

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: PORTFOLIO

Report Number: P244139

Luminaire Tested: **LSR8B50D010 EC8B50940 8LBSW0LI**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P244139  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1801-521-53)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: PORTFOLIO  
Catalog Number: LSR8B50D010 EC8B50940 8LBSW0LI  
Description: PORTFOLIO 8 INCH SINGLE WALL WASH DISTRIBUTION 60 DEGREE CUTOFF  
RECESSED DOWNLIGHT- CYLINDEC  
90 CRI 4000 CCT WITH SPECULAR CLEAR TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5183.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.2 / 1.11  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

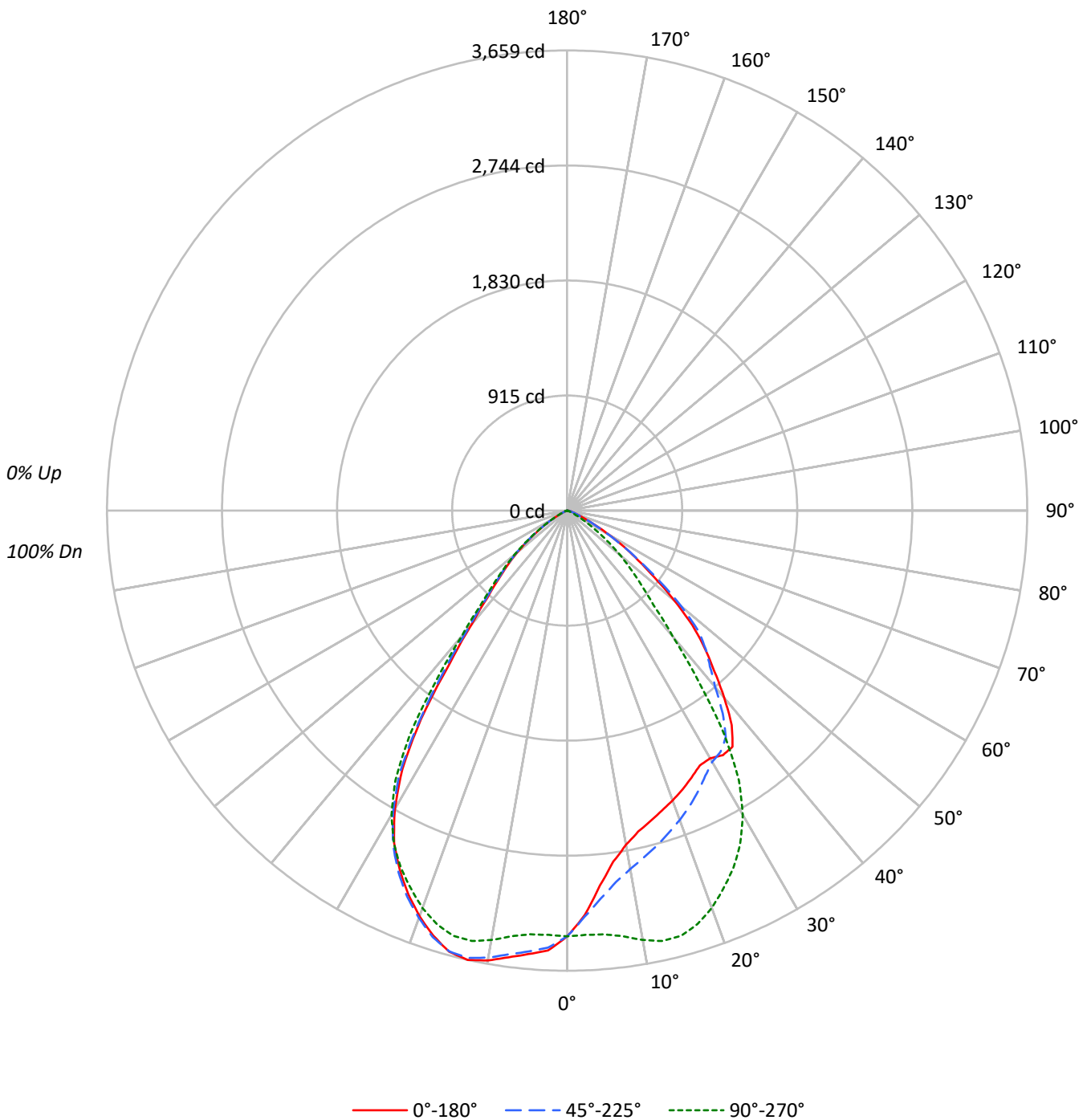
Input Watts (W): 53  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P244139

