

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: P243147

Luminaire Tested: **S122DR-H865D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243147  
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-H865D927-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: 2859.9 lumens  
Efficiency: N/A  
Efficacy: 90.8 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

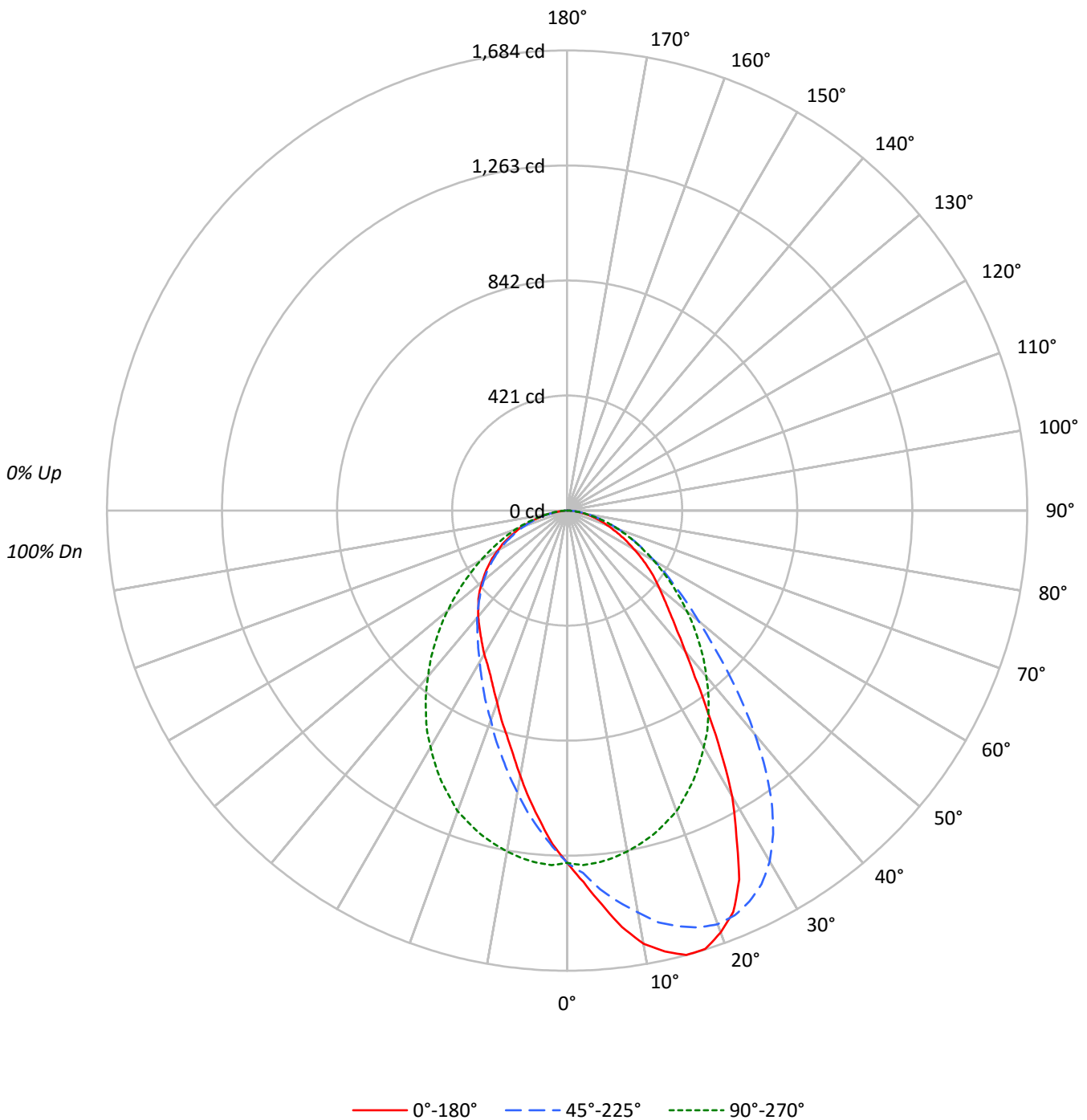
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	24549	24549	24549
5°	27654	24725	21780
10°	31128	24504	19061
15°	33204	24174	16799
20°	33300	23736	15160
25°	31317	22946	13974
30°	26585	21990	13344
35°	20786	20963	12845
40°	16699	19701	12597
45°	14366	18401	12362
50°	13033	16932	12013
55°	12008	15429	11689
60°	10792	13901	11158
65°	9717	12489	10619
70°	8660	11105	9935
75°	7794	9545	8706
80°	6801	7689	6801
85°	5835	5726	3759



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.8	4.3
10°-20°	352.9	12.3
20°-30°	513.2	17.9
30°-40°	550.5	19.3
40°-50°	493.4	17.3
50°-60°	393.4	13.8
60°-70°	266.1	9.3
70°-80°	135.7	4.7
80°-90°	31.8	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°	989.0	34.6
0°-40°	1539.5	53.8
0°-60°	2426.3	84.8
0°-90°	2859.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2859.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1289	1289	1289	1289	1289	
5°	1446	1391	1293	1171	1139	143
15°	1684	1575	1226	928	852	471
25°	1490	1578	1092	725	665	670
35°	894	1306	902	571	552	566
45°	533	826	683	453	459	417
55°	362	480	465	342	352	323
65°	216	279	277	225	236	214
75°	106	132	130	112	118	113
85°	27	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°	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8
2.5°	1360.4	1364.7	1360.9	1359.4	1356.6	1355.6	1348.0	1341.8	1338.0	1327.5	1328.4
5°	1446.3	1455.8	1450.5	1450.1	1439.6	1432.9	1426.2	1416.7	1402.4	1390.9	1381.9
7.5°	1536.9	1532.1	1530.7	1525.4	1517.8	1508.3	1493.5	1479.6	1461.5	1444.8	1432.4
10°	1609.4	1608.0	1610.3	1597.0	1592.2	1577.4	1564.5	1543.1	1519.7	1493.5	1477.3
12.5°	1652.3	1656.6	1659.9	1654.7	1643.3	1639.0	1617.5	1587.4	1579.3	1543.6	1524.0
15°	1683.8	1685.7	1686.2	1680.5	1674.7	1663.8	1650.9	1631.8	1605.6	1574.6	1559.8
