

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: P243161

Luminaire Tested: **S122DR-H675D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243161
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-H675D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

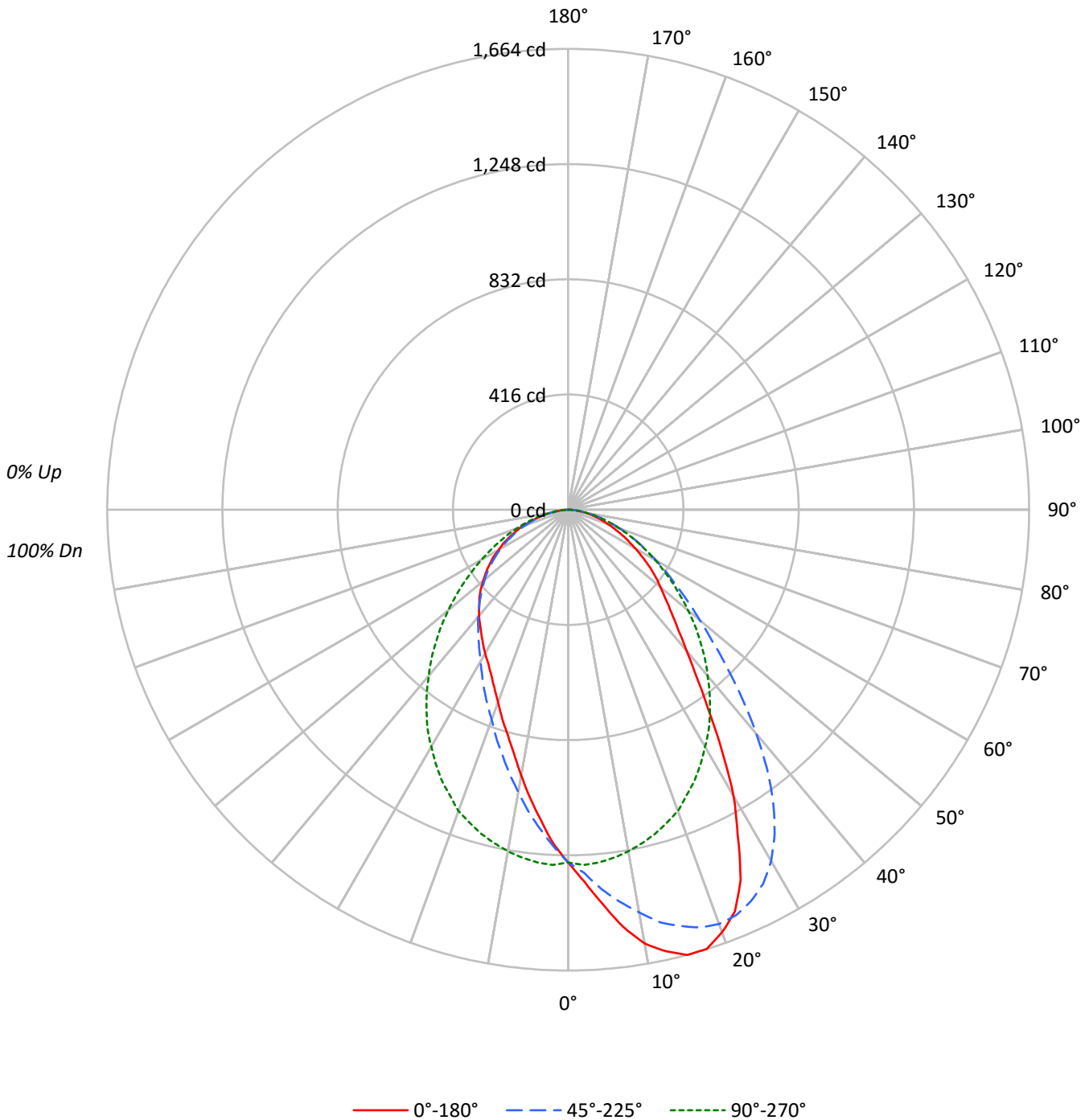
Lumens per Lamp: N/A
Luminaire Lumens: 2827.0 lumens
Efficiency: N/A
Efficacy: 119.8 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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	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°	24267	24267	24267
5°	27335	24442	21530
10°	30770	24221	18841
15°	32821	23896	16606
20°	32917	23465	14986
25°	30958	22683	13814
30°	26279	21737	13192
35°	20546	20723	12696
40°	16508	19474	12450
45°	14199	18188	12219
50°	12881	16740	11877
55°	11869	15249	11557
60°	10671	13741	11029
65°	9605	12345	10497
70°	8560	10977	9818
75°	7705	9442	8603
80°	6724	7602	6724
85°	5770	5660	3715



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.4	4.3
10°-20°	348.9	12.3
20°-30°	507.3	17.9
30°-40°	544.2	19.3
40°-50°	487.8	17.3
50°-60°	388.8	13.8
60°-70°	263.0	9.3
70°-80°	134.2	4.7
80°-90°	31.4	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°	977.6	34.6
0°-40°	1521.8	53.8
0°-60°	2398.4	84.8
0°-90°	2827.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2827.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1274	1274	1274	1274	1274	
5°	1430	1375	1278	1158	1126	142
15°	1664	1556	1212	917	842	466
25°	1473	1560	1079	717	657	663
35°	884	1291	891	564	546	560
45°	527	817	675	448	454	412
55°	357	475	459	338	348	319
65°	213	276	274	222	233	211
75°	105	131	128	110	117	112
85°	26	30	26	20	17	31
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°	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0
2.5°	1344.7	1349.0	1345.2	1343.8	1341.0	1340.0	1332.5	1326.4	1322.6	1312.2	1313.2
5°	1429.6	1439.0	1433.9	1433.4	1423.0	1416.4	1409.8	1400.4	1386.2	1374.9	1366.0
7.5°	1519.2	1514.5	1513.1	1507.9	1500.3	1490.9	1476.3	1462.6	1444.7	1428.2	1415.9
10°	1590.9	1589.5	1591.8	1578.6	1573.9	1559.3	1546.5	1525.3	1502.2	1476.3	1460.3
12.5°	1633.3	1637.5	1640.8	1635.7	1624.3	1620.1	1598.9	1569.2	1561.2	1525.8	1506.5