CATALOG NUMBER: LSR8B50D010 EC8B50940 8LBSW0LI

### Luminous Intensity Polar Plot





TEST NUMBER: P244139

CATALOG NUMBER: LSR8B50D010 EC8B50940 8LBSW0LI

**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	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91					91			
2	105	99	95	91	103	98	93	90	94	91	88	91	88	86	88	86	84	82					82			
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74					74			
4	92	83	76	71	90	82	76	71	80	74	70	77	73	69	76	72	68	67					67			
5	86	76	69	64	84	75	69	64	73	68	63	72	66	63	70	65	62	60					60			
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	56	55					55			
7	76	65	58	53	74	64	57	52	63	57	52	61	56	52	60	55	52	50					50			
8	71	60	53	48	70	59	53	48	58	52	48	57	52	48	56	51	47	46					46			
9	67	56	49	44	66	55	49	44	54	48	44	53	48	44	52	47	44	42					42			
10	63	52	45	41	62	52	45	41	51	45	41	50	44	40	49	44	40	39					39			

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

	0°	90°	180°
0°	104409	104409	104409
5°	92636	104671	109574
10°	84461	108556	113738
15°	81624	111728	115904
20°	80457	110351	112629
25°	79667	106546	107213
30°	80966	99435	97598
35°	86303	82283	76324
40°	78213	52680	47701
45°	67507	36043	33557
50°	53264	26289	24754
55°	36972	16166	15209
60°	23540	8178	7296
65°	11747	3247	2466
70°	6500	1605	884
75°	4658	1168	429
80°	3800	781	160
85°	4104	637	0



TEST NUMBER: P244139

CATALOG NUMBER: LSR8B50D010 EC8B50940 8LBSW0LI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	315.6	6.1
10°-20°	911.5	17.6
20°-30°	1323.0	25.5
30°-40°	1303.0	25.1
40°-50°	816.8	15.8
50°-60°	394.1	7.6
60°-70°	95.4	1.8
70°-80°	19.3	0.4
80°-90°	4.4	0.1
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°	2550.0	49.2
0°-40°	3853.0	74.3
0°-60°	5063.9	97.7
0°-90°	5183.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5183.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3386	3386	3386	3386	3386	
5°	2993	3094	3382	3518	3540	277
15°	2557	2758	3500	3628	3631	723
25°	2342	2463	3132	3174	3151	1084
35°	2293	2199	2186	2061	2028	1387
45°	1548	1559	826	792	770	1183
55°	688	710	301	297	283	633
65°	161	159	44	38	34	184
75°	39	34	10	4	4	44
85°	12	9	2	0	0	12
90°	0	0	0	0	0	



