

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: P517740

Luminaire Tested: HVL8-1-LD4-1LO-30-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: P517740
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1LO-30-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 680.0 lumens
Efficiency: N/A
Efficacy: 117.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

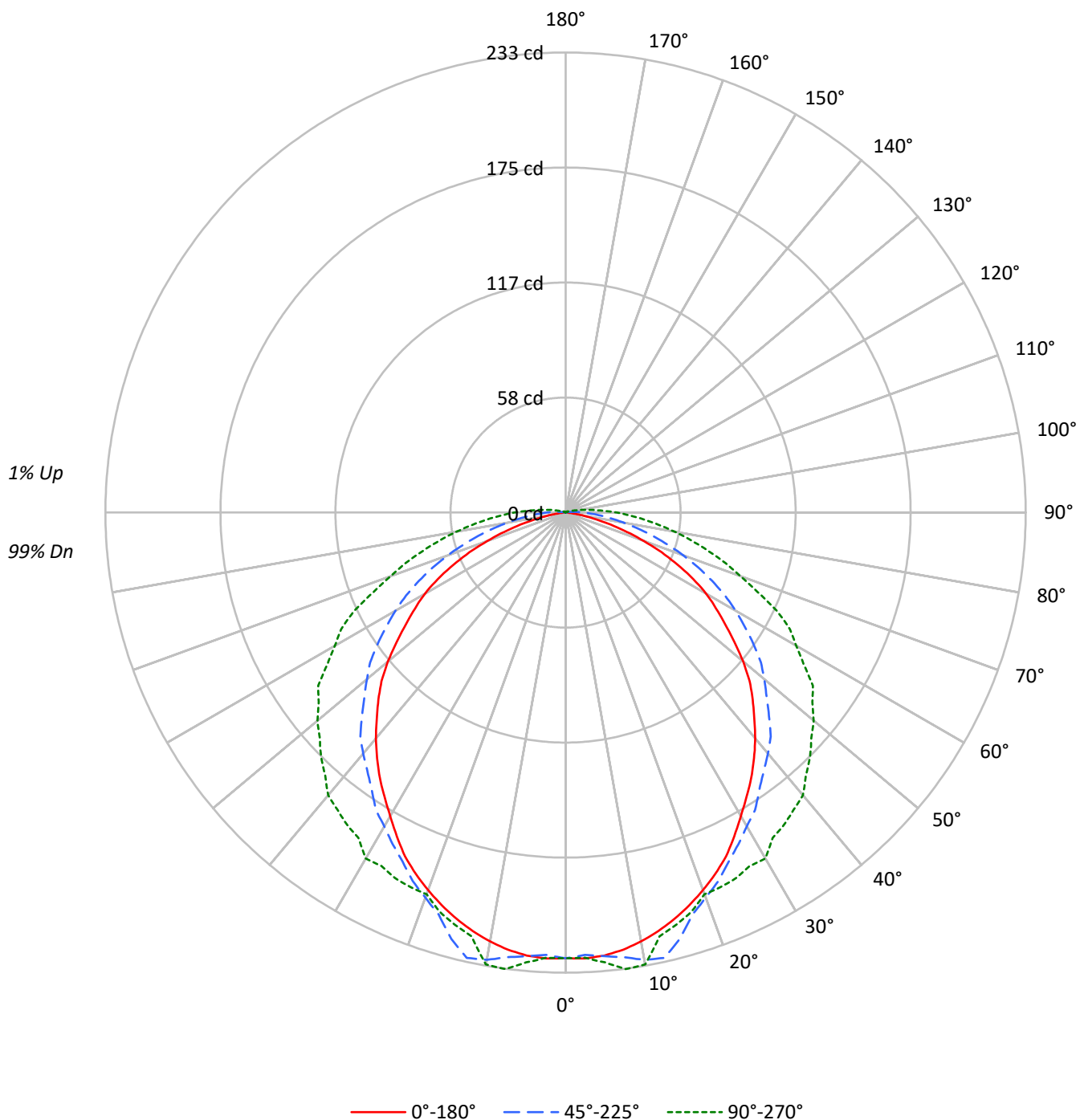
Input Watts (W): 5.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	3644	3644	3644
5°	3597	3563	3627
10°	3512	3585	3649
15°	3410	3462	3387
20°	3297	3220	3240
25°	3177	3057	3260
30°	3019	2924	3296
35°	2895	2796	3237
40°	2762	2694	3258
45°	2623	2570	3198
50°	2460	2441	3174
55°	2244	2302	3171
60°	2062	2125	3037
65°	1759	1917	2939
70°	1366	1659	2636
75°	908	1358	2407
80°	454	1055	2161
85°	134	755	1901

