

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: P242660

Luminaire Tested: **S124DR-S795D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242660  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DR-S795D940-X4F0-XX-UDD-A-W  
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2970.0 lumens  
Efficiency: N/A  
Efficacy: 112.5 lumens/watt  
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct

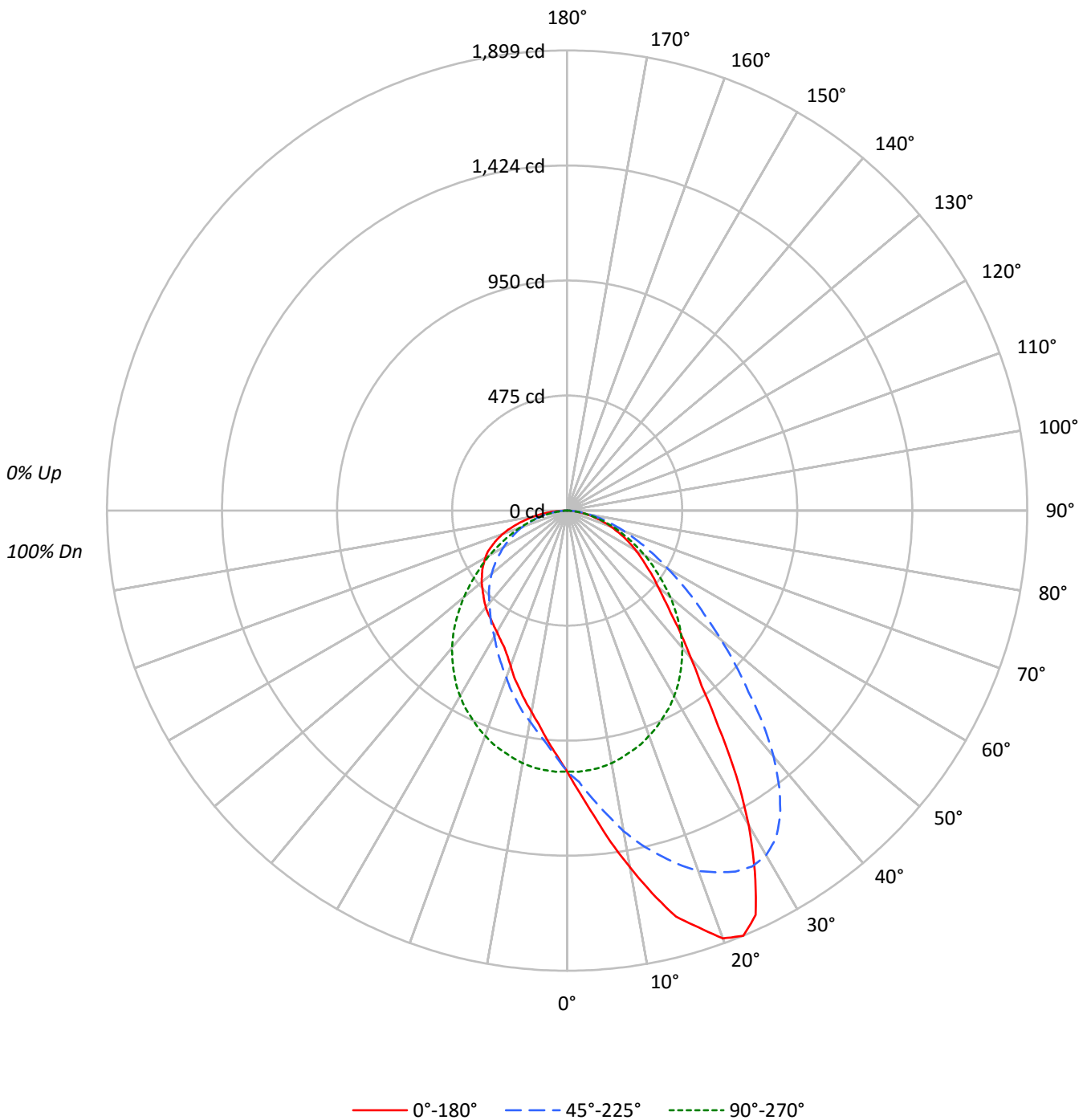
Input Watts (W): 26.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P242660

