

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: P518164

Luminaire Tested: HVL8-8-LD4-1HI-40-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: P518164
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-1HI-40-UNV-C-EDD
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8028.0 lumens
Efficiency: N/A
Efficacy: 93.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

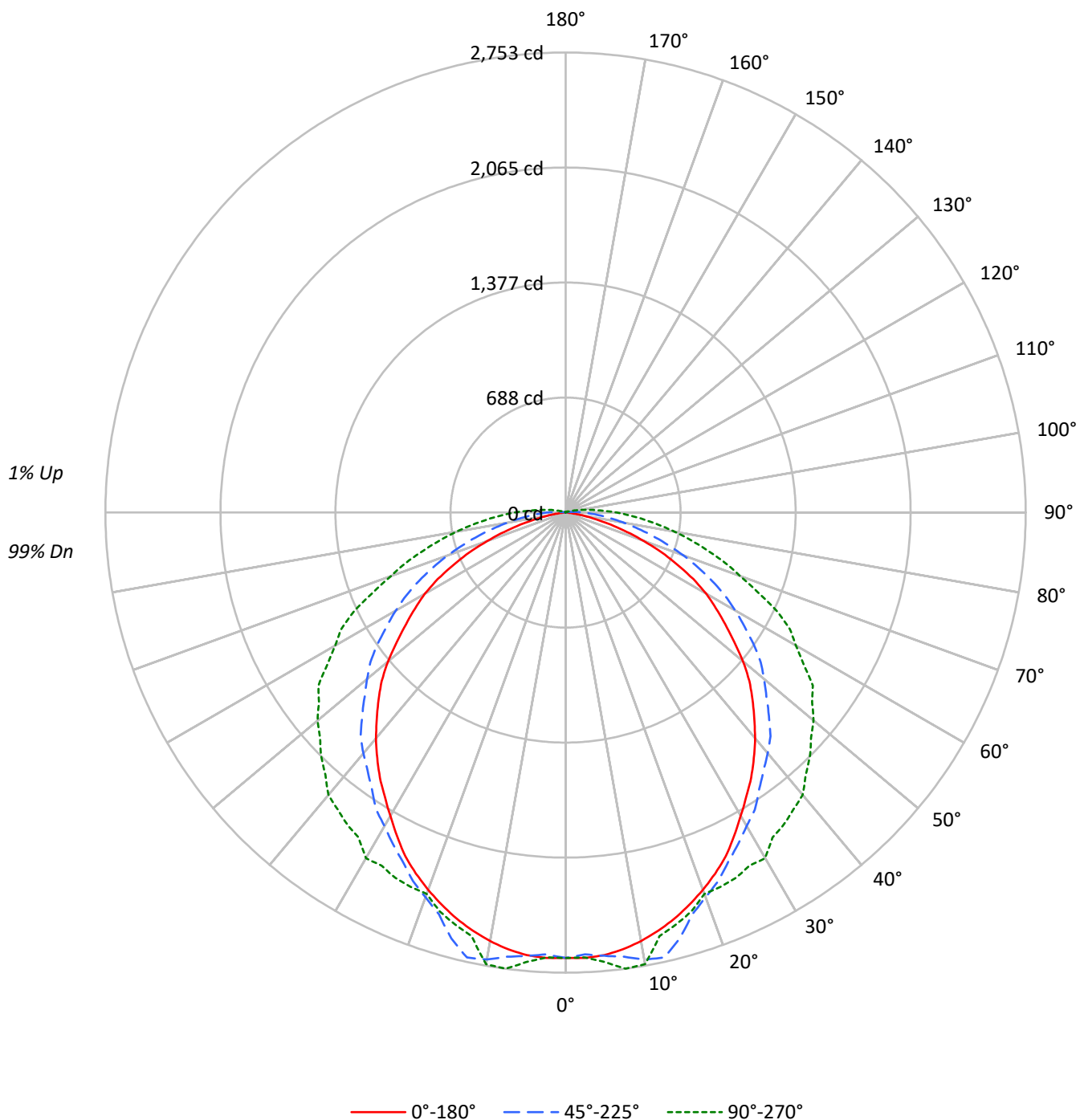
Input Watts (W): 86
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5378	5378	5378
5°	5376	5304	5352
10°	5315	5383	5385
15°	5228	5243	4998
20°	5120	4918	4780
25°	5006	4711	4810
30°	4827	4545	4863
35°	4702	4388	4777
40°	4568	4272	4807
45°	4424	4121	4720
50°	4248	3962	4684
55°	3983	3791	4681
60°	3786	3556	4481
65°	3372	3273	4339
70°	2781	2903	3891
75°	2019	2451	3552
80°	1168	1996	3189
85°	468	1525	2808