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3198 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.7	3.2
10°-20°	61.8	9.1
20°-30°	91.9	13.5
30°-40°	110.5	16.3
40°-50°	116.3	17.1
50°-60°	107.9	15.9
60°-70°	85.3	12.5
70°-80°	52.1	7.7
80°-90°	22.7	3.3
90°-100°	7.1	1.0
100°-110°	1.6	0.2
110°-120°	0.6	0.1
120°-130°	0.4	0.1
130°-140°	0.1	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°	175.4	25.8
0°-40°	285.9	42.0
0°-60°	510.1	75.0
0°-90°	670.2	98.6
90°-120°	9.3	1.4
90°-150°	9.7	1.4
90°-180°	10.0	1.5
0°-180°	680.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	226	226	226	226	226	
5°	225	225	226	228	229	21
15°	213	221	224	216	216	60
25°	192	204	195	201	204	88
35°	164	169	171	187	193	103
45°	134	135	146	169	175	103
55°	99	100	116	142	153	89
65°	62	64	82	108	118	62
75°	24	31	46	70	75	26
85°	2	7	18	34	40	3
90°	0	2	9	22	26	0
95°	0	1	4	12	15	0
105°	0	0	1	2	3	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	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°	225.7	225.7	225.7	225.7	225.7
2.5°	226.0	225.4	224.2	225.4	225.7
5°	225.2	224.7	225.5	228.0	228.7
7.5°	223.3	225.0	227.1	231.7	233.2
10°	220.5	223.8	230.0	233.9	232.4
12.5°	217.1	222.7	231.0	223.4	219.8
15°	213.1	221.3	223.5	216.1	216.2
17.5°	208.5	220.2	213.5	213.3	212.0
20°	203.5	216.3	207.5	207.1	205.7
22.5°	198.1	211.2	202.1	201.4	205.3
25°	192.2	204.5	195.2	201.0	204.3
27.5°	184.9	195.8	189.4	197.7	201.8
30°	177.5	186.8	183.5	195.0	202.3
32.5°	170.6	177.4	178.6	194.0	195.2
35°	164.0	168.6	171.1	186.6	193.0
37.5°	156.8	158.0	164.8	183.6	189.7
40°	149.4	148.7	159.4	178.5	187.0
42.5°	141.5	141.3	153.8	176.0	180.2
45°	134.0	134.6	145.7	168.8	175.1
47.5°	126.4	127.1	138.1	160.9	168.8
50°	117.4	118.4	131.3	153.9	164.0
52.5°	107.8	109.7	124.7	147.3	157.5
55°	98.7	100.3	116.2	141.7	152.9
57.5°	90.4	91.4	107.6	134.5	143.0
60°	82.3	82.5	99.4	126.6	134.8
62.5°	73.0	73.4	91.0	117.3	128.2
65°	62.5	64.5	81.9	108.4	118.2
67.5°	52.7	56.1	72.7	100.2	105.3
70°	42.2	48.1	63.6	90.6	94.2
72.5°	32.6	39.5	54.3	79.8	84.9
75°	23.6	31.3	45.7	70.2	74.6
77.5°	15.9	23.7	37.6	59.5	65.3
80°	9.5	17.3	30.3	49.6	56.2
82.5°	4.9	11.6	23.5	41.6	47.5
85°	2.1	7.4	17.8	34.5	39.6
87.5°	0.6	4.2	13.1	27.9	32.2
90°	0.0	2.2	9.3	21.9	25.8
92.5°	0.0	1.1	6.6	16.6	19.5
95°	0.0	0.6	4.1	12.0	14.7
97.5°	0.0	0.3	2.5	8.5	10.8
100°	0.0	0.3	1.5	5.7	7.7
102.5°	0.0	0.3	1.0	3.6	5.0
105°	0.0	0.3	0.8	2.3	3.3
107.5°	0.1	0.3	0.7	1.7	2.3
110°	0.0	0.3	0.8	1.3	1.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.2	0.7	1.1	1.3
115°	0.0	0.2	0.6	1.1	1.1
117.5°	0.1	0.1	0.5	1.1	1.1
120°	0.1	0.1	0.4	1.0	1.1
122.5°	0.1	0.1	0.3	0.9	1.1
125°	0.0	0.1	0.3	0.7	1.0
127.5°	0.1	0.1	0.2	0.6	0.7
130°	0.1	0.1	0.2	0.4	0.6
132.5°	0.1	0.1	0.1	0.3	0.4
135°	0.1	0.1	0.1	0.2	0.3
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)