

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: P242297

Luminaire Tested: **S122DR-S865D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242297  
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-S865D835-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3660.5 lumens  
Efficiency: N/A  
Efficacy: 105.2 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

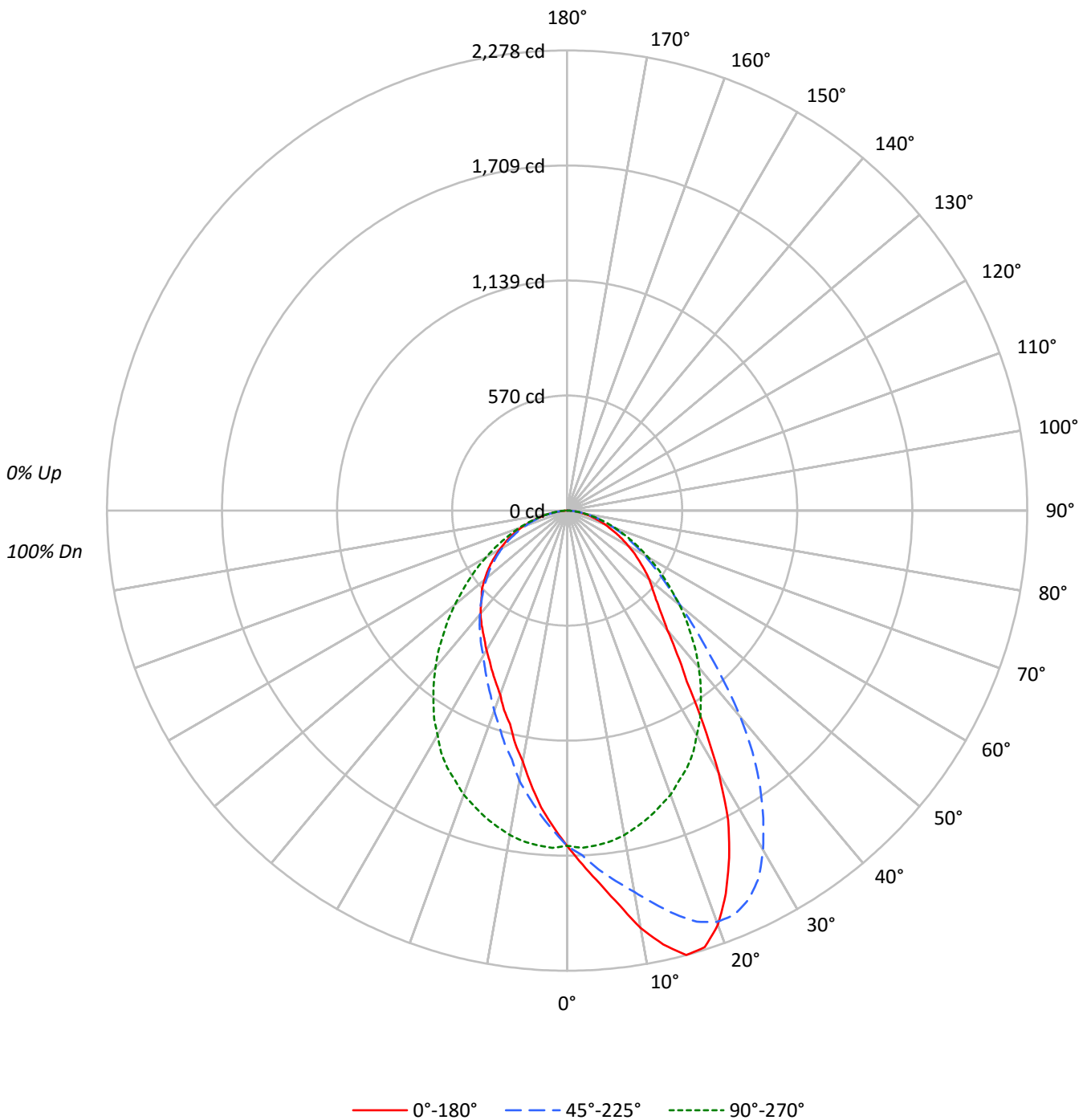
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	31606	31606	31606
5°	35432	31811	28191
10°	40604	31550	24397
15°	44917	30972	21554
20°	44234	30350	19648
25°	39886	29524	18442
30°	32961	28206	17560
35°	24023	26825	16933
40°	19186	25196	16585
45°	16766	23312	16114
50°	15759	21487	15797
55°	14529	19630	15376
60°	13314	17661	14720
65°	12129	15892	14085
70°	11010	14168	13138
75°	9759	12246	11635
80°	8391	10146	9379
85°	7518	7518	5573



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.0	4.3
10°-20°	460.0	12.6
20°-30°	667.6	18.2
30°-40°	703.8	19.2
40°-50°	622.7	17.0
50°-60°	497.1	13.6
60°-70°	337.6	9.2
70°-80°	172.8	4.7
80°-90°	40.8	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°	1285.6	35.1
0°-40°	1989.4	54.3
0°-60°	3109.2	84.9
0°-90°	3660.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3660.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1659	1659	1659	1659	1659	
5°	1853	1784	1664	1511	1474	184
15°	2278	2069	1571	1194	1093	631
25°	1898	2125	1405	934	878	861
35°	1033	1664	1154	750	728	669
45°	622	985	865	593	598	488
55°	438	567	591	446	463	392
65°	269	336	353	295	312	267
75°	133	163	166	149	158	141
85°	34	38	34	29	26	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3
2.5°	1754.9	1755.6	1756.8	1746.6	1745.4	1745.4	1736.4	1728.8	1719.9	1707.7	1709.0
5°	1853.1	1860.2	1862.7	1855.1	1843.6	1842.3	1831.5	1813.6	1797.0	1783.6	1774.1
7.5°	1966.7	1969.2	1964.1	1955.2	1947.5	1932.9	1915.0	1897.8	1872.3	1849.3	1832.7
10°	2099.3	2103.1	2092.3	2077.6	2065.5	2047.6	2018.3	1988.3	1952.0	1916.9	1888.9
12.5°	2200.0	2210.9	2196.2	2197.5	2174.5	2148.4	2112.0	2100.6	2045.7	1993.4	1962.8
15°	2277.8	2277.2	2278.5	2266.4	2251.1	2247.2	2210.2	2170.1	2098.0	2069.3	2019.6