TEST NUMBER: P244139

CATALOG NUMBER: LSR8B50D010 EC8B50940 8LBSWOLI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9
2.5°	3218.7	3198.2	3160.0	3206.2	3206.2	3180.4	3232.0	3200.9	3225.8	3265.0	3230.3
5°	2992.7	2975.8	2943.8	2992.7	2999.0	2974.9	3037.2	3014.1	3050.6	3098.6	3094.1
7.5°	2813.9	2792.6	2763.2	2813.9	2823.7	2807.7	2867.3	2856.6	2904.7	2966.9	2977.6
10°	2697.4	2675.1	2649.3	2695.6	2702.7	2692.0	2752.5	2746.3	2793.5	2865.5	2894.0
12.5°	2614.6	2596.0	2567.5	2616.4	2624.4	2609.3	2666.2	2663.6	2712.5	2788.1	2823.7
15°	2556.8	2534.6	2508.8	2550.6	2561.3	2544.4	2598.6	2593.3	2643.1	2717.8	2757.9
17.5°	2502.5	2482.1	2455.4	2494.5	2505.2	2487.4	2540.8	2531.9	2574.6	2645.8	2686.7
20°	2451.8	2429.6	2405.6	2445.6	2451.8	2431.4	2484.7	2473.2	2511.4	2577.3	2617.3
22.5°	2399.3	2376.2	2351.3	2390.4	2396.7	2376.2	2425.1	2411.8	2447.4	2507.0	2543.5
25°	2341.5	2320.2	2295.3	2331.7	2337.1	2314.8	2366.4	2349.5	2380.7	2433.2	2463.4
27.5°	2283.7	2263.2	2235.7	2273.0	2275.7	2254.3	2301.5	2278.4	2304.2	2352.2	2378.0
30°	2273.9	2250.8	2222.3	2252.6	2253.4	2225.9	2270.3	2242.8	2257.0	2292.6	2307.7
32.5°	2305.0	2281.9	2252.6	2277.5	2274.8	2244.5	2287.3	2253.4	2257.9	2276.6	2273.0
35°	2292.6	2265.0	2230.3	2257.0	2257.0	2220.5	2263.2	2223.2	2218.7	2221.4	2199.2
37.5°	2151.1	2129.8	2096.9	2122.7	2120.0	2092.4	2125.3	2092.4	2077.3	2071.1	2031.0
40°	1943.0	1917.2	1892.3	1919.8	1922.5	1893.1	1935.8	1898.5	1894.0	1876.2	1829.1
42.5°	1732.1	1723.2	1699.2	1722.3	1734.8	1709.9	1745.5	1727.7	1730.3	1725.9	1681.4
45°	1548.0	1532.8	1515.0	1541.7	1549.7	1537.3	1572.9	1562.2	1572.9	1595.1	1558.6
47.5°	1349.6	1334.5	1314.9	1343.3	1357.6	1334.5	1364.7	1361.1	1377.2	1415.4	1411.8
50°	1110.3	1099.6	1096.0	1099.6	1108.5	1097.8	1119.2	1120.0	1130.7	1183.2	1186.8
52.5°	879.0	876.3	863.8	875.4	875.4	858.5	879.8	870.1	880.7	916.3	939.5
55°	687.7	685.0	677.0	687.7	676.1	669.9	676.1	666.3	658.3	685.9	709.9
57.5°	535.6	526.7	516.9	521.3	520.4	507.1	514.2	502.6	496.4	506.2	527.6
60°	381.7	379.0	370.1	374.5	378.1	368.3	375.4	370.1	359.4	367.4	368.3
62.5°	253.5	255.3	250.0	250.9	248.2	246.4	250.9	253.5	250.9	247.3	248.2
65°	161.0	160.1	159.2	160.1	161.9	158.4	161.0	162.8	160.1	160.1	159.2
67.5°	106.8	104.1	101.4	103.2	105.0	102.3	105.0	104.1	105.0	104.1	101.4
70°	72.1	71.2	70.3	71.2	71.2	69.4	71.2	70.3	71.2	70.3	67.6
72.5°	52.5	52.5	51.6	52.5	52.5	50.7	51.6	49.8	50.7	49.8	48.0
75°	39.1	39.1	38.3	39.1	38.3	37.4	38.3	37.4	35.6	35.6	33.8
77.5°	28.5	28.5	28.5	28.5	28.5	27.6	27.6	26.7	25.8	24.9	24.9
80°	21.4	20.5	20.5	20.5	20.5	19.6	20.5	19.6	18.7	17.8	16.9
82.5°	15.1	16.0	15.1	15.1	15.1	14.2	15.1	14.2	14.2	13.3	11.6
85°	11.6	11.6	11.6	11.6	11.6	10.7	10.7	10.7	9.8	9.8	8.9
87.5°	6.2	6.2	6.2	7.1	6.2	6.2	6.2	5.3	5.3	4.4	4.4
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: P244139

