

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: P243148

Luminaire Tested: **S122DR-H1005D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243148
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-H1005D927-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3340.9 lumens
Efficiency: N/A
Efficacy: 88.6 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

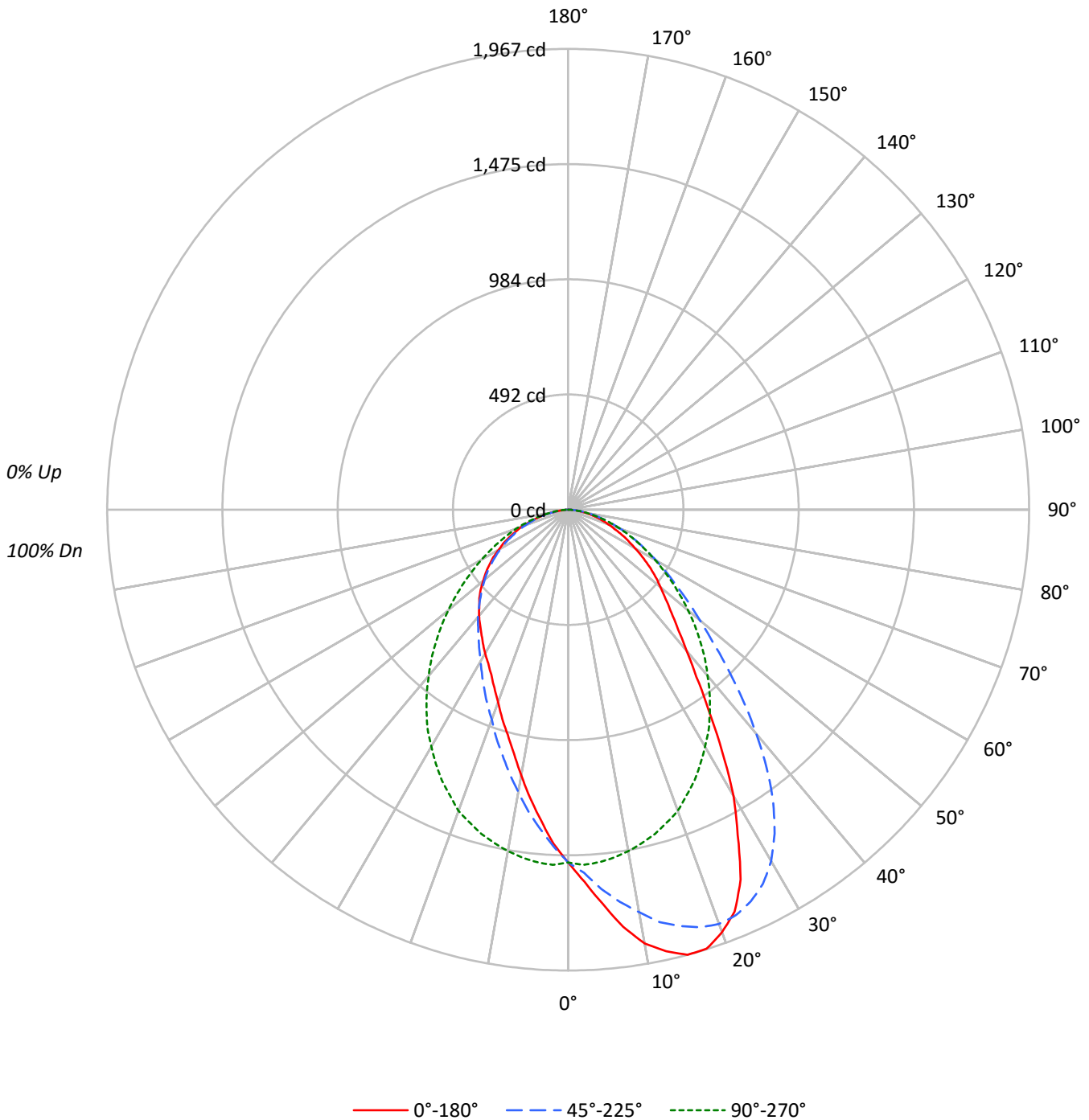
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	28678	28678	28678
5°	32304	28883	25442
10°	36364	28625	22266
15°	38789	28240	19625
20°	38900	27730	17710
25°	36586	26807	16326
30°	31056	25687	15590
35°	24281	24490	15005
40°	19509	23013	14715
45°	16782	21493	14439
50°	15225	19783	14034
55°	14027	18022	13655
60°	12610	16240	13032
65°	11353	14589	12408
70°	10119	12971	11606
75°	9104	11157	10171
80°	7942	8984	7942
85°	6819	6688	4393



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.4	4.3
10°-20°	412.3	12.3
20°-30°	599.6	17.9
30°-40°	643.1	19.3
40°-50°	576.4	17.3
50°-60°	459.5	13.8
60°-70°	310.8	9.3
70°-80°	158.5	4.7
80°-90°	37.1	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°	1155.3	34.6
0°-40°	1798.4	53.8
0°-60°	2834.4	84.8
0°-90°	3340.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3340.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1506	1506	1506	1506	1506	
5°	1690	1625	1511	1368	1331	167
15°	1967	1839	1432	1084	995	551
25°	1741	1844	1276	847	777	783
35°	1044	1526	1053	667	645	662
45°	623	965	798	529	536	487
55°	422	561	543	399	411	377
65°	252	326	324	262	275	250
75°	124	154	152	130	138	132
85°	31	36	31	24	20	36
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°	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6
2.5°	1589.2	1594.2	1589.8	1588.1	1584.7	1583.6	1574.7	1567.5	1563.0	1550.8	1551.9
5°	1689.5	1700.6	1694.5	1694.0	1681.7	1673.9	1666.1	1655.0	1638.2	1624.9	1614.3
7.5°	1795.4	1789.8	1788.1	1782.0	1773.1	1761.9	1744.7	1728.5	1707.3	1687.8	1673.3
10°	1880.1	1878.4	1881.2	1865.6	1860.0	1842.7	1827.7	1802.6	1775.3	1744.7	1725.7
12.5°	1930.2	1935.2	1939.1	1933.0	1919.6	1914.6	1889.5	1854.4	1845.0	1803.2	1780.3
15°	1967.0	1969.2	1969.8	1963.1	1956.4	1943.6	1928.5	1906.3	1875.6	1839.4	1822.1