17.5°	2266.4	2275.3	2280.4	2276.6	2274.0	2268.3	2252.3	2222.4	2182.8	2134.4	2075.1
20°	2182.2	2194.9	2196.9	2211.5	2219.8	2230.7	2235.1	2228.1	2205.8	2166.9	2117.1
22.5°	2052.1	2053.4	2060.4	2085.3	2105.7	2136.9	2153.5	2184.7	2179.6	2165.6	2126.1
25°	1897.8	1891.4	1913.7	1925.2	1966.7	2010.0	2041.3	2075.7	2106.3	2124.8	2112.7
27.5°	1726.9	1713.5	1747.3	1777.3	1806.6	1848.7	1895.9	1952.0	1994.7	2052.7	2066.8
30°	1498.6	1504.3	1536.2	1568.7	1619.7	1686.1	1740.9	1804.0	1872.3	1939.2	1985.8
32.5°	1252.4	1278.6	1295.8	1350.0	1393.4	1469.2	1556.0	1638.9	1728.2	1806.6	1885.0
35°	1033.1	1058.6	1086.6	1123.0	1186.1	1259.4	1337.9	1444.4	1560.4	1664.4	1749.8
37.5°	894.0	889.6	906.8	933.6	987.8	1050.9	1144.0	1252.4	1391.4	1506.9	1621.7
40°	771.6	769.1	780.5	804.8	843.7	887.0	966.1	1058.6	1185.5	1334.7	1478.2
42.5°	687.4	690.0	695.1	710.4	734.0	767.8	822.0	897.2	1010.7	1149.1	1306.0
45°	622.4	626.9	633.9	642.2	657.5	686.8	720.0	776.1	867.9	985.2	1137.0
47.5°	571.4	572.6	580.3	588.0	596.9	614.7	644.1	679.8	749.9	850.0	985.9
50°	531.8	527.4	532.5	538.2	547.8	559.3	577.1	610.3	653.6	730.8	839.8
52.5°	483.4	484.6	489.1	490.4	498.7	510.2	526.1	546.5	584.8	640.9	725.7
55°	437.5	440.6	443.2	447.0	454.7	463.0	475.7	491.0	521.6	566.9	633.2
57.5°	394.1	395.4	397.3	405.6	410.0	417.7	430.4	444.5	464.9	500.0	552.2
60°	349.5	349.5	354.6	357.7	364.1	371.8	381.3	394.7	412.6	440.0	480.2
62.5°	308.6	308.0	309.3	315.0	319.5	326.5	336.1	346.9	363.5	387.1	418.3
65°	269.1	267.8	271.7	272.9	278.0	285.0	292.7	304.8	318.2	336.1	365.4
67.5°	229.6	231.5	234.0	236.6	239.1	247.4	252.5	261.5	272.9	288.2	308.6
70°	197.7	197.7	197.7	199.6	203.4	207.3	212.4	219.4	230.2	243.0	260.8
72.5°	162.0	164.5	167.1	165.2	170.3	172.2	178.6	181.7	191.9	199.0	214.3
75°	132.6	132.6	132.6	135.8	137.7	139.7	143.5	147.3	152.4	162.6	170.9
77.5°	104.6	103.9	104.6	105.2	107.8	110.3	111.6	114.8	119.9	125.0	132.6
80°	76.5	77.8	78.4	79.7	79.7	81.0	81.6	86.1	89.3	92.5	96.9
82.5°	54.8	54.8	54.8	54.8	55.5	56.1	58.0	58.7	59.3	61.9	65.0
85°	34.4	33.8	33.8	35.1	34.4	34.4	35.7	37.0	37.0	37.6	39.5
87.5°	16.6	16.6	17.2	16.6	16.6	17.2	17.2	16.6	17.2	17.9	18.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3