15°	1664.4	1666.3	1666.8	1661.1	1655.5	1644.6	1631.9	1613.0	1587.1	1556.4	1541.8
17.5°	1662.5	1662.1	1664.9	1661.6	1658.3	1655.0	1645.1	1630.5	1610.2	1581.4	1556.9
20°	1623.9	1632.4	1639.0	1640.4	1639.9	1641.8	1637.1	1627.6	1613.0	1592.3	1564.5
22.5°	1571.1	1567.8	1581.9	1581.0	1587.1	1601.2	1607.4	1603.6	1597.9	1584.7	1562.6
25°	1473.0	1476.3	1486.2	1496.6	1520.6	1529.1	1547.5	1561.6	1563.5	1560.2	1546.5
27.5°	1325.9	1349.5	1354.6	1368.3	1401.8	1429.6	1466.9	1489.0	1520.6	1523.4	1517.3
30°	1194.8	1193.9	1201.9	1226.4	1257.0	1299.0	1347.1	1404.2	1440.5	1465.4	1474.4
32.5°	1033.5	1037.3	1058.1	1088.2	1119.4	1161.3	1217.0	1286.7	1335.3	1387.2	1416.4
35°	883.6	895.4	915.2	935.9	969.9	1027.4	1089.2	1147.2	1221.7	1291.0	1338.1
37.5°	760.1	776.1	791.2	811.0	844.0	888.3	944.0	1020.8	1094.8	1178.3	1247.6
40°	663.9	670.0	680.4	699.7	721.9	766.2	822.3	879.8	960.0	1055.7	1146.7
42.5°	588.4	587.0	598.3	610.6	630.9	663.9	712.9	770.4	850.1	935.0	1026.9
45°	527.1	527.6	532.3	545.1	561.1	580.0	617.7	671.9	732.3	816.7	914.3
47.5°	477.2	478.6	485.7	494.6	504.0	521.5	546.5	581.8	638.4	709.1	800.6
50°	434.7	437.1	441.8	448.4	455.5	467.7	486.6	514.4	559.2	619.1	702.1
52.5°	397.0	398.0	399.4	405.5	411.2	422.5	436.6	458.3	493.7	543.6	608.2
55°	357.4	356.5	359.8	364.9	370.1	378.1	392.8	410.2	435.2	474.8	528.1
57.5°	316.9	318.3	320.6	323.5	332.9	341.4	352.2	368.2	388.1	419.2	463.5
60°	280.1	280.1	282.9	286.7	292.8	298.5	308.8	323.5	340.9	364.9	402.2
62.5°	244.2	246.1	249.0	250.8	256.5	263.6	271.6	282.9	298.9	318.3	346.1
65°	213.1	212.2	215.0	218.8	223.0	227.7	236.7	246.1	258.4	275.8	298.9
67.5°	181.1	183.9	184.8	186.7	190.0	196.1	200.4	210.3	220.2	235.8	255.1
70°	153.7	155.6	157.0	159.4	162.2	165.0	169.3	177.3	187.2	198.0	211.7
72.5°	129.2	130.6	129.2	131.6	133.0	135.8	141.5	145.2	152.8	162.2	174.5
75°	104.7	105.6	105.1	107.5	108.0	110.8	113.6	116.9	125.4	130.6	139.1
77.5°	82.0	83.0	83.5	84.4	85.3	86.8	88.2	91.5	96.2	100.9	107.5
80°	61.3	61.3	62.7	63.2	63.7	64.6	67.0	67.9	71.2	72.6	77.8
82.5°	42.4	42.9	43.4	43.4	43.9	44.8	45.3	47.2	48.1	50.5	52.8
85°	26.4	26.9	26.9	26.9	28.3	27.8	27.8	28.8	30.2	30.2	31.1
87.5°	13.2	13.7	13.7	13.7	14.1	14.1	14.1	14.1	14.1	15.1	14.6
