

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: P183640

Luminaire Tested: **LSM90M9040D010TEP**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P183640  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27020)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: PORTFOLIO  
Catalog Number: LSM90M9040D010TEP  
Description: PORTFOLIO SURFACE MOUNT LED LUMINAIRE, MEDIUM DISTRIBUTION WITH CLEAR GLASS LENS  
Light Source: 90 CRI, 4000K CCT LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7770.2 lumens  
Efficiency: N/A  
Efficacy: 79.6 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.28 / 1.33  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
CIE Type: Direct

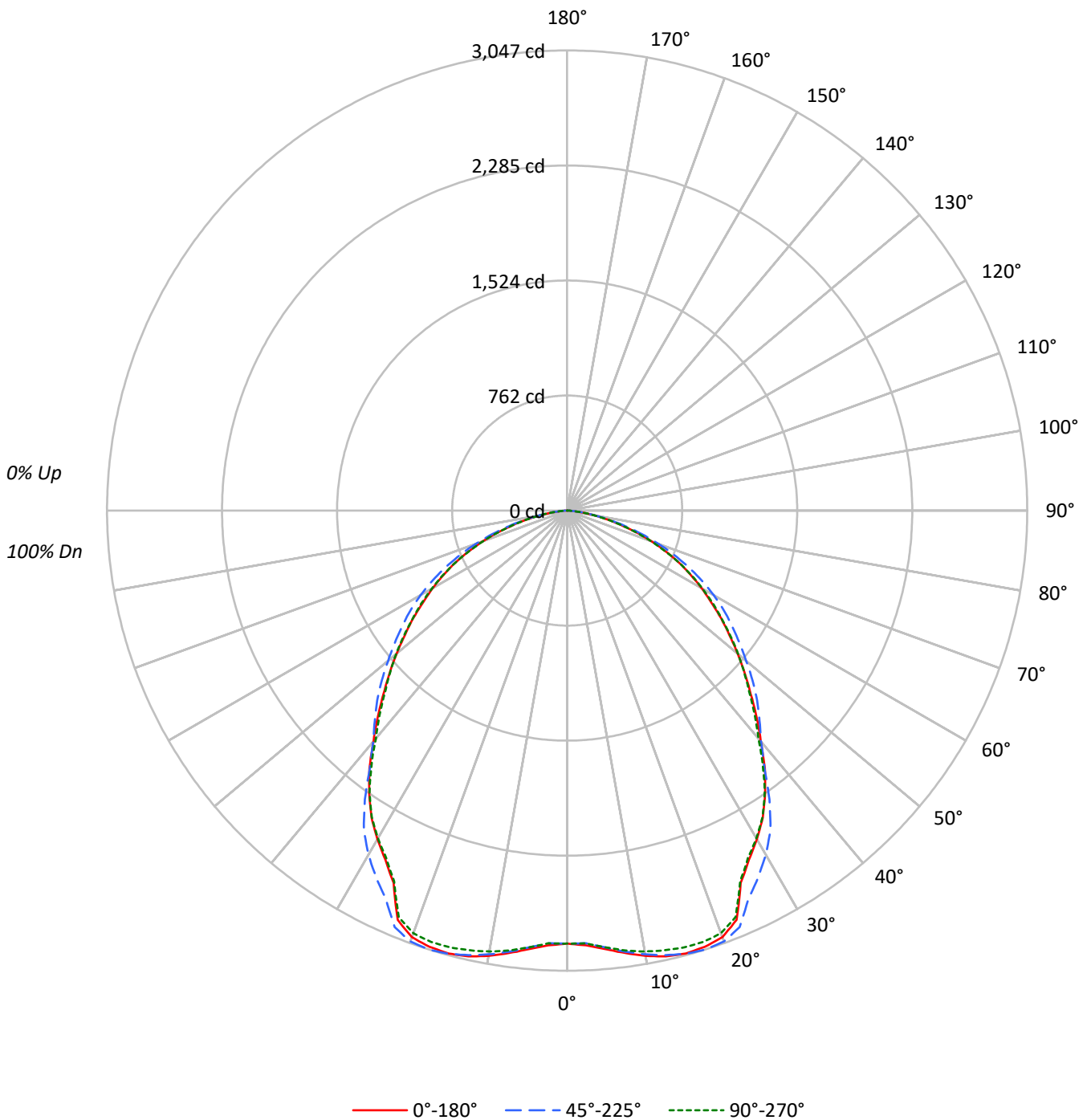
Input Watts (W): 97.58  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	86	80	98	90	85	79	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	61
4	84	73	64	58	82	71	63	57	69	62	57	67	61	56	64	59	55	53
5	78	65	56	50	76	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	54	45	39	65	53	45	39	51	44	39	50	43	38	48	43	38	36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	45	39	34	32
9	58	45	37	32	57	44	37	32	43	36	31	42	36	31	41	35	31	29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	28	38	33	28	27

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

	0°	45°	90°
0°	31051	31051	31051
5°	31686	31562	31551
10°	32916	32813	32598
15°	34033	34057	33570
20°	34639	34983	34317
25°	32497	33916	32373
30°	31413	32898	31323
35°	30208	30863	30153
40°	28201	28215	27865
45°	26345	27245	26140
50°	24806	26075	24911
55°	23491	25168	23588
60°	22275	24265	22452
65°	20954	22753	20929
70°	18797	20301	18699
75°	15468	16677	15510
80°	11268	12042	11593
85°	6548	6933	6796



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	281.2	3.6
10°-20°	859.8	11.1
20°-30°	1291.0	16.6
30°-40°	1413.2	18.2
40°-50°	1382.4	17.8
50°-60°	1192.8	15.4
60°-70°	852.7	11.0
70°-80°	418.9	5.4
80°-90°	78.1	1.0