17.5°	1964.8	1964.2	1967.6	1963.7	1959.8	1955.9	1944.2	1926.9	1902.9	1868.9	1840.0
20°	1919.1	1929.1	1936.9	1938.6	1938.0	1940.3	1934.7	1923.5	1906.3	1881.7	1848.9
22.5°	1856.7	1852.8	1869.5	1868.4	1875.6	1892.3	1899.6	1895.1	1888.4	1872.8	1846.6
25°	1740.8	1744.7	1756.4	1768.6	1797.0	1807.1	1828.8	1845.5	1847.8	1843.9	1827.7
27.5°	1566.9	1594.8	1600.9	1617.1	1656.6	1689.5	1733.5	1759.7	1797.0	1800.4	1793.1
30°	1412.0	1410.9	1420.4	1449.3	1485.6	1535.1	1592.0	1659.4	1702.3	1731.8	1742.4
32.5°	1221.4	1225.9	1250.4	1286.1	1322.8	1372.4	1438.2	1520.7	1578.1	1639.4	1673.9
35°	1044.2	1058.2	1081.6	1106.1	1146.2	1214.2	1287.2	1355.7	1443.8	1525.7	1581.4
37.5°	898.2	917.2	935.0	958.4	997.4	1049.8	1115.6	1206.4	1293.9	1392.5	1474.4
40°	784.6	791.8	804.1	826.9	853.1	905.5	971.8	1039.8	1134.5	1247.6	1355.2
42.5°	695.4	693.7	707.1	721.6	745.6	784.6	842.5	910.5	1004.7	1105.0	1213.6
45°	623.0	623.5	629.1	644.2	663.1	685.4	730.0	794.0	865.4	965.1	1080.5
47.5°	563.9	565.6	573.9	584.5	595.7	616.3	645.8	687.6	754.5	838.1	946.2
50°	513.8	516.5	522.1	529.9	538.3	552.8	575.1	607.9	660.9	731.6	829.7
52.5°	469.2	470.3	472.0	479.2	485.9	499.3	516.0	541.6	583.4	642.5	718.8
55°	422.4	421.3	425.2	431.3	437.4	446.9	464.2	484.8	514.3	561.1	624.1
57.5°	374.5	376.1	378.9	382.3	393.4	403.4	416.2	435.2	458.6	495.4	547.8
60°	331.0	331.0	334.3	338.8	346.0	352.7	365.0	382.3	402.9	431.3	475.3
62.5°	288.6	290.9	294.2	296.4	303.1	311.5	321.0	334.3	353.3	376.1	409.0
65°	251.9	250.8	254.1	258.6	263.6	269.1	279.7	290.9	305.4	326.0	353.3
67.5°	214.0	217.3	218.4	220.7	224.6	231.8	236.8	248.5	260.2	278.6	301.5
70°	181.7	183.9	185.6	188.3	191.7	195.0	200.0	209.5	221.2	234.0	250.2
72.5°	152.7	154.4	152.7	155.5	157.1	160.5	167.2	171.6	180.5	191.7	206.2
75°	123.7	124.8	124.3	127.0	127.6	130.9	134.3	138.2	148.2	154.4	164.4
77.5°	97.0	98.1	98.6	99.7	100.9	102.5	104.2	108.1	113.7	119.2	127.0
80°	72.4	72.4	74.1	74.7	75.2	76.3	79.1	80.2	84.1	85.8	91.9
82.5°	50.2	50.7	51.3	51.3	51.8	52.9	53.5	55.7	56.8	59.6	62.4
85°	31.2	31.8	31.8	31.8	33.4	32.9	32.9	34.0	35.7	35.7	36.8
87.5°	15.6	16.2	16.2	16.2	16.7	16.7	16.7	16.7	16.7	17.8	17.3
