

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: P243152

Luminaire Tested: **S122DR-H865D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243152  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DR-H865D830-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

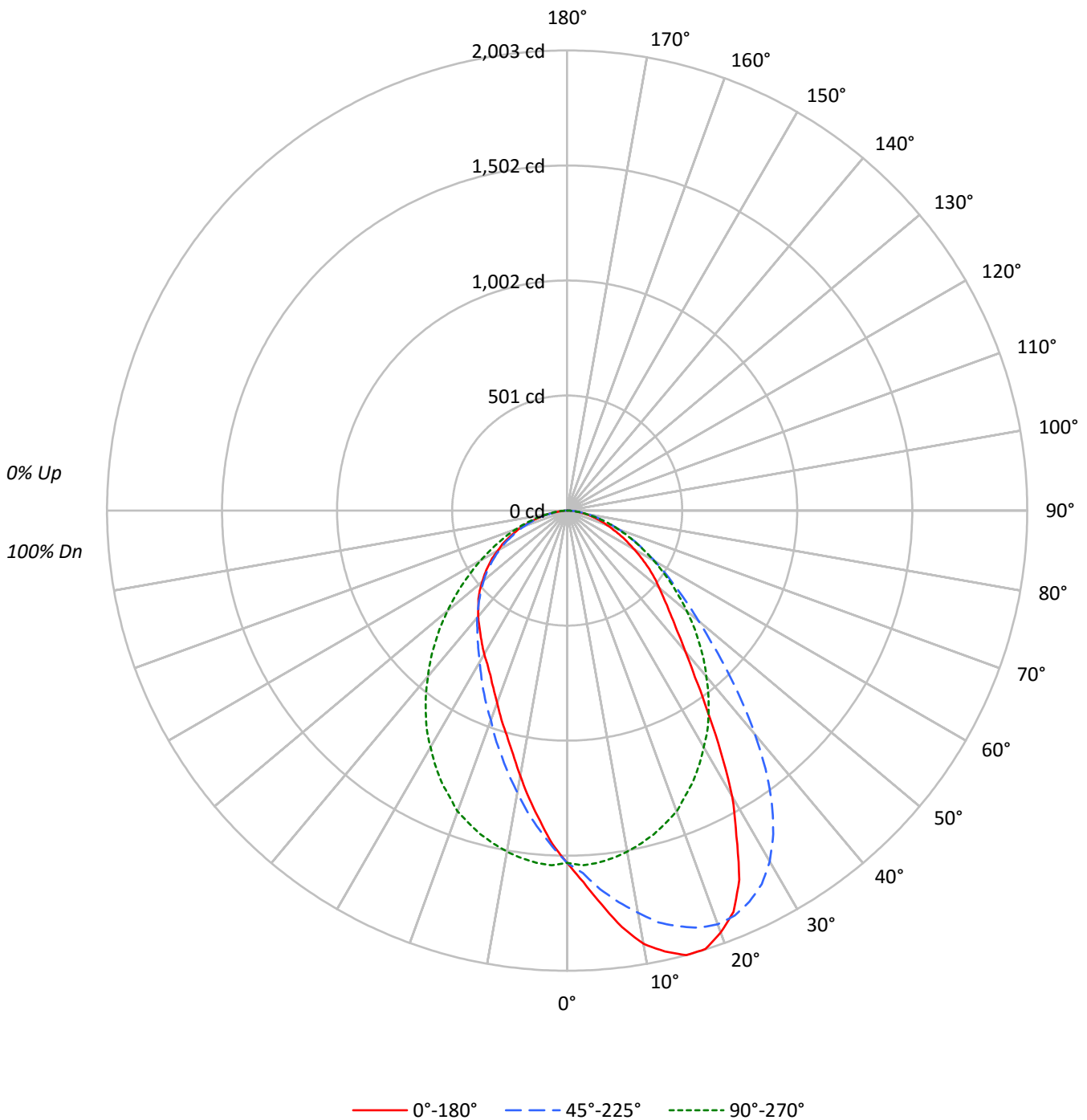
Lumens per Lamp: N/A  
Luminaire Lumens: 3402.7 lumens  
Efficiency: N/A  
Efficacy: 108.0 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (Ain): 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	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	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76					74				
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66					63				
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57					55				
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51					49				
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45					43				
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40					39				
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37					35				
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33					32				
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31					29				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	29210	29210	29210
5°	32903	29419	25914
10°	37037	29155	22678
15°	39506	28763	19988
20°	39620	28242	18038
25°	37263	27303	16626
30°	31630	26165	15878
35°	24732	24941	15282
40°	19870	23440	14986
45°	17092	21892	14708
50°	15507	20147	14295
55°	14286	18358	13908
60°	12842	16541	13276
65°	11561	14860	12638
70°	10303	13210	11823
75°	9273	11363	10355
80°	8095	9148	8095
85°	6950	6819	4458



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.1	4.3
10°-20°	419.9	12.3
20°-30°	610.7	17.9
30°-40°	655.0	19.3
40°-50°	587.1	17.3
50°-60°	468.0	13.8
60°-70°	316.6	9.3
70°-80°	161.5	4.7
80°-90°	37.8	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°	1176.7	34.6
0°-40°	1831.7	53.8
0°-60°	2886.8	84.8
0°-90°	3402.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3402.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1534	1534	1534	1534	1534	
5°	1721	1655	1539	1393	1355	170
15°	2003	1873	1459	1104	1014	561
25°	1773	1878	1299	863	791	798
35°	1064	1554	1073	679	657	674
45°	634	983	813	539	546	496
55°	430	572	553	406	419	384
65°	256	332	330	267	280	255
75°	126	157	154	133	141	134
85°	32	36	31	24	20	37
