

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: P243156

Luminaire Tested: **S122DR-H675D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243156
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-H675D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2799.4 lumens
Efficiency: N/A
Efficacy: 118.6 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

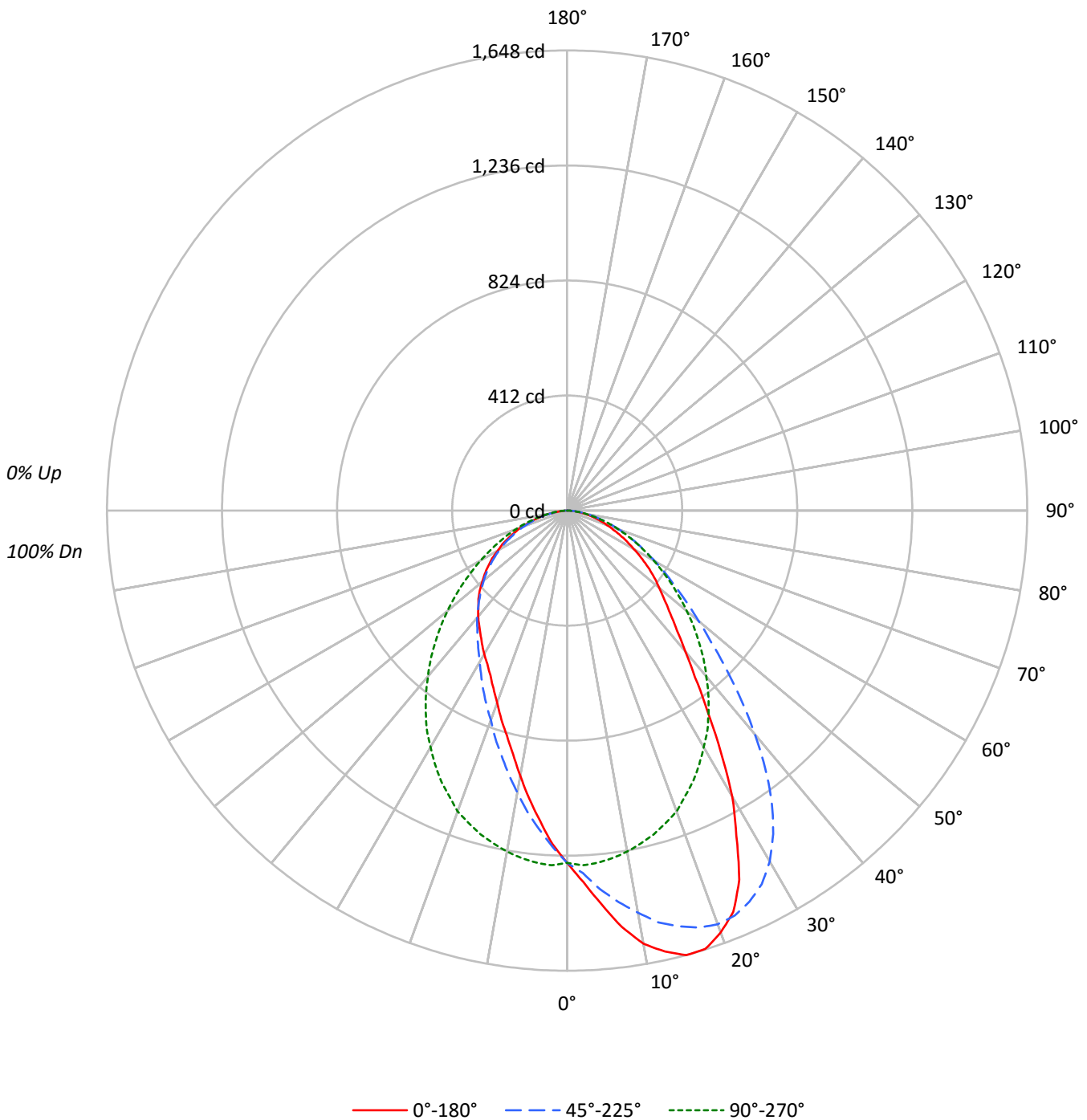
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	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°	24031	24031	24031
5°	27067	24203	21319
10°	30469	23985	18657
15°	32502	23662	16444
20°	32594	23234	14840
25°	30655	22461	13680
30°	26022	21524	13062
35°	20346	20518	12573
40°	16346	19283	12331
45°	14061	18010	12100
50°	12757	16574	11761
55°	11753	15103	11444
60°	10564	13608	10922
65°	9510	12228	10393
70°	8476	10871	9724
75°	7632	9347	8522
80°	6658	7525	6658
85°	5704	5617	3672



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.2	4.3
10°-20°	345.5	12.3
20°-30°	502.4	17.9
30°-40°	538.9	19.3
40°-50°	483.0	17.3
50°-60°	385.0	13.8
60°-70°	260.5	9.3
70°-80°	132.8	4.7
80°-90°	31.1	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°	968.0	34.6
0°-40°	1506.9	53.8
0°-60°	2375.0	84.8
0°-90°	2799.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2799.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1262	1262	1262	1262	1262	
5°	1416	1362	1266	1146	1115	140
15°	1648	1541	1200	908	834	462
25°	1459	1545	1069	710	651	656
35°	875	1278	882	559	541	554
45°	522	809	669	444	449	408
55°	354	470	455	334	345	316
65°	211	273	271	220	231	209
75°	104	129	127	109	116	111
85°	26	30	26	20	17	30
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°	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6
2.5°	1331.6	1335.8	1332.1	1330.7	1327.9	1326.9	1319.5	1313.4	1309.7	1299.4	1300.3
5°	1415.6	1425.0	1419.9	1419.4	1409.1	1402.6	1396.0	1386.7	1372.7	1361.5	1352.6
7.5°	1504.4	1499.7	1498.3	1493.2	1485.7	1476.3	1461.9	1448.3	1430.6	1414.2	1402.1
10°	1575.3	1573.9	1576.3	1563.2	1558.5	1544.0	1531.4	1510.4	1487.6	1461.9	1446.0
12.5°	1617.4	1621.6	1624.8	1619.7	1608.5	1604.3	1583.3	1553.9	1545.9	1510.9	1491.8
