

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: P243490

Luminaire Tested: **S124DR-H795D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243490
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-H795D927-X4F0-XX-UDD-A-W
Description: DEFINE 4 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: 2598.0 lumens
Efficiency: N/A
Efficacy: 110.1 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

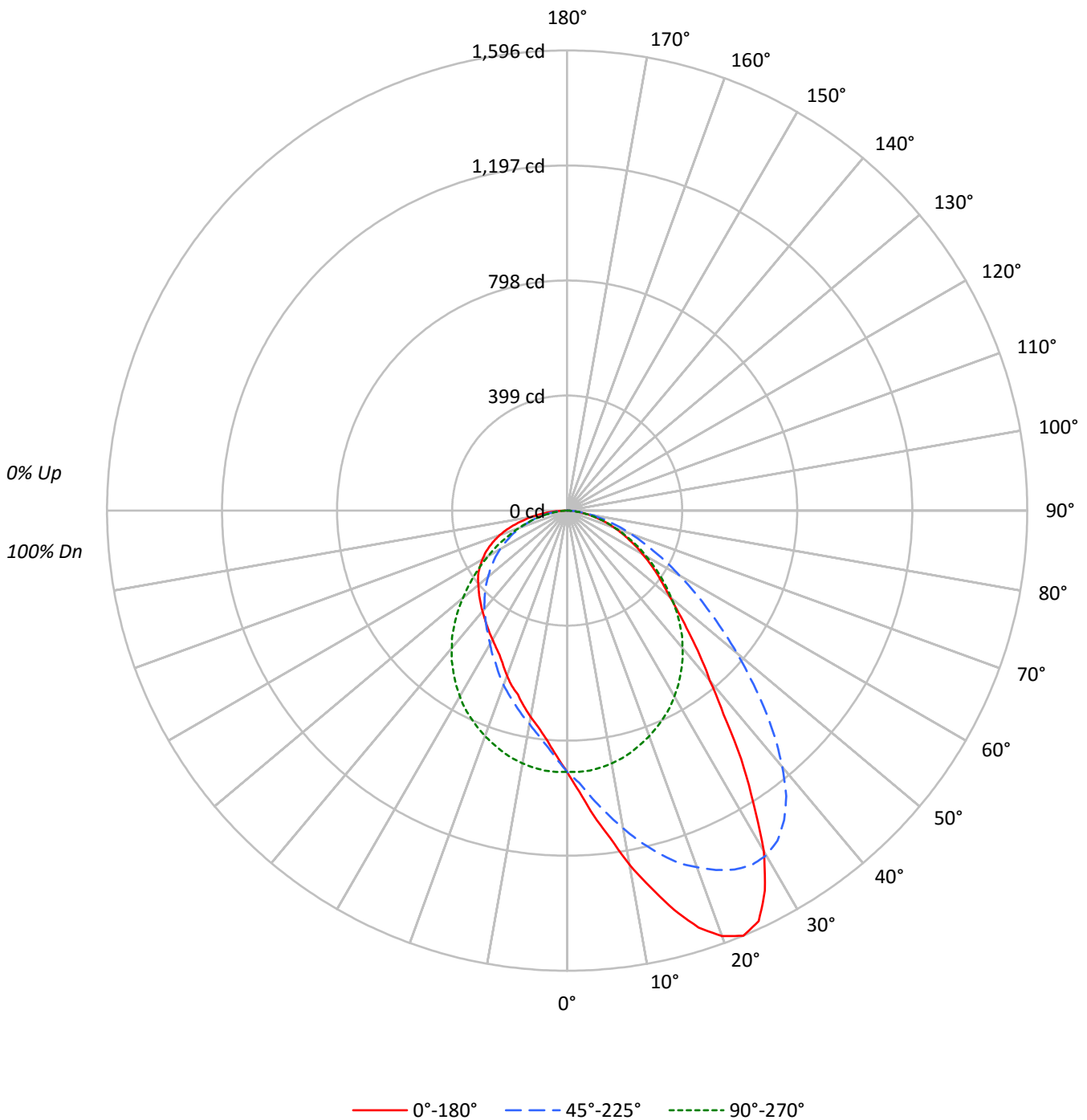
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85				85
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72				72
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61				61
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53				53
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46				46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41				41
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36				36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32				32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29				29
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26				26

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8054	8054	8054
5°	9477	8075	7128
10°	11263	8038	6563
15°	13191	7968	6078
20°	14854	7875	5765
25°	15415	7770	5427
30°	13999	7637	5307
35°	11421	7456	5273
40°	8943	7222	5296
45°	7485	6932	5393
50°	6423	6526	5554
55°	5869	6087	5822
60°	5378	5634	6036
65°	4932	5157	6270
70°	4538	4652	6458
75°	4039	4090	6453
80°	3368	3353	6434
85°	2560	2529	6038



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	88.2	3.4
10°-20°	273.1	10.5
20°-30°	438.8	16.9
30°-40°	501.6	19.3
40°-50°	461.7	17.8
50°-60°	377.7	14.5
60°-70°	269.2	10.4
70°-80°	147.9	5.7
80°-90°	39.7	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°	800.2	30.8
0°-40°	1301.8	50.1
0°-60°	2141.2	82.4
0°-90°	2598.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2598.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	906	906	906	906	906	
5°	1062	1002	905	818	799	107
15°	1433	1232	866	697	660	409
25°	1572	1374	792	586	553	705
35°	1052	1311	687	489	486	654
45°	595	966	551	403	429	465
55°	379	594	393	314	376	340
65°	234	329	245	220	298	234
75°	118	152	119	122	188	126
85°	25	31	25	34	59	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°	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1