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°	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6
2.5°	1551.3	1550.8	1548.5	1538.5	1530.7	1520.7	1519.0	1517.3	1503.4	1488.3	1483.9
5°	1605.9	1595.9	1582.0	1565.2	1548.5	1530.1	1519.5	1510.6	1489.5	1466.1	1452.7
7.5°	1659.4	1639.9	1618.2	1592.0	1564.1	1534.6	1515.6	1497.8	1468.8	1438.2	1419.8
10°	1705.1	1678.9	1648.8	1614.3	1575.8	1535.7	1507.8	1480.0	1443.2	1405.9	1381.4
12.5°	1743.0	1709.6	1670.0	1623.2	1588.1	1532.9	1493.9	1457.1	1416.5	1368.0	1341.2
15°	1772.0	1739.1	1685.6	1638.2	1592.0	1518.4	1471.1	1432.1	1377.5	1330.1	1287.7
17.5°	1807.1	1760.3	1707.3	1639.4	1588.1	1503.9	1450.5	1399.7	1340.7	1285.0	1238.1
20°	1822.7	1773.6	1716.8	1641.0	1575.8	1488.3	1417.0	1368.0	1296.7	1232.6	1179.6
22.5°	1824.9	1778.1	1716.2	1636.0	1554.7	1465.5	1383.6	1319.5	1248.2	1180.2	1120.6
25°	1815.4	1770.9	1706.8	1627.1	1531.2	1441.0	1349.6	1275.5	1193.0	1122.8	1062.1
27.5°	1789.8	1753.6	1692.8	1607.6	1507.3	1403.1	1303.3	1222.5	1141.2	1061.5	1003.6
30°	1748.6	1724.6	1672.2	1582.0	1476.6	1361.9	1262.1	1167.9	1079.9	1005.2	942.8
32.5°	1695.6	1683.9	1640.5	1551.3	1445.4	1316.7	1212.5	1115.6	1019.7	949.0	884.9
35°	1628.2	1634.3	1597.6	1516.8	1405.9	1271.0	1154.6	1053.2	959.5	884.3	825.2
37.5°	1540.7	1570.8	1547.4	1471.6	1355.2	1224.8	1093.8	991.9	893.8	821.3	769.5
40°	1442.7	1495.6	1484.4	1420.9	1300.6	1170.7	1035.3	925.5	829.7	761.2	711.6
42.5°	1327.3	1404.2	1416.5	1359.1	1246.5	1103.3	969.6	863.7	771.2	703.8	656.4
45°	1198.0	1293.3	1334.5	1289.4	1183.5	1038.1	902.1	797.9	706.6	649.2	609.6
47.5°	1068.2	1183.0	1238.7	1217.0	1110.0	968.5	835.3	733.3	646.9	596.8	559.5
50°	940.0	1063.2	1144.5	1130.0	1037.5	902.1	767.9	667.6	588.4	542.2	510.4
52.5°	827.5	943.9	1032.5	1039.8	956.8	826.4	696.5	603.5	536.0	494.3	467.5
55°	716.6	824.7	921.6	939.5	872.1	746.7	630.8	542.7	481.4	446.9	425.2
57.5°	617.4	715.5	811.9	843.1	788.5	675.4	560.0	482.6	429.6	402.9	383.9
60°	533.3	621.9	704.9	736.6	699.3	596.2	495.4	426.3	382.3	358.3	343.2
62.5°	459.7	528.2	601.8	636.9	611.8	522.1	434.1	372.8	337.1	316.5	304.8
65°	393.4	446.3	504.3	545.0	517.1	450.2	376.7	323.7	293.7	274.7	266.4
67.5°	332.1	376.1	422.4	454.7	440.8	380.0	318.2	276.9	251.9	237.4	229.6
