

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: P183620

Luminaire Tested: **LSM90M8040D010TEP**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P183620  
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: LSM90M8040D010TEP  
Description: PORTFOLIO SURFACE MOUNT LED LUMINAIRE, MEDIUM DISTRIBUTION WITH CLEAR GLASS LENS  
Light Source: 80 CRI, 4000K CCT LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

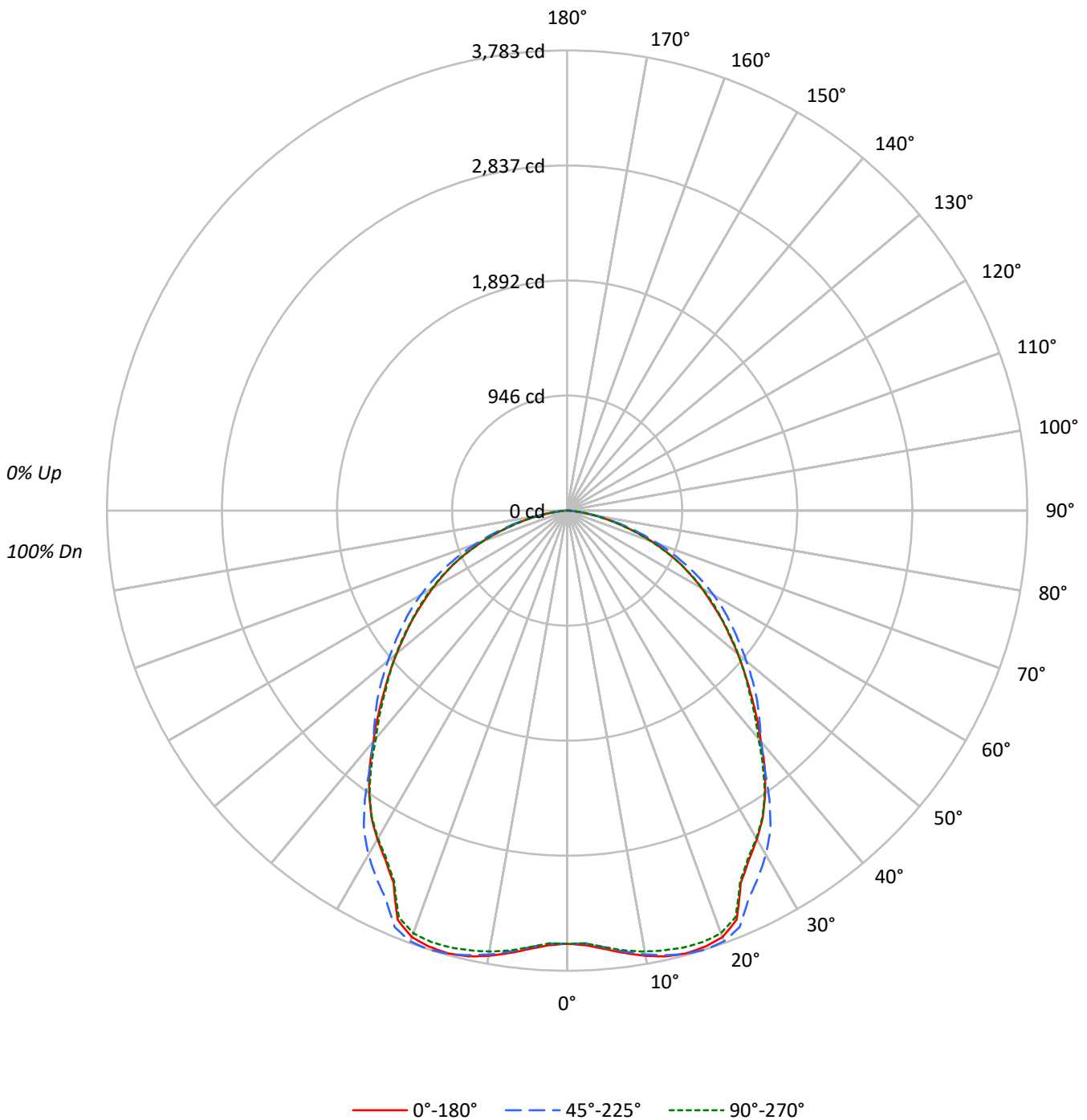
Lumens per Lamp: N/A  
Luminaire Lumens: 9647.6 lumens  
Efficiency: N/A  
Efficacy: 98.9 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.28 / 1.33  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
CIE Type: Direct

Input Watts (W): 97.58  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	38553	38553	38553
5°	39342	39189	39175
10°	40868	40741	40473
15°	42256	42286	41681
20°	43007	43436	42609
25°	40349	42110	40196
30°	39003	40846	38891
35°	37506	38320	37439
40°	35014	35033	34597
45°	32709	33829	32455
50°	30799	32375	30928
55°	29167	31249	29287
60°	27654	30128	27877
65°	26017	28252	25984
70°	23340	25208	23217
75°	19204	20706	19258
80°	13994	14948	14393
85°	8126	8598	8449



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	349.2	3.6
10°-20°	1067.5	11.1
20°-30°	1602.9	16.6
30°-40°	1754.6	18.2
40°-50°	1716.4	17.8
50°-60°	1481.0	15.4
60°-70°	1058.8	11.0
70°-80°	520.1	5.4
80°-90°	97.0	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°	3019.6	31.3
0°-40°	4774.3	49.5
0°-60°	7971.7	82.6
0°-90°	9647.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9647.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3560	3560	3560	3560	3560	
5°	3619	3650	3605	3633	3604	349
15°	3769	3821	3772	3776	3718	1064
25°	3377	3577	3524	3554	3364	1574
35°	2837	2794	2899	2760	2832	1767
45°	2136	2278	2209	2253	2119	1654
55°	1545	1685	1655	1668	1551	1382
65°	1015	1070	1103	1060	1014	1001