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4720 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.1	3.2
10°-20°	729.4	9.1
20°-30°	1085.2	13.5
30°-40°	1304.4	16.2
40°-50°	1373.0	17.1
50°-60°	1274.0	15.9
60°-70°	1007.3	12.5
70°-80°	615.3	7.7
80°-90°	268.1	3.3
90°-100°	83.5	1.0
100°-110°	18.7	0.2
110°-120°	7.5	0.1
120°-130°	4.2	0.1
130°-140°	1.1	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°	2070.7	25.8
0°-40°	3375.2	42.0
0°-60°	6022.2	75.0
0°-90°	7912.9	98.6
90°-120°	109.7	1.4
90°-150°	115.1	1.4
90°-180°	115.0	1.4
0°-180°	8028.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2665	2665	2665	2665	2665	
5°	2658	2653	2662	2692	2700	252
15°	2516	2613	2638	2551	2552	709
25°	2270	2415	2304	2373	2412	1042
35°	1936	1990	2020	2203	2278	1210
45°	1582	1590	1720	1993	2067	1220
55°	1166	1184	1372	1672	1806	1047
65°	738	761	967	1280	1396	731
75°	279	370	539	828	880	305
85°	25	87	210	408	468	39
90°	0	26	110	258	304	1
95°	0	6	48	142	173	0
105°	0	4	10	28	39	1
115°	0	2	8	12	13	1
125°	0	1	3	8	11	1
135°	1	1	1	3	4	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°	2664.9	2664.9	2664.9	2664.9	2664.9
2.5°	2668.1	2661.1	2646.4	2660.5	2664.3
5°	2658.3	2652.9	2662.1	2692.0	2699.6
7.5°	2636.1	2656.7	2681.1	2735.4	2752.8
10°	2603.0	2642.1	2715.3	2761.5	2743.6
12.5°	2562.8	2629.0	2727.3	2637.2	2595.4
15°	2516.1	2612.7	2638.3	2550.9	2552.5
17.5°	2461.3	2599.2	2520.5	2518.3	2502.5
20°	2402.1	2553.6	2449.3	2445.0	2428.2
22.5°	2338.6	2493.3	2386.4	2377.7	2423.3
25°	2269.7	2414.6	2304.4	2373.3	2411.9
27.5°	2183.3	2311.5	2236.0	2333.7	2382.0
30°	2096.0	2205.1	2166.0	2302.2	2388.0
32.5°	2014.0	2093.8	2108.4	2290.3	2304.4
35°	1936.4	1990.1	2020.0	2203.4	2278.3
37.5°	1851.1	1865.8	1945.0	2167.1	2239.3
40°	1764.3	1755.0	1882.1	2107.4	2207.2
42.5°	1670.9	1667.6	1815.3	2077.5	2127.4
45°	1582.4	1589.5	1720.3	1992.8	2067.2
47.5°	1491.8	1501.0	1630.2	1900.0	1992.3
50°	1386.4	1398.4	1549.8	1817.5	1936.4
52.5°	1272.4	1295.2	1471.7	1739.3	1859.3
55°	1165.5	1184.5	1372.3	1672.5	1805.5
57.5°	1067.8	1079.2	1269.7	1588.4	1688.8
60°	971.7	974.4	1173.1	1495.0	1591.1
62.5°	861.5	866.4	1073.8	1384.8	1513.5
65°	737.7	761.1	966.8	1279.5	1395.7
67.5°	622.1	662.8	857.7	1182.9	1243.7
70°	498.3	567.3	750.8	1069.4	1112.3
72.5°	384.9	465.8	641.1	942.4	1002.6
75°	279.0	369.7	539.1	828.4	880.5
77.5°	187.8	280.1	443.5	702.5	771.4
80°	112.4	204.7	358.3	585.7	663.4
82.5°	57.5	137.3	277.9	491.3	560.8
85°	25.0	86.9	210.1	407.7	467.9
87.5°	7.1	49.4	154.7	329.5	380.5
90°	0.5	26.1	110.2	258.4	304.5
92.5°	0.5	12.5	77.6	195.4	230.7
95°	0.5	6.5	48.3	141.7	173.2
97.5°	0.5	3.8	29.3	100.4	127.0
100°	0.5	3.3	17.4	66.8	90.7
102.5°	0.5	3.8	11.9	42.3	59.2
105°	0.5	3.8	9.8	27.7	39.1
107.5°	1.1	3.8	8.7	20.6	27.1
110°	0.5	3.3	9.2	15.7	21.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.1	2.7	8.7	13.0	15.7
115°	0.5	2.2	7.6	12.5	13.0
117.5°	1.1	1.6	6.0	12.5	13.0
120°	1.1	1.1	4.9	11.9	13.6
122.5°	1.1	1.1	3.8	10.9	13.0
125°	0.5	1.1	3.3	8.1	11.4
127.5°	1.1	1.1	2.7	6.5	8.7
130°	1.1	1.1	2.2	4.9	6.5
132.5°	1.1	1.1	1.6	3.8	4.9
135°	1.1	1.1	1.1	2.7	3.8
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)