

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: P242395

Luminaire Tested: **S122RDR-S865D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242395
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-S865D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED 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: 2989.0 lumens
Efficiency: N/A
Efficacy: 85.9 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

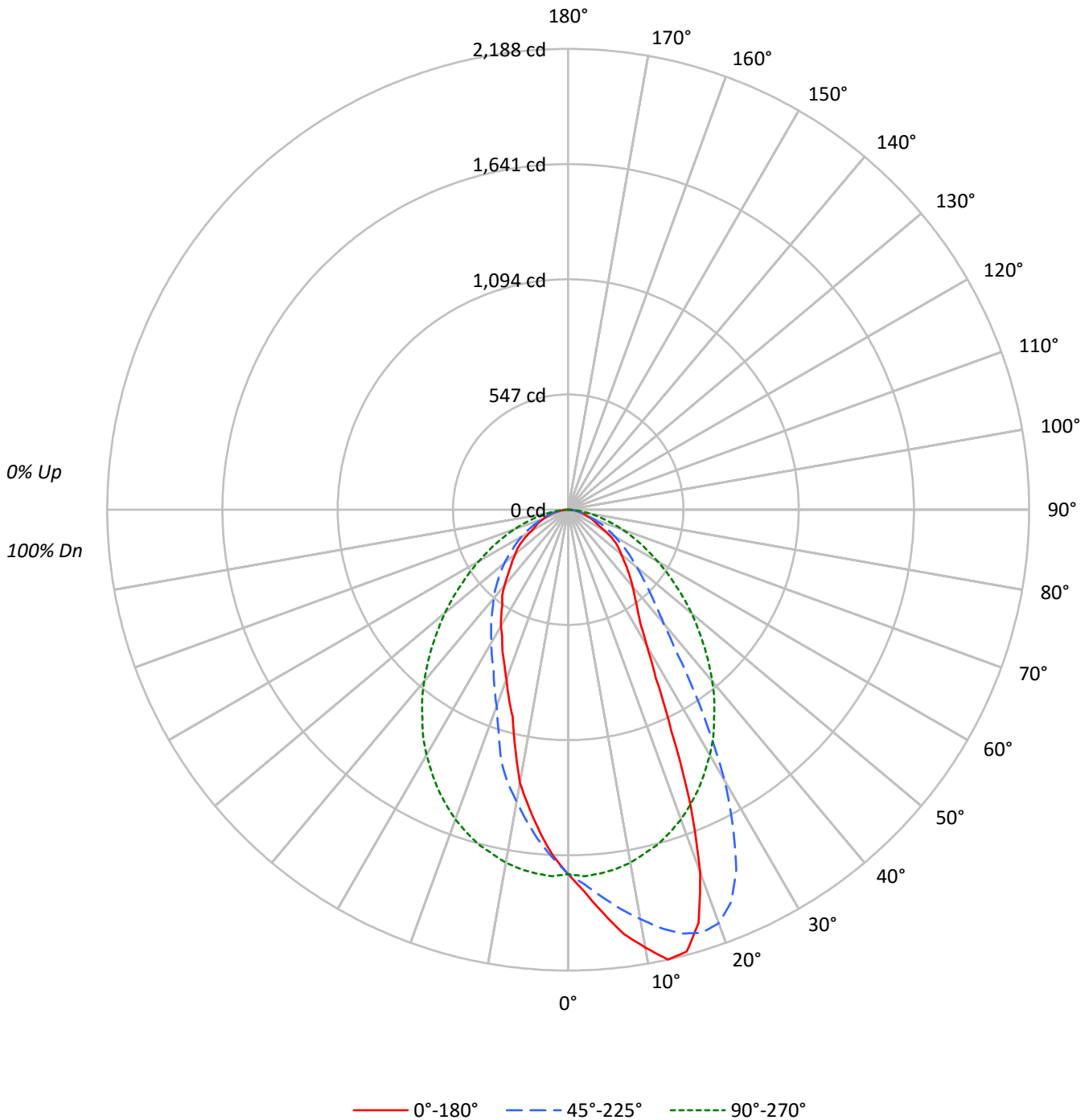
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242395