75°	459	485	495	476	460	493
85°	65	69	69	68	68	91
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°	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3
2.5°	3577.0	3606.5	3582.1	3577.0	3556.5	3605.2	3587.3	3591.1	3577.0	3579.6	3560.3
5°	3619.3	3650.1	3627.0	3620.6	3600.1	3650.1	3632.1	3634.7	3620.6	3624.4	3605.2
7.5°	3669.3	3701.4	3677.0	3673.2	3653.9	3703.9	3687.3	3689.8	3674.4	3677.0	3657.8
10°	3716.7	3751.4	3727.0	3724.4	3705.2	3759.1	3741.1	3743.7	3725.7	3727.0	3705.2
12.5°	3753.9	3789.8	3765.5	3765.5	3747.5	3798.8	3784.7	3787.3	3769.3	3769.3	3743.7
15°	3769.3	3806.5	3780.8	3784.7	3766.7	3820.6	3807.8	3809.1	3793.7	3797.5	3771.9
17.5°	3760.3	3797.5	3774.4	3777.0	3760.3	3815.5	3802.6	3807.8	3795.0	3805.2	3783.4
20°	3732.1	3765.5	3737.3	3739.8	3727.0	3782.1	3773.2	3782.1	3773.2	3788.5	3769.3
22.5°	3641.1	3671.9	3656.5	3673.2	3670.6	3729.6	3724.4	3732.1	3718.0	3725.7	3705.2
25°	3377.0	3416.7	3411.6	3459.0	3503.9	3577.0	3571.9	3574.4	3544.9	3547.5	3524.4
27.5°	3236.0	3269.3	3250.1	3252.6	3234.7	3275.7	3278.3	3342.4	3380.8	3415.5	3400.1
30°	3119.3	3144.9	3098.8	3066.7	3020.6	3061.6	3059.0	3115.4	3183.4	3264.2	3266.7
32.5°	2993.7	3001.3	2936.0	2892.4	2875.7	2919.3	2916.7	2933.4	2984.7	3071.9	3110.3
35°	2837.2	2843.6	2762.9	2750.1	2750.1	2793.6	2783.4	2788.5	2816.7	2873.1	2898.8
37.5°	2669.3	2660.3	2614.2	2616.7	2627.0	2666.7	2659.0	2659.0	2668.0	2693.6	2661.6
40°	2477.0	2487.2	2473.1	2485.9	2494.9	2533.4	2529.5	2532.1	2528.3	2514.2	2478.3
42.5°	2306.5	2332.1	2347.5	2362.9	2364.2	2401.3	2398.8	2409.0	2389.8	2352.6	2341.1
45°	2135.9	2166.7	2209.0	2239.8	2242.4	2278.3	2278.3	2280.8	2241.1	2214.1	2209.0
47.5°	1982.1	2014.1	2057.7	2103.9	2111.6	2148.8	2148.8	2142.4	2100.0	2083.4	2066.7
50°	1828.2	1869.3	1910.3	1965.4	1969.3	1997.5	1998.8	1992.3	1973.1	1952.6	1921.8
52.5°	1682.1	1732.1	1771.8	1816.7	1819.3	1842.3	1837.2	1842.3	1844.9	1821.8	1784.7
