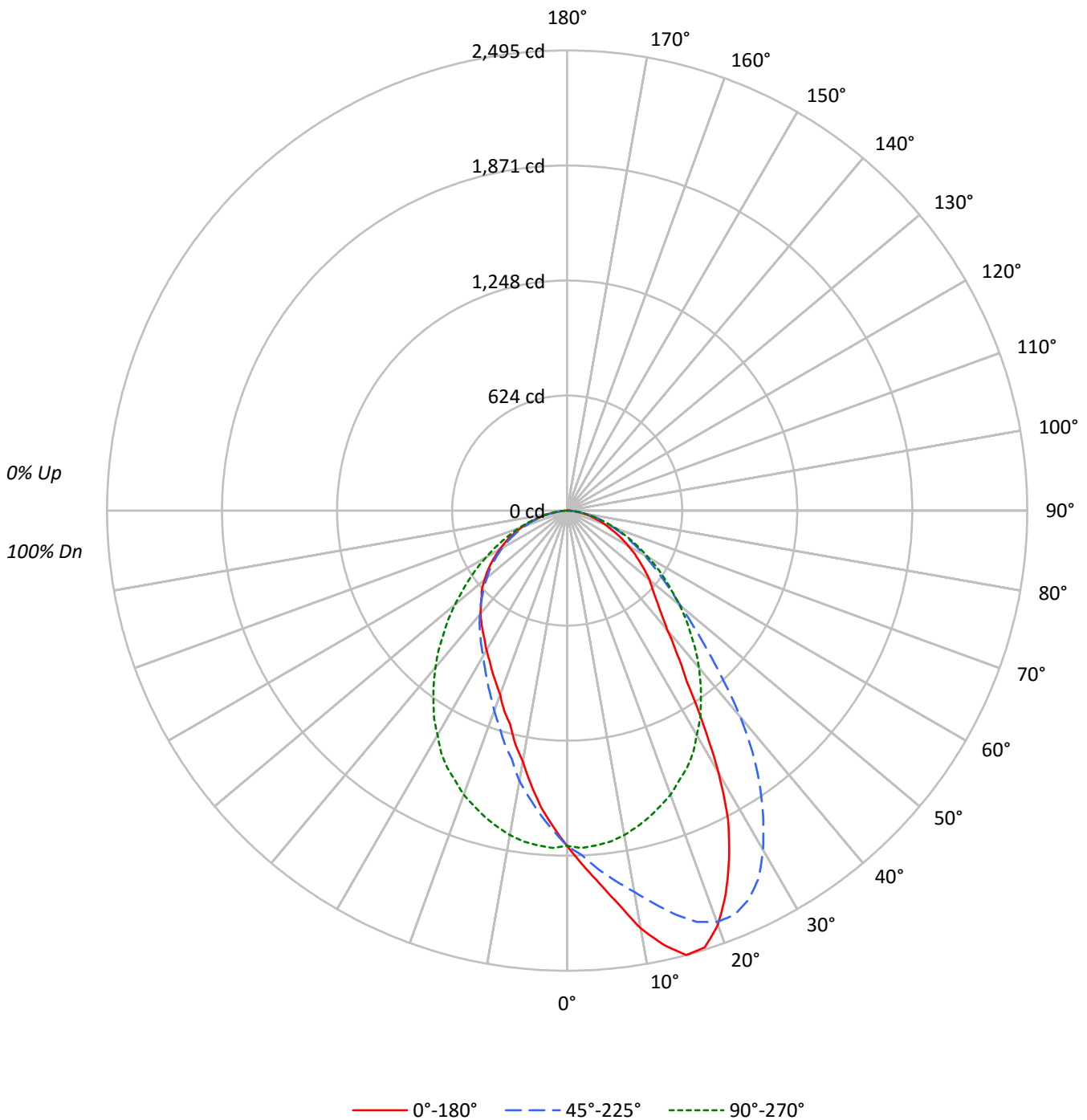
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242293

CATALOG NUMBER: S122DR-S1005D830-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





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CATALOG NUMBER: S122DR-S1005D830-X4F0-XX-UDD-A-W