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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	109	105	101	97	107	103	99	96	98	95	93		95	92	90		91	89	87	85
2	100	92	86	80	98	90	84	79	87	82	78		84	79	76		81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66		74	69	65		72	67	64	62
4	84	73	64	58	82	72	64	58	69	62	57		67	61	56		65	60	55	53
5	78	65	57	50	76	64	56	50	62	55	50		60	54	49		58	53	49	46
6	72	59	51	44	70	58	50	44	56	49	44		55	48	43		53	47	43	41
7	67	54	45	39	65	53	45	39	52	44	39		50	44	39		49	43	38	36
8	62	49	41	35	61	49	41	35	47	40	35		46	40	35		45	39	35	33
9	58	45	37	32	57	45	37	32	44	37	32		43	36	32		42	36	31	30
10	55	42	34	29	54	41	34	29	40	34	29		39	33	29		39	33	29	27

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

	0°	90°	180°
0°	9567	9567	9567
5°	11267	9592	8466
10°	13489	9550	7622
15°	15961	9454	6999
20°	17772	9354	6445
25°	18060	9210	6061
30°	15367	9070	5940
35°	11815	8844	5941
40°	9209	8577	6054
45°	7678	8177	6155
50°	6758	7689	6363
55°	6191	7102	6619
60°	5803	6580	6928
65°	5401	5992	7183
70°	4935	5411	7347
75°	4410	4764	7257
80°	3696	3901	7028
85°	2733	2815	6731



TEST NUMBER: P242660

CATALOG NUMBER: S124DR-S795D940-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.7	3.5
10°-20°	323.3	10.9
20°-30°	513.6	17.3
30°-40°	570.7	19.2
40°-50°	519.0	17.5
50°-60°	424.1	14.3
60°-70°	302.8	10.2
70°-80°	166.6	5.6
80°-90°	45.0	1.5
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°	941.7	31.7
0°-40°	1512.4	50.9
0°-60°	2455.6	82.7
0°-90°	2970.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2970.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1076	1076	1076	1076	1076	
5°	1263	1193	1075	966	949	128
15°	1734	1472	1027	810	761	490
25°	1841	1644	939	666	618	817
35°	1089	1533	815	550	548	689
45°	611	1058	650	456	490	480
55°	400	637	458	356	427	361
65°	257	355	285	248	342	254
75°	128	165	139	138	211	136
85°	27	34	28	39	66	33
90°	0	0	0	0	0	



