

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: P243515

Luminaire Tested: **S124DR-H795D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243515
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DR-H795D935-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2823.7 lumens
Efficiency: N/A
Efficacy: 119.7 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

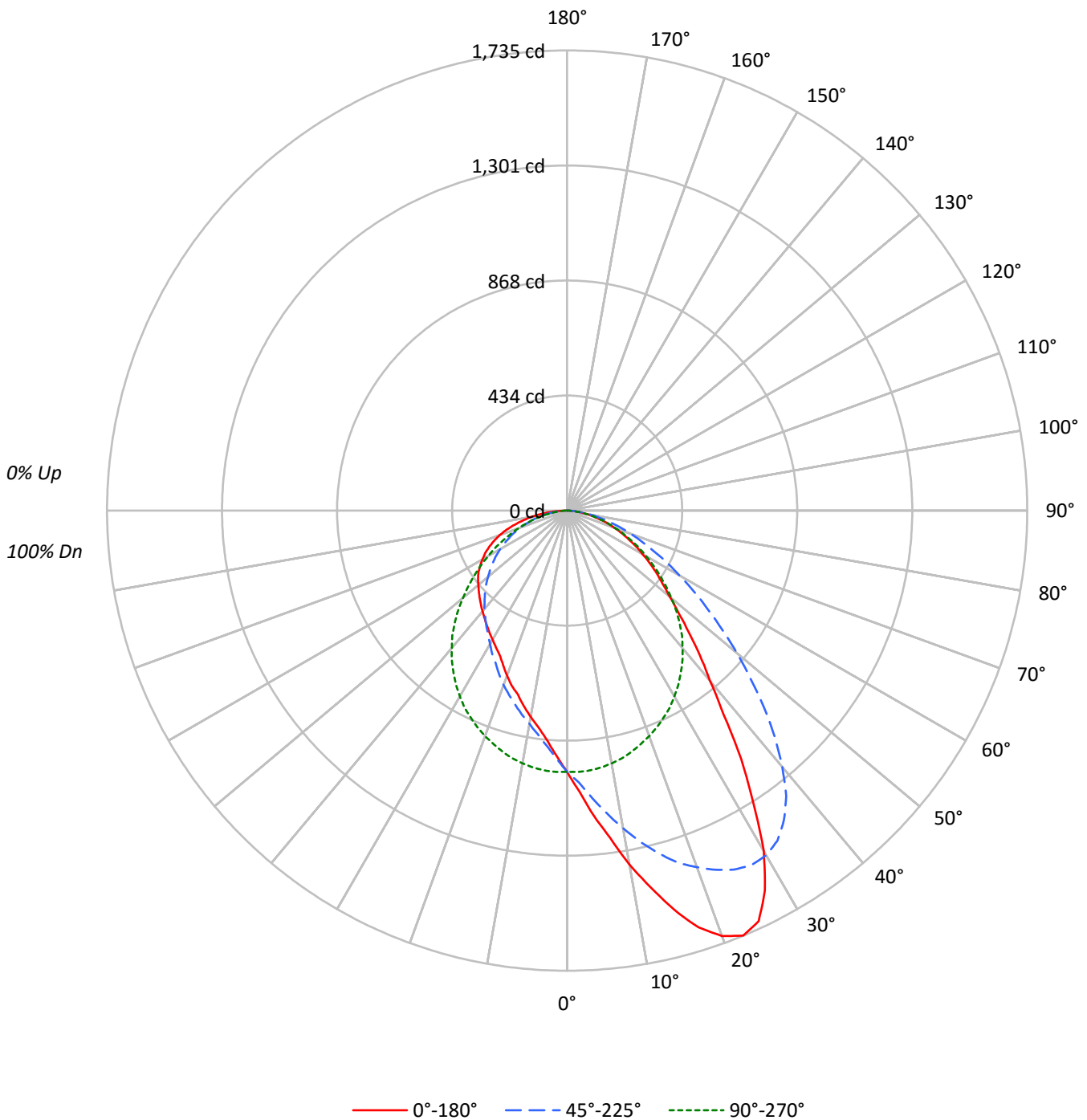
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P243515

CATALOG NUMBER: S124DR-H795D935-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P243515