15°	1648.2	1650.0	1650.5	1644.9	1639.3	1628.6	1615.9	1597.3	1571.6	1541.2	1526.8
17.5°	1646.3	1645.8	1648.6	1645.4	1642.1	1638.8	1629.0	1614.5	1594.5	1566.0	1541.7
20°	1608.0	1616.4	1623.0	1624.4	1623.9	1625.8	1621.1	1611.7	1597.3	1576.7	1549.2
22.5°	1555.7	1552.5	1566.5	1565.5	1571.6	1585.6	1591.7	1587.9	1582.3	1569.3	1547.3
25°	1458.6	1461.9	1471.7	1481.9	1505.8	1514.2	1532.4	1546.4	1548.2	1545.0	1531.4
27.5°	1312.9	1336.3	1341.4	1355.0	1388.1	1415.6	1452.5	1474.5	1505.8	1508.6	1502.5
30°	1183.1	1182.2	1190.1	1214.4	1244.8	1286.3	1333.9	1390.4	1426.4	1451.1	1460.0
32.5°	1023.5	1027.2	1047.7	1077.6	1108.4	1150.0	1205.1	1274.2	1322.3	1373.6	1402.6
35°	875.0	886.6	906.3	926.8	960.4	1017.4	1078.5	1136.0	1209.7	1278.4	1325.1
37.5°	752.6	768.5	783.5	803.1	835.8	879.6	934.7	1010.8	1084.1	1166.8	1235.4
40°	657.4	663.5	673.7	692.9	714.8	758.7	814.3	871.2	950.6	1045.4	1135.5
42.5°	582.7	581.3	592.5	604.6	624.7	657.4	706.0	762.9	841.8	925.9	1016.9
45°	522.0	522.5	527.1	539.7	555.6	574.3	611.6	665.3	725.1	808.7	905.3
47.5°	472.5	473.9	480.9	489.8	499.1	516.4	541.1	576.2	632.2	702.2	792.8
50°	430.5	432.8	437.5	444.0	451.0	463.2	481.8	509.4	553.7	613.0	695.2
52.5°	393.1	394.1	395.5	401.5	407.1	418.3	432.4	453.8	488.8	538.3	602.3
55°	353.9	353.0	356.2	361.4	366.5	374.5	388.9	406.2	431.0	470.2	522.9
57.5°	313.8	315.2	317.5	320.3	329.6	338.0	348.8	364.7	384.3	415.1	459.0
60°	277.3	277.3	280.1	283.9	289.9	295.5	305.8	320.3	337.6	361.4	398.3
62.5°	241.9	243.7	246.5	248.4	254.0	261.0	268.9	280.1	296.0	315.2	342.7
65°	211.0	210.1	212.9	216.6	220.8	225.5	234.4	243.7	255.9	273.1	296.0
67.5°	179.3	182.1	183.0	184.9	188.2	194.2	198.4	208.2	218.0	233.5	252.6
70°	152.2	154.1	155.5	157.8	160.6	163.4	167.6	175.6	185.4	196.1	209.6
72.5°	127.9	129.3	127.9	130.3	131.7	134.5	140.1	143.8	151.3	160.6	172.8
75°	103.7	104.6	104.1	106.5	106.9	109.7	112.5	115.8	124.2	129.3	137.7
77.5°	81.2	82.2	82.6	83.6	84.5	85.9	87.3	90.6	95.2	99.9	106.5
80°	60.7	60.7	62.1	62.6	63.0	64.0	66.3	67.2	70.5	71.9	77.0
82.5°	42.0	42.5	43.0	43.0	43.4	44.4	44.8	46.7	47.6	50.0	52.3
85°	26.1	26.6	26.6	26.6	28.0	27.5	27.5	28.5	29.9	29.9	30.8
87.5°	13.1	13.5	13.5	13.5	14.0	14.0	14.0	14.0	14.0	14.9	14.5