55°	1544.9	1596.2	1630.8	1662.9	1669.3	1684.7	1674.4	1691.1	1706.4	1685.9	1655.2
57.5°	1403.9	1459.0	1488.5	1510.3	1515.4	1528.2	1518.0	1539.8	1560.3	1547.5	1527.0
60°	1276.9	1320.5	1341.1	1361.6	1362.8	1375.7	1366.7	1388.5	1411.6	1405.2	1391.1
62.5°	1146.2	1176.9	1192.3	1214.1	1207.7	1220.5	1224.4	1243.6	1260.3	1261.6	1250.0
65°	1015.4	1032.1	1044.9	1057.7	1060.3	1070.5	1074.4	1082.1	1107.7	1110.3	1102.6
67.5°	876.9	887.2	898.7	910.3	909.0	919.2	929.5	937.2	953.9	960.3	950.0
70°	737.2	750.0	756.4	761.6	760.3	770.5	779.5	785.9	801.3	805.1	796.2
72.5°	596.2	609.0	614.1	615.4	614.1	625.7	633.3	637.2	650.0	656.4	642.3
75°	459.0	475.7	478.2	475.7	474.4	484.6	488.5	494.9	503.9	505.1	494.9
77.5°	334.6	348.7	351.3	347.4	344.9	352.6	355.1	361.5	366.7	369.2	359.0
80°	224.4	238.5	237.2	235.9	232.1	237.2	241.0	243.6	247.4	247.4	239.7
82.5°	134.6	143.6	142.3	143.6	139.7	141.0	143.6	147.4	146.2	148.7	143.6
85°	65.4	69.2	69.2	69.2	68.0	69.2	70.5	73.1	70.5	73.1	69.2
87.5°	23.1	24.4	23.1	23.1	23.1	23.1	24.4	24.4	23.1	24.4	23.1
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: P183620

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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3	3560.3
2.5°	3587.3	3566.7	3587.3	3578.3	3589.8	3586.0	3587.3	3601.4	3569.3	3561.6
5°	3632.1	3610.3	3630.8	3624.4	3633.4	3629.6	3632.1	3646.2	3612.9	3603.9
7.5°	3683.4	3660.3	3680.8	3671.9	3680.8	3677.0	3678.3	3689.8	3655.2	3647.5
10°	3730.8	3706.5	3724.4	3715.5	3720.6	3716.7	3719.3	3727.0	3689.8	3680.8
12.5°	3768.0	3743.7	3761.6	3751.4	3753.9	3748.8	3747.5	3751.4	3712.9	3702.6
15°	3798.8	3774.4	3787.3	3777.0	3775.7	3768.0	3765.5	3766.7	3728.3	3718.0
17.5°	3807.8	3779.6	3787.3	3775.7	3771.9	3765.5	3762.9	3765.5	3728.3	3718.0
20°	3789.8	3756.5	3760.3	3746.2	3741.1	3736.0	3736.0	3739.8	3703.9	3697.5
22.5°	3728.3	3700.1	3709.1	3700.1	3694.9	3689.8	3680.8	3671.9	3625.7	3616.7