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	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88					86				
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76					74				
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66					64				
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58					55				
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51					49				
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45					43				
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41					39				
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37					35				
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34					32				
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31					29				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	34621	34621	34621
5°	38815	34847	30880
10°	44478	34561	26724
15°	49204	33928	23610
20°	48454	33247	21523
25°	43692	32343	20201
30°	36106	30898	19236
35°	26313	29385	18549
40°	21016	27600	18169
45°	18366	25534	17649
50°	17264	23535	17306
55°	15914	21503	16840
60°	14583	19345	16126
65°	13287	17411	15428
70°	12057	15521	14396
75°	10693	13416	12747
80°	9192	11112	10267
85°	8239	8239	6097



TEST NUMBER: P242293

CATALOG NUMBER: S122DR-S1005D830-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	173.1	4.3
10°-20°	503.9	12.6
20°-30°	731.3	18.2
30°-40°	770.9	19.2
40°-50°	682.1	17.0
50°-60°	544.5	13.6
60°-70°	369.9	9.2
70°-80°	189.3	4.7
80°-90°	44.7	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1408.3	35.1
0°-40°	2179.2	54.3
0°-60°	3405.8	84.9
0°-90°	4009.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4009.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1818	1818	1818	1818	1818	
5°	2030	1954	1822	1656	1615	202
15°	2495	2267	1720	1308	1197	691
25°	2079	2328	1539	1023	961	943
35°	1132	1823	1264	822	798	733
45°	682	1079	948	650	655	534
55°	479	621	648	488	507	430
65°	295	368	386	323	342	293
75°	145	178	182	164	173	155
85°	38	41	38	31	28	43
90°	0	0	0	0	0	



TEST NUMBER: P242293

CATALOG NUMBER: S122DR-S1005D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6
2.5°	1922.4	1923.1	1924.5	1913.3	1911.9	1911.9	1902.1	1893.7	1884.0	1870.7	1872.1
5°	2030.0	2037.6	2040.4	2032.0	2019.5	2018.1	2006.2	1986.6	1968.5	1953.8	1943.3
7.5°	2154.3	2157.1	2151.5	2141.7	2133.3	2117.3	2097.7	2078.9	2050.9	2025.8	2007.6
10°	2299.6	2303.8	2291.9	2275.8	2262.6	2243.0	2210.9	2178.0	2138.2	2099.8	2069.1
12.5°	2410.0	2421.8	2405.8	2407.2	2382.0	2353.4	2313.6	2301.0	2240.9	2183.6	2150.1
15°	2495.2	2494.5	2495.9	2482.6	2465.8	2461.7	2421.1	2377.1	2298.2	2266.8	2212.3
17.5°	2482.6	2492.4	2498.0	2493.8	2491.0	2484.7	2467.2	2434.4	2391.1	2338.0	2273.0
20°	2390.4	2404.4	2406.5	2422.5	2431.6	2443.5	2448.4	2440.7	2416.2	2373.6	2319.1
22.5°	2247.9	2249.3	2257.0	2284.2	2306.6	2340.8	2359.0	2393.2	2387.6	2372.2	2328.9
25°	2078.9	2071.9	2096.3	2108.9	2154.3	2201.8	2236.0	2273.7	2307.3	2327.5	2314.3
27.5°	1891.6	1877.0	1914.0	1946.8	1979.0	2025.1	2076.8	2138.2	2185.0	2248.6	2264.0
30°	1641.6	1647.9	1682.8	1718.4	1774.3	1846.9	1907.0	1976.2	2050.9	2124.3	2175.3
32.5°	1371.9	1400.6	1419.4	1478.8	1526.3	1609.4	1704.4	1795.2	1893.0	1979.0	2064.9
35°	1131.6	1159.6	1190.3	1230.1	1299.3	1379.6	1465.5	1582.2	1709.3	1823.2	1916.8
37.5°	979.4	974.5	993.3	1022.7	1082.0	1151.2	1253.2	1371.9	1524.2	1650.6	1776.4
40°	845.2	842.4	855.0	881.6	924.2	971.7	1058.3	1159.6	1298.6	1462.0	1619.2
42.5°	753.0	755.8	761.4	778.2	804.0	841.0	900.4	982.8	1107.2	1258.8	1430.6
45°	681.8	686.7	694.3	703.4	720.2	752.3	788.7	850.1	950.7	1079.2	1245.5
47.5°	625.9	627.3	635.7	644.1	653.8	673.4	705.5	744.6	821.5	931.2	1079.9
50°	582.6	577.7	583.3	589.6	600.0	612.6	632.2	668.5	716.0	800.5	920.0
52.5°	529.5	530.9	535.8	537.2	546.3	558.8	576.3	598.6	640.6	702.0	794.9
55°	479.2	482.7	485.5	489.7	498.1	507.1	521.1	537.9	571.4	621.0	693.6
57.5°	431.7	433.1	435.2	444.3	449.2	457.5	471.5	486.9	509.2	547.7	604.9
60°	382.8	382.8	388.4	391.9	398.9	407.2	417.7	432.4	452.0	482.0	526.0
62.5°	338.1	337.4	338.8	345.1	350.0	357.7	368.1	380.0	398.2	424.0	458.2
65°	294.8	293.4	297.6	299.0	304.6	312.2	320.6	333.9	348.6	368.1	400.3
67.5°	251.5	253.6	256.4	259.2	262.0	271.0	276.6	286.4	299.0	315.7	338.1
70°	216.5	216.5	216.5	218.6	222.8	227.0	232.6	240.3	252.2	266.1	285.7
72.5°	177.4	180.2	183.0	180.9	186.5	188.6	195.6	199.1	210.3	217.9	234.7
75°	145.3	145.3	145.3	148.8	150.9	153.0	157.2	161.4	167.0	178.1	187.2
77.5°	114.6	113.9	114.6	115.3	118.1	120.8	122.2	125.7	131.3	136.9	145.3
80°	83.8	85.2	85.9	87.3	87.3	88.7	89.4	94.3	97.8	101.3	106.2
82.5°	60.1	60.1	60.1	60.1	60.8	61.5	63.6	64.3	65.0	67.8	71.3
85°	37.7	37.0	37.0	38.4	37.7	37.7	39.1	40.5	40.5	41.2	43.3
87.5°	18.2	18.2	18.9	18.2	18.2	18.9	18.9	18.2	18.9	19.6	20.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242293