70°	276.4	309.3	346.6	371.7	361.6	314.8	265.8	232.9	211.7	201.7	195.0
72.5°	226.8	248.0	276.4	297.0	286.4	253.5	218.4	192.2	176.6	164.9	159.9
75°	180.0	198.4	218.4	232.4	224.0	199.5	171.6	151.6	141.0	133.7	130.4
77.5°	136.5	151.0	164.9	171.6	167.7	149.9	130.9	115.3	106.4	102.0	98.1
80°	98.1	106.4	115.9	122.0	119.8	107.5	94.2	81.9	78.0	72.4	71.3
82.5°	65.8	72.4	74.7	77.5	75.8	70.2	60.7	53.5	50.2	47.4	46.8
85°	39.0	40.7	43.5	43.5	41.8	37.9	32.9	30.6	27.3	26.7	25.1
87.5°	17.3	17.3	17.3	17.3	17.3	16.2	13.9	12.8	11.7	11.1	10.6
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6	1505.6
2.5°	1480.0	1474.4	1466.6	1457.7	1449.9	1437.6	1433.7	1433.7	1436.5	1433.2	1430.4
5°	1441.5	1430.4	1419.2	1402.0	1387.5	1368.0	1362.4	1356.8	1356.3	1350.7	1343.5
7.5°	1400.3	1383.6	1360.7	1336.2	1320.6	1299.4	1287.7	1284.4	1273.8	1263.8	1252.1
10°	1352.4	1326.7	1299.4	1276.0	1251.5	1224.2	1210.3	1200.8	1190.2	1178.0	1169.6
12.5°	1294.4	1265.5	1240.4	1213.1	1192.5	1154.0	1149.6	1137.3	1116.1	1097.7	1091.0
15°	1258.8	1208.1	1179.6	1154.6	1123.4	1083.8	1069.3	1055.9	1035.9	1024.2	1014.7
17.5°	1195.8	1150.1	1114.4	1081.0	1050.9	1020.3	998.5	987.4	971.2	961.2	951.7
20°	1138.4	1088.8	1051.5	1012.5	981.3	953.4	935.0	921.1	912.7	902.7	893.2
22.5°	1080.5	1028.6	993.0	953.4	916.6	899.9	878.2	866.5	855.3	847.5	837.5
25°	1013.0	971.8	927.2	896.6	864.3	847.0	826.4	815.2	806.3	797.4	792.4
27.5°	952.9	911.1	869.8	839.2	811.9	795.2	782.3	771.8	760.6	753.9	750.0
30°	890.4	852.0	815.8	786.2	765.1	746.7	738.9	728.8	720.5	717.7	711.6
32.5°	834.7	791.8	762.8	736.1	718.3	705.4	699.9	689.3	687.6	684.8	681.5
35°	779.0	742.2	714.4	691.5	676.5	667.0	659.8	657.0	654.2	651.4	648.6
37.5°	723.8	694.9	668.7	650.3	638.0	630.8	629.1	623.5	623.0	619.1	619.1
40°	674.2	644.7	626.3	611.8	601.8	598.5	594.0	592.9	591.2	590.1	592.3
42.5°	624.6	604.6	589.0	573.9	566.1	563.4	562.2	560.6	559.5	562.8	563.9
45°	578.4	561.1	547.8	537.2	532.7	529.4	529.4	531.0	530.5	532.1	532.1
47.5°	535.5	519.9	508.7	504.8	499.3	498.2	498.7	498.2	500.9	503.2	505.4
50°	494.8	480.9	472.0	468.1	467.0	465.3	467.5	468.6	470.3	472.5	473.6
52.5°	449.7	443.0	437.4	433.5	433.0	433.5	433.0	436.9	438.5	441.9	441.3