25°	3548.8	3529.6	3562.9	3568.0	3553.9	3527.0	3477.0	3438.5	3371.9	3364.2
27.5°	3416.7	3377.0	3337.2	3287.2	3257.8	3246.2	3253.9	3268.0	3233.4	3220.6
30°	3269.3	3183.4	3106.5	3055.2	3036.0	3033.4	3064.2	3101.3	3107.8	3110.3
32.5°	3086.0	2977.0	2918.0	2901.3	2888.5	2884.7	2894.9	2937.2	2964.2	2988.5
35°	2878.3	2802.6	2771.9	2773.1	2760.3	2755.2	2748.8	2774.4	2802.6	2832.1
37.5°	2684.7	2651.3	2642.4	2647.5	2633.4	2625.7	2618.0	2624.4	2633.4	2643.6
40°	2502.6	2510.3	2515.4	2519.3	2501.3	2496.2	2489.8	2487.2	2471.8	2447.5
42.5°	2347.5	2368.0	2391.1	2391.1	2371.8	2369.3	2370.6	2362.9	2316.7	2283.4
45°	2214.1	2221.8	2261.6	2269.3	2252.6	2248.8	2250.0	2225.7	2152.6	2119.3
47.5°	2083.4	2087.2	2123.1	2141.1	2123.1	2119.3	2123.1	2071.8	1992.3	1975.7
50°	1951.3	1961.6	1977.0	1993.6	1977.0	1975.7	1971.8	1923.1	1844.9	1835.9
52.5°	1818.0	1838.5	1830.8	1834.7	1824.4	1825.7	1829.5	1779.5	1707.7	1692.3
55°	1682.1	1701.3	1682.1	1671.8	1668.0	1671.8	1679.5	1633.4	1577.0	1551.3
57.5°	1547.5	1559.0	1538.5	1518.0	1511.6	1520.5	1527.0	1488.5	1439.8	1420.5
60°	1407.7	1405.2	1388.5	1369.3	1356.4	1366.7	1377.0	1342.3	1298.7	1287.2
62.5°	1260.3	1257.7	1237.2	1220.5	1207.7	1215.4	1225.7	1192.3	1162.8	1152.6
65°	1109.0	1106.4	1084.6	1071.8	1060.3	1062.8	1074.4	1043.6	1025.7	1014.1
67.5°	962.8	953.9	932.1	924.4	910.3	915.4	923.1	898.7	882.1	871.8
70°	809.0	801.3	782.1	774.4	762.8	765.4	773.1	757.7	739.8	733.3
72.5°	652.6	651.3	633.3	623.1	616.7	618.0	624.4	616.7	600.0	594.9
75°	501.3	505.1	491.0	482.1	475.7	475.7	483.3	484.6	466.7	460.3
77.5°	369.2	369.2	357.7	359.0	348.7	348.7	353.9	359.0	339.8	335.9
80°	247.4	246.2	242.3	238.5	233.3	234.6	238.5	244.9	229.5	230.8
82.5°	146.2	146.2	146.2	143.6	139.7	138.5	143.6	148.7	138.5	138.5
85°	71.8	70.5	70.5	70.5	68.0	66.7	70.5	73.1	66.7	68.0
87.5°	24.4	23.1	23.1	24.4	23.1	23.1	23.1	23.1	21.8	23.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)