TEST NUMBER: P242660

CATALOG NUMBER: S124DR-S795D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3
2.5°	1162.8	1162.4	1157.9	1157.0	1153.9	1149.9	1149.0	1141.8	1127.6	1120.9	1119.1
5°	1262.7	1271.6	1260.0	1257.8	1256.4	1241.7	1234.1	1225.2	1204.7	1192.7	1183.3
7.5°	1379.5	1379.9	1375.0	1370.1	1361.7	1349.2	1332.2	1312.6	1289.0	1264.9	1248.0
10°	1494.5	1498.1	1492.3	1491.4	1468.7	1454.4	1425.9	1401.8	1374.1	1343.4	1315.3
12.5°	1615.8	1608.7	1606.4	1582.8	1583.2	1554.3	1519.9	1495.0	1448.6	1412.0	1372.4
15°	1734.4	1724.6	1718.3	1692.0	1679.1	1643.0	1607.8	1580.6	1524.8	1471.8	1431.7
17.5°	1803.1	1815.1	1799.0	1788.3	1753.1	1729.5	1694.3	1638.5	1597.1	1531.1	1485.2
20°	1878.8	1879.7	1871.7	1860.6	1834.3	1802.2	1762.9	1700.5	1648.3	1582.8	1513.2
22.5°	1899.4	1899.4	1897.1	1886.9	1868.6	1844.1	1804.4	1754.9	1688.9	1616.2	1546.7
25°	1841.4	1839.6	1843.6	1855.2	1847.6	1839.6	1816.9	1778.1	1719.2	1643.9	1569.0
27.5°	1677.3	1688.9	1713.0	1741.5	1762.0	1780.3	1779.0	1762.5	1720.6	1655.5	1575.7
30°	1497.2	1512.4	1529.3	1557.8	1613.1	1644.8	1679.5	1705.9	1691.1	1641.6	1568.5
32.5°	1299.2	1300.1	1327.3	1360.8	1410.2	1478.5	1538.7	1598.8	1624.7	1604.6	1546.7
35°	1088.8	1095.0	1122.2	1154.3	1216.3	1290.8	1373.7	1447.7	1508.8	1533.3	1502.1
37.5°	912.2	931.8	952.4	988.9	1045.5	1112.9	1202.0	1294.3	1383.9	1438.3	1444.1
40°	793.6	804.8	818.6	844.9	891.3	957.3	1031.3	1141.0	1237.7	1325.1	1353.6
42.5°	700.0	705.3	712.5	735.7	768.2	833.8	899.7	992.9	1090.1	1198.9	1251.5
45°	610.8	617.5	631.8	645.6	672.4	717.8	780.7	860.1	957.7	1058.5	1146.7
47.5°	543.9	548.4	557.3	572.5	596.6	627.3	680.8	748.1	843.6	941.2	1035.7
50°	488.7	492.2	498.9	512.3	529.7	556.4	598.3	660.3	731.2	829.7	922.0
52.5°	445.0	445.9	450.3	458.3	471.3	492.7	525.2	573.8	638.5	723.6	815.5
55°	399.5	401.3	405.7	412.4	424.5	438.7	465.0	503.4	560.9	637.1	716.9
57.5°	362.0	363.8	367.4	370.1	380.8	392.8	414.2	441.8	486.9	554.6	627.3
60°	326.4	325.5	329.9	332.2	338.9	348.7	364.3	390.6	428.5	480.6	546.2
62.5°	291.6	290.3	293.8	296.9	300.1	308.1	320.1	339.3	368.3	414.2	468.6
65°	256.8	255.0	257.3	260.8	264.4	268.9	278.2	296.5	321.0	354.9	398.2
67.5°	221.1	223.4	223.4	225.6	227.8	234.1	240.8	255.0	272.4	300.1	338.4
70°	189.9	190.4	192.2	192.2	193.5	198.9	204.2	211.8	228.7	253.7	283.6
72.5°	158.7	161.0	159.6	161.4	162.3	165.4	169.0	176.1	189.9	206.9	231.0
75°	128.4	129.7	129.7	130.2	131.5	132.9	136.0	141.3	151.6	165.4	182.8
77.5°	99.0	99.0	99.9	101.7	101.7	103.9	106.6	110.6	116.4	126.6	137.8
80°	72.2	73.1	72.7	73.6	73.6	75.4	76.2	81.6	83.8	90.1	98.5
82.5°	48.2	49.0	49.0	50.4	51.3	51.3	52.6	53.9	56.2	61.5	63.8
85°	26.8	27.6	26.8	27.6	29.0	29.4	30.8	31.2	33.0	34.3	37.5
87.5°	9.8	11.1	11.1	11.6	12.5	12.9	13.4	12.9	14.7	15.2	16.9
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: P242660