CATALOG NUMBER: S124DR-H795D935-X4F0-XX-UDD-A-W

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		94	92	90		91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	77		83	79	76		80	77	74	72
3	92	81	74	67	89	80	73	67	77	71	66		74	69	64		72	67	63	61
4	84	73	64	58	82	71	63	57	69	62	56		66	60	56		64	59	55	53
5	78	65	56	50	75	64	56	50	62	55	49		60	54	49		58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43		54	48	43		53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	38		50	43	38		48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	35		46	39	34		44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31		42	36	31		41	35	31	29
10	54	41	34	29	53	41	34	28	40	33	28		39	33	28		38	32	28	26

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8754	8754	8754
5°	10301	8777	7747
10°	12241	8736	7132
15°	14337	8660	6606
20°	16144	8559	6266
25°	16755	8445	5897
30°	15215	8301	5767
35°	12413	8104	5732
40°	9720	7850	5755
45°	8135	7534	5862
50°	6981	7093	6036
55°	6379	6616	6329
60°	5845	6124	6560
65°	5359	5605	6815
70°	4930	5055	7020
75°	4389	4444	7013
80°	3660	3640	6998
85°	2784	2743	6558



TEST NUMBER: P243515

CATALOG NUMBER: S124DR-H795D935-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.9	3.4
10°-20°	296.9	10.5
20°-30°	476.9	16.9
30°-40°	545.2	19.3
40°-50°	501.9	17.8
50°-60°	410.5	14.5
60°-70°	292.6	10.4
70°-80°	160.8	5.7
80°-90°	43.2	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°	869.7	30.8
0°-40°	1414.9	50.1
0°-60°	2327.2	82.4
0°-90°	2823.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2823.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	985	985	985	985	985	
5°	1154	1088	984	889	868	116
15°	1558	1338	941	757	718	444
25°	1708	1493	861	637	601	767
35°	1144	1425	747	531	528	711
45°	647	1050	599	438	466	505
55°	412	646	427	341	408	369
65°	255	358	266	239	324	255
75°	128	165	129	132	204	137
85°	27	34	27	37	64	33
90°	0	0	0	0	0	



