

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P517643

Luminaire Tested: HVL12-8-LD4-2LO-30-UNV-C-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P517643
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2LO-30-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10780.0 lumens
Efficiency: N/A
Efficacy: 113.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

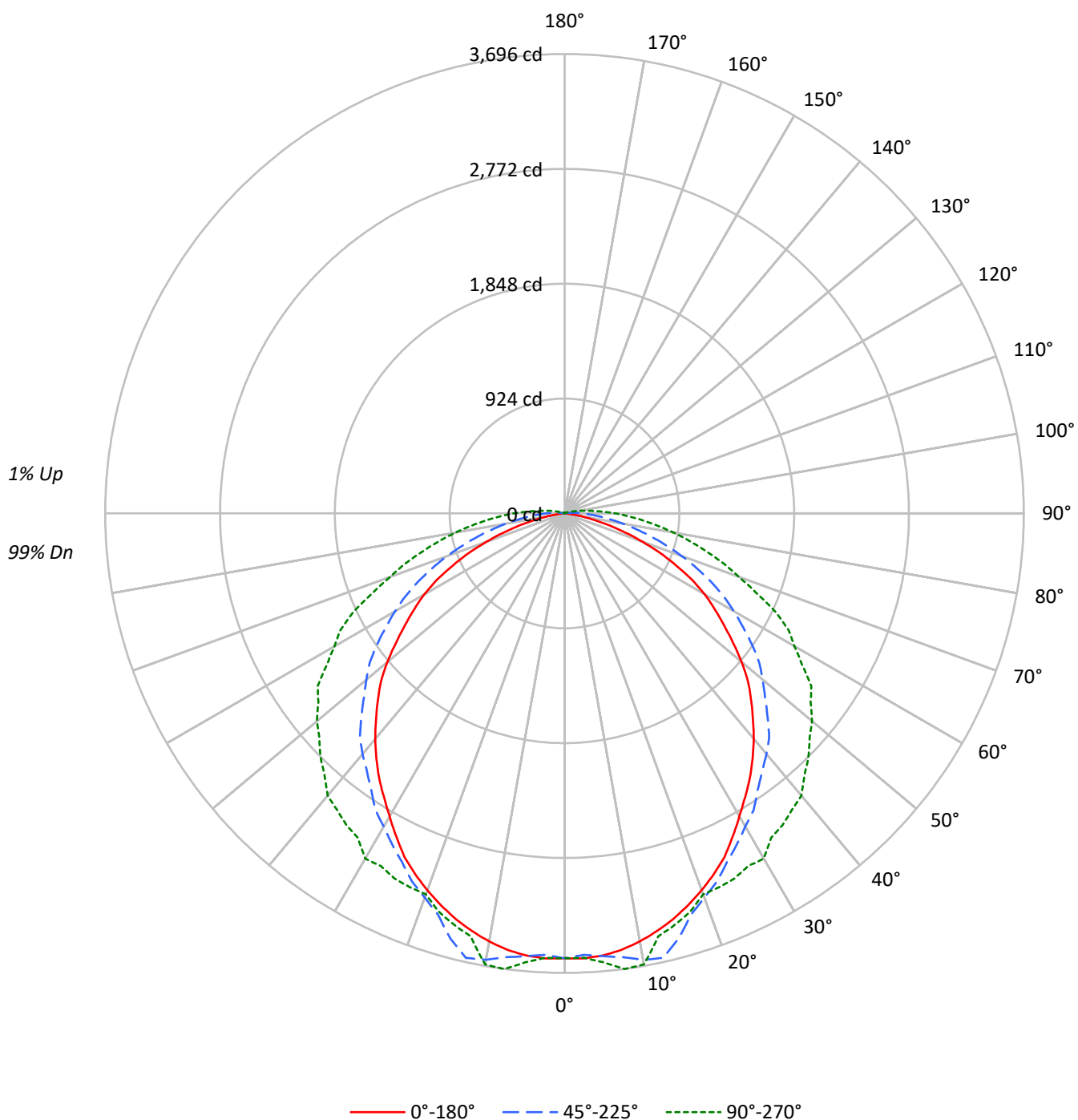
Input Watts (W): 94.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4815	4815	4815
5°	4812	4773	4826
10°	4758	4868	4890
15°	4680	4765	4570
20°	4584	4492	4402
25°	4481	4326	4461
30°	4321	4197	4545
35°	4209	4077	4500
40°	4090	3994	4567
45°	3961	3881	4527
50°	3803	3762	4541
55°	3565	3634	4594
60°	3389	3447	4461
65°	3019	3218	4395
70°	2490	2907	4030
75°	1807	2517	3789
80°	1046	2128	3548
85°	418	1731	3338