CATALOG NUMBER: S124DR-S795D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3
2.5°	1119.5	1113.3	1108.8	1105.3	1095.5	1089.7	1085.2	1079.0	1071.8	1064.3	1054.9
5°	1173.9	1158.8	1147.6	1130.7	1114.6	1101.3	1087.4	1075.0	1059.8	1043.3	1031.3
7.5°	1229.7	1208.7	1180.6	1158.8	1132.5	1109.7	1089.7	1068.7	1046.4	1025.0	1005.0
10°	1282.3	1253.3	1221.2	1183.3	1147.6	1116.0	1086.6	1058.0	1030.4	1002.7	979.1
12.5°	1338.9	1301.0	1249.7	1203.8	1162.8	1117.8	1080.8	1044.2	1009.4	980.0	951.5
15°	1388.4	1336.2	1281.4	1222.1	1169.5	1120.0	1071.4	1027.3	989.8	951.5	924.7
17.5°	1419.6	1355.0	1296.1	1234.1	1173.5	1111.5	1061.1	1011.7	965.3	927.8	894.4
20°	1450.4	1386.2	1308.1	1246.2	1170.4	1106.2	1045.5	988.9	939.9	899.3	864.5
22.5°	1477.1	1400.4	1322.4	1235.9	1160.6	1091.5	1023.7	966.6	916.2	873.0	840.0
25°	1483.4	1398.2	1313.5	1232.4	1146.7	1066.0	1005.9	939.0	885.5	840.4	804.8
27.5°	1485.6	1395.5	1301.5	1213.2	1124.9	1051.3	972.9	914.5	859.2	811.5	777.6
30°	1480.7	1385.7	1282.7	1185.1	1096.4	1014.8	948.8	883.7	827.1	779.8	744.1
32.5°	1465.1	1365.2	1258.7	1153.9	1061.1	981.8	913.1	852.0	797.2	750.8	712.9
35°	1432.1	1334.5	1221.7	1114.2	1020.1	939.4	877.9	815.0	759.7	715.6	679.5
37.5°	1388.0	1297.0	1182.4	1070.5	980.0	898.0	836.0	778.0	728.1	682.6	645.2
40°	1326.4	1248.8	1133.8	1025.5	925.6	848.5	791.4	739.2	689.7	647.4	612.2
42.5°	1255.5	1190.4	1086.6	970.2	874.8	797.2	741.9	696.4	650.5	612.2	576.9
45°	1168.6	1124.0	1024.1	918.0	817.7	744.6	691.5	650.5	611.3	572.9	543.5
47.5°	1071.8	1046.9	959.9	858.3	762.0	688.9	642.9	603.7	568.0	534.6	508.3
50°	974.2	963.5	890.8	793.6	702.7	634.9	588.5	556.0	526.6	498.0	473.5
52.5°	877.9	880.1	816.4	729.4	646.9	582.3	536.4	506.5	482.0	460.1	438.7
55°	779.4	791.8	740.6	661.2	585.9	527.0	485.5	458.3	440.5	421.3	404.8
57.5°	688.9	709.8	665.2	592.5	528.8	472.6	436.0	415.1	395.5	383.0	370.1
60°	600.6	620.2	587.2	528.3	469.0	422.7	388.3	370.1	353.6	345.5	337.1
62.5°	522.1	539.0	516.7	463.2	413.8	369.6	342.0	324.6	314.8	305.9	301.0
65°	448.1	462.8	441.8	402.2	358.0	322.4	298.7	284.9	274.2	270.6	264.4
67.5°	375.0	388.3	377.2	342.4	305.0	276.9	258.2	243.4	237.2	233.6	229.6
70°	311.2	324.6	312.5	283.1	255.9	233.2	215.8	208.2	201.5	200.2	193.9
72.5°	257.3	265.3	253.2	231.8	209.6	191.3	178.8	170.8	168.1	165.4	162.7
75°	201.1	209.1	201.1	183.2	166.8	153.4	141.8	138.7	134.6	133.3	131.1
77.5°	150.7	158.3	152.0	140.0	127.1	115.9	109.2	104.8	104.3	101.7	102.5
80°	108.8	113.2	107.5	99.9	90.1	82.9	78.5	76.2	73.6	72.7	74.5
82.5°	70.4	71.8	69.6	65.1	58.4	54.4	51.7	49.0	49.0	49.5	49.0
85°	40.6	40.1	39.7	35.2	33.0	29.9	28.1	27.6	27.2	28.1	29.0
87.5°	16.9	17.4	16.9	15.2	13.8	12.5	12.0	11.6	12.0	12.5	12.9
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: P242660

