

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: P517864

Luminaire Tested: HVL8-1-LD4-3STD-50-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: P517864
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3STD-50-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2826.0 lumens
Efficiency: N/A
Efficacy: 118.2 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

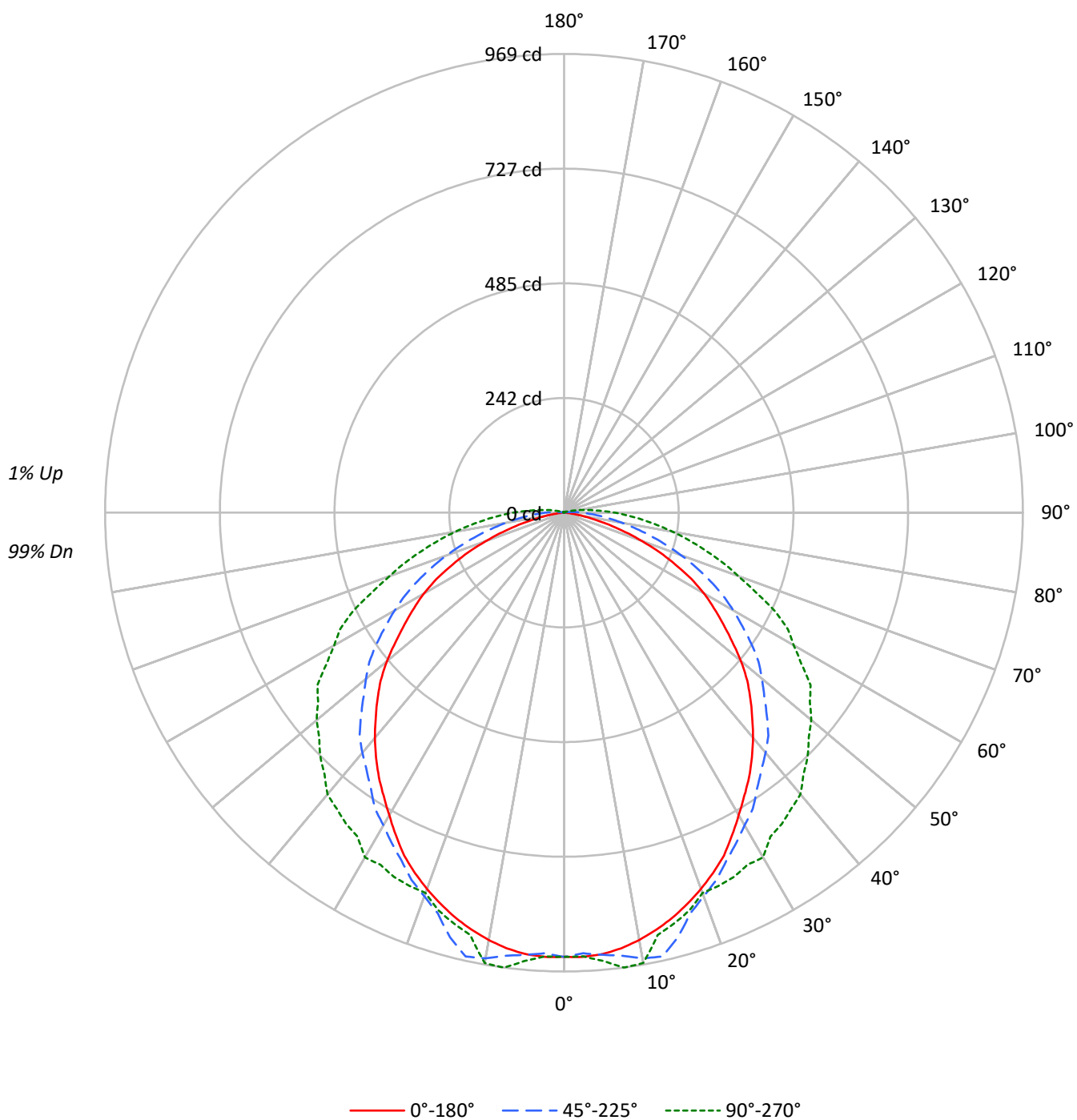
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	15146	15146	15146
5°	14949	14806	15072
10°	14594	14896	15166
15°	14172	14388	14076
20°	13698	13379	13462
25°	13208	12706	13546
30°	12548	12149	13695
35°	12030	11619	13452
40°	11484	11195	13537
45°	10901	10681	13292
50°	10228	10143	13190
55°	9329	9571	13184
60°	8572	8830	12621
65°	7309	7966	12218
70°	5679	6895	10958
75°	3777	5639	10003
80°	1893	4389	8978
85°	561	3138	7908