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°	2432.0	31.3
0°-40°	3845.2	49.5
0°-60°	6420.4	82.6
0°-90°	7770.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7770.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2868	2868	2868	2868	2868	
5°	2915	2940	2904	2926	2903	281
15°	3036	3077	3038	3041	2994	857
25°	2720	2881	2839	2862	2710	1267
35°	2285	2250	2335	2223	2281	1423
45°	1720	1835	1779	1814	1707	1332
55°	1244	1357	1333	1343	1249	1113
65°	818	862	888	854	817	806
75°	370	390	399	383	371	397
85°	53	56	56	55	55	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5
2.5°	2880.9	2904.7	2885.1	2880.9	2864.4	2903.6	2889.2	2892.3	2880.9	2883.0	2867.5
5°	2915.0	2939.8	2921.2	2916.0	2899.5	2939.8	2925.3	2927.4	2916.0	2919.1	2903.6
7.5°	2955.3	2981.1	2961.5	2958.4	2942.9	2983.1	2969.7	2971.8	2959.4	2961.5	2946.0
10°	2993.5	3021.4	3001.7	2999.7	2984.2	3027.5	3013.1	3015.2	3000.7	3001.7	2984.2
12.5°	3023.4	3052.3	3032.7	3032.7	3018.3	3059.6	3048.2	3050.3	3035.8	3035.8	3015.2
15°	3035.8	3065.8	3045.1	3048.2	3033.7	3077.1	3066.8	3067.8	3055.4	3058.5	3037.9
17.5°	3028.6	3058.5	3039.9	3042.0	3028.6	3073.0	3062.7	3066.8	3056.5	3064.7	3047.2
20°	3005.9	3032.7	3010.0	3012.1	3001.7	3046.1	3038.9	3046.1	3038.9	3051.3	3035.8
22.5°	2932.6	2957.3	2944.9	2958.4	2956.3	3003.8	2999.7	3005.9	2994.5	3000.7	2984.2
25°	2719.8	2751.8	2747.7	2785.9	2822.1	2880.9	2876.8	2878.9	2855.1	2857.2	2838.6
27.5°	2606.3	2633.1	2617.6	2619.7	2605.2	2638.3	2640.3	2692.0	2722.9	2750.8	2738.4
30°	2512.3	2532.9	2495.8	2470.0	2432.8	2465.8	2463.8	2509.2	2563.9	2629.0	2631.0
32.5°	2411.1	2417.3	2364.6	2329.5	2316.1	2351.2	2349.1	2362.6	2403.9	2474.1	2505.1
35°	2285.1	2290.3	2225.2	2214.9	2214.9	2250.0	2241.7	2245.9	2268.6	2314.0	2334.7
37.5°	2149.8	2142.6	2105.4	2107.5	2115.8	2147.8	2141.6	2141.6	2148.8	2169.5	2143.7
40°	1995.0	2003.2	1991.9	2002.2	2009.4	2040.4	2037.3	2039.4	2036.3	2024.9	1996.0
42.5°	1857.6	1878.3	1890.7	1903.1	1904.1	1934.0	1932.0	1940.2	1924.7	1894.8	1885.5