2.5°	975.6	972.6	971.2	969.3	968.9	967.1	963.4	958.2	951.6	944.5	944.5
5°	1062.1	1061.4	1055.8	1056.2	1049.2	1041.4	1035.5	1028.1	1013.7	1001.5	993.0
7.5°	1145.0	1152.7	1150.9	1145.0	1134.6	1123.5	1111.7	1101.3	1074.7	1059.9	1047.7
10°	1247.8	1250.7	1245.6	1237.1	1227.8	1206.4	1190.8	1173.4	1144.6	1119.5	1097.3
12.5°	1338.0	1345.0	1335.8	1327.7	1305.8	1289.9	1274.4	1239.6	1209.3	1177.5	1145.3
15°	1433.4	1426.0	1430.8	1410.9	1395.3	1380.2	1340.6	1305.1	1270.7	1231.5	1197.9
17.5°	1516.3	1516.3	1507.4	1494.5	1478.2	1449.7	1410.1	1370.9	1332.8	1281.4	1233.7
20°	1570.3	1574.3	1564.0	1550.3	1530.7	1501.1	1469.7	1427.1	1376.5	1316.6	1262.6
22.5°	1596.2	1596.9	1593.2	1581.7	1565.8	1540.7	1508.5	1467.1	1413.5	1349.1	1292.5
25°	1571.7	1575.8	1574.7	1574.0	1565.8	1551.4	1525.5	1487.1	1438.2	1373.9	1312.9
27.5°	1485.9	1495.9	1504.4	1508.1	1517.0	1517.8	1510.0	1486.7	1446.7	1386.1	1318.0
30°	1363.9	1358.7	1381.7	1393.1	1423.4	1441.6	1454.5	1453.0	1430.1	1380.9	1316.2
32.5°	1201.2	1215.2	1231.5	1258.5	1294.4	1336.5	1368.3	1392.0	1389.8	1357.6	1303.6
35°	1052.5	1052.5	1073.2	1106.5	1144.6	1195.3	1248.5	1292.5	1319.5	1311.4	1273.3
37.5°	891.3	901.3	924.9	950.8	997.4	1046.2	1116.5	1174.9	1231.5	1248.5	1228.9
40°	770.7	775.1	800.3	822.1	869.8	920.5	979.3	1054.0	1119.1	1160.9	1163.5
42.5°	681.2	680.8	691.2	710.8	749.3	794.4	858.0	931.2	1007.4	1066.6	1094.3
45°	595.4	594.7	605.4	625.4	652.7	692.7	747.8	821.0	899.0	966.3	1010.0
47.5°	522.9	529.6	534.4	549.9	572.5	606.5	653.8	712.3	787.4	862.8	921.6
50°	464.5	467.5	477.8	485.2	510.4	534.0	572.1	624.6	689.0	768.1	831.7
52.5°	417.9	419.7	426.0	435.7	450.1	470.8	501.1	549.6	607.6	676.4	742.2
55°	378.7	377.6	381.7	387.9	400.5	417.9	440.1	477.1	527.7	593.9	654.6
57.5°	340.2	340.2	343.9	348.4	355.4	369.8	391.6	420.9	461.5	520.3	574.0
60°	302.5	305.1	306.6	311.0	316.9	327.7	343.9	366.9	401.3	449.3	502.6
62.5°	269.2	269.2	271.8	273.3	281.1	288.8	300.7	320.3	347.3	390.2	431.6
65°	234.5	236.7	236.7	239.6	246.3	252.2	261.5	276.3	298.4	329.1	368.0
67.5°	204.9	204.9	206.7	208.2	211.9	216.0	224.1	235.6	254.4	278.8	314.0
70°	174.6	175.7	174.9	176.8	179.0	183.1	189.0	198.6	212.3	233.4	259.2
72.5°	147.2	145.7	146.4	148.3	149.4	152.0	155.7	163.1	174.2	191.2	210.1