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 13292 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.2	3.2
10°-20°	256.8	9.1
20°-30°	382.0	13.5
30°-40°	459.2	16.2
40°-50°	483.3	17.1
50°-60°	448.5	15.9
60°-70°	354.6	12.5
70°-80°	216.6	7.7
80°-90°	94.4	3.3
90°-100°	29.4	1.0
100°-110°	6.6	0.2
110°-120°	2.7	0.1
120°-130°	1.5	0.1
130°-140°	0.4	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°	728.9	25.8
0°-40°	1188.1	42.0
0°-60°	2119.9	75.0
0°-90°	2785.5	98.6
90°-120°	38.6	1.4
90°-150°	40.5	1.4
90°-180°	41.0	1.5
0°-180°	2826.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	938	938	938	938	938	
5°	936	934	937	948	950	89
15°	886	920	929	898	898	250
25°	799	850	811	836	849	367
35°	682	700	711	776	802	426
45°	557	560	606	702	728	429
55°	410	417	483	589	636	369
65°	260	268	340	450	491	257
75°	98	130	190	292	310	107
85°	9	31	74	144	165	14
90°	0	9	39	91	107	0
95°	0	2	17	50	61	0
105°	0	1	3	10	14	0
115°	0	1	3	4	5	0
125°	0	0	1	3	4	0
135°	0	0	0	1	1	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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CATALOG NUMBER: HVL8-1-LD4-3STD-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	938.1	938.1	938.1	938.1	938.1
2.5°	939.2	936.7	931.6	936.5	937.9
5°	935.8	933.9	937.1	947.6	950.3
7.5°	928.0	935.2	943.8	962.9	969.0
10°	916.3	930.1	955.8	972.1	965.8
12.5°	902.2	925.5	960.1	928.3	913.6
15°	885.7	919.7	928.7	897.9	898.5
17.5°	866.4	915.0	887.2	886.5	880.9
20°	845.6	898.9	862.2	860.7	854.8
22.5°	823.2	877.7	840.0	837.0	853.0
25°	799.0	850.0	811.2	835.5	849.0
27.5°	768.6	813.7	787.1	821.5	838.5
30°	737.8	776.2	762.5	810.4	840.6
32.5°	709.0	737.0	742.2	806.2	811.2
35°	681.6	700.5	711.1	775.6	802.0
37.5°	651.6	656.8	684.7	762.8	788.3
40°	621.1	617.8	662.5	741.8	777.0
42.5°	588.2	587.0	639.0	731.3	748.9
45°	557.0	559.5	605.6	701.5	727.7
47.5°	525.1	528.4	573.9	668.8	701.3
50°	488.1	492.3	545.6	639.8	681.6
52.5°	447.9	455.9	518.1	612.3	654.5
55°	410.3	417.0	483.1	588.8	635.6
57.5°	375.9	379.9	447.0	559.1	594.5
60°	342.1	343.0	413.0	526.3	560.1
62.5°	303.3	305.0	378.0	487.5	532.8
65°	259.7	267.9	340.3	450.4	491.3
67.5°	219.0	233.3	301.9	416.4	437.8
70°	175.4	199.7	264.3	376.5	391.6
72.5°	135.5	164.0	225.7	331.7	352.9
75°	98.2	130.1	189.8	291.6	310.0
77.5°	66.1	98.6	156.1	247.3	271.5
80°	39.6	72.0	126.1	206.2	233.5
82.5°	20.3	48.3	97.8	172.9	197.4
85°	8.8	30.6	74.0	143.5	164.7
87.5°	2.5	17.4	54.5	116.0	134.0
90°	0.2	9.2	38.8	91.0	107.2
92.5°	0.2	4.4	27.3	68.8	81.2
95°	0.2	2.3	17.0	49.9	61.0
97.5°	0.2	1.3	10.3	35.4	44.7
100°	0.2	1.1	6.1	23.5	31.9
102.5°	0.2	1.3	4.2	14.9	20.8
105°	0.2	1.3	3.4	9.7	13.8
107.5°	0.4	1.3	3.1	7.3	9.6
110°	0.2	1.1	3.2	5.5	7.5

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CATALOG NUMBER: HVL8-1-LD4-3STD-50-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.1	4.6	5.5
115°	0.2	0.8	2.7	4.4	4.6
117.5°	0.4	0.6	2.1	4.4	4.6
120°	0.4	0.4	1.7	4.2	4.8
122.5°	0.4	0.4	1.3	3.8	4.6
125°	0.2	0.4	1.1	2.9	4.0
127.5°	0.4	0.4	1.0	2.3	3.1
130°	0.4	0.4	0.8	1.7	2.3
132.5°	0.4	0.4	0.6	1.3	1.7
135°	0.4	0.4	0.4	1.0	1.3
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)