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°	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6
2.5°	1299.9	1299.4	1297.5	1289.1	1282.6	1274.2	1272.8	1271.4	1259.7	1247.1	1243.4
5°	1345.6	1337.2	1325.5	1311.5	1297.5	1282.1	1273.2	1265.8	1248.0	1228.4	1217.2
7.5°	1390.4	1374.1	1355.9	1333.9	1310.6	1285.8	1270.0	1255.0	1230.8	1205.1	1189.7
10°	1428.7	1406.8	1381.6	1352.6	1320.4	1286.8	1263.4	1240.1	1209.3	1178.0	1157.5
12.5°	1460.5	1432.5	1399.3	1360.1	1330.7	1284.4	1251.8	1221.0	1186.9	1146.2	1123.8
15°	1484.8	1457.2	1412.4	1372.7	1333.9	1272.3	1232.6	1199.9	1154.2	1114.5	1079.0
17.5°	1514.2	1474.9	1430.6	1373.6	1330.7	1260.2	1215.3	1172.9	1123.4	1076.7	1037.5
20°	1527.2	1486.2	1438.5	1375.0	1320.4	1247.1	1187.3	1146.2	1086.5	1032.8	988.4
22.5°	1529.1	1489.9	1438.1	1370.8	1302.7	1228.0	1159.3	1105.6	1045.9	988.9	938.9
25°	1521.2	1483.8	1430.1	1363.4	1283.0	1207.4	1130.8	1068.7	999.6	940.8	889.9
27.5°	1499.7	1469.3	1418.5	1347.0	1263.0	1175.7	1092.1	1024.4	956.2	889.4	840.9
30°	1465.1	1445.1	1401.2	1325.5	1237.3	1141.1	1057.5	978.6	904.9	842.3	790.0
32.5°	1420.8	1411.0	1374.6	1299.9	1211.1	1103.3	1016.0	934.7	854.4	795.1	741.4
35°	1364.3	1369.4	1338.6	1270.9	1178.0	1065.0	967.4	882.4	804.0	741.0	691.5
37.5°	1291.0	1316.2	1296.6	1233.1	1135.5	1026.3	916.5	831.1	748.9	688.2	644.8
40°	1208.8	1253.2	1243.8	1190.6	1089.8	981.0	867.5	775.5	695.2	637.8	596.2
42.5°	1112.2	1176.6	1186.9	1138.8	1044.5	924.5	812.4	723.7	646.2	589.7	550.0
45°	1003.8	1083.7	1118.2	1080.4	991.7	869.8	755.9	668.6	592.0	543.9	510.8
47.5°	895.1	991.2	1037.9	1019.7	930.1	811.5	699.9	614.4	542.1	500.1	468.8
50°	787.7	890.9	959.0	946.9	869.4	755.9	643.4	559.3	493.0	454.3	427.7
52.5°	693.4	790.9	865.2	871.2	801.7	692.4	583.6	505.7	449.2	414.1	391.7
55°	600.4	691.0	772.3	787.2	730.7	625.6	528.5	454.8	403.4	374.5	356.2
57.5°	517.3	599.5	680.3	706.4	660.7	565.9	469.2	404.3	360.0	337.6	321.7
60°	446.8	521.1	590.6	617.2	586.0	499.6	415.1	357.2	320.3	300.2	287.6
62.5°	385.2	442.6	504.3	533.7	512.7	437.5	363.7	312.4	282.5	265.2	255.4
65°	329.6	374.0	422.5	456.6	433.3	377.3	315.6	271.3	246.1	230.2	223.2
67.5°	278.3	315.2	353.9	381.0	369.3	318.4	266.6	232.1	211.0	198.9	192.4