CATALOG NUMBER: S124DR-S795D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3
2.5°	1050.4	1046.4	1040.6	1032.6	1025.9	1018.8	1017.0	1014.3	1019.7	1015.2	1013.9
5°	1021.0	1011.7	999.6	985.8	977.8	966.2	963.9	959.5	955.0	954.6	950.1
7.5°	990.3	977.3	962.2	947.9	935.4	922.9	914.9	914.0	906.9	903.3	898.8
10°	960.8	943.9	925.6	912.2	897.1	883.7	874.3	869.0	864.5	859.6	855.2
12.5°	926.0	907.8	893.5	878.8	860.1	850.7	833.8	823.5	823.5	824.8	811.5
15°	900.6	882.8	859.6	839.1	829.3	809.7	801.2	790.5	783.8	777.1	771.8
17.5°	869.4	847.6	829.7	806.6	788.3	773.6	762.0	756.2	745.5	735.7	729.0
20°	840.4	816.8	797.6	772.7	752.2	733.0	723.6	714.7	707.1	699.1	691.5
22.5°	811.0	786.0	761.5	737.4	718.7	698.2	689.3	676.4	669.2	665.7	658.1
25°	779.8	753.1	726.3	703.1	683.5	665.7	653.6	644.3	636.2	632.7	627.8
27.5°	745.9	719.6	694.2	667.4	644.7	631.8	622.0	614.4	609.5	604.1	601.9
30°	713.8	686.2	658.5	634.0	613.5	600.6	591.7	586.7	583.2	581.0	578.7
32.5°	681.3	654.1	624.6	602.8	585.0	573.8	567.6	562.7	561.3	560.9	560.4
35°	646.0	618.4	591.7	571.6	554.2	549.7	543.9	541.3	540.4	543.5	544.8
37.5°	612.2	586.3	561.3	541.3	529.7	522.5	520.3	519.9	523.0	525.7	528.8
40°	579.6	554.6	531.5	514.5	503.8	499.8	498.9	501.1	504.7	507.8	511.4
42.5°	548.0	523.4	502.9	487.3	480.6	477.1	478.0	480.2	485.5	489.6	495.3
45°	515.0	494.5	473.9	461.0	454.8	455.7	455.7	459.7	464.6	470.4	476.2
47.5°	484.2	463.2	445.9	434.7	431.6	430.3	432.5	437.8	444.5	451.2	459.2
50°	453.0	433.4	418.7	408.9	405.3	406.6	410.2	415.1	423.6	432.5	441.0
52.5°	421.3	403.9	390.6	381.7	379.4	382.1	385.7	394.1	401.3	411.1	421.8
55°	388.3	373.2	362.5	355.8	354.9	356.2	360.3	368.7	379.4	391.5	401.3
57.5°	355.8	342.9	332.6	327.7	328.2	329.0	335.3	345.5	356.2	369.2	381.7
60°	322.8	311.2	303.2	299.6	300.1	302.7	310.8	320.1	334.4	346.9	360.3
62.5°	291.6	281.8	274.2	271.1	270.2	276.9	284.5	294.3	308.5	322.8	337.5
65°	257.7	249.7	243.4	241.7	243.0	247.5	257.3	270.2	282.2	296.9	312.1
67.5°	224.7	218.0	213.6	214.5	215.8	222.0	230.5	241.7	255.0	270.2	285.8
70°	193.5	187.3	183.7	184.1	186.8	194.8	202.0	213.1	227.8	243.4	255.9
72.5°	161.4	157.8	154.7	156.9	159.6	164.5	173.9	185.0	197.5	211.8	225.2
75°	128.9	128.9	127.1	128.4	132.4	137.8	144.5	156.1	169.0	180.6	191.3
77.5°	101.2	99.9	100.8	102.1	104.8	111.5	119.0	127.5	137.8	149.8	158.7
80°	73.1	73.6	75.8	78.5	79.4	84.3	92.3	99.9	107.5	117.3	125.7
82.5°	50.4	50.8	51.7	55.3	56.2	61.5	66.0	73.6	80.3	86.1	92.7
85°	29.9	29.9	32.1	33.4	35.7	39.2	42.4	46.8	53.1	57.5	64.2
87.5°	14.3	14.3	16.1	16.9	18.3	20.5	21.4	26.3	28.1	30.3	34.3
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: P242660

CATALOG NUMBER: S124DR-S795D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1076.3	1076.3	1076.3	1076.3
2.5°	1013.0	1012.1	1009.0	1008.5
5°	947.4	945.2	943.9	948.8
7.5°	898.0	896.2	892.2	890.8
10°	850.7	848.9	845.3	844.5
12.5°	805.2	801.2	801.2	802.5
15°	766.0	764.2	759.3	760.6
17.5°	725.9	724.1	717.4	724.1
20°	688.4	684.8	681.7	681.3
22.5°	652.7	649.6	650.1	646.5
25°	624.2	621.1	620.2	618.0
27.5°	601.0	599.2	597.4	598.3
30°	580.1	579.6	578.7	578.7
32.5°	562.7	562.7	563.6	563.6
35°	546.6	548.0	548.9	547.5
37.5°	532.4	533.2	534.6	535.9
40°	515.4	518.5	519.4	521.7
42.5°	499.4	502.9	505.6	505.6
45°	482.9	486.4	489.6	489.6
47.5°	465.9	470.8	473.9	474.4
50°	448.5	454.8	457.9	460.1
52.5°	431.6	437.8	442.3	443.2
55°	411.5	420.4	425.3	427.1
57.5°	393.7	401.7	407.1	408.4
60°	372.3	381.2	388.3	389.7
62.5°	350.4	359.8	366.0	370.1
65°	324.6	333.9	340.2	341.5
67.5°	297.4	307.2	311.2	313.9
70°	268.4	276.0	280.4	282.7
72.5°	235.4	243.4	248.8	248.8
75°	201.5	208.7	211.3	211.3
77.5°	166.3	170.3	173.9	174.8
80°	132.4	134.6	137.3	137.3
82.5°	97.6	99.4	102.1	101.7
85°	63.3	67.3	66.9	66.0
87.5°	35.7	36.1	37.5	38.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)