

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: P517746

Luminaire Tested: HVL8-1-LD4-1LO-35-UNV-O-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: P517746
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1LO-35-UNV-O-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 646.0 lumens
Efficiency: N/A
Efficacy: 111.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

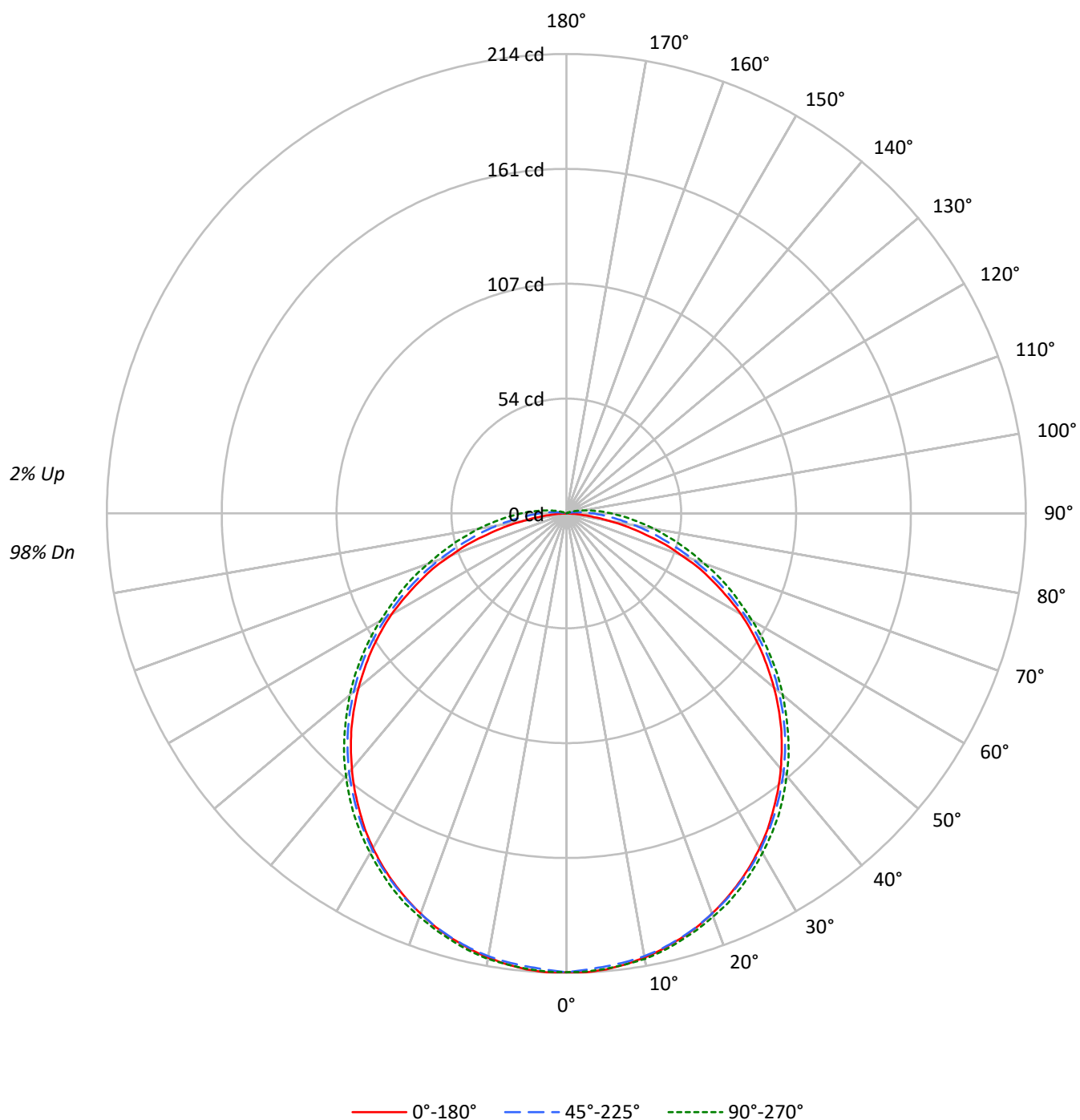
Input Watts (W): 5.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	3450	3450	3450
5°	3406	3346	3377
10°	3346	3264	3309
15°	3282	3174	3227
20°	3214	3079	3148
25°	3141	2982	3068
30°	3061	2881	2976
35°	2969	2773	2887
40°	2873	2660	2782
45°	2769	2538	2669
50°	2647	2402	2547
55°	2512	2255	2410
60°	2355	2072	2253
65°	2136	1870	2099
70°	1849	1638	1917
75°	1477	1387	1752
80°	994	1142	1603
85°	421	895	1460

