

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: P517656

Luminaire Tested: HVL12-8-LD4-2LO-50-UNV-C-EDD

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: P517656
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2LO-50-UNV-C-EDD
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10111.0 lumens
Efficiency: N/A
Efficacy: 106.8 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

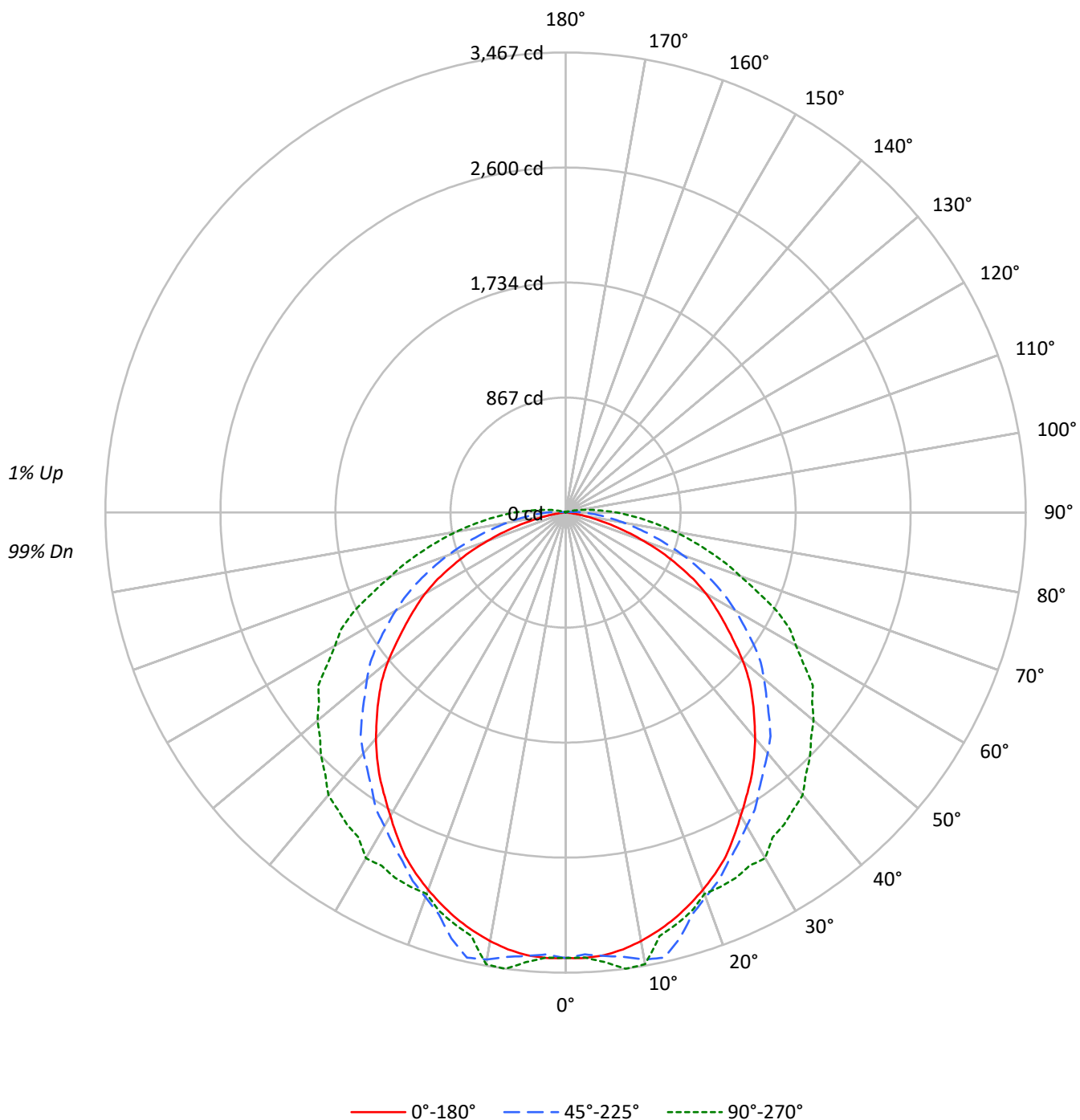
Input Watts (W): 94.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4516	4516	4516
5°	4514	4477	4526
10°	4463	4566	4586
15°	4390	4470	4287
20°	4299	4214	4128
25°	4203	4058	4184
30°	4053	3937	4262
35°	3948	3824	4221
40°	3836	3747	4283
45°	3715	3640	4246
50°	3567	3528	4259
55°	3344	3409	4309
60°	3179	3233	4184
65°	2832	3018	4123
70°	2335	2727	3780
75°	1695	2361	3554
80°	981	1995	3328
85°	393	1624	3132