CATALOG NUMBER: S122DR-S1005D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6
2.5°	1877.0	1871.4	1867.9	1855.3	1844.1	1833.0	1829.5	1830.9	1815.5	1800.8	1794.5
5°	1937.7	1923.8	1910.5	1891.6	1869.3	1844.8	1832.3	1822.5	1798.0	1771.5	1756.1
7.5°	1992.9	1974.8	1951.0	1917.5	1886.8	1850.4	1828.1	1809.2	1775.0	1739.4	1717.7
10°	2042.5	2015.3	1982.5	1939.1	1899.3	1852.5	1819.7	1786.9	1745.0	1700.2	1672.3
12.5°	2085.1	2046.0	2013.9	1955.2	1906.3	1844.8	1804.3	1754.7	1710.0	1654.8	1627.6
15°	2157.8	2090.0	2028.6	1965.7	1907.7	1826.0	1782.7	1720.5	1662.5	1596.9	1565.4
17.5°	2211.6	2138.2	2043.2	1967.1	1902.8	1815.5	1753.3	1679.3	1613.6	1541.0	1499.1
20°	2256.3	2169.0	2064.9	1969.9	1888.8	1785.5	1716.3	1640.2	1559.8	1475.3	1429.2
22.5°	2282.8	2189.9	2087.2	1959.4	1860.9	1761.0	1669.5	1584.3	1502.6	1409.7	1360.8
25°	2284.2	2200.4	2091.4	1954.5	1838.6	1724.7	1619.9	1538.9	1440.4	1355.2	1284.6
27.5°	2261.2	2194.8	2089.3	1944.7	1812.7	1682.1	1568.2	1479.5	1375.4	1283.2	1212.7
30°	2210.2	2175.3	2073.3	1928.0	1780.6	1637.4	1508.8	1404.8	1301.4	1207.8	1135.1
32.5°	2131.2	2130.5	2043.9	1904.2	1746.3	1580.8	1446.7	1341.2	1223.8	1132.3	1063.9
35°	2023.0	2056.5	1999.9	1866.5	1701.6	1527.7	1383.8	1263.7	1144.9	1056.9	991.9
37.5°	1885.4	1962.9	1940.5	1816.2	1644.4	1471.1	1314.7	1188.9	1075.1	984.2	920.7
40°	1742.2	1848.3	1863.7	1756.8	1582.9	1403.4	1235.0	1110.0	999.6	918.6	854.3
42.5°	1588.5	1717.0	1765.9	1685.6	1515.8	1332.1	1163.8	1033.1	924.2	845.9	790.7
45°	1413.1	1577.3	1653.4	1604.5	1439.7	1252.5	1079.2	947.9	848.7	774.7	730.7
47.5°	1254.6	1432.7	1529.8	1506.7	1358.0	1172.1	1001.0	873.2	774.7	714.6	673.4
50°	1084.1	1268.5	1392.2	1397.8	1268.5	1084.8	913.0	794.2	705.5	650.3	618.2
52.5°	936.0	1110.0	1247.6	1283.2	1168.7	994.0	834.1	716.0	640.6	591.0	563.0
55°	811.0	959.8	1109.3	1163.8	1069.5	901.8	751.6	647.5	574.2	539.3	514.1
57.5°	692.3	822.9	964.7	1022.0	961.9	814.5	669.2	577.7	515.5	484.1	464.5
60°	602.1	699.9	822.9	894.8	844.5	716.7	593.8	507.8	458.9	431.7	413.5
62.5°	518.3	602.1	701.3	765.6	743.9	625.2	518.3	445.0	404.5	379.3	367.4
65°	441.5	509.9	590.3	651.0	632.9	541.4	451.3	386.3	352.8	332.5	322.0
67.5°	375.8	428.2	485.5	541.4	526.0	458.2	382.1	329.7	303.9	285.7	279.4
70°	314.3	352.1	401.7	444.3	432.4	379.3	322.0	278.7	257.1	242.4	236.1
72.5°	255.7	285.0	319.9	352.8	345.8	303.9	258.5	228.4	213.1	199.8	194.9
75°	201.9	225.6	248.7	271.7	269.6	235.4	207.5	182.3	169.0	158.6	156.5
77.5°	157.9	172.5	189.3	204.0	200.5	178.1	155.1	139.7	129.2	122.2	121.5
80°	113.9	121.5	132.7	142.5	137.6	129.2	111.8	101.3	94.3	87.3	84.5
82.5°	74.7	82.4	88.0	92.2	88.7	81.0	71.9	65.7	62.2	58.0	57.3
85°	43.3	47.5	50.3	51.7	50.3	45.4	40.5	37.7	34.2	32.1	31.4
87.5°	21.0	21.0	21.0	22.4	20.3	20.3	17.5	15.4	14.7	14.0	12.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242293