75°	117.6	116.9	119.5	118.7	120.6	122.8	126.1	131.7	140.2	152.0	166.4
77.5°	91.7	90.6	91.7	92.5	93.2	95.0	97.6	101.0	106.9	114.6	127.6
80°	65.8	65.5	66.2	66.9	67.3	70.3	71.0	74.3	76.9	82.8	89.1
82.5°	43.6	44.4	44.7	45.5	45.1	46.6	47.3	49.6	51.8	54.7	59.5
85°	25.1	24.0	25.1	25.1	25.1	27.0	26.6	28.1	29.6	31.1	34.4
87.5°	8.9	8.9	9.2	9.6	9.6	10.7	10.4	11.1	12.6	12.6	13.7
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°	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1
2.5°	942.3	938.2	935.3	926.8	921.6	916.8	912.4	907.5	902.4	895.7	891.6
5°	984.1	975.2	962.3	950.4	937.1	925.3	915.7	905.0	893.1	880.9	870.2
7.5°	1030.3	1013.7	993.7	971.9	951.2	933.8	915.7	898.7	882.0	865.8	850.6
10°	1076.6	1047.7	1021.5	991.5	964.1	937.9	914.2	890.5	869.8	848.4	829.1
12.5°	1119.5	1084.7	1046.2	1008.9	972.3	938.2	909.0	880.2	853.6	828.0	805.5
15°	1152.4	1108.7	1063.2	1018.9	976.7	941.2	903.1	865.8	838.0	807.0	782.2
17.5°	1190.1	1138.3	1093.2	1039.9	987.4	930.1	889.8	849.1	815.8	785.9	761.1
20°	1215.2	1158.3	1093.2	1032.9	978.9	927.5	879.1	832.5	797.3	762.6	732.6
22.5°	1235.2	1176.4	1104.7	1041.8	974.1	912.0	859.5	813.6	772.2	739.3	710.8
25°	1245.6	1173.8	1105.4	1029.2	961.5	902.0	842.8	792.2	750.4	713.8	689.3
27.5°	1245.9	1172.3	1091.3	1015.9	943.4	879.1	820.6	770.7	723.7	688.6	659.4
30°	1244.1	1162.7	1077.3	994.8	922.7	856.9	795.9	744.1	701.2	663.8	636.1
32.5°	1232.2	1149.4	1056.2	969.7	891.3	825.1	768.9	717.5	671.6	637.6	608.4
35°	1205.6	1120.2	1026.6	937.5	863.2	794.4	738.9	687.1	646.1	609.1	579.1
37.5°	1171.6	1091.7	996.7	903.5	823.2	758.1	706.0	657.2	614.3	580.3	550.3
40°	1128.7	1053.6	960.1	863.2	782.9	717.1	667.9	622.4	585.8	551.0	521.8
42.5°	1069.9	1012.2	916.1	821.7	737.8	675.7	628.0	590.2	552.5	521.1	491.9
45°	1007.0	954.5	869.1	775.5	694.9	630.9	586.2	551.4	519.2	487.4	463.8
47.5°	937.5	894.6	815.5	724.1	644.6	588.0	544.0	512.9	483.4	459.0	435.3
50°	854.7	832.1	758.1	675.3	598.0	539.9	503.7	471.9	450.1	426.4	404.2
52.5°	777.7	759.6	699.3	618.0	547.7	496.7	457.8	432.7	411.2	393.9	376.1
55°	694.2	684.9	633.9	563.6	500.0	449.0	415.7	392.8	375.7	359.5	346.5
57.5°	617.2	616.5	571.4	511.1	449.0	405.7	373.9	355.0	340.2	328.8	317.7
60°	538.5	544.7	507.8	452.7	403.5	362.8	333.9	316.9	307.0	296.2	287.0