CATALOG NUMBER: S122RDR-S865D830-X4F0-XX-UDD-A-W

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	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	111	106	103	100	108	104	101	98	100	97	95		96	94	92		93	91	89	87
2	102	95	89	84	100	93	88	83	90	85	81		87	83	80		84	81	78	76
3	94	85	78	72	92	84	77	72	81	75	71		78	73	69		76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62		71	66	61		69	64	60	59
5	81	70	62	56	79	69	61	56	67	60	55		65	59	55		63	58	54	52
6	76	64	56	50	74	63	55	50	61	54	49		60	54	49		58	53	49	47
7	71	59	51	45	69	58	50	45	56	50	45		55	49	44		54	48	44	42
8	66	54	46	41	65	53	46	41	52	45	41		51	45	40		50	44	40	39
9	62	50	43	38	61	50	42	37	49	42	37		47	41	37		47	41	37	35
10	59	47	39	35	58	46	39	35	45	39	34		44	38	34		44	38	34	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	32947	32947	32947
5°	36797	33153	29396
10°	40826	32921	25481
15°	42833	32439	20077
20°	37133	31725	17374
25°	24354	30746	15513
30°	16392	29558	14039
35°	13277	28062	12661
40°	11806	26436	11716
45°	10686	24527	10460
50°	9726	22637	9690
55°	9142	20536	9023
60°	7646	18613	7554
65°	6445	16902	7315
70°	5959	15098	6895
75°	5571	13137	6366
80°	5145	10816	5671
85°	4721	8545	4983



TEST NUMBER: P242395

CATALOG NUMBER: S122RDR-S865D830-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.1	5.5
10°-20°	457.9	15.3
20°-30°	589.4	19.7
30°-40°	559.1	18.7
40°-50°	479.1	16.0
50°-60°	364.9	12.2
60°-70°	230.2	7.7
70°-80°	114.9	3.8
80°-90°	29.5	1.0
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°	1211.4	40.5
0°-40°	1770.5	59.2
0°-60°	2614.5	87.5
0°-90°	2989.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2989.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1730	1730	1730	1730	1730	
5°	1924	1845	1734	1580	1537	190
15°	2172	2083	1645	1232	1018	591
25°	1159	1888	1463	838	738	547
35°	571	1026	1207	636	544	363
45°	397	541	910	469	388	307
55°	275	337	618	318	272	242
65°	143	192	375	191	162	145
75°	76	85	178	97	86	80
85°	22	22	39	23	23	24
90°	0	0	0	0	0	



TEST NUMBER: P242395

CATALOG NUMBER: S122RDR-S865D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7
2.5°	1817.5	1819.3	1821.1	1816.9	1816.9	1813.3	1805.5	1799.5	1782.6	1780.2	1780.2
5°	1924.5	1923.3	1925.7	1917.9	1907.0	1904.6	1893.2	1878.2	1862.6	1845.1	1841.5
7.5°	2032.6	2025.4	2022.4	2026.0	2014.6	1999.0	1979.8	1961.7	1934.7	1912.4	1898.6
10°	2110.8	2130.6	2118.6	2097.6	2101.8	2073.5	2058.5	2032.6	2011.0	1973.1	1964.7
12.5°	2187.7	2192.5	2190.7	2181.1	2173.3	2155.9	2134.2	2112.6	2068.1	2035.1	2000.2
15°	2172.1	2183.5	2186.5	2182.9	2185.9	2184.7	2173.9	2155.3	2120.4	2083.1	2050.7
17.5°	2056.7	2069.9	2080.7	2090.3	2105.4	2134.8	2143.8	2147.4	2133.0	2106.6	2079.5
20°	1831.9	1818.7	1874.0	1902.2	1926.3	1986.4	2038.1	2057.9	2089.7	2089.1	2083.1
22.5°	1513.4	1520.6	1572.3	1607.1	1688.9	1749.0	1809.7	1898.0	1967.1	2018.2	2049.5
25°	1158.8	1181.6	1233.9	1279.6	1357.7	1469.5	1571.1	1688.9	1800.1	1887.8	1971.3
27.5°	901.5	904.5	952.0	998.3	1046.4	1143.1	1279.0	1420.2	1578.9	1693.1	1837.3
30°	745.3	741.7	759.1	784.9	824.6	895.5	991.7	1129.9	1288.0	1485.1	1660.6
32.5°	634.7	635.9	647.9	665.3	696.6	738.7	797.0	902.7	1050.0	1242.9	1456.3
35°	571.0	570.4	580.0	593.8	607.6	638.3	683.4	742.3	845.0	1025.9	1236.3
37.5°	518.1	521.1	525.3	534.3	551.1	569.2	597.4	638.9	717.0	829.4	1018.1
40°	474.8	476.0	482.6	489.8	498.8	512.1	534.3	566.2	619.7	705.0	834.2
42.5°	435.1	436.3	440.5	447.2	453.8	467.0	484.4	510.9	551.7	613.6	714.6
45°	396.7	396.7	400.9	403.9	411.7	423.7	438.7	461.6	491.6	540.9	611.8
47.5°	359.4	359.4	362.4	367.8	373.2	382.8	398.5	417.7	439.3	479.6	542.7
50°	328.2	328.8	330.6	334.8	337.8	346.2	357.6	373.8	396.7	426.1	476.6
52.5°	302.9	302.3	304.7	305.9	307.7	313.1	320.9	334.8	354.6	379.2	418.9
55°	275.3	272.9	276.5	279.5	281.3	283.7	288.5	297.5	314.9	336.6	367.8
57.5°	242.8	241.6	243.4	246.4	251.8	257.8	260.8	266.9	275.9	292.7	325.8
60°	200.7	200.7	206.1	208.0	214.6	223.0	231.4	236.2	245.2	255.4	278.3
62.5°	163.5	164.1	165.9	167.7	170.7	181.5	194.1	206.1	214.6	224.2	237.4
65°	143.0	144.2	144.2	145.4	147.9	150.3	155.1	163.5	178.5	192.3	203.7
67.5°	125.0	125.0	125.6	126.8	127.4	130.4	132.2	136.4	139.4	155.1	170.7
70°	107.0	108.8	108.2	109.4	110.0	111.2	113.6	115.4	120.8	123.8	132.2
72.5°	90.2	91.4	91.4	92.0	93.8	93.8	95.6	97.4	100.4	102.8	106.4
75°	75.7	75.1	75.7	76.9	77.5	78.1	78.1	80.5	82.3	84.7	87.7
77.5°	61.3	61.9	61.9	61.9	61.9	63.1	63.1	64.3	66.1	67.3	69.1
80°	46.9	47.5	46.9	47.5	48.1	48.7	48.1	48.7	50.5	51.7	51.7
82.5°	33.7	33.7	34.3	34.3	34.3	34.3	35.5	35.5	36.7	36.1	36.7
85°	21.6	21.0	21.0	21.0	21.6	22.2	21.6	21.6	22.2	22.2	22.2
87.5°	9.6	10.2	10.2	10.2	10.2	10.2	10.2	10.8	10.2	10.8	10.2
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: P242395