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2769 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	20.2	3.1
10°-20°	58.0	9.0
20°-30°	88.0	13.6
30°-40°	106.4	16.5
40°-50°	111.0	17.2
50°-60°	101.5	15.7
60°-70°	79.1	12.2
70°-80°	49.5	7.7
80°-90°	22.5	3.5
90°-100°	7.5	1.2
100°-110°	1.9	0.3
110°-120°	0.3	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°	166.2	25.7
0°-40°	272.6	42.2
0°-60°	485.2	75.1
0°-90°	636.3	98.5
90°-120°	9.8	1.5
90°-150°	9.8	1.5
90°-180°	10.0	1.5
0°-180°	646.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	214	214	214	214	214	
5°	213	213	212	213	213	20
15°	205	205	205	206	206	58
25°	190	190	190	192	192	88
35°	168	169	170	171	172	105
45°	142	143	144	145	146	109
55°	110	112	114	116	116	99
65°	76	77	80	83	84	75
75°	38	41	47	52	54	41
85°	7	12	21	28	30	8
90°	0	5	12	19	21	0
95°	0	1	6	12	14	0
105°	0	0	1	3	4	0
115°	0	0	0	1	1	0
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°	213.7	213.7	213.7	213.7	213.7
2.5°	213.9	213.6	212.7	213.6	213.6
5°	213.2	212.8	211.8	212.9	212.9
7.5°	211.8	211.6	210.8	211.9	211.9
10°	210.1	210.1	209.4	210.6	210.7
12.5°	207.8	208.0	207.4	208.6	208.7
15°	205.1	205.4	204.9	206.1	206.0
17.5°	202.1	202.3	201.9	203.2	203.2
20°	198.4	198.7	198.4	199.8	199.9
22.5°	194.4	194.7	194.7	196.1	196.5
25°	190.0	190.2	190.4	192.0	192.3
27.5°	185.3	185.5	185.9	187.3	187.6
30°	180.0	180.4	180.8	182.3	182.7
32.5°	174.5	174.9	175.4	177.3	177.5
35°	168.2	169.0	169.7	171.4	172.1
37.5°	162.0	162.9	163.6	165.4	166.0
40°	155.4	156.3	157.4	159.3	159.7
42.5°	148.5	149.6	150.8	152.6	153.2
45°	141.5	142.8	143.9	145.4	146.1
47.5°	134.0	135.3	136.7	138.3	138.8
50°	126.3	127.7	129.2	130.8	131.6
52.5°	118.3	120.1	121.8	123.4	124.2
55°	110.5	111.8	113.8	115.5	116.2
57.5°	102.3	103.4	105.3	108.0	108.4
60°	94.0	95.0	96.9	99.1	100.0
62.5°	84.8	86.2	88.2	91.0	91.8
65°	75.9	77.2	79.9	83.1	84.4
67.5°	67.3	67.7	71.2	74.5	76.6
70°	57.1	58.8	62.8	66.9	68.5
72.5°	48.4	50.1	54.4	59.2	61.2
75°	38.4	40.8	46.7	52.3	54.3
77.5°	29.7	32.3	39.7	45.3	47.6
80°	20.8	24.8	32.8	39.2	41.7
82.5°	13.0	18.1	26.6	33.3	35.5
85°	6.6	12.3	21.1	27.9	30.4
87.5°	1.8	8.0	16.4	22.9	25.4
90°	0.1	4.6	12.4	18.7	21.0
92.5°	0.1	2.6	9.3	14.9	17.2
95°	0.1	1.2	6.4	11.7	13.5
97.5°	0.1	0.5	4.4	8.8	10.6
100°	0.1	0.3	2.8	6.4	8.0
102.5°	0.1	0.2	1.8	4.6	5.8
105°	0.1	0.2	1.1	3.1	4.2
107.5°	0.1	0.2	0.6	2.1	2.9
110°	0.2	0.2	0.4	1.3	1.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.2	0.2	0.9	1.3
115°	0.2	0.2	0.2	0.6	0.8
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)