17.5°	1681.9	1681.4	1684.3	1680.9	1677.6	1674.3	1664.2	1649.5	1628.9	1599.8	1575.0
20°	1642.8	1651.4	1658.0	1659.5	1659.0	1660.9	1656.1	1646.6	1631.8	1610.8	1582.7
22.5°	1589.4	1586.0	1600.3	1599.4	1605.6	1619.9	1626.1	1622.3	1616.5	1603.2	1580.8
25°	1490.1	1493.5	1503.5	1514.0	1538.3	1546.9	1565.5	1579.8	1581.7	1578.4	1564.5
27.5°	1341.3	1365.2	1370.4	1384.2	1418.1	1446.3	1483.9	1506.4	1538.3	1541.2	1535.0
30°	1208.7	1207.8	1215.9	1240.7	1271.7	1314.1	1362.8	1420.5	1457.2	1482.5	1491.6
32.5°	1045.6	1049.4	1070.4	1100.9	1132.4	1174.8	1231.1	1301.7	1350.9	1403.3	1432.9
35°	893.9	905.8	925.9	946.8	981.2	1039.4	1101.9	1160.5	1235.9	1306.0	1353.7
37.5°	768.9	785.1	800.4	820.4	853.8	898.7	954.9	1032.7	1107.6	1192.0	1262.1
40°	671.6	677.8	688.3	707.9	730.3	775.1	831.9	890.1	971.2	1068.0	1160.1
42.5°	595.3	593.9	605.3	617.7	638.2	671.6	721.2	779.4	860.0	945.9	1038.9
45°	533.3	533.8	538.5	551.4	567.6	586.7	624.9	679.7	740.8	826.2	924.9
47.5°	482.7	484.2	491.3	500.4	509.9	527.6	552.8	588.6	645.9	717.4	809.9
50°	439.8	442.2	446.9	453.6	460.8	473.2	492.3	520.4	565.7	626.3	710.2
52.5°	401.6	402.6	404.0	410.2	415.9	427.4	441.7	463.6	499.4	550.0	615.3
55°	361.6	360.6	363.9	369.2	374.4	382.6	397.3	415.0	440.3	480.3	534.2
57.5°	320.5	322.0	324.4	327.2	336.8	345.3	356.3	372.5	392.6	424.1	468.9
60°	283.3	283.3	286.2	290.0	296.2	301.9	312.4	327.2	344.9	369.2	406.9
62.5°	247.1	249.0	251.9	253.8	259.5	266.6	274.8	286.2	302.4	322.0	350.1
65°	215.6	214.6	217.5	221.3	225.6	230.4	239.5	249.0	261.4	279.0	302.4
67.5°	183.2	186.0	187.0	188.9	192.2	198.4	202.7	212.7	222.8	238.5	258.1
70°	155.5	157.4	158.8	161.2	164.1	166.9	171.2	179.4	189.4	200.3	214.2
72.5°	130.7	132.1	130.7	133.1	134.5	137.4	143.1	146.9	154.5	164.1	176.5
75°	105.9	106.8	106.4	108.8	109.2	112.1	115.0	118.3	126.9	132.1	140.7
77.5°	83.0	84.0	84.4	85.4	86.3	87.8	89.2	92.5	97.3	102.1	108.8
80°	62.0	62.0	63.4	63.9	64.4	65.3	67.7	68.7	72.0	73.5	78.7
82.5°	42.9	43.4	43.9	43.9	44.4	45.3	45.8	47.7	48.7	51.0	53.4
85°	26.7	27.2	27.2	27.2	28.6	28.1	28.1	29.1	30.5	30.5	31.5
87.5°	13.4	13.8	13.8	13.8	14.3	14.3	14.3	14.3	14.3	15.3	14.8
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8