CATALOG NUMBER: S122RDR-S865D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7
2.5°	1781.4	1776.6	1772.4	1761.6	1756.2	1744.2	1742.4	1741.8	1726.1	1711.1	1706.9
5°	1831.9	1822.3	1807.9	1791.0	1773.6	1755.6	1743.6	1733.9	1709.9	1687.1	1673.8
7.5°	1881.8	1864.4	1841.5	1812.7	1788.0	1759.2	1739.4	1721.3	1688.3	1658.2	1638.4
10°	1938.9	1905.2	1872.2	1828.3	1794.0	1760.4	1729.1	1702.1	1663.6	1620.3	1589.7
12.5°	1974.3	1936.5	1887.8	1845.1	1798.2	1753.2	1708.7	1672.0	1625.2	1580.1	1542.2
15°	2005.6	1965.9	1910.6	1849.3	1792.2	1736.3	1688.3	1645.0	1586.1	1532.6	1488.1
17.5°	2034.5	1979.8	1922.7	1851.7	1788.6	1720.7	1660.0	1605.9	1541.6	1478.5	1428.0
20°	2047.1	1993.0	1924.5	1853.5	1775.4	1691.9	1625.2	1565.1	1494.7	1424.4	1364.3
22.5°	2039.3	2000.2	1922.1	1833.7	1753.2	1664.8	1587.3	1515.2	1435.2	1363.1	1291.0
25°	1998.4	1984.0	1911.8	1819.3	1727.9	1626.4	1539.2	1462.9	1373.9	1297.0	1221.3
27.5°	1923.3	1944.3	1893.2	1792.8	1694.3	1584.9	1489.9	1404.0	1313.2	1227.3	1151.6
30°	1804.3	1875.8	1856.5	1765.2	1651.6	1544.6	1434.6	1343.9	1245.3	1156.4	1081.8
32.5°	1641.4	1771.2	1799.5	1726.7	1608.3	1488.1	1371.5	1281.4	1177.4	1082.4	1010.3
35°	1466.5	1643.2	1724.3	1675.6	1557.8	1431.0	1312.0	1206.8	1103.5	1010.9	938.8
37.5°	1259.1	1494.7	1619.7	1614.3	1501.9	1372.7	1243.5	1139.5	1033.2	941.8	866.7
40°	1058.4	1319.2	1495.3	1534.4	1443.0	1300.6	1169.6	1063.2	959.8	870.9	781.3
42.5°	878.1	1137.7	1364.3	1439.4	1371.5	1230.3	1098.7	986.3	886.5	803.6	711.6
45°	739.3	966.4	1205.0	1326.4	1286.2	1155.2	1016.3	910.5	816.2	743.5	655.7
47.5°	640.1	805.4	1045.2	1203.8	1199.0	1074.6	936.4	834.8	745.9	678.6	604.0
50°	557.7	697.2	892.5	1078.8	1094.5	994.1	864.3	763.9	682.2	610.6	553.5
52.5°	483.8	592.6	763.3	940.0	991.7	908.1	783.1	692.4	613.6	549.3	502.5
55°	421.3	510.3	643.7	810.8	878.1	816.8	705.0	618.4	554.1	498.8	456.8
57.5°	366.6	436.3	547.5	687.6	763.9	722.4	626.9	555.3	498.2	446.6	412.9
60°	315.5	370.2	461.0	573.4	659.9	632.9	554.1	488.6	441.7	398.5	367.2
62.5°	267.5	312.5	387.1	473.0	550.5	543.3	482.6	430.3	390.7	352.2	327.0
65°	223.0	257.2	317.9	389.5	453.2	458.6	412.3	375.0	338.4	307.1	283.7
67.5°	184.5	208.0	253.6	316.7	365.4	382.2	351.0	320.9	290.9	265.7	244.6
70°	149.7	167.7	198.9	247.6	291.5	309.5	293.3	271.1	245.8	226.0	208.6
72.5°	114.2	131.6	152.7	185.1	221.2	241.0	238.0	223.6	204.3	188.7	172.5
75°	91.4	96.8	112.4	136.4	165.9	182.7	186.9	178.5	162.3	149.7	140.0
77.5°	70.9	74.5	82.9	97.4	117.8	132.8	139.4	138.2	126.2	117.8	108.8
80°	54.1	55.9	59.5	64.9	79.3	94.4	98.6	98.6	90.8	87.7	78.7
82.5°	37.9	39.1	40.9	43.3	48.1	60.7	65.5	66.7	62.5	58.3	51.7
85°	23.4	22.8	24.0	25.8	27.0	30.7	37.9	39.1	37.9	33.1	31.3
87.5°	10.2	10.8	10.8	10.2	10.8	11.4	14.4	17.4	15.0	13.2	12.0
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: P242395