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°	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5
2.5°	1618.6	1623.7	1619.2	1617.5	1614.1	1612.9	1603.8	1596.5	1591.9	1579.4	1580.6
5°	1720.8	1732.1	1725.9	1725.3	1712.8	1704.9	1696.9	1685.6	1668.5	1654.9	1644.1
7.5°	1828.6	1822.9	1821.2	1815.0	1805.9	1794.5	1776.9	1760.5	1738.9	1719.1	1704.3
10°	1914.9	1913.2	1916.0	1900.1	1894.4	1876.8	1861.5	1836.0	1808.2	1776.9	1757.7
12.5°	1965.9	1971.0	1975.0	1968.8	1955.2	1950.0	1924.5	1888.8	1879.1	1836.5	1813.3
15°	2003.4	2005.7	2006.2	1999.4	1992.6	1979.6	1964.2	1941.5	1910.3	1873.4	1855.8
17.5°	2001.1	2000.6	2004.0	2000.0	1996.0	1992.0	1980.1	1962.5	1938.1	1903.5	1874.0
20°	1954.6	1964.8	1972.7	1974.4	1973.9	1976.2	1970.5	1959.1	1941.5	1916.6	1883.1
22.5°	1891.0	1887.0	1904.1	1902.9	1910.3	1927.3	1934.7	1930.2	1923.4	1907.5	1880.8
25°	1773.0	1776.9	1788.9	1801.4	1830.3	1840.5	1862.6	1879.7	1881.9	1878.0	1861.5
27.5°	1595.9	1624.3	1630.5	1647.0	1687.3	1720.8	1765.6	1792.3	1830.3	1833.7	1826.3
30°	1438.1	1437.0	1446.6	1476.2	1513.0	1563.6	1621.4	1690.1	1733.8	1763.9	1774.7
32.5°	1244.0	1248.6	1273.5	1309.9	1347.3	1397.8	1464.8	1548.8	1607.3	1669.7	1704.9
35°	1063.6	1077.7	1101.6	1126.6	1167.4	1236.7	1311.0	1380.8	1470.5	1553.9	1610.7
37.5°	914.9	934.2	952.3	976.2	1015.9	1069.2	1136.2	1228.7	1317.8	1418.3	1501.7
40°	799.1	806.5	819.0	842.2	868.9	922.2	989.8	1059.0	1155.5	1270.7	1380.2
42.5°	708.3	706.6	720.2	735.0	759.4	799.1	858.1	927.3	1023.3	1125.4	1236.1
45°	634.5	635.1	640.7	656.1	675.4	698.1	743.5	808.7	881.4	983.0	1100.4
47.5°	574.3	576.0	584.6	595.3	606.7	627.7	657.8	700.3	768.4	853.6	963.7
50°	523.3	526.1	531.8	539.7	548.2	563.0	585.7	619.2	673.1	745.2	845.1
52.5°	477.9	479.0	480.7	488.1	494.9	508.5	525.5	551.6	594.2	654.4	732.1
55°	430.2	429.1	433.0	439.3	445.5	455.2	472.8	493.8	523.8	571.5	635.6
57.5°	381.4	383.1	385.9	389.3	400.7	410.9	423.9	443.2	467.1	504.5	557.9
60°	337.1	337.1	340.5	345.1	352.4	359.2	371.7	389.3	410.3	439.3	484.1
62.5°	294.0	296.3	299.7	301.9	308.7	317.3	326.9	340.5	359.8	383.1	416.6
65°	256.5	255.4	258.8	263.3	268.4	274.1	284.9	296.3	311.0	332.0	359.8
67.5°	217.9	221.3	222.5	224.7	228.7	236.1	241.2	253.1	265.0	283.8	307.0
70°	185.0	187.3	189.0	191.8	195.2	198.6	203.7	213.4	225.3	238.4	254.8
72.5°	155.5	157.2	155.5	158.3	160.0	163.4	170.3	174.8	183.9	195.2	210.0