CATALOG NUMBER: S122DR-S1005D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6	1817.6
2.5°	1787.6	1783.4	1768.7	1761.0	1748.4	1736.6	1728.9	1732.4	1735.2	1733.8	1731.7
5°	1742.2	1728.9	1708.6	1691.2	1678.6	1655.5	1645.8	1640.9	1636.7	1631.8	1626.9
7.5°	1691.9	1673.0	1644.4	1622.0	1599.7	1570.3	1555.6	1547.3	1538.2	1527.7	1517.9
10°	1637.4	1608.0	1577.3	1542.4	1514.4	1488.6	1465.5	1450.2	1436.2	1422.9	1413.1
12.5°	1580.1	1545.2	1505.4	1454.4	1422.9	1383.1	1384.5	1354.5	1330.7	1323.7	1311.9
15°	1518.6	1471.1	1422.9	1366.3	1341.9	1308.4	1287.4	1266.5	1247.6	1234.3	1230.8
17.5°	1451.6	1388.0	1341.2	1299.3	1259.5	1225.2	1207.1	1190.3	1174.2	1154.7	1154.0
20°	1372.6	1319.5	1267.1	1231.5	1190.3	1155.4	1131.6	1114.9	1101.6	1091.1	1082.0
22.5°	1297.9	1238.5	1191.7	1151.9	1111.4	1084.8	1067.4	1051.3	1040.8	1028.9	1020.6
25°	1216.9	1171.4	1119.1	1075.1	1041.5	1023.4	1008.0	994.0	987.0	979.4	969.6
27.5°	1147.7	1097.4	1045.7	1011.5	980.7	964.7	952.8	942.3	936.0	931.2	924.9
30°	1073.7	1022.7	984.2	950.7	926.3	910.2	903.2	897.6	889.9	887.1	884.4
32.5°	1002.4	957.7	926.3	898.3	875.3	866.2	859.9	855.0	849.4	846.6	840.3
35°	936.0	897.6	865.5	849.4	830.6	821.5	816.6	809.6	804.0	801.2	800.5
37.5°	872.5	837.5	815.9	794.2	785.2	780.3	773.3	768.4	766.3	765.6	764.9
40°	811.0	783.8	764.9	748.1	744.6	736.3	730.7	726.5	726.5	727.2	726.5
42.5°	755.1	731.4	715.3	701.3	697.1	693.0	687.4	688.1	689.5	692.3	689.5
45°	698.5	681.1	669.2	662.2	654.5	649.6	648.9	651.0	651.7	652.4	654.5
47.5°	645.4	634.3	623.1	614.7	611.2	610.5	609.1	612.6	616.1	616.8	620.3
50°	599.3	586.1	577.0	572.1	569.3	567.9	569.3	573.5	576.3	579.8	581.9
52.5°	547.7	539.3	533.7	530.2	529.5	530.9	530.9	535.8	540.7	541.4	542.1
55°	500.9	493.9	492.5	486.2	489.0	488.3	491.8	494.6	498.8	502.9	503.6
57.5°	453.4	447.1	442.9	443.6	444.3	447.1	449.9	454.7	459.6	464.5	464.5
60°	405.9	403.1	401.0	401.0	402.4	406.5	410.0	414.9	417.7	420.5	422.6
62.5°	362.5	359.7	357.7	359.0	363.2	365.3	369.5	371.6	374.4	377.2	377.9
65°	316.4	315.0	317.1	318.5	319.2	322.7	327.6	329.7	332.5	333.9	338.8
67.5°	274.5	274.5	273.8	275.9	280.1	280.8	285.7	291.3	291.3	294.1	297.6
70°	231.9	233.3	234.7	236.1	239.6	241.0	244.5	246.6	249.4	251.5	253.6
72.5°	192.8	192.8	194.2	193.5	196.3	199.8	202.6	204.7	207.5	210.3	212.4
75°	154.4	154.4	155.8	156.5	160.0	163.5	162.8	164.2	167.0	169.7	171.1
77.5°	119.5	118.1	119.5	120.1	121.5	124.3	125.0	127.1	130.6	129.9	131.3
80°	85.9	83.8	85.9	86.6	86.6	90.1	90.1	91.5	93.6	91.5	93.6
82.5°	55.2	54.5	55.9	55.9	57.3	56.6	58.0	58.0	60.1	59.4	60.1
85°	30.7	30.0	30.7	30.0	30.7	31.4	31.4	30.7	30.7	32.1	30.0
87.5°	11.9	11.2	10.5	10.5	9.8	9.1	8.4	8.4	8.4	7.0	7.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242293