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°	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0
2.5°	1312.7	1312.2	1310.3	1301.8	1295.2	1286.7	1285.3	1283.9	1272.1	1259.4	1255.6
5°	1358.9	1350.4	1338.6	1324.5	1310.3	1294.8	1285.8	1278.3	1260.3	1240.5	1229.2
7.5°	1404.2	1387.6	1369.3	1347.1	1323.5	1298.5	1282.5	1267.4	1242.9	1217.0	1201.4
10°	1442.8	1420.7	1395.2	1366.0	1333.4	1299.5	1275.9	1252.3	1221.2	1189.6	1168.9
12.5°	1474.9	1446.6	1413.1	1373.5	1343.8	1297.1	1264.1	1233.0	1198.6	1157.6	1134.9
15°	1499.4	1471.6	1426.3	1386.2	1347.1	1284.9	1244.8	1211.8	1165.6	1125.5	1089.7
17.5°	1529.1	1489.5	1444.7	1387.2	1343.8	1272.6	1227.3	1184.4	1134.4	1087.3	1047.7
20°	1542.3	1500.8	1452.7	1388.6	1333.4	1259.4	1199.0	1157.6	1097.2	1043.0	998.2
22.5°	1544.2	1504.6	1452.2	1384.3	1315.5	1240.1	1170.8	1116.5	1056.2	998.7	948.2
25°	1536.2	1498.5	1444.2	1376.8	1295.7	1219.3	1142.0	1079.3	1009.5	950.1	898.7
27.5°	1514.5	1483.8	1432.4	1360.3	1275.4	1187.3	1102.9	1034.5	965.6	898.2	849.2
30°	1479.6	1459.3	1415.0	1338.6	1249.5	1152.4	1068.0	988.3	913.8	850.6	797.8
32.5°	1434.8	1424.9	1388.1	1312.7	1223.1	1114.2	1026.0	944.0	862.9	803.0	748.8
35°	1377.7	1382.9	1351.8	1283.4	1189.6	1075.5	977.0	891.2	811.9	748.3	698.3
37.5°	1303.7	1329.2	1309.4	1245.3	1146.7	1036.4	925.6	839.3	756.3	695.0	651.2
40°	1220.7	1265.5	1256.1	1202.3	1100.5	990.6	876.1	783.2	702.1	644.1	602.1
42.5°	1123.1	1188.2	1198.6	1150.0	1054.8	933.6	820.4	730.8	652.6	595.5	555.4
45°	1013.7	1094.4	1129.3	1091.1	1001.5	878.4	763.4	675.2	597.9	549.3	515.8
47.5°	903.9	1001.0	1048.2	1029.8	939.2	819.5	706.8	620.5	547.4	505.0	473.4
50°	795.4	899.6	968.5	956.2	877.9	763.4	649.7	564.9	497.9	458.8	431.9
52.5°	700.2	798.7	873.7	879.8	809.6	699.2	589.4	510.6	453.6	418.2	395.6
55°	606.4	697.8	779.9	795.0	737.9	631.8	533.7	459.2	407.4	378.1	359.8
57.5°	522.4	605.4	687.0	713.4	667.2	571.5	473.9	408.3	363.5	340.9	324.9
60°	451.2	526.2	596.5	623.3	591.7	504.5	419.2	360.7	323.5	303.2	290.4
62.5°	389.0	447.0	509.2	538.9	517.7	441.8	367.3	315.4	285.3	267.8	257.9
65°	332.9	377.7	426.7	461.1	437.6	381.0	318.7	273.9	248.5	232.5	225.4
67.5°	281.0	318.3	357.4	384.8	373.0	321.6	269.2	234.3	213.1	200.9	194.3