75°	126.0	127.1	126.6	129.4	130.0	133.4	136.8	140.7	151.0	157.2	167.4
77.5°	98.8	99.9	100.5	101.6	102.7	104.4	106.1	110.1	115.8	121.5	129.4
80°	73.8	73.8	75.5	76.0	76.6	77.8	80.6	81.7	85.7	87.4	93.6
82.5°	51.1	51.6	52.2	52.2	52.8	53.9	54.5	56.8	57.9	60.7	63.6
85°	31.8	32.3	32.3	32.3	34.1	33.5	33.5	34.6	36.3	36.3	37.5
87.5°	15.9	16.5	16.5	16.5	17.0	17.0	17.0	17.0	17.0	18.2	17.6
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°	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5
2.5°	1580.0	1579.4	1577.2	1567.0	1559.0	1548.8	1547.1	1545.4	1531.2	1515.9	1511.3
5°	1635.6	1625.4	1611.2	1594.2	1577.2	1558.4	1547.7	1538.6	1517.0	1493.2	1479.6
7.5°	1690.1	1670.3	1648.1	1621.4	1593.1	1563.0	1543.7	1525.5	1496.0	1464.8	1446.1
10°	1736.7	1710.0	1679.3	1644.1	1605.0	1564.1	1535.7	1507.4	1469.9	1431.9	1406.9
12.5°	1775.2	1741.2	1700.9	1653.2	1617.5	1561.3	1521.6	1484.1	1442.7	1393.3	1366.1
15°	1804.8	1771.3	1716.8	1668.5	1621.4	1546.5	1498.3	1458.6	1402.9	1354.7	1311.6
17.5°	1840.5	1792.8	1738.9	1669.7	1617.5	1531.8	1477.3	1425.6	1365.5	1308.7	1261.1
20°	1856.4	1806.5	1748.6	1671.4	1605.0	1515.9	1443.2	1393.3	1320.7	1255.4	1201.5
22.5°	1858.7	1811.0	1748.0	1666.3	1583.4	1492.6	1409.2	1343.9	1271.3	1202.0	1141.3
25°	1849.0	1803.6	1738.4	1657.2	1559.6	1467.6	1374.6	1299.1	1215.1	1143.6	1081.7
27.5°	1822.9	1786.0	1724.2	1637.3	1535.2	1429.0	1327.5	1245.2	1162.3	1081.2	1022.1
30°	1780.9	1756.5	1703.2	1611.2	1504.0	1387.1	1285.5	1189.6	1099.9	1023.8	960.3
32.5°	1727.0	1715.1	1670.8	1580.0	1472.2	1341.1	1235.0	1136.2	1038.6	966.5	901.2
35°	1658.3	1664.6	1627.1	1544.8	1431.9	1294.5	1175.9	1072.6	977.3	900.7	840.5
37.5°	1569.2	1599.9	1576.0	1498.9	1380.2	1247.4	1114.1	1010.2	910.3	836.5	783.8
40°	1469.3	1523.3	1511.9	1447.2	1324.6	1192.4	1054.5	942.7	845.1	775.3	724.7
42.5°	1351.9	1430.2	1442.7	1384.2	1269.6	1123.7	987.5	879.7	785.5	716.8	668.6
45°	1220.2	1317.2	1359.2	1313.3	1205.4	1057.3	918.8	812.7	719.6	661.2	620.9
47.5°	1088.0	1204.9	1261.6	1239.5	1130.5	986.4	850.7	746.9	658.9	607.8	569.8
50°	957.4	1082.9	1165.7	1151.0	1056.7	918.8	782.1	679.9	599.3	552.2	519.9
52.5°	842.8	961.4	1051.6	1059.0	974.5	841.7	709.4	614.6	546.0	503.4	476.2
55°	729.8	839.9	938.7	956.9	888.2	760.5	642.4	552.8	490.3	455.2	433.0
57.5°	628.8	728.7	826.9	858.7	803.1	687.9	570.4	491.5	437.6	410.3	391.0