2.5°	1713.5	1708.4	1705.2	1693.7	1683.5	1673.3	1670.1	1671.4	1657.4	1644.0	1638.2
5°	1769.0	1756.2	1744.1	1726.9	1706.5	1684.2	1672.7	1663.7	1641.4	1617.2	1603.2
7.5°	1819.3	1802.8	1781.1	1750.5	1722.4	1689.3	1668.8	1651.6	1620.4	1587.9	1568.1
10°	1864.6	1839.7	1809.8	1770.2	1733.9	1691.2	1661.2	1631.2	1593.0	1552.1	1526.6
12.5°	1903.5	1867.8	1838.5	1784.9	1740.3	1684.2	1647.2	1601.9	1561.1	1510.7	1485.8
15°	1969.8	1908.0	1851.9	1794.5	1741.5	1666.9	1627.4	1570.6	1517.7	1457.8	1429.1
17.5°	2018.9	1952.0	1865.3	1795.7	1737.1	1657.4	1600.6	1533.0	1473.1	1406.8	1368.5
20°	2059.8	1980.0	1885.0	1798.3	1724.3	1629.9	1566.8	1497.3	1424.0	1346.8	1304.7
22.5°	2084.0	1999.2	1905.4	1788.7	1698.8	1607.6	1524.1	1446.3	1371.7	1286.9	1242.2
25°	2085.3	2008.7	1909.3	1784.3	1678.4	1574.5	1478.8	1404.8	1314.9	1237.1	1172.7
27.5°	2064.2	2003.6	1907.3	1775.3	1654.8	1535.6	1431.6	1350.6	1255.6	1171.4	1107.0
30°	2017.7	1985.8	1892.7	1760.0	1625.5	1494.8	1377.4	1282.4	1188.0	1102.6	1036.3
32.5°	1945.6	1945.0	1865.9	1738.4	1594.2	1443.1	1320.7	1224.4	1117.2	1033.7	971.2
35°	1846.8	1877.4	1825.7	1703.9	1553.4	1394.6	1263.3	1153.6	1045.2	964.8	905.5
37.5°	1721.1	1791.9	1771.5	1658.0	1501.1	1343.0	1200.1	1085.4	981.4	898.5	840.5
40°	1590.4	1687.3	1701.4	1603.8	1445.0	1281.1	1127.4	1013.3	912.5	838.6	779.9
42.5°	1450.1	1567.5	1612.1	1538.8	1383.8	1216.1	1062.4	943.2	843.7	772.2	721.9
45°	1290.1	1439.9	1509.4	1464.8	1314.3	1143.4	985.2	865.4	774.8	707.2	667.0
47.5°	1145.3	1307.9	1396.6	1375.5	1239.7	1070.1	913.8	797.1	707.2	652.4	614.7
50°	989.7	1158.1	1270.9	1276.0	1158.1	990.3	833.5	725.1	644.1	593.7	564.4
52.5°	854.5	1013.3	1138.9	1171.4	1066.9	907.4	761.4	653.6	584.8	539.5	514.0
55°	740.4	876.2	1012.7	1062.4	976.3	823.3	686.2	591.1	524.2	492.3	469.3
57.5°	632.0	751.2	880.7	932.9	878.1	743.6	610.9	527.4	470.6	441.9	424.1
60°	549.7	639.0	751.2	816.9	771.0	654.3	542.0	463.6	419.0	394.1	377.5
62.5°	473.2	549.7	640.2	698.9	679.1	570.7	473.2	406.2	369.2	346.3	335.4
65°	403.0	465.5	538.9	594.3	577.8	494.2	412.0	352.6	322.0	303.5	294.0
67.5°	343.1	390.9	443.2	494.2	480.2	418.3	348.8	301.0	277.4	260.8	255.1
70°	287.0	321.4	366.7	405.6	394.7	346.3	294.0	254.4	234.7	221.3	215.5