CATALOG NUMBER: LSR8B50D010 EC8B50940 8LBSWOLI

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9
2.5°	3276.5	3281.0	3271.2	3286.3	3345.0	3297.9	3317.4	3323.7	3368.2	3376.2	3370.8
5°	3152.0	3171.5	3184.0	3217.8	3282.8	3248.9	3283.6	3305.9	3362.8	3381.5	3385.9
7.5°	3054.1	3095.0	3125.3	3180.4	3257.0	3231.2	3283.6	3320.1	3389.5	3413.5	3425.1
10°	2981.2	3043.4	3095.9	3171.5	3257.8	3240.9	3309.4	3361.0	3438.4	3466.9	3481.1
12.5°	2926.0	3001.6	3071.9	3168.0	3261.4	3253.4	3336.1	3394.8	3476.7	3505.2	3522.1
15°	2865.5	2952.7	3034.5	3142.2	3242.7	3240.9	3329.9	3392.2	3475.8	3499.8	3515.8
17.5°	2793.5	2886.9	2976.7	3093.3	3192.9	3194.7	3284.5	3345.9	3427.8	3447.3	3458.0
20°	2720.5	2813.0	2902.9	3023.0	3120.8	3123.5	3211.6	3268.5	3346.8	3362.8	3365.5
22.5°	2643.1	2729.4	2819.3	2938.5	3032.8	3034.5	3121.7	3175.1	3241.8	3249.8	3257.0
25°	2555.0	2639.5	2724.1	2842.4	2932.2	2937.6	3016.8	3063.9	3125.3	3131.5	3134.2
27.5°	2463.4	2532.8	2613.7	2715.2	2805.9	2802.3	2877.1	2930.5	2985.6	2982.1	2981.2
30°	2370.9	2428.7	2478.5	2576.4	2643.1	2645.8	2716.1	2741.9	2799.7	2792.6	2791.7
32.5°	2305.9	2321.1	2334.4	2384.2	2447.4	2425.1	2473.2	2505.2	2545.2	2542.6	2543.5
35°	2186.7	2159.1	2119.1	2126.2	2164.5	2129.8	2155.6	2154.7	2195.6	2185.8	2197.4
37.5°	1983.0	1904.7	1815.7	1765.0	1772.2	1728.6	1719.7	1741.0	1755.2	1727.7	1737.5
40°	1765.9	1650.3	1511.5	1395.8	1389.6	1335.3	1325.6	1304.2	1331.8	1308.7	1315.8
42.5°	1605.8	1452.8	1270.4	1129.8	1099.6	1054.2	1027.5	1024.0	1032.0	1016.0	1011.5
45°	1483.0	1320.2	1111.2	950.1	916.3	867.4	840.7	830.9	831.8	826.5	822.0
47.5°	1338.9	1175.2	963.5	798.9	760.6	714.4	687.7	681.5	685.0	677.9	672.6
50°	1139.6	992.8	799.8	649.4	615.6	581.8	560.5	554.2	553.4	548.0	544.5
52.5°	925.2	803.3	636.1	510.7	480.4	447.5	432.4	424.4	425.2	419.9	414.6
55°	716.2	640.5	492.9	386.1	358.5	332.7	318.5	308.7	306.0	300.7	298.0
57.5°	532.9	482.2	369.2	278.5	262.4	237.5	223.3	211.7	210.0	207.3	206.4
60°	373.6	337.2	259.8	198.4	179.7	164.6	150.3	138.8	133.4	132.6	129.9
62.5°	242.0	219.7	170.8	132.6	118.3	107.6	93.4	85.4	81.8	78.3	79.2
65°	150.3	133.4	106.8	85.4	77.4	69.4	58.7	51.6	48.0	44.5	45.4
67.5°	93.4	83.6	67.6	55.2	49.8	43.6	35.6	30.2	27.6	24.9	23.1
70°	63.2	54.3	46.3	39.1	35.6	31.1	25.8	21.4	19.6	17.8	16.0
72.5°	44.5	40.0	33.8	29.4	26.7	23.1	19.6	16.9	15.1	13.3	11.6
75°	32.0	28.5	24.9	21.4	19.6	17.8	15.1	13.3	11.6	9.8	8.0
77.5°	23.1	20.5	17.8	16.0	15.1	12.5	10.7	9.8	8.9	7.1	5.3
80°	16.0	14.2	11.6	10.7	10.7	8.9	8.0	7.1	6.2	4.4	3.6
82.5°	10.7	9.8	8.9	8.0	7.1	6.2	6.2	4.4	3.6	2.7	1.8
85°	8.0	7.1	6.2	5.3	5.3	4.4	3.6	2.7	2.7	1.8	0.9
87.5°	4.4	4.4	3.6	2.7	2.7	1.8	1.8	0.9	0.9	0.9	0.9
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: P244139