70°	233.9	261.7	293.3	314.5	306.0	266.4	224.9	197.1	179.2	170.7	165.0
72.5°	191.9	209.8	233.9	251.3	242.4	214.5	184.8	162.7	149.5	139.6	135.3
75°	152.3	167.9	184.8	196.6	189.5	168.8	145.2	128.3	119.3	113.2	110.3
77.5°	115.5	127.8	139.6	145.2	141.9	126.8	110.8	97.6	90.1	86.3	83.0
80°	83.0	90.1	98.1	103.3	101.4	91.0	79.7	69.3	66.0	61.3	60.4
82.5°	55.6	61.3	63.2	65.5	64.1	59.4	51.4	45.3	42.4	40.1	39.6
85°	33.0	34.4	36.8	36.8	35.4	32.1	27.8	25.9	23.1	22.6	21.2
87.5°	14.6	14.6	14.6	14.6	14.6	13.7	11.8	10.8	9.9	9.4	9.0
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°	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0	1274.0
2.5°	1252.3	1247.6	1241.0	1233.5	1226.9	1216.5	1213.2	1213.2	1215.5	1212.7	1210.4
5°	1219.8	1210.4	1200.9	1186.3	1174.1	1157.6	1152.8	1148.1	1147.7	1142.9	1136.8
7.5°	1184.9	1170.8	1151.4	1130.7	1117.5	1099.6	1089.7	1086.8	1077.9	1069.4	1059.5
10°	1144.4	1122.7	1099.6	1079.8	1059.0	1035.9	1024.1	1016.1	1007.1	996.8	989.7
12.5°	1095.3	1070.8	1049.6	1026.5	1009.0	976.5	972.7	962.3	944.4	928.9	923.2
15°	1065.1	1022.2	998.2	977.0	950.6	917.1	904.8	893.5	876.5	866.6	858.6
17.5°	1011.9	973.2	943.0	914.7	889.3	863.3	844.9	835.5	821.8	813.4	805.3
20°	963.3	921.3	889.7	856.7	830.3	806.8	791.2	779.4	772.3	763.8	755.8
22.5°	914.3	870.4	840.2	806.8	775.6	761.5	743.1	733.2	723.8	717.2	708.7
25°	857.2	822.3	784.6	758.7	731.3	716.7	699.2	689.8	682.3	674.7	670.5
27.5°	806.3	770.9	736.0	710.1	687.0	672.8	662.0	653.0	643.6	638.0	634.7
30°	753.5	720.9	690.3	665.3	647.4	631.8	625.2	616.7	609.7	607.3	602.1
32.5°	706.3	670.0	645.5	622.9	607.8	596.9	592.2	583.3	581.8	579.5	576.7
35°	659.2	628.0	604.5	585.1	572.4	564.4	558.3	555.9	553.6	551.2	548.8
37.5°	612.5	588.0	565.8	550.3	539.9	533.7	532.3	527.6	527.1	523.8	523.8
40°	570.5	545.5	530.0	517.7	509.2	506.4	502.6	501.7	500.3	499.3	501.2
42.5°	528.6	511.6	498.4	485.7	479.1	476.7	475.8	474.3	473.4	476.2	477.2
45°	489.4	474.8	463.5	454.5	450.8	447.9	447.9	449.3	448.9	450.3	450.3
47.5°	453.1	439.9	430.5	427.2	422.5	421.5	422.0	421.5	423.9	425.8	427.7
50°	418.7	406.9	399.4	396.1	395.1	393.7	395.6	396.5	398.0	399.8	400.8
52.5°	380.5	374.8	370.1	366.8	366.4	366.8	366.4	369.7	371.1	373.9	373.4