62.5°	467.1	476.7	443.0	399.8	351.3	318.0	295.9	282.9	271.8	264.1	257.0
65°	398.7	410.9	383.5	344.7	307.7	276.3	257.4	245.2	236.7	232.2	227.4
67.5°	338.4	345.0	326.6	296.2	265.5	238.2	222.6	211.9	204.5	202.7	197.1
70°	278.1	285.9	272.9	245.2	221.5	201.6	187.5	179.0	174.6	172.0	168.3
72.5°	229.7	233.0	220.0	200.8	182.0	165.3	155.0	148.7	143.5	142.4	140.5
75°	179.7	184.5	174.2	159.4	143.9	132.0	124.3	119.1	116.5	114.6	114.6
77.5°	135.7	139.8	133.9	120.9	111.7	101.3	96.2	91.3	90.2	88.4	89.1
80°	96.5	98.4	95.0	86.2	78.0	72.5	68.0	65.5	65.1	63.6	65.1
82.5°	64.0	64.3	60.7	56.6	50.3	47.3	44.4	43.3	42.9	42.9	42.2
85°	35.5	36.2	33.7	31.1	28.8	26.3	25.5	24.8	24.0	25.1	25.9
87.5°	13.7	14.1	13.7	12.6	11.8	11.1	10.7	11.5	10.4	11.1	11.5
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1	906.1
2.5°	885.4	882.4	878.0	870.6	865.4	859.8	857.6	858.4	856.1	853.2	853.9
5°	862.1	853.6	846.2	835.8	826.2	818.0	815.5	812.1	809.2	807.3	805.5
7.5°	837.3	825.4	814.3	804.0	792.9	782.5	778.5	775.5	774.0	768.9	766.6
10°	813.6	799.9	786.6	774.4	762.9	751.5	747.4	743.7	738.5	736.3	733.7
12.5°	788.5	774.8	760.4	745.6	734.1	724.9	717.8	715.2	710.1	707.8	706.4
15°	764.1	747.4	735.9	724.5	707.1	696.7	693.8	684.5	681.6	677.1	674.2
17.5°	739.6	724.1	707.1	693.8	683.1	670.1	663.1	659.0	653.5	649.4	643.9
20°	715.6	697.5	684.2	667.5	655.7	643.9	635.0	631.3	626.5	620.9	613.2
22.5°	692.3	672.3	659.4	643.9	629.1	615.4	608.0	602.8	593.2	592.1	585.1
25°	664.9	647.2	630.2	613.9	599.5	585.8	581.0	572.9	569.5	562.9	561.8
27.5°	639.1	620.2	601.7	584.0	571.4	561.8	553.3	548.1	544.7	539.6	539.9
30°	612.1	591.3	574.0	557.7	544.0	534.8	529.2	526.6	521.8	521.1	518.5
32.5°	583.2	564.3	546.2	531.8	517.8	509.6	507.0	504.4	501.5	501.8	501.1
35°	554.4	537.7	518.5	505.2	493.7	488.9	484.8	484.1	483.0	483.7	483.7
37.5°	526.3	508.1	492.2	480.0	473.4	466.7	464.9	464.5	464.9	465.6	467.5
40°	498.9	482.2	466.7	456.7	449.3	446.4	443.8	444.9	446.4	449.0	451.2
42.5°	471.5	455.6	442.7	432.7	425.7	424.2	424.6	426.8	427.1	430.8	434.9
45°	442.7	429.0	416.8	409.0	404.6	402.7	403.5	405.7	408.3	413.5	418.6
47.5°	416.1	403.8	393.1	385.4	382.0	381.3	382.8	385.7	391.6	396.8	402.7
50°	389.1	378.0	368.0	360.9	360.6	358.0	361.3	365.0	372.0	379.1	387.9