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4309 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	322.6	3.2
10°-20°	918.6	9.1
20°-30°	1366.8	13.5
30°-40°	1642.9	16.2
40°-50°	1729.3	17.1
50°-60°	1604.5	15.9
60°-70°	1268.7	12.5
70°-80°	774.9	7.7
80°-90°	337.7	3.3
90°-100°	105.1	1.0
100°-110°	23.6	0.2
110°-120°	9.5	0.1
120°-130°	5.4	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°	2608.0	25.8
0°-40°	4250.9	42.0
0°-60°	7584.7	75.0
0°-90°	9966.0	98.6
90°-120°	138.2	1.4
90°-150°	145.0	1.4
90°-180°	145.0	1.4
0°-180°	10111.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3356	3356	3356	3356	3356	
5°	3348	3341	3353	3390	3400	317
15°	3169	3291	3323	3213	3215	893
25°	2859	3041	2902	2989	3038	1312
35°	2439	2506	2544	2775	2870	1524
45°	1993	2002	2167	2510	2604	1536
55°	1468	1492	1728	2106	2274	1319
65°	929	959	1218	1612	1758	920
75°	351	466	679	1043	1109	384
85°	32	109	265	514	589	49
90°	1	33	139	325	384	2
95°	1	8	61	178	218	1
105°	1	5	12	35	49	1
115°	1	3	10	16	16	1
125°	1	1	4	10	14	1
135°	1	1	1	3	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°	3356.3	3356.3	3356.3	3356.3	3356.3
2.5°	3360.4	3351.5	3333.1	3350.8	3355.6
5°	3348.1	3341.3	3352.9	3390.5	3400.1
7.5°	3320.1	3346.0	3376.8	3445.2	3467.1
10°	3278.4	3327.6	3419.9	3478.0	3455.4
12.5°	3227.8	3311.2	3434.9	3321.4	3268.8
15°	3169.0	3290.7	3322.8	3212.7	3214.8
17.5°	3099.9	3273.6	3174.4	3171.7	3151.9
20°	3025.4	3216.1	3084.9	3079.4	3058.2
22.5°	2945.4	3140.3	3005.6	2994.6	3052.1
25°	2858.6	3041.1	2902.3	2989.2	3037.7
27.5°	2749.9	2911.2	2816.2	2939.2	3000.1
30°	2639.8	2777.2	2728.0	2899.6	3007.6
32.5°	2536.5	2637.0	2655.5	2884.5	2902.3
35°	2438.8	2506.5	2544.1	2775.2	2869.5
37.5°	2331.4	2349.9	2449.7	2729.3	2820.3
40°	2222.0	2210.4	2370.4	2654.1	2779.9
42.5°	2104.4	2100.3	2286.3	2616.5	2679.4
45°	1993.0	2001.9	2166.7	2509.9	2603.5
47.5°	1878.8	1890.4	2053.2	2393.0	2509.2
50°	1746.2	1761.2	1952.0	2289.0	2438.8
52.5°	1602.6	1631.3	1853.5	2190.6	2341.7
55°	1467.9	1491.8	1728.4	2106.5	2274.0
57.5°	1344.8	1359.2	1599.2	2000.5	2127.0
60°	1223.8	1227.2	1477.5	1882.9	2003.9
62.5°	1085.0	1091.2	1352.4	1744.1	1906.2
65°	929.2	958.6	1217.7	1611.5	1757.8
67.5°	783.5	834.8	1080.3	1489.8	1566.4
70°	627.6	714.5	945.6	1346.9	1400.9
72.5°	484.7	586.6	807.5	1186.9	1262.8
75°	351.4	465.6	678.9	1043.3	1109.0
77.5°	236.6	352.8	558.6	884.7	971.5
80°	141.5	257.8	451.2	737.7	835.5
82.5°	72.5	173.0	350.1	618.8	706.3
85°	31.5	109.4	264.6	513.5	589.4
87.5°	8.9	62.2	194.9	415.0	479.3
90°	0.7	32.8	138.8	325.4	383.6
92.5°	0.7	15.7	97.8	246.1	290.6
95°	0.7	8.2	60.8	178.4	218.1
97.5°	0.7	4.8	36.9	126.5	160.0
100°	0.7	4.1	21.9	84.1	114.2
102.5°	0.7	4.8	15.0	53.3	74.5
105°	0.7	4.8	12.3	34.9	49.2
107.5°	1.4	4.8	10.9	26.0	34.2
110°	0.7	4.1	11.6	19.8	26.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.4	3.4	10.9	16.4	19.8
115°	0.7	2.7	9.6	15.7	16.4
117.5°	1.4	2.1	7.5	15.7	16.4
120°	1.4	1.4	6.2	15.0	17.1
122.5°	1.4	1.4	4.8	13.7	16.4
125°	0.7	1.4	4.1	10.3	14.4
127.5°	1.4	1.4	3.4	8.2	10.9
130°	1.4	1.4	2.7	6.2	8.2
132.5°	1.4	1.4	2.1	4.8	6.2
135°	1.4	1.4	1.4	3.4	4.8
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)