2.5°	1328.0	1327.5	1325.6	1317.0	1310.3	1301.7	1300.3	1298.9	1286.9	1274.1	1270.2
5°	1374.7	1366.1	1354.2	1339.9	1325.6	1309.8	1300.8	1293.1	1275.0	1255.0	1243.5
7.5°	1420.5	1403.8	1385.2	1362.8	1338.9	1313.6	1297.4	1282.2	1257.4	1231.1	1215.4
10°	1459.6	1437.2	1411.4	1381.9	1348.9	1314.6	1290.8	1266.9	1235.4	1203.5	1182.5
12.5°	1492.0	1463.4	1429.6	1389.5	1359.4	1312.2	1278.8	1247.3	1212.5	1171.0	1148.1
15°	1516.9	1488.7	1442.9	1402.4	1362.8	1299.8	1259.3	1225.9	1179.1	1138.6	1102.3
17.5°	1546.9	1506.8	1461.5	1403.3	1359.4	1287.4	1241.6	1198.2	1147.7	1100.0	1059.9
20°	1560.3	1518.3	1469.6	1404.8	1348.9	1274.1	1213.0	1171.0	1110.0	1055.1	1009.8
22.5°	1562.2	1522.1	1469.2	1400.5	1330.8	1254.5	1184.4	1129.5	1068.5	1010.3	959.2
25°	1554.1	1515.9	1461.0	1392.8	1310.8	1233.5	1155.3	1091.8	1021.3	961.1	909.2
27.5°	1532.1	1501.1	1449.1	1376.1	1290.3	1201.1	1115.7	1046.5	976.9	908.7	859.1
30°	1496.8	1476.3	1431.5	1354.2	1264.0	1165.8	1080.4	999.8	924.4	860.5	807.1
32.5°	1451.5	1441.5	1404.3	1328.0	1237.3	1127.1	1037.9	954.9	872.9	812.3	757.5
35°	1393.8	1399.0	1367.6	1298.4	1203.5	1088.0	988.3	901.5	821.4	757.0	706.4
37.5°	1318.9	1344.7	1324.6	1259.7	1160.1	1048.4	936.3	849.1	765.1	703.1	658.7
40°	1234.9	1280.3	1270.7	1216.3	1113.3	1002.2	886.3	792.3	710.2	651.6	609.1
42.5°	1136.2	1202.0	1212.5	1163.4	1067.0	944.5	830.0	739.3	660.2	602.4	561.9
45°	1025.5	1107.1	1142.4	1103.8	1013.1	888.6	772.3	683.1	604.8	555.7	521.8
47.5°	914.4	1012.7	1060.4	1041.8	950.2	829.0	715.0	627.7	553.8	510.9	478.9
50°	804.7	910.1	979.8	967.3	888.2	772.3	657.3	571.4	503.7	464.1	436.9
52.5°	708.3	808.0	883.9	890.1	819.0	707.4	596.2	516.6	458.9	423.1	400.2
55°	613.4	706.0	789.0	804.2	746.5	639.2	540.0	464.6	412.1	382.6	363.9
57.5°	528.5	612.5	695.0	721.7	675.0	578.1	479.4	413.1	367.8	344.9	328.7
60°	456.5	532.3	603.4	630.6	598.6	510.4	424.1	364.9	327.2	306.7	293.8
62.5°	393.5	452.2	515.2	545.2	523.7	446.9	371.6	319.1	288.6	270.9	260.9
65°	336.8	382.1	431.7	466.5	442.7	385.4	322.4	277.1	251.4	235.2	228.0
67.5°	284.3	322.0	361.6	389.2	377.3	325.3	272.4	237.1	215.6	203.2	196.5
70°	236.6	264.7	296.7	318.2	309.6	269.5	227.5	199.4	181.3	172.7	166.9