45°	1720.3	1745.1	1779.1	1803.9	1806.0	1834.9	1834.9	1837.0	1805.0	1783.3	1779.1
47.5°	1596.4	1622.2	1657.3	1694.5	1700.7	1730.6	1730.6	1725.5	1691.4	1678.0	1664.5
50°	1472.5	1505.5	1538.6	1583.0	1586.1	1608.8	1609.8	1604.6	1589.2	1572.6	1547.8
52.5°	1354.8	1395.0	1427.0	1463.2	1465.2	1483.8	1479.7	1483.8	1485.9	1467.3	1437.4
55°	1244.3	1285.6	1313.5	1339.3	1344.4	1356.8	1348.6	1362.0	1374.4	1357.9	1333.1
57.5°	1130.7	1175.1	1198.8	1216.4	1220.5	1230.8	1222.6	1240.1	1256.7	1246.3	1229.8
60°	1028.5	1063.6	1080.1	1096.6	1097.6	1108.0	1100.7	1118.3	1136.9	1131.7	1120.4
62.5°	923.1	947.9	960.3	977.9	972.7	983.0	986.1	1001.6	1015.0	1016.1	1006.8
65°	817.8	831.2	841.6	851.9	854.0	862.2	865.3	871.5	892.2	894.2	888.0
67.5°	706.3	714.6	723.8	733.1	732.1	740.4	748.6	754.8	768.2	773.4	765.1
70°	593.7	604.1	609.2	613.4	612.3	620.6	627.8	633.0	645.4	648.5	641.2
72.5°	480.2	490.5	494.6	495.6	494.6	503.9	510.1	513.2	523.5	528.7	517.3
75°	369.7	383.1	385.2	383.1	382.1	390.3	393.4	398.6	405.8	406.8	398.6
77.5°	269.5	280.9	282.9	279.8	277.8	284.0	286.0	291.2	295.3	297.4	289.1
80°	180.7	192.1	191.0	190.0	186.9	191.0	194.1	196.2	199.3	199.3	193.1
82.5°	108.4	115.6	114.6	115.6	112.6	113.6	115.6	118.7	117.7	119.8	115.6
85°	52.7	55.8	55.8	55.8	54.7	55.8	56.8	58.9	56.8	58.9	55.8
87.5°	18.6	19.6	18.6	18.6	18.6	18.6	19.6	19.6	18.6	19.6	18.6
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5	2867.5
2.5°	2889.2	2872.7	2889.2	2882.0	2891.2	2888.1	2889.2	2900.5	2874.7	2868.5
5°	2925.3	2907.8	2924.3	2919.1	2926.4	2923.3	2925.3	2936.7	2909.8	2902.6
7.5°	2966.6	2948.0	2964.6	2957.3	2964.6	2961.5	2962.5	2971.8	2943.9	2937.7
10°	3004.8	2985.2	2999.7	2992.4	2996.6	2993.5	2995.5	3001.7	2971.8	2964.6
12.5°	3034.8	3015.2	3029.6	3021.4	3023.4	3019.3	3018.3	3021.4	2990.4	2982.1
15°	3059.6	3039.9	3050.3	3042.0	3041.0	3034.8	3032.7	3033.7	3002.8	2994.5
17.5°	3066.8	3044.1	3050.3	3041.0	3037.9	3032.7	3030.6	3032.7	3002.8	2994.5
20°	3052.3	3025.5	3028.6	3017.2	3013.1	3009.0	3009.0	3012.1	2983.1	2978.0
