

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: P517733

Luminaire Tested: HVL8-1-LD4-1HI-40-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: P517733
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1HI-40-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1081.0 lumens
Efficiency: N/A
Efficacy: 101.0 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

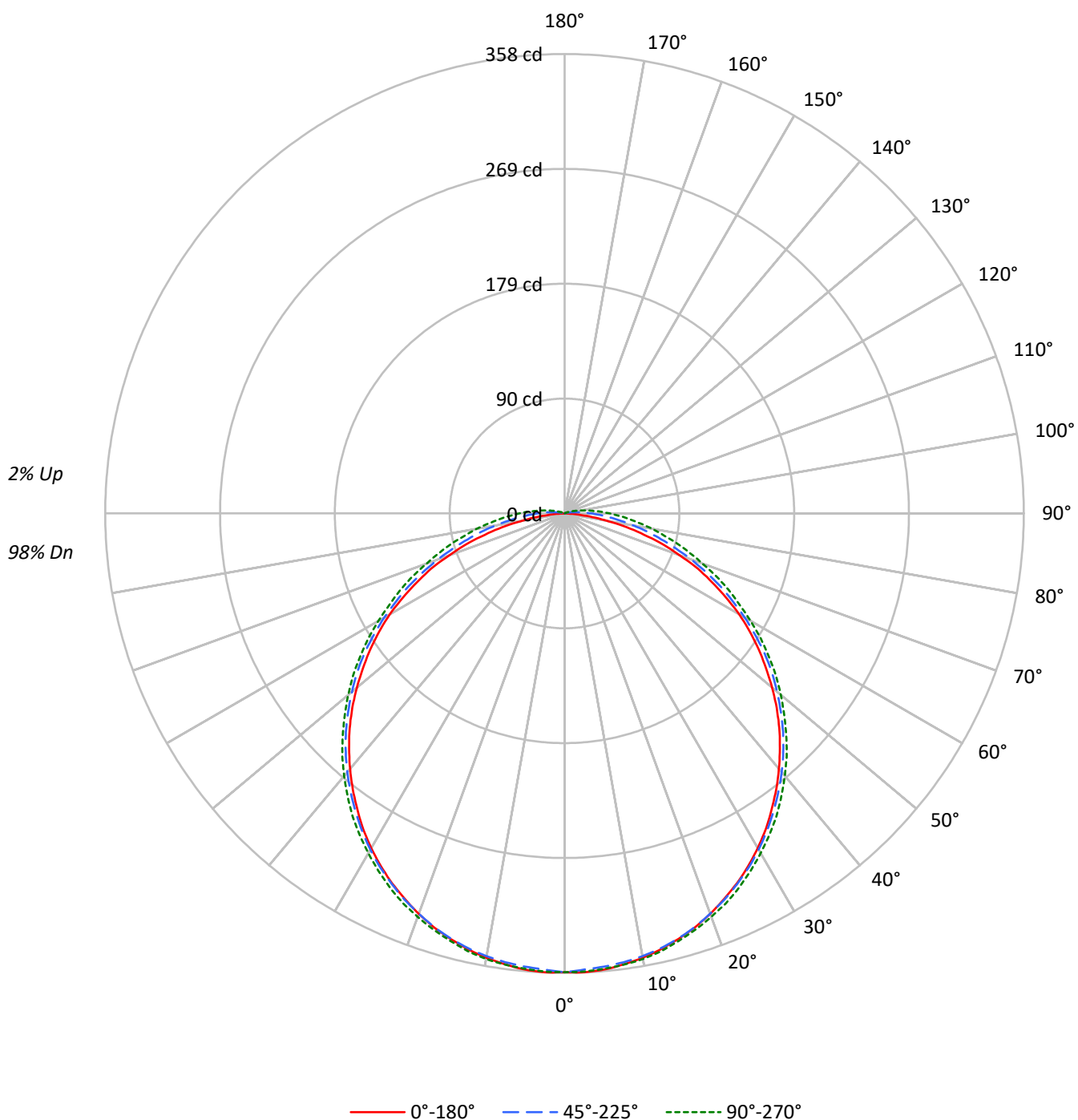
Input Watts (W): 10.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5772	5772	5772
5°	5700	5601	5650
10°	5600	5461	5537
15°	5491	5312	5400
20°	5380	5152	5268
25°	5257	4990	5134
30°	5122	4821	4982
35°	4969	4640	4831
40°	4808	4451	4655
45°	4634	4249	4464
50°	4428	4021	4259
55°	4202	3774	4034
60°	3941	3468	3772
65°	3574	3130	3511
70°	3095	2742	3207
75°	2473	2323	2933
80°	1658	1914	2680
85°	708	1497	2439