CATALOG NUMBER: S122RDR-S865D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7	1729.7
2.5°	1699.1	1694.9	1687.1	1675.0	1667.8	1655.2	1646.8	1651.6	1652.8	1651.6	1650.4
5°	1659.4	1646.8	1629.4	1612.5	1596.9	1580.1	1570.5	1566.3	1557.8	1553.0	1550.6
7.5°	1614.3	1595.7	1571.1	1544.0	1518.8	1494.7	1483.9	1475.5	1459.9	1451.5	1443.6
10°	1562.7	1528.4	1503.8	1465.3	1441.8	1407.6	1384.1	1384.7	1361.3	1348.1	1338.5
12.5°	1505.6	1467.1	1422.0	1388.4	1353.5	1327.7	1298.2	1283.8	1258.5	1245.9	1215.9
15°	1441.2	1397.4	1354.1	1307.2	1274.2	1231.5	1190.6	1140.7	1100.5	1065.6	1056.0
17.5°	1372.7	1318.6	1276.0	1227.9	1176.2	1098.7	1048.2	1017.5	993.5	975.5	961.0
20°	1301.8	1246.5	1200.2	1117.3	1041.0	992.3	957.4	935.2	909.9	890.1	879.3
22.5°	1227.3	1169.0	1101.7	1006.7	951.4	914.8	884.7	858.3	843.2	828.8	819.2
25°	1157.6	1094.5	990.5	926.8	878.7	837.8	816.2	800.6	782.5	761.5	751.9
27.5°	1084.8	984.5	905.7	859.5	810.2	784.3	765.7	739.9	723.6	715.8	705.0
30°	1001.3	900.9	842.6	790.9	758.5	729.0	706.2	693.0	677.3	661.1	654.5
32.5°	908.1	833.0	777.7	736.8	703.8	679.8	662.9	639.5	629.3	620.9	605.2
35°	834.2	773.5	722.4	687.6	656.3	635.9	614.8	602.2	581.8	573.4	568.0
37.5°	766.9	714.0	675.5	637.1	613.0	589.0	577.0	555.9	548.1	534.9	524.1
40°	711.6	659.9	623.3	593.2	565.6	548.7	532.5	516.3	503.1	497.6	483.8
42.5°	655.1	615.4	578.8	545.1	528.9	510.9	489.2	478.4	464.6	455.0	447.8
45°	604.0	566.8	535.5	508.5	488.0	469.4	456.2	436.3	428.5	411.1	403.9
47.5°	558.9	522.9	492.8	466.4	446.0	435.1	415.9	398.5	387.7	375.6	365.4
50°	510.3	481.4	452.6	429.7	411.7	394.3	374.4	366.6	347.4	342.0	336.6
52.5°	465.8	438.7	412.9	390.7	372.6	355.8	339.0	328.2	316.7	311.3	307.7
55°	424.9	398.5	373.2	353.4	335.4	317.9	307.1	294.5	288.5	284.3	279.5
57.5°	382.8	358.8	339.0	318.5	300.5	286.1	272.9	265.7	259.6	254.8	248.2
60°	343.2	320.3	302.9	284.3	265.7	254.2	244.6	235.6	228.4	220.0	217.6
62.5°	301.1	281.9	266.3	248.2	232.6	222.4	213.4	204.9	195.9	182.7	179.1
65°	263.2	247.6	230.8	215.8	201.3	191.1	177.9	168.3	164.7	163.5	162.9
67.5°	228.4	213.4	198.9	183.3	170.1	158.7	150.9	149.7	147.2	146.6	144.8
70°	193.5	179.7	165.3	150.9	138.2	136.4	134.0	131.6	128.6	127.4	126.2
72.5°	162.3	147.9	133.4	122.6	119.0	116.6	114.2	111.8	110.0	108.8	108.2
75°	129.2	116.0	106.4	102.2	99.2	97.4	93.8	92.0	90.8	89.0	88.3
77.5°	98.6	90.2	85.3	82.9	79.3	77.5	75.1	73.3	71.5	71.5	70.3
80°	70.9	67.3	64.3	60.7	59.5	57.1	56.5	54.7	55.3	53.5	53.5
82.5°	51.1	46.3	43.9	42.7	41.5	39.7	39.1	38.5	38.5	37.3	37.3
85°	28.2	27.0	25.8	24.6	24.6	22.8	23.4	22.8	22.8	21.6	21.0
87.5°	11.4	10.8	9.6	9.6	9.6	9.0	9.0	8.4	8.4	8.4	7.8
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: P242395