CATALOG NUMBER: LSR8B50D010 EC8B50940 8LBSW0LI

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9
2.5°	3416.2	3418.9	3434.0	3422.4	3451.8	3473.1	3462.5	3486.5	3478.5	3476.7	3504.3
5°	3439.3	3445.6	3466.0	3455.3	3487.4	3510.5	3499.8	3526.5	3518.5	3516.7	3545.2
7.5°	3483.8	3490.0	3507.8	3498.9	3532.7	3553.2	3539.9	3569.2	3558.5	3557.6	3585.2
10°	3539.9	3548.8	3563.9	3555.0	3586.1	3603.9	3590.6	3619.0	3609.2	3604.8	3635.0
12.5°	3581.7	3587.9	3603.0	3595.9	3626.2	3639.5	3627.9	3655.5	3643.1	3639.5	3666.2
15°	3571.9	3578.1	3590.6	3584.3	3612.8	3625.3	3610.1	3640.4	3627.9	3620.8	3644.8
17.5°	3509.6	3513.2	3522.1	3515.8	3546.1	3554.1	3537.2	3567.4	3555.9	3543.4	3566.5
20°	3418.0	3416.2	3421.5	3418.9	3443.8	3448.2	3437.5	3459.8	3446.4	3439.3	3452.7
22.5°	3304.1	3302.3	3305.9	3298.8	3323.7	3326.3	3310.3	3337.0	3323.7	3310.3	3332.6
25°	3177.8	3168.0	3166.2	3168.9	3185.8	3188.4	3171.5	3191.1	3174.2	3163.5	3184.9
27.5°	3022.1	3009.6	3007.0	3009.6	3026.5	3014.1	2999.8	3014.1	2997.2	2987.4	3000.7
30°	2829.9	2812.1	2804.1	2798.8	2816.6	2812.1	2779.2	2795.2	2768.5	2754.3	2764.1
32.5°	2571.0	2561.3	2539.9	2527.5	2544.4	2510.5	2490.1	2490.1	2479.4	2455.4	2460.7
35°	2211.6	2196.5	2176.9	2166.3	2168.9	2123.6	2089.8	2096.9	2061.3	2055.1	2057.7
37.5°	1757.0	1732.1	1725.0	1702.8	1708.1	1668.1	1621.8	1622.7	1604.0	1584.4	1578.2
40°	1320.2	1315.8	1308.7	1290.0	1297.1	1253.5	1235.7	1236.6	1224.1	1209.9	1217.0
42.5°	1020.4	1006.2	1001.7	995.5	997.3	990.2	967.0	969.7	959.0	955.5	951.9
45°	829.1	814.0	803.3	808.7	808.7	800.7	791.8	797.1	791.8	784.7	788.2
47.5°	683.2	669.0	663.7	662.8	669.0	663.7	654.8	656.6	655.7	653.0	651.2
50°	545.3	541.8	537.3	534.7	537.3	535.6	527.6	532.0	534.7	525.8	528.4
52.5°	415.5	415.5	414.6	408.3	413.7	408.3	407.5	409.2	406.6	403.0	402.1
55°	304.3	301.6	297.1	296.2	298.0	296.2	294.5	295.4	297.1	288.2	288.2
57.5°	208.2	206.4	203.7	203.7	207.3	202.8	200.2	203.7	200.2	196.6	196.6
60°	133.4	132.6	129.9	129.9	129.9	129.0	126.3	127.2	129.0	123.7	124.5
62.5°	80.1	77.4	76.5	75.6	76.5	75.6	75.6	74.7	73.8	73.8	71.2
65°	43.6	41.8	40.0	40.9	40.9	40.0	40.0	40.0	38.3	37.4	36.5
67.5°	22.2	20.5	20.5	19.6	19.6	19.6	19.6	18.7	18.7	18.7	17.8
70°	14.2	13.3	12.5	12.5	12.5	11.6	11.6	11.6	11.6	11.6	10.7
72.5°	9.8	8.9	8.0	8.0	8.0	7.1	7.1	7.1	7.1	6.2	6.2
75°	7.1	6.2	5.3	5.3	5.3	4.4	4.4	4.4	4.4	4.4	4.4
77.5°	4.4	3.6	3.6	3.6	3.6	2.7	2.7	2.7	2.7	2.7	1.8
80°	2.7	2.7	1.8	1.8	1.8	1.8	0.9	0.9	0.9	0.9	0.9
82.5°	1.8	1.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.0
85°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
87.5°	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P244139