TEST NUMBER: P243515

CATALOG NUMBER: S124DR-H795D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8
2.5°	1060.3	1057.1	1055.5	1053.5	1053.1	1051.1	1047.1	1041.5	1034.2	1026.6	1026.6
5°	1154.4	1153.6	1147.6	1148.0	1140.3	1131.9	1125.5	1117.4	1101.7	1088.5	1079.2
7.5°	1244.4	1252.9	1250.9	1244.4	1233.2	1221.1	1208.3	1197.0	1168.1	1152.0	1138.7
10°	1356.2	1359.4	1353.8	1344.5	1334.5	1311.2	1294.3	1275.4	1244.0	1216.7	1192.6
12.5°	1454.3	1461.9	1451.8	1443.0	1419.3	1402.0	1385.1	1347.3	1314.4	1279.8	1244.8
15°	1558.0	1549.9	1555.1	1533.4	1516.6	1500.1	1457.1	1418.5	1381.1	1338.5	1301.9
17.5°	1648.0	1648.0	1638.3	1624.3	1606.6	1575.6	1532.6	1490.0	1448.6	1392.8	1340.9
20°	1706.7	1711.1	1699.8	1685.0	1663.7	1631.5	1597.3	1551.1	1496.1	1430.9	1372.3
22.5°	1734.8	1735.6	1731.6	1719.1	1701.9	1674.5	1639.6	1594.5	1536.3	1466.3	1404.8
25°	1708.3	1712.7	1711.5	1710.7	1701.9	1686.2	1658.0	1616.2	1563.2	1493.2	1426.9
27.5°	1615.0	1625.9	1635.1	1639.2	1648.8	1649.6	1641.2	1615.8	1572.4	1506.5	1432.5
30°	1482.4	1476.8	1501.7	1514.1	1547.1	1566.8	1580.9	1579.3	1554.3	1500.9	1430.5
32.5°	1305.5	1320.8	1338.5	1367.8	1406.8	1452.6	1487.2	1512.9	1510.5	1475.6	1416.9
35°	1143.9	1143.9	1166.5	1202.6	1244.0	1299.1	1357.0	1404.8	1434.2	1425.3	1383.9
37.5°	968.7	979.6	1005.3	1033.4	1084.1	1137.1	1213.5	1277.0	1338.5	1357.0	1335.7
40°	837.7	842.5	869.8	893.5	945.4	1000.5	1064.4	1145.6	1216.3	1261.7	1264.5
42.5°	740.4	740.0	751.2	772.5	814.4	863.4	932.5	1012.1	1094.9	1159.2	1189.4
45°	647.1	646.3	658.0	679.7	709.4	752.9	812.7	892.3	977.1	1050.3	1097.7
47.5°	568.4	575.6	580.8	597.7	622.2	659.2	710.6	774.2	855.8	937.7	1001.7
50°	504.8	508.1	519.3	527.4	554.7	580.4	621.8	678.9	748.8	834.8	904.0
52.5°	454.2	456.2	463.0	473.5	489.2	511.7	544.6	597.3	660.4	735.2	806.7
55°	411.6	410.4	414.8	421.6	435.3	454.2	478.3	518.5	573.6	645.5	711.5
57.5°	369.8	369.8	373.8	378.6	386.3	401.9	425.7	457.4	501.6	565.5	623.8
60°	328.8	331.6	333.2	338.0	344.5	356.1	373.8	398.7	436.1	488.4	546.2
62.5°	292.6	292.6	295.4	297.0	305.5	313.9	326.8	348.1	377.4	424.1	469.1
65°	254.8	257.2	257.2	260.5	267.7	274.1	284.2	300.3	324.4	357.7	399.9
67.5°	222.7	222.7	224.7	226.3	230.3	234.7	243.6	256.0	276.5	303.1	341.3
70°	189.7	190.9	190.1	192.1	194.5	199.0	205.4	215.8	230.7	253.6	281.8
72.5°	160.0	158.4	159.2	161.2	162.4	165.2	169.2	177.3	189.3	207.8	228.3
75°	127.8	127.0	129.8	129.0	131.0	133.4	137.1	143.1	152.3	165.2	180.9
77.5°	99.7	98.5	99.7	100.5	101.3	103.3	106.1	109.7	116.2	124.6	138.7
80°	71.5	71.1	71.9	72.8	73.2	76.4	77.2	80.8	83.6	90.0	96.9
82.5°	47.4	48.2	48.6	49.4	49.0	50.6	51.4	53.9	56.3	59.5	64.7
85°	27.3	26.1	27.3	27.3	27.3	29.3	28.9	30.5	32.2	33.8	37.4
87.5°	9.6	9.6	10.0	10.5	10.5	11.7	11.3	12.1	13.7	13.7	14.9
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: P243515