70°	231.6	259.1	290.4	311.4	303.0	263.8	222.7	195.2	177.4	169.0	163.4
72.5°	190.0	207.8	231.6	248.9	240.0	212.4	183.0	161.1	148.0	138.2	134.0
75°	150.8	166.2	183.0	194.7	187.7	167.2	143.8	127.0	118.1	112.1	109.3
77.5°	114.4	126.5	138.2	143.8	140.5	125.6	109.7	96.6	89.2	85.4	82.2
80°	82.2	89.2	97.1	102.3	100.4	90.1	78.9	68.6	65.4	60.7	59.8
82.5°	55.1	60.7	62.6	64.9	63.5	58.8	50.9	44.8	42.0	39.7	39.2
85°	32.7	34.1	36.4	36.4	35.0	31.7	27.5	25.7	22.9	22.4	21.0
87.5°	14.5	14.5	14.5	14.5	14.5	13.5	11.7	10.7	9.8	9.3	8.9
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°	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6	1261.6
2.5°	1240.1	1235.4	1228.9	1221.4	1214.9	1204.6	1201.3	1201.3	1203.7	1200.9	1198.5
5°	1207.9	1198.5	1189.2	1174.7	1162.6	1146.2	1141.6	1136.9	1136.4	1131.8	1125.7
7.5°	1173.3	1159.3	1140.2	1119.6	1106.6	1088.8	1079.0	1076.2	1067.3	1058.9	1049.1
10°	1133.2	1111.7	1088.8	1069.2	1048.7	1025.8	1014.1	1006.2	997.3	987.0	980.0
12.5°	1084.6	1060.3	1039.3	1016.4	999.2	967.0	963.2	952.9	935.2	919.8	914.2
15°	1054.7	1012.2	988.4	967.4	941.3	908.1	896.0	884.8	868.0	858.2	850.2
17.5°	1002.0	963.7	933.8	905.8	880.6	854.9	836.7	827.4	813.8	805.4	797.5
20°	953.9	912.3	881.0	848.4	822.2	798.9	783.5	771.8	764.8	756.4	748.4
22.5°	905.3	861.9	832.0	798.9	768.1	754.0	735.8	726.0	716.7	710.2	701.8
25°	848.8	814.3	776.9	751.2	724.2	709.7	692.4	683.1	675.6	668.1	663.9
27.5°	798.4	763.4	728.8	703.2	680.3	666.3	655.5	646.7	637.3	631.7	628.5
30°	746.1	713.9	683.5	658.8	641.1	625.6	619.1	610.7	603.7	601.4	596.2
32.5°	699.4	663.5	639.2	616.8	601.8	591.1	586.4	577.6	576.2	573.8	571.0
35°	652.7	621.9	598.6	579.4	566.8	558.9	552.8	550.5	548.1	545.8	543.5
37.5°	606.5	582.2	560.3	544.9	534.6	528.5	527.1	522.5	522.0	518.7	518.7
40°	565.0	540.2	524.8	512.7	504.3	501.5	497.7	496.8	495.4	494.4	496.3
42.5°	523.4	506.6	493.5	480.9	474.4	472.0	471.1	469.7	468.8	471.6	472.5
45°	484.6	470.2	459.0	450.1	446.4	443.6	443.6	445.0	444.5	445.9	445.9
47.5°	448.7	435.6	426.3	423.0	418.3	417.4	417.9	417.4	419.7	421.6	423.5
50°	414.6	402.9	395.5	392.2	391.3	389.9	391.7	392.7	394.1	395.9	396.9
52.5°	376.8	371.2	366.5	363.3	362.8	363.3	362.8	366.1	367.5	370.3	369.8