CATALOG NUMBER: LSR8B50D010 EC8B50940 8LBSW0LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9	3385.9
2.5°	3494.5	3487.4	3491.8	3524.7	3510.5	3506.0	3468.7	3501.6
5°	3536.3	3531.0	3531.0	3568.3	3551.4	3547.9	3511.4	3539.9
7.5°	3575.4	3570.1	3571.0	3609.2	3595.9	3590.6	3554.1	3582.6
10°	3626.2	3622.6	3623.5	3660.0	3645.7	3640.4	3603.0	3632.4
12.5°	3656.4	3651.1	3651.1	3690.2	3674.2	3666.2	3630.6	3659.1
15°	3633.3	3625.3	3625.3	3664.4	3646.6	3635.0	3603.9	3630.6
17.5°	3554.1	3546.1	3546.1	3579.9	3566.5	3549.6	3517.6	3542.5
20°	3443.8	3434.0	3431.3	3470.5	3451.8	3436.7	3408.2	3432.2
22.5°	3319.2	3314.8	3306.8	3345.9	3329.0	3313.0	3282.8	3301.4
25°	3169.8	3162.7	3154.6	3192.9	3176.0	3160.0	3136.0	3151.1
27.5°	2983.8	2984.7	2980.3	3010.5	2993.6	2984.7	2955.4	2980.3
30°	2758.8	2749.0	2745.4	2781.0	2765.0	2753.4	2716.9	2741.0
32.5°	2465.2	2450.9	2432.3	2472.3	2444.7	2434.9	2403.8	2438.5
35°	2038.2	2033.7	2016.8	2050.6	2035.5	2017.7	1998.1	2027.5
37.5°	1575.5	1579.1	1577.3	1586.2	1577.3	1565.8	1544.4	1533.7
40°	1202.8	1193.9	1186.8	1202.8	1184.1	1184.1	1171.6	1185.0
42.5°	943.0	939.5	948.4	951.9	941.2	939.5	937.7	936.8
45°	778.4	778.4	780.2	783.8	780.2	778.4	773.1	769.5
47.5°	641.4	645.0	641.4	653.0	646.8	645.0	634.3	638.8
50°	519.5	515.1	519.5	523.1	524.0	518.7	513.3	516.0
52.5°	403.0	395.9	394.1	399.4	395.9	395.9	392.3	391.4
55°	283.8	286.5	282.0	286.5	284.7	282.0	279.3	282.9
57.5°	192.2	193.1	191.3	193.9	189.5	190.4	189.5	188.6
60°	124.5	121.0	121.0	123.7	119.2	119.2	118.3	118.3
62.5°	71.2	70.3	70.3	69.4	68.5	68.5	68.5	66.7
65°	36.5	35.6	34.7	34.7	34.7	34.7	33.8	33.8
67.5°	17.8	16.9	16.9	17.8	16.9	16.9	16.9	16.9
70°	10.7	10.7	9.8	10.7	9.8	9.8	9.8	9.8
72.5°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
75°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
77.5°	2.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)