CATALOG NUMBER: S122DR-S1005D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1817.6	1817.6	1817.6	1817.6
2.5°	1724.7	1723.3	1723.3	1717.0
5°	1617.1	1615.0	1611.5	1615.0
7.5°	1515.1	1506.0	1504.7	1497.7
10°	1401.3	1395.7	1395.0	1381.7
12.5°	1314.7	1299.3	1302.8	1296.5
15°	1212.0	1212.0	1209.2	1197.3
17.5°	1138.6	1137.9	1131.6	1135.8
20°	1074.4	1070.2	1061.8	1061.8
22.5°	1013.6	1014.3	1005.2	1008.7
25°	968.9	963.3	959.1	961.2
27.5°	922.8	920.7	920.0	913.7
30°	883.7	876.7	878.1	874.6
32.5°	838.9	837.5	835.5	832.7
35°	799.1	799.8	796.3	797.7
37.5°	763.5	766.3	764.2	764.2
40°	728.6	728.6	728.6	730.7
42.5°	695.0	693.6	692.3	691.6
45°	655.9	658.0	658.7	655.2
47.5°	621.7	622.4	621.7	625.9
50°	585.4	584.0	585.4	584.0
52.5°	547.0	547.7	546.3	546.3
55°	506.4	507.8	507.1	507.1
57.5°	465.2	465.9	467.3	463.8
60°	421.9	425.4	424.7	423.3
62.5°	382.1	382.8	382.8	382.8
65°	340.9	342.3	340.2	342.3
67.5°	296.2	296.9	298.3	299.0
70°	255.0	254.3	256.4	258.5
72.5°	211.7	213.8	212.4	213.8
75°	169.7	171.8	171.1	173.2
77.5°	129.9	130.6	130.6	131.3
80°	93.6	92.2	90.8	93.6
82.5°	58.0	59.4	58.0	57.3
85°	30.0	29.3	27.9	27.9
87.5°	7.0	6.3	6.3	5.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)