55°	344.6	340.4	337.1	333.4	332.9	334.3	335.2	338.0	339.9	342.2	341.8
57.5°	314.2	311.0	307.2	306.3	305.8	306.3	310.5	310.0	312.8	314.7	315.6
60°	281.1	278.7	275.5	275.5	276.9	277.8	279.2	281.5	284.3	283.9	287.1
62.5°	250.7	247.9	247.0	248.4	247.9	250.3	251.7	251.7	255.4	256.8	257.7
65°	220.4	219.4	218.0	218.0	219.4	219.9	222.2	223.6	225.0	227.8	230.2
67.5°	191.9	189.6	189.6	188.6	190.5	191.9	193.3	195.2	196.1	199.4	200.8
70°	162.0	161.1	160.6	161.5	161.5	162.9	165.3	167.6	169.5	170.0	172.8
72.5°	133.1	133.1	133.1	134.5	135.4	136.8	137.3	139.1	141.9	142.4	143.8
75°	106.9	107.4	106.9	107.4	107.9	109.3	110.2	112.1	113.9	114.4	115.3
77.5°	82.6	81.7	80.8	82.2	83.1	85.9	85.4	86.4	88.2	87.3	88.2
80°	57.9	59.3	57.4	60.2	60.2	59.8	60.7	62.1	61.6	62.6	61.6
82.5°	39.2	37.8	37.8	39.2	39.7	38.3	39.2	39.7	40.2	39.2	38.8
85°	21.5	21.0	21.9	20.5	21.0	20.1	20.1	19.1	20.1	19.1	18.2
87.5°	7.9	7.5	7.9	6.5	6.1	5.6	5.1	5.1	4.2	4.2	4.2
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: P243156

CATALOG NUMBER: S122DR-H675D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1261.6	1261.6	1261.6	1261.6
2.5°	1201.8	1196.7	1194.3	1196.2
5°	1119.2	1120.6	1112.2	1115.0
7.5°	1047.7	1041.7	1043.5	1040.3
10°	972.1	968.8	963.7	964.6
12.5°	921.2	899.3	897.9	893.7
15°	849.8	837.6	834.8	833.9
17.5°	792.8	782.5	786.3	783.5
20°	741.4	741.9	735.8	732.1
22.5°	696.2	695.2	692.9	689.1
25°	657.9	657.9	652.3	650.9
27.5°	622.8	623.8	619.1	619.1
30°	596.7	593.4	593.0	593.9
32.5°	570.6	566.8	567.3	566.8
35°	542.5	543.5	542.1	540.7
37.5°	518.7	518.7	518.7	517.3
40°	495.4	496.3	494.9	495.9
42.5°	472.0	472.5	472.5	470.6
45°	448.7	448.2	447.3	449.2
47.5°	424.4	424.4	423.9	424.9
50°	397.8	398.7	397.3	396.9
52.5°	370.7	371.2	370.7	371.7
55°	343.2	343.2	343.6	344.6
57.5°	314.7	318.0	315.6	317.5
60°	286.7	287.1	287.6	286.7
62.5°	260.1	259.6	260.1	261.5
65°	231.1	232.1	231.6	230.6
67.5°	202.6	201.7	203.1	201.7
70°	172.3	174.2	172.8	174.6
72.5°	144.7	144.3	145.2	142.9
75°	115.8	115.8	116.3	115.8
77.5°	88.7	87.8	87.3	85.9
80°	61.2	61.2	59.3	60.7
82.5°	37.4	37.8	38.3	35.5
85°	17.7	17.7	17.3	16.8
87.5°	3.7	3.7	4.2	4.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)