55°	411.2	406.2	402.3	397.9	397.3	399.0	400.1	403.4	405.7	408.4	407.9
57.5°	375.0	371.1	366.7	365.5	365.0	365.5	370.6	370.0	373.3	375.6	376.7
60°	335.4	332.7	328.8	328.8	330.4	331.5	333.2	336.0	339.3	338.8	342.7
62.5°	299.2	295.9	294.8	296.4	295.9	298.7	300.3	300.3	304.8	306.5	307.6
65°	263.0	261.9	260.2	260.2	261.9	262.5	265.2	266.9	268.6	271.9	274.7
67.5°	229.0	226.2	226.2	225.1	227.3	229.0	230.7	232.9	234.0	237.9	239.6
70°	193.4	192.2	191.7	192.8	192.8	194.5	197.3	200.0	202.3	202.8	206.2
72.5°	158.8	158.8	158.8	160.5	161.6	163.3	163.8	166.1	169.4	170.0	171.6
75°	127.6	128.2	127.6	128.2	128.7	130.4	131.5	133.7	136.0	136.5	137.6
77.5°	98.6	97.5	96.4	98.1	99.2	102.5	102.0	103.1	105.3	104.2	105.3
80°	69.1	70.8	68.5	71.9	71.9	71.3	72.4	74.1	73.6	74.7	73.6
82.5°	46.8	45.1	45.1	46.8	47.4	45.7	46.8	47.4	47.9	46.8	46.2
85°	25.6	25.1	26.2	24.5	25.1	24.0	24.0	22.8	24.0	22.8	21.7
87.5°	9.5	8.9	9.5	7.8	7.2	6.7	6.1	6.1	5.0	5.0	5.0
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: P243148

CATALOG NUMBER: S122DR-H1005D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1505.6	1505.6	1505.6	1505.6
2.5°	1434.3	1428.2	1425.4	1427.6
5°	1335.7	1337.3	1327.3	1330.6
7.5°	1250.4	1243.2	1245.4	1241.5
10°	1160.1	1156.2	1150.1	1151.2
12.5°	1099.4	1073.2	1071.5	1066.5
15°	1014.1	999.7	996.3	995.2
17.5°	946.2	933.9	938.4	935.0
20°	884.9	885.4	878.2	873.7
22.5°	830.8	829.7	826.9	822.5
25°	785.1	785.1	778.4	776.8
27.5°	743.3	744.5	738.9	738.9
30°	712.1	708.2	707.7	708.8
32.5°	680.9	676.5	677.0	676.5
35°	647.5	648.6	646.9	645.3
37.5°	619.1	619.1	619.1	617.4
40°	591.2	592.3	590.7	591.8
42.5°	563.4	563.9	563.9	561.7
45°	535.5	534.9	533.8	536.0
47.5°	506.5	506.5	506.0	507.1
50°	474.8	475.9	474.2	473.6
52.5°	442.4	443.0	442.4	443.5
55°	409.6	409.6	410.1	411.2
57.5°	375.6	379.5	376.7	378.9
60°	342.1	342.7	343.2	342.1
62.5°	310.4	309.8	310.4	312.0
65°	275.8	276.9	276.4	275.3
67.5°	241.8	240.7	242.4	240.7
70°	205.6	207.8	206.2	208.4
72.5°	172.7	172.2	173.3	170.5
75°	138.2	138.2	138.7	138.2
77.5°	105.9	104.8	104.2	102.5
80°	73.0	73.0	70.8	72.4
82.5°	44.6	45.1	45.7	42.3
85°	21.2	21.2	20.6	20.1
87.5°	4.5	4.5	5.0	5.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)