72.5°	233.4	260.2	292.1	322.0	315.7	277.4	235.9	208.5	194.5	182.4	177.9
75°	184.3	206.0	227.0	248.1	246.2	214.9	189.4	166.4	154.3	144.8	142.8
77.5°	144.1	157.5	172.8	186.2	183.0	162.6	141.6	127.5	118.0	111.6	111.0
80°	103.9	111.0	121.2	130.1	125.6	118.0	102.0	92.5	86.1	79.7	77.2
82.5°	68.2	75.2	80.3	84.2	81.0	74.0	65.7	59.9	56.8	52.9	52.3
85°	39.5	43.4	45.9	47.2	45.9	41.5	37.0	34.4	31.2	29.3	28.7
87.5°	19.1	19.1	19.1	20.4	18.5	18.5	15.9	14.0	13.4	12.8	11.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3	1659.3
2.5°	1631.9	1628.0	1614.6	1607.6	1596.1	1585.3	1578.3	1581.5	1584.0	1582.8	1580.8
5°	1590.4	1578.3	1559.8	1543.9	1532.4	1511.3	1502.4	1497.9	1494.1	1489.7	1485.2
7.5°	1544.5	1527.3	1501.1	1480.7	1460.3	1433.5	1420.1	1412.5	1404.2	1394.6	1385.7
10°	1494.8	1468.0	1439.9	1408.0	1382.5	1358.9	1337.9	1323.9	1311.1	1299.0	1290.1
12.5°	1442.5	1410.6	1374.2	1327.7	1299.0	1262.6	1263.9	1236.5	1214.8	1208.4	1197.6
15°	1386.3	1343.0	1299.0	1247.3	1225.0	1194.4	1175.3	1156.1	1138.9	1126.8	1123.6
17.5°	1325.1	1267.1	1224.4	1186.1	1149.8	1118.5	1101.9	1086.6	1072.0	1054.1	1053.5
20°	1253.1	1204.6	1156.8	1124.3	1086.6	1054.7	1033.1	1017.8	1005.6	996.1	987.8
22.5°	1184.8	1130.6	1087.9	1051.6	1014.6	990.3	974.4	959.7	950.2	939.3	931.7
25°	1110.9	1069.4	1021.6	981.4	950.8	934.2	920.2	907.4	901.1	894.0	885.1
27.5°	1047.7	1001.8	954.6	923.4	895.3	880.7	869.8	860.3	854.5	850.0	844.3
30°	980.1	933.6	898.5	867.9	845.6	830.9	824.5	819.4	812.4	809.9	807.3
32.5°	915.1	874.3	845.6	820.1	799.0	790.7	785.0	780.5	775.4	772.9	767.1
35°	854.5	819.4	790.1	775.4	758.2	749.9	745.5	739.1	734.0	731.4	730.8
37.5°	796.5	764.6	744.8	725.1	716.8	712.3	705.9	701.5	699.6	698.9	698.3
40°	740.4	715.5	698.3	683.0	679.8	672.1	667.0	663.2	663.2	663.8	663.2
42.5°	689.3	667.7	653.0	640.2	636.4	632.6	627.5	628.1	629.4	632.0	629.4
45°	637.7	621.8	610.9	604.5	597.5	593.1	592.4	594.3	595.0	595.6	597.5
47.5°	589.2	579.0	568.8	561.2	558.0	557.3	556.1	559.3	562.4	563.1	566.3
50°	547.1	535.0	526.7	522.3	519.7	518.4	519.7	523.5	526.1	529.3	531.2
52.5°	500.0	492.3	487.2	484.0	483.4	484.6	484.6	489.1	493.6	494.2	494.9
