

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: P517649

Luminaire Tested: HVL12-8-LD4-2LO-35-UNV-O-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: P517649
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2LO-35-UNV-O-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10245.0 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

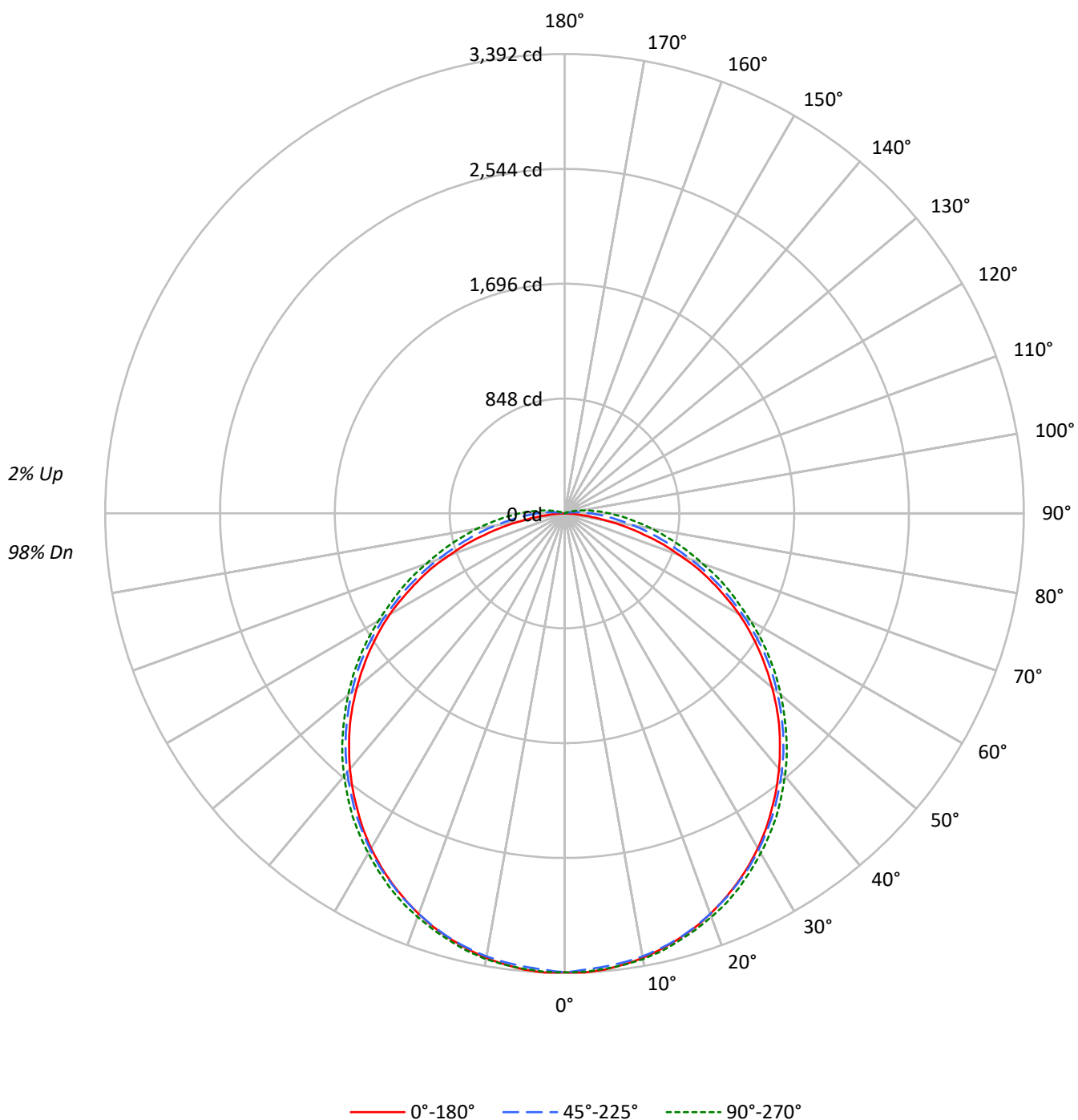
Input Watts (W): 94.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	4559	4559	4559
5°	4558	4486	4494
10°	4536	4433	4435
15°	4506	4371	4356
20°	4472	4298	4280
25°	4431	4222	4201
30°	4383	4138	4107
35°	4319	4045	4015
40°	4254	3945	3902
45°	4184	3835	3778
50°	4090	3705	3643
55°	3990	3560	3493
60°	3871	3363	3313
65°	3669	3140	3138
70°	3370	2872	2931
75°	2940	2578	2760
80°	2280	2303	2631
85°	1314	2054	2560