60°	543.1	633.4	717.9	750.3	712.3	607.3	504.5	434.2	389.3	364.9	349.6
62.5°	468.2	538.0	612.9	648.7	623.2	531.8	442.1	379.7	343.4	322.4	310.4
65°	400.7	454.6	513.6	555.0	526.7	458.6	383.7	329.7	299.1	279.8	271.3
67.5°	338.2	383.1	430.2	463.1	448.9	387.1	324.1	282.1	256.5	241.8	233.8
70°	281.5	315.0	353.0	378.5	368.3	320.7	270.7	237.2	215.7	205.4	198.6
72.5°	231.0	252.6	281.5	302.5	291.7	258.2	222.5	195.8	179.9	168.0	162.9
75°	183.3	202.0	222.5	236.7	228.1	203.2	174.8	154.4	143.6	136.2	132.8
77.5°	139.0	153.8	168.0	174.8	170.8	152.7	133.4	117.5	108.4	103.9	99.9
80°	99.9	108.4	118.0	124.3	122.0	109.5	95.9	83.4	79.5	73.8	72.6
82.5°	67.0	73.8	76.0	78.9	77.2	71.5	61.9	54.5	51.1	48.2	47.7
85°	39.7	41.4	44.3	44.3	42.6	38.6	33.5	31.2	27.8	27.2	25.5
87.5°	17.6	17.6	17.6	17.6	17.6	16.5	14.2	13.1	11.9	11.4	10.8
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°	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5	1533.5
2.5°	1507.4	1501.7	1493.7	1484.7	1476.7	1464.2	1460.3	1460.3	1463.1	1459.7	1456.9
5°	1468.2	1456.9	1445.5	1427.9	1413.2	1393.3	1387.6	1381.9	1381.4	1375.7	1368.3
7.5°	1426.2	1409.2	1385.9	1360.9	1345.1	1323.5	1311.6	1308.2	1297.4	1287.2	1275.2
10°	1377.4	1351.3	1323.5	1299.7	1274.7	1246.9	1232.7	1223.0	1212.3	1199.8	1191.3
12.5°	1318.4	1288.9	1263.3	1235.5	1214.5	1175.4	1170.8	1158.3	1136.8	1118.0	1111.2
15°	1282.1	1230.4	1201.5	1175.9	1144.1	1103.9	1089.1	1075.5	1055.0	1043.1	1033.5
17.5°	1217.9	1171.4	1135.1	1101.0	1070.4	1039.2	1017.0	1005.7	989.2	979.0	969.3
20°	1159.5	1109.0	1070.9	1031.2	999.4	971.0	952.3	938.1	929.6	919.4	909.8
22.5°	1100.4	1047.7	1011.3	971.0	933.6	916.6	894.4	882.5	871.2	863.2	853.0
25°	1031.8	989.8	944.4	913.2	880.2	862.7	841.7	830.3	821.2	812.1	807.0
27.5°	970.5	927.9	885.9	854.7	826.9	809.9	796.8	786.0	774.7	767.9	763.9
30°	906.9	867.8	830.9	800.8	779.2	760.5	752.5	742.3	733.8	731.0	724.7
32.5°	850.2	806.5	777.0	749.7	731.6	718.5	712.8	702.0	700.3	697.5	694.1
35°	793.4	756.0	727.6	704.3	689.0	679.3	672.0	669.1	666.3	663.4	660.6
37.5°	737.2	707.7	681.0	662.3	649.8	642.4	640.7	635.1	634.5	630.5	630.5
40°	686.7	656.6	637.9	623.2	612.9	609.5	605.0	603.9	602.2	601.0	603.3
42.5°	636.2	615.8	599.9	584.6	576.6	573.8	572.6	570.9	569.8	573.2	574.3
45°	589.1	571.5	557.9	547.1	542.6	539.2	539.2	540.9	540.3	542.0	542.0
47.5°	545.4	529.5	518.2	514.2	508.5	507.4	507.9	507.4	510.2	512.5	514.8