55°	457.2	450.9	449.6	443.8	446.4	445.7	448.9	451.5	455.3	459.1	459.8
57.5°	413.9	408.1	404.3	404.9	405.6	408.1	410.7	415.1	419.6	424.1	424.1
60°	370.5	367.9	366.0	366.0	367.3	371.1	374.3	378.8	381.3	383.9	385.8
62.5°	331.0	328.4	326.5	327.8	331.6	333.5	337.3	339.3	341.8	344.4	345.0
65°	288.9	287.6	289.5	290.8	291.4	294.6	299.1	301.0	303.5	304.8	309.3
67.5°	250.6	250.6	250.0	251.9	255.7	256.4	260.8	265.9	265.9	268.5	271.7
70°	211.7	213.0	214.3	215.5	218.7	220.0	223.2	225.1	227.7	229.6	231.5
72.5°	176.0	176.0	177.3	176.6	179.2	182.4	184.9	186.8	189.4	191.9	193.9
75°	140.9	140.9	142.2	142.8	146.0	149.2	148.6	149.9	152.4	155.0	156.2
77.5°	109.0	107.8	109.0	109.7	111.0	113.5	114.1	116.1	119.2	118.6	119.9
80°	78.4	76.5	78.4	79.1	79.1	82.3	82.3	83.5	85.5	83.5	85.5
82.5°	50.4	49.7	51.0	51.0	52.3	51.7	52.9	52.9	54.8	54.2	54.8
85°	28.1	27.4	28.1	27.4	28.1	28.7	28.7	28.1	28.1	29.3	27.4
87.5°	10.8	10.2	9.6	9.6	8.9	8.3	7.7	7.7	7.7	6.4	6.4
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: P242297

CATALOG NUMBER: S122DR-S865D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1659.3	1659.3	1659.3	1659.3
2.5°	1574.5	1573.2	1573.2	1567.5
5°	1476.3	1474.4	1471.2	1474.4
7.5°	1383.2	1374.9	1373.6	1367.2
10°	1279.2	1274.1	1273.5	1261.4
12.5°	1200.1	1186.1	1189.3	1183.6
15°	1106.4	1106.4	1103.8	1093.0
17.5°	1039.4	1038.8	1033.1	1036.9
20°	980.8	976.9	969.3	969.3
22.5°	925.3	925.9	917.6	920.8
25°	884.5	879.4	875.6	877.5
27.5°	842.4	840.5	839.8	834.1
30°	806.7	800.3	801.6	798.4
32.5°	765.9	764.6	762.7	760.1
35°	729.5	730.2	727.0	728.2
37.5°	697.0	699.6	697.6	697.6
40°	665.1	665.1	665.1	667.0
42.5°	634.5	633.2	632.0	631.3
45°	598.8	600.7	601.3	598.2
47.5°	567.5	568.2	567.5	571.4
50°	534.4	533.1	534.4	533.1
52.5°	499.3	500.0	498.7	498.7
55°	462.3	463.6	463.0	463.0
57.5°	424.7	425.3	426.6	423.4
60°	385.2	388.4	387.7	386.4
62.5°	348.8	349.5	349.5	349.5
65°	311.2	312.5	310.6	312.5
67.5°	270.4	271.0	272.3	272.9
70°	232.8	232.1	234.0	235.9
72.5°	193.2	195.1	193.9	195.1
75°	155.0	156.9	156.2	158.1
77.5°	118.6	119.2	119.2	119.9
80°	85.5	84.2	82.9	85.5
82.5°	52.9	54.2	52.9	52.3
85°	27.4	26.8	25.5	25.5
87.5°	6.4	5.7	5.7	5.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)