CATALOG NUMBER: S122RDR-S865D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1729.7	1729.7	1729.7	1729.7
2.5°	1643.8	1645.0	1643.2	1644.4
5°	1547.6	1540.4	1539.2	1537.4
7.5°	1434.0	1433.4	1429.8	1425.6
10°	1325.2	1322.2	1321.6	1317.4
12.5°	1197.8	1174.4	1172.0	1160.0
15°	1041.6	1038.0	1025.9	1018.1
17.5°	954.4	942.4	938.2	936.4
20°	870.9	860.1	858.3	857.1
22.5°	813.2	801.8	796.4	792.1
25°	745.9	741.7	739.3	738.1
27.5°	693.0	682.2	681.0	677.9
30°	649.1	646.1	641.9	638.3
32.5°	597.4	595.0	591.4	590.2
35°	562.0	553.5	549.9	544.5
37.5°	522.9	518.1	512.1	514.5
40°	476.0	473.0	471.8	471.2
42.5°	438.7	429.1	425.5	425.5
45°	400.9	393.1	387.7	388.3
47.5°	360.0	360.6	357.0	358.2
50°	332.4	328.8	326.4	327.0
52.5°	305.9	302.9	301.1	304.1
55°	276.5	272.9	272.3	271.7
57.5°	244.6	242.8	239.8	238.0
60°	209.8	204.9	198.9	198.3
62.5°	177.9	177.9	177.9	177.9
65°	161.7	161.1	161.7	162.3
67.5°	144.8	143.6	142.4	143.0
70°	125.0	124.4	123.8	123.8
72.5°	105.8	105.8	105.2	104.6
75°	87.7	86.5	86.5	86.5
77.5°	70.3	69.7	69.1	68.5
80°	52.9	52.3	51.7	51.7
82.5°	37.3	36.7	36.7	36.1
85°	21.6	22.2	21.6	22.8
87.5°	7.8	7.2	7.8	7.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)