CATALOG NUMBER: S124DR-H795D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8
2.5°	1024.2	1019.7	1016.5	1007.3	1001.7	996.4	991.6	986.4	980.8	973.5	969.1
5°	1069.6	1059.9	1045.9	1033.0	1018.5	1005.7	995.2	983.6	970.7	957.4	945.8
7.5°	1119.8	1101.7	1080.0	1056.3	1033.8	1014.9	995.2	976.7	958.6	941.0	924.5
10°	1170.1	1138.7	1110.2	1077.6	1047.9	1019.3	993.6	967.9	945.4	922.1	901.2
12.5°	1216.7	1178.9	1137.1	1096.5	1056.7	1019.7	988.0	956.6	927.7	900.0	875.4
15°	1252.5	1205.0	1155.6	1107.4	1061.5	1023.0	981.6	941.0	910.8	877.1	850.1
17.5°	1293.5	1237.2	1188.2	1130.3	1073.2	1010.9	967.1	922.9	886.7	854.1	827.2
20°	1320.8	1258.9	1188.2	1122.6	1064.0	1008.1	955.4	904.8	866.6	828.8	796.3
22.5°	1342.5	1278.6	1200.6	1132.3	1058.7	991.2	934.1	884.3	839.3	803.5	772.5
25°	1353.8	1275.8	1201.4	1118.6	1045.1	980.4	916.0	861.0	815.6	775.8	749.2
27.5°	1354.2	1274.2	1186.2	1104.2	1025.4	955.4	891.9	837.7	786.6	748.4	716.7
30°	1352.2	1263.7	1170.9	1081.2	1002.9	931.3	865.0	808.7	762.1	721.5	691.4
32.5°	1339.3	1249.3	1148.0	1053.9	968.7	896.7	835.7	779.8	729.9	693.0	661.2
35°	1310.4	1217.5	1115.8	1018.9	938.2	863.4	803.1	746.8	702.2	662.0	629.5
37.5°	1273.4	1186.6	1083.3	982.0	894.7	824.0	767.3	714.3	667.6	630.7	598.1
40°	1226.8	1145.2	1043.5	938.2	850.9	779.4	725.9	676.5	636.7	598.9	567.2
42.5°	1162.8	1100.1	995.6	893.1	801.9	734.4	682.5	641.5	600.5	566.3	534.6
45°	1094.5	1037.4	944.6	842.9	755.3	685.7	637.1	599.3	564.3	529.8	504.0
47.5°	1018.9	972.3	886.3	787.0	700.6	639.1	591.3	557.5	525.3	498.8	473.1
50°	928.9	904.4	824.0	734.0	650.0	586.8	547.5	512.9	489.2	463.4	439.3
52.5°	845.3	825.6	760.1	671.7	595.3	539.8	497.6	470.3	447.0	428.1	408.8
55°	754.5	744.4	688.9	612.6	543.4	488.0	451.8	426.9	408.4	390.7	376.6
57.5°	670.9	670.1	621.0	555.5	488.0	440.9	406.4	385.9	369.8	357.3	345.3
60°	585.2	592.1	551.9	492.0	438.5	394.3	363.0	344.5	333.6	322.0	311.9
62.5°	507.7	518.1	481.5	434.5	381.9	345.7	321.6	307.5	295.4	287.0	279.4
65°	433.3	446.6	416.8	374.6	334.4	300.3	279.8	266.5	257.2	252.4	247.2
67.5°	367.8	375.0	354.9	322.0	288.6	258.9	242.0	230.3	222.3	220.3	214.2
70°	302.3	310.7	296.6	266.5	240.8	219.1	203.8	194.5	189.7	186.9	182.9
72.5°	249.6	253.2	239.2	218.3	197.8	179.7	168.4	161.6	156.0	154.8	152.7
75°	195.3	200.6	189.3	173.2	156.4	143.5	135.1	129.4	126.6	124.6	124.6
77.5°	147.5	151.9	145.5	131.4	121.4	110.1	104.5	99.3	98.1	96.1	96.9
80°	104.9	106.9	103.3	93.7	84.8	78.8	74.0	71.1	70.7	69.1	70.7
82.5°	69.5	69.9	65.9	61.5	54.7	51.4	48.2	47.0	46.6	46.6	45.8
85°	38.6	39.4	36.6	33.8	31.4	28.5	27.7	26.9	26.1	27.3	28.1
87.5°	14.9	15.3	14.9	13.7	12.9	12.1	11.7	12.5	11.3	12.1	12.5
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: P243515