72.5°	194.1	212.3	236.6	254.2	245.2	217.0	187.0	164.6	151.2	141.2	136.9
75°	154.1	169.8	187.0	198.9	191.8	170.8	146.9	129.7	120.7	114.5	111.6
77.5°	116.9	129.3	141.2	146.9	143.6	128.3	112.1	98.7	91.1	87.3	84.0
80°	84.0	91.1	99.2	104.5	102.6	92.1	80.6	70.1	66.8	62.0	61.1
82.5°	56.3	62.0	63.9	66.3	64.9	60.1	52.0	45.8	42.9	40.5	40.1
85°	33.4	34.8	37.2	37.2	35.8	32.4	28.1	26.2	23.4	22.9	21.5
87.5°	14.8	14.8	14.8	14.8	14.8	13.8	11.9	11.0	10.0	9.5	9.1
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°	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8	1288.8
2.5°	1266.9	1262.1	1255.5	1247.8	1241.1	1230.7	1227.3	1227.3	1229.7	1226.8	1224.5
5°	1234.0	1224.5	1214.9	1200.1	1187.7	1171.0	1166.3	1161.5	1161.0	1156.2	1150.0
7.5°	1198.7	1184.4	1164.8	1143.8	1130.5	1112.4	1102.3	1099.5	1090.4	1081.8	1071.8
10°	1157.7	1135.7	1112.4	1092.3	1071.3	1048.0	1036.0	1027.9	1018.9	1008.4	1001.2
12.5°	1108.1	1083.3	1061.8	1038.4	1020.8	987.9	984.0	973.6	955.4	939.7	934.0
15°	1077.5	1034.1	1009.8	988.3	961.6	927.8	915.4	903.9	886.7	876.7	868.6
17.5°	1023.6	984.5	954.0	925.4	899.6	873.4	854.8	845.2	831.4	822.8	814.7
20°	974.5	932.1	900.1	866.7	840.0	816.1	800.4	788.5	781.3	772.7	764.6
22.5°	924.9	880.5	850.0	816.1	784.7	770.4	751.7	741.7	732.2	725.5	716.9
25°	867.2	831.9	793.7	767.5	739.8	725.0	707.4	697.8	690.2	682.6	678.3
27.5°	815.7	779.9	744.6	718.4	695.0	680.7	669.7	660.6	651.1	645.4	642.0
30°	762.2	729.3	698.3	673.0	654.9	639.2	632.5	623.9	616.8	614.4	609.1
32.5°	714.5	677.8	653.0	630.1	614.8	603.9	599.1	590.0	588.6	586.2	583.4
35°	666.8	635.4	611.5	592.0	579.1	571.0	564.8	562.4	560.0	557.6	555.2
37.5°	619.6	594.8	572.4	556.7	546.2	540.0	538.5	533.8	533.3	529.9	529.9
40°	577.2	551.9	536.1	523.7	515.2	512.3	508.5	507.5	506.1	505.1	507.0
42.5°	534.7	517.5	504.2	491.3	484.6	482.2	481.3	479.9	478.9	481.8	482.7
45°	495.1	480.3	468.9	459.8	456.0	453.1	453.1	454.6	454.1	455.5	455.5
47.5°	458.4	445.0	435.5	432.2	427.4	426.4	426.9	426.4	428.8	430.7	432.6
50°	423.6	411.6	404.0	400.7	399.7	398.3	400.2	401.2	402.6	404.5	405.4
52.5°	384.9	379.2	374.4	371.1	370.6	371.1	370.6	374.0	375.4	378.3	377.8