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4634 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.8	3.1
10°-20°	97.1	9.0
20°-30°	147.3	13.6
30°-40°	178.1	16.5
40°-50°	185.8	17.2
50°-60°	169.9	15.7
60°-70°	132.4	12.3
70°-80°	82.8	7.7
80°-90°	37.6	3.5
90°-100°	12.6	1.2
100°-110°	3.2	0.3
110°-120°	0.5	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°	278.1	25.7
0°-40°	456.2	42.2
0°-60°	811.9	75.1
0°-90°	1064.8	98.5
90°-120°	16.3	1.5
90°-150°	16.3	1.5
90°-180°	16.0	1.5
0°-180°	1081.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	358	358	358	358	358	
5°	357	356	354	356	356	34
15°	343	344	343	345	345	97
25°	318	318	319	321	322	147
35°	282	283	284	287	288	176
45°	237	239	241	243	244	182
55°	185	187	190	193	194	165
65°	127	129	134	139	141	126
75°	64	68	78	88	91	69
85°	11	21	35	47	51	14
90°	0	8	21	31	35	0
95°	0	2	11	20	23	0
105°	0	0	2	5	7	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°	357.5	357.5	357.5	357.5	357.5
2.5°	358.0	357.4	355.8	357.4	357.4
5°	356.8	356.1	354.5	356.2	356.2
7.5°	354.4	354.2	352.7	354.7	354.7
10°	351.6	351.5	350.4	352.5	352.6
12.5°	347.8	348.1	347.0	349.0	349.3
15°	343.2	343.8	342.9	344.8	344.7
17.5°	338.2	338.6	337.9	340.1	340.0
20°	332.1	332.5	332.0	334.3	334.5
22.5°	325.2	325.8	325.8	328.1	328.8
25°	318.0	318.3	318.6	321.3	321.8
27.5°	310.0	310.4	311.0	313.4	314.0
30°	301.2	301.9	302.6	305.1	305.8
32.5°	292.0	292.6	293.5	296.8	297.1
35°	281.5	282.8	284.0	286.8	288.0
37.5°	271.1	272.7	273.8	276.8	277.7
40°	260.0	261.6	263.4	266.6	267.2
42.5°	248.5	250.3	252.4	255.3	256.3
45°	236.8	238.9	240.9	243.2	244.4
47.5°	224.3	226.4	228.7	231.4	232.2
50°	211.3	213.7	216.3	218.8	220.1
52.5°	198.0	200.9	203.8	206.5	207.8
55°	184.8	187.0	190.5	193.3	194.5
57.5°	171.2	173.0	176.2	180.7	181.4
60°	157.3	159.0	162.2	165.9	167.4
62.5°	141.9	144.2	147.6	152.3	153.6
65°	127.0	129.2	133.7	139.0	141.2
67.5°	112.6	113.4	119.1	124.7	128.2
70°	95.6	98.4	105.1	111.9	114.6
72.5°	80.9	83.8	91.1	99.1	102.5
75°	64.3	68.3	78.2	87.6	90.9
77.5°	49.7	54.1	66.4	75.9	79.6
80°	34.7	41.6	55.0	65.6	69.7
82.5°	21.8	30.3	44.6	55.7	59.3
85°	11.1	20.6	35.3	46.7	50.8
87.5°	2.9	13.3	27.5	38.3	42.6
90°	0.1	7.7	20.8	31.3	35.1
92.5°	0.1	4.3	15.5	24.9	28.7
95°	0.1	2.0	10.8	19.6	22.6
97.5°	0.1	0.8	7.4	14.7	17.8
100°	0.1	0.4	4.7	10.7	13.3
102.5°	0.2	0.3	2.9	7.7	9.8
105°	0.2	0.3	1.8	5.2	7.0
107.5°	0.2	0.3	1.0	3.5	4.8
110°	0.3	0.3	0.6	2.2	3.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.3	0.3	1.4	2.1
115°	0.3	0.3	0.3	0.9	1.3
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)