

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: P517683

Luminaire Tested: HVL12-8-LD4-3HI-40-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: P517683
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3HI-40-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 29874.0 lumens
Efficiency: N/A
Efficacy: 115.5 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

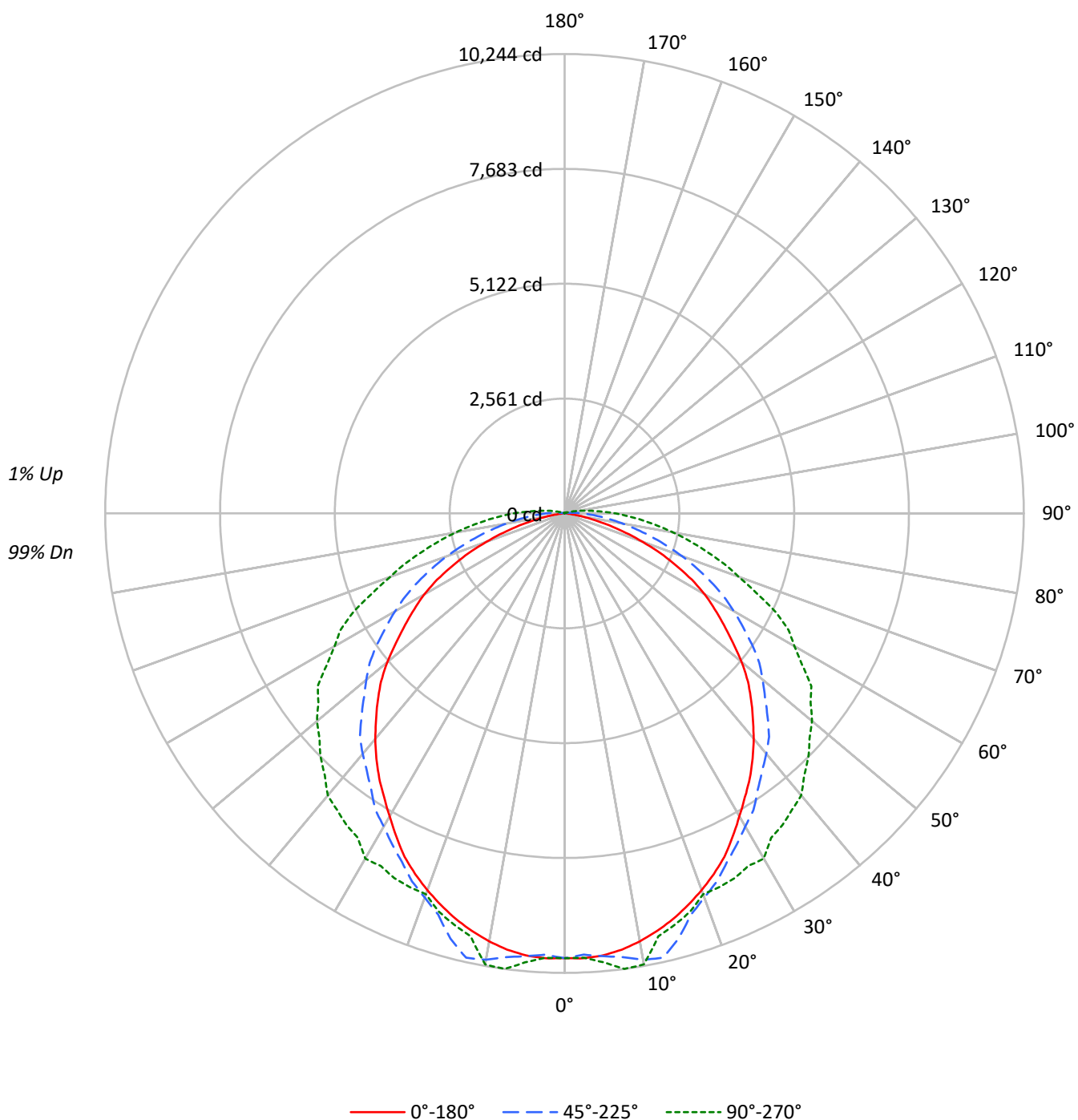
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	13343	13343	13343
5°	13337	13226	13373
10°	13185	13490	13550
15°	12970	13206	12665
20°	12703	12450	12198
25°	12418	11989	12363
30°	11974	11632	12594
35°	11665	11297	12470
40°	11333	11069	12656
45°	10976	10755	12546
50°	10538	10425	12583
55°	9880	10072	12730
60°	9391	9553	12363
65°	8366	8918	12180
70°	6900	8056	11168
75°	5008	6976	10501
80°	2898	5896	9832
85°	1158	4798	9252