55°	352.0	347.7	344.4	340.6	340.1	341.5	342.5	345.3	347.3	349.6	349.2
57.5°	321.0	317.7	313.9	312.9	312.4	312.9	317.2	316.7	319.6	321.5	322.4
60°	287.2	284.8	281.4	281.4	282.9	283.8	285.2	287.6	290.5	290.0	293.4
62.5°	256.1	253.3	252.3	253.8	253.3	255.7	257.1	257.1	260.9	262.3	263.3
65°	225.1	224.2	222.8	222.8	224.2	224.7	227.1	228.5	229.9	232.8	235.2
67.5°	196.0	193.7	193.7	192.7	194.6	196.0	197.5	199.4	200.3	203.7	205.1
70°	165.5	164.6	164.1	165.0	165.0	166.5	168.9	171.2	173.1	173.6	176.5
72.5°	135.9	135.9	135.9	137.4	138.3	139.8	140.2	142.1	145.0	145.5	146.9
75°	109.2	109.7	109.2	109.7	110.2	111.6	112.6	114.5	116.4	116.9	117.8
77.5°	84.4	83.5	82.5	84.0	84.9	87.8	87.3	88.2	90.2	89.2	90.2
80°	59.1	60.6	58.7	61.5	61.5	61.1	62.0	63.4	63.0	63.9	63.0
82.5°	40.1	38.6	38.6	40.1	40.5	39.1	40.1	40.5	41.0	40.1	39.6
85°	21.9	21.5	22.4	21.0	21.5	20.5	20.5	19.6	20.5	19.6	18.6
87.5°	8.1	7.6	8.1	6.7	6.2	5.7	5.2	5.2	4.3	4.3	4.3
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: P243147

CATALOG NUMBER: S122DR-H865D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1288.8	1288.8	1288.8	1288.8
2.5°	1227.8	1222.5	1220.2	1222.1
5°	1143.4	1144.8	1136.2	1139.1
7.5°	1070.4	1064.2	1066.1	1062.7
10°	993.1	989.8	984.5	985.5
12.5°	941.1	918.7	917.3	913.0
15°	868.1	855.7	852.9	851.9
17.5°	809.9	799.4	803.3	800.4
20°	757.5	757.9	751.7	747.9
22.5°	711.2	710.2	707.9	704.0
25°	672.1	672.1	666.4	664.9
27.5°	636.3	637.3	632.5	632.5
30°	609.6	606.3	605.8	606.7
32.5°	582.9	579.1	579.6	579.1
35°	554.3	555.2	553.8	552.4
37.5°	529.9	529.9	529.9	528.5
40°	506.1	507.0	505.6	506.6
42.5°	482.2	482.7	482.7	480.8
45°	458.4	457.9	457.0	458.9
47.5°	433.6	433.6	433.1	434.1
50°	406.4	407.4	405.9	405.4
52.5°	378.7	379.2	378.7	379.7
55°	350.6	350.6	351.1	352.0
57.5°	321.5	324.8	322.4	324.4
60°	292.9	293.4	293.8	292.9
62.5°	265.7	265.2	265.7	267.1
65°	236.1	237.1	236.6	235.6
67.5°	207.0	206.1	207.5	206.1
70°	176.0	177.9	176.5	178.4
72.5°	147.9	147.4	148.3	146.0
75°	118.3	118.3	118.8	118.3
77.5°	90.6	89.7	89.2	87.8
80°	62.5	62.5	60.6	62.0
82.5°	38.2	38.6	39.1	36.3
85°	18.1	18.1	17.6	17.2
87.5°	3.8	3.8	4.3	4.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)