55°	348.0	343.7	340.4	336.7	336.2	337.6	338.5	341.4	343.3	345.6	345.1
57.5°	317.3	314.0	310.3	309.3	308.8	309.3	313.6	313.1	315.9	317.8	318.7
60°	283.8	281.5	278.2	278.2	279.6	280.5	282.0	284.3	287.1	286.7	290.0
62.5°	253.2	250.4	249.4	250.8	250.4	252.7	254.1	254.1	257.9	259.3	260.3
65°	222.6	221.6	220.2	220.2	221.6	222.1	224.4	225.9	227.3	230.1	232.5
67.5°	193.8	191.4	191.4	190.5	192.4	193.8	195.2	197.1	198.0	201.3	202.7
70°	163.6	162.7	162.2	163.1	163.1	164.6	166.9	169.3	171.2	171.6	174.5
72.5°	134.4	134.4	134.4	135.8	136.7	138.2	138.6	140.5	143.3	143.8	145.2
75°	108.0	108.4	108.0	108.4	108.9	110.3	111.3	113.2	115.0	115.5	116.5
77.5°	83.5	82.5	81.6	83.0	83.9	86.8	86.3	87.2	89.1	88.2	89.1
80°	58.5	59.9	58.0	60.8	60.8	60.4	61.3	62.7	62.2	63.2	62.2
82.5°	39.6	38.2	38.2	39.6	40.1	38.7	39.6	40.1	40.5	39.6	39.1
85°	21.7	21.2	22.2	20.7	21.2	20.3	20.3	19.3	20.3	19.3	18.4
87.5°	8.0	7.5	8.0	6.6	6.1	5.7	5.2	5.2	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: P243161

CATALOG NUMBER: S122DR-H675D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1274.0	1274.0	1274.0	1274.0
2.5°	1213.7	1208.5	1206.1	1208.0
5°	1130.2	1131.6	1123.1	1126.0
7.5°	1058.1	1051.9	1053.8	1050.5
10°	981.7	978.4	973.2	974.1
12.5°	930.3	908.1	906.7	902.5
15°	858.1	845.9	843.1	842.1
17.5°	800.6	790.2	794.0	791.2
20°	748.8	749.2	743.1	739.3
22.5°	703.0	702.1	699.7	695.9
25°	664.4	664.4	658.7	657.3
27.5°	629.0	629.9	625.2	625.2
30°	602.6	599.3	598.8	599.8
32.5°	576.2	572.4	572.9	572.4
35°	547.9	548.8	547.4	546.0
37.5°	523.8	523.8	523.8	522.4
40°	500.3	501.2	499.8	500.7
42.5°	476.7	477.2	477.2	475.3
45°	453.1	452.6	451.7	453.6
47.5°	428.6	428.6	428.1	429.1
50°	401.7	402.7	401.3	400.8
52.5°	374.4	374.8	374.4	375.3
55°	346.6	346.6	347.0	348.0
57.5°	317.8	321.1	318.7	320.6
60°	289.5	290.0	290.4	289.5
62.5°	262.6	262.2	262.6	264.0
65°	233.4	234.3	233.9	232.9
67.5°	204.6	203.7	205.1	203.7
70°	174.0	175.9	174.5	176.3
72.5°	146.2	145.7	146.6	144.3
75°	116.9	116.9	117.4	116.9
77.5°	89.6	88.6	88.2	86.8
80°	61.8	61.8	59.9	61.3
82.5°	37.7	38.2	38.7	35.8
85°	17.9	17.9	17.4	17.0
87.5°	3.8	3.8	4.2	4.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)