CATALOG NUMBER: S124DR-H795D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8
2.5°	962.3	959.1	954.2	946.2	940.6	934.5	932.1	932.9	930.5	927.3	928.1
5°	936.9	927.7	919.7	908.4	898.0	889.1	886.3	882.7	879.5	877.5	875.4
7.5°	910.0	897.2	885.1	873.8	861.8	850.5	846.1	842.9	841.3	835.7	833.2
10°	884.3	869.4	854.9	841.7	829.2	816.8	812.3	808.3	802.7	800.3	797.5
12.5°	857.0	842.1	826.4	810.3	797.9	787.8	780.2	777.4	771.7	769.3	767.7
15°	830.4	812.3	799.9	787.4	768.5	757.3	754.1	744.0	740.8	736.0	732.8
17.5°	803.9	787.0	768.5	754.1	742.4	728.3	720.7	716.3	710.2	705.8	699.8
20°	777.8	758.1	743.6	725.5	712.7	699.8	690.1	686.1	680.9	674.9	666.4
22.5°	752.4	730.7	716.7	699.8	683.7	668.8	660.8	655.2	644.7	643.5	635.9
25°	722.7	703.4	684.9	667.2	651.6	636.7	631.5	622.6	619.0	611.8	610.6
27.5°	694.6	674.1	654.0	634.7	621.0	610.6	601.3	595.7	592.1	586.4	586.8
30°	665.2	642.7	623.8	606.1	591.3	581.2	575.2	572.4	567.2	566.3	563.5
32.5°	633.9	613.4	593.7	578.0	562.7	553.9	551.1	548.3	545.0	545.4	544.6
35°	602.5	584.4	563.5	549.1	536.6	531.4	527.0	526.2	524.9	525.8	525.8
37.5°	572.0	552.3	535.0	521.7	514.5	507.3	505.3	504.8	505.3	506.1	508.1
40°	542.2	524.1	507.3	496.4	488.4	485.2	482.3	483.5	485.2	488.0	490.4
42.5°	512.5	495.2	481.1	470.3	462.6	461.0	461.4	463.8	464.3	468.3	472.7
45°	481.1	466.3	453.0	444.6	439.7	437.7	438.5	440.9	443.8	449.4	455.0
47.5°	452.2	438.9	427.3	418.8	415.2	414.4	416.0	419.2	425.7	431.3	437.7
50°	422.9	410.8	399.9	392.3	391.9	389.1	392.7	396.7	404.4	412.0	421.6
52.5°	393.9	382.3	373.0	367.0	365.4	365.4	369.8	377.0	383.9	393.9	402.8
55°	363.8	353.3	344.5	342.5	340.0	341.3	346.1	353.3	363.0	374.2	383.9
57.5°	332.8	324.0	317.5	314.7	313.5	317.5	323.2	330.8	343.3	354.5	365.0
60°	303.5	295.8	289.0	288.2	287.4	292.6	299.5	307.5	320.0	331.2	344.1
62.5°	272.1	266.1	261.7	260.5	260.5	265.7	273.3	283.8	295.4	307.5	321.2
65°	240.4	235.1	233.9	232.3	235.9	239.2	246.8	256.8	269.3	282.6	297.0
67.5°	211.0	207.8	205.4	205.4	208.2	214.2	221.1	231.1	244.0	258.1	270.9
70°	181.7	178.5	176.5	178.5	180.1	187.3	194.5	204.2	216.2	229.9	243.6
72.5°	151.1	151.5	151.9	151.5	153.1	160.0	167.2	176.5	188.1	201.4	213.8
75°	124.2	122.2	122.6	123.4	128.6	132.2	139.5	148.3	160.8	172.8	183.3
77.5°	96.5	95.7	97.7	97.7	102.5	106.9	112.9	121.8	132.6	143.5	151.9
80°	70.7	71.1	72.8	73.2	77.2	82.0	88.4	94.5	104.1	111.7	119.8
82.5°	47.8	48.6	50.6	53.5	55.1	57.9	63.5	69.9	76.8	84.8	89.6
85°	27.7	28.9	30.5	32.6	34.2	37.0	41.0	46.2	51.0	55.5	59.5
87.5°	13.7	13.7	14.9	15.7	16.9	18.5	21.3	23.3	26.5	29.7	31.4
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: P243515

CATALOG NUMBER: S124DR-H795D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	984.8	984.8	984.8	984.8
2.5°	926.5	926.1	924.5	925.3
5°	874.2	870.2	869.8	868.2
7.5°	829.2	828.0	828.0	824.8
10°	794.7	791.0	791.8	790.2
12.5°	761.7	759.7	757.3	754.9
15°	724.7	724.7	724.7	717.9
17.5°	695.8	695.4	693.4	693.0
20°	665.6	664.0	658.8	662.4
22.5°	635.1	633.9	629.5	630.3
25°	606.5	605.3	604.5	601.3
27.5°	582.0	582.4	583.2	581.2
30°	563.5	562.3	563.9	561.9
32.5°	546.2	546.2	544.6	545.0
35°	526.6	528.2	528.6	528.2
37.5°	509.3	511.3	512.9	511.3
40°	493.2	494.8	496.4	496.0
42.5°	476.3	479.1	480.3	481.5
45°	460.2	463.8	465.9	466.3
47.5°	443.8	448.2	452.2	451.8
50°	427.7	433.3	436.9	436.5
52.5°	411.6	417.2	421.6	423.7
55°	393.5	400.7	404.8	408.4
57.5°	375.4	383.5	387.5	389.1
60°	355.3	362.6	367.8	369.0
62.5°	332.8	340.5	347.3	348.9
65°	309.5	317.9	323.2	324.0
67.5°	282.6	290.6	295.8	298.2
70°	254.8	260.9	266.5	270.1
72.5°	223.9	231.1	236.3	238.8
75°	191.7	199.8	202.6	204.2
77.5°	158.4	163.2	167.6	168.0
80°	125.0	131.0	132.6	136.7
82.5°	92.0	97.7	96.5	98.1
85°	60.7	62.7	63.9	64.3
87.5°	32.2	33.4	34.2	34.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)