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4594 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	343.9	3.2
10°-20°	979.4	9.1
20°-30°	1457.2	13.5
30°-40°	1751.6	16.2
40°-50°	1843.7	17.1
50°-60°	1710.7	15.9
60°-70°	1352.6	12.5
70°-80°	826.2	7.7
80°-90°	360.0	3.3
90°-100°	112.1	1.0
100°-110°	25.2	0.2
110°-120°	10.1	0.1
120°-130°	5.7	0.1
130°-140°	1.5	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°	2780.6	25.8
0°-40°	4532.2	42.0
0°-60°	8086.6	75.0
0°-90°	10625.4	98.6
90°-120°	147.4	1.4
90°-150°	154.6	1.4
90°-180°	155.0	1.4
0°-180°	10780.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3578	3578	3578	3578	3578	
5°	3570	3562	3575	3615	3625	338
15°	3379	3508	3543	3425	3428	952
25°	3048	3242	3094	3187	3239	1399
35°	2600	2672	2712	2959	3059	1625
45°	2125	2134	2310	2676	2776	1638
55°	1565	1591	1843	2246	2424	1406
65°	991	1022	1298	1718	1874	981
75°	375	496	724	1112	1182	409
85°	34	117	282	547	628	52
90°	1	35	148	347	409	2
95°	1	9	65	190	232	1
105°	1	5	13	37	52	1
115°	1	3	10	17	18	1
125°	1	2	4	11	15	1
135°	2	2	2	4	5	1
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3578.4	3578.4	3578.4	3578.4	3578.4
2.5°	3582.7	3573.3	3553.6	3572.5	3577.6
5°	3569.6	3562.3	3574.7	3614.8	3625.0
7.5°	3539.7	3567.4	3600.2	3673.1	3696.5
10°	3495.3	3547.8	3646.2	3708.1	3684.1
12.5°	3441.3	3530.3	3662.2	3541.2	3485.1
15°	3378.6	3508.4	3542.7	3425.3	3427.5
17.5°	3305.0	3490.2	3384.5	3381.6	3360.4
20°	3225.6	3428.9	3289.0	3283.2	3260.6
22.5°	3140.3	3348.0	3204.4	3192.8	3254.0
25°	3047.7	3242.3	3094.4	3186.9	3238.7
27.5°	2931.8	3103.8	3002.5	3133.7	3198.6
30°	2814.4	2961.0	2908.5	3091.4	3206.6
32.5°	2704.4	2811.5	2831.2	3075.4	3094.4
35°	2600.1	2672.3	2712.4	2958.8	3059.4
37.5°	2485.7	2505.4	2611.8	2909.9	3006.9
40°	2369.1	2356.7	2527.2	2829.8	2963.9
42.5°	2243.7	2239.3	2437.6	2789.7	2856.7
45°	2124.9	2134.3	2310.0	2675.9	2775.8
47.5°	2003.1	2015.5	2189.0	2551.3	2675.2
50°	1861.7	1877.8	2081.1	2440.5	2600.1
52.5°	1708.6	1739.3	1976.2	2335.5	2496.6
55°	1565.0	1590.6	1842.8	2245.9	2424.5
57.5°	1433.8	1449.1	1705.0	2132.9	2267.7
60°	1304.8	1308.4	1575.2	2007.5	2136.5
62.5°	1156.8	1163.4	1441.8	1859.5	2032.3
65°	990.6	1022.0	1298.2	1718.1	1874.1
67.5°	835.4	890.0	1151.7	1588.4	1670.0
70°	669.2	761.7	1008.1	1436.0	1493.6
72.5°	516.8	625.4	860.9	1265.4	1346.4
75°	374.7	496.4	723.8	1112.4	1182.3
77.5°	252.2	376.1	595.5	943.3	1035.8
80°	150.9	274.8	481.1	786.5	890.8
82.5°	77.3	184.4	373.2	659.7	753.0
85°	33.5	116.6	282.1	547.4	628.3
87.5°	9.5	66.3	207.7	442.5	511.0
90°	0.7	35.0	148.0	347.0	408.9
92.5°	0.7	16.8	104.2	262.4	309.8
95°	0.7	8.7	64.9	190.3	232.5
97.5°	0.7	5.1	39.4	134.9	170.6
100°	0.7	4.4	23.3	89.7	121.7
102.5°	0.7	5.1	16.0	56.9	79.5
105°	0.7	5.1	13.1	37.2	52.5
107.5°	1.5	5.1	11.7	27.7	36.4
110°	0.7	4.4	12.4	21.1	28.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	3.6	11.7	17.5	21.1
115°	0.7	2.9	10.2	16.8	17.5
117.5°	1.5	2.2	8.0	16.8	17.5
120°	1.5	1.5	6.6	16.0	18.2
122.5°	1.5	1.5	5.1	14.6	17.5
125°	0.7	1.5	4.4	10.9	15.3
127.5°	1.5	1.5	3.6	8.7	11.7
130°	1.5	1.5	2.9	6.6	8.7
132.5°	1.5	1.5	2.2	5.1	6.6
135°	1.5	1.5	1.5	3.6	5.1
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)