50°	504.0	489.8	480.7	476.7	475.6	473.9	476.2	477.3	479.0	481.3	482.4
52.5°	458.0	451.2	445.5	441.5	441.0	441.5	441.0	444.9	446.6	450.1	449.5
55°	418.8	413.7	409.8	405.2	404.7	406.4	407.5	410.9	413.2	416.0	415.4
57.5°	381.9	378.0	373.4	372.3	371.7	372.3	377.4	376.8	380.2	382.5	383.7
60°	341.7	338.8	334.8	334.8	336.5	337.7	339.4	342.2	345.6	345.1	349.0
62.5°	304.8	301.4	300.2	301.9	301.4	304.2	305.9	305.9	310.4	312.1	313.3
65°	267.9	266.7	265.0	265.0	266.7	267.3	270.1	271.8	273.6	277.0	279.8
67.5°	233.3	230.4	230.4	229.3	231.6	233.3	235.0	237.2	238.4	242.3	244.0
70°	196.9	195.8	195.2	196.4	196.4	198.1	200.9	203.7	206.0	206.6	210.0
72.5°	161.7	161.7	161.7	163.4	164.6	166.3	166.9	169.1	172.5	173.1	174.8
75°	130.0	130.5	130.0	130.5	131.1	132.8	133.9	136.2	138.5	139.0	140.2
77.5°	100.5	99.3	98.2	99.9	101.0	104.4	103.9	105.0	107.3	106.1	107.3
80°	70.4	72.1	69.8	73.2	73.2	72.6	73.8	75.5	74.9	76.0	74.9
82.5°	47.7	46.0	46.0	47.7	48.2	46.5	47.7	48.2	48.8	47.7	47.1
85°	26.1	25.5	26.7	25.0	25.5	24.4	24.4	23.3	24.4	23.3	22.1
87.5°	9.6	9.1	9.6	7.9	7.4	6.8	6.2	6.2	5.1	5.1	5.1
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: P243152

CATALOG NUMBER: S122DR-H865D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1533.5	1533.5	1533.5	1533.5
2.5°	1460.8	1454.6	1451.8	1454.0
5°	1360.4	1362.1	1351.9	1355.3
7.5°	1273.5	1266.2	1268.4	1264.5
10°	1181.6	1177.6	1171.4	1172.5
12.5°	1119.7	1093.1	1091.4	1086.3
15°	1032.9	1018.2	1014.7	1013.6
17.5°	963.7	951.2	955.7	952.3
20°	901.2	901.8	894.4	889.9
22.5°	846.2	845.1	842.2	837.7
25°	799.7	799.7	792.8	791.1
27.5°	757.1	758.2	752.5	752.5
30°	725.3	721.3	720.8	721.9
32.5°	693.5	689.0	689.6	689.0
35°	659.5	660.6	658.9	657.2
37.5°	630.5	630.5	630.5	628.8
40°	602.2	603.3	601.6	602.7
42.5°	573.8	574.3	574.3	572.1
45°	545.4	544.8	543.7	546.0
47.5°	515.9	515.9	515.3	516.5
50°	483.5	484.7	483.0	482.4
52.5°	450.6	451.2	450.6	451.8
55°	417.1	417.1	417.7	418.8
57.5°	382.5	386.5	383.7	385.9
60°	348.5	349.0	349.6	348.5
62.5°	316.1	315.5	316.1	317.8
65°	280.9	282.1	281.5	280.4
67.5°	246.3	245.2	246.9	245.2
70°	209.4	211.7	210.0	212.3
72.5°	175.9	175.4	176.5	173.7
75°	140.7	140.7	141.3	140.7
77.5°	107.8	106.7	106.1	104.4
80°	74.3	74.3	72.1	73.8
82.5°	45.4	46.0	46.5	43.1
85°	21.6	21.6	21.0	20.4
87.5°	4.5	4.5	5.1	5.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)