22.5°	3002.8	2980.0	2987.3	2980.0	2975.9	2971.8	2964.6	2957.3	2920.2	2912.9
25°	2858.2	2842.7	2869.6	2873.7	2862.3	2840.7	2800.4	2769.4	2715.7	2709.5
27.5°	2751.8	2719.8	2687.8	2647.6	2623.8	2614.5	2620.7	2632.1	2604.2	2593.9
30°	2633.1	2563.9	2502.0	2460.7	2445.2	2443.1	2467.9	2497.8	2503.0	2505.1
32.5°	2485.4	2397.7	2350.2	2336.7	2326.4	2323.3	2331.6	2365.7	2387.3	2407.0
35°	2318.2	2257.2	2232.5	2233.5	2223.2	2219.0	2213.9	2234.5	2257.2	2281.0
37.5°	2162.2	2135.4	2128.2	2132.3	2120.9	2114.7	2108.5	2113.7	2120.9	2129.2
40°	2015.6	2021.8	2025.9	2029.0	2014.6	2010.4	2005.3	2003.2	1990.8	1971.2
42.5°	1890.7	1907.2	1925.8	1925.8	1910.3	1908.2	1909.3	1903.1	1865.9	1839.0
45°	1783.3	1789.5	1821.5	1827.7	1814.3	1811.2	1812.2	1792.6	1733.7	1706.9
47.5°	1678.0	1681.1	1710.0	1724.4	1710.0	1706.9	1710.0	1668.7	1604.6	1591.2
50°	1571.6	1579.9	1592.3	1605.7	1592.3	1591.2	1588.1	1548.9	1485.9	1478.7
52.5°	1464.2	1480.7	1474.5	1477.6	1469.4	1470.4	1473.5	1433.2	1375.4	1363.0
55°	1354.8	1370.2	1354.8	1346.5	1343.4	1346.5	1352.7	1315.5	1270.1	1249.4
57.5°	1246.3	1255.6	1239.1	1222.6	1217.4	1224.6	1229.8	1198.8	1159.6	1144.1
60°	1133.8	1131.7	1118.3	1102.8	1092.5	1100.7	1109.0	1081.1	1046.0	1036.7
62.5°	1015.0	1013.0	996.4	983.0	972.7	978.9	987.2	960.3	936.6	928.3
65°	893.2	891.1	873.6	863.2	854.0	856.0	865.3	840.5	826.1	816.8
67.5°	775.5	768.2	750.7	744.5	733.1	737.3	743.5	723.8	710.4	702.2
70°	651.6	645.4	629.9	623.7	614.4	616.5	622.7	610.3	595.8	590.6
72.5°	525.6	524.6	510.1	501.8	496.7	497.7	502.9	496.7	483.3	479.1
75°	403.7	406.8	395.5	388.3	383.1	383.1	389.3	390.3	375.9	370.7
77.5°	297.4	297.4	288.1	289.1	280.9	280.9	285.0	289.1	273.6	270.5
80°	199.3	198.3	195.2	192.1	187.9	189.0	192.1	197.2	184.8	185.9
82.5°	117.7	117.7	117.7	115.6	112.6	111.5	115.6	119.8	111.5	111.5
85°	57.8	56.8	56.8	56.8	54.7	53.7	56.8	58.9	53.7	54.7
87.5°	19.6	18.6	18.6	19.6	18.6	18.6	18.6	18.6	17.6	18.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)