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12730 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	953.1	3.2
10°-20°	2714.2	9.1
20°-30°	4038.4	13.5
30°-40°	4854.1	16.2
40°-50°	5109.3	17.1
50°-60°	4740.8	15.9
60°-70°	3748.4	12.5
70°-80°	2289.7	7.7
80°-90°	997.6	3.3
90°-100°	310.6	1.0
100°-110°	69.8	0.2
110°-120°	28.1	0.1
120°-130°	15.8	0.1
130°-140°	4.2	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°	7705.6	25.8
0°-40°	12559.8	42.0
0°-60°	22409.9	75.0
0°-90°	29445.6	98.6
90°-120°	408.4	1.4
90°-150°	428.4	1.4
90°-180°	428.0	1.4
0°-180°	29874.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	9916	9916	9916	9916	9916	
5°	9892	9872	9906	10018	10046	938
15°	9363	9723	9818	9492	9498	2638
25°	8446	8985	8575	8832	8975	3877
35°	7206	7406	7517	8200	8478	4503
45°	5888	5915	6402	7416	7692	4539
55°	4337	4408	5107	6224	6719	3897
65°	2745	2832	3598	4761	5194	2719
75°	1038	1376	2006	3083	3277	1133
85°	93	323	782	1517	1741	144
90°	2	97	410	962	1133	4
95°	2	24	180	527	644	2
105°	2	14	36	103	145	3
115°	2	8	28	46	48	3
125°	2	4	12	30	42	3
135°	4	4	4	10	14	2
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°	9916.5	9916.5	9916.5	9916.5	9916.5
2.5°	9928.7	9902.4	9847.9	9900.4	9914.5
5°	9892.3	9872.1	9906.4	10017.5	10045.8
7.5°	9809.5	9886.2	9977.1	10179.2	10243.8
10°	9686.3	9831.7	10104.4	10276.1	10209.5
12.5°	9536.8	9783.2	10148.9	9813.5	9658.0
15°	9363.0	9722.6	9817.6	9492.3	9498.4
17.5°	9159.0	9672.1	9379.2	9371.1	9312.5
20°	8938.8	9502.4	9114.6	9098.4	9035.8
22.5°	8702.5	9278.2	8880.2	8847.9	9017.6
25°	8445.9	8985.3	8575.2	8831.8	8975.2
27.5°	8124.7	8601.5	8320.7	8684.3	8864.1
30°	7799.5	8205.5	8060.1	8567.1	8886.3
32.5°	7494.5	7791.4	7846.0	8522.7	8575.2
35°	7205.6	7405.6	7516.7	8199.5	8478.3
37.5°	6888.5	6943.0	7237.9	8064.1	8332.8
40°	6565.2	6530.9	7003.6	7841.9	8213.6
42.5°	6217.8	6205.7	6755.1	7730.8	7916.7
45°	5888.5	5914.8	6401.6	7415.7	7692.4
47.5°	5551.2	5585.5	6066.3	7070.3	7413.7
50°	5159.3	5203.7	5767.3	6763.2	7205.6
52.5°	4735.1	4819.9	5476.4	6472.3	6918.8
55°	4337.1	4407.8	5106.7	6223.8	6718.8
57.5°	3973.5	4015.9	4725.0	5910.7	6284.5
60°	3615.9	3626.0	4365.4	5563.3	5920.8
62.5°	3205.9	3224.0	3995.7	5153.2	5632.0
65°	2745.3	2832.1	3597.8	4761.3	5193.6
67.5°	2315.0	2466.5	3191.7	4401.7	4628.0
70°	1854.4	2111.0	2793.8	3979.5	4139.1
72.5°	1432.2	1733.2	2385.7	3506.8	3731.1
75°	1038.3	1375.7	2005.9	3082.6	3276.6
77.5°	698.9	1042.4	1650.4	2614.0	2870.5
80°	418.2	761.6	1333.2	2179.7	2468.5
82.5°	214.1	511.1	1034.3	1828.2	2086.7
85°	92.9	323.2	781.8	1517.1	1741.3
87.5°	26.3	183.8	575.7	1226.2	1416.1
90°	2.0	97.0	410.1	961.6	1133.3
92.5°	2.0	46.5	288.9	727.2	858.5
95°	2.0	24.2	179.8	527.2	644.4
97.5°	2.0	14.1	109.1	373.7	472.7
100°	2.0	12.1	64.6	248.5	337.4
102.5°	2.0	14.1	44.4	157.6	220.2
105°	2.0	14.1	36.4	103.0	145.4
107.5°	4.0	14.1	32.3	76.8	101.0
110°	2.0	12.1	34.3	58.6	78.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	4.0	10.1	32.3	48.5	58.6
115°	2.0	8.1	28.3	46.5	48.5
117.5°	4.0	6.1	22.2	46.5	48.5
120°	4.0	4.0	18.2	44.4	50.5
122.5°	4.0	4.0	14.1	40.4	48.5
125°	2.0	4.0	12.1	30.3	42.4
127.5°	4.0	4.0	10.1	24.2	32.3
130°	4.0	4.0	8.1	18.2	24.2
132.5°	4.0	4.0	6.1	14.1	18.2
135°	4.0	4.0	4.0	10.1	14.1
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)