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4184 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	320.6	3.1
10°-20°	919.8	9.0
20°-30°	1395.6	13.6
30°-40°	1687.5	16.5
40°-50°	1760.8	17.2
50°-60°	1609.9	15.7
60°-70°	1255.0	12.2
70°-80°	785.1	7.7
80°-90°	356.6	3.5
90°-100°	119.5	1.2
100°-110°	30.0	0.3
110°-120°	4.7	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°	2636.0	25.7
0°-40°	4323.5	42.2
0°-60°	7694.2	75.1
0°-90°	10090.8	98.5
90°-120°	154.2	1.5
90°-150°	154.2	1.5
90°-180°	154.0	1.5
0°-180°	10245.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3388	3388	3388	3388	3388	
5°	3381	3375	3360	3376	3376	321
15°	3253	3258	3249	3268	3267	918
25°	3014	3016	3019	3045	3050	1389
35°	2668	2680	2691	2718	2729	1670
45°	2245	2264	2283	2305	2316	1730
55°	1752	1772	1805	1832	1844	1565
65°	1204	1224	1267	1317	1338	1191
75°	610	647	741	830	861	650
85°	105	195	335	442	482	133
90°	1	73	197	296	332	4
95°	1	19	102	185	214	1
105°	2	2	17	50	66	2
115°	2	2	3	9	13	2
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
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°	3388.4	3388.4	3388.4	3388.4	3388.4
2.5°	3392.4	3387.6	3372.5	3387.6	3386.8
5°	3381.2	3374.8	3359.7	3375.6	3375.6
7.5°	3358.9	3356.5	3342.9	3361.3	3361.3
10°	3332.5	3331.7	3320.5	3340.5	3341.3
12.5°	3295.8	3299.0	3288.6	3307.8	3310.1
15°	3252.6	3258.2	3249.4	3267.8	3267.0
17.5°	3205.5	3208.7	3202.3	3223.1	3222.3
20°	3147.2	3151.2	3146.4	3168.0	3170.4
22.5°	3082.5	3088.1	3087.3	3109.7	3116.0
25°	3013.8	3016.2	3019.4	3045.0	3049.7
27.5°	2937.9	2941.9	2947.5	2970.7	2975.5
30°	2854.8	2861.2	2867.6	2891.6	2898.0
32.5°	2767.0	2773.4	2781.4	2812.5	2815.7
35°	2667.9	2679.9	2691.1	2718.3	2729.4
37.5°	2568.9	2584.1	2594.4	2623.2	2632.0
40°	2464.2	2479.4	2496.2	2526.5	2532.1
42.5°	2354.8	2372.4	2392.3	2419.5	2429.1
45°	2244.6	2264.5	2282.9	2305.3	2316.5
47.5°	2125.6	2145.5	2167.9	2193.5	2200.6
50°	2002.5	2025.7	2049.7	2073.6	2086.4
52.5°	1876.3	1904.3	1931.5	1957.0	1969.0
55°	1751.7	1772.5	1805.2	1831.6	1843.6
57.5°	1622.3	1639.9	1669.5	1712.6	1719.0
60°	1490.5	1506.5	1536.9	1572.0	1586.4
62.5°	1345.1	1366.7	1398.7	1443.4	1456.2
65°	1203.8	1224.5	1266.9	1317.2	1338.0
67.5°	1067.2	1074.4	1128.7	1181.4	1214.9
70°	905.8	933.0	996.1	1060.8	1086.3
72.5°	766.8	794.0	863.5	939.4	971.3
75°	609.5	647.0	741.3	829.9	861.1
77.5°	471.3	512.8	629.4	718.9	754.8
80°	329.1	393.8	520.8	621.5	660.6
82.5°	206.9	286.8	422.6	528.0	562.3
85°	105.4	194.9	334.7	442.5	481.7
87.5°	28.0	126.2	260.4	363.4	403.4
90°	0.8	72.7	197.3	296.3	332.3
92.5°	0.8	40.7	147.0	235.6	272.4
95°	0.8	19.2	102.2	185.3	214.1
97.5°	0.8	8.0	70.3	139.8	168.5
100°	0.8	4.0	44.7	101.4	126.2
102.5°	1.6	2.4	28.0	72.7	92.7
105°	1.6	2.4	16.8	49.5	66.3
107.5°	1.6	2.4	9.6	33.5	45.5
110°	2.4	2.4	5.6	20.8	30.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.4	2.4	3.2	13.6	20.0
115°	2.4	2.4	3.2	8.8	12.8
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)