52.5°	362.4	351.7	343.2	337.6	336.2	336.2	340.2	346.9	353.2	362.4	370.6
55°	334.7	325.1	316.9	315.1	312.9	314.0	318.4	325.1	333.9	344.3	353.2
57.5°	306.2	298.1	292.2	289.6	288.5	292.2	297.3	304.4	315.8	326.2	335.8
60°	279.2	272.2	265.9	265.2	264.4	269.2	275.5	282.9	294.4	304.7	316.6
62.5°	250.4	244.8	240.8	239.6	239.6	244.5	251.5	261.1	271.8	282.9	295.5
65°	221.2	216.3	215.2	213.8	217.1	220.0	227.1	236.3	247.8	260.0	273.3
67.5°	194.2	191.2	189.0	189.0	191.6	197.1	203.4	212.6	224.5	237.4	249.3
70°	167.2	164.2	162.4	164.2	165.7	172.3	179.0	187.9	199.0	211.5	224.1
72.5°	139.1	139.4	139.8	139.4	140.9	147.2	153.8	162.4	173.1	185.3	196.7
75°	114.3	112.4	112.8	113.5	118.3	121.7	128.3	136.5	147.9	159.0	168.6
77.5°	88.8	88.0	89.9	89.9	94.3	98.4	103.9	112.1	122.0	132.0	139.8
80°	65.1	65.5	66.9	67.3	71.0	75.4	81.4	86.9	95.8	102.8	110.2
82.5°	44.0	44.7	46.6	49.2	50.7	53.3	58.4	64.3	70.6	78.0	82.5
85°	25.5	26.6	28.1	30.0	31.4	34.0	37.7	42.5	47.0	51.0	54.7
87.5°	12.6	12.6	13.7	14.4	15.5	17.0	19.6	21.4	24.4	27.4	28.8
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: P243490

CATALOG NUMBER: S124DR-H795D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	906.1	906.1	906.1	906.1
2.5°	852.4	852.1	850.6	851.3
5°	804.4	800.7	800.3	798.8
7.5°	762.9	761.8	761.8	758.9
10°	731.1	727.8	728.6	727.1
12.5°	700.8	699.0	696.7	694.5
15°	666.8	666.8	666.8	660.5
17.5°	640.2	639.8	637.9	637.6
20°	612.4	610.9	606.1	609.5
22.5°	584.3	583.2	579.1	579.9
25°	558.1	557.0	556.2	553.3
27.5°	535.5	535.9	536.6	534.8
30°	518.5	517.4	518.9	517.0
32.5°	502.6	502.6	501.1	501.5
35°	484.5	485.9	486.3	485.9
37.5°	468.6	470.4	471.9	470.4
40°	453.8	455.3	456.7	456.4
42.5°	438.2	440.8	441.9	443.0
45°	423.4	426.8	428.6	429.0
47.5°	408.3	412.4	416.1	415.7
50°	393.5	398.7	402.0	401.6
52.5°	378.7	383.9	387.9	389.8
55°	362.1	368.7	372.4	375.7
57.5°	345.4	352.8	356.5	358.0
60°	326.9	333.6	338.4	339.5
62.5°	306.2	313.2	319.5	321.0
65°	284.8	292.5	297.3	298.1
67.5°	260.0	267.4	272.2	274.4
70°	234.5	240.0	245.2	248.5
72.5°	206.0	212.6	217.5	219.7
75°	176.4	183.8	186.4	187.9
77.5°	145.7	150.1	154.2	154.6
80°	115.0	120.6	122.0	125.7
82.5°	84.7	89.9	88.8	90.2
85°	55.8	57.7	58.8	59.2
87.5